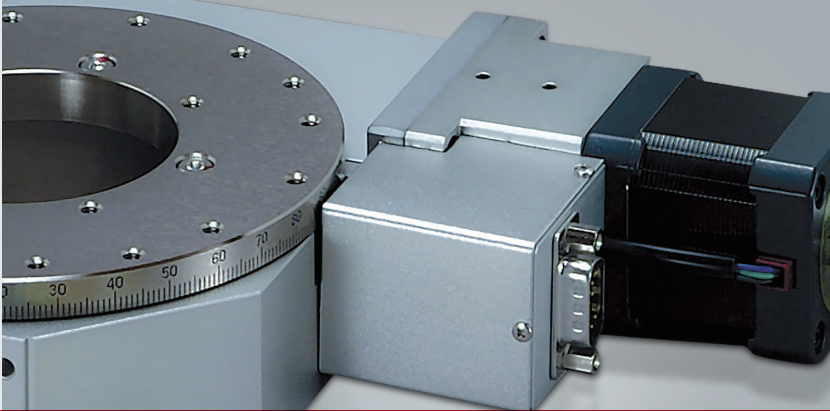
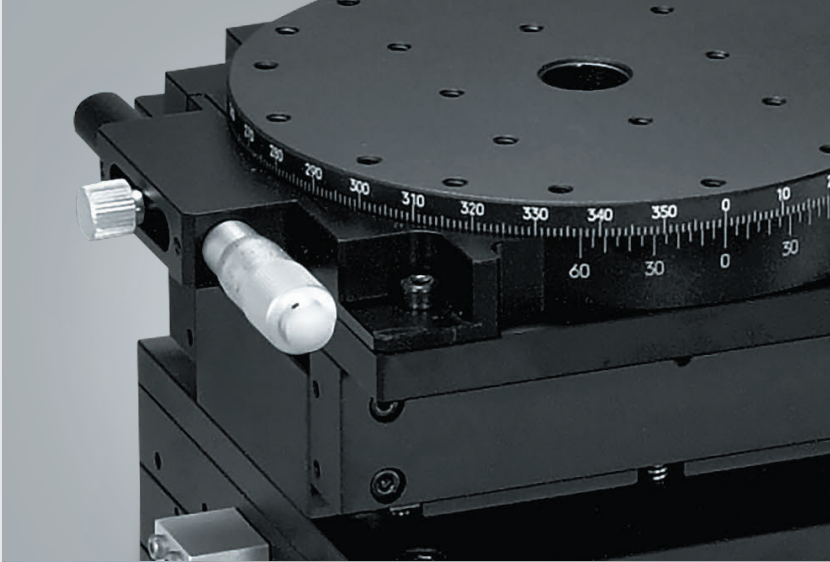
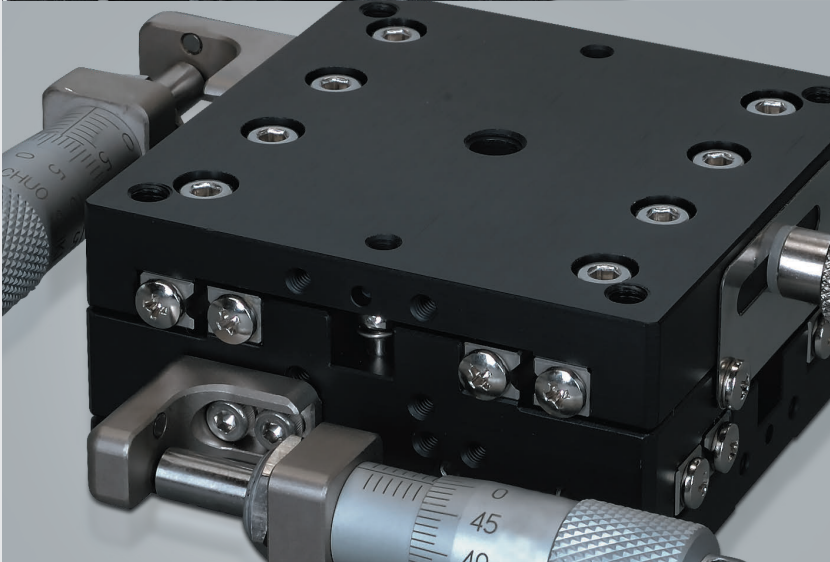


THK CHUO



StageCatalog



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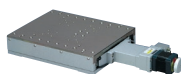
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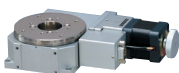
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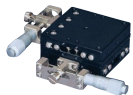


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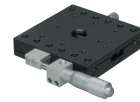
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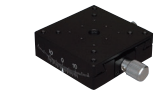


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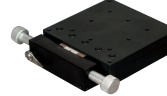


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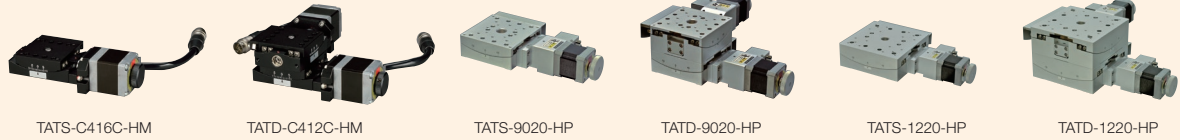
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TATS-C416C-HM

TATD-C412C-HM

TATS-9020-HP

TATD-9020-HP

TATS-1220-HP

TATD-1220-HP

Motorized Rotary



TARS-336-HM

TARS-6036-GM

TARS-936-HP

TARS-136-HP

Motorized Z



TALV-3005-HM

TALV-901-HP

TALV-102-HP

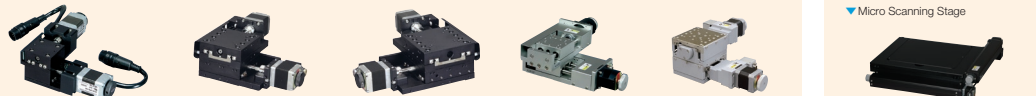
TALV-104-HP

TALZ-301-HM

TALZ-6012-G1M

TALZ-604-E1P

Motorized XY



TALD-301-HM

TALD-6012-G1M

TALD-7013-G1M-R

TALD-604-E1P

TALD-904-H1PC

▼ Micro Scanning Stage

TMSS-150C

Motorized X



TALS-301-HM

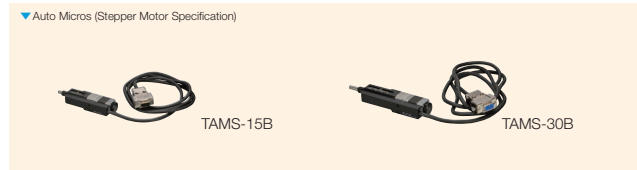
TALS-4011-G1M

TALS-7013-G1M

TALS-604-E1P

TALS-904-H1PC

Actuators/Others



Controller



A lineup of both manual and motorized stages for precision positioning is available.

Travel direction, travel amount, size, accuracy/performance, and function specifications can be suited to each customer's needs.

These products deliver both maximum performance and absolute reliability.



Manual Stages

Fix Stages



TLS-1251FX



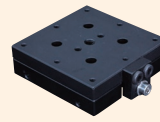
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TLS-4051FX



TLD-4051FX



TLS-6051FX



TLD-6051FX

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▼ XYZ, XYZ Rotary Stages



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TLT-907-S1

▼ Rack & Pinion Stages



TLM-912W



TLS-112

▼ Long-Distance Stage



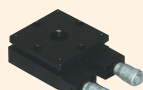
TLS-414WL3

Manual Tilting

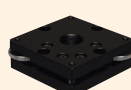
▼ Tilt Stages



TTD-302



TTD-602



TTD-604

▼ Goniometer Stages



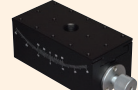
TTD-313



TTS-R412

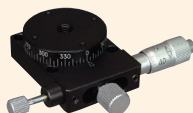


TTD-C611



TTS-211

Manual Rotary



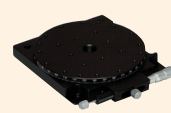
TRS-317



TRS-4012



TRS-6012



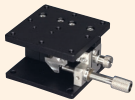
TRS-147-1



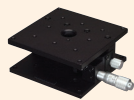
TRS-211T

Manual Z

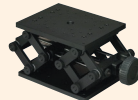
▼ Lift Types



TLV-6042-6



TLV-947-1



TLV-251-2



TLZ-6042-S1



TLZ-7047-CR1



TLZ-7047-S6



TLV-243

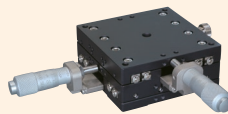
Manual XY



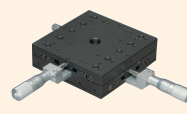
TLD-6047-S1



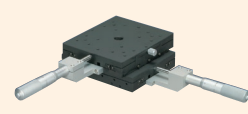
TLD-6042-S1



TLD-7047-CR1



TLD-149-C1

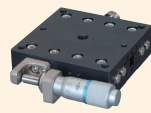


TLD-241-C1

Manual X



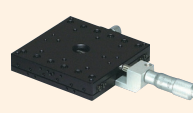
TLS-3047-S1



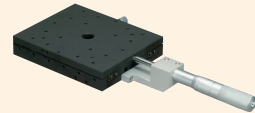
TLS-6047-S8



TLS-6042-S1



TLS-947-C1



TLS-241-C1

THK CHUO Motorized Stages

Foreword

THK CHUO manufactures and sells a wide range of motorized stages to meet customer demands.

In addition, THK CHUO clearly identifies the key parameters for motorized stages, such as stage surface dimensions, travel amount, and accuracy, so that one can freely select and use motorized stages that best suit the application.

1 Features

1.1 Selecting a motorized stage is easy because the stage surface dimensions, travel amount, accuracy, etc., are made clear.

1.2 The stage surface and base bottom surfaces of motorized stages are interchangeable, enabling multi-axis combination to suit customer specifications.

▼ Mounting screw standard dimensions

■ Stage surfaces

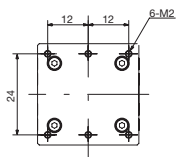


Figure 1-1

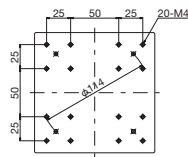


Figure 1-5

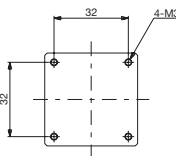


Figure 1-2

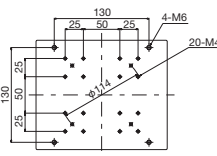


Figure 1-6

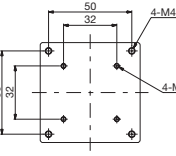


Figure 1-3

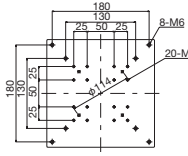


Figure 1-7

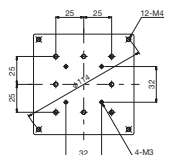


Figure 1-4

■ Stage bottom surfaces

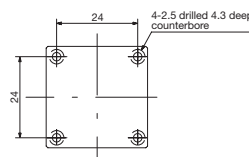


Figure 1-8

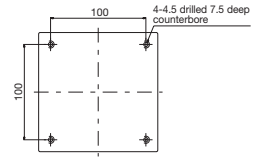


Figure 1-12

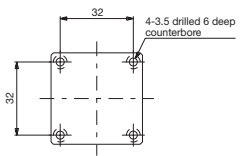


Figure 1-9

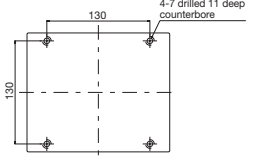


Figure 1-13

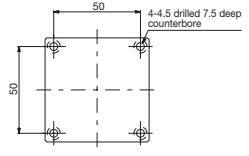


Figure 1-10

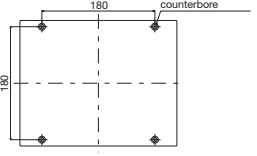


Figure 1-14

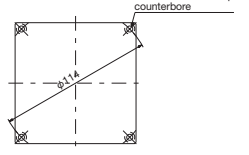


Figure 1-11

1.3 Every motorized stage undergoes inspection. Each measuring instrument is traceable, and reliable accuracy and quality are guaranteed.

1.4 We also have an extensive after-sales service and support system.



2 Classification

The guide methods of motorized stages can be classified into 5 types.

2.1 V-groove and cross rollers (V-CR method) (Fig. 2-1)

Rollers are alternately arranged orthogonally on two V-groove rails facing each other to make one set, and two sets are used as one pair for the guide.

The V-groove rail raceway surface is hardened and then precision machined to achieve a guide with excellent straightness.

In addition, the use of rollers enables a large load capacity for both vertical and horizontal loads. This type is used for stages for heavy loads requiring high precision.

2.2 V-groove and cross rollers (HG-VCR method) (Fig. 2-2)

This is THK CHUO's original guide system developed with the aim of further improving the performance of the V-CR system.

This is called "HG-VCR."

The distance between the rollers is minimized as much as possible, and the number of rollers held by the retainer is increased. This type is compact, with high preload and ultra-high rigidity.

Adopted by THK CHUO's new motorized and manual stages, it supports precise positioning of various sensors and cameras, in addition to enabling precise positioning and measurement in various production machines and inspection equipment.

The high rigidity enables it to be used with peace of mind even in applications where some unbalanced loads may be applied.

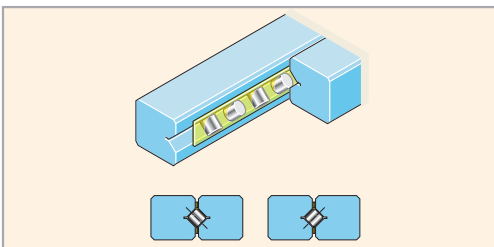


Fig. 2-1 V-groove and cross rollers (V-CR method)

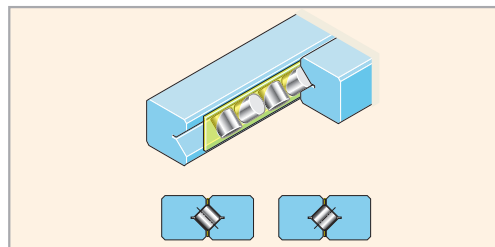


Fig. 2-2 V-groove and cross rollers (HG-VCR method)

▶ Motorized Stages

Motorized Stages
Automated Products for Microscopes
Manual Stages

2.3 Roller ways (Fig. 2-3)

Two circulating roller bearings and one V-groove rail make one set, and two sets are used as one pair for the guide.

The V-groove rail is precision machined to achieve a guide with excellent straightness. In addition, the use of rollers enables a large load capacity for both vertical and horizontal loads.

Moreover, the circulating roller bearings used enable the stage surface size to be compact regardless of stroke.

This type is used for stages for heavy loads requiring high precision.

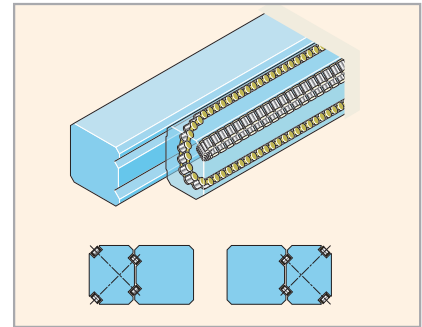


Fig. 2-3 Roller ways

2.4 Ball bushing (Fig. 2-4)

Two ball slide bearings and one shaft make one set, and two sets are used as one pair for the guide.

The shaft has been machined but can vary depending on the stage mounting surface accuracy and load. The steel balls and shaft are in point contact, so they are best suited for light loads.

The ball slide bearings used enable the stage surface size to be compact regardless of stroke.

The stage body is made of aluminum alloy, making it lightweight. This type is used for stages for light loads.

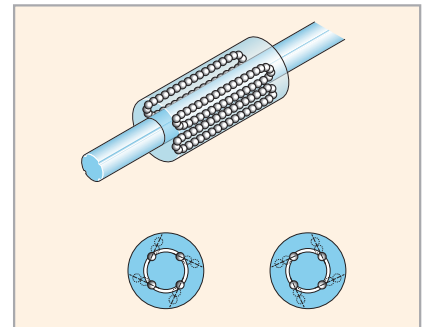


Fig. 2-4 Ball bushing

2.5 Rotating bearing (Fig. 2-5 and 2-6)

Rotating bearings such as angular bearings or cross roller bearings are used for this guide.

The high-precision preload type angular bearings and cross roller bearings used enable high accuracy and rotation without backlash to be achieved.

In addition, the use of cross roller bearings enables a large load capacity for both vertical and horizontal loads.

This type is used for rotary stages for heavy loads requiring high precision.

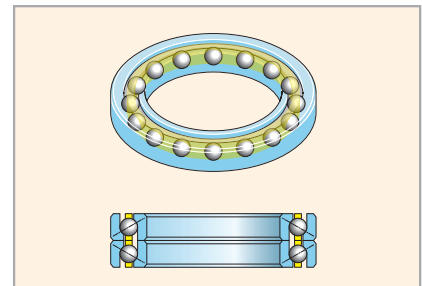


Fig. 2-5 Angular bearing

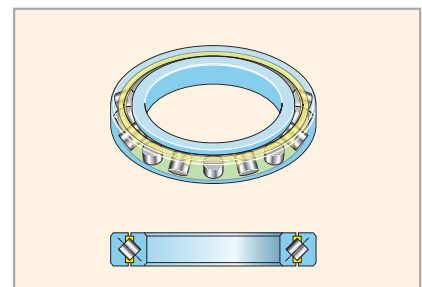


Fig. 2-6 Cross roller bearing

Guide method	Travel accuracy	Load capacity	Rigidity
V-groove and cross rollers (HG-VCR method)	☆	☆	☆
V-groove and cross rollers (V-CR method)	◎	◎	◎
Roller ways	◎	◎	◎
Ball bushing	△	△	△
Rotating bearing	◎	○	○

Table 1 Guide roller method comparison ☆: Outstanding ◎: Excellent ○: Good △: Fair



3 Catalog-listed specifications and accuracy

3.1 Positioning accuracy (JIS B 6191-1993 compliant) (Fig. 3-1)

"The maximum allowable deviation from the target position of the position reached by one point of the moving part after the movement completes."
 Positioning is performed sequentially in one direction for each reference length (angle) specified for each motorized stage model while the difference between the reference length (angle) to be moved and the amount actually moved is measured.

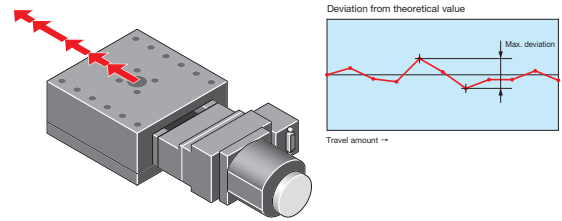


Fig. 3-1 Positioning accuracy

3.2 Repeatability (JIS B 6191-1993 compliant) (Fig. 3-2)

"Maximum variation in deviation between target position and actual position when positioning is repeated from one direction." From any one point, the stop position after repeating positioning operation 7 times from the same direction is measured in order to record the maximum difference between measured values. The measurement is performed at the center of the travel distance and at both ends, then a "±" symbol is added to 1/2 of the maximum value of the obtained difference to obtain the "repeatability."

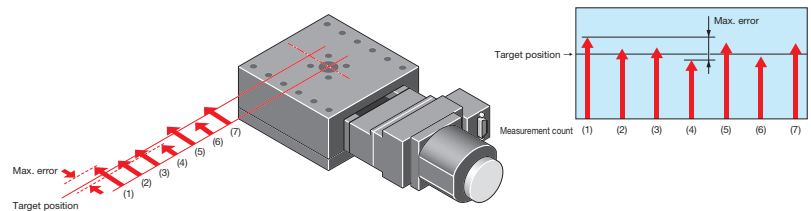


Fig. 3-2 Repeatability

3.3 Resolution (JIS Z 8103-1990 compliant)

"Amount of change in input that can make an identifiable change in output."
 This is the minimum feed amount achievable by a stage due to the basic rotation of the motor used.

3.4 Maximum speed

The maximum speed of the motorized stage varies depending on the type of stage, the output of the controller/driver used, acceleration/deceleration conditions (acceleration/deceleration rate), etc. Note that the maximum speed may not be achievable if overloaded or the acceleration/deceleration conditions are too strict. This catalog shows settings for conditions as per Table 2.

Maximum speed and acceleration/deceleration conditions	X, XY Stages Maximum speed = 8,000 pps Startup speed = 1,000 pps Acceleration/deceleration time = 200 ms	Reference
	Z, Rotary, Tilt Stages Maximum speed = 5,000 pps Startup speed = 1,000 pps Acceleration/deceleration time = 100 ms	Acceleration/deceleration rate (ms/kpps) =
		Acceleration/deceleration time (ms)
		Maximum speed (kpps) - startup speed (kpps)
		Acceleration/deceleration rate = 20 or more

Table 2 Motorized stage maximum speed

Motorized Stages
Automated Products for Microscopes
Manual Stages

► Motorized Stages

Motorized Stages
Automated Products for Microscopes
Manual Stages

3.5 Lost motion (JIS B 6330-1980 compliant) (Fig. 3-5)

"The maximum difference between the stop position when positioning from the positive direction and the stop position when positioning from the negative direction." Positioning operations from positive and negative directions towards one point are repeated 7 times, recording the stop position each time, then the average difference is calculated. Measurement is performed at the center of the travel distance and near both ends, wherein the maximum value defines the "lost motion."

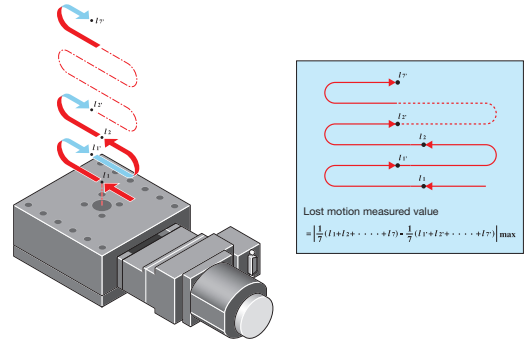


Figure 3-5-1 Lost motion (X stage)

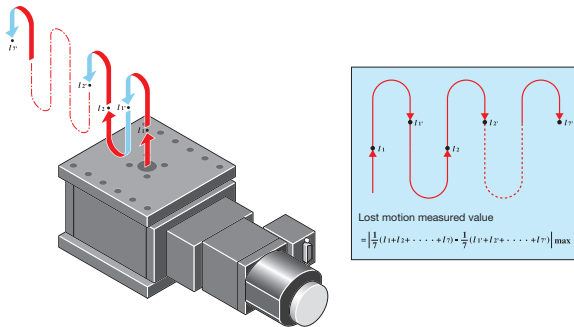


Figure 3-5-2 Lost motion (Z stage)

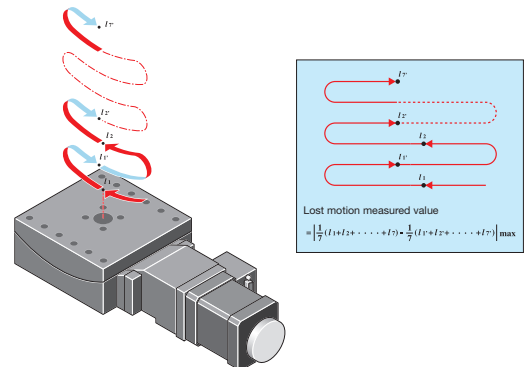


Figure 3-5-3 Lost motion (Tilt stage)

3.6 Backlash (JIS B 0182-1993 compliant) (Fig. 3-6)

"The clearance established along the direction of movement between mechanical elements that move together. This may contain inadvertent gaps along the direction of movement." The stage is moved and positioned in a specific direction, then a load is applied to the stage in the same direction of travel based on that position. The difference between the value when the load is removed and the reference position is the backlash.

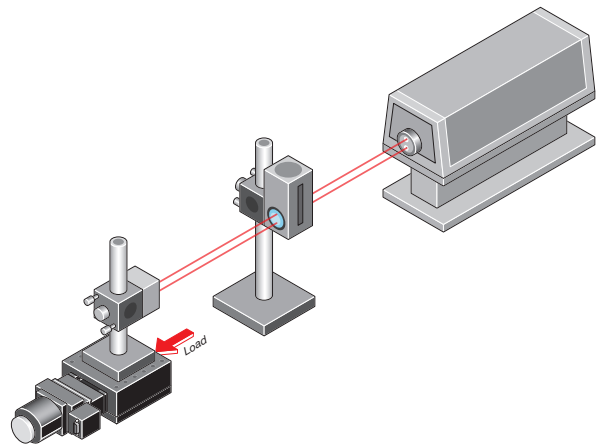


Fig. 3-6 Backlash

3.7 Straightness (horizontal) (JIS B 6191-1993 compliant) (Fig. 3-7)

"The magnitude of the deviation from the geometrical straight line of motion of a part moving with linear motion." Positioning is performed sequentially in one direction from the reference position. The difference between the horizontal displacement length at each position and the reference position is taken as the measured value at that position. The maximum difference between the reference position and the geometric line connecting the measurement points at the final measurement position is defined as the "straightness (horizontal)."

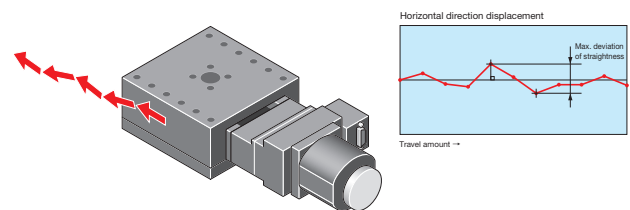


Fig. 3-7 Straightness (horizontal)



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3.8 Straightness (vertical) (JIS B 6191-1993 compliant) (Fig. 3-8)

"The magnitude of the deviation from the geometrical straight line of motion of a part moving with linear motion." Positioning is performed sequentially in one direction from the reference position. The difference between the vertical displacement length at each position and the reference position is taken as the measured value at that position. The maximum difference between the reference position and the geometric line connecting the measurement points at the final measurement position is defined as the "straightness (vertical)."

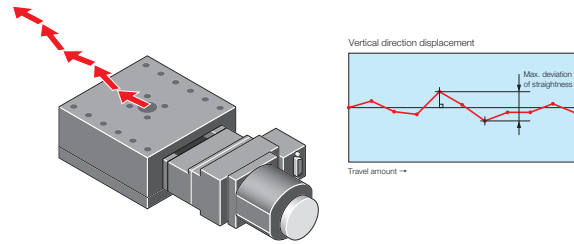


Fig. 3-8 Straightness (vertical)

3.9 Yaw (JIS B 6191-1993 compliant) (Fig. 3-9)

"The angular deviation that occurs when the moving part moves with linear motion. This is the magnitude of the deviation in orientation during movement of the moving part that should be moving linearly." Positioning is sequentially performed in one direction from the reference position. The maximum horizontal displacement angle with respect to the reference position at each position is defined as the "yaw."

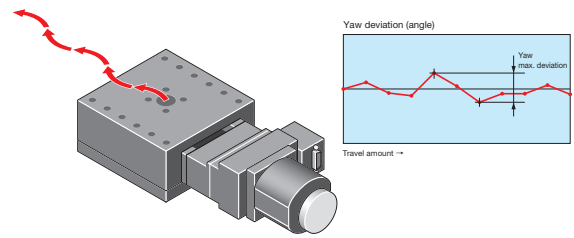


Fig. 3-9 Yaw

3.10 Pitch (JIS B 6191-1993 compliant) (Fig. 3-10)

"The angular deviation that occurs when the moving part moves with linear motion. This is the magnitude of the deviation in orientation during movement of the moving part that should be moving linearly." Positioning is sequentially performed in one direction from the reference position. The maximum vertical displacement angle with respect to the reference position at each position is defined as the "pitch."

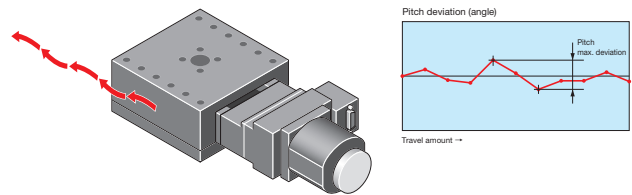


Fig. 3-10 Pitch

3.11 Parallelism (JIS B 6330-1980 compliant) (Fig. 3-11)

"For each combination of planar surfaces, the magnitude of the deviation from one surface to another when one surface is taken as a parallel geometric reference plane."

"Parallelism" is defined by the degree of co-linearity between the table surface and the base surface at the center position of the total travel amount of the motorized stage.

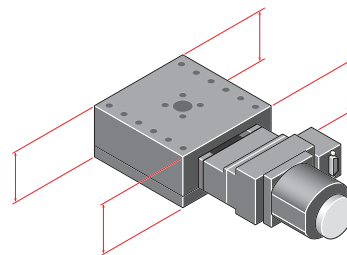


Fig. 3-11 Parallelism

3.12 XY orthogonality (JIS B 7440-1987 compliant) (Fig. 3-12)

"The perpendicularity of two orthogonal axes is given by the magnitude of the deviation of linear motion relative to a geometric straight line drawn perpendicular to the geometric straight line in the direction of the linear motion."

The geometric straight line drawn from the X stage reference position and the final measurement position is the reference line for straightness (horizontal).

"XY orthogonality" is the maximum horizontal error from the Y stage reference position to the final measurement position with respect to a geometric line perpendicular to the X stage reference axis.

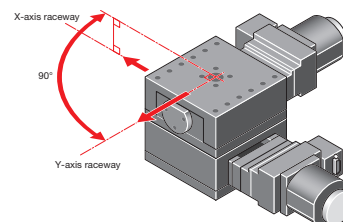


Fig. 3-12 XY orthogonality

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3.13 Load capacity (Fig. 3-13)

The "load capacity" is defined as the uniform load that can be loaded onto the stage surface.

3.13-1 Workpiece dimension calculation (Fig. 3-13-1)

Even with loads below the load capacity, there are restrictions on the dimensions of the load to be able to fully demonstrate the performance of the motorized stage.

The vertical and horizontal dimensions of the load should be equal to or less than approximately 1.5 times the stage surface dimensions, and the height dimension should be about 1 times that of the stage surface.

When wanting to load something larger than that, use a motorized stage with a larger stage surface.

Ex. For stage surface = 200 mm x 200 mm

Workpiece vertical/horizontal dimensions = 200 mm x 1.5 = approx. 300 mm or less each

Workpiece height dimension = 200 mm x 1 = approx. 200 mm or less

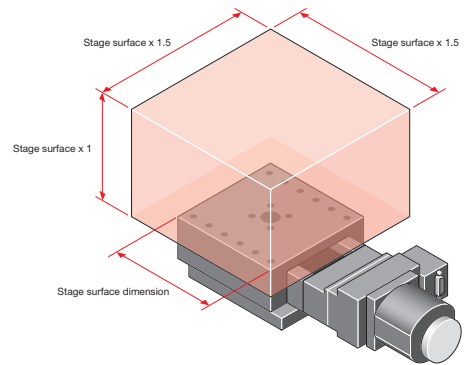


Fig. 3-13-1 Workpiece dimensions

3.13-2 Workpiece with unbalanced load (Fig. 3-13-2)

There is an upper limit to the allowable moment applied to the motorized stage for unbalanced loads.

This moment is defined as the moment that occurs when the center of gravity of the same load is applied to the stage surface at a distance 1/4 of the stage surface size from the center.

However, this does not apply to special conditions, such as using the motorized stage vertically or upside down.

When wanting to use an unbalanced load in excess of this, use a motorized stage with a larger stage surface.

Ex. Load capacity = 490 N, stage surface dimensions for 200 mm motorized stage

Permissible moment = 490 N x 20 cm x 1/4 = 2450 N·cm or less

≈ If the center of gravity is the part 10 cm from the stage center, then the load capacity weight should be less than 25 kg.

$$\left(\frac{2450 \text{ N}\cdot\text{cm}}{10 \text{ cm}} = 25 \text{ kg} \right)$$

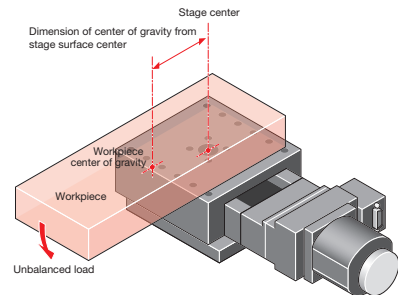


Figure 3-13-2 Unbalanced load

3.14 Moment rigidity (JIS B 6201-1993 compliant) (Fig. 3-14)

The displacement angle (sec) of the motorized stage due to each 1 N·cm of moment load is called the "moment rigidity."

The moment rigidity varies depending on the direction of the moment load and the type of motorized stage. Three types of rigidity are set for X, XY, and Z stages (yaw, pitch, and roll rigidities), while one type is set for rotary stages, and two types are set for tilt stages (yaw and roll rigidities).

The smaller the moment rigidity is, the smaller the displacement of the motorized stage due to the moment load, which demonstrates the stage's superior rigidity.

3.14-1 X, XY, Z stage moment rigidity (Fig. 3-14-1)

*The bottom axis is the reference for XY stages.

1. Moment rigidity (yaw rigidity)
2. Moment rigidity (pitch rigidity)
3. Moment rigidity (roll rigidity)

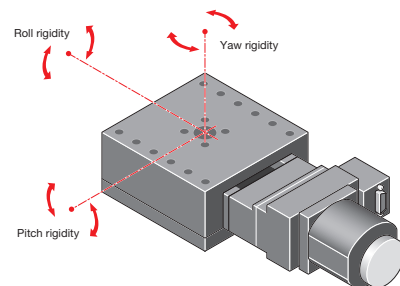
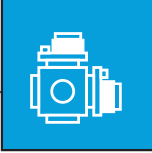


Fig. 3-14-1 Moment rigidity



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3.14-2 Z lift stage moment rigidity (Fig. 3-14-2)

1. Moment rigidity (yaw rigidity)
2. Moment rigidity (pitch rigidity)
3. Moment rigidity (roll rigidity)

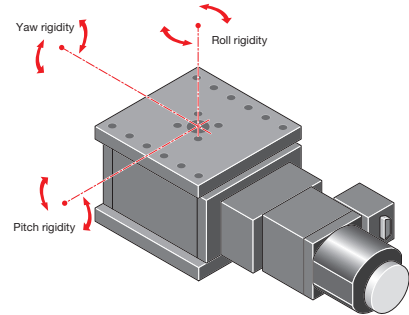


Fig. 3-14-2 Moment rigidity

3.14-3 Rotary stage moment rigidity (Fig. 3-14-3)

1. Moment rigidity

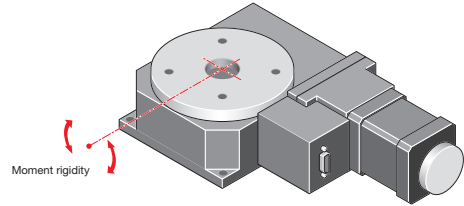


Fig. 3-14-3 Moment rigidity

3.14-4 Tilt stage moment rigidity (Fig. 3-14-4)

1. Moment rigidity (yaw rigidity)
2. Moment rigidity (roll rigidity)

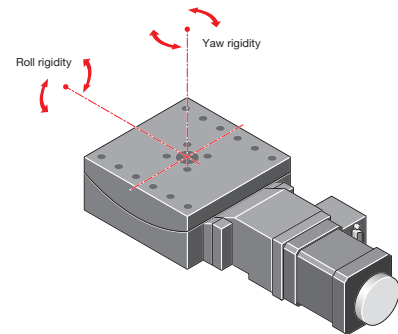


Fig. 3-14-4 Moment rigidity

3.15 Permissible moment (JIS B 6201-1993 compliant) (See Fig. 3-14)

The moment load that can be applied when assembling parts between stages or on a stage is called the "permissible moment."

The permissible moment varies depending on the direction of the moment load and the type of stage.

Three types of permissible moments are set for X, XY, and Z stages (yaw, pitch, and roll permissible moments), while one type is set for rotary stages, and two types are set for tilt stages (yaw and roll permissible moments).

3.16 Runout (Fig. 3-16)

The maximum value of the rotating axis deviation in the radial (horizontal) direction for rotary stages is defined as the "runout."

3.17 Surface runout (JIS B 6191-1993 compliant) (Fig. 3-17)

"The size of the deviation of an end face that rotates about one axis from a plane perpendicular to the axis during rotation." The maximum value of the surface deviation in the thrust (vertical) direction for rotary stages is defined as the "surface runout."

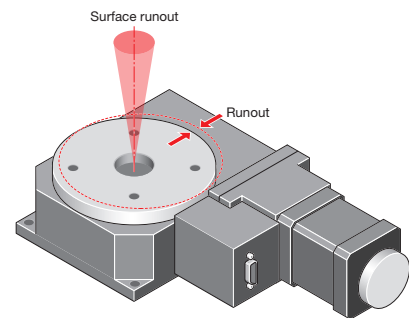


Fig. 3-16, Fig. 3-17 Runout/Surface runout

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3.18 Rotation center accuracy (Fig. 3-18)

The position from the top of the goniometer stage to the ideal rotation center is used as a reference while the maximum difference from the ideal rotation center when the stage is positioned is measured. The diameter of the sphere with the maximum difference as the radius is the "rotation center accuracy."

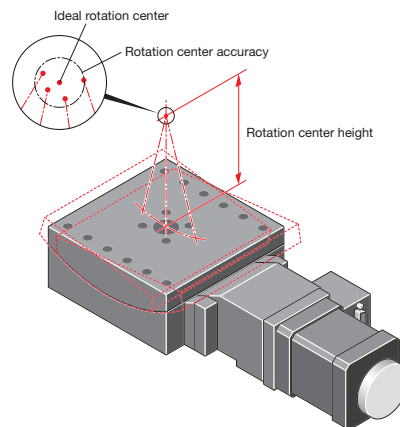


Fig. 3-18 Rotation center accuracy

4 Inspection method

THK CHUO's motorized stages have inspection items and accuracy standards listed in the catalog. 100% inspection is performed at the time of shipment from the factory. The accuracy inspection is fully automated to prevent human error (individual inspection operator error), and the inspection results are retained.

Each measuring instrument used for inspection is traceable, and highly reliable accuracy control is maintained.

Inspection item	Linear stage	Rotary stage	Tilt stage
Positioning accuracy	○	○	○
Repeatability	○	○	○
Lost motion	○	○	○
Straightness (horizontal)	○		
Straightness (vertical)	○		
Yaw	○		
Pitch	○		
XY orthogonality (XY only)	○		
Runout		○	
Surface runout		○	
Static parallelism		○	
Rotation center accuracy (sample-based inspection)			○

Table 4 Motorized stage inspection items



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4.1 Linear stage inspection

For length measurement, such as for positioning accuracy, an ultra-precision laser measurement system or a digital length measuring instrument with a built-in glass scale is used.

Straightness (horizontal), straightness (vertical), yaw, and pitch are measured using a straightness measuring machine that can measure four displacements simultaneously or an ultra-precision laser measurement system.

The measured data is stored by serial number.

■ Inspection

The X stage positioning accuracy is measured by an ultra-precision laser measurement system.

The ultra-precision laser measurement system is capable of sub-micron-class precision measurement, enabling positioning accuracy with a minute feed to be measured.

Our measurement devices have full traceability, and reliable accuracy is guaranteed. Measurements are performed in a constant temperature and humidity laboratory.

A dedicated controller driver is used to control the X stage. Control is performed automatically so that human error does not affect the inspection program of the connected PC.

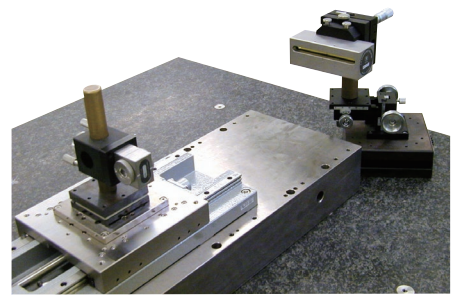


Photo 4-1-1 Straightness (horizontal) measurement

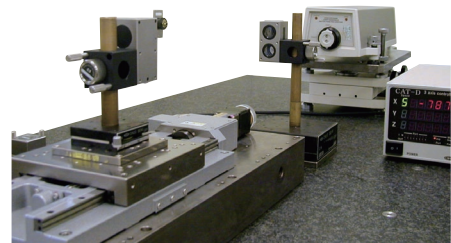


Photo 4-1-2 Pitch measurement

4.2 Z stage inspection

For length measurement, such as for positioning accuracy, a digital length measuring instrument with a built-in glass scale is used. Straightness (horizontal), straightness (vertical), yaw, and pitch are measured using a straightness measuring machine that can measure four displacements simultaneously. The measured data is stored by serial number.

■ Inspection

The straightness measuring machine is installed vertically while the parameters that determine the accuracy of the Z stage motion—straightness (horizontal, vertical), yaw, and pitch—are measured simultaneously.

Simultaneous measurement of the four displacements drastically reduces setup and measurement time.

A dedicated controller driver is used to control the Z stage. Control is performed automatically so that human error does not affect the inspection program of the connected PC.

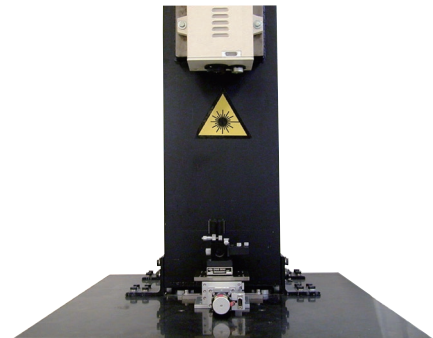


Photo 4-2-1 Straightness measurement

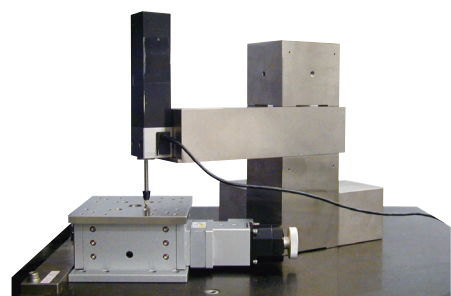


Photo 4-2-2 Positioning and repeatability measurements

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4.3 Tilt stage inspection

The tilt stage uses a theodolite, laser autocollimator, or photoelectric autocollimator together with a precision mirror. The measured data is stored by serial number.

■ Inspection

The laser autocollimator is used to measure the repeatability of the tilt stage.

A dedicated controller driver is used to control the tilt stage. Control is performed automatically so that human error does not affect the inspection program of the connected PC.

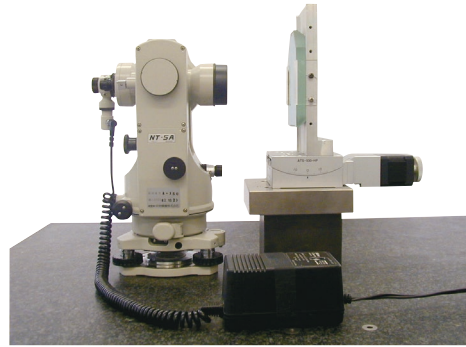


Photo 4-3-1 Positioning accuracy measurement

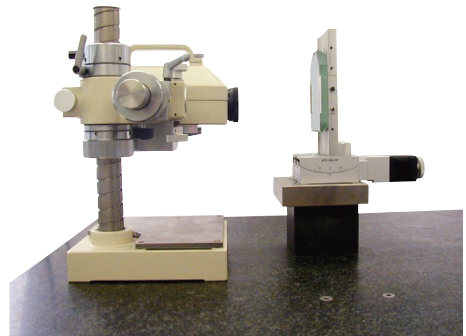


Photo 4-3-2 Repeatability measurement

4.4 Rotary stage inspection

The rotary stage is measured using a photoelectric autocollimator or a laser autocollimator that can measure horizontal and vertical angular displacements simultaneously with a precision 12-facet mirror. The measured data is stored by serial number.

■ Inspection

The photoelectric autocollimator and precision 12-facet mirror measure the accuracy of rotary stage positioning. A dedicated controller driver is used to control the rotary stage. Control is performed automatically so that human error does not affect the inspection program of the connected PC.

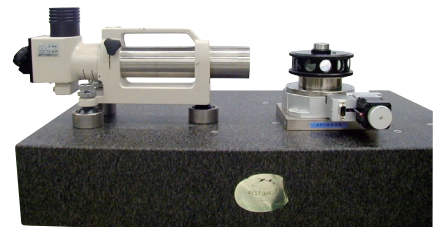


Photo 4-4-1 Positioning accuracy measurement

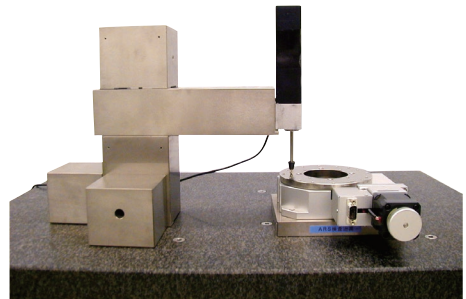


Photo 4-4-2 Surface runout measurement



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5 Sensor operating logic and timing chart

THK CHUO motorized stages have different classifications for home, pre-home, presence/absence of limit sensors, and operation logic, as follows.

Model number	Sensor availability and operating logic			
	Home position	Pre-home	CW limit	CCW limit
TAL○-30○-○M	None	None	N.O.	N.O.
TAL○-○○○○-G○M	N.C.	None	N.C.	N.C.
TAL○-○○○-E○P	N.O.	N.C.	N.C.	N.C.
TAL○-○○○-H○P				
TAL○-○○○-H○S				
TALV-○○○-HP				
TAT○-○○○-HP				
TAT○-C○○○-HP	N.C.	None	N.C.	N.C.
TALV-○○○○C-H○M				
TAT○-C○○○-○M				
TARS-○○○-○M	N.O.	None	None	None
TARS-○○○-HP	N.O.	N.O.	None	None
TMSS series	N.C.	None	N.C.	N.C.
TAMS series	None	None	N.O.	N.O.

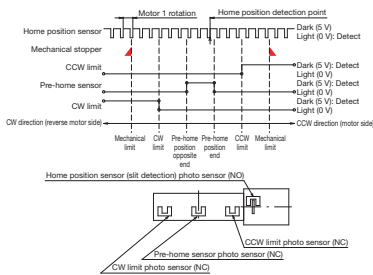
NO:
Normally open contact (make contact, A contact)
operation

NC:
Normally closed contact (break contact, B contact)
operation

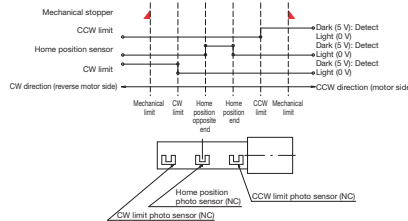
If there is no sensor, set the controller to NO.

See the instruction manual for each product for details on controller driver settings.

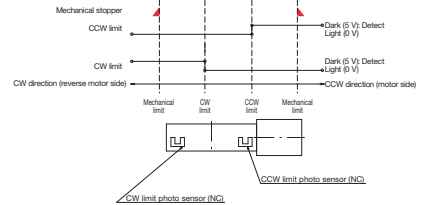
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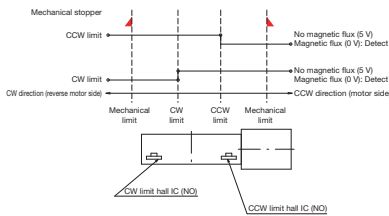
Timing chart 1



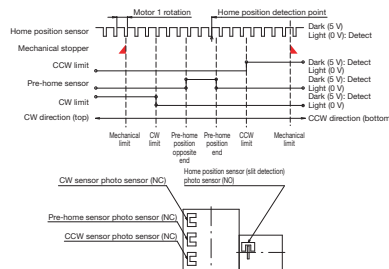
Timing chart 2



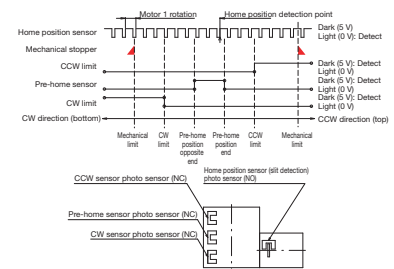
Timing chart 3



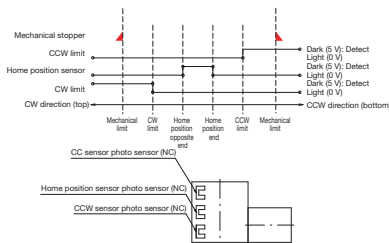
Timing chart 4



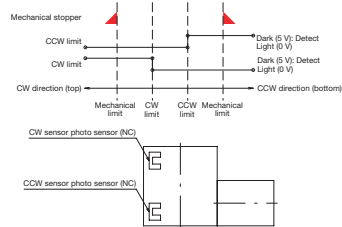
Timing chart 5



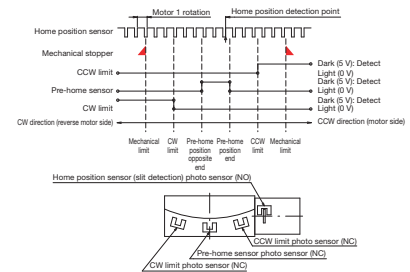
Timing chart 6



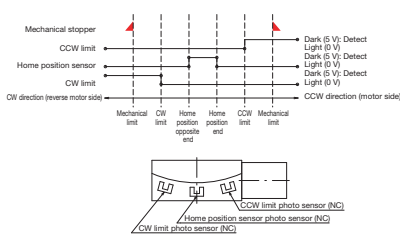
Timing chart 7



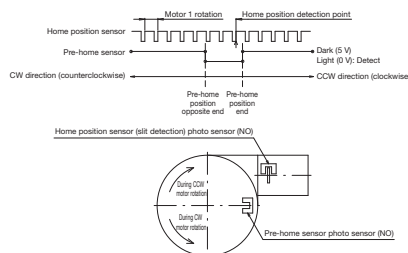
Timing chart 8



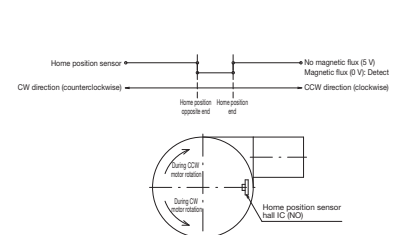
Timing chart 9



Timing chart 10

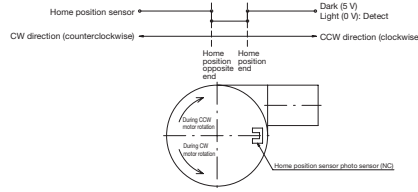


Timing chart 11



Timing chart 12

▶ Motorized Stages



Timing chart 13

6 Motorized stage connections

Model number	Pin No.	Wiring specifications	Mating connector model number (manufacturer)
TAL○-30○-○M	1	Blue motor wire	Jack: RP17-13JA-12SC (Hirose Electric Co., Ltd.) Contact: RP17-SC-122 (Hirose Electric Co., Ltd.)
	2	Red motor wire	
	3	Orange motor wire	
	4	Green motor wire	
	5	Black motor wire	
	6	Sensor Vcc 4.5 V to 16 V ¹	
	7	+ (CW) direction limit OUT	
	8	- (CCW) direction limit OUT	
	9	Sensor common (GND)	
	10	N.C.	
	11	For maintenance	
	12	Safety frame ground	

¹ TALV-3005-HM only has Vcc 5 V to 24 V

Model number	Pin No.	Wiring specifications	Mating connector model number (manufacturer)
TAL○-○○○○-G○M TALV-○○○C-H○M TAT○-C○○○-○M TARS-○○○-○M	1	Blue motor wire	Connector: HR10A-10P-12S(73) (Hirose Electric Co., Ltd.)
	2	Red motor wire	
	3	Orange motor wire	
	4	Green motor wire	
	5	Black motor wire	
	6	Sensor Vcc 5 V to 24 V	
	7	+ (CW) direction limit OUT ¹	
	8	- (CCW) direction limit OUT ¹	
	9	Sensor common (GND)	
	10	Home position sensor	
	11	N.C.	
	12	Safety frame ground	

¹ TARS rotary stages do not have limit sensors and consequently do not need wiring.

Model number	Pin No.	Wiring specifications	Mating connector model number (manufacturer)
TAL○-○○○-E○P TAL○-○○○-H○P TAL○-○○○-H○S TALV-○○○-HP TAT○-○○○-HP TAT○-C○○○-HP TARS-○○○-HP	1	Blue motor wire	DB15-HDF 3-row (DATA SPEC JAPAN LTD.) or receptacle D02-M15SG-N-FO (Japan Aviation Electronics Industry, Ltd.) Socket Contact D02-22-26S-PKG100 (Japan Aviation Electronics Industry, Ltd.)
	2	Red motor wire	
	3	Orange motor wire	
	4	Green motor wire	
	5	Black motor wire	
	6	Sensor Vcc 5 V to 24 V	
	7	+ (CW) direction limit OUT ¹	
	8	- (CCW) direction limit OUT ¹	
	9	Sensor common (GND)	
	10	Home position sensor	
	11	Pre-home sensor	
	12	N.C.	
	13	Electromagnetic brake +24 V	
	14	Electromagnetic brake GND	
	15	Safety frame ground	

¹ TARS rotary stages do not have limit sensors and consequently do not need wiring.

Model number	Pin No.	Wiring specifications	Mating connector model number (manufacturer)
TMSS series	1	Blue motor wire	Connector: HR10A-10P-12S(73) (Hirose Electric Co., Ltd.)
	2	Red motor wire	
	3	Orange motor wire	
	4	Green motor wire	
	5	Black motor wire	
	6	Sensor Vcc 5 V to 24 V	
	7	+ (CW) direction limit OUT	
	8	- (CCW) direction limit OUT	
	9	Sensor common (GND)	
	10	Home position sensor	
	11	N.C.	
	12	Safety frame ground	

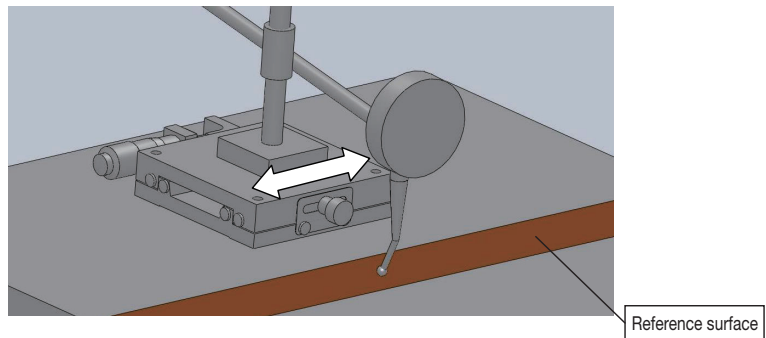


Model number	Pin No.	Wiring specifications	Mating connector model number (manufacturer)
TAMS series	1	Black motor wire	Plug D02-M15PG-N-F0 (Japan Aviation Electronics Industry) Pin Contact D02-22-22P-PKG100 (Japan Aviation Electronics Industry)
	2	Green motor wire	
	3	Orange motor wire	
	4	Red motor wire	
	5	Blue motor wire	
	6	Sensor Vcc 4.5 V to 16 V	
	7	For maintenance	
	8	Sensor common (GND)	
	9	- (CCW) direction limit OUT	
	10	+ (CW) direction limit OUT	
	11	Safety frame ground	
	12	For maintenance	
	13	For maintenance	
	14	N.C.	
	15	For maintenance	

7 To install stages with correct accuracy

7.1 Mounting with a dial gauge (recommended mounting method)

Use a dial gauge so that the stage runs parallel to the reference surface set by the customer near the stage mount. Measure this parallelism while moving the stage in the direction of the arrow and mount so that the displacement of the dial gauge is minimized.



7.2 Simplified mounting using the stage machining reference surface

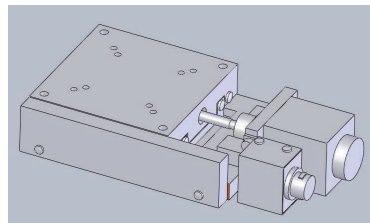
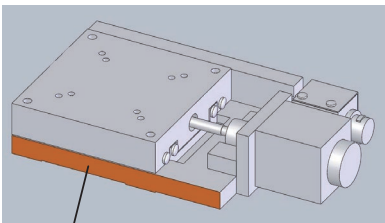
The high-grade stage has a machining reference surface as per the figure below.

When installing the stage, it is possible to easily install it in parallel by simply touching the machining reference surface against the reference surface or reference pin of the location where you want to install it.

High-Grade Stage Reference Surface

Standard type

Symmetrical type



Machining reference surface

The reference surfaces of symmetrical types are protected with covers. As such, they should be adjusted/installed using a dial gauge.

8 Operating environment

If using a motorized stage, be careful with the operating environment. Avoid places with extremely low or high temperatures, places with dramatic temperature changes, and dusty areas. Use at the temperature and humidity listed below.

Temperature	10 to 40°C
Humidity	20 to 80% RH

▶ Motorized Stages

9 About use in vacuum environments

9.1 About vacuums

Vacuum levels can be expressed using Bar, Pascal (Pa), and Torr, but recently the trend has been to migrate from Torr to the SI unit, Pascal (Pa).

101,325 Pa is the atmospheric pressure

About 100 Pa is considered to be a low vacuum level

About 10^{-1} Pa is a medium vacuum level

About 10^{-5} Pa is a high vacuum level used by electronic microscopes or the environment of the International Space Station

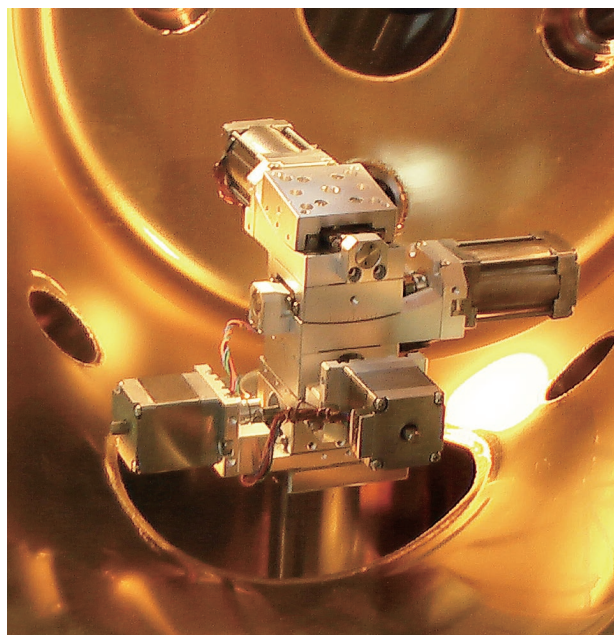
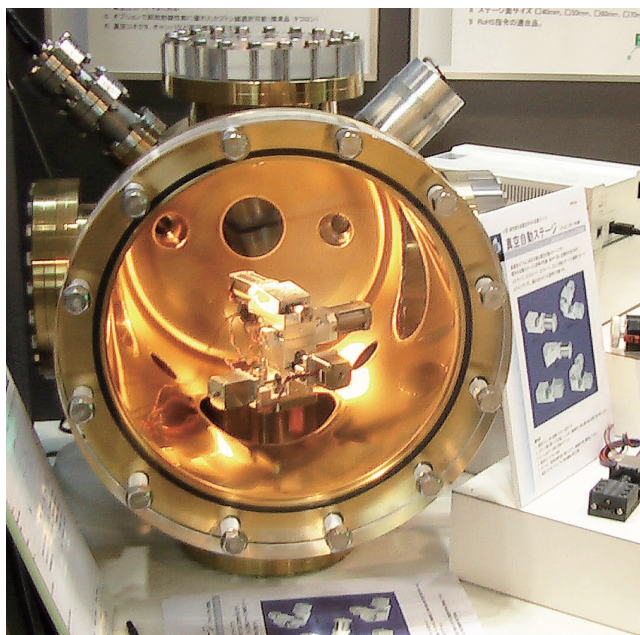
About 10^{-7} Pa is an ultra-high vacuum level used for the environment of synchrotrons and man-made satellites.

Above that is the extremely high vacuum level like that of empty space and interstellar locations

9.2 Vacuum level supported by motorized stages

Vacuum levels up to 10^{-1} Pa can be supported after discussing specifications separately.

Even greater vacuum levels may be possible in certain conditions and circumstances, so please consult with us individually to discuss details.



Usage example inside of vacuum chamber

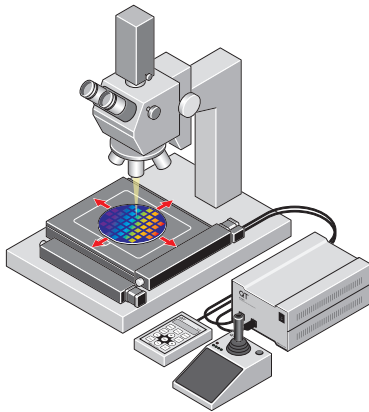


Motorized Stages ◀

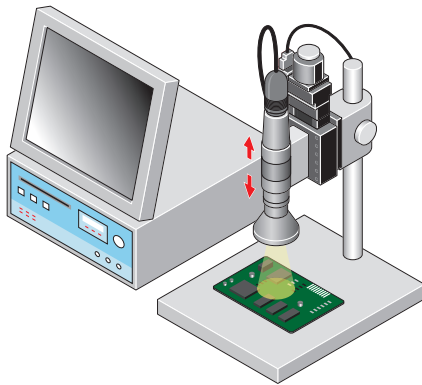
Motorized stage usage example

Motorized stages can be used in all kinds of situations. Here we introduce some examples.

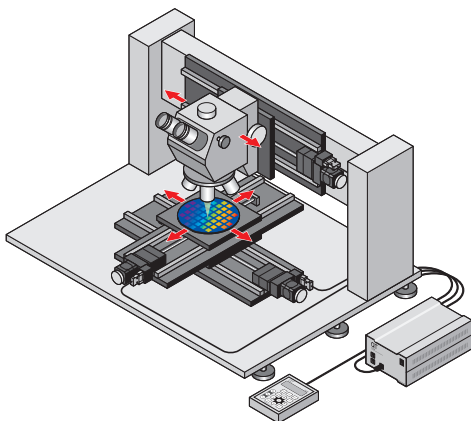
- ▼ Use as a laser repair device sample platform



- ▼ Use with microscope image synthesis



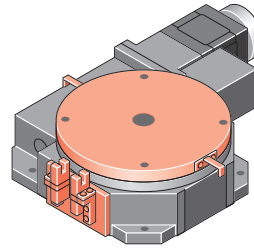
- ▼ Use as a mapping device sample platform



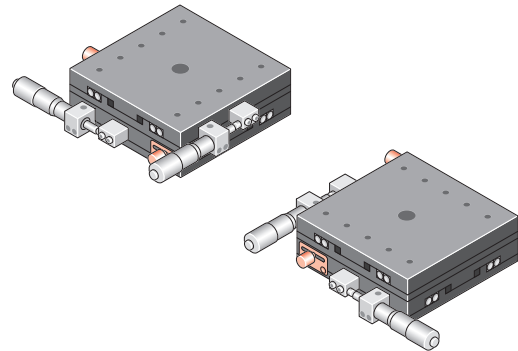
Product special order example

THK CHUO enables not only custom-order products, but also those for people wanting additional features or modifications. We welcome a wide range of customer requests.

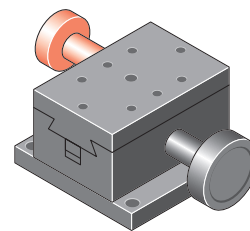
- ▼ Mount a limit sensor to a motorized stage



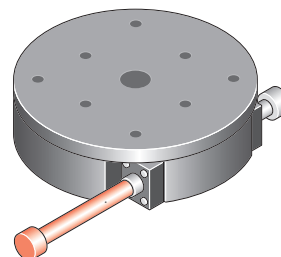
- ▼ Change the clamp position over to the operating side



- ▼ Make the knob or handle larger



- ▼ Increase the handle length





► Motorized Stages ► High-Grade Stages | Product List

Motorized Stages
Automated Products for Microscopes
Manual Stages
High-Grade Stages (40 mm x 30 mm)
Compact Stages
Cross Roller Stages
Ball Bushing Stages
High-Precision/High-Rigidity Stages
Z-Like Stages
Tilt Stages
Correction Cables
Actuators

Page	Example product photo	Type	Model number		Stage surface	Travel amount (total travel amount)
			Precision screw specification	Ball screw specification		
23		X Stage	TALS-4011-G0M	TALS-4011-G1M	40 mm x 40 mm	±7.5 mm (15 mm)
			TALS-4011-G0M-R	TALS-4011-G1M-R	40 mm x 40 mm	±7.5 mm (15 mm)
			TALS-5012-G0M	TALS-5012-G1M	50 mm x 50 mm	±10 mm (20 mm)
			TALS-5012-G0M-R	TALS-5012-G1M-R	50 mm x 50 mm	±10 mm (20 mm)
25		X Stage	TALS-6012-G0M	TALS-6012-G1M	60 mm x 60 mm	±12.5 mm (25 mm)
			TALS-6012-G0M-R	TALS-6012-G1M-R	60 mm x 60 mm	±12.5 mm (25 mm)
			TALS-7013-G0M	TALS-7013-G1M	70 mm x 70 mm	±15 mm (30 mm)
			TALS-7013-G0M-R	TALS-7013-G1M-R	70 mm x 70 mm	±15 mm (30 mm)
27		XY Stage	TALD-4011-G0M	TALD-4011-G1M	40 mm x 40 mm	±7.5 mm (15 mm)
			TALD-4011-G0M-R	TALD-4011-G1M-R	40 mm x 40 mm	±7.5 mm (15 mm)
			TALD-5012-G0M	TALD-5012-G1M	50 mm x 50 mm	±10 mm (20 mm)
			TALD-5012-G0M-R	TALD-5012-G1M-R	50 mm x 50 mm	±10 mm (20 mm)
29		XY Stage	TALD-6012-G0M	TALD-6012-G1M	60 mm x 60 mm	±12.5 mm (25 mm)
			TALD-6012-G0M-R	TALD-6012-G1M-R	60 mm x 60 mm	±12.5 mm (25 mm)
			TALD-7013-G0M	TALD-7013-G1M	70 mm x 70 mm	±15 mm (30 mm)
			TALD-7013-G0M-R	TALD-7013-G1M-R	70 mm x 70 mm	±15 mm (30 mm)
31		Z Stage	TALZ-4011-G0M	TALZ-4011-G1M	40 mm x 40 mm	±7.5 mm (15 mm)
			TALZ-4011-G0M-R	TALZ-4011-G1M-R	40 mm x 40 mm	±7.5 mm (15 mm)
			TALZ-5012-G0M	TALZ-5012-G1M	50 mm x 50 mm	±10 mm (20 mm)
			TALZ-5012-G0M-R	TALZ-5012-G1M-R	50 mm x 50 mm	±10 mm (20 mm)
33		Z Stage	TALZ-6012-G0M	TALZ-6012-G1M	60 mm x 60 mm	±12.5 mm (25 mm)
			TALZ-6012-G0M-R	TALZ-6012-G1M-R	60 mm x 60 mm	±12.5 mm (25 mm)
			TALZ-7013-G0M	TALZ-7013-G1M	70 mm x 70 mm	±15 mm (30 mm)
			TALZ-7013-G0M-R	TALZ-7013-G1M-R	70 mm x 70 mm	±15 mm (30 mm)

Page	Example product photo	Type	Model number	Stage surface	Travel amount	Travel guide
35		Rotary Stage	TARS-4036-GM	φ 40 mm	360°	Ball bearing
			TARS-5036-GM	φ 50 mm	360°	Ball bearing
			TARS-6036-GM	φ 60 mm	360°	Ball bearing
			TARS-7036-GM	φ 70 mm	360°	Ball bearing

Page	Type	Model number	Function
85	Connection cable	TACB-BTM-D3	Driver connection cable 3 m
		TARC-BTM-D3	Driver connection cable 3 m (robot cable specification)
			For connecting customer-supplied drivers, with stage side connectors



Features | High-Grade Stages ◀ Motorized Stages ◀

◆ HG-VCR method

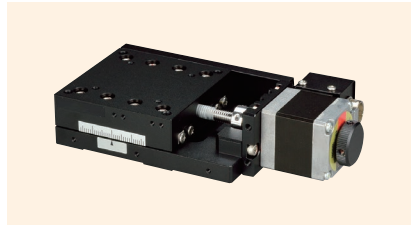
Our proprietary developed HG-VCR method, using a V-groove and cross rollers, enables the production of stages with high precision, high load capacity, and high rigidity.

*Excluding rotary stages.

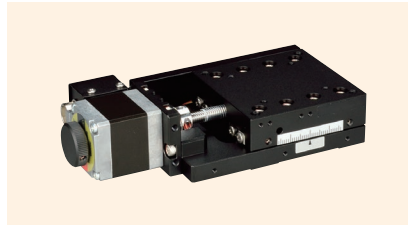
◆ Support for symmetrical positioning

In order to handle horizontally symmetrical positioning, products with symmetrical connector and sensor positions (symmetrical types) are also available.

*Excluding rotary stages.



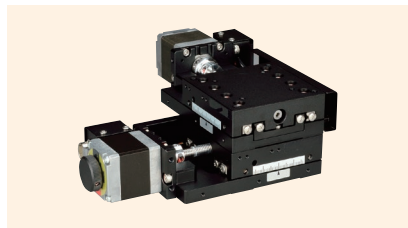
↑ TALS-6012-G1M



↑ TALS-6012-G1M-R



↑ TALD-6012-G1M



↑ TALD-6012-G1M-R



↑ TALZ-6012-G1M



↑ TALZ-6012-G1M-R

◆ Made of aluminum alloy

The body is made of lightweight aluminum alloy. For higher rigidity, part of the guide rail is integrated.

◆ Black stage body

Stages are all black to avoid influencing optical equipment.

◆ 4 travel directions and 4 sizes

Travel directions include X stages, XY stages, Z stages, and rotary stages, while available sizes are 40 mm x 40 mm (ϕ 40 mm), 50 mm x 50 mm (ϕ 50 mm), 60 mm x 60 mm (ϕ 60 mm), and 70 mm x 70 mm (ϕ 70 mm).

◆ Precision screw and ball screw

Product feed screws are either precision screws or high-durability, high-precision ball screws. (Excluding rotary stages)

◆ 5-phase stepper motor

Equipped as standard with a 5-phase stepper motor with 0.75 A/phase, 0.72° (full)/0.36° (half) step angle, and 28 mm x 28 mm motor mounting dimensions.

*The motor is a dedicated THK CHUO specification.

◆ Home position sensor included as standard equipment

A home position sensor (photo sensor) is equipped as standard, enabling high-accuracy return to home position.

*Limit sensors equipped as standard on products other than rotary stages.

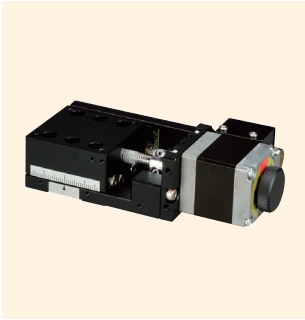
◆ Environmental measures

Products that do not contain 10 substances regulated by European RoHS.

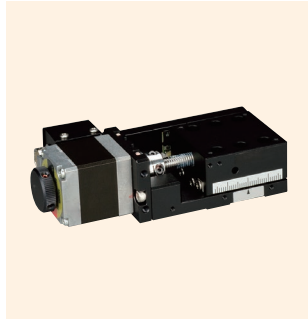
Motorized Stages	Automated Products for Microscopes	Manual Stages	High-Grade Stages (ϕ 80 mm) Connector Stages	Cross Roller Stages	Ball Bushing High-Rigidity Stages	High-Precision/High-Rigidity Z-Lift Stages	Tilt Stages	Connection Cables	Actuators
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High-Grade X Stage 40 x 40, 50 x 50

HG-VCR method **0.75 A/phase** 0.75 A/phase motor



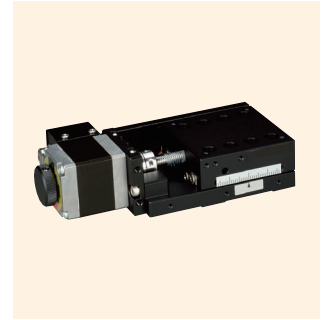
↑ TALS-4011-G1M



↑ TALS-4011-G1M-R



↑ TALS-5012-G1M



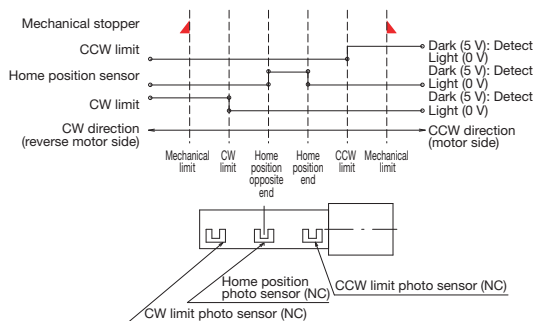
↑ TALS-5012-G1M-R

Features

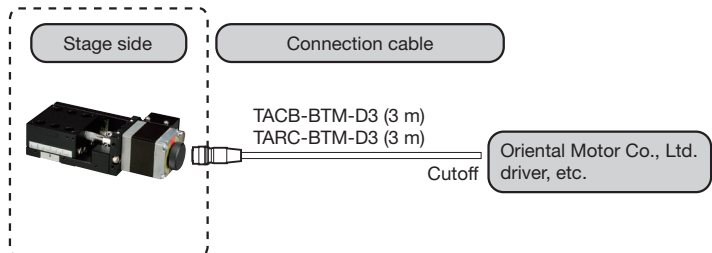
- A high-precision, high-rigidity motorized stage using the HG-VCR method.
- Precision screw and ball screw specifications are available.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TALS-4011-G0M	TALS-4011-G1M	TALS-5012-G0M	TALS-5012-G1M
Model number (symmetrical)	TALS-4011-G0M-R	TALS-4011-G1M-R	TALS-5012-G0M-R	TALS-5012-G1M-R
Model name	High-Grade X Stage			
Travel direction	X-axis single direction			
Travel amount	±7.5 mm		±10 mm	
Stage surface	40 mm x 40 mm		50 mm x 50 mm	
Motor used	PK523HPB equivalent (5-wire type pentagonal wiring, 0.75 A/phase)			
Resolution	0.001 mm	0.002 mm	0.001 mm	0.002 mm
Feed screw specification	Precision screw	Ball screw	Precision screw	Ball screw
Feed screw lead	0.5 mm	1 mm	0.5 mm	1 mm
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.002 mm			
Positioning accuracy	Yawing 20 s, pitching 30 s	Yawing 15 s, pitching 25 s	Yawing 20 s, pitching 30 s	Yawing 15 s, pitching 25 s
Repeatability	±0.0005 mm	±0.0003 mm	±0.0005 mm	±0.0003 mm
Lost motion	0.005 mm	0.001 mm	0.005 mm	0.001 mm
Parallelism of motion	0.02 mm	0.015 mm	0.015 mm	0.01 mm
Moment rigidity	Yaw rigidity 0.25 s/N-cm, pitch rigidity 0.3 s/N-cm, roll rigidity 0.3 s/N-cm		Yaw rigidity 0.15 s/N-cm, pitch rigidity 0.2 s/N-cm, roll rigidity 0.2 s/N-cm	
Load capacity	49 N (5 kgf)			
Mass	0.32 kg		0.4 kg	
Maximum speed (at 8,000 pps)	8 mm/s	16 mm/s	8 mm/s	16 mm/s
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
Home position sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Applicable cables	TACB-BTM-D3, TARC-BTM-D3			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

◆ Sensor operating logic and timing chart



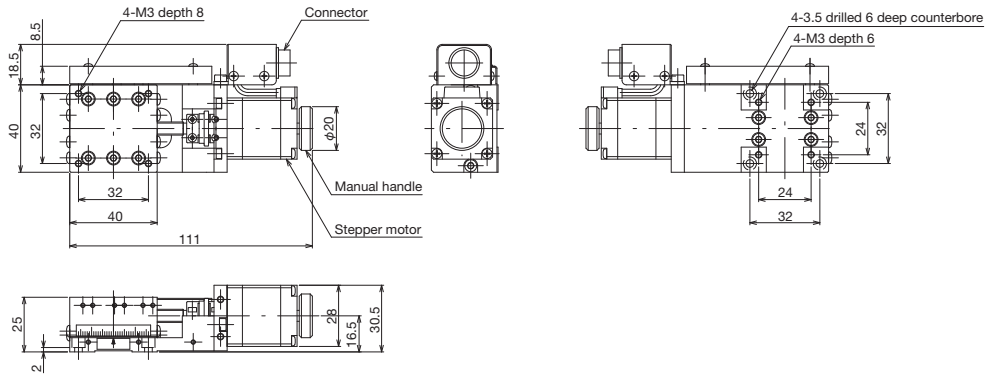
◆ Connection method: Connection cable and driver



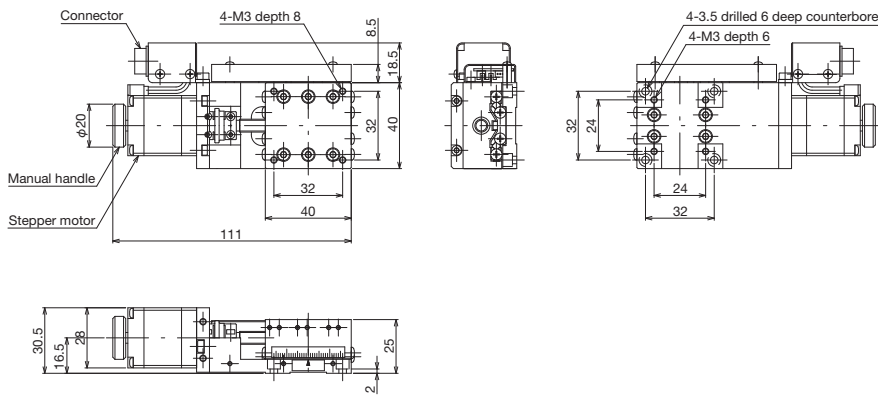


High-Grade Stages ◀ Motorized Stages ▶

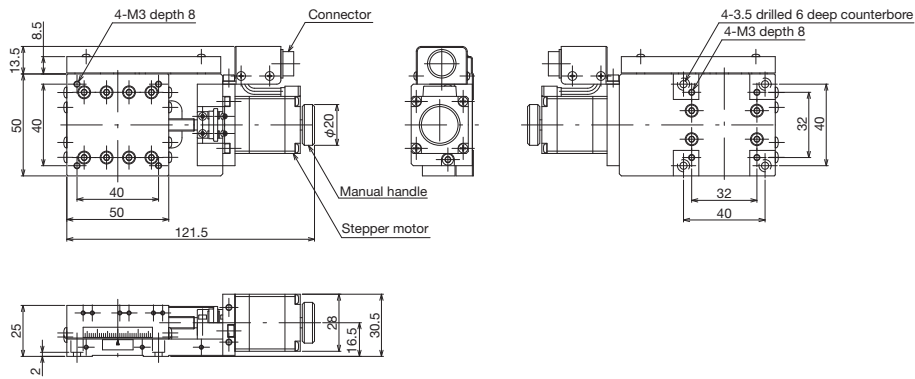
Product Appearance



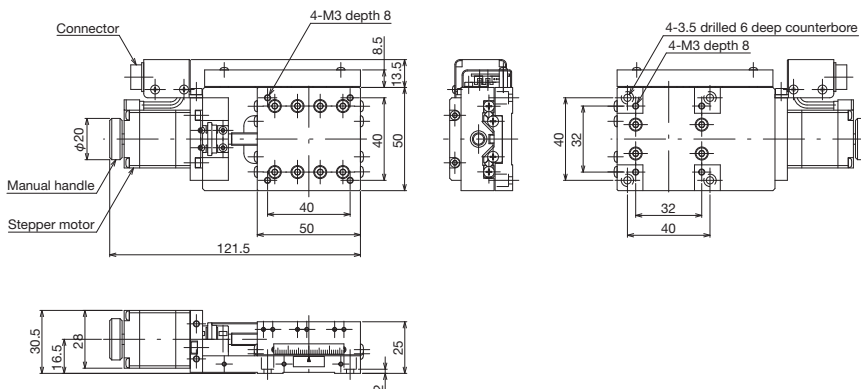
*TALS-4011-G0M has the same dimensions as TALS-4011-G1M. ↑ TALS-4011-G1M



*TALS-4011-G0M-R has the same dimensions as TALS-4011-G1M-R. ↑ TALS-4011-G1M-R



*TALS-5012-G0M has the same dimensions as TALS-5012-G1M. ↑ TALS-5012-G1M



*TALS-5012-G0M-R has the same dimensions as TALS-5012-G1M-R. ↑ TALS-5012-G1M-R

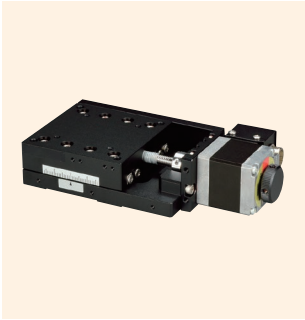
Motorized Stages	Automated Products for Microscopes	High-Grade Stages (30 mm x 30 mm Contact Stages)	Class Roller Stages	Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Lift Stages	Tilt Stages	Connection Cases	Actuators
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High-Grade X Stage 60 x 60, 70 x 70



0.75 A/phase

0.75 A/phase motor



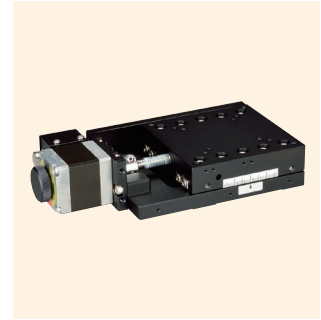
↑ TALS-6012-G1M



↑ TALS-6012-G1M-R



↑ TALS-7013-G1M



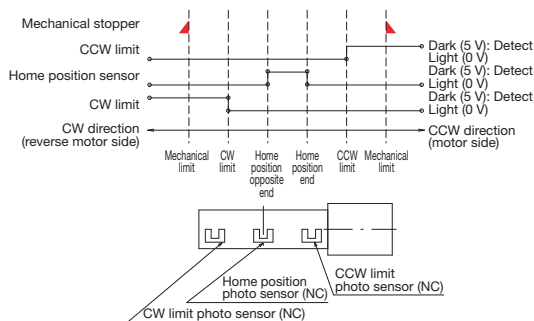
↑ TALS-7013-G1M-R

Features

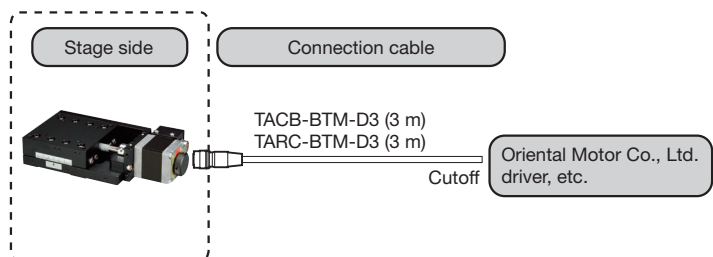
- A high-precision, high-rigidity motorized stage using the HG-VCR method.
- Precision screw and ball screw specifications are available.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TALS-6012-G0M	TALS-6012-G1M	TALS-7013-G0M	TALS-7013-G1M
Model number (symmetrical)	TALS-6012-G0M-R	TALS-6012-G1M-R	TALS-7013-G0M-R	TALS-7013-G1M-R
Model name	High-Grade X Stage			
Travel direction	X-axis single direction			
Travel amount	±12.5 mm		±15 mm	
Stage surface	60 mm x 60 mm		70 mm x 70 mm	
Motor used	PK523HPB equivalent (5-wire type pentagonal wiring, 0.75 A/phase)			
Resolution	0.001 mm	0.002 mm	0.001 mm	0.002 mm
Feed screw specification	Precision screw	Ball screw	Precision screw	Ball screw
Feed screw lead	0.5 mm	1 mm	0.5 mm	1 mm
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.002 mm			
Positioning accuracy	Yawing 20 s, pitching 30 s	Yawing 15 s, pitching 25 s	Yawing 20 s, pitching 30 s	Yawing 15 s, pitching 25 s
Repeatability	±0.0005 mm	±0.0003 mm	±0.0005 mm	±0.0003 mm
Lost motion	0.005 mm	0.001 mm	0.005 mm	0.001 mm
Parallelism of motion	0.015 mm	0.01 mm	0.015 mm	0.01 mm
Moment rigidity	Yaw rigidity 0.1 s/N-cm, pitch rigidity 0.1 s/N-cm, roll rigidity 0.1 s/N-cm		Yaw rigidity 0.06 s/N-cm, pitch rigidity 0.08 s/N-cm, roll rigidity 0.08 s/N-cm	
Load capacity	49 N (5 kgf)			
Mass	0.5 kg		0.62 kg	
Maximum speed (at 8,000 pps)	8 mm/s	16 mm/s	8 mm/s	16 mm/s
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
Home position sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Applicable cables	TACB-BTM-D3, TARC-BTM-D3			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

◆ Sensor operating logic and timing chart



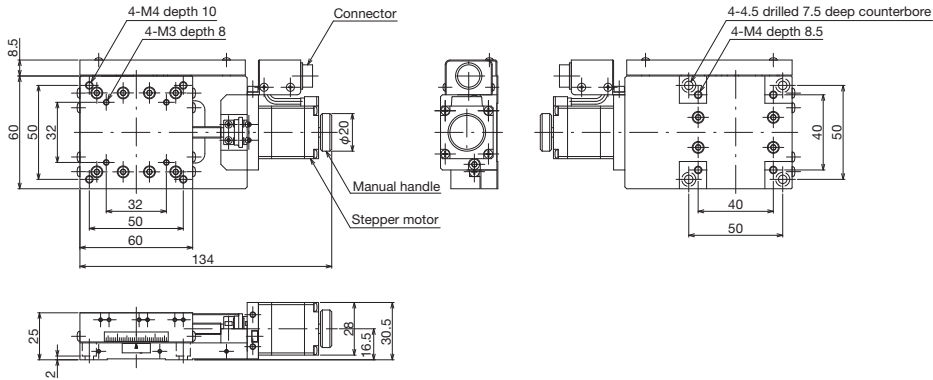
◆ Connection method: Connection cable and driver



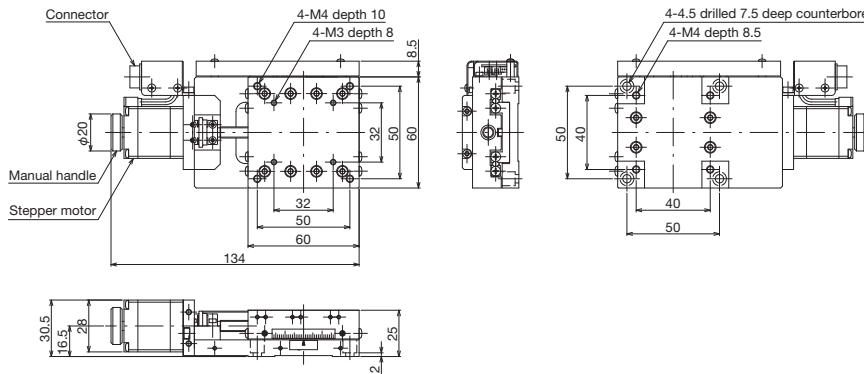


High-Grade Stages ◀ Motorized Stages ▶

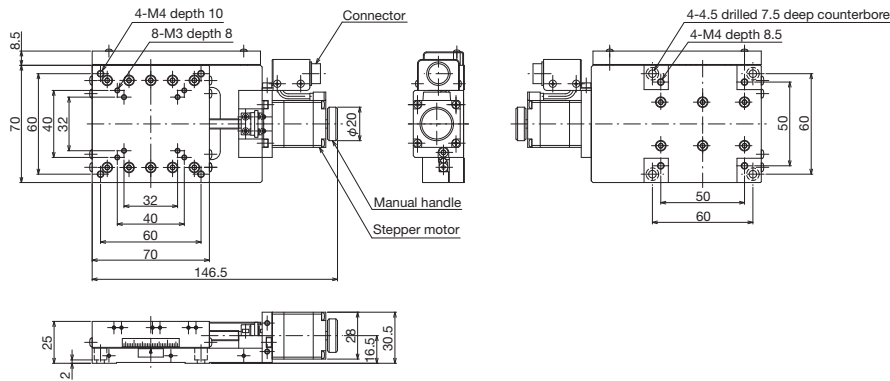
Product Appearance



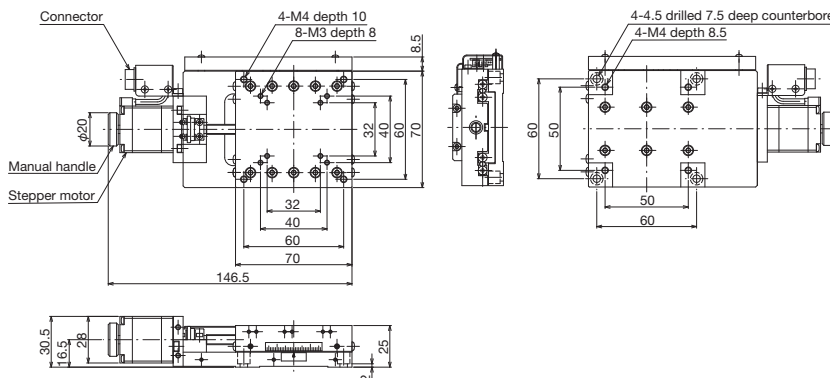
*TALS-6012-G0M has the same dimensions as TALS-6012-G1M. ↑ TALS-6012-G1M



*TALS-6012-G0M-R has the same dimensions as TALS-6012-G1M-R. ↑ TALS-6012-G1M-R



*TALS-7013-G0M has the same dimensions as TALS-7013-G1M. ↑ TALS-7013-G1M



*TALS-7013-G0M-R has the same dimensions as TALS-7013-G1M-R. ↑ TALS-7013-G1M-R

Motorized Stages	Automated Products for Microscopes	High-Grade Stages (30 mm x 30 mm) Coarse Stages	Coarse Roller Stages	Ball Bushing High-Precision Stages	High-Precision/High-Rigidity Stages	Z-Limit Stages	TTR Stages	Connection Cases	Actuators
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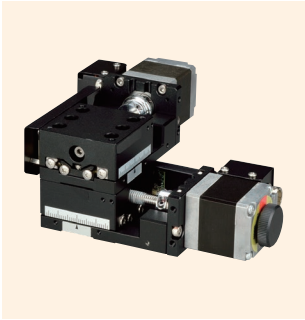
High-Grade XY Stage 40 x 40, 50 x 50



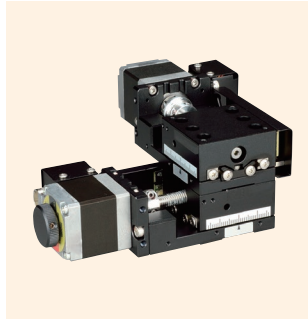
HG-VCR method

0.75 A/phase

0.75 A/phase motor



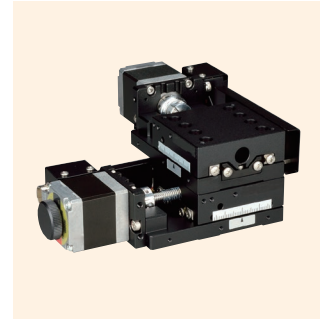
↑ TALD-4011-G1M



↑ TALD-4011-G1M-R



↑ TALD-5012-G1M



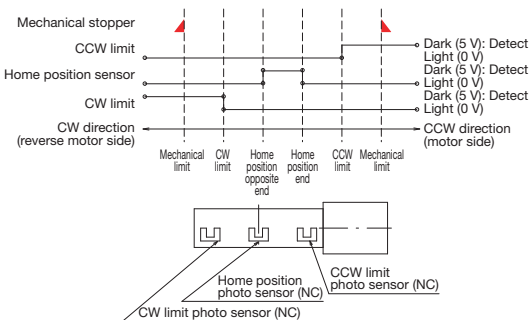
↑ TALD-5012-G1M-R

Features

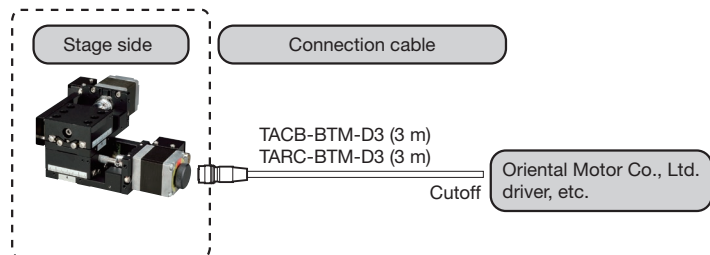
- A high-precision, high-rigidity motorized stage using the HG-VCR method.
- Precision screw and ball screw specifications are available.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TALD-4011-G0M	TALD-4011-G1M	TALD-5012-G0M	TALD-5012-G1M
Model number (symmetrical)	TALD-4011-G0M-R	TALD-4011-G1M-R	TALD-5012-G0M-R	TALD-5012-G1M-R
Model name	High-Grade XY Stage			
Travel direction	XY-axis double direction			
Travel amount	±7.5 mm		±10 mm	
Stage surface	40 mm x 40 mm		50 mm x 50 mm	
Motor used	PK523HPB equivalent (5-wire type pentagonal wiring, 0.75 A/phase)			
Resolution	0.001 mm	0.002 mm	0.001 mm	0.002 mm
Feed screw specification	Precision screw	Ball screw	Precision screw	Ball screw
Feed screw lead	0.5 mm	1 mm	0.5 mm	1 mm
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.002 mm			
Positioning accuracy	Yawing 20 s, pitching 30 s	Yawing 15 s, pitching 25 s	Yawing 20 s, pitching 30 s	Yawing 15 s, pitching 25 s
Repeatability	±0.0005 mm	±0.0003 mm	±0.0005 mm	±0.0003 mm
Lost motion	0.005 mm	0.001 mm	0.005 mm	0.001 mm
Parallelism of motion	0.04 mm	0.03 mm	0.03 mm	0.02 mm
XY orthogonality	0.006 mm			
Moment rigidity	Yaw rigidity 0.5 s/N-cm, pitch rigidity 0.6 s/N-cm, roll rigidity 0.6 s/N-cm		Yaw rigidity 0.3 s/N-cm, pitch rigidity 0.4 s/N-cm, roll rigidity 0.4 s/N-cm	
Load capacity	39.2 N (4 kgf)			
Mass	0.64 kg		0.8 kg	
Maximum speed (at 8,000 pps)	8 mm/s	16 mm/s	8 mm/s	16 mm/s
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
Home position sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Applicable cables	TACB-BTM-D3, TARC-BTM-D3			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

◆ Sensor operating logic and timing chart



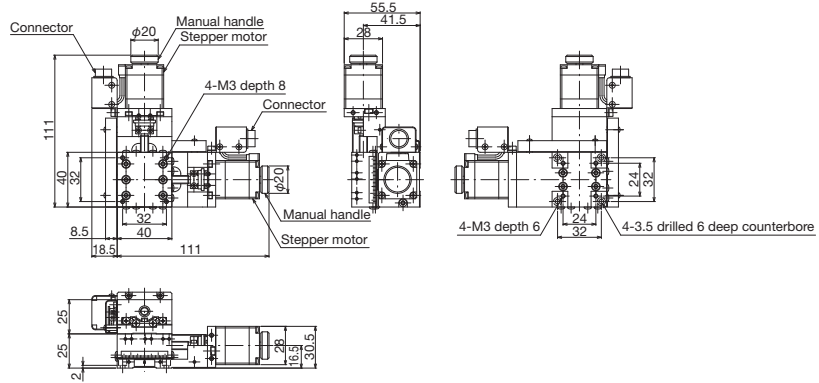
◆ Connection method: Connection cable and driver



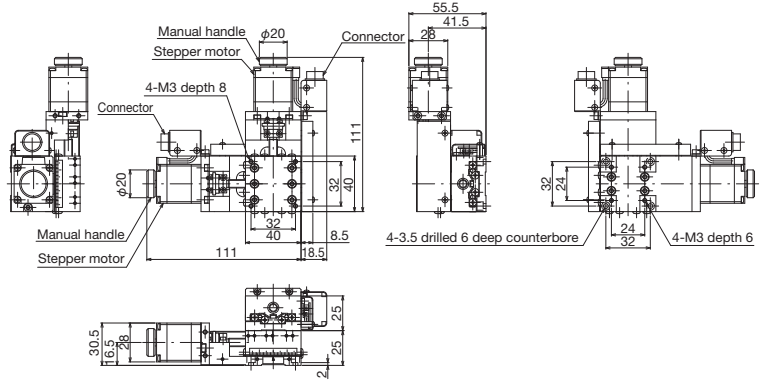


High-Grade Stages ◀ Motorized Stages ◀

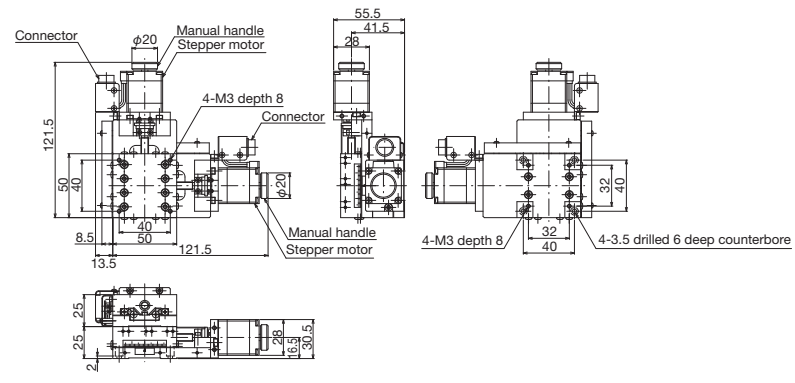
Product Appearance



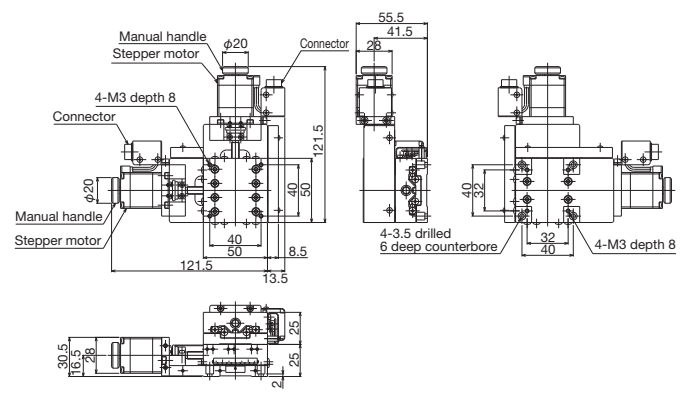
*TALD-4011-G0M has the same dimensions as TALD-4011-G1M. [↑ TALD-4011-G1M](#)



*TALD-4011-G0M-R has the same dimensions as TALD-4011-G1M-R. [↑ TALD-4011-G1M-R](#)



*TALD-5012-G0M has the same dimensions as TALD-5012-G1M. [↑ TALD-5012-G1M](#)



*TALD-5012-G0M-R has the same dimensions as TALD-5012-G1M-R. [↑ TALD-5012-G1M-R](#)

Motorized Stages	Automated Products for Microscopes	Manual Stages	High-Grade Stages (φ30 mm) Coarse Stages	30 mm x 30 mm Coarse Stages	Coarse Roller Stages	Ball Bushing Stages	High-Precision High-Rigidity Stages	Z-Lift Stages	TTR Stages	Connection Cases	Actuators
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High-Grade XY Stage 60 x 60, 70 x 70

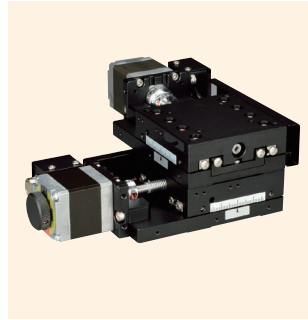


0.75 A/phase

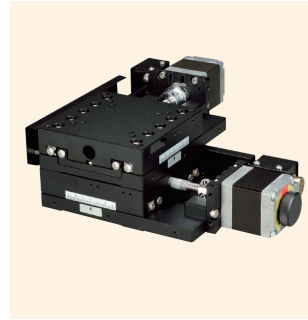
0.75 A/phase motor



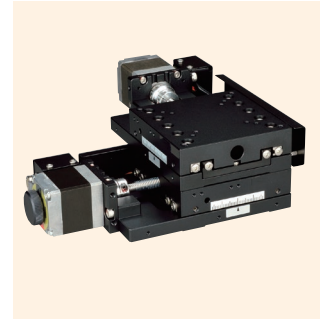
↑ TALD-6012-G1M



↑ TALD-6012-G1M-R



↑ TALD-7013-G1M



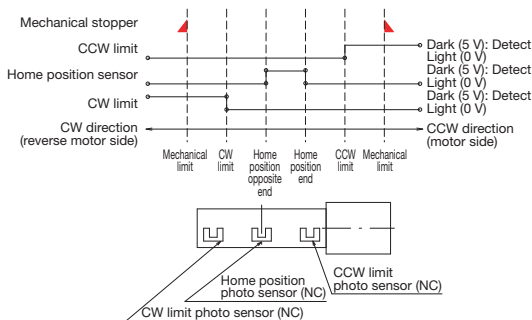
↑ TALD-7013-G1M-R

Features

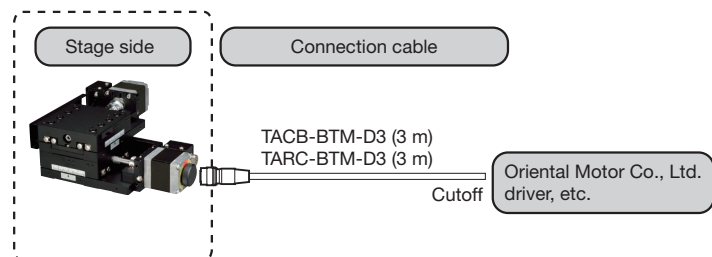
- A high-precision, high-rigidity motorized stage using the HG-VCR method.
- Precision screw and ball screw specifications are available.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TALD-6012-G0M	TALD-6012-G1M	TALD-7013-G0M	TALD-7013-G1M
Model number (symmetrical)	TALD-6012-G0M-R	TALD-6012-G1M-R	TALD-7013-G0M-R	TALD-7013-G1M-R
Model name	High-Grade XY Stage			
Travel direction	XY-axis double direction			
Travel amount	±12.5 mm		±15 mm	
Stage surface	60 mm x 60 mm		70 mm x 70 mm	
Motor used	PK523HPB equivalent (5-wire type pentagonal wiring, 0.75 A/phase)			
Resolution	0.001 mm	0.002 mm	0.001 mm	0.002 mm
Feed screw specification	Precision screw	Ball screw	Precision screw	Ball screw
Feed screw lead	0.5 mm	1 mm	0.5 mm	1 mm
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.002 mm			
Positioning accuracy	Yawing 20 s, pitching 30 s	Yawing 15 s, pitching 25 s	Yawing 20 s, pitching 30 s	Yawing 15 s, pitching 25 s
Repeatability	±0.0005 mm	±0.0003 mm	±0.0005 mm	±0.0003 mm
Lost motion	0.005 mm	0.001 mm	0.005 mm	0.001 mm
Parallelism of motion	0.03 mm	0.02 mm	0.03 mm	0.02 mm
XY orthogonality	0.006 mm			
Moment rigidity	Yaw rigidity 0.2 s/N-cm, pitch rigidity 0.2 s/N-cm, roll rigidity 0.2 s/N-cm		Yaw rigidity 0.12 s/N-cm, pitch rigidity 0.16 s/N-cm, roll rigidity 0.16 s/N-cm	
Load capacity	39.2 N (4 kgf)			
Mass	1.0 kg		1.2 kg	
Maximum speed (at 8,000 pps)	8 mm/s	16 mm/s	8 mm/s	16 mm/s
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
Home position sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Applicable cables	TACB-BTM-D3, TARC-BTM-D3			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

◆ Sensor operating logic and timing chart



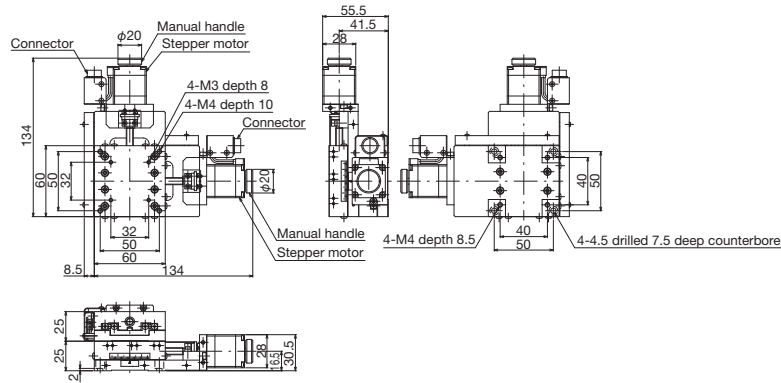
◆ Connection method: Connection cable and driver



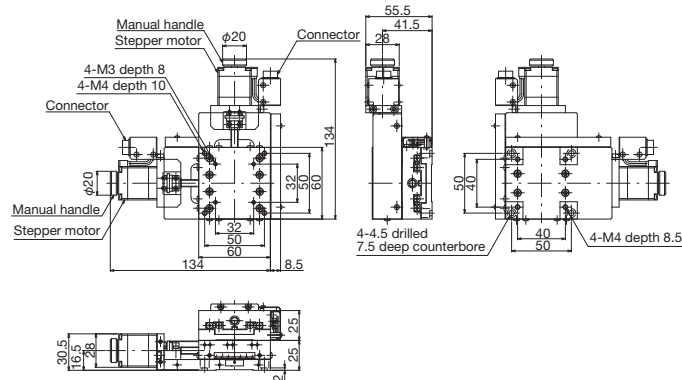


High-Grade Stages ◀ Motorized Stages ◀

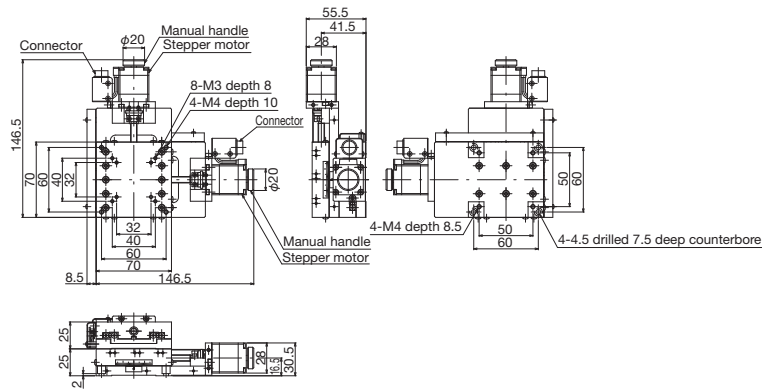
Product Appearance



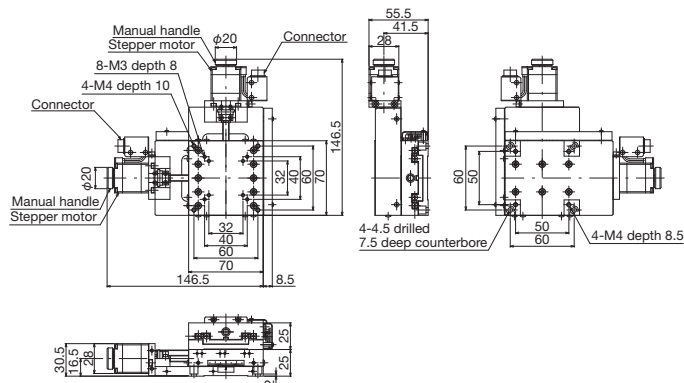
*TALD-6012-G0M has the same dimensions as TALD-6012-G1M. [↑ TALD-6012-G1M](#)



*TALD-6012-G0M-R has the same dimensions as TALD-6012-G1M-R. [↑ TALD-6012-G1M-R](#)



*TALD-7013-G0M has the same dimensions as TALD-7013-G1M. [↑ TALD-7013-G1M](#)



*TALD-7013-G0M-R has the same dimensions as TALD-7013-G1M-R. [↑ TALD-7013-G1M-R](#)

Motorized Stages	Automated Products for Microscopes	High-Grade Stages (30 mm x 30 mm Corner Stages)	Class Roller Stages	Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Lift Stages	Tilt Stages	Connection Cases	Actuators
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High-Grade Z Stage 40 x 40, 50 x 50



HG-VCR method

0.75 A/phase

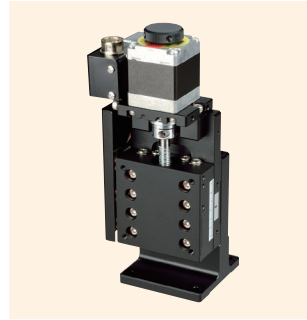
0.75 A/phase motor



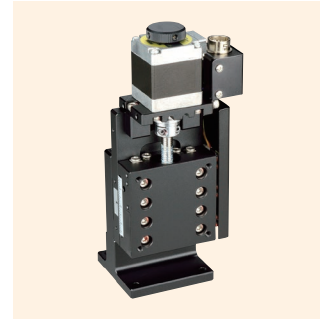
↑ TALZ-4011-G1M



↑ TALZ-4011-G1M-R



↑ TALZ-5012-G1M



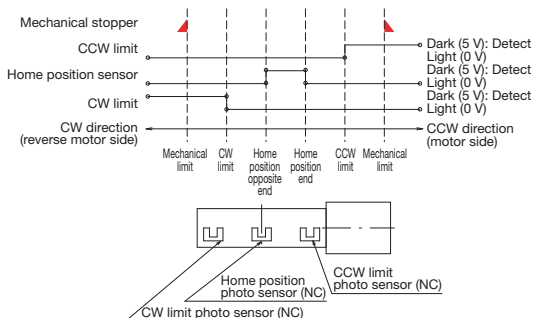
↑ TALZ-5012-G1M-R

Features

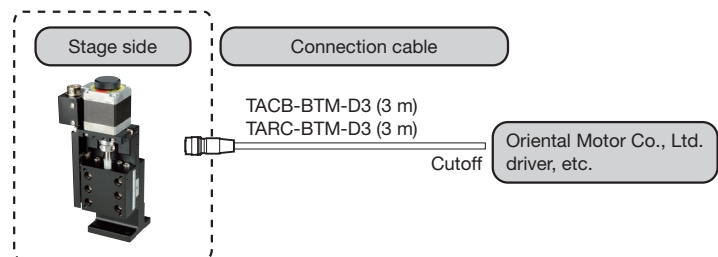
- A high-precision, high-rigidity motorized stage using the HG-VCR method.
- Precision screw and ball screw specifications are available.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TALZ-4011-G0M	TALZ-4011-G1M	TALZ-5012-G0M	TALZ-5012-G1M
Model number (symmetrical)	TALZ-4011-G0M-R	TALZ-4011-G1M-R	TALZ-5012-G0M-R	TALZ-5012-G1M-R
Model name	High-Grade Z Stage			
Travel direction	Z-axis single direction			
Travel amount	±7.5 mm		±10 mm	
Stage surface	40 mm x 40 mm		50 mm x 50 mm	
Motor used	PK523HPB equivalent (5-wire type pentagonal wiring, 0.75 A/phase)			
Resolution	0.001 mm	0.002 mm	0.001 mm	0.002 mm
Feed screw specification	Precision screw	Ball screw	Precision screw	Ball screw
Feed screw lead	0.5 mm	1 mm	0.5 mm	1 mm
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.002 mm			
Positioning accuracy	0.01 mm	0.006 mm	0.012 mm	0.008 mm
Repeatability	±0.0005 mm	±0.0003 mm	±0.0005 mm	±0.0003 mm
Lost motion	0.005 mm	0.001 mm	0.005 mm	0.001 mm
Moment rigidity	Yaw rigidity 0.25 s/N-cm, pitch rigidity 0.3 s/N-cm, roll rigidity 0.3 s/N-cm		Yaw rigidity 0.15 s/N-cm, pitch rigidity 0.2 s/N-cm, roll rigidity 0.2 s/N-cm	
Load capacity	19.6 N (2 kgf)			
Mass	0.42 kg		0.54 kg	
Maximum speed (at 5,000 pps)	5 mm/s	10 mm/s	5 mm/s	10 mm/s
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
Home position sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Applicable cables	TACB-BTM-D3, TARC-BTM-D3			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

◆ Sensor operating logic and timing chart



◆ Connection method: Connection cable and driver

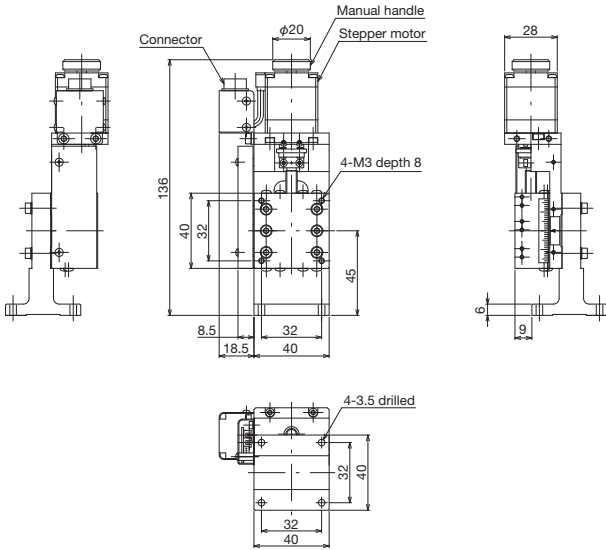




High-Grade Stages ◀ Motorized Stages ◀

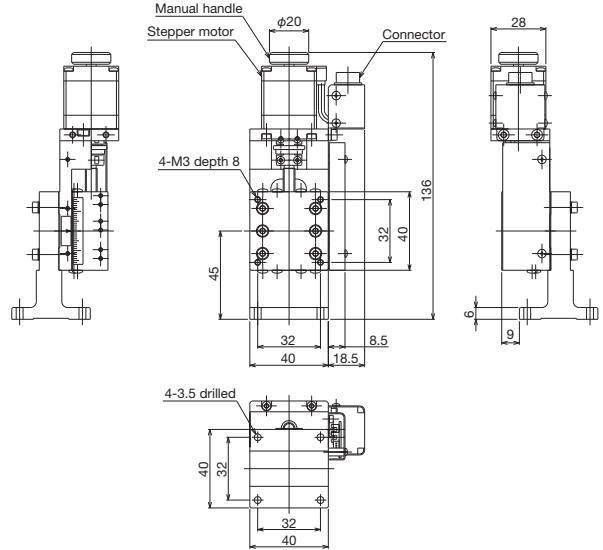
Product Appearance

Motorized Stages	Automated Products for Microscopes	Manual Stages	High-Grade Stages (30 mm x 30 mm Contact Stages)	Class Roller Stages	Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Lift Stages	Tilt Stages	Connection Cases	Actuators
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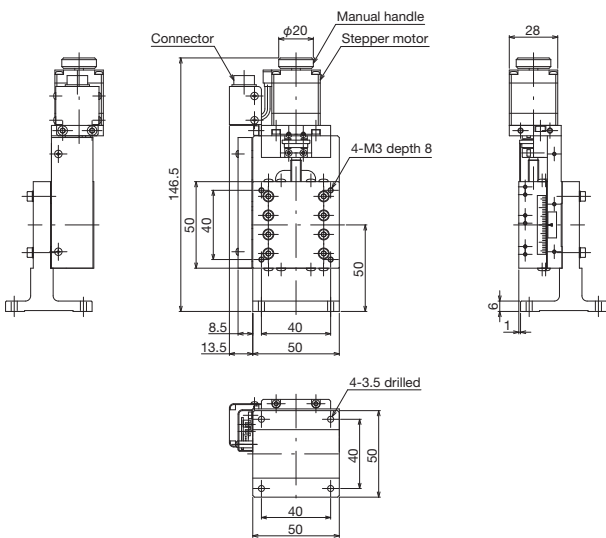
*TALZ-4011-G0M has the same dimensions as TALZ-4011-G1M.

↑ TALZ-4011-G1M



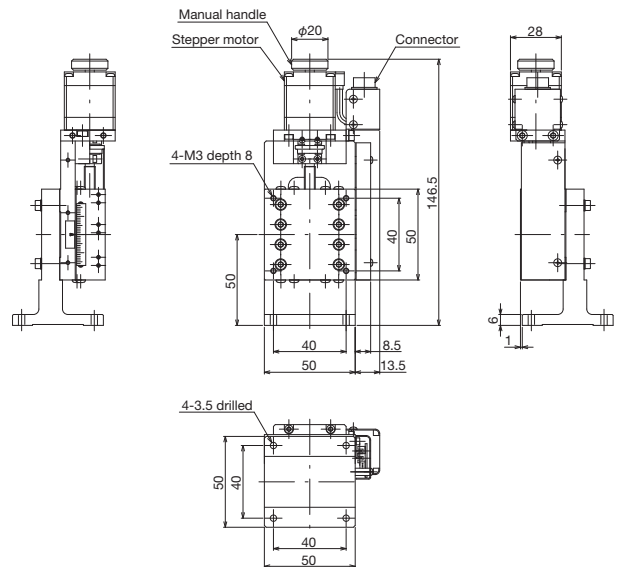
*TALZ-4011-G0M-R has the same dimensions as TALZ-4011-G1M-R.

↑ TALZ-4011-G1M-R



*TALZ-5012-G0M has the same dimensions as TALZ-5012-G1M.

↑ TALZ-5012-G1M



*TALZ-5012-G0M-R has the same dimensions as TALZ-5012-G1M-R.

↑ TALZ-5012-G1M-R

High-Grade Z Stage 60 x 60, 70 x 70

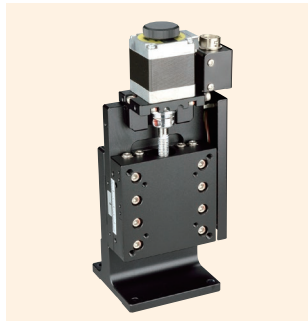


0.75 A/phase

0.75 A/phase motor



↑ TALZ-6012-G1M



↑ TALZ-6012-G1M-R



↑ TALZ-7013-G1M



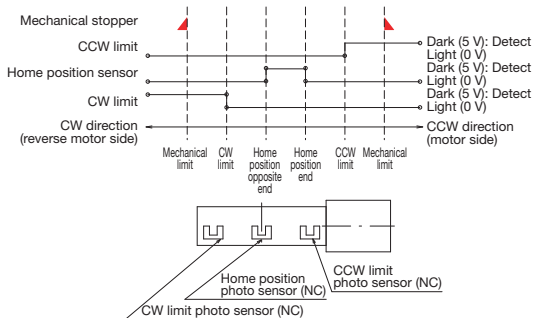
↑ TALZ-7013-G1M-R

Features

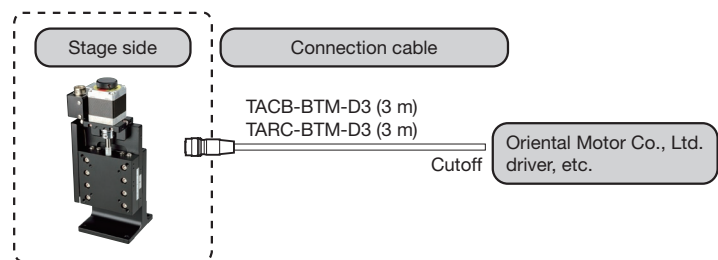
- A high-precision, high-rigidity motorized stage using the HG-VCR method.
- Precision screw and ball screw specifications are available.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TALZ-6012-G0M	TALZ-6012-G1M	TALZ-7013-G0M	TALZ-7013-G1M
Model number (symmetrical)	TALZ-6012-G0M-R	TALZ-6012-G1M-R	TALZ-7013-G0M-R	TALZ-7013-G1M-R
Model name	High-Grade Z Stage			
Travel direction	Z-axis single direction			
Travel amount	±12.5 mm		±15 mm	
Stage surface	60 mm x 60 mm		70 mm x 70 mm	
Motor used	PK523HPB equivalent (5-wire type pentagonal wiring, 0.75 A/phase)			
Resolution	0.001 mm	0.002 mm	0.001 mm	0.002 mm
Feed screw specification	Precision screw	Ball screw	Precision screw	Ball screw
Feed screw lead	0.5 mm	1 mm	0.5 mm	1 mm
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.002 mm			
Positioning accuracy	Yawing 20 s, pitching 30 s	Yawing 15 s, pitching 25 s	Yawing 20 s, pitching 30 s	Yawing 15 s, pitching 25 s
Repeatability	±0.0005 mm	±0.0003 mm	±0.0005 mm	±0.0003 mm
Lost motion	0.005 mm	0.001 mm	0.005 mm	0.001 mm
Moment rigidity	Yaw rigidity 0.1 s/N-cm, pitch rigidity 0.1 s/N-cm, roll rigidity 0.1 s/N-cm		Yaw rigidity 0.06 s/N-cm, pitch rigidity 0.08 s/N-cm, roll rigidity 0.08 s/N-cm	
Load capacity	19.6 N (2 kgf)			
Mass	0.7 kg		0.9 kg	
Maximum speed (at 5,000 pps)	5 mm/s	10 mm/s	5 mm/s	10 mm/s
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
Home position sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Applicable cables	TACB-BTM-D3, TARC-BTM-D3			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

◆ Sensor operating logic and timing chart



◆ Connection method: Connection cable and driver

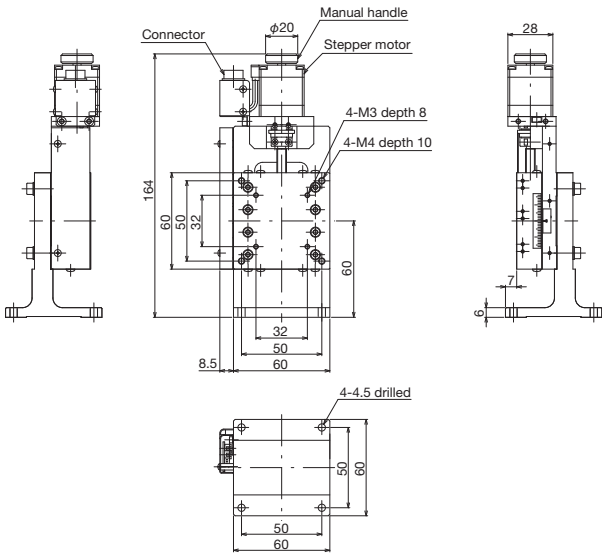




High-Grade Stages ◀ Motorized Stages ◀

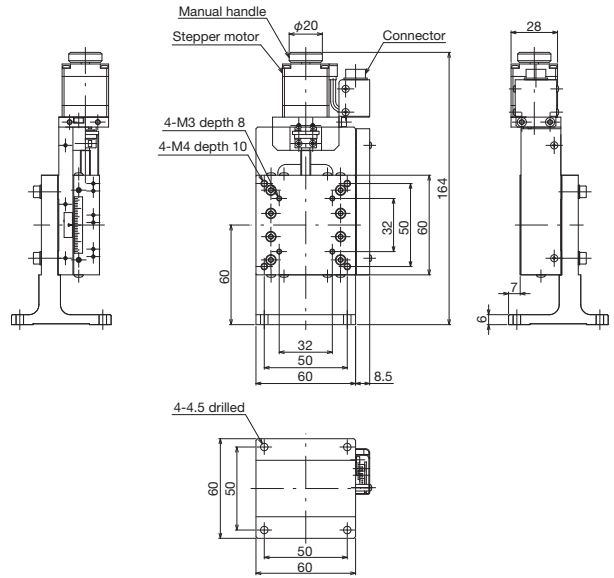
Product Appearance

Motorized Stages	Automated Products for Microscopes	Manual Stages	High-Grade Stages (φ30 mm) Contact Stages	30 mm x 30 mm Class Roller Stages	Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Lift Stages	Tilt Stages	Connection Cases	Actuators
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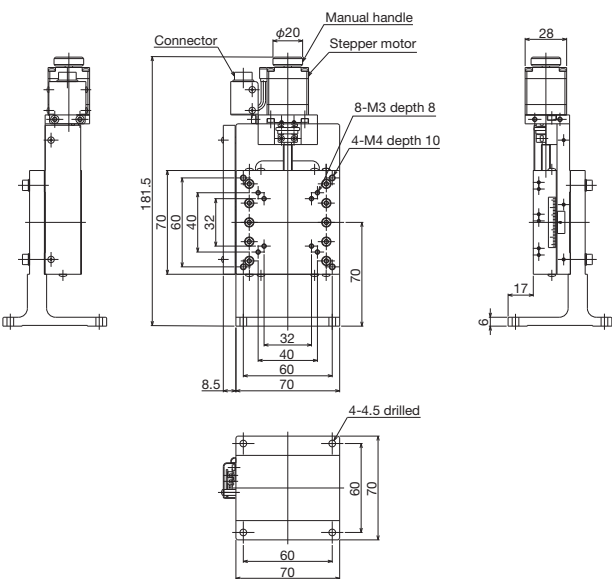
*TALZ-6012-G0M has the same dimensions as TALZ-6012-G1M.

↑ TALZ-6012-G1M



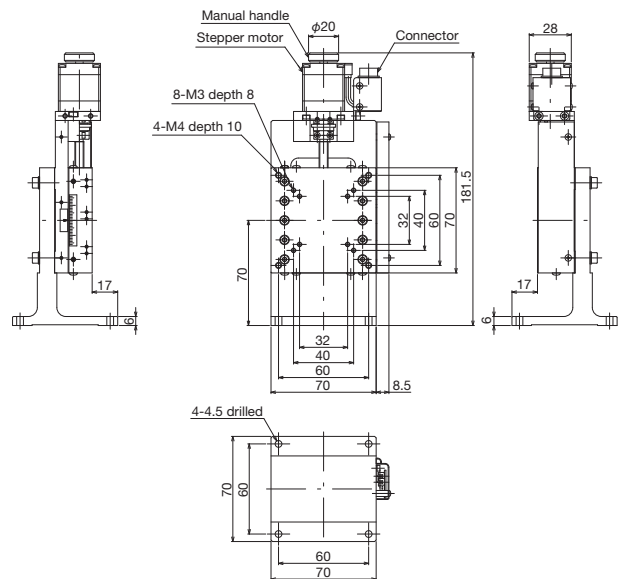
*TALZ-6012-G0M-R has the same dimensions as TALZ-6012-G1M-R.

↑ TALZ-6012-G1M-R



*TALZ-7013-G0M has the same dimensions as TALZ-7013-G1M.

↑ TALZ-7013-G1M



*TALZ-7013-G0M-R has the same dimensions as TALZ-7013-G1M-R.

↑ TALZ-7013-G1M-R

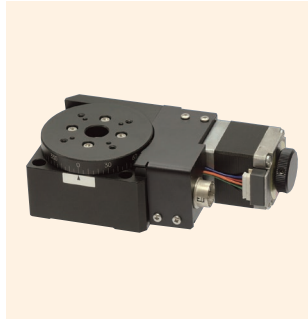
High-Grade Rotary Stage $\phi 40$, $\phi 50$, $\phi 60$, $\phi 70$

Rotating bearing type

0.75 A/phase
0.75 A/phase motor



↑ TARS-4036-GM



↑ TARS-5036-GM



↑ TARS-6036-GM



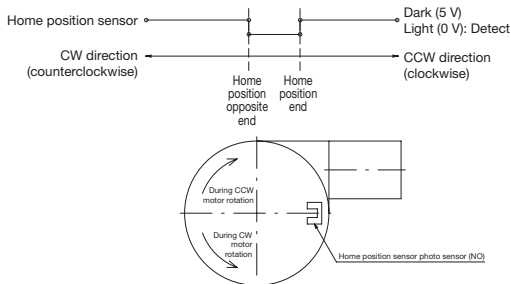
↑ TARS-7036-GM

Features

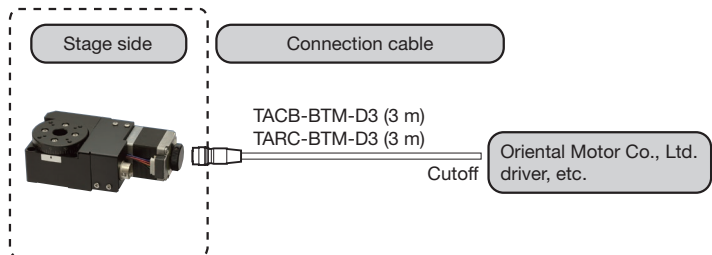
- A rotary stage adopting ball bearings (or angular contact bearings) for the travel guide.
- The center has a transmission hole drilled.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number	TARS-4036-GM	TARS-5036-GM	TARS-6036-GM	TARS-7036-GM
Model name	Rotary Stage			
Travel direction	Rotation direction			
Travel amount	360°			
Stage surface	$\phi 40$ mm	$\phi 50$ mm	$\phi 60$ mm	$\phi 70$ mm
Motor used	PK523HPB equivalent (5-wire type pentagonal wiring, 0.75 A/phase)			
Resolution	0.01°			
Travel guide	Ball bearings			
Runout	0.01 mm			
Surface runout	0.04 mm		0.05 mm	0.06 mm
Positioning accuracy	0.08°		0.05°	
Repeatability	$\pm 0.003^\circ$			
Lost motion	0.02°			
Parallelism	0.075 mm			
Load capacity	29.4 N (3 kgf)		39.2 N (4 kgf)	
Mass	0.4 kg	0.5 kg	0.6 kg	0.7 kg
Maximum speed (at 5,000 pps)	50°/s			
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
Home position sensor	Normally open contact (make contact, A contact) operation, photo sensor			
Pre-home sensor	-			
Limit sensor	-			
Applicable cables	TACB-BTM-D3, TARC-BTM-D3			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

◆ Sensor operating logic and timing chart



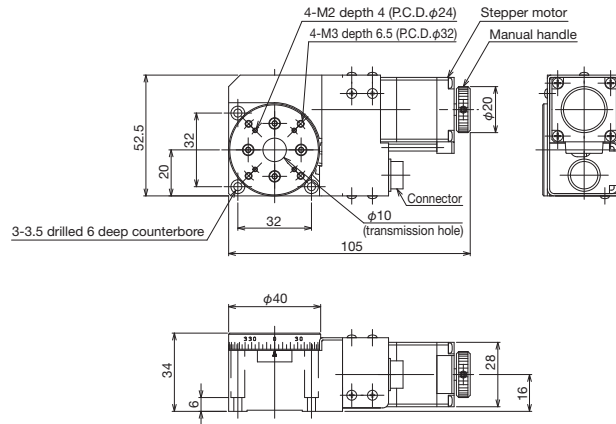
◆ Connection method: Connection cable and driver



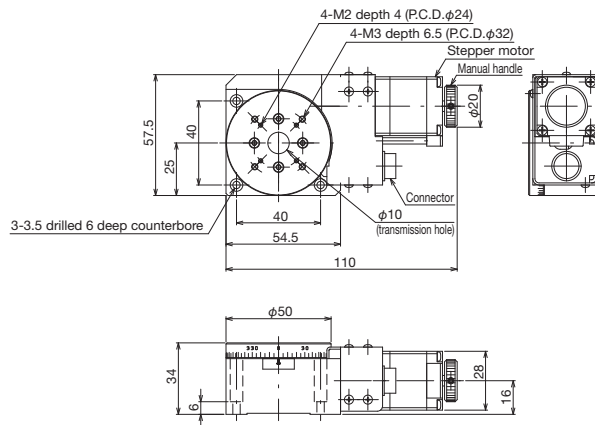


High-Grade Stages ◀ Motorized Stages ◀

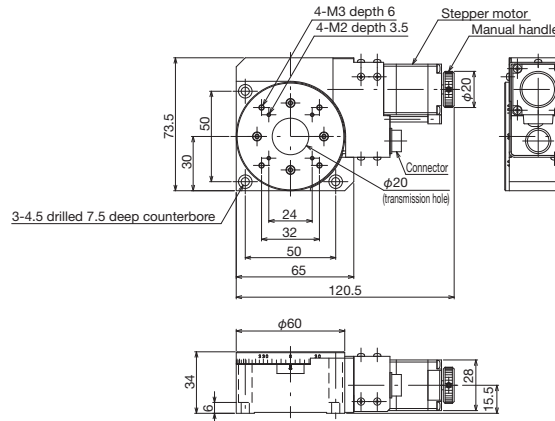
Product Appearance



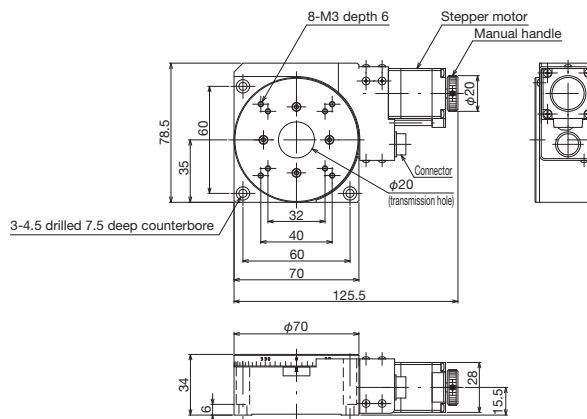
↑ TARS-4036-GM



↑ TARS-5036-GM



↑ TARS-6036-GM



↑ TARS-7036-GM

Motorized Stages	Automated Products for Microscopes	High-Grade Stages	30 mm x 30 mm (ø30 mm) Connector Stages	Class Roller Stages	Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Like Stages	TTR Stages	Connector Cases	Actuators
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► Motorized Stages ► 30 mm x 30 mm (φ 30 mm) Compact Stages | Product List

Motorized Stages
Automated Products for Microscopes
Manual Stages
High-Grade Stages (φ 30 mm) Compact Stages
Cross Roller Stages
Ball Bearing Stages
High-Precision/High-Rigidity Stages
Z Lift Stages
Tilt Stages
Correction Cables
Actuators

Page	Example product photo	Type	Model number	Motor mounting dimensions	Stage surface	Travel amount (total travel amount)
39		X Stage	TALS-301-HM	20 mm	30 mm x 30 mm	±7.5 mm (15 mm)
		XY Stage	TALD-301-HM	20 mm	30 mm x 30 mm	±7.5 mm (15 mm)
		Z Stage	TALZ-301-HM	20 mm	30 mm x 30 mm	±7.5 mm (15 mm)
41		Z Lift Stage	TALV-3005-HM	20 mm	30 mm x 30 mm	0 to 5 mm
		Rotary Stage	TARS-336-HM	20 mm	φ 30 mm	360°

■ Main Specifications (excerpt)

	TALS-301-HM	TALD-301-HM	TALZ-301-HM	TALV-3005-HM	TARS-336-HM
Travel direction	X Stage	XY Stage	Z Stage	Z Lift Stage	Rotary Stage
Stage surface	30 mm x 30 mm				φ 30 mm
Travel amount	±7.5 mm			0 to 5 mm	360°
Resolution	0.001 mm				0.015°
Travel guide	V-groove and cross rollers				Ball bearing
Travel accuracy	Straightness (horizontal/vertical): 0.008 mm			Straightness (horizontal/vertical): 0.005 mm	-
Runout	-				0.02 mm
Surface runout	-				0.06 mm
Positioning accuracy	0.015 mm			0.02 mm	0.18°
Repeatability	±0.0005 mm		±0.001 mm	±0.002 mm	±0.003°
Lost motion	0.005 mm				0.02°
XY orthogonality	-	0.010 mm		-	
Load capacity	19.6 N (2 kgf)	14.7 N (1.5 kgf)	9.8 N (1 kgf)		19.6 N (2 kgf)
Mass	0.16 kg	0.32 kg	0.18 kg	0.2 kg	0.18 kg
Maximum speed	8 mm/s (at 8,000 pps)		5 mm/s (at 5,000 pps)	3 mm/s (at 3,000 pps)	75°/s (at 5,000 pps)
Main materials	Aluminum alloy/black satin anodized finish				
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain				



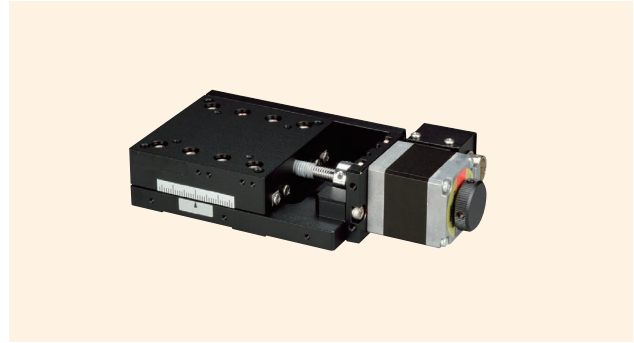
Features | 30 mm x 30 mm (ϕ 30 mm) Compact Stages ◀ Motorized Stages ◀

◆ Compact/lightweight/thin type

The 30 mm x 30 mm (ϕ 30 mm) stage surface and aluminum alloy frame are light-weight and can be easily used in tight spaces such as chambers.



↑ TALS-301-HM 30 mm x 30 mm stage surface



↑ TALS-6012-G1M 60 mm x 60 mm stage surface

◆ High-precision/high-rigidity stages

Despite its small size and light weight, this model boasts the same high precision and high performance as conventional stages.

◆ Black stage body

Stages are all black to avoid influencing optical equipment.

◆ Rich product lineup

Various products are available with different travel directions, including X-axis single direction, XY-axis double direction, Z-axis single direction, Z lift (Z-axis single direction), and rotary types.

◆ 5-phase stepper motor

Equipped as standard with a 5-phase stepper motor with 0.35 A/phase, 0.72° (full)/0.36° (half) step angle, and 20 mm x 20 mm motor mounting dimensions.

*The motor is a dedicated THK CHUO specification.

◆ Sensor

Limit sensors and home position sensors are equipped as standard.

■ Sensor list

	TALS-301-HM	TALD-301-HM	TALZ-301-HM	TALV-3005-HM	TARS-336-HM
Home position sensor	-	-	-	-	○
Limit sensor	○	○	○	○	-

◆ Environmental measures

Products that do not contain 10 substances regulated by European RoHS.

- Motorized Stages
- Automated Products for Microscopes
- Manual Stages
- High-Grade Stages
- 30 mm x 30 mm (ϕ 30 mm) Compact Stages
- Class Roller Stages
- Ball Bushing Stages
- High-Precision/High-Rigidity Stages
- Z Lift Stages
- TR Stages
- Connection Cases
- Actuators

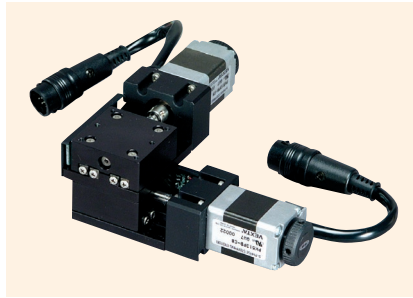
▶ Motorized Stages ▶ 30 mm x 30 mm (φ 30 mm) Compact Stages

30 mm x 30 mm (φ 30 mm) Compact Stages - X Stages, XY Stages, Z Stages

V-CR method 0.35 A/phase 0.35 A/phase motor



↑ TALS-301-HM



↑ TALD-301-HM



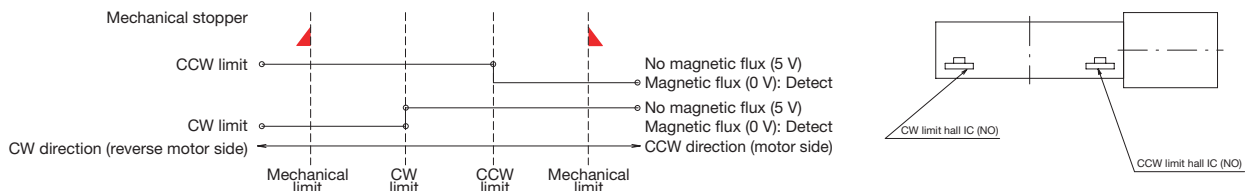
↑ TALZ-301-HM

Features

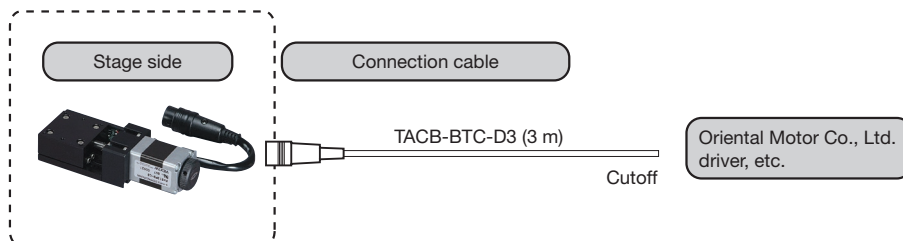
- Compact motorized stage adopting a 20 mm x 20 mm 5-phase stepper motor.
- 15 mm travel types are available.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number	TALS-301-HM	TALD-301-HM	TALZ-301-HM
Model name	X Stage	XY Stage	Z Stage
Travel direction	X-axis single direction	XY-axis double direction	Z-axis single direction
Travel amount		±7.5 mm	
Stage surface	30 mm x 30 mm		
Motor used	PK513PB equivalent (5-wire type pentagonal wiring, 0.35 A/phase)		
Resolution	0.001 mm		
Feed screw lead	0.5 mm		
Travel guide	V-groove and cross rollers		
Travel accuracy	Straightness (horizontal/vertical): 0.008 mm		
Positioning accuracy	0.015 mm		
Repeatability	±0.0005 mm	±0.0005 mm	±0.001 mm
Lost motion	0.005 mm		
XY orthogonality	-	0.010 mm	-
Load capacity	19.6 N (2 kgf)	14.7 N (1.5 kgf)	9.8 N (1 kgf)
Mass	0.16 kg	0.32 kg	0.18 kg
Maximum speed	8 mm/s (at 8,000 pps)		
Main materials/surface treatment	Aluminum alloy/black satin anodized finish		
Limit sensor	Normally open contact (make contact, A contact) operation, hall IC		
Applicable cables	TACB-BTC-D3		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

◆ Sensor operating logic and timing chart



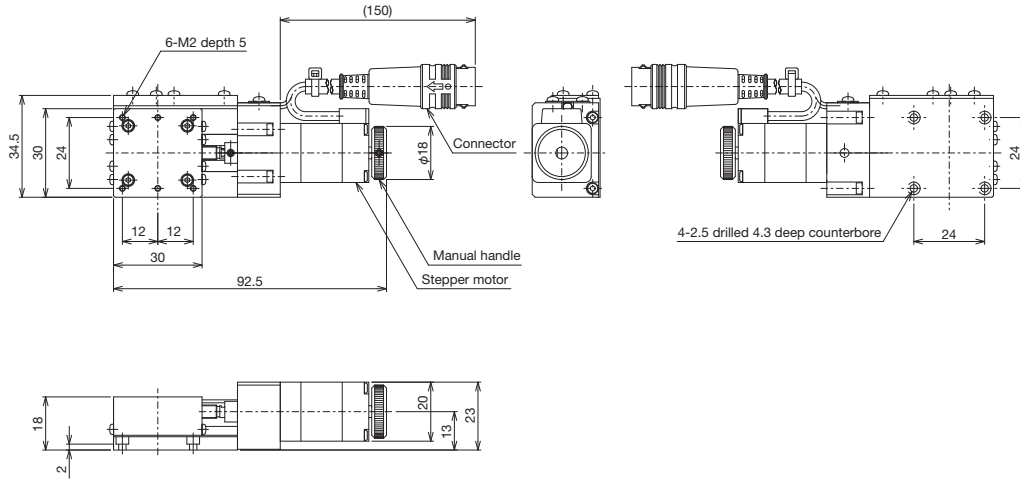
◆ Connection method: Connection cable and driver



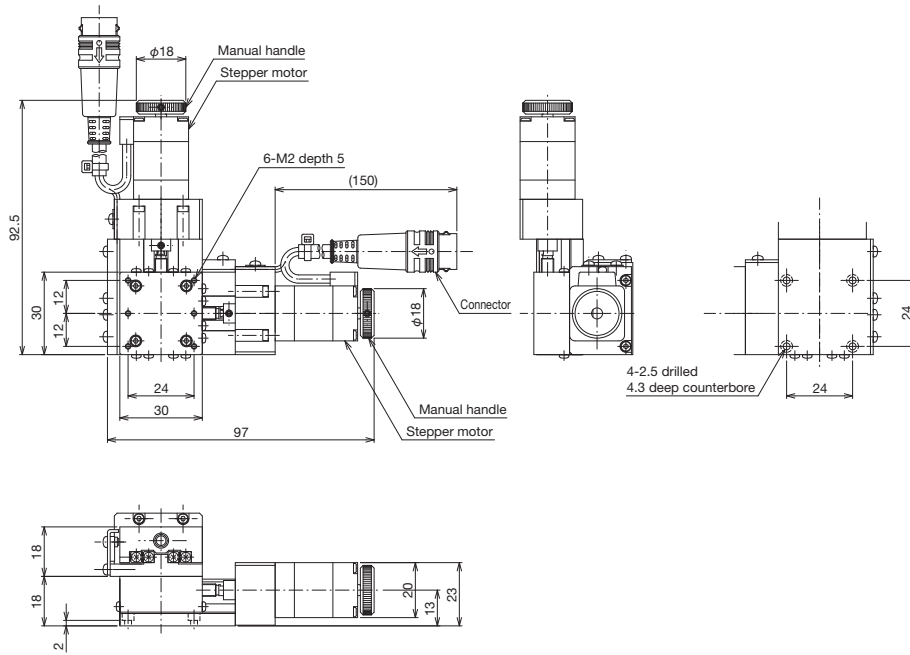


30 mm x 30 mm ($\phi 30$ mm) Compact Stages \triangleleft Motorized Stages \triangleleft

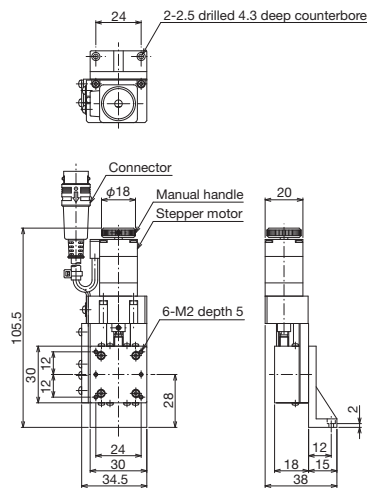
Product Appearance



\uparrow TALD-301-HM



\uparrow TALD-301-HM



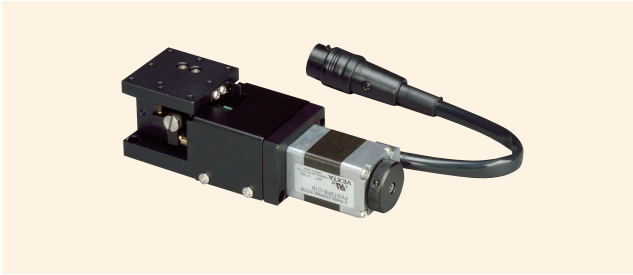
\uparrow TALZ-301-HM

Motorized Stages	Automated Products for Microscopes	High-Grade Stages	30 mm x 30 mm ($\phi 30$ mm) Compact Stages	Class Roller Stages	Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Lift Stages	Tilt Stages	Connection Cases	Actuators
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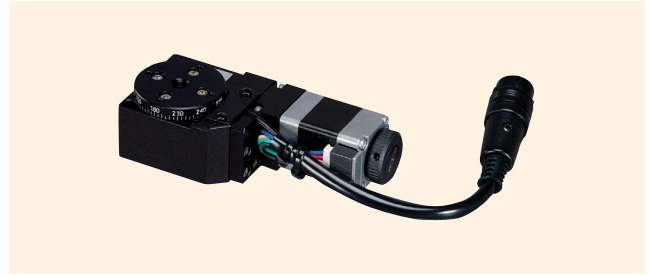
▶ Motorized Stages ▶ 30 mm x 30 mm (φ 30 mm) Compact Stages

30 mm x 30 mm (φ 30 mm) Compact Stages - Z Lift Stages, Rotary Stages

0.35 A/phase 0.35 A/phase motor



↑ TALV-3005-HM



↑ TARS-336-HM

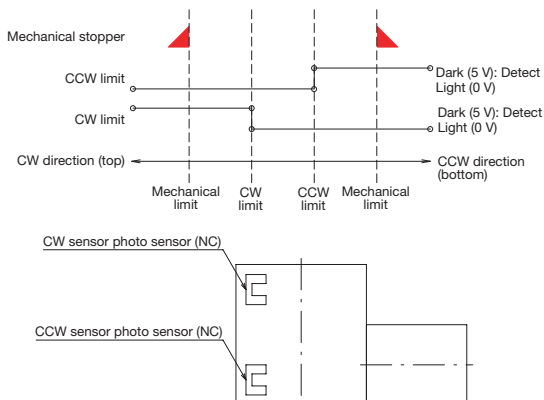
Features

- Compact motorized stage adopting a 20 mm x 20 mm 5-phase stepper motor.
- Z lift stages use V groove and cross roller travel guides, and rotary stages use ball bearings to enable extremely high-precision movement.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

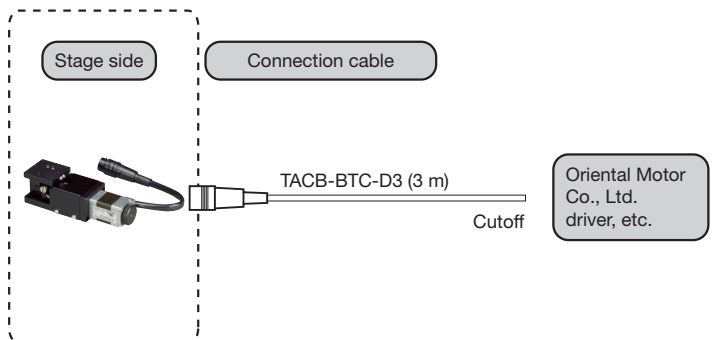
Model number	TALV-3005-HM
Model name	Z Lift Stage
Travel direction	Z-axis single direction
Travel amount	0 to 5 mm
Stage surface	30 mm x 30 mm
Motor used	PK513PB equivalent (5-wire type pentagonal wiring, 0.35 A/phase)
Resolution	0.001 mm
Feed screw lead	0.5 mm
Travel guide	V-groove and cross rollers
Travel accuracy	Straightness (horizontal/vertical): 0.005 mm
Positioning accuracy	0.020 mm
Repeatability	±0.002 mm
Lost motion	0.005 mm
Load capacity	9.8 N (1 kgf)
Mass	0.2 kg
Maximum speed (at 3,000 pps)	3 mm/s
Main materials/surface treatment	Aluminum alloy/black satin anodized finish
Home position sensor	-
Pre-home sensor	-
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor
Applicable cables	TACB-BTC-D3
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain

Model number	TARS-336-HM
Model name	Rotary Stage
Travel direction	Rotation direction
Travel amount	360°
Stage surface	φ 30 mm
Motor used	PK513PB equivalent (5-wire type pentagonal wiring, 0.35 A/phase)
Resolution	0.015°
Travel guide	Ball bearing
Runout	0.02 mm
Surface runout	0.06 mm
Positioning accuracy	0.18°
Repeatability	±0.003°
Lost motion	0.02°
Parallelism	0.075 mm
Load capacity	19.6 N (2 kgf)
Mass	0.18 kg
Maximum speed (at 5,000 pps)	75°/s
Main materials/surface treatment	Aluminum alloy/black satin anodized finish
Home position sensor	Normally open contact (make contact, A contact) operation, hall IC
Pre-home sensor	-
Limit sensor	-
Applicable cables	TACB-BTC-D3
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain

◆ TALV-3005-HM sensor operating logic and timing chart



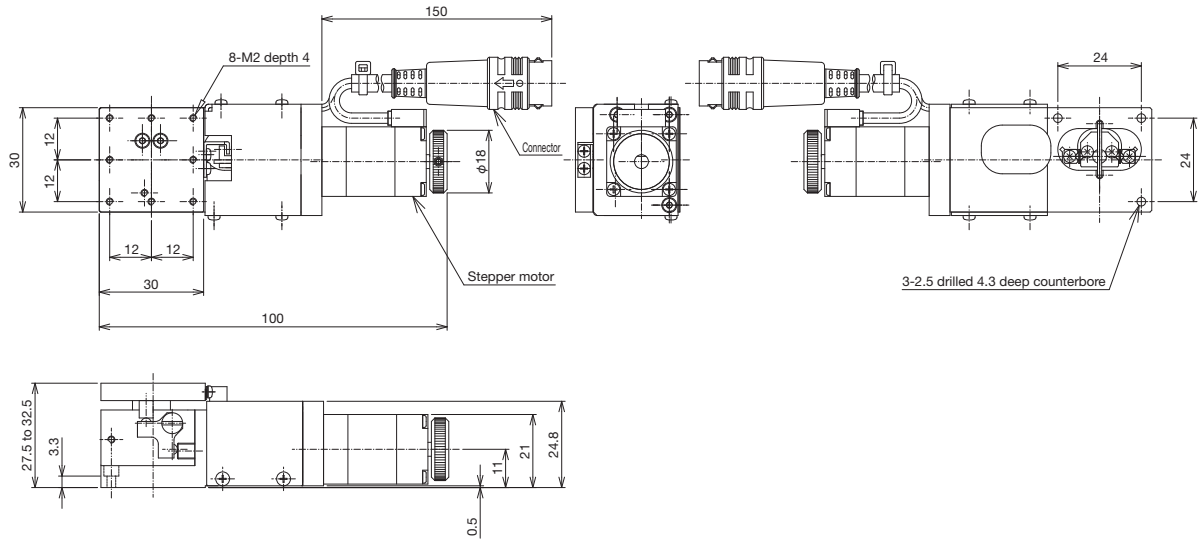
◆ Connection method: Connection cable and driver



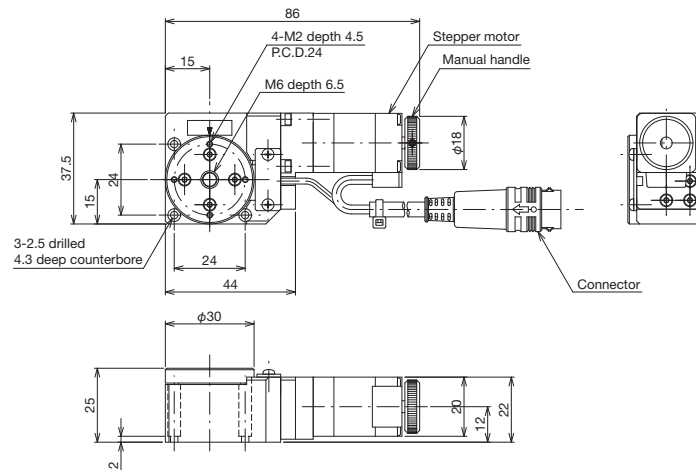


30 mm x 30 mm ($\phi 30$ mm) Compact Stages \triangleleft Motorized Stages \triangleleft

Product Appearance



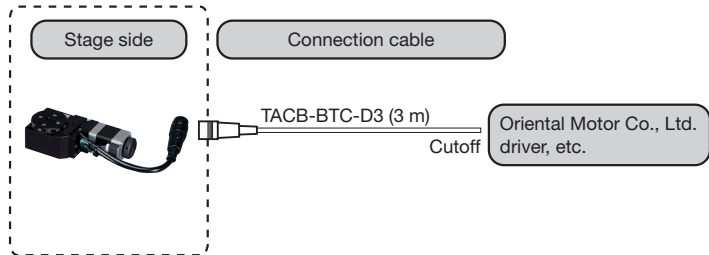
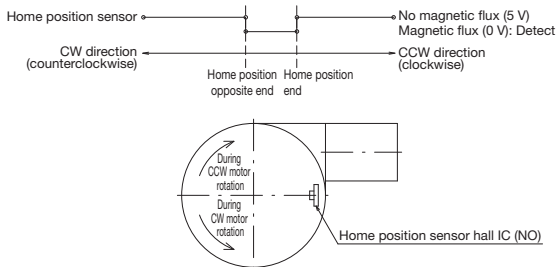
\uparrow TALV-3005-HM



\uparrow TARS-336-HM

\blacklozenge TARS-336-HM sensor operating logic and timing chart

\blacklozenge Connection method: Connection cable and driver



Motorized Stages	Automated Products for Microscopes
Manual Stages	
High-Grade Stages	
30 mm x 30 mm ($\phi 30$ mm) Compact Stages	
Class Roller Stages	
Ball Bushing Stages	
High-Precision/High-Rigidity Stages	
Z-Lift Stages	
Tilt Stages	
Connection Cables	
Actuators	



► Motorized Stages ► Cross Roller Stages | Product List

Motorized Stages
Automated Products for Microscopes
Manual Stages
High-Grade Stages (40.30 mm) Compact Stages
Cross Roller Stages
Ball Bushing High-Rigidity Stages
High-Precision High-Rigidity Stages
Z-Lin Stages
Tilt Stages
Connection Cables
Actuators

Page	Example product photo	Type	Model number	Stage surface	Travel amount (total travel amount)
45		X Stage	TALS-904-H1PC	90 mm x 90 mm	±20 mm (40 mm)
			TALS-106-H1PC	125 mm x 125 mm	±30 mm (60 mm)
			TALS-510-H1P	150 mm x 180 mm	±50 mm (100 mm)
			TALS-215-H1P	200 mm x 250 mm	±75 mm (150 mm)
47		XY Stage	TALD-904-H1PC	90 mm x 90 mm	±20 mm (40 mm)
			TALD-106-H1PC	125 mm x 125 mm	±30 mm (60 mm)
			TALD-510-H1P	150 mm x 180 mm	±50 mm (100 mm)
			TALD-215-H1P	200 mm x 250 mm	±75 mm (150 mm)
49		Z Stage	TALZ-904-H1P	90 mm x 90 mm	±20 mm (40 mm)
			TALZ-106-H1P	125 mm x 125 mm	±30 mm (60 mm)
			TALZ-510-H1P	150 mm x 180 mm	±50 mm (100 mm)
			TALZ-215-H1P	200 mm x 250 mm	±75 mm (150 mm)
51		Rotary Stages	TARS-936-HP	φ 90 mm	360°
			TARS-136-HP	φ 125 mm	360°

Page	Type	Model number	Function
85	Connection cable	TACB-BTD-D3	Driver connection cable 3 m
		TARC-BTD-D3	Driver connection cable 3 m (robot cable specification)
			For connecting customer-supplied drivers, with stage side connectors



Features | Cross Roller Stages ◀ Motorized Stages ◀

◆ Cross roller guide

Uses a V-groove guide type and cross rollers to achieve a motorized stage with high precision and high rigidity.

■ Guide method comparison table

	Travel accuracy	Load capacity	Rigidity
V-groove and cross rollers (HG-VCR)	☆	☆	☆
V-groove and cross rollers	◎	◎	◎
Ball bushing	△	△	△

☆: Outstanding ◎: Excellent △: Fair

◆ Home position/pre-home sensor included as standard equipment

A home position sensor and pre-home sensor are equipped as standard, enabling high-accuracy return to home position.

Pre-home sensor position can be adjusted (excluding rotary stages).

◆ Limit sensor

Limit sensors are equipped as standard and position can be adjusted.

*Excluding rotary stages.

◆ 4 travel directions and 4 sizes

X stage/XY stage/Z stage movement direction types with 90 mm x 90 mm, 125 mm x 125 mm, 150 mm x 180 mm, and 200 mm x 250 mm stage sizes are available.

Rotary stages are available with φ 90 mm and φ 125 mm stage sizes.

◆ 5-phase stepper motor

Equipped as standard with a 5-phase stepper motor with 0.75 A/phase, 0.72° (full)/0.36° (half) step angle.

*The motor is a dedicated THK CHUO specification.

*Z stages are equipped with motors with electromagnetic brakes.

■ Stage specifications

	Stepper motor
Motor control method	Open loop control
Stage operating method	Controller driver communication or operation via operating parts

◆ Environmental measures

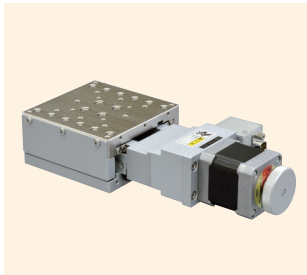
Products that do not contain 10 substances regulated by European RoHS.

Motorized Stages	Automated Products for Microscopes
Manual Stages	
High-Speed Stages	
30 mm x 30 mm Compact Stages	
Cross Roller Stages	
Ball Bushing Stages	
High-Precision/High-Rigidity Stages	
Z-Lift Stages	
Tilt Stages	
Connection Cables	
Actuators	

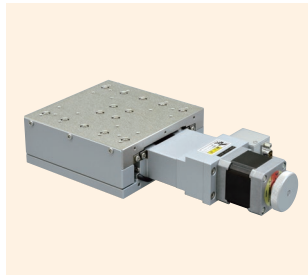
▶ Motorized Stages ▶ Cross Roller Stages

X Stages 90 x 90, 125 x 125, 150 x 180, 200 x 250

V-CR method 0.75 A/phase 0.75 A/phase motor



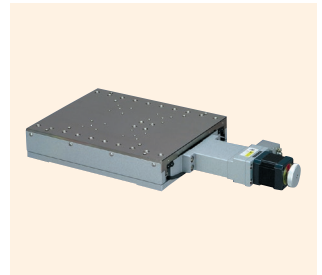
↑ TALS-904-H1PC



↑ TALS-106-H1PC



↑ TALS-510-H1P



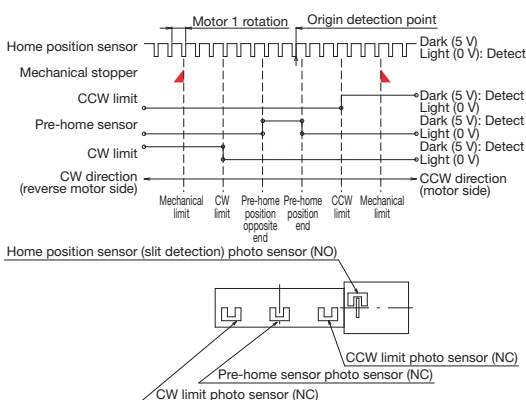
↑ TALS-215-H1P

Features

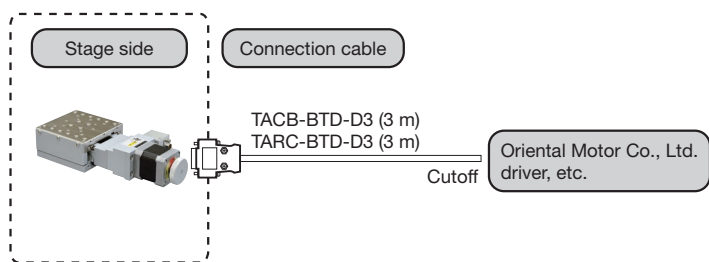
- A motorized stage that adopts a V-groove and cross roller guide for high precision.
- The travel guide and ball screw are coated with clean room grease.
- Can be used for applications for automatic positioning of various sensors and workpieces.
- Pre-home sensor and limit sensor positions can be adjusted.

Model number	TALS-904-H1PC	TALS-106-H1PC	TALS-510-H1P	TALS-215-H1P
Model name	X Stage			
Travel direction	X-axis single direction			
Travel amount	±20 mm	±30 mm	±50 mm	±75 mm
Stage surface	90 mm x 90 mm	125 mm x 125 mm	150 mm x 180 mm	200 mm x 250 mm
Motor used	PK545NBW equivalent (5-wire type pentagonal wiring, 0.75/phase)			
Resolution	0.002 mm			
Feed screw specification	Ball screw			
Feed screw lead	1 mm			
Travel guide	V-groove and cross rollers			
Travel accuracy	Straightness (horizontal/vertical): 0.003 mm		Straightness (horizontal/vertical): 0.004 mm	
	Yawing 15 s, pitching 20 s		Yawing 20 s, pitching 30 s	
Positioning accuracy	0.005 mm	0.006 mm	0.010 mm	0.015 mm
Repeatability	±0.0006 mm	±0.0005 mm	±0.0007 mm	±0.0008 mm
Lost motion	0.001 mm			
Moment rigidity	Yaw rigidity 0.3sec/N-cm, pitch rigidity 0.3sec/N-cm, roll rigidity 0.1sec/N-cm	Yaw rigidity 0.1sec/N-cm, pitch rigidity 0.1sec/N-cm, roll rigidity 0.05sec/N-cm	Yaw rigidity 0.02sec/N-cm, pitch rigidity 0.02sec/N-cm, roll rigidity 0.01sec/N-cm	Yaw rigidity 0.02sec/N-cm, pitch rigidity 0.02sec/N-cm, roll rigidity 0.01sec/N-cm
Load capacity	196 N (20 kgf)	392 N (40 kgf)	490 N (50 kgf)	490 N (50 kgf)
Mass	2.8 kg	4.9 kg	8 kg	14.5 kg
Maximum speed (at 8,000 pps)	16 mm/s			
Main materials/surface treatment	Steel: Electroless nickel plating (table), coating (base)			
Home position sensor	Normally open contact (make contact, A contact) operation, photo sensor			
Pre-home sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Applicable cables	TACB-BTD-D3, TARC-BTD-D3			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

◆ Sensor operating logic and timing chart



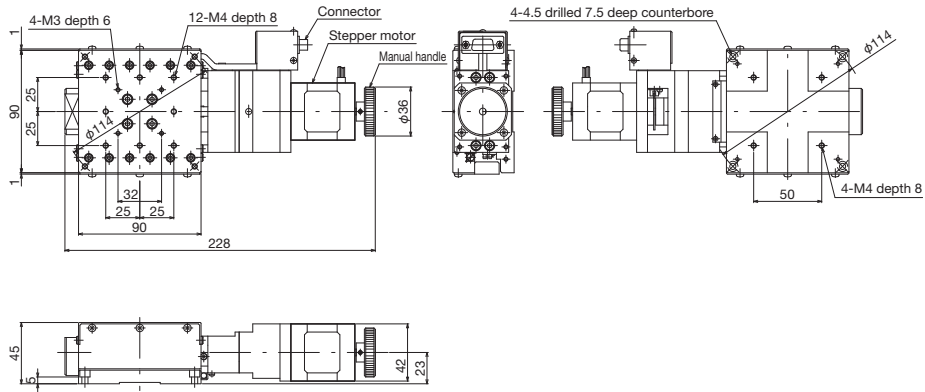
◆ Connection method: Connection cable and driver



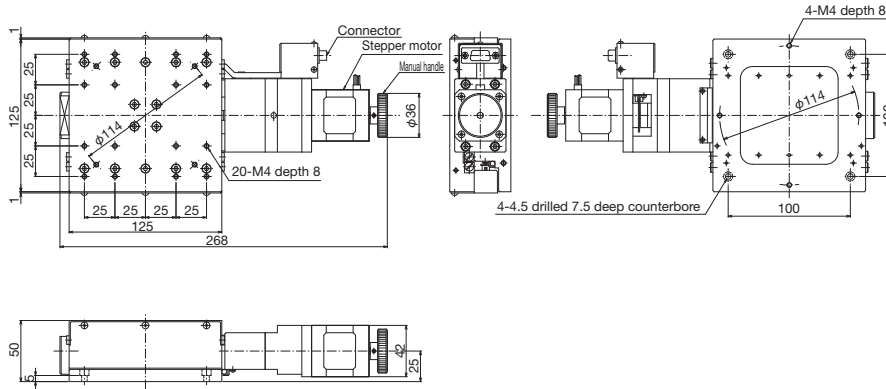


Cross Roller Stages ◀ Motorized Stages ◀

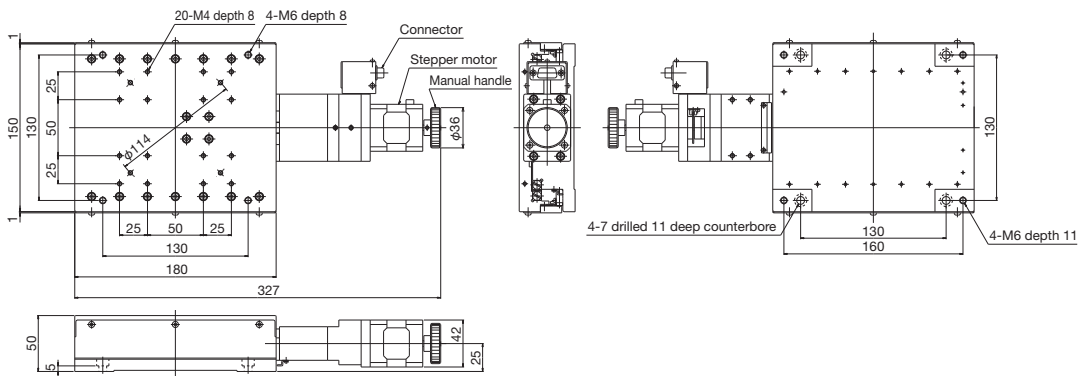
Product Appearance



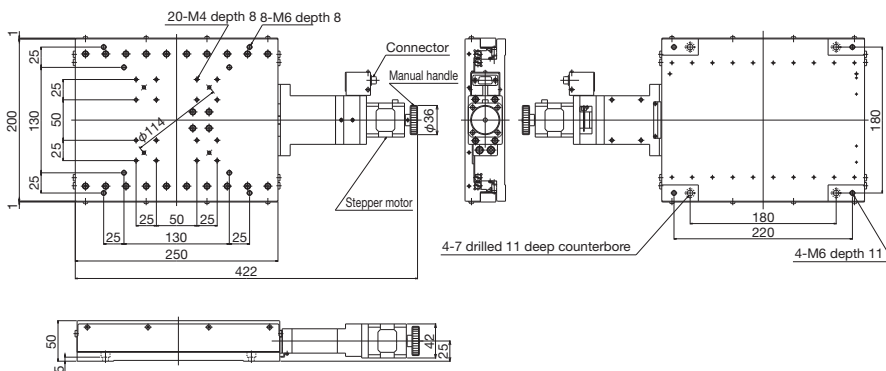
↑ TALS-904-H1PC



↑ TALS-106-H1PC



↑ TALS-510-H1P



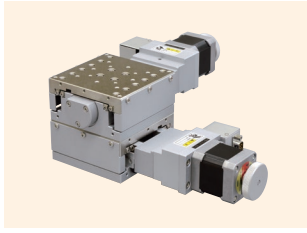
↑ TALS-215-H1P

Motorized Stages	Automated Products for Microscopes	Manual Stages
High-Grade Stages	30 mm x 30 mm (φ30 mm) Compact Stages	Cross Roller Stages
Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Lift Stages
Tilt Stages	Connection Cases	Actuators

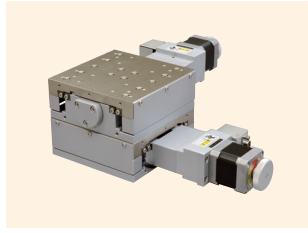
▶ Motorized Stages ▶ Cross Roller Stages

XY Stages 90 x 90, 125 x 125, 150 x 180, 200 x 250

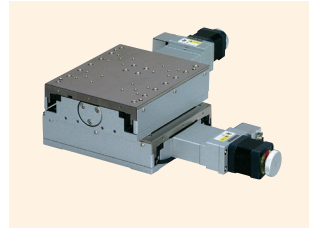
V-CR method **0.75 A/phase** 0.75 A/phase motor



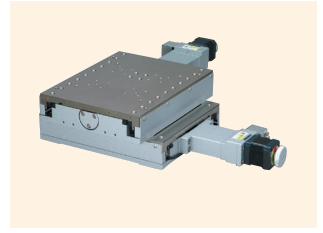
↑ TALD-904-H1PC



↑ TALD-106-H1PC



↑ TALD-510-H1P



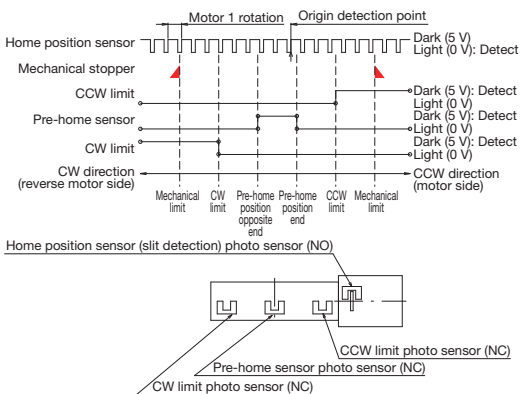
↑ TALD-215-H1P

Features

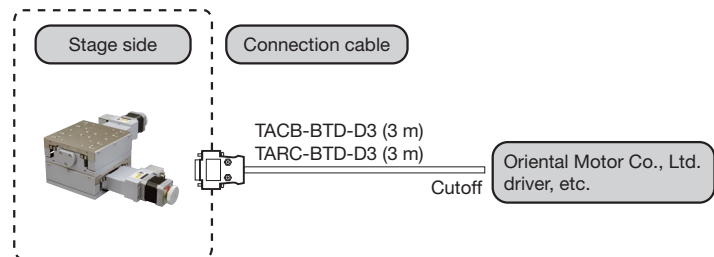
- A motorized XY stage that adopts a V-groove and cross roller guide for high precision.
- The travel guide and ball screw are coated with clean room grease.
- Can be used for applications for automatic positioning of various sensors and workpieces.
- Pre-home sensor and limit sensor positions can be adjusted.

Model number	TALD-904-H1PC	TALD-106-H1PC	TALD-510-H1P	TALD-215-H1P
Model name	XY Stage			
Travel direction	XY-axis double direction			
Travel amount	±20 mm	±30 mm	±50 mm	±75 mm
Stage surface	90 mm x 90 mm	125 mm x 125 mm	150 mm x 180 mm	200 mm x 250 mm
Motor used	PK545NBW equivalent (5-wire type pentagonal wiring, 0.75 A/phase)			
Resolution	0.002 mm			
Feed screw specification	Ball screw			
Feed screw lead	1 mm			
Travel guide	V-groove and cross rollers			
Travel accuracy	Straightness (horizontal/vertical): 0.003 mm		Straightness (horizontal/vertical): 0.004 mm	
Positioning accuracy	0.005 mm	0.006 mm	0.010 mm	0.015 mm
Repeatability	±0.0006 mm	±0.0005 mm	±0.0007 mm	±0.0008 mm
Lost motion	0.001 mm			
XY orthogonality	0.006 mm	0.008 mm	0.01 mm	0.012 mm
Moment rigidity	Yaw rigidity 0.6sec/N-cm, pitch rigidity 0.4sec/N-cm, roll rigidity 0.4sec/N-cm	Yaw rigidity 0.2sec/N-cm, pitch rigidity 0.15sec/N-cm, roll rigidity 0.15sec/N-cm	Yaw rigidity 0.04sec/N-cm, pitch rigidity 0.03sec/N-cm, roll rigidity 0.03sec/N-cm	
Load capacity	166 N (17 kgf)	343 N (35 kgf)	392 N (40 kgf)	343 N (35 kgf)
Mass	5.6 kg	9.8 kg	16 kg	29 kg
Maximum speed (at 8,000 pps)	16 mm/s			
Main materials/surface treatment	Steel: Electroless nickel plating (table), coating (base)			
Home position sensor	Normally open contact (make contact, A contact) operation, photo sensor			
Pre-home sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Applicable cables	TACB-BTD-D3, TARC-BTD-D3			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

◆ Sensor operating logic and timing chart



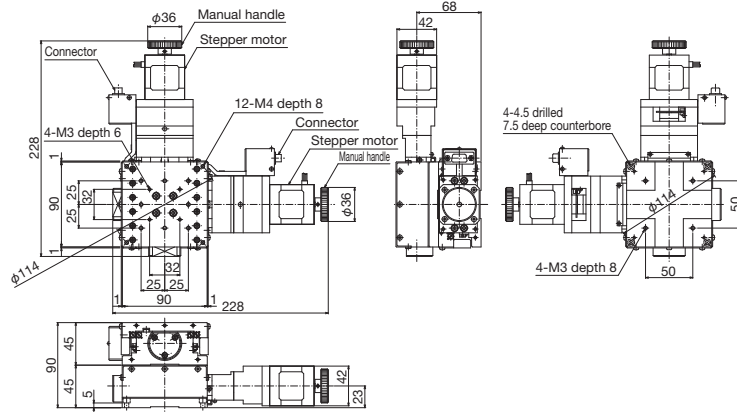
◆ Connection method: Connection cable and driver



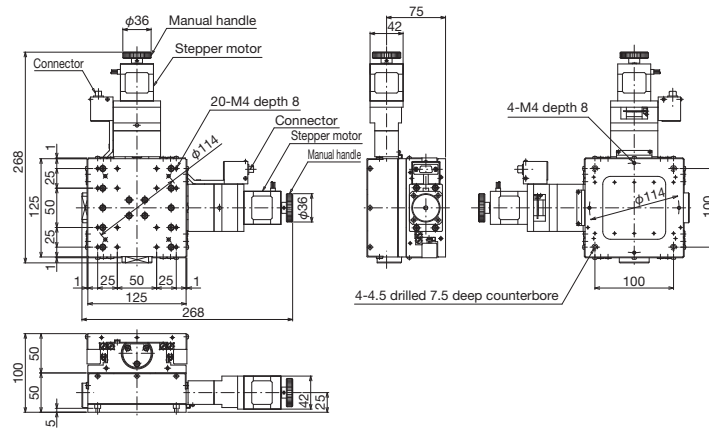


Cross Roller Stages ◀ Motorized Stages ◀

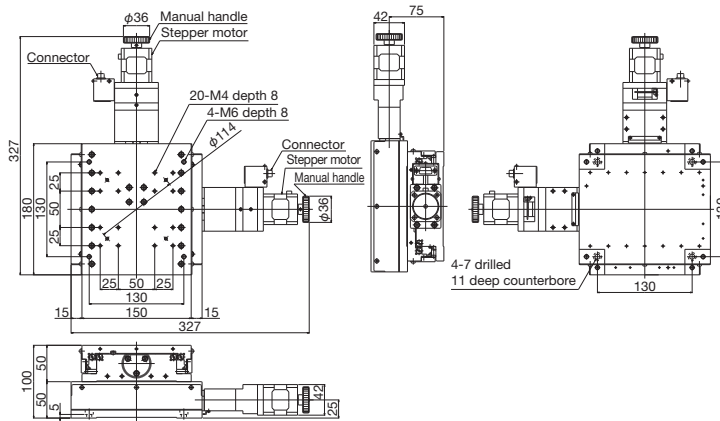
Product Appearance



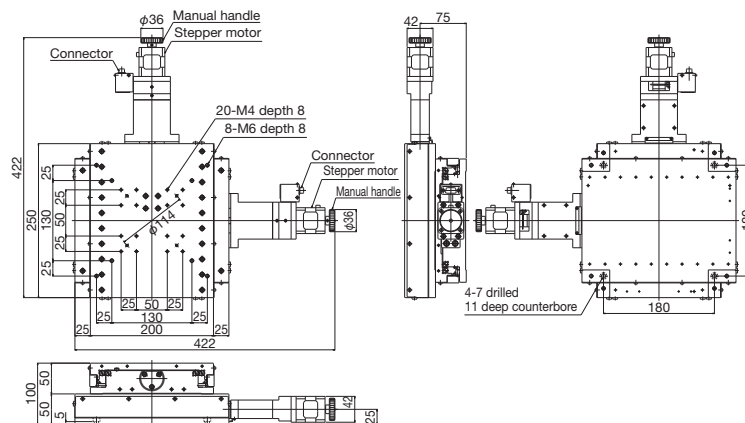
↑ TALD-904-H1PC



↑ TALD-106-H1PC



↑ TALD-510-H1P



↑ TALD-215-H1P

Motorized Stages	Automated Products for Microscopes
Manual Stages	High-Grade Stages
High-Grade Stages	30 mm x 30 mm (φ30 mm) Coarse Stages
Coarse Stages	Cross Roller Stages
Cross Roller Stages	Ball Bushing Stages
Ball Bushing Stages	High-Precision/High-Rigidity Stages
High-Precision/High-Rigidity Stages	Z-Lift Stages
Z-Lift Stages	Tilt Stages
Tilt Stages	Connection Cases
Connection Cases	Actuators

▶ Motorized Stages ▶ Cross Roller Stages

Z Stages 90 x 90, 125 x 125, 150 x 180, 200 x 250

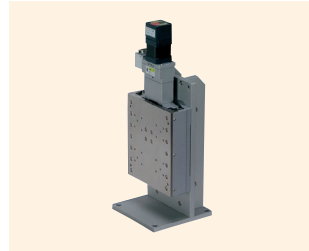
V-CR method **0.75 A/phase** 0.75 A/phase motor



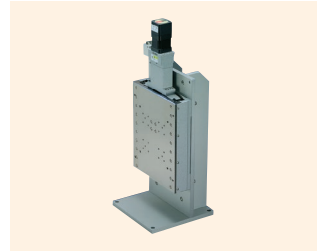
↑ TALZ-904-H1P



↑ TALZ-106-H1P



↑ TALZ-510-H1P



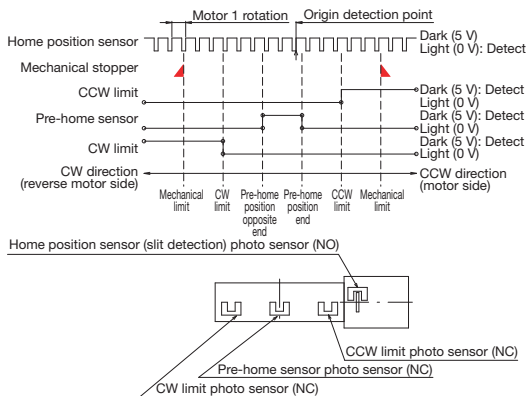
↑ TALZ-215-H1P

Features

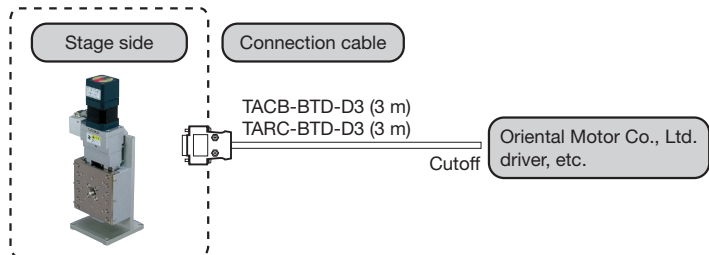
- A motorized stage that adopts a V-groove and cross roller guide for high precision.
- The travel guide is coated with clean room grease.
- Can be used for applications for automatic positioning of various sensors and workpieces.
- Pre-home sensor and limit sensor positions can be adjusted.
- With electromagnetic brake to prevent the table from falling.

Model number	TALZ-904-H1P	TALZ-106-H1P	TALZ-510-H1P	TALZ-215-H1P
Model name	Z Stage			
Travel direction	Z-axis single direction			
Travel amount	±20 mm	±30 mm	±50 mm	±75 mm
Stage surface	90 mm x 90 mm	125 mm x 125 mm	150 mm x 180 mm	200 mm x 250 mm
Motor used	PK545NAW equivalent with electromagnetic brake (5-wire type pentagonal wiring, 0.75 A/phase)			
Resolution	0.002 mm			
Feed screw lead	1 mm			
Travel guide	V-groove and cross rollers			
Travel accuracy	Straightness (horizontal/vertical): 0.003 mm		Straightness (horizontal/vertical): 0.004 mm	
	Yawing 15 s, pitching 20 s		Yawing 20 s, pitching 30 s	
Positioning accuracy	0.005 mm	0.006 mm	0.010 mm	0.015 mm
Repeatability	±0.0006 mm	±0.0005 mm	±0.0007 mm	±0.0008 mm
Lost motion	0.001 mm			
Moment rigidity	Yaw rigidity 0.3sec/N-cm, pitch rigidity 0.4sec/N-cm, roll rigidity 0.15sec/N-cm	Yaw rigidity 0.1sec/N-cm, pitch rigidity 0.5sec/N-cm, roll rigidity 0.4sec/N-cm	Yaw rigidity 0.05sec/N-cm, pitch rigidity 0.6sec/N-cm, roll rigidity 0.6sec/N-cm	
	Load capacity 98 N (10 kgf)			
Mass	4.7 kg	8.9 kg	15.4 kg	26.7 kg
Maximum speed (at 5,000 pps)	10 mm/s			
Main materials/surface treatment	Steel, aluminum (brackets): Electroless nickel plating (table), coating (base), white anodized satin finish			
Home position sensor	Normally open contact (make contact, A contact) operation, photo sensor			
Pre-home sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Applicable cables	TACB-BTD-D3, TARC-BTD-D3			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

◆ Sensor operating logic and timing chart



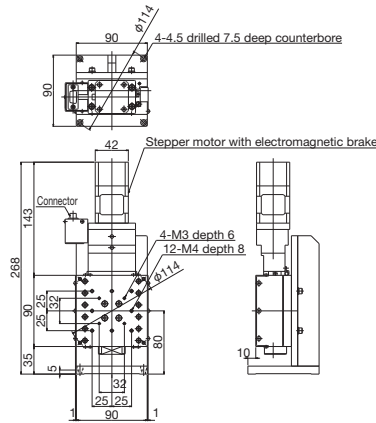
◆ Connection method - connection cable and driver



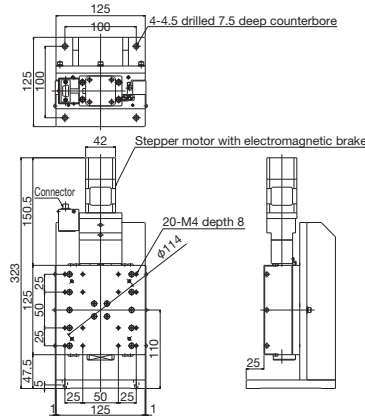


Cross Roller Stages ◀ Motorized Stages ◀

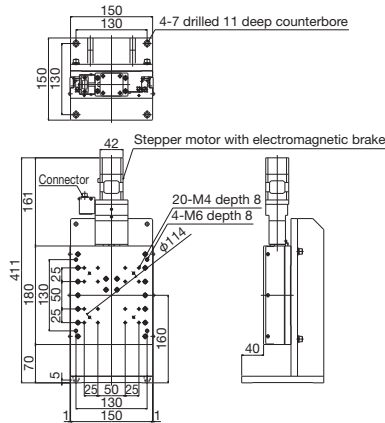
Product Appearance



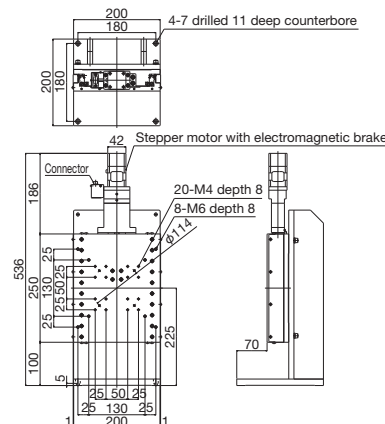
↑ TALZ-904-H1P



↑ TALZ-106-H1P



↑ TALZ-510-H1P



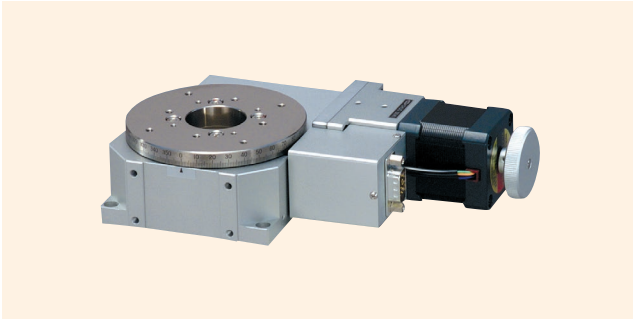
↑ TALZ-215-H1P

Motorized Stages	Automated Products for Microscopes	Manual Stages	High-Grade Stages	30 mm x 30 mm Connector Stages	Cross Roller Stages	Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Lift Stages	Tilt Stages	Connection Cases	Actuators
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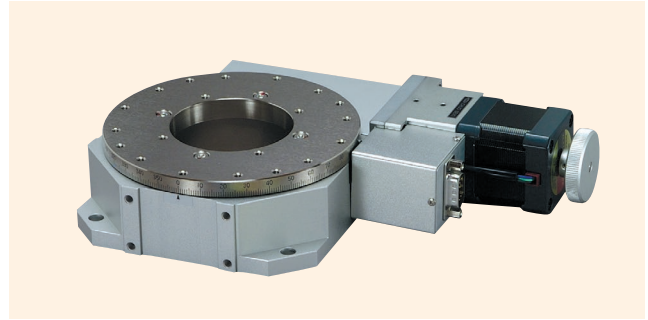
Rotary Stages $\phi 90$, $\phi 125$

Rotating bearing Method

0.75 A/phase 0.75 A/phase motor



↑ TARS-936-HP



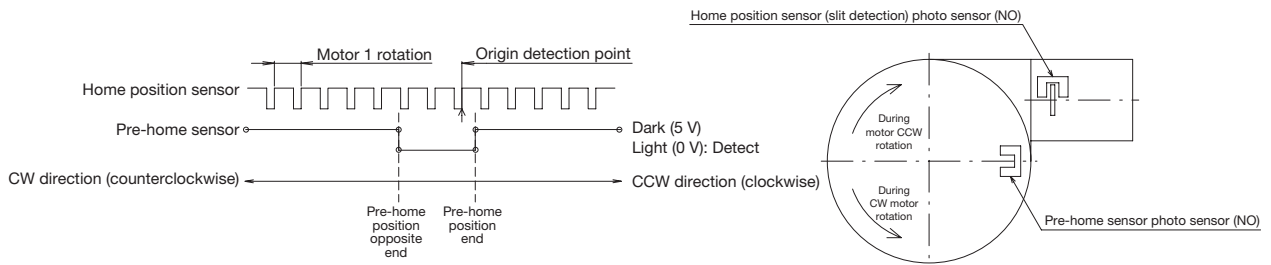
↑ TARS-136-HP

Features

- A rotary stage adopting cross roller bearings for the travel guide.
- The center has transmission holes drilled.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number	TARS-936-HP	TARS-136-HP
Model name	Rotary Stage	
Travel direction	Rotation direction	
Travel amount	360°	
Stage surface	$\phi 90$ mm	$\phi 125$ mm
Motor used	PK545NBW equivalent (5-wire type pentagonal wiring, 0.75 A/phase)	
Resolution	0.004°	
Travel guide	Cross roller bearings	
Runout	0.01 mm	
Surface runout	0.015 mm	
Positioning accuracy	0.025°	
Repeatability	$\pm 0.003^\circ$	
Lost motion	0.003°	
Moment rigidity	0.2sec/N-cm	0.15sec/N-cm
Parallelism	0.05 mm	
Load capacity	98 N (10 kgf)	147 N (15 kgf)
Mass	2.4 kg	3 kg
Maximum speed (at 5,000 pps)	20°/s	
Main materials/surface treatment	Steel (table), aluminum (base): Electroless nickel plating, white anodized satin finish	
Home position sensor	Normally open contact (make contact, A contact) operation, photo sensor	
Pre-home sensor	Normally open contact (make contact, A contact) operation, photo sensor	
Limit sensor	-	
Applicable cables	TACB-BTD-D3, TARC-BTD-D3	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain	

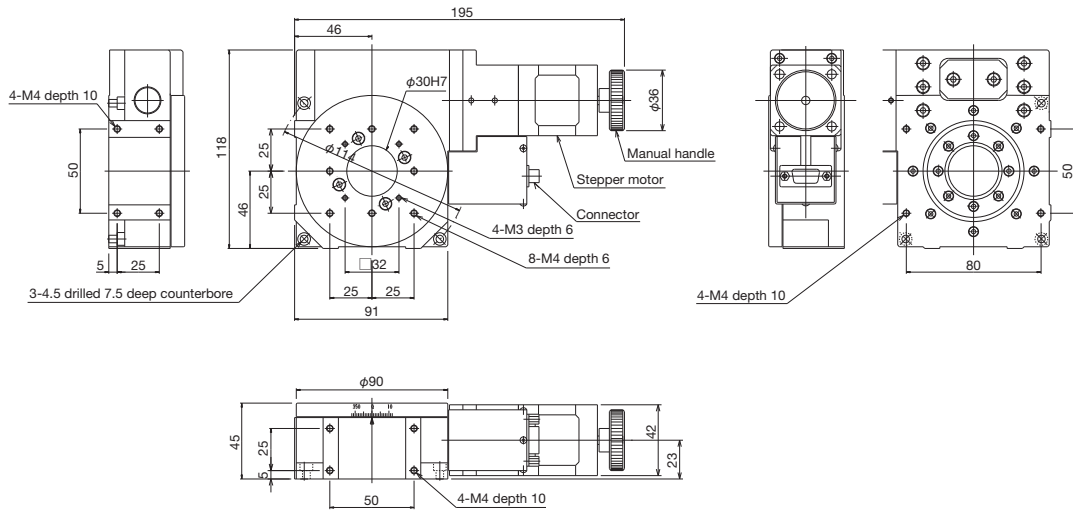
◆ Sensor operating logic and timing chart



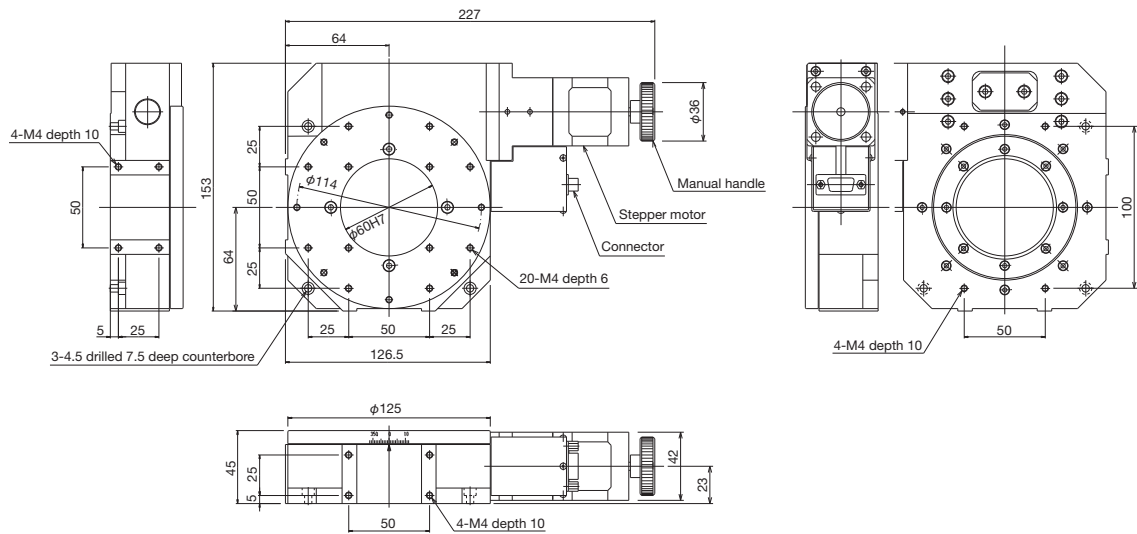


Cross Roller Stages ◀ Motorized Stages ◀

Product Appearance

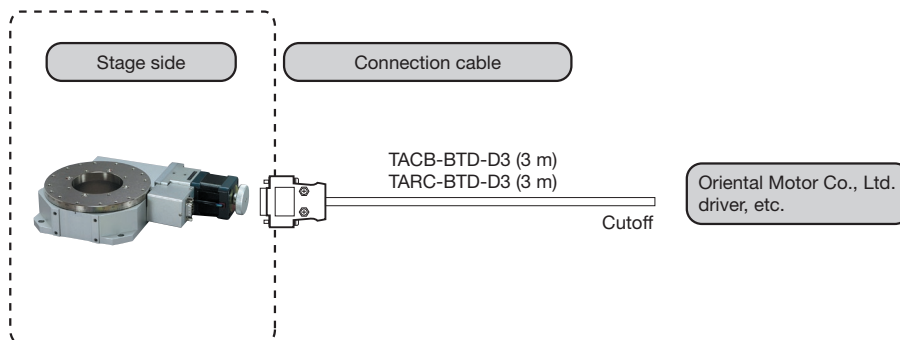


↑ TARS-936-HP



↑ TARS-136-HP

◆ Connection method: Connection cable and driver


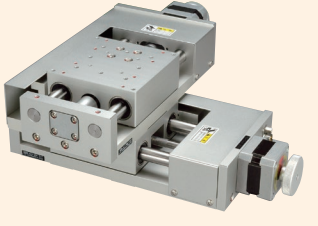



Motorized Stages	Automated Products for Microscopes	Manual Stages	High-Capacity Stages	30 mm x 30 mm Compact Stages	Cross Roller Stages	Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Lift Stages	Tilt Stages	Connection Cases	Actuators
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▶ Motorized Stages ▶ Ball Bushing Stages | Product List

Motorized Stages
Automated Products for Microscopes
Manual Stages
High-Grade Stages
30 mm x 30 mm Contact Stages
Cross Roller Stages
Ball Bushing Stages
High-Precision/High-Rigidity Stages
Z-Like Stages
Tilt Stages
Connection Cables
Actuators

Page	Example product photo	Type	Model number	Stage surface	Travel amount (total travel amount)
55		X Stage	TALS-604-E1P	60 mm x 60 mm	±20 mm (40 mm)
			TALS-906-E1P	90 mm x 90 mm	±30 mm (60 mm)
			TALS-115-E1P	125 mm x 125 mm	±75 mm (150 mm)
57		XY Stage	TALD-604-E1P	60 mm x 60 mm	±20 mm (40 mm)
			TALD-906-E1P	90 mm x 90 mm	±30 mm (60 mm)
			TALD-115-E1P	125 mm x 125 mm	±75 mm (150 mm)
59		Z Stage	TALZ-604-E1P	60 mm x 60 mm	±20 mm (40 mm)
			TALZ-906-E1P	90 mm x 90 mm	±30 mm (60 mm)
			TALZ-115-E1P	125 mm x 125 mm	±75 mm (150 mm)

Page	Type	Model number	Function
85	Connection cable	TACB-BTD-D3	Driver connection cable 3 m
		TARC-BTD-D3	Driver connection cable 3 m (robot cable specification)
			For connecting customer-supplied drivers, with stage side connectors



Features | Ball Bushing Stages ◀ Motorized Stages ◀

◆ Ball bushing guides

Two ball slide bearings and one shaft make one set, and two sets are used as one pair for the guide.

The ball bushing guides can be affected easily by stage mounting surface accuracy or loads, and the steel balls and shaft are only in point contact, so this stage is suitable for light loads.

■ Guide method comparison table

	Travel accuracy	Load capacity	Rigidity
V-groove and cross rollers (HG-VCR)	☆	☆	☆
V-groove and cross rollers	◎	◎	◎
Ball bushing	△	△	△

☆: Outstanding ◎: Excellent △: Fair

◆ Home position/pre-home sensor included as standard equipment

A home position sensor and pre-home sensor are equipped as standard, enabling high-accuracy return to home position.

Pre-home sensor position can be adjusted.

◆ Limit sensor

Limit sensors are equipped as standard and position can be adjusted.

◆ 3 sizes

Stage surfaces are available in 60 mm x 60 mm, 90 mm x 90 mm, and 125 mm x 125 mm sizes.

◆ 5-phase stepper motor

Equipped as standard with a 5-phase stepper motor with 0.75 A/phase, 0.72° (full)/0.36° (half) step angle.

*The motor is a dedicated THK CHUO specification.

‡Z stages are equipped with motors with electromagnetic brakes.

■ Stage specifications

	Stepper motor
Motor control method	Open loop control
Stage operating method	Controller driver communication or operation via operating parts

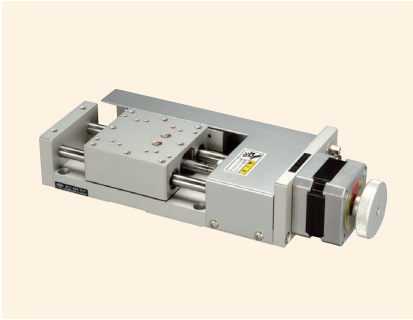
◆ Environmental measures

Products that do not contain 10 substances regulated by European RoHS.

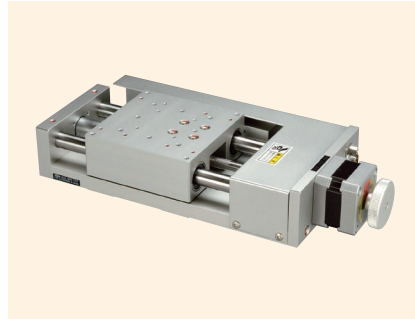
Motorized Stages	Automated Products for Microscopes
	Manual Stages
	High-Grade Stages
	30 mm x 30 mm (ø30 mm) Compact Stages
	Cross Roller Stages
	Ball Bushing Stages
	High-Precision/High-Rigidity Stages
	Z-Lift Stages
	Tilt Stages
	Connection Cables
	Actuators

X Stages 60 x 60, 90 x 90, 125 x 125

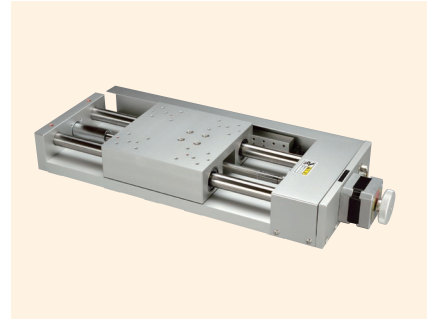
0.75 A/phase 0.75 A/phase motor



↑ TALS-604-E1P



↑ TALS-906-E1P



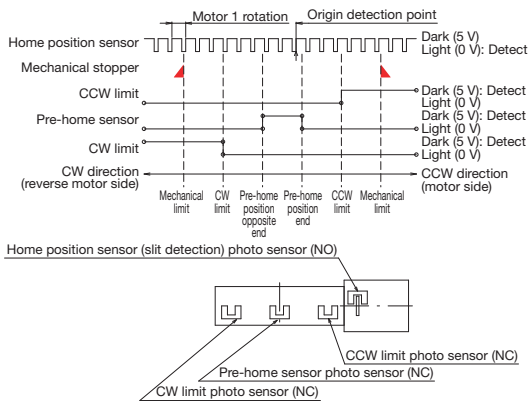
↑ TALS-115-E1P

Features

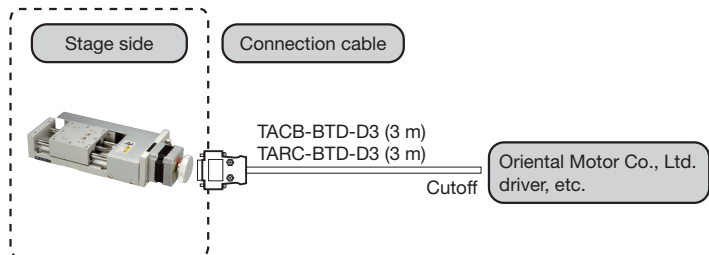
- A motorized stage that adopts ball bushings for medium precision.
- Can be used for applications for automatic positioning of various sensors and workpieces.
- Pre-home sensor and limit sensor positions can be adjusted.

Model number	TALS-604-E1P	TALS-906-E1P	TALS-115-E1P
Model name	X Stage		
Travel direction	X-axis single direction		
Travel amount	±20 mm	±30 mm	±75 mm
Stage surface	60 mm x 60 mm	90 mm x 90 mm	125 mm x 125 mm
Motor used	PK543NBW equivalent (5-wire type pentagonal wiring, 0.75 A/phase)		
Resolution	0.002 mm		
Feed screw specification	Ball screw		
Feed screw lead	1 mm		
Travel guide	Ball bushing		
Travel accuracy	Straightness (horizontal/vertical): 0.015 mm		
Positioning accuracy	0.03 mm	0.04 mm	
Repeatability	±0.003 mm	±0.003 mm	
Lost motion	0.01 mm		
Load capacity	49 N (5 kgf)	98 N (10 kgf)	147 N (15 kgf)
Mass	1.2 kg	2.5 kg	5.5 kg
Maximum speed (at 8,000 pps)	16 mm/s		
Main materials/surface treatment	Aluminum alloy/white satin anodized finish		
Home position sensor	Normally open contact (make contact, A contact) operation, photo sensor		
Pre-home sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Applicable cables	TACB-BTD-D3, TARC-BTD-D3		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

◆ Sensor operating logic and timing chart



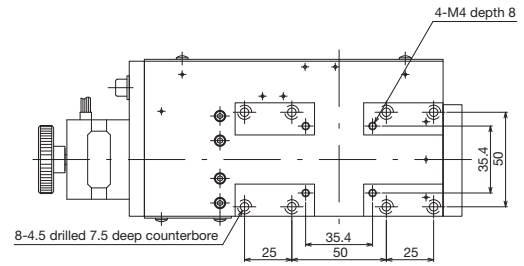
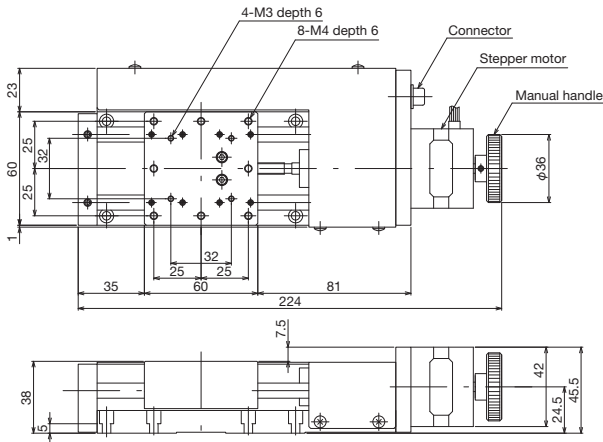
◆ Connection method: Connection cable and driver



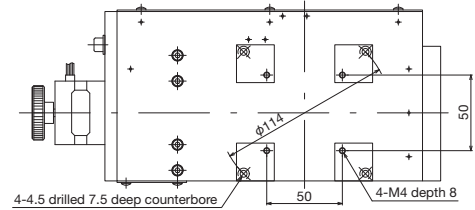
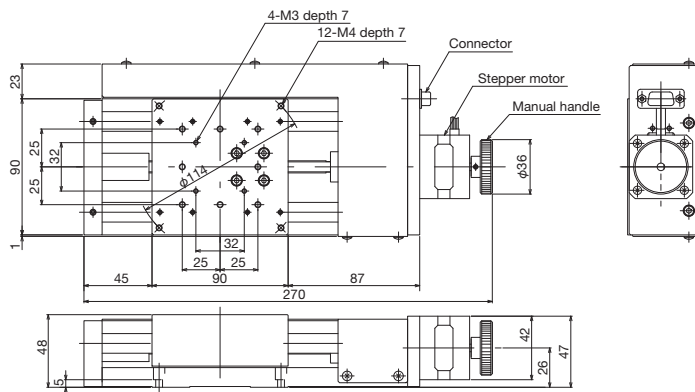


Ball Bushing Stages ◀ Motorized Stages ◀

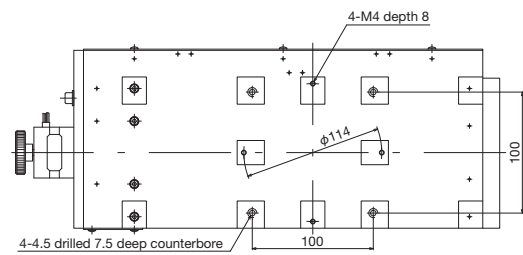
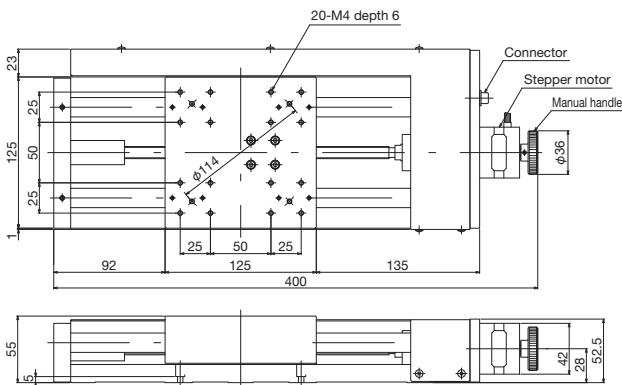
Product Appearance



↑ TALS-604-E1P



↑ TALS-906-E1P

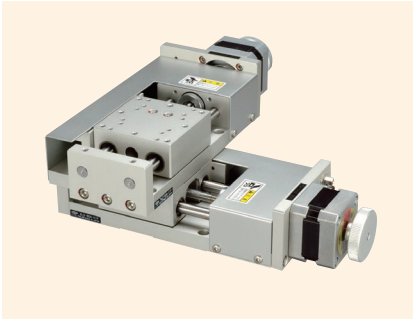


↑ TALS-115-E1P

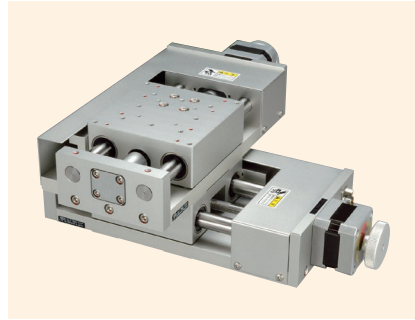
Motorized Stages	Automated Products for Microscopes	Manual Stages	High-Grade Stages	30 mm x 30 mm Corner Stages	Class Roller Stages	Ball Bushing High-Precision Stages	High-Precision High-Rigidity Stages	Z-Lift Stages	Tilt Stages	Connection Cases	Actuators
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XY Stages 60 x 60, 90 x 90, 125 x 125

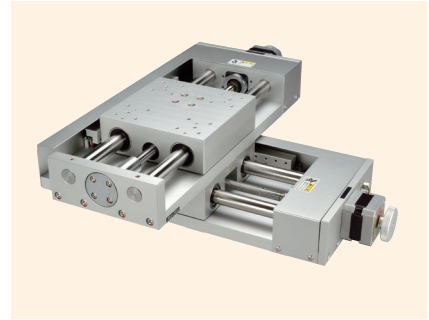
0.75 A/phase 0.75 A/phase motor



↑ TALD-604-E1P



↑ TALD-906-E1P



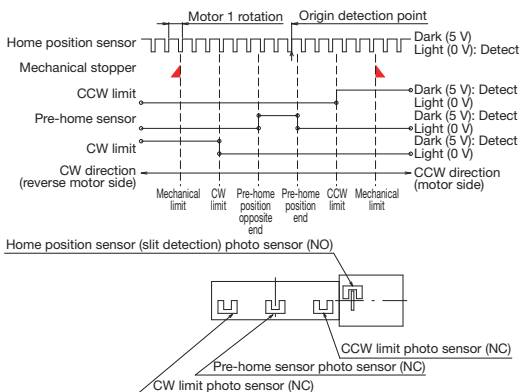
↑ TALD-115-E1P

Features

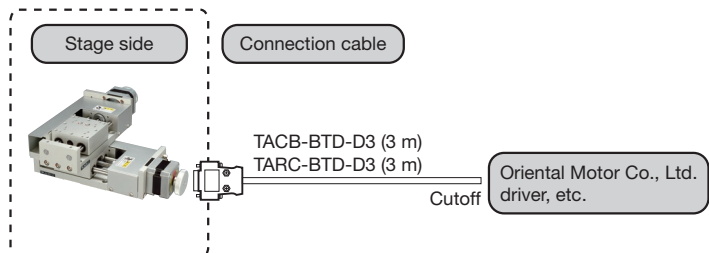
- A motorized XY stage that adopts ball bushings for medium precision.
- Can be used for applications for automatic positioning of various sensors and workpieces.
- Pre-home sensor and limit sensor positions can be adjusted.

Model number	TALD-604-E1P	TALD-906-E1P	TALD-115-E1P
Model name	XY Stage		
Travel direction	XY-axis double direction		
Travel amount	±20 mm	±30 mm	±75 mm
Stage surface	60 mm x 60 mm	90 mm x 90 mm	125 mm x 125 mm
Motor used	PK543NBW equivalent (5-wire type pentagonal wiring, 0.75 A/phase)		
Resolution	0.002 mm		
Feed screw specification	Ball screw		
Feed screw lead	1 mm		
Travel guide	Ball bushing		
Travel accuracy	Straightness (horizontal/vertical): 0.05 mm		Straightness (horizontal/vertical): 0.08 mm
Positioning accuracy	0.05 mm (no load), 0.15 mm (4 kg load)		0.10 mm (no load), 0.60 mm (10 kg load)
Repeatability	±0.003 mm		±0.015 mm
Lost motion	0.01 mm		0.03 mm
XY orthogonality	0.06 mm		
Load capacity	39.2 N (4 kgf)	78.4 N (8 kgf)	98 N (10 kgf)
Mass	2.4 kg	5 kg	11 kg
Maximum speed (at 8,000 pps)	16 mm/s		
Main materials/surface treatment	Aluminum alloy/white satin anodized finish		
Home position sensor	Normally open contact (make contact, A contact) operation, photo sensor		
Pre-home sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Applicable cables	TACB-BTD-D3, TARC-BTD-D3		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

◆ Sensor operating logic and timing chart



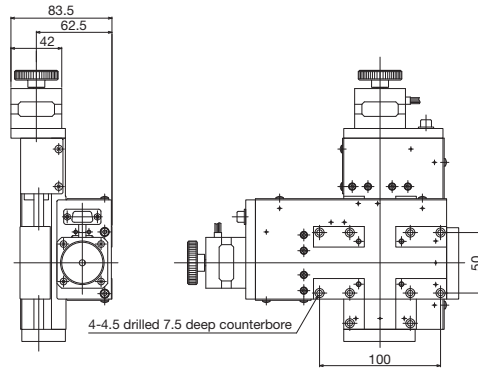
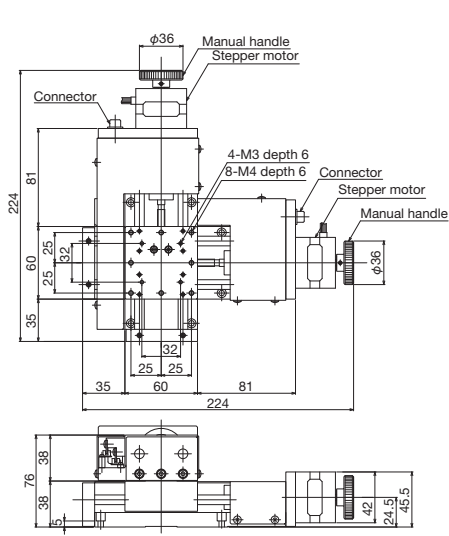
◆ Connection method: Connection cable and driver



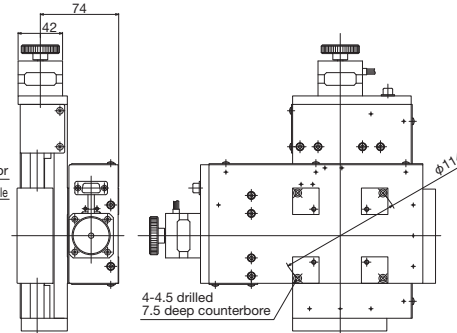
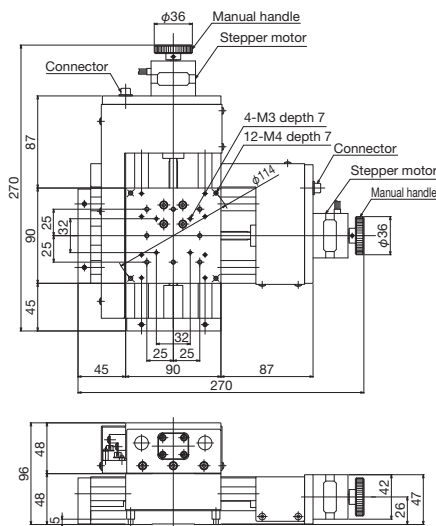


Ball Bushing Stages ◀ Motorized Stages ◀

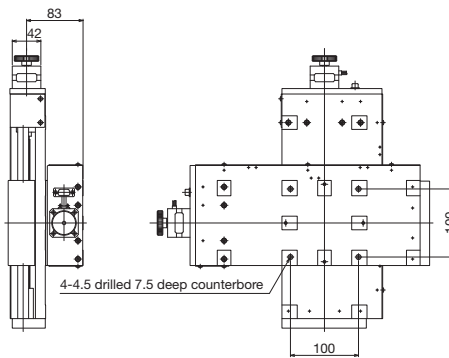
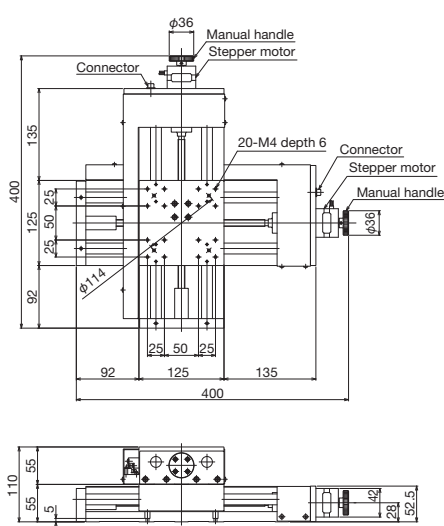
Product Appearance



↑ TALD-604-E1P



↑ TALD-906-E1P



↑ TALD-115-E1P

Motorized Stages	Automated Products for Microscopes	Manual Stages	High-Grade Stages	30 mm x 30 mm Contact Stages	Class Roller Stages	Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Like Stages	Tilt Stages	Connection Cases	Actuators
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Z Stages 60 x 60, 90 x 90, 125 x 125

0.75 A/phase 0.75 A/phase motor



↑ TALZ-604-E1P



↑ TALZ-906-E1P



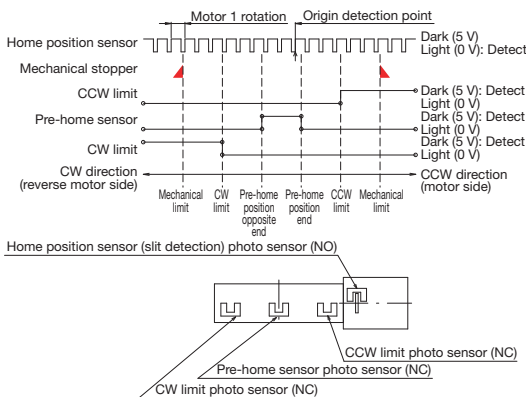
↑ TALZ-115-E1P

Features

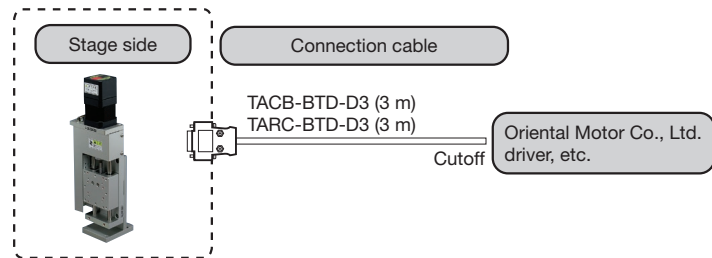
- A motorized stage that adopts ball bushings for medium precision.
- Can be used for applications for automatic positioning of various sensors and workpieces.
- Pre-home sensor and limit sensor positions can be adjusted.
- With electromagnetic brake to prevent the table from falling.

Model number	TALZ-604-E1P	TALZ-906-E1P	TALZ-115-E1P
Model name	Z Stage		
Travel direction	Z-axis single direction		
Travel amount	±20 mm	±30 mm	±75 mm
Stage surface	60 mm x 60 mm	90 mm x 90 mm	125 mm x 125 mm
Motor used	PK545NAW equivalent with electromagnetic brake (5-wire type pentagonal wiring, 0.75 A/phase)		
Resolution	0.002 mm		
Feed screw lead	1 mm		
Travel guide	Ball bushing		
Travel accuracy	Straightness (horizontal/vertical): 0.015 mm		
Positioning accuracy	0.03 mm		0.04 mm
Repeatability	±0.003 mm		
Lost motion	0.01 mm		
Load capacity	29.4 N (3 kgf)	49 N (5 kgf)	78.4 N (8 kgf)
Mass	1.6 kg	3.1 kg	7.3 kg
Maximum speed (at 5,000 pps)	10 mm/s		
Main materials/surface treatment	Aluminum alloy/white satin anodized finish		
Home position sensor	Normally open contact (make contact, A contact) operation, photo sensor		
Pre-home sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Applicable cables	TACB-BTD-D3, TARC-BTD-D3		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

◆ Sensor operating logic and timing chart



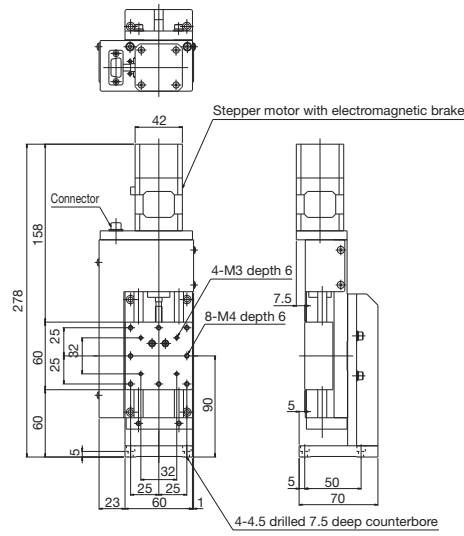
◆ Connection method: Connection cable and driver



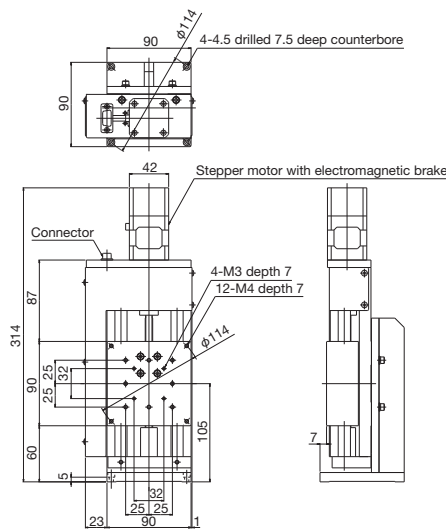


Ball Bushing Stages ◀ Motorized Stages ◀

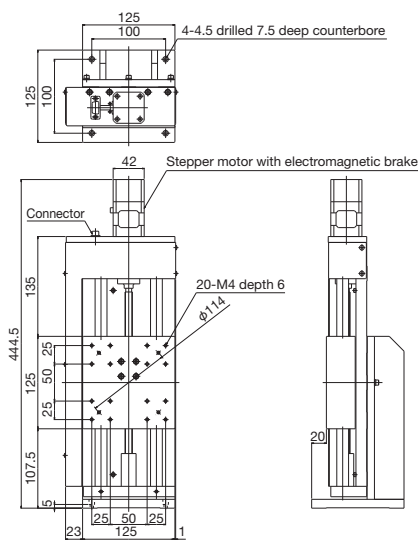
Product Appearance



↑ TALZ-604-E1P



↑ TALZ-906-E1P



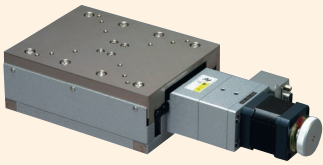
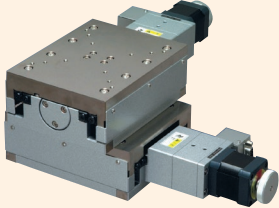

↑ TALZ-115-E1P

Motorized Stages	Automated Products for Microscopes	Manual Stages	High-Grade Stages (40 mm)	30 mm x 30 mm Contact Stages	Class Roller Stages	Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Lift Stages	Tilt Stages	Connection Cables	Actuators
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▶ Motorized Stages ▶ High-Precision/High-Rigidity Stages | Product List

Motorized Stages
Automated Products for Microscopes
Manual Stages
High-Grade Stages
30 mm x 30 mm (ø30 mm) Compact Stages
Cross Roller Stages
Ball Bushing Stages
High-Precision/High-Rigidity Stages
Z-Lift Stages
Tilt Stages
Connection Cables
Actuators

Page	Example product photo	Type	Model number	Stage surface	Travel amount (total travel amount)
63		X Stage	TALS-903-H1S	90 mm x 100 mm	±15 mm (30 mm)
			TALS-105-H1S	125 mm x 160 mm	±25 mm (50 mm)
			TALS-510-H1S	150 mm x 200 mm	±50 mm (100 mm)
65		XY Stage	TALD-903-H1S	90 mm x 100 mm	±15 mm (30 mm)
			TALD-105-H1S	125 mm x 160 mm	±25 mm (50 mm)
			TALD-510-H1S	150 mm x 200 mm	±50 mm (100 mm)
67		Z Stage	TALZ-903-H1S	90 mm x 100 mm	±15 mm (30 mm)
			TALZ-105-H1S	125 mm x 160 mm	±25 mm (50 mm)
			TALZ-510-H1S	150 mm x 200 mm	±50 mm (100 mm)

Page	Type	Model number	Function
85	Connection cable	TACB-BTD-D3	Driver connection cable 3 m
		TARC-BTD-D3	Driver connection cable 3 m (robot cable specification)
			For connecting customer-supplied drivers, with stage side connectors



Features | High-Precision/High-Rigidity Stages ◀ Motorized Stages ◀

◆ High-precision/high-rigidity stages

Through efforts to improve machine accuracy, straightness is down to 1 μm or less, repeatability is ±0.5 μm or less, and moment rigidity is 2 times that of conventional products, resulting in a high-precision, high-rigidity motorized stage.

◆ Cross roller guide

Uses a V-groove guide type and cross rollers to achieve a motorized stage with high precision and high rigidity.

■ Guide method comparison table

	Travel accuracy	Load capacity	Rigidity
V-groove and cross rollers (HG-VCR)	☆	☆	☆
V-groove and cross rollers	◎	◎	◎
Ball bushing	△	△	△

☆: Outstanding ◎: Excellent △: Fair

◆ Home position/pre-home sensor included as standard equipment

A home position sensor and pre-home sensor are equipped as standard, enabling high-accuracy return to home position.

Pre-home sensor position can be adjusted.

◆ Limit sensor

Limit sensors are equipped as standard and position can be adjusted.

◆ 3 travel directions and 3 sizes

X stage/XY stage/Z stage movement direction types with 90 mm x 100 mm, 125 mm x 160 mm, and 150 mm x 200 mm stage sizes are available.

◆ 5-phase stepper motor

Equipped as standard with a 5-phase stepper motor with 0.75 A/phase, 0.72° (full)/0.36° (half) step angle.

*The motor is a dedicated THK CHUO specification.

*Z stages are equipped with motors with electromagnetic brakes.

■ Stage specification comparison chart due to motor differences

	Stepper motor
Motor control method	Open loop control
Stage operating method	Controller driver communication or operation via operating parts

◆ Environmental measures

Products that do not contain 10 substances regulated by European RoHS.

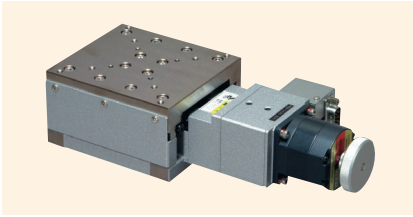
Motorized Stages
Automated Products for Microscopes
Manual Stages
High-Grade Stages
30 mm x 30 mm (40 mm) Contact Stages
Cross Roller Stages
Ball Bushing Stages
High-Precision/High-Rigidity Stages
Z Lift Stages
Tilt Stages
Connection Cases
Actuators

X Stages - High-Precision/High-Rigidity Type

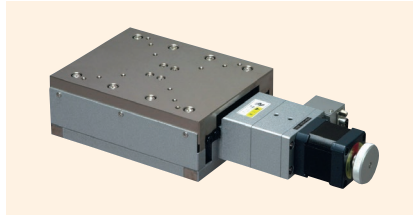


0.75 A/phase

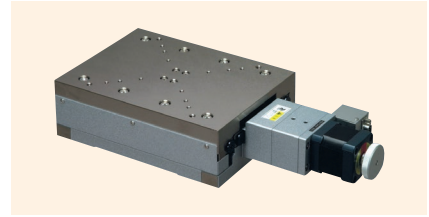
0.75 A/phase motor



↑ TALS-903-H1S



↑ TALS-105-H1S



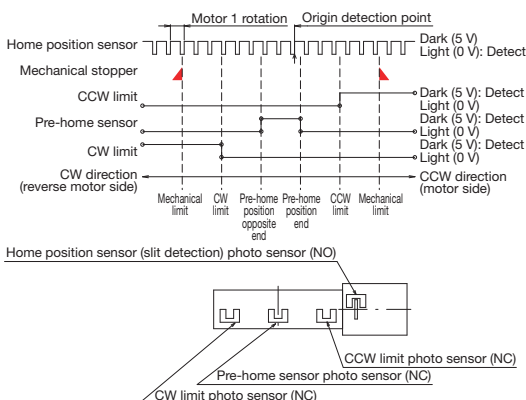
↑ TALS-510-H1S

Features

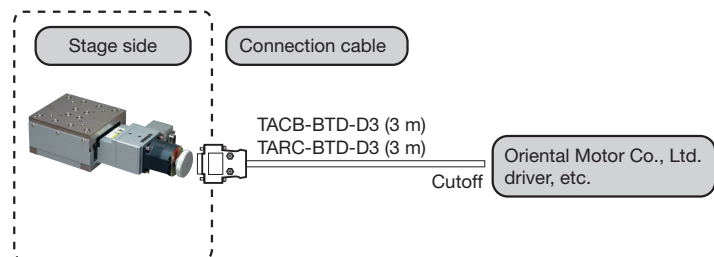
- An ultra-high accuracy motorized X stage for increased machine accuracy.
- Can be used for applications for automatic positioning of various sensors and workpieces.
- Pre-home sensor and limit sensor positions can be adjusted.

Model number	TALS-903-H1S	TALS-105-H1S	TALS-510-H1S
Model name	X Stage - High-Precision/High-Rigidity Type		
Travel direction	X-axis single direction		
Travel amount	±15 mm	±25 mm	±50 mm
Stage surface	90 mm x 100 mm	125 mm x 160 mm	150 mm x 200 mm
Motor used	PK543NBW equivalent (5-wire type pentagonal wiring, 0.75 A/phase)	PK545NBW equivalent (5-wire type pentagonal wiring, 0.75 A/phase)	
Resolution	0.002 mm		
Feed screw specification	Ball screw		
Feed screw lead	1 mm		
Travel guide	V-groove and cross rollers		
Travel accuracy	Straightness (horizontal/vertical): 0.0007 mm Yaw/pitch 4 s	Straightness (horizontal/vertical): 0.0008 mm Yaw/pitch 6 s	Straightness (horizontal/vertical): 0.001 mm Yaw/pitch 6 s
Positioning accuracy	0.002 mm	0.003 mm	0.005 mm
Repeatability	±0.0005 mm		
Lost motion	0.0005 mm		
Moment rigidity	Yaw rigidity 0.1 s/N-cm, pitch rigidity 0.1 s/N-cm, roll rigidity 0.05 s/N-cm	Yaw rigidity 0.05 s/N-cm, pitch rigidity 0.05 s/N-cm, roll rigidity 0.03 s/N-cm	Yaw rigidity 0.01 s/N-cm, pitch rigidity 0.01 s/N-cm, roll rigidity 0.01 s/N-cm
Load capacity	196 N (20 kgf)	392 N (40 kgf)	490 N (50 kgf)
Mass	3.5 kg	8.2 kg	12.8 kg
Maximum speed (at 8,000 pps)	16 mm/s		
Main materials/surface treatment	Steel: Electroless nickel plating (table), coating (base)		
Home position sensor	Normally open contact (make contact, A contact) operation, photo sensor		
Pre-home sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Applicable cables	TACB-BTD-D3, TARC-BTD-D3		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

◆ Sensor operating logic and timing chart



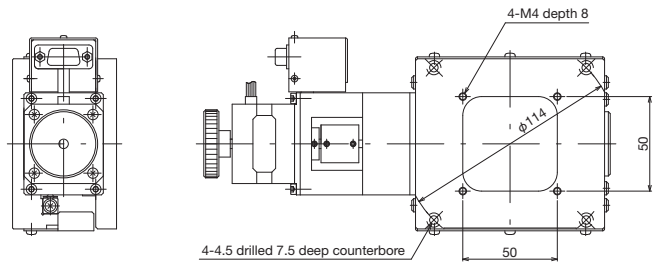
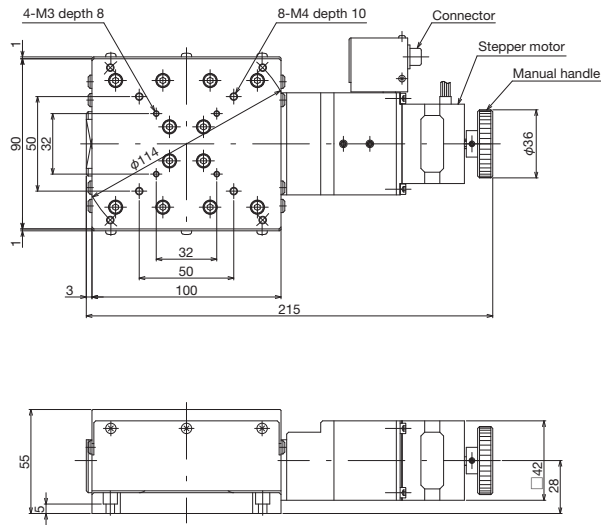
◆ Connection method: Connection cable and driver



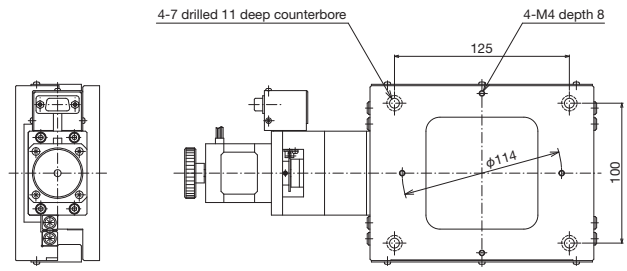
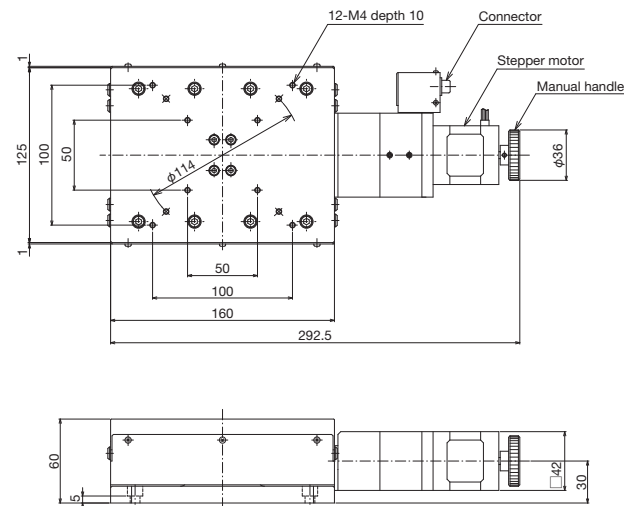


High-Precision/High-Rigidity Stages ◀ Motorized Stages ◀

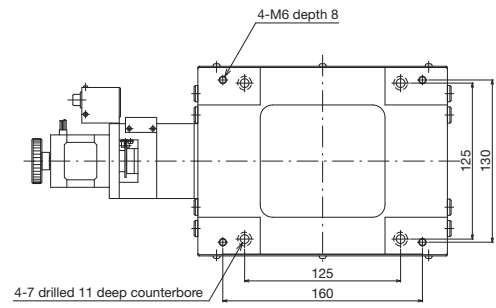
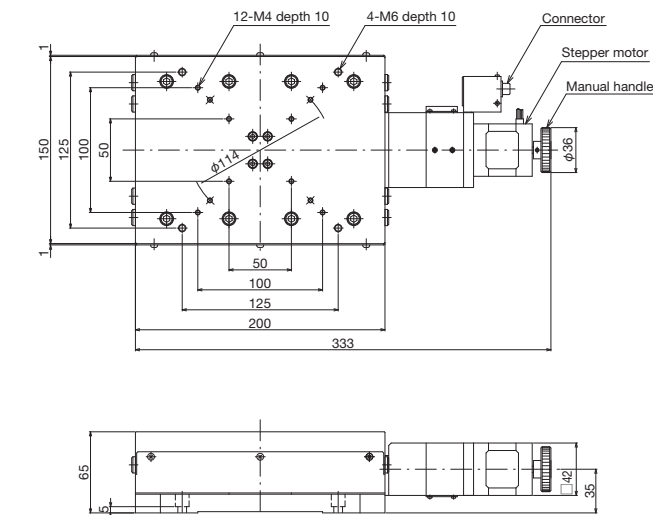
Product Appearance



↑ TALS-903-H1S



↑ TALS-105-H1S



↑ TALS-510-H1S

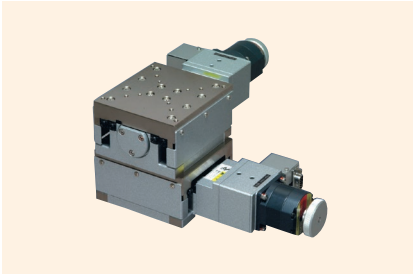
Motorized Stages	Automated Products for Microscopes	Manual Stages	High-Grade Stages	30 mm x 30 mm Corner Stages	Coax Roller Stages	Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Lift Stages	Tilt Stages	Connection Cases	Actuators
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XY Stages - High-Precision/High-Rigidity Type

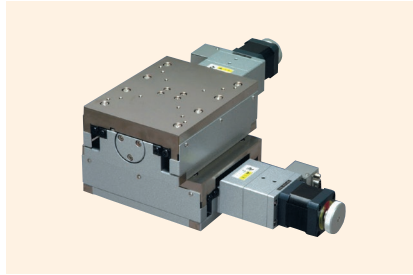
◆ V-CR method

0.75 A/phase

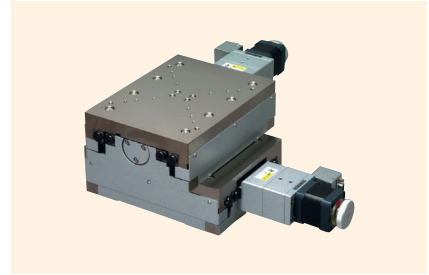
0.75 A/phase motor



↑ TALD-903-H1S



↑ TALD-105-H1S



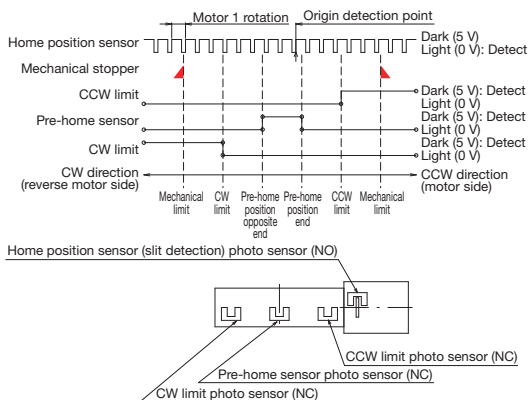
↑ TALD-510-H1S

Features

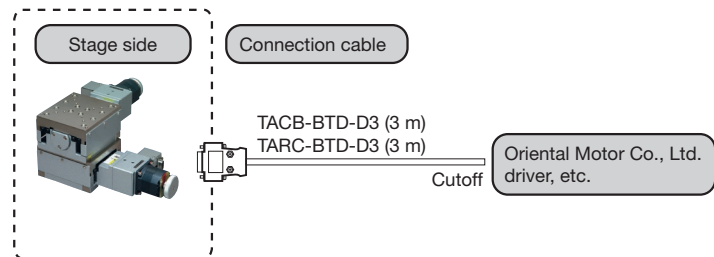
- An ultra-high accuracy motorized XY stage for increased machine accuracy.
- Can be used for applications for automatic positioning of various sensors and workpieces.
- Pre-home sensor and limit sensor positions can be adjusted.

Model number	TALD-903-H1S	TALD-105-H1S	TALD-510-H1S
Model name	XY Stage - High-Precision/High-Rigidity Type		
Travel direction	XY-axis double direction		
Travel amount	±15 mm	±25 mm	±50 mm
Stage surface	90 mm x 100 mm	125 mm x 160 mm	150 mm x 200 mm
Motor used	PK543NBW equivalent (5-wire type pentagonal wiring, 0.75 A/phase)	PK545NBW equivalent (5-wire type pentagonal wiring, 0.75 A/phase)	
Resolution	0.002 mm		
Feed screw specification	Ball screw		
Feed screw lead	1 mm		
Travel guide	V-groove and cross rollers		
Travel accuracy	Straightness (horizontal/vertical): 0.0007 mm	Straightness (horizontal/vertical): 0.0008 mm	Straightness (horizontal/vertical): 0.001 mm
Positioning accuracy	0.002 mm	0.003 mm	0.005 mm
Repeatability	±0.0005 mm		
Lost motion	0.0005 mm		
XY orthogonality	0.006 mm	0.008 mm	0.01 mm
Moment rigidity	Yaw rigidity 0.2 s/N-cm, pitch rigidity 0.15 s/N-cm, roll rigidity 0.15 s/N-cm	Yaw rigidity 0.1 s/N-cm, pitch rigidity 0.08 s/N-cm, roll rigidity 0.08 s/N-cm	Yaw rigidity 0.02 s/N-cm, pitch rigidity 0.02 s/N-cm, roll rigidity 0.02 s/N-cm
Load capacity	157 N (16 kgf)	314 N (32 kgf)	363 N (37 kgf)
Mass	7 kg	16.4 kg	25.6 kg
Maximum speed (at 8,000 pps)	16 mm/s		
Main materials/surface treatment	Steel: Electroless nickel plating (table), coating (base)		
Home position sensor	Normally open contact (make contact, A contact) operation, photo sensor		
Pre-home sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Applicable cables	TACB-BTD-D3, TARC-BTD-D3		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

◆ Sensor operating logic and timing chart



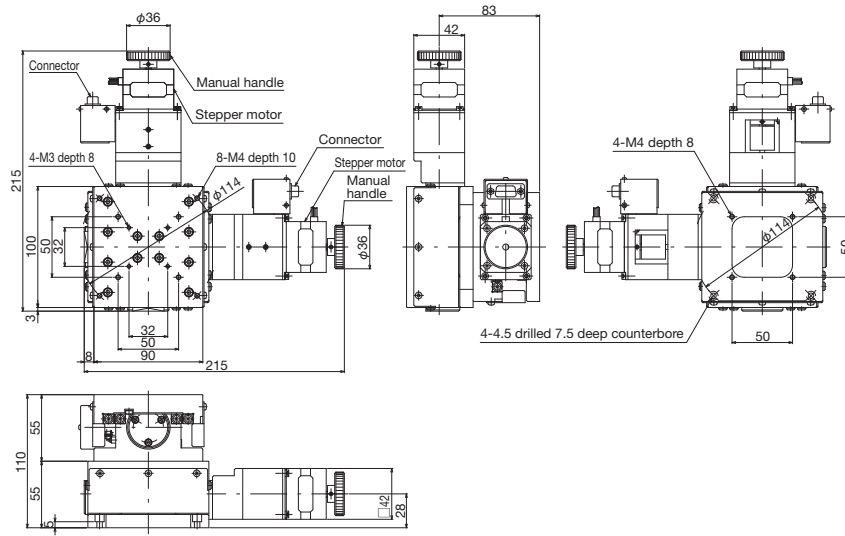
◆ Connection method: Connection cable and driver



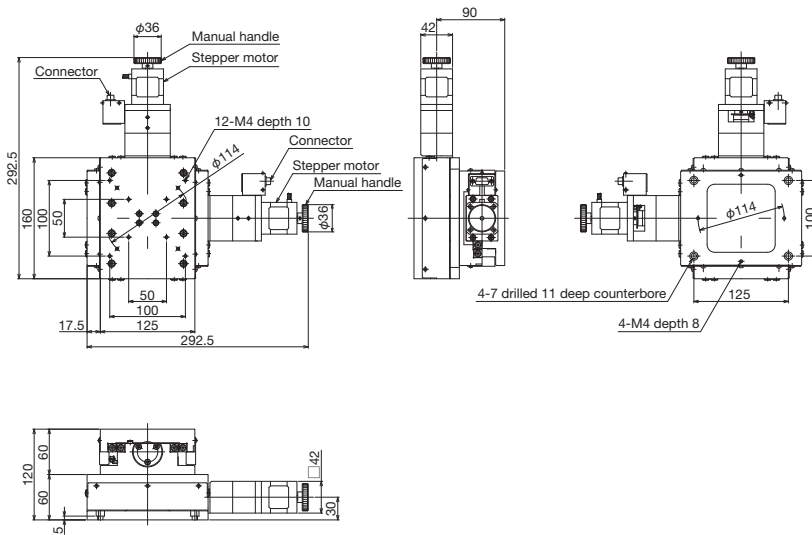


High-Precision/High-Rigidity Stages ◀ Motorized Stages ◀

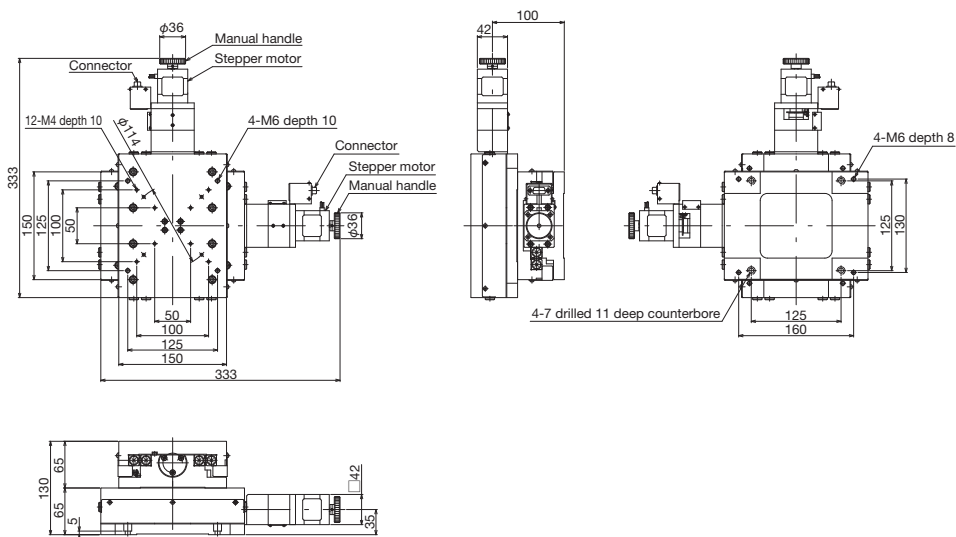
Product Appearance



↑ TALD-903-H1S



↑ TALD-105-H1S



↑ TALD-510-H1S

Motorized Stages	Automated Products for Microscopes
Manual Stages	High-Grade Stages
	30 mm x 30 mm (ø30 mm) Corner Stages
	Class Roller Stages
	Ball Bushing Stages
	High-Precision/High-Rigidity Stages
	Z-Lift Stages
	Tilt Stages
	Connection Cases
	Actuators

Z Stages - High-Precision/High-Rigidity Type

◆ V-CR method **0.75 A/phase** 0.75 A/phase motor



↑ TALZ-903-H1S



↑ TALZ-105-H1S



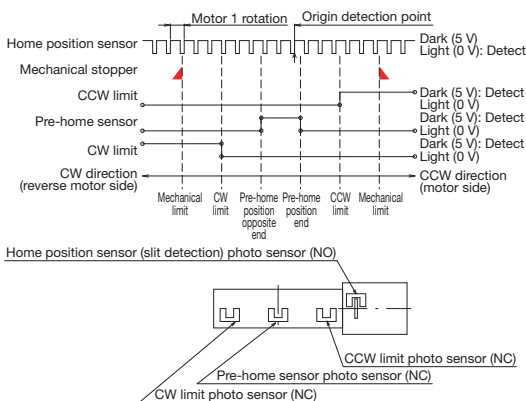
↑ TALZ-510-H1S

Features

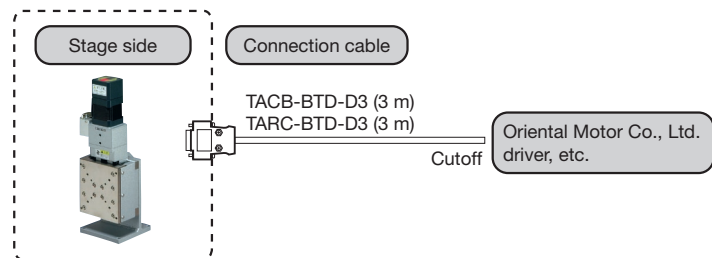
- An ultra-high accuracy motorized Z stage for increased machine accuracy.
- Can be used for applications for automatic positioning of various sensors and workpieces.
- Pre-home sensor and limit sensor positions can be adjusted.
- With electromagnetic brake to prevent the table from falling.

Model number	TALZ-903-H1S	TALZ-105-H1S	TALZ-510-H1S
Model name	Z Stage - High-Precision/High-Rigidity Type		
Travel direction	Z-axis single direction		
Travel amount	±15 mm	±25 mm	±50 mm
Stage surface	90 mm x 100 mm	125 mm x 160 mm	150 mm x 200 mm
Motor used	PK545NAW equivalent with electromagnetic brake (5-wire type pentagonal wiring, 0.75 A/phase)		
Resolution	0.002 mm		
Feed screw lead	1 mm		
Travel guide	V-groove and cross rollers		
Travel accuracy	Straightness (horizontal/vertical): 0.0007 mm Yaw/pitch 4 s	Straightness (horizontal/vertical): 0.0008 mm Yaw/pitch 6 s	Straightness (horizontal/vertical): 0.001 mm Yaw/pitch 6 s
Positioning accuracy	0.002 mm	0.003 mm	0.005 mm
Repeatability	±0.0005 mm		
Lost motion	0.0005 mm		
Moment rigidity	Yaw rigidity 0.1 s/N-cm, pitch rigidity 0.15 s/N-cm, roll rigidity 0.1 s/N-cm	Yaw rigidity 0.05 s/N-cm, pitch rigidity 0.1 s/N-cm, roll rigidity 0.05 s/N-cm	Yaw rigidity 0.03 s/N-cm, pitch rigidity 0.05 s/N-cm, roll rigidity 0.03 s/N-cm
Load capacity	98 N (10 kgf)		
Mass	5.5 kg	12.5 kg	20.7 kg
Maximum speed (at 5,000 pps)	10 mm/s		
Main materials/surface treatment	Steel: Electroless nickel plating (table), coating (base, brackets)		
Home position sensor	Normally open contact (make contact, A contact) operation, photo sensor		
Pre-home sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Applicable cables	TACB-BTD-D3, TARC-BTD-D3		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

◆ Sensor operating logic and timing chart



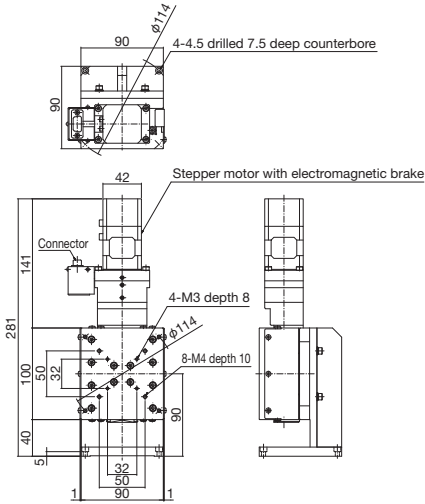
◆ Connection method: Connection cable and driver



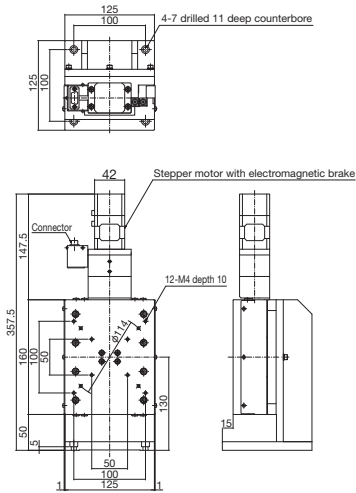


High-Precision/High-Rigidity Stages ◀ Motorized Stages ◀

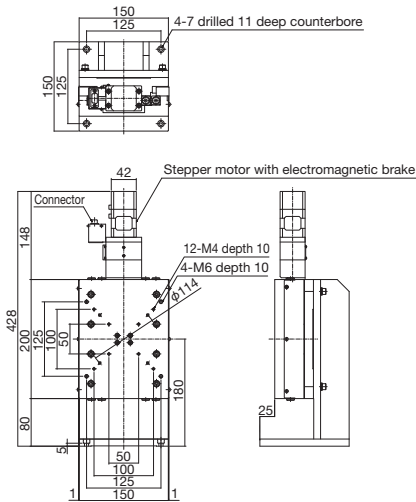
Product Appearance



TALZ-903-H1S



TALZ-105-H1S



TALZ-510-H1S

Motorized Stages	Automated Products for Microscopes	Manual Stages	High-Grade Stages	30 mm x 30 mm (or 80 mm) Compact Stages	Class Roller Stages	Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Lift Stages	Tilt Stages	Connection Cables	Actuators
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▶ Motorized Stages ▶ Z Lift Stages | Product List

Motorized Stages
Automated Products for Microscopes
Manual Stages
High-Grade Stages (30 mm x 30 mm) Compact Stages
Cross Roller Stages
Ball Bearing High-Rigidity Stages
High-Precision Z-Lift Stages
Tilt Stages
Connection Cables
Actuators

Page	Example product photo	Type	Model number	Stage surface	Travel amount
71		Z Lift Stage	TALV-600C-H0M	60 mm x 60 mm	0 to 5 mm
			TALV-600C-H1M	60 mm x 60 mm	0 to 5 mm
73		Z Lift Stage	TALV-901-HP	90 mm x 90 mm	0 to 10 mm
			TALV-902-HP	90 mm x 90 mm	0 to 20 mm
			TALV-102-HP	125 mm x 125 mm	0 to 20 mm
			TALV-104-HP	125 mm x 125 mm	0 to 40 mm

*Because Z lift stages move vertically (up/down), the stage surface movement center is not defined, but the travel amount from the minimum height is shown.

Page	Type	Model number	Function
85	Connection cable	TACB-BTD-D3	Driver connection cable 3 m
		TARC-BTD-D3	Driver connection cable 3 m (robot cable specification)
		TACB-BTM-D3	Driver connection cable 3 m
		TARC-BTM-D3	Driver connection cable 3 m (robot cable specification)
			For connecting customer-supplied drivers, with stage side connectors



Features | Z Lift Stages ◀ Motorized Stages ◀

◆ Cross roller guide

Adopts a V-groove and cross roller guide to achieve a Z lift (horizontal stage surface) motorized stage with high precision.

■ Guide method comparison table

	Travel accuracy	Load capacity	Rigidity
V-groove and cross rollers (HG-VCR)	☆	☆	☆
V-groove and cross rollers	◎	◎	◎
Ball bushing	△	△	△

☆: Outstanding ◎: Excellent △: Fair

◆ Home position/pre-home sensor included as standard equipment

A home position sensor and pre-home sensor are equipped as standard, enabling high-accuracy return to home position.

*TALV-600C-H0M and TALV-600C-H1M have a home position sensor only.

◆ Limit sensor

Limit sensors are equipped at the ends of the movable range as standard.

◆ 3 sizes

Stage surfaces are available in 60 mm x 60 mm, 90 mm x 90 mm, and 125 mm x 125 mm sizes.

◆ 5-phase stepper motor

Equipped as standard with a 5-phase stepper motor with 0.75 A/phase, 0.72° (full)/0.36° (half) step angle.

*The motor is a dedicated THK CHUO specification.

■ Stage specifications

	Stepper motor
Motor control method	Open loop control
Stage operating method	Controller driver communication or operation via operating parts

◆ Environmental measures

Products that do not contain 10 substances regulated by European RoHS.

Motorized Stages	Automated Products for Microscopes
Manual Stages	
High-Grade Stages	30 mm x 30 mm Contact Stages
	Cross Roller Stages
	Ball Bushing Stages
	High-Precision/High-Rigidity Stages
	Z Lift Stages
	TTL Stages
	Connection Cables
	Actuators

Z Lift Stages

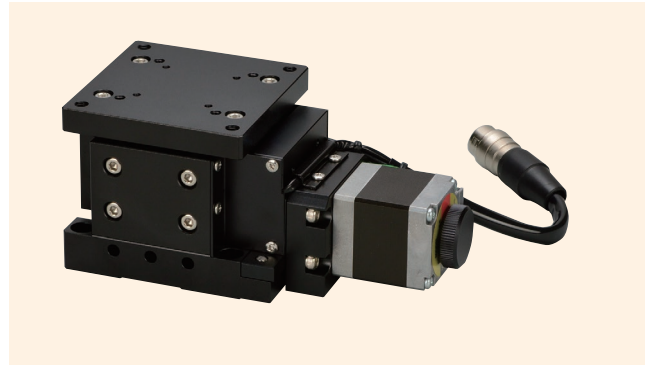
◆ V-CR method

0.75 A/phase

0.75 A/phase motor



↑ TALV-600C-H0M



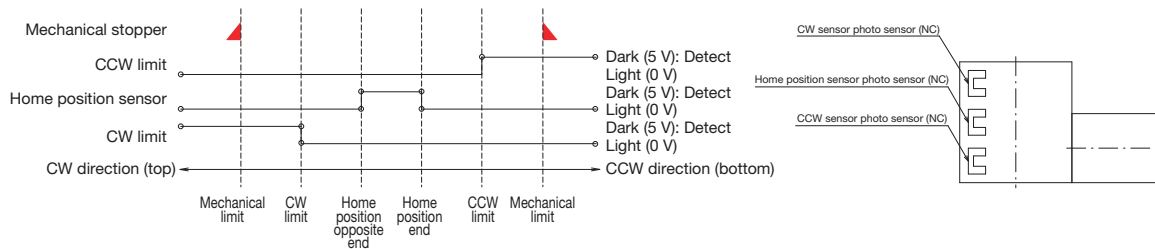
↑ TALV-600C-H1M

Features

- Z lift stages that adopt a V-groove and cross roller guide for high precision.
- The feed screw is available as a precision screw or ball screw.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number	TALV-600C-H0M	TALV-600C-H1M
Model name	Z Lift Stage precision screw specification	Z Lift Stage ball screw specification
Travel direction	Z-axis single direction	
Travel amount	0 to 5 mm	
Stage surface	60 mm x 60 mm	
Motor used	PK523HPB equivalent (5-wire type pentagonal wiring, 0.75 A/phase)	
Resolution	0.0005 mm	0.001 mm
Feed screw lead	0.5 mm	1 mm
Travel guide	V-groove and cross rollers	
Travel accuracy	Straightness (horizontal/vertical): 0.005 mm	
Positioning accuracy	0.012 mm	0.01 mm
Repeatability	±0.0015 mm	±0.001 mm
Lost motion	0.003 mm	
Load capacity	29.4 N (3 kgf)	
Mass	0.7 kg	
Maximum speed (at 5,000 pps)	2.5 mm/s	5 mm/s
Main materials/surface treatment	Aluminum alloy/black satin anodized finish	
Home position sensor	Normally closed contact (break contact, B contact) operation, photo sensor	
Pre-home sensor	-	
Limit sensor	Normally closed contact (break contact, B contact) operation, photo sensor	
Applicable cables	TACB-BTM-D3, TARC-BTM-D3	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain	

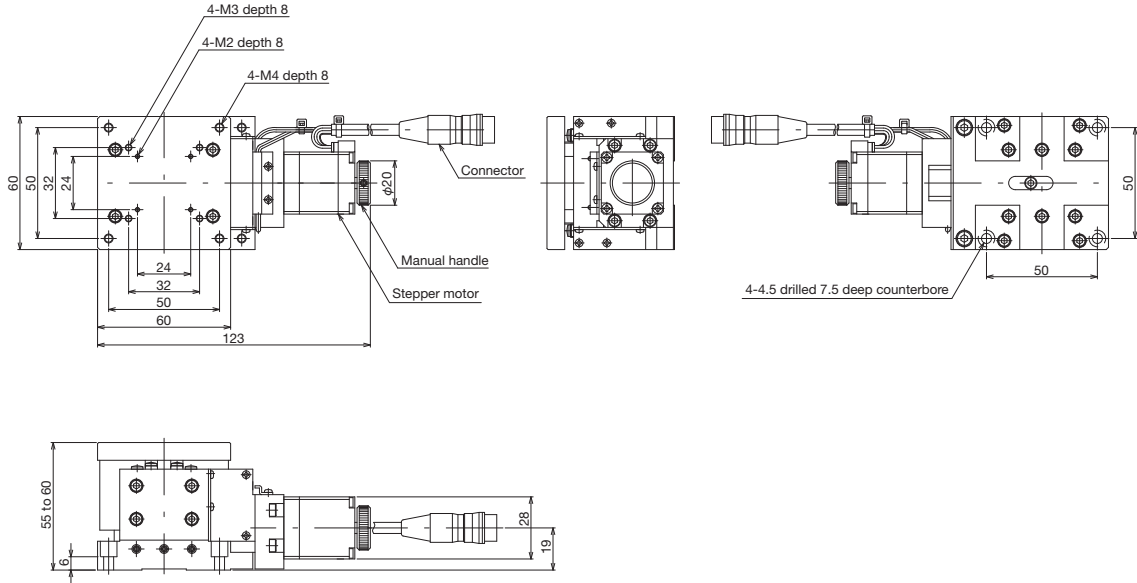
◆ Sensor operating logic and timing chart



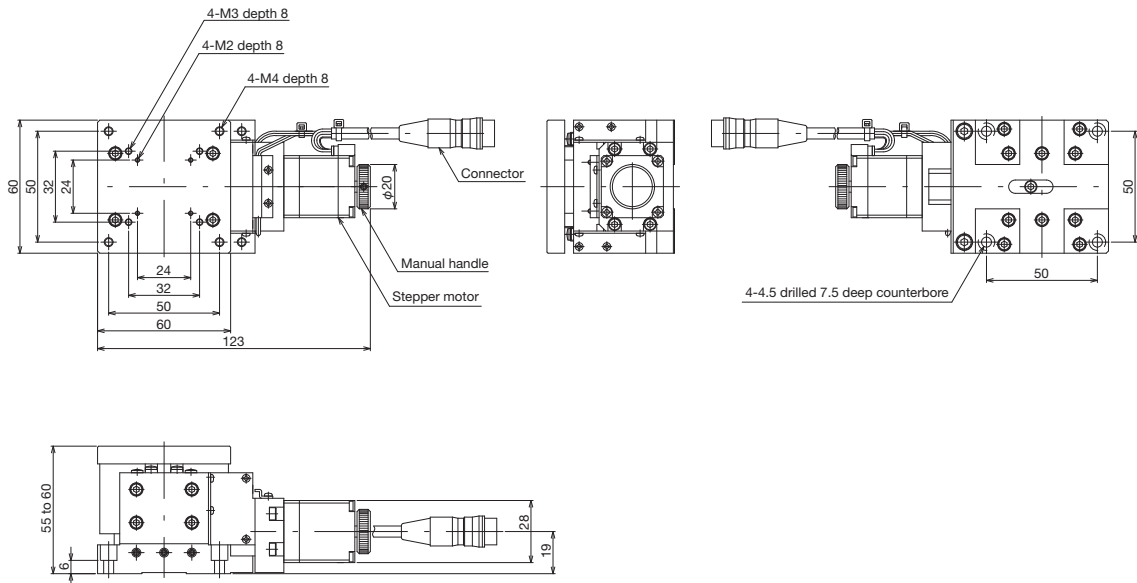


Z Lift Stages ◀ Motorized Stages ◀

Product Appearance



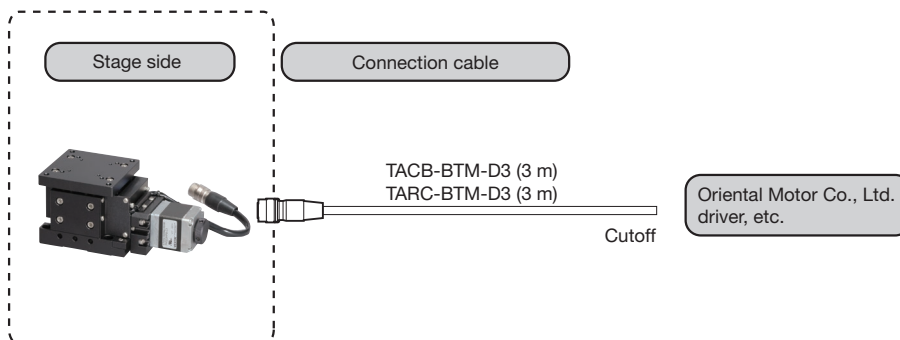
↑ TALV-600C-H0M



↑ TALV-600C-H1M

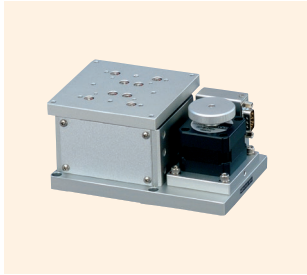
Motorized Stages	Automated Products for Microscopes	Manual Stages	High-Grade Stages	30 mm x 30 mm (ø30 mm) Compact Stages	Class Roller Stages	Ball Bushing Stages	High-Precision High-Rigidity Stages	Z Lift Stages	Tilt Stages	Connection Cases	Actuators
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◆ Connection method: Connection cable and driver



Z Lift Stages

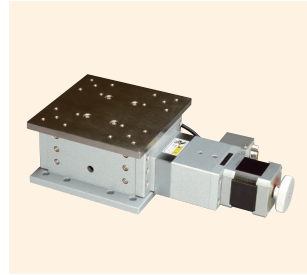
V-CR method **0.75 A/phase** 0.75 A/phase motor



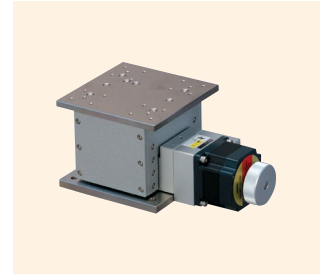
↑ TALV-901-HP



↑ TALV-902-HP



↑ TALV-102-HP



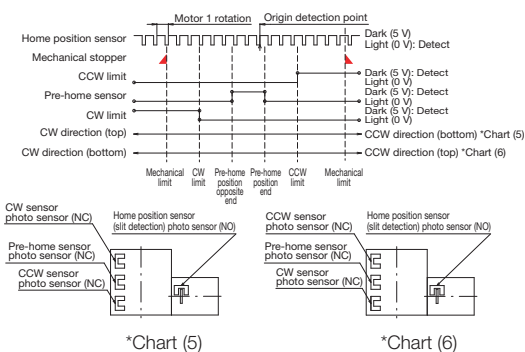
↑ TALV-104-HP

Features

- Z lift stages that adopt a V-groove and cross roller guide for high precision.
- Types with stage surface sizes of 90 mm x 90 mm and 125 mm x 125 mm are available, each with different travel amounts.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number	TALV-901-HP	TALV-902-HP	TALV-102-HP	TALV-104-HP
Model name	Z Lift Stage			
Travel direction	Z-axis single direction			
Travel amount	0 to 10 mm	0 to 20 mm		0 to 40 mm
Stage surface	90 mm x 90 mm		125 mm x 125 mm	
Motor used	PK543NBW equivalent (5-wire type pentagonal wiring, 0.75 A/phase)		PK545NBW equivalent (5-wire type pentagonal wiring, 0.75 A/phase)	PKP564FN equivalent (5-wire type pentagonal wiring, 0.75 A/phase)
Resolution	0.001 mm			
Feed screw lead	1 mm			-
Travel guide	V-groove and cross rollers			
Travel accuracy	Straightness (horizontal/vertical): 0.005 mm			Straightness (horizontal/vertical): 0.008 mm
Positioning accuracy	0.008 mm	0.01 mm		0.03 mm
Repeatability	±0.0008 mm			±0.001 mm
Lost motion	0.001 mm			0.002 mm
Parallelism	0.08 mm		0.04 mm	0.05 mm
Moment rigidity	Yaw rigidity 0.5 s/N-cm, pitch rigidity 0.5 s/N-cm, roll rigidity 0.03 s/N-cm	Yaw rigidity 0.6 s/N-cm, pitch rigidity 0.6 s/N-cm, roll rigidity 0.05 s/N-cm	Yaw rigidity 1.5 s/N-cm, pitch rigidity 1.5 s/N-cm, roll rigidity 0.05 s/N-cm	Yaw rigidity 1 s/N-cm, pitch rigidity 1 s/N-cm, roll rigidity 0.05 s/N-cm
Load capacity	49 N (5 kg)		98 N (10 kgf)	
Mass	1.8 kg	1.9 kg	5.5 kg	5.9 kg
Maximum speed (at 5,000 pps)	5 mm/s			
Main materials/surface treatment	Aluminum alloy/white satin anodized finish		Steel: Electroless nickel plating, coating	
Home position sensor	Normally open contact (make contact, A contact) operation, photo sensor			
Pre-home sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor			
Applicable cables	TACB-BTD-D3, TARC-BTD-D3			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

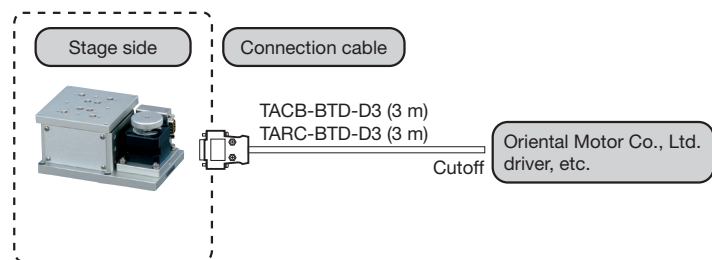
◆ Sensor operating logic and timing chart



*Chart (5) TALV-102-HP

*Chart (6) TALV-901-HP, TALV-902-HP, TALV-104-HP

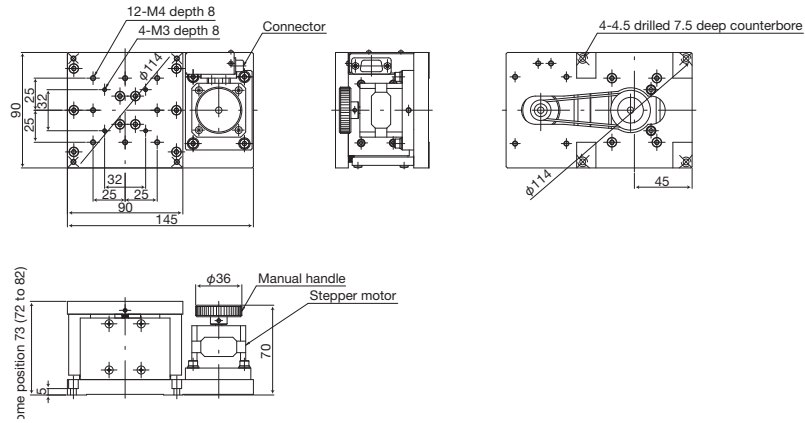
◆ Connection method: Connection cable and driver



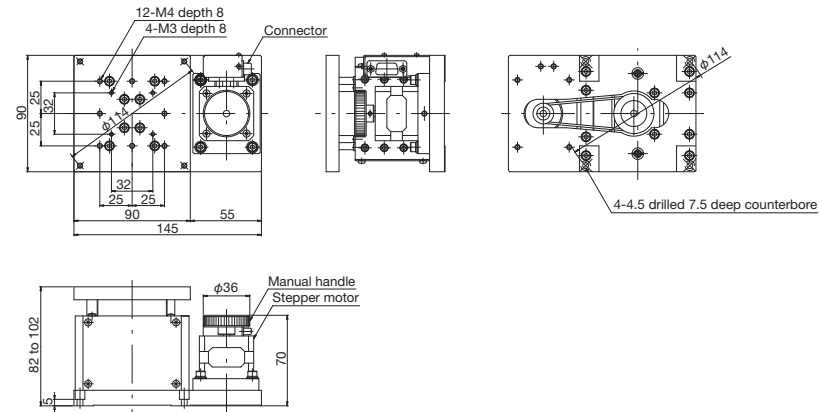


Z Lift Stages ◀ Motorized Stages ◀

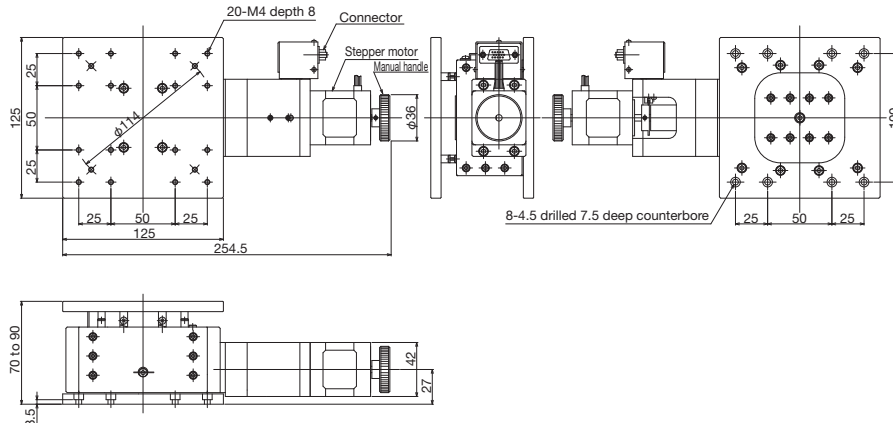
Product Appearance



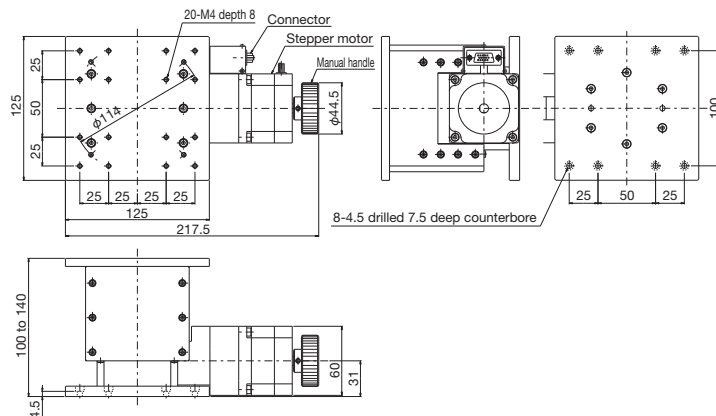
TALV-901-HP



TALV-902-HP



TALV-102-HP



TALV-104-HP

Motorized Stages	Automated Products for Microscopes	High-Grade Stages	30 mm x 30 mm (30 mm) Coarse Stages	Coarse Roller Stages	Ball Bushing Stages	High-Precision High-Rigidity Stages	Z Lift Stages	Tilt Stages	Connection Cases	Actuators
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▶ Motorized Stages ▶ Tilt Stages | Product List

Motorized Stages
Automated Products for Microscopes
Manual Stages
High-Grade Stages (30 mm x 30 mm) Compact Stages
Cross Roller Stages
Ball Bearing High-Rigidity Stages
High-Precision/High-Rigidity Stages
Z-Lin Stages
Tilt Stages
Connection Cables
Actuators

Page	Example product photo	Type	Model number	Stage surface	Travel amount (total travel amount)
77		Tilt Stage	TATS-C416C-HM	40 mm x 40 mm	±8° (16°)
			TATS-C412C-HM	40 mm x 40 mm	±6° (12°)
			TATS-C410C-HM	40 mm x 40 mm	±5° (10°)
		2-Axis Tilt Stage	TATD-C412C-HM	40 mm x 40 mm	Upper axis ±8° (16°)/lower axis ±6° (12°)
TATD-C410C-HM			40 mm x 40 mm	Upper axis ±6° (12°)/lower axis ±5° (10°)	
79		Tilt Stage	TATS-C616C-HM	60 mm x 60 mm	±8° (16°)
			TATS-C612C-HM	60 mm x 60 mm	±6° (12°)
			TATS-C610C-HM	60 mm x 60 mm	±5° (10°)
		2-Axis Tilt Stage	TATD-C612C-HM	60 mm x 60 mm	Upper axis ±8° (16°)/lower axis ±6° (12°)
TATD-C610C-HM			60 mm x 60 mm	Upper axis ±6° (12°)/lower axis ±5° (10°)	
81		Tilt Stage	TATS-9030-HP	90 mm x 90 mm	±15° (30°)
			TATS-9020-HP	90 mm x 90 mm	±10° (20°)
		2-Axis Tilt Stage	TATD-9020-HP	90 mm x 90 mm	Upper axis ±15° (30°)/lower axis ±10° (20°)
83		Tilt Stage	TATS-1230-HP	125 mm x 125 mm	±15° (30°)
			TATS-1220-HP	125 mm x 125 mm	±10° (20°)
		2-Axis Tilt Stage	TATD-1220-HP	125 mm x 125 mm	Upper axis ±15° (30°)/lower axis ±10° (20°)

Page	Type	Model number	Function
85	Connection cable	TACB-BTD-D3	Driver connection cable 3 m
		TARC-BTD-D3	Driver connection cable 3 m (robot cable)
		TACB-BTM-D3	Driver connection cable 3 m
		TARC-BTM-D3	Driver connection cable 3 m (robot cable)
			For connecting customer-supplied drivers and stage connectors



Features | Tilt Stages ◀ Motorized Stages ◀

◆ Cross roller guide

Adopts a V-groove and cross roller guide to achieve a motorized stage with high precision.

■ Guide method comparison table

	Travel accuracy	Load capacity	Rigidity
V-groove and cross rollers (HG-VCR)	☆	☆	☆
V-groove and cross rollers	◎	◎	◎
Ball bushing	△	△	△

☆: Outstanding ◎: Excellent △: Fair

◆ Home position sensor included as standard equipment

A home position sensor is equipped as standard, enabling high-accuracy return to home position.

*TATS-9030-HP, TATS-9020-HP, TATD-9020-HP, TATS-1230-HP, TATS-1220-HP and TATD-1220-HP have a pre-home sensor equipped as standard.

◆ Limit sensor

Limit sensors are equipped at the ends of the movable range as standard.

◆ 4 sizes

Stage surfaces are available in 40 mm x 40 mm, 60 mm x 60 mm, 90 mm x 90 mm, and 125 mm x 125 mm sizes.

◆ 5-phase stepper motor

Equipped as standard with a 5-phase stepper motor with 0.75 A/phase, 0.72° (full)/0.36° (half) step angle.

*The motor is a dedicated THK CHUO specification.

■ Stage specifications

	Stepper motor
Motor control method	Open loop control
Stage operating method	Controller driver communication or operation via operating parts

◆ Environmental measures

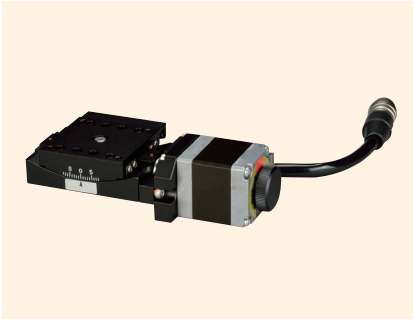
Products that do not contain 10 substances regulated by European RoHS.

Motorized Stages	Automated Products for Microscopes
Manual Stages	
High-Grade Stages	30 mm x 30 mm Contact Stages
	Cross Roller Stages
	Ball Bushing Stages
	High-Precision/High-Rigidity Stages
	Z-Lift Stages
	Tilt Stages
	Connection Cables
	Actuators

Tilt Stage 40 x 40

Complex coupling method

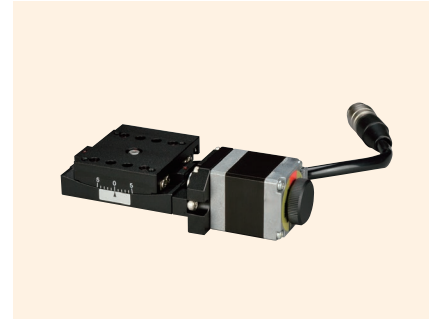
0.75 A/phase motor



↑ TATS-C416C-HM



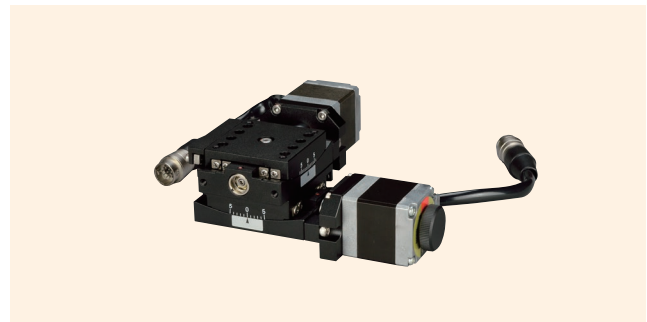
↑ TATS-C412C-HM



↑ TATS-C410C-HM



↑ TATD-C412C-HM



↑ TATD-C410C-HM

Features

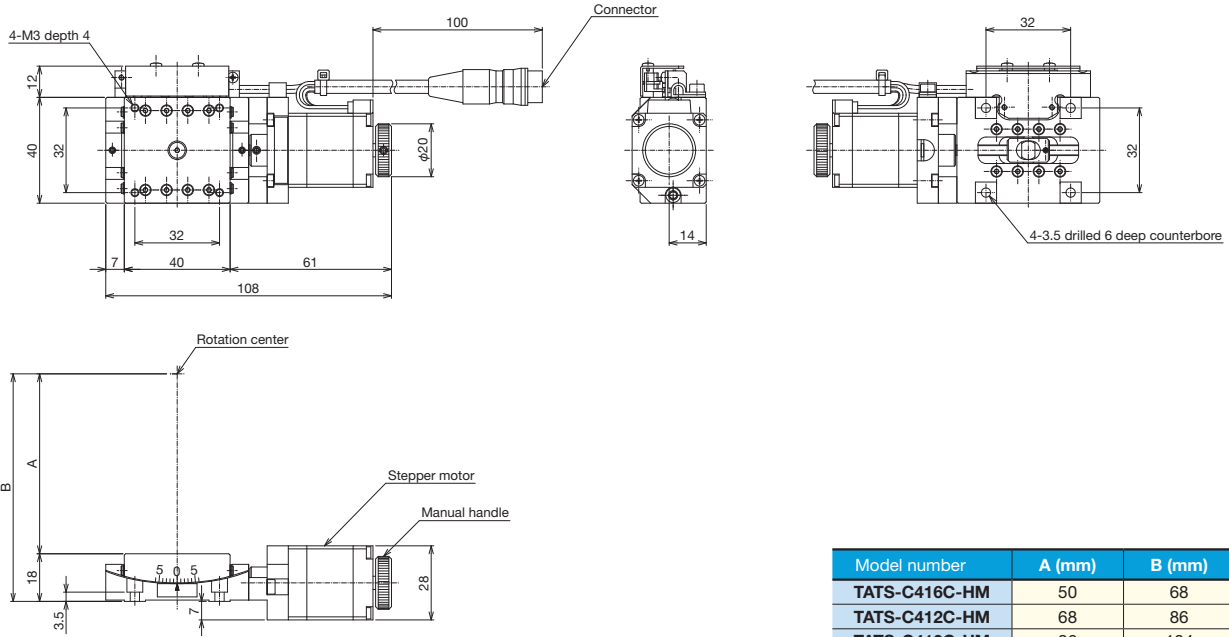
- A tilt stage with differing rotation center height and travel amount.
- The proprietary complex coupling structure enables fine movements to be made extraordinarily smoothly.
- Versatile use for precision positioning of cameras, sensors, etc.

Model number	TATS-C416C-HM	TATS-C412C-HM	TATS-C410C-HM	TATD-C412C-HM	TATD-C410C-HM
Model name	Tilt Stage			2-Axis Tilt Stage	
Travel direction	Tilt single direction			Tilt double direction	
Stage height	18 mm			36 mm	
Rotation center (from stage top)	50 mm	68 mm	86 mm	50 mm	68 mm
Travel amount	±8°	±6°	±5°	Upper axis ±8°/lower axis ±6°	Upper axis ±6°/lower axis ±5°
Stage surface	40 mm x 40 mm				
Motor used	PK523HPB equivalent (5-wire type pentagonal wiring, 0.75 A/phase)				
Resolution	0.000939°	0.000725°	0.000591°	Upper axis 0.000939°/ lower axis 0.000725°	Upper axis 0.000725°/ lower axis 0.000591°
Feed screw lead	0.5 mm				
Travel guide	V-groove and cross rollers				
Travel mechanism/feed type	Complex coupling/feed screw				
Positioning accuracy	0.03°				
Rotation center accuracy	φ 0.05 mm			-	
Repeatability	±0.002°				
Lost motion	0.006°				
Load capacity	29.4 N (3 kgf)			19.8 N (2 kgf)	
Mass	0.4 kg			0.8 kg	
Maximum speed (at 5,000 pps)	4.7°/s	3.6°/s	3°/s	Upper axis 4.7°/s, lower axis 3.6°/s	Upper axis 3.6°/s, lower axis 3.0°/s
Main materials/surface treatment	Aluminum alloy/black satin anodized finish				
Home position sensor	Normally closed contact (break contact, B contact) operation, photo sensor				
Pre-home sensor	-				
Limit sensor	Normally closed contact (break contact, B contact) operation, photo sensor				
Applicable cables	TACB-BTM-D3, TARC-BTM-D3				
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain				

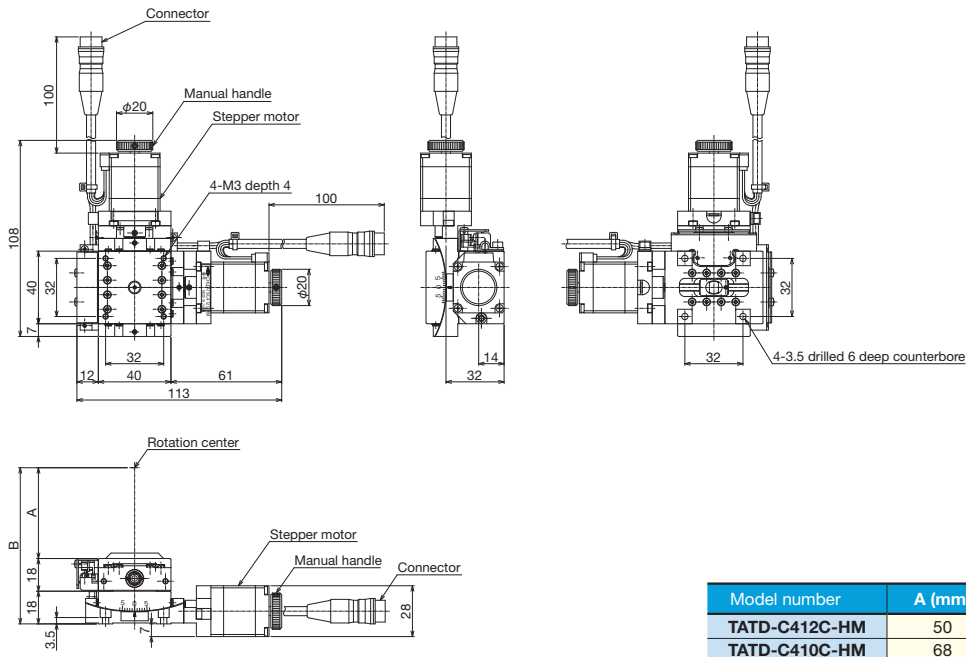


Tilt Stages ◀ Motorized Stages ◀

Product Appearance



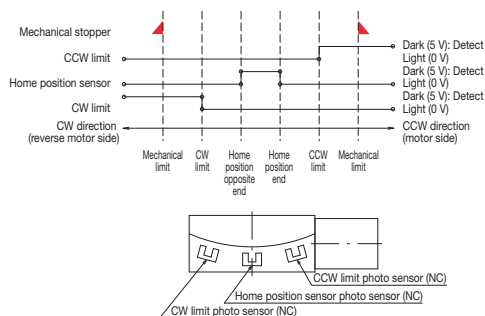
Model number	A (mm)	B (mm)
TATS-C416C-HM	50	68
TATS-C412C-HM	68	86
TATS-C410C-HM	86	104



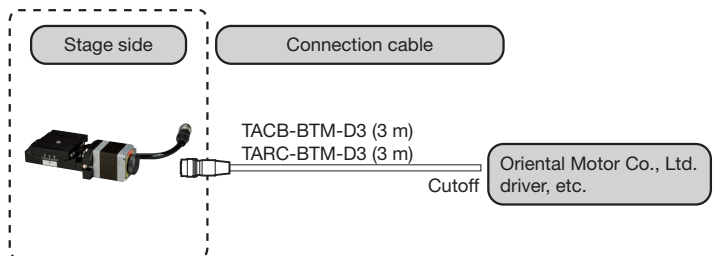
Model number	A (mm)	B (mm)
TATD-C412C-HM	50	86
TATD-C410C-HM	68	104

- Motorized Stages
- Automated Products for Microscopes
- Manual Stages
- High-Grade Stages
- 30 mm x 30 mm (or 30 mm) Compact Stages
- Class Roller Stages
- Ball Bushing Stages
- High-Precision/High-Rigidity Stages
- Z-Limit Stages
- Tilt Stages
- Connection Cases
- Actuators

◆ Sensor operating logic and timing chart



◆ Connection method: Connection cable and driver



Tilt Stage 60 x 60

Complex coupling method

0.75 A/phase
0.75 A/phase motor



↑ TATS-C616C-HM



↑ TATS-C612C-HM



↑ TATS-C610C-HM



↑ TATD-C612C-HM



↑ TATD-C610C-HM

Features

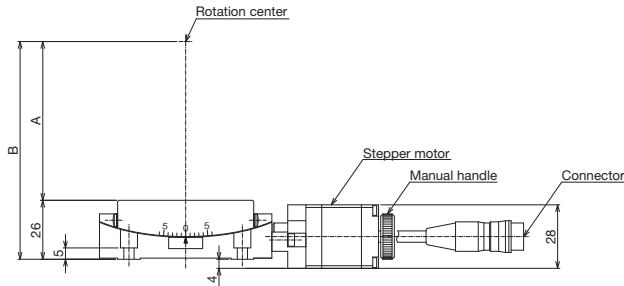
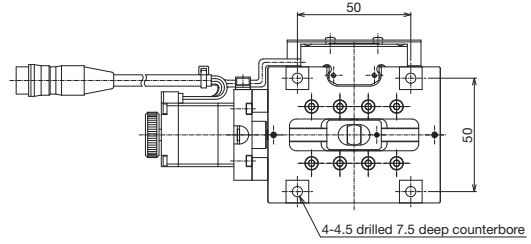
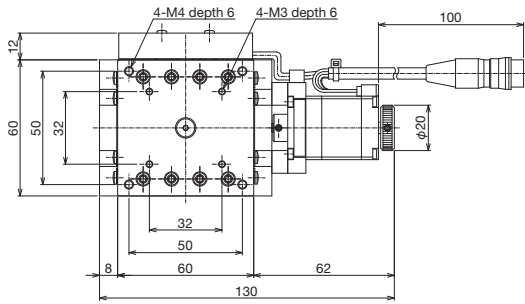
- A tilt stage with differing rotation center height and travel amount.
- The proprietary complex coupling structure enables fine movements to be made extraordinarily smoothly.
- Versatile use for precision positioning of cameras, sensors, etc.

Model number	TATS-C616C-HM	TATS-C612C-HM	TATS-C610C-HM	TATD-C612C-HM	TATD-C610C-HM
Model name	Tilt Stage			2-Axis Tilt Stage	
Travel direction	Tilt single direction			Tilt double direction	
Stage height	26 mm			52 mm	
Rotation center (from stage top)	70 mm	96 mm	122 mm	70 mm	96 mm
Travel amount	±8°	±6°	±5°	Upper axis ±8°/ lower axis ±6°	Upper axis ±6°/ lower axis ±5°
Stage surface	60 mm x 60 mm				
Motor used	PK523HPB equivalent (5-wire type pentagonal wiring, 0.75 A/phase)				
Resolution	0.000666°	0.000512°	0.000415°	Upper axis 0.000666°/ lower axis 0.000512°	Upper axis 0.000512°/ lower axis 0.000415°
Feed screw lead	0.5 mm				
Travel guide	V-groove and cross rollers				
Travel mechanism/feed type	Complex coupling/feed screw				
Positioning accuracy	0.03°				
Rotation center accuracy	φ0.05 mm			-	
Repeatability	±0.002°				
Lost motion	0.006°				
Load capacity	49 N (5 kgf)			29.4 N (3 kgf)	
Mass	0.6 kg			1.2 kg	
Maximum speed (at 5,000 pps)	3.3°/s	2.6°/s	2.1°/s	Upper axis 3.3°/s, lower axis 2.6°/s	Upper axis 2.6°/s, lower axis 2.1°/s
Main materials/surface treatment	Aluminum alloy/black satin anodized finish				
Home position sensor	Normally closed contact (break contact, B contact) operation, photo sensor				
Pre-home sensor	-				
Limit sensor	Normally closed contact (break contact, B contact) operation, photo sensor				
Applicable cables	TACB-BTM-D3, TARC-BTM-D3				
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain				

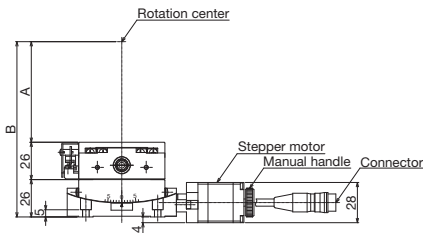
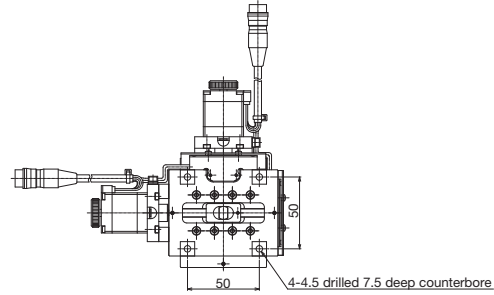
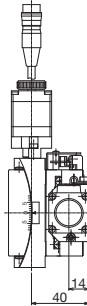
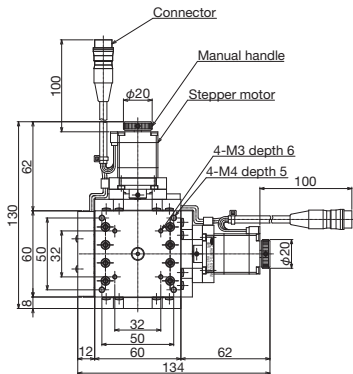


Tilt Stages ◀ Motorized Stages ▶

Product Appearance



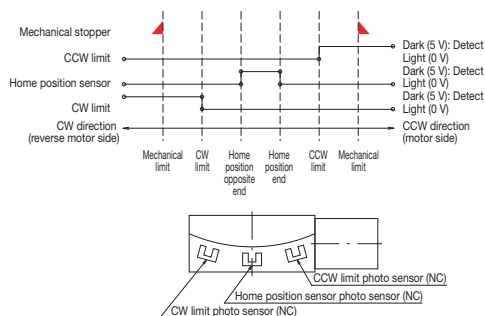
Model number	A (mm)	B (mm)
TATS-C616C-HM	70	96
TATS-C612C-HM	96	122
TATS-C610C-HM	122	148



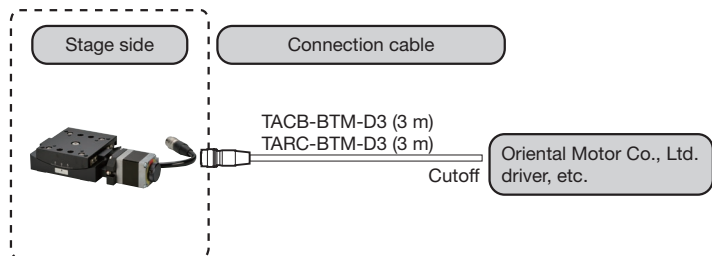
Model number	A (mm)	B (mm)
TATD-C612C-HM	70	122
TATD-C610C-HM	96	148

- Motorized Stages
- Automated Products for Microscopes
- Manual Stages
- High-Grade Stages
- 30 mm x 30 mm (φ30 mm) Connector Stages
- Class Roller Stages
- Ball Bushing Stages
- High-Precision/High-Rigidity Stages
- Z-Limit Stages
- Tilt Stages
- Connection Cases
- Actuators

◆ Sensor operating logic and timing chart

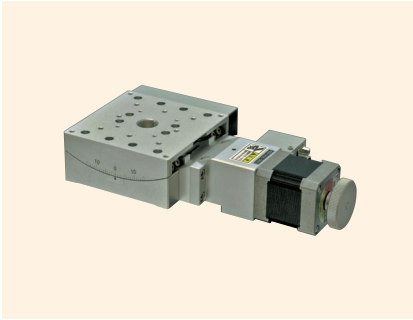


◆ Connection method: Connection cable and driver

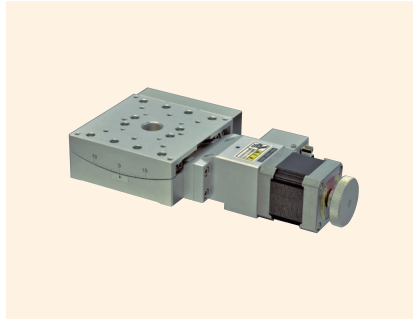


Tilt Stage 90 x 90

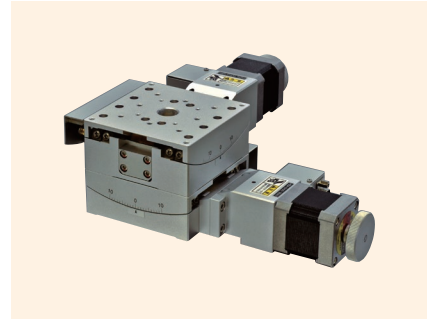
0.75 A/phase 0.75 A/phase motor



↑ TATS-9030-HP



↑ TATS-9020-HP



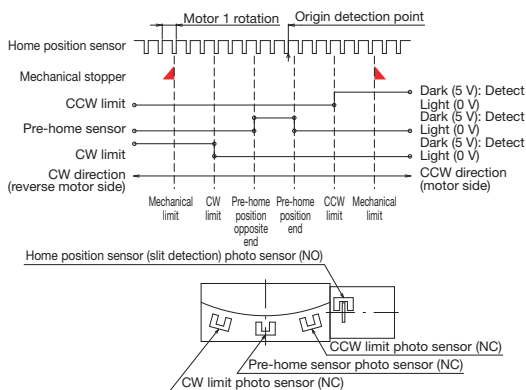
↑ TATD-9020-HP

Features

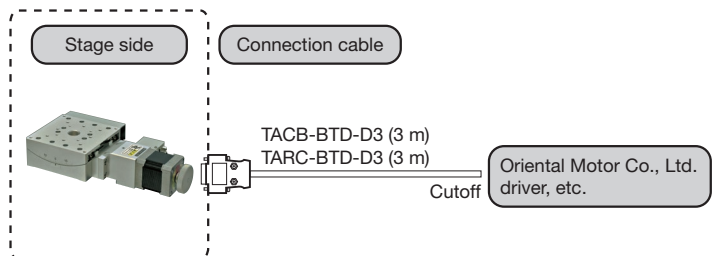
- A tilt stage possessing a rotation center above the space.
- Uses V-groove and cross rollers (V-CR method) for the travel guides.
- Versatile use for precision positioning of cameras, sensors, etc.

Model number	TATS-9030-HP	TATS-9020-HP	TATD-9020-HP
Model name	Tilt Stage		2-Axis Tilt Stage
Travel direction	Tilt single direction		Tilt double direction
Stage height	40 mm	36 mm	76 mm
Rotation center (from stage top)	72 mm	112 mm	72 mm
Travel amount	±15°	±10°	Upper axis ±15°/lower axis ±10°
Stage surface	90 mm x 90 mm		
Motor used	PK545NBW equivalent (5-wire type pentagonal wiring, 0.75 A/phase)		
Resolution	0.002°		
Travel guide	V-groove and cross rollers		
Travel mechanism, feed type	Worm gear		
Positioning accuracy	0.025°		
Rotation center accuracy	φ 0.05 mm		-
Repeatability	±0.002°		
Lost motion	0.002°		
Moment rigidity	Yaw rigidity 0.4 s/N-cm, roll rigidity 0.1 s/N-cm		Yaw rigidity 0.8 s/N-cm
Load capacity	58.8 N (6 kgf)		49 N (5 kgf)
Mass	1.6 kg	1.5 kg	3.1 kg
Maximum speed (at 5,000 pps)	10°/s		
Main materials/surface treatment	Aluminum alloy/white satin anodized finish		
Home position sensor	Normally open contact (make contact, A contact) operation, photo sensor		
Pre-home sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Applicable cables	TACB-BTD-D3, TARC-BTD-D3		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

◆ Sensor operating logic and timing chart



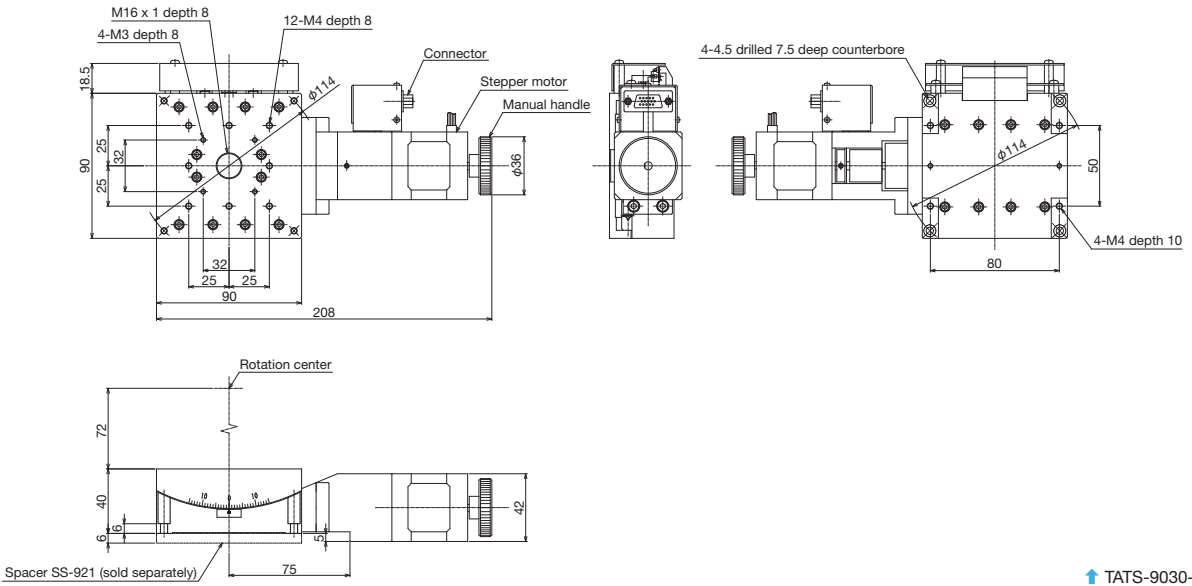
◆ Connection method: Connection cable and driver



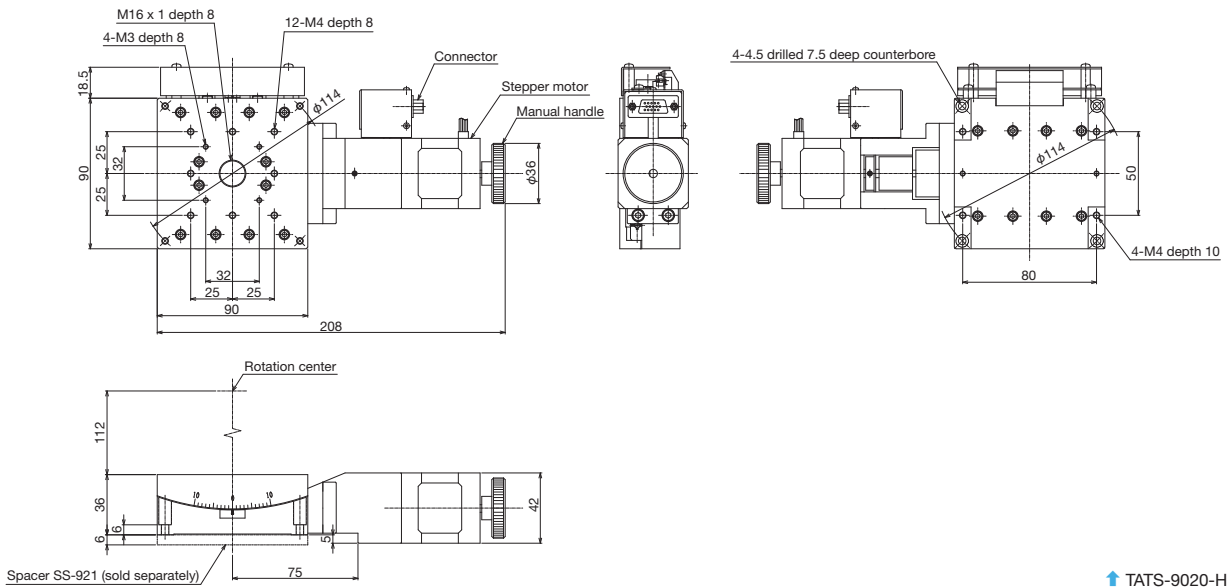


Tilt Stages ◀ Motorized Stages ◀

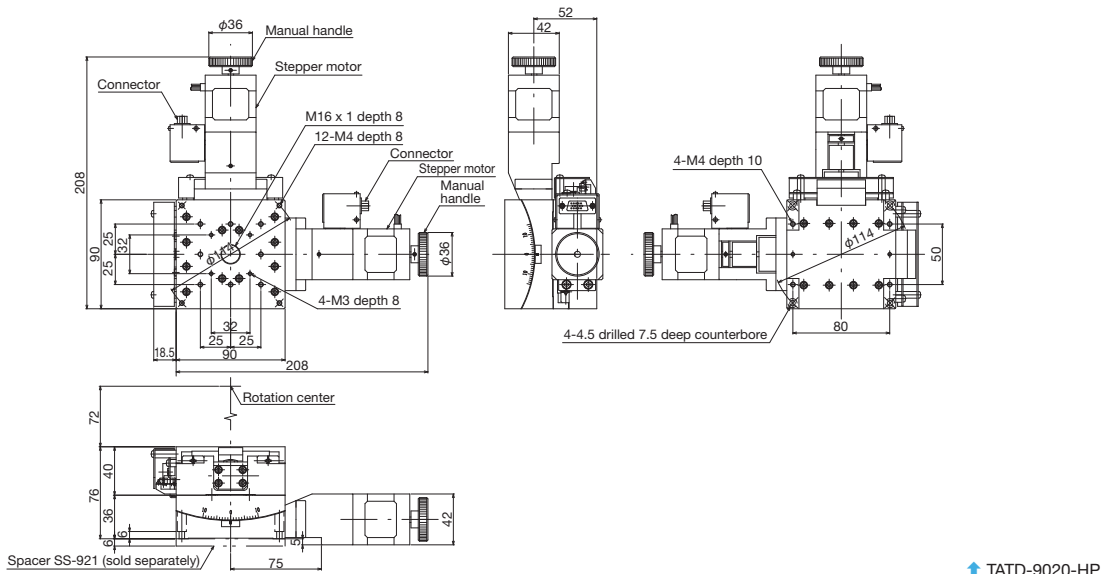
Product Appearance



↑ TATS-9030-HP



↑ TATS-9020-HP

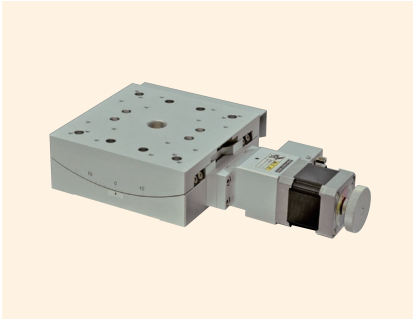


↑ TATD-9020-HP

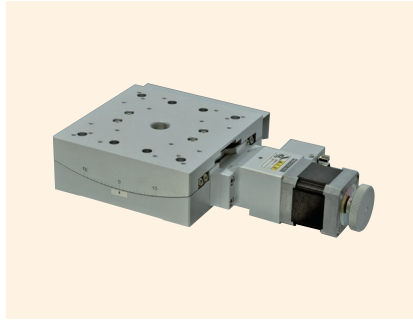
Motorized Stages	Automated Products for Microscopes	Manual Stages	High-Grade Stages	30 mm x 30 mm (or 80 mm) Coarse Stages	Coarse Roller Stages	Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Like Stages	Tilt Stages	Connection Cases	Actuators
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Tilt Stage 125 x 125

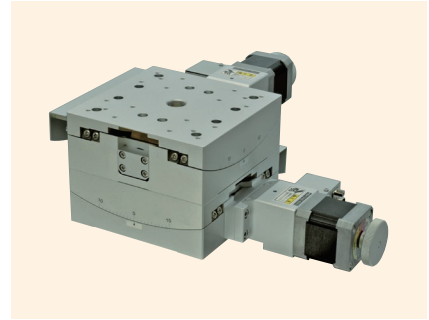
0.75 A/phase 0.75 A/phase motor



↑ TATS-1230-HP



↑ TATS-1220-HP



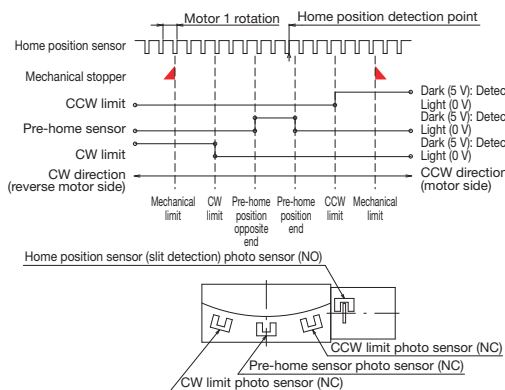
↑ TATD-1220-HP

Features

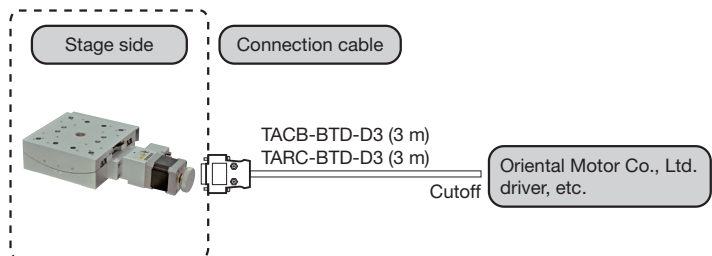
- A tilt stage possessing a rotation center above the space.
- Uses V-groove and cross rollers (V-CR method) for the travel guides.
- Versatile use for precision positioning of cameras, sensors, etc.

Model number (standard)	TATS-1230-HP	TATS-1220-HP	TATD-1220-HP
Model name	Tilt Stage		2-Axis Tilt Stage
Travel direction	Tilt single direction		Tilt double direction
Stage height	48 mm	47 mm	95 mm
Rotation center (from stage top)	112 mm	160 mm	112 mm
Travel amount	±15°	±10°	Upper axis ±15°/lower axis ±10°
Stage surface	125 mm x 125 mm		
Motor used	PK545NBW equivalent (5-wire type pentagonal wiring, 0.75 A/phase)		
Resolution	0.002°		
Travel guide	V-groove and cross rollers		
Travel mechanism, feed type	Worm gear		
Positioning accuracy	0.025°		
Rotation center accuracy	φ 0.05 mm		-
Repeatability	±0.002°		
Lost motion	0.002°		
Moment rigidity	Yaw rigidity 0.08 s/N-cm, roll rigidity 0.03 s/N-cm		Yaw rigidity 0.16 s/N-cm
Load capacity	98 N (10 kgf)		78.4 N (8 kgf)
Mass	2.7 kg		5.4 kg
Maximum speed (at 5,000 pps)	10°/s		
Main materials/surface treatment	Aluminum alloy/white satin anodized finish		
Home position sensor	Normally open contact (make contact, A contact) operation, photo sensor		
Pre-home sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Applicable cables	TACB-BTD-D3, TARC-BTD-D3		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

◆ Sensor operating logic and timing chart



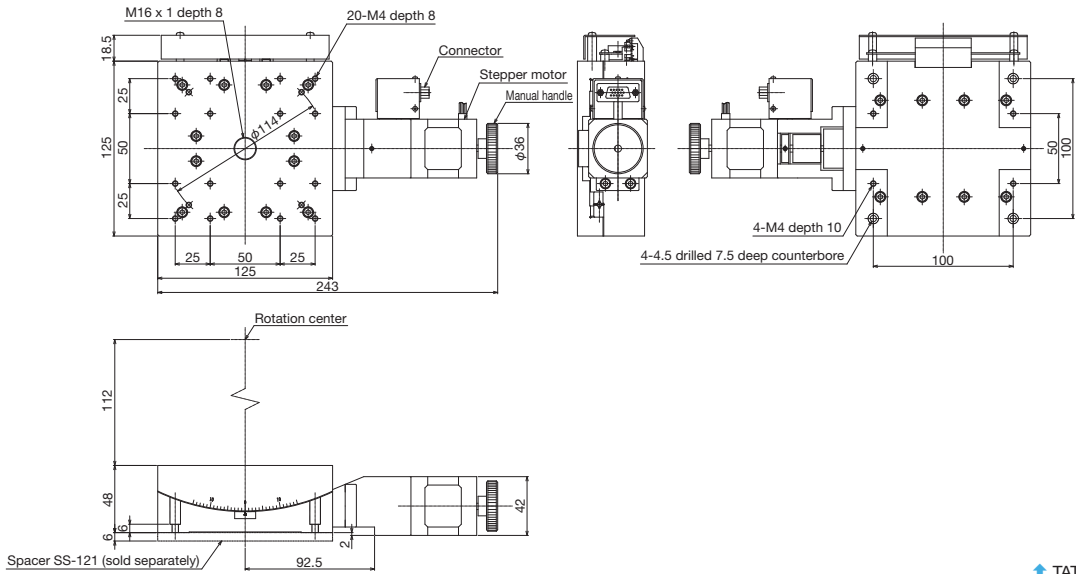
◆ Connection method: Connection cable and driver



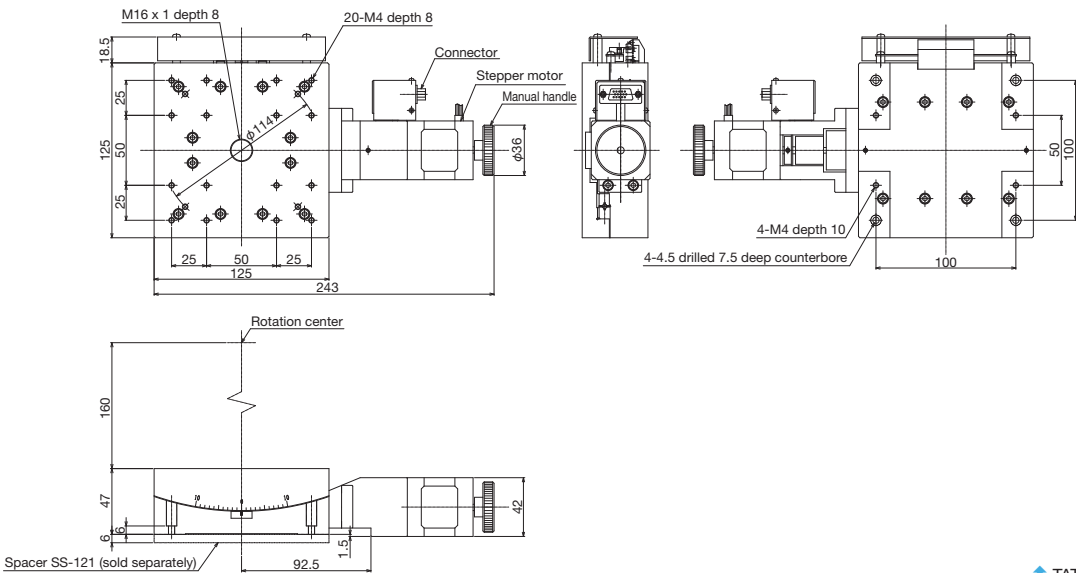


Tilt Stages ◀ Motorized Stages ◀

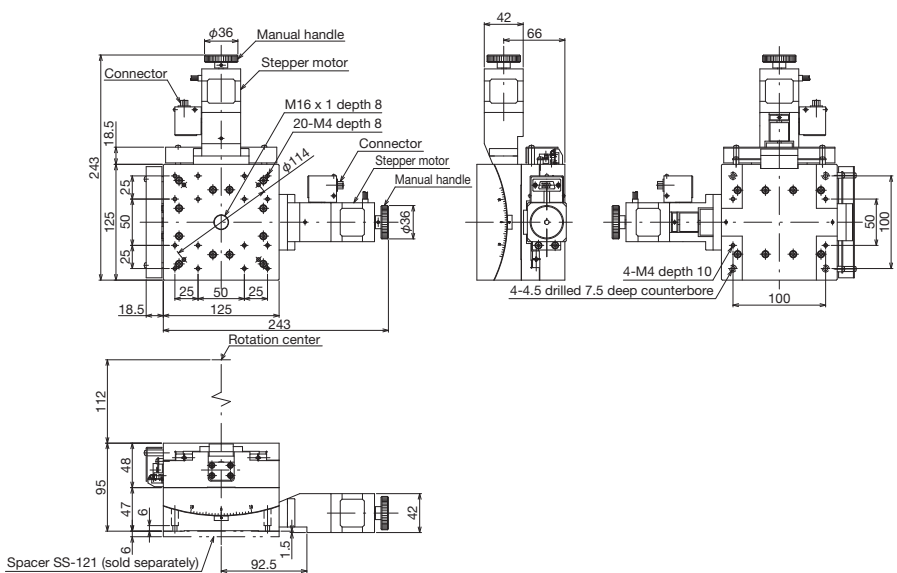
Product Appearance



↑ TATS-1230-HP



↑ TATS-1220-HP



↑ TATD-1220-HP

Motorized Stages	Automated Products for Microscopes	High-Grade Stages	30 mm x 30 mm (ø30 mm) Coarse Stages	Coarse Roller Stages	Ball Bushing High-Rigidity Stages	High-Precision High-Rigidity Stages	Z-Lift Stages	Tilt Stages	Connection Cases	Actuators
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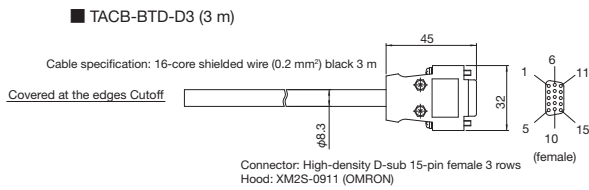
Driver Connection Cable

0.75 A/phase 0.75 A/phase motor

Features

- Driver connection cables are only wired to stage side connectors.

Model number	TACB-BTD-D3	TACB-BTM-D3
Model name	Driver connection cable 3 m	



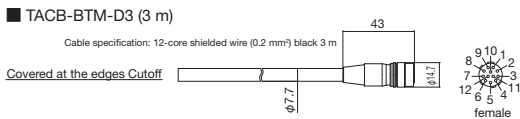
Lead color	No	Stage side
Brown	1	Blue motor lead B
Blue	2	Red motor lead D
Gray	3	Orange motor lead A
Orange	4	Green motor lead C
Pink	5	Black motor lead E
light blue	6	Sensor Vcc
Purple	7	CW limit
Green	8	CCW limit
Yellow	9	Sensor GND
Red	10	Home position sensor
White	11	Pre-home sensor
White/Blue	12	unused
White/Red	13	Brake control
White/Green	14	Brake control
Shield	15	FG

(Do not use this line)

Dotted line is the shield.

Compatible motorized stages

TALS-○○○-E○P○
 TALS-○○○-H○P○
 TALS-○○○-H1S
 TALD-○○○-E○P○
 TALD-○○○-H○P○
 TALD-○○○-H1S
 TALZ-○○○-E○P○
 TALZ-○○○-H○P○
 TALZ-○○○-H1S
 TALV-○○○-H○P
 TARS-○○○-HP
 TATS-○○○-HP
 TATD-○○○-HP



Lead color	No	Stage side
Brown	1	Blue motor lead B
Blue	2	Red motor lead D
Gray	3	Orange motor lead A
Orange	4	Green motor lead C
Pink	5	Black motor lead E
light blue	6	Sensor Vcc
Purple	7	CW limit
Green	8	CCW limit
Yellow	9	Sensor GND
Red	10	Home position sensor
White	11	unused
Shield	12	FG

(Do not use this line)

Dotted line is the shield.

Compatible motorized stages

TALS-○○1○-G○M○
 TALD-○○1○-G○M○
 TALZ-○○1○-G○M○
 TALV-○○○○-H○M
 TARS-○○○○-○M
 TATS-○○○○-○M
 TATD-○○○○-○M
 TMSS-C series



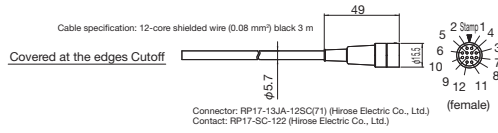
Connection Cables ◀ Motorized Stages ▶

Driver Connection Cable

0.35 A/phase 0.35 A/phase motor

Model number	TACB-BTC-D3
Model name	Driver connection cable 3 m

■ TACB-BTC-D3 (3 m)



Lead color	No.	Stage side
Pink/red	1	Blue motor lead B
Pink/black	2	Red motor lead D
Orange/red	3	Orange motor lead A
Orange/black	4	Green motor lead C
Yellow/red	5	Black motor lead E
Yellow/black	6	Sensor Vcc
Gray/red	7	CCW limit
Gray/black	8	CCW limit
White/red	9	Sensor GND
White/black	10	Home position sensor
	11	unused
Shield	12	FG

Dotted line is the shield.

Compatible motorized stages

Product adopting
a 20 mm x 20 mm
0.35 A/phase stepper motor

TA○○-3○○-○M

Motorized Stages	Automated Products for Microscopes	Manual Stages	High-Grade Stages	30 mm x 30 mm (φ30 mm) Contact Stages	Class Roller Stages	Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Lift Stages	TTR Stages	Connection Cables	Actuators
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Driver connection cable (robot cable)

0.75 A/phase 0.75 A/phase motor



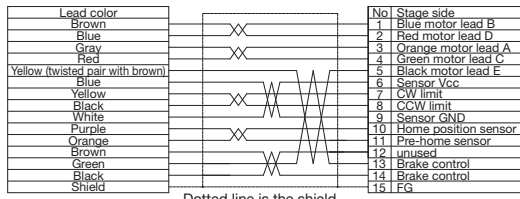
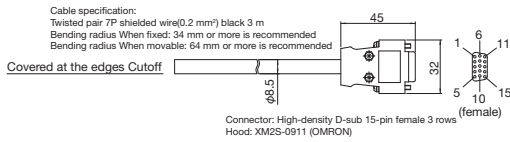
↑ TARC-BTD-D3

Features

- Driver connection cables are only wired to stage side connectors.
- Uses a robot cable with excellent flexibility and torsional resistance, ideal for use in environments where the cable is pulled and turned frequently.
- Catalog products exceeding 3 m can be custom-made up to 10 m. However, this may increase the effect of issues such as noise, which cause malfunctions. Please take note of this in advance.

Model number	TARC-BTD-D3
Model name	Driver connection cable 3 m (robot cable specification)

■ TARC-BTD-D3



Compatible motorized stages

- TALS-○○○-E○P○
- TALS-○○○-H○P○
- TALS-○○○-H1S
- TALD-○○○-E○P○
- TALD-○○○-H○P○
- TALD-○○○-H1S
- TALZ-○○○-E○P○
- TALZ-○○○-H○P○
- TALZ-○○○-H1S
- TALV-○○○-H○P
- TARS-○○○-HP
- TATS-○○○-HP
- TATD-○○○-HP



Connection Cables ◀ Motorized Stages ◀

Driver connection cable (robot cable)

0.75 A/phase 0.75 A/phase motor



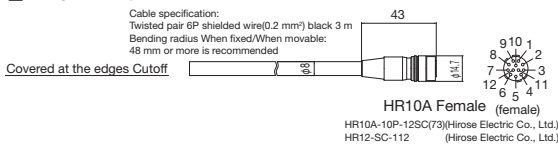
↑ TARC-BTM-D3

Features

- Driver connection cables are only wired to stage side connectors.
- Uses a robot cable with excellent flexibility, softness, and torsional resistance, ideal for use in environments where the cable is pulled and turned frequently.
- Catalog products exceeding 3 m can be custom-made up to 10 m. However, this may increase the effect of issues such as noise, which cause malfunctions. Please take note of this in advance.

Model number	TARC-BTM-D3
Model name	Driver connection cable 3 m (robot cable specification)

TARC-BTM-D3



Covered at the edges Cutoff

Lead color	No	Stage side
Brown	1	Blue motor lead
Black	2	Red motor lead
Red	3	Orange motor lead
Black	4	Green motor lead
Orange (twisted pair with black)	5	Black motor lead
Yellow	6	Sensor Vcc
Green	7	CW limit
Black	8	CCW limit
Black	9	Sensor GND
Blue	10	Home position sensor
Black	11	unused
Shield	12	FG

(Do not use this line)

Dotted line is the shield.

The above indicates twisted pairs.

Compatible motorized stages

- TALS-0010-GOM0
- TALD-0010-GOM0
- TALZ-0010-GOM0
- TALV-0000-HOM0
- TARS-0000-OM
- TATS-0000-OM
- TATD-0000-OM
- TMSS-C series

Motorized Stages

Automated Products for Microscopes

Manual Stages

High-Grade Stages

30 mm x 30 mm Compact Stages

Class Roller Stages

Ball Bushing Stages

High-Precision/High-Rigidity Stages

Z-Lift Stages

Tilt Stages

Connection Cables

Actuators



► Motorized Stages ► Actuators | Product List

Motorized Stages

Automated Products for Microscopes

Manual Stages

High-Grade Stages (40 mm x 30 mm) Compact Stages

Cross Roller Stages

Ball Bushing High-Rigidity Stages




High-Precision/High-Rigidity Stages

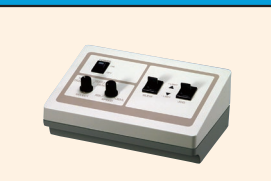
Z-Lin Stages



Tilt Stages

Correction Cables

Actuators

Page	Example product photo	Type	Model number	Travel amount	Motor
91		Auto Micro (motorized micrometer head)	TAMH-13	0 to 13 mm	Coreless geared motor
			TAMH-15	0 to 15 mm	
			TAMH-25	0 to 25 mm	

Page	Example product photo	Type	Model number	Number of axes controlled
91		Auto Micro Controller	TAMC-4	4 axes (exclusively for Auto Micro)

Page	Example product photo	Type	Model number	Travel amount	Motor
93		Auto Micro (electric actuator)	TAMS-15B	0 to 15 mm	Stepper motor (0.35 A/phase)
			TAMS-30B	0 to 30 mm	



■ **Auto micro TAMH**

◆ **Compatible with micrometer heads**

This electric micrometer head can be used to replace micrometer heads with a $\phi 9.5$ mm stem to enable automatic feeding with manual stages.

◆ **3 travel amounts**

13 mm, 15 mm, and 25 mm products are available.

◆ **Dedicated controller**

TAMC-4 is available as a dedicated controller for auto micro TAMH.

Auto micro TAMH can be connected to up to 4 axes, switching between them using a switch to drive one axis at a time.

■ **Auto micro (stepper motor specification) TAMS**

◆ **Compatible with micrometer heads**

This electric micrometer head can be used to replace micrometer heads with a $\phi 9.5$ mm stem to enable automatic feeding with manual stages.

◆ **2 travel amounts**

15 mm and 30 mm products are available.

◆ **Compact, high thrust, lightweight**

20 mm x 20 mm stepper motors are combined with a reduction gear to have high thrust despite the compact size.

*The motor is a dedicated THK CHUO specification.

◆ **Cable included**

A connector cable is present on the motor part to enable drivers/controller drivers to be connected for use as-is.

Motorized Stages	Automated Products for Microscopes	Manual Stages	High-Capacity Stages	30 mm x 30 mm Compact Stages	Class Roller Stages	Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Lift Stages	Tilt Stages	Connection Cables	Actuators
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Auto Micros, Auto Micro Controller



↑ TAMH-13



↑ TAMH-15



↑ TAMH-25



↑ TAMC-4

Features

- Auto micro has a motorized micrometer head.
- Both the diameter and length are extremely compact.
- These are compatible and interchangeable with the micrometer heads used by THK CHUO manual stages.
- A flat or spherical tip can be selected by exchanging the spindle cap.
- The Auto Micro Controller is a dedicated controller for driving auto micros.
- Each axis can be driven one at a time by switching between them.
- An overcurrent limiter is used for limit detection, enabling it to stop not only at the end of travel of the auto micro head, but also when moving to the stage limits.
- Auto micro operating speed can be continuously adjusted using a knob.
- TTL signals enable external control signals to be transmitted.

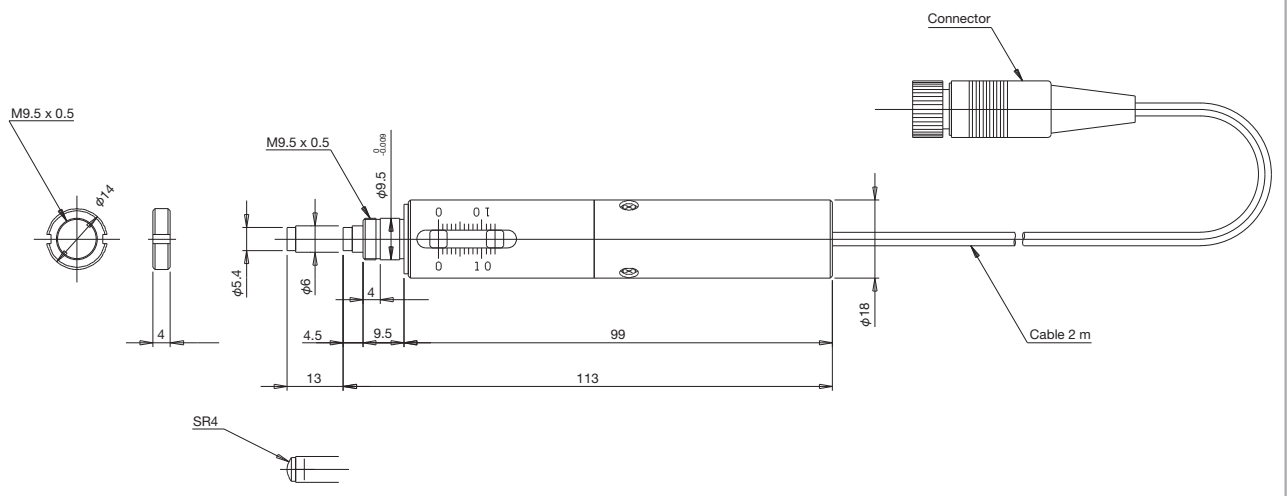
Model number	TAMH-13	TAMH-15	TAMH-25
Model name	Auto Micro 13 mm	Auto Micro 15 mm	Auto Micro 25 mm
Travel amount	0 to 13 mm	0 to 15 mm	0 to 25 mm
Motor used	Coreless geared motor		
Thrust	7 kgf		
Mount diameter	φ 9.5 0-0.009 mm		φ 10 0-0.009 mm
Maximum speed	1 mm/s		
Operating temperature	20±10°C		
Cable length	2 m		
Mass	0.13 kg		0.14 kg
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

Model number	TAMC-4
Model name	4-Axis Auto Micro Controller
Controlled axes	4 axes
External dimensions	W 180 mm x D 125 mm x H 70 mm (excludes protruding parts)
Mass	0.6 kg

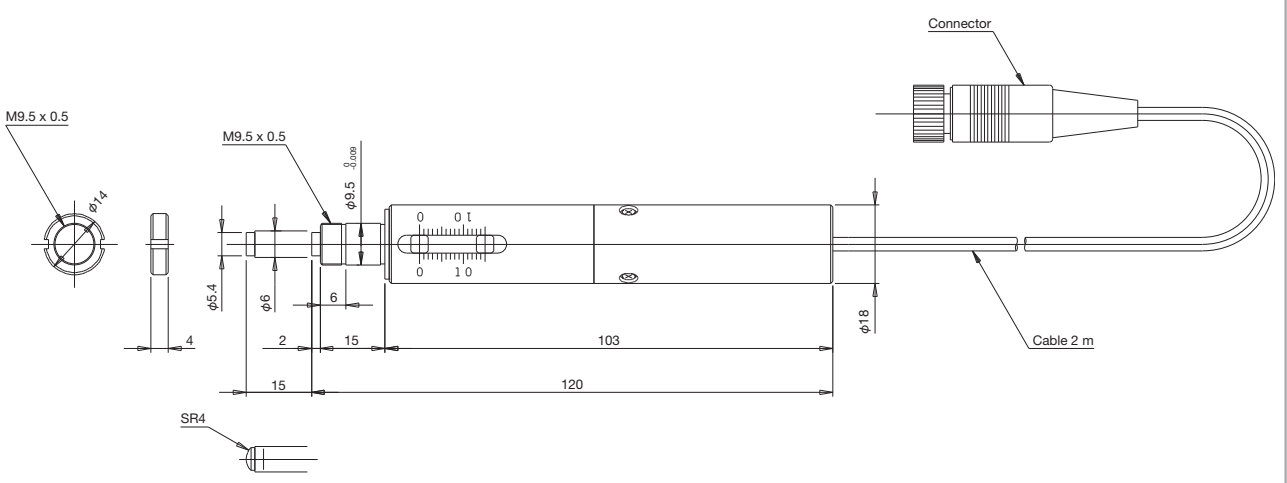


Actuators ◀ Motorized Stages ◀

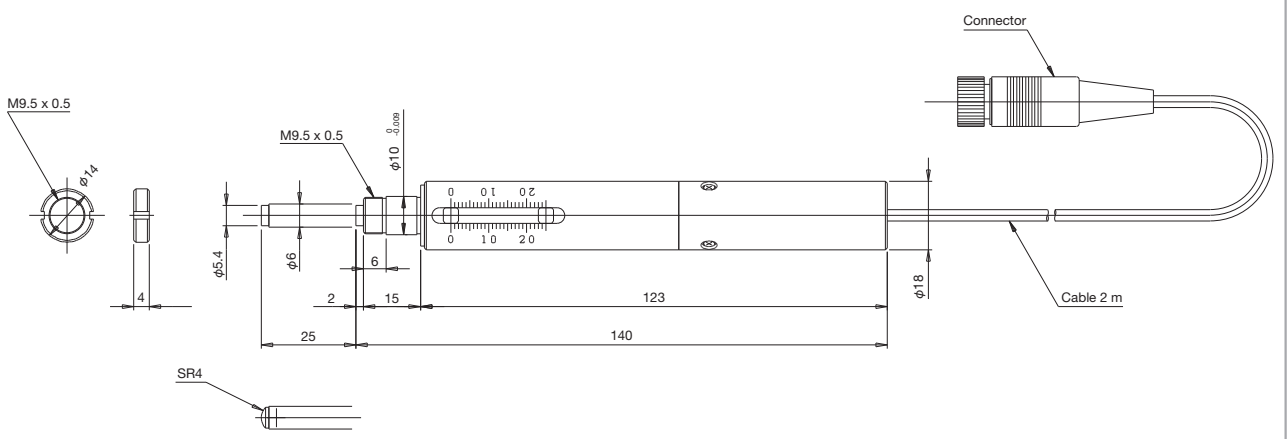
Product Appearance



↑ TAMH-13



↑ TAMH-15



↑ TAMH-25

Motorized Stages	Automated Products for Microscopes
Manual Stages	
High-Grade Stages	
30 mm x 30 mm Contact Stages	
Coax Roller Stages	
Ball Bushing Stages	
High-Precision/High-Rigidity Stages	
Z-Lift Stages	
Tilt Stages	
Connection Cases	
Actuators	

Auto Micro (Stepper Motor Specification)

0.35 A/phase 0.35 A/phase motor



↑ TAMS-15B



↑ TAMS-30B

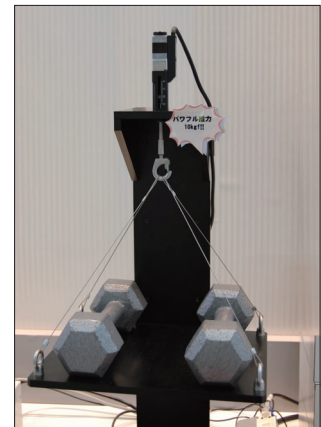
Features

- A motorized actuator adopting a 5-phase stepper motor.
- Extremely powerful with 10 kgf of thrust.
- Reduction gear with a 1:50 reduction ratio is equipped for extremely high resolution.
- Limit sensors that can be used for home position sensing are equipped as standard.

Model number	TAMS-15B	TAMS-30B
Model name	Auto Micro (Stepper Motor Specification)	
Travel amount	0 to 15 mm	0 to 30 mm
Motor used	PK513PB equivalent (5-wire type pentagonal wiring, 0.35 A/phase)	
Thrust	98 N (10 kgf)	
Resolution	0.00002 mm	
Feed screw lead	0.5 mm	
Positioning accuracy	0.01 mm	0.015 mm
Repeatability	±0.003 mm	
Mount diameter	φ 9.5 0-0.009 mm	φ 10 0-0.009 mm
Mass	0.25 kg	0.27 kg
Reduction gear	Reduction ratio 1:50	
Maximum speed (at 15,000 pps)	0.3 mm/s	
Main materials/surface treatment	Steel/black chrome	
Home position sensor	-	
Pre-home sensor	-	
Limit sensor	Normally closed contact (break contact, B contact) operation, photo sensor	
Cable length	Approx. 1.5 m	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain	



• Usage example 1: Mounting to a manual stage

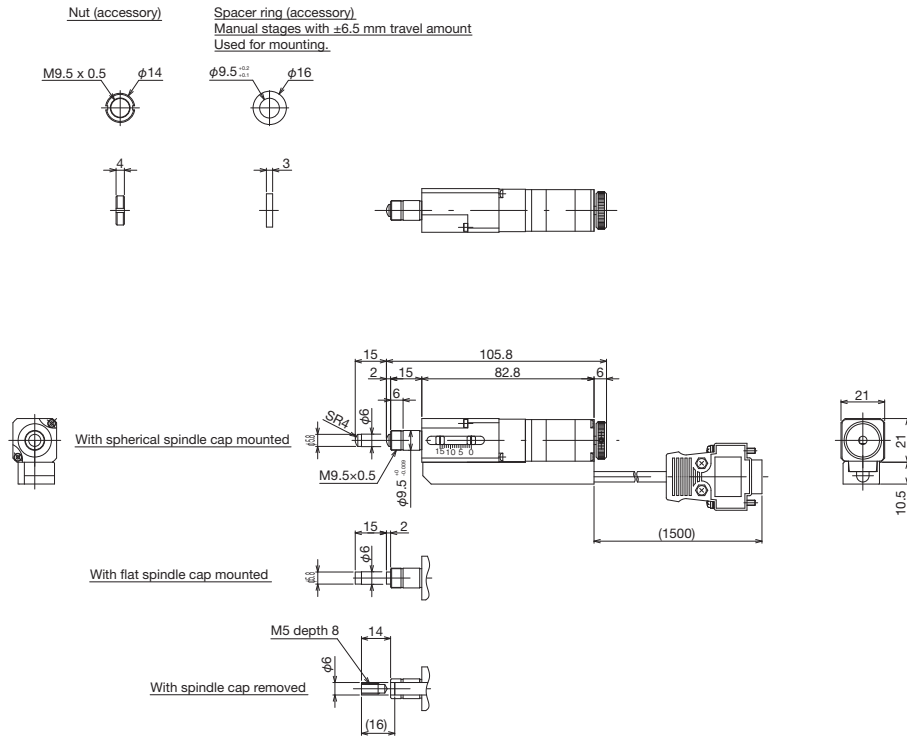


• Usage example 2: Capable of lifting 10 kg workpieces up and down

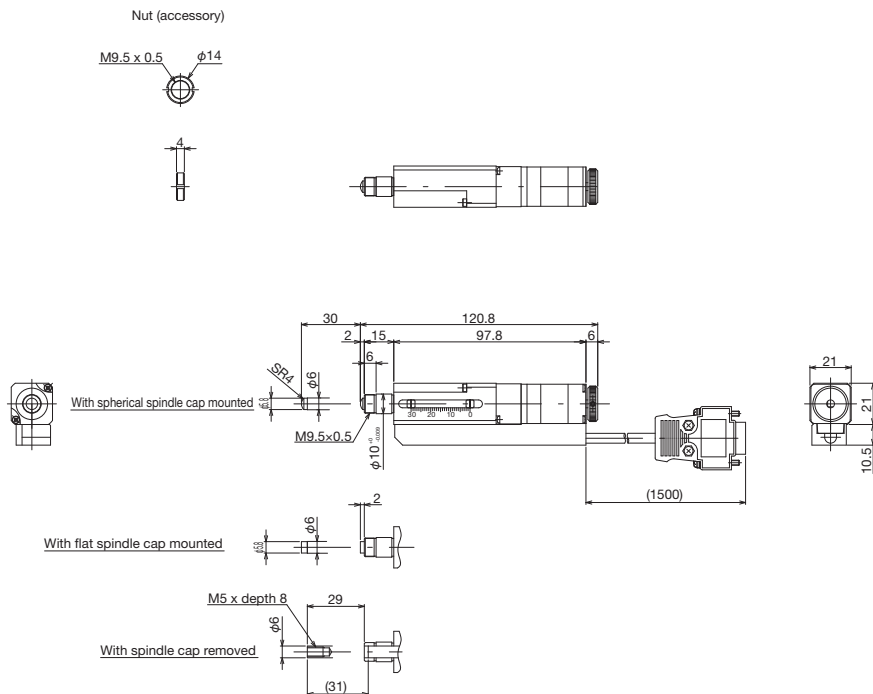


Actuators ◀ Motorized Stages ▶

Product Appearance



↑ TAMS-15B









↑ TAMS-30B

Motorized Stages	Automated Products for Microscopes	Manual Stages	High-Grade Stages	30 mm x 30 mm (40 mm) Compact Stages	Class Roller Stages	Ball Bushing Stages	High-Precision/High-Rigidity Stages	Z-Lift Stages	TTR Stages	Connection Cases	Actuators
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■ Stepper motor specifications

Page	Example product photo	Type	Model number		Stage surface	Travel amount
97		XY Stage	TMSS-50D-OA	For OLYMPUS	155 mm x 155 mm	±25 mm
			TMSS-50D-OB	For OLYMPUS		
			TMSS-50D-NA	For NIKON		
99		XY Stage	TMSS-50WD-OA	For OLYMPUS	205 mm x 155 mm	X axis ±50 mm, Y axis ±25 mm
			TMSS-50WD-OB	For OLYMPUS		
			TMSS-50WD-NA	For NIKON		
101		XY Stage	TMSS-100D	-	205 mm x 183 mm	±50 mm
103		XY Stage	TMSS-150D	For OLYMPUS and NIKON	280 mm x 230 mm	±75 mm
			TMSS-150D-OA	For OLYMPUS		
			TMSS-150D-NA	For NIKON		
			TMSS-150D-NB	For NIKON		
			TMSS-150D-NC	For NIKON		
105		XY Stage	TMSS-200D	For OLYMPUS and NIKON	355 mm x 305 mm	±100 mm
			TMSS-200D-NA	For NIKON		
107		XY Stage	TMSS-300D	For OLYMPUS	460 mm x 405 mm	±150 mm
			TMSS-300D-NA	For NIKON		

Motorized Stages

Automated Products for Microscopes

Manual Stages

Microscope XY Stages



Features | Micro Scanning Stages ◀ Automated Products for Microscopes ◀

◆ Thin/lightweight/large travel amount

This motorized stage is not only thin and lightweight for microscope applications, but it also achieves a large travel amount.

◆ High accuracy

Adopts ball screws and cross roller guides for uncompromising accuracy.

■ Guide method comparison table

	Travel accuracy	Load capacity	Rigidity
V-groove and cross rollers (HG-VCR)	☆	☆	☆
V-groove and cross rollers	◎	◎	◎
Ball bushing	△	△	△

☆: Outstanding ◎: Excellent △: Fair

◆ Home position sensor included as standard equipment

A home position sensor (photo sensor) is equipped as standard, enabling high-accuracy return to home position.

Limit sensors are equipped as standard.

◆ Stage specifications

Equipped with a 5-phase stepper motor.

	Stepper motor
Maximum speed	16 mm/s (at 8,000 pps)
Motor control method	Open loop control
Stage operating method	Controller driver communication or operation via operating parts

◆ Environmental measures

Products that do not contain 10 substances regulated by European RoHS.

Motorized Stages

Automated Products for Microscopes

Manual Stages

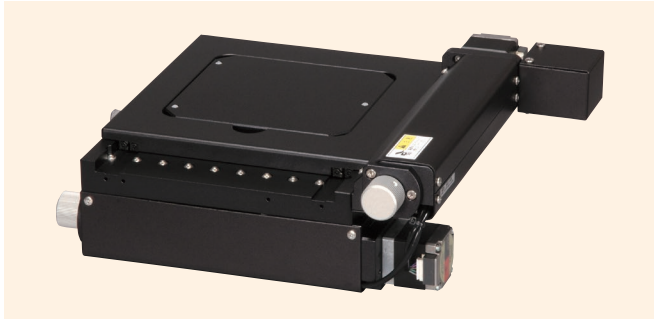
Microscope Stages

Micro Scanning Stages



0.75 A/phase

0.75 A/phase motor



↑ TMSS-50D

Model number	Supported microscopes	
TMSS-50D-OA	OLYMPUS	BH2
TMSS-50D-OB	OLYMPUS	BX40, BX41M-LED, BX51, BX51M, BX60, BX61
TMSS-50D-NA	NIKON	OPTIPHOTO 100S, Eclipse ME600

*Models with -OA, -OB, or -NA at the end of the model number include an adapter to support use with microscopes.

Features

- Thin type lightweight stage with 50 mm x 50 mm travel amount.
- Thin and lightweight to support microscope applications without compromising accuracy.

Model number	TMSS-50D-OA	TMSS-50D-OB	TMSS-50D-NA
Model name	Micro Scanning Stage		
Travel direction	XY-axis double direction		
Travel amount	±25 mm		
Stage surface	155 mm x 155 mm		
Motor used	PK523HPA equivalent (5-wire type pentagonal wiring, 0.75 A/phase)		
Resolution	0.002 mm		
Feed screw specification	Ball screw		
Feed screw lead	1 mm		
Travel guide	V-groove and cross rollers		
Travel accuracy	Straightness (horizontal/vertical): 0.008 mm		
Positioning accuracy (1/10 stroke)	X axis: 0.005 mm, Y axis: 0.005 mm		
Positioning accuracy (full stroke)	X axis: 0.020 mm, Y axis: 0.010 mm		
Repeatability	±0.002 mm		
Lost motion	0.002 mm		
Load capacity	29.4 N (3 kgf)		
Mass	2.7 kg (excluding aluminum plate)		
Maximum speed (at 8,000 pps)	16 mm/s		
Main materials/surface treatment	Aluminum alloy/black satin anodized finish		
Home position sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Applicable cables	TACB-BTM-D3, TARC-BTM-D3		
Standard accessories	Aluminum plate		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		



OLYMPUS Microscope Combination Example
The photo shows TMSS-300D.

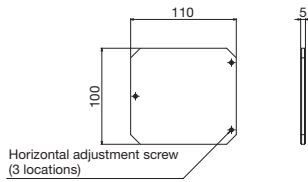


NIKON Microscope Combination Example
The photo shows TMSS-200D-NA.

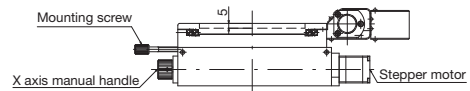
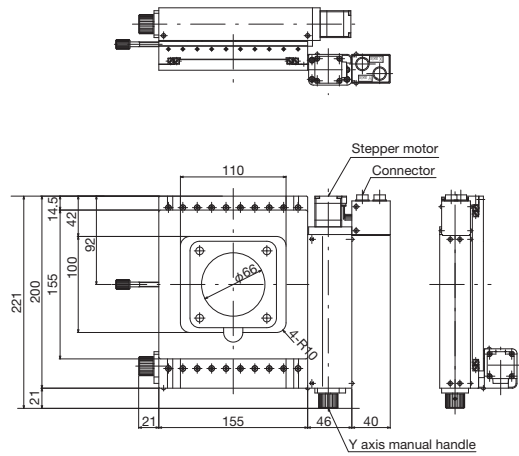
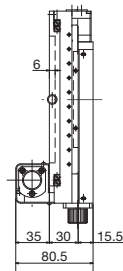
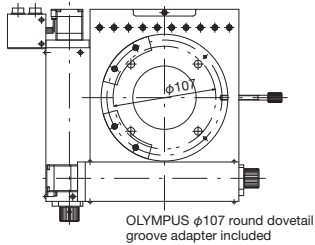
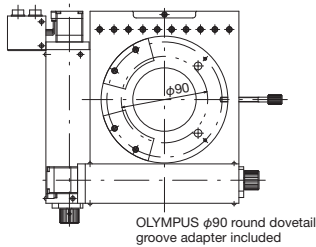
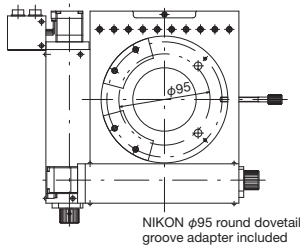


XY Stages for Microscopes ◀ Automated Products for Microscopes ▶

Product Appearance



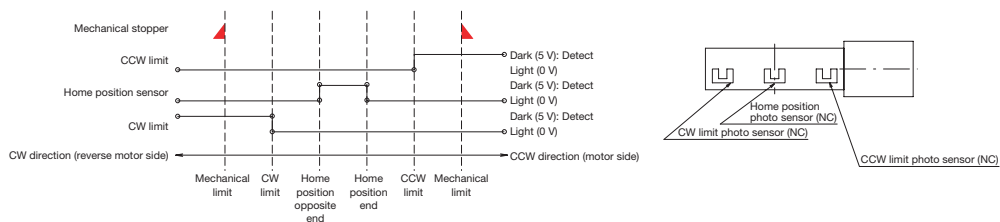
Aluminum plate



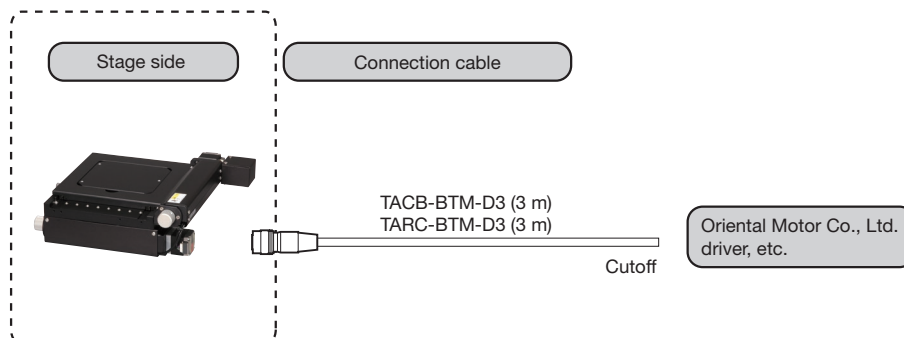
↑ TMSS-50D

Motorized Stages
Automated Products for Microscopes
Manual Stages
Microscope XY Stages

◀ Sensor operating logic and timing chart



◀ Connection method: Connection cable and driver

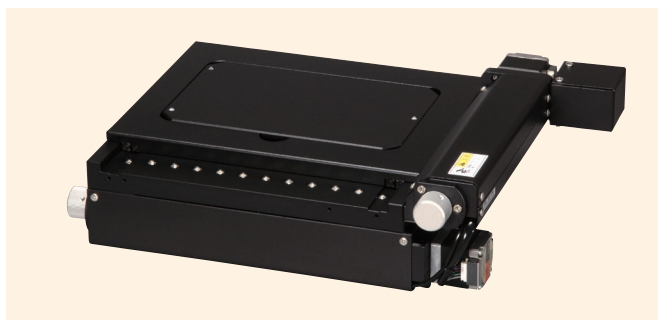


Micro Scanning Stages

V-CR method

0.75 A/phase

0.75 A/phase motor



↑ TMSS-50WD

Model number	Supported microscopes	
TMSS-50WD-OA	OLYMPUS	BH2
TMSS-50WD-OB	OLYMPUS	BX40, BX41M-LED, BX51, BX51M, BX60, BX61
TMSS-50WD-NA	NIKON	OPTIPHOTO 100S, Eclipse ME600

*Models with -OA, -OB, or -NA at the end of the model number include an adapter to support use with microscopes.

Features

- Thin type lightweight stage with 100 mm x 50 mm travel amount.
- Thin and lightweight to support microscope applications without compromising accuracy.

Model number	TMSS-50WD-OA	TMSS-50WD-OB	TMSS-50WD-NA
Model name	Micro Scanning Stage		
Travel direction	XY-axis double direction		
Travel amount	X axis: ±50 mm, Y axis: ±25 mm		
Stage surface	205 mm x 155 mm		
Motor used	PK523HPA equivalent (5-wire type pentagonal wiring, 0.75 A/phase)		
Resolution	0.002 mm		
Feed screw specification	Ball screw		
Feed screw lead	1 mm		
Travel guide	V-groove and cross rollers		
Travel accuracy	Straightness: (horizontal) 0.010 mm, (vertical) 0.015 mm		
Positioning accuracy (1/10 stroke)	X axis: 0.010 mm, Y axis: 0.005 mm		
Positioning accuracy (full stroke)	X axis: 0.040 mm, Y axis: 0.010 mm		
Repeatability	±0.002 mm		
Lost motion	0.002 mm		
Load capacity	29.4 N (3 kgf)		
Mass	3.3 kg (excluding aluminum plate)		
Maximum speed (at 8,000 pps)	16 mm/s		
Main materials/surface treatment	Aluminum alloy/black satin anodized finish		
Home position sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor		
Applicable cables	TACB-BTM-D3, TARC-BTM-D3		
Standard accessories	Aluminum plate		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		



OLYMPUS Microscope Combination Example
The photo shows TMSS-300D

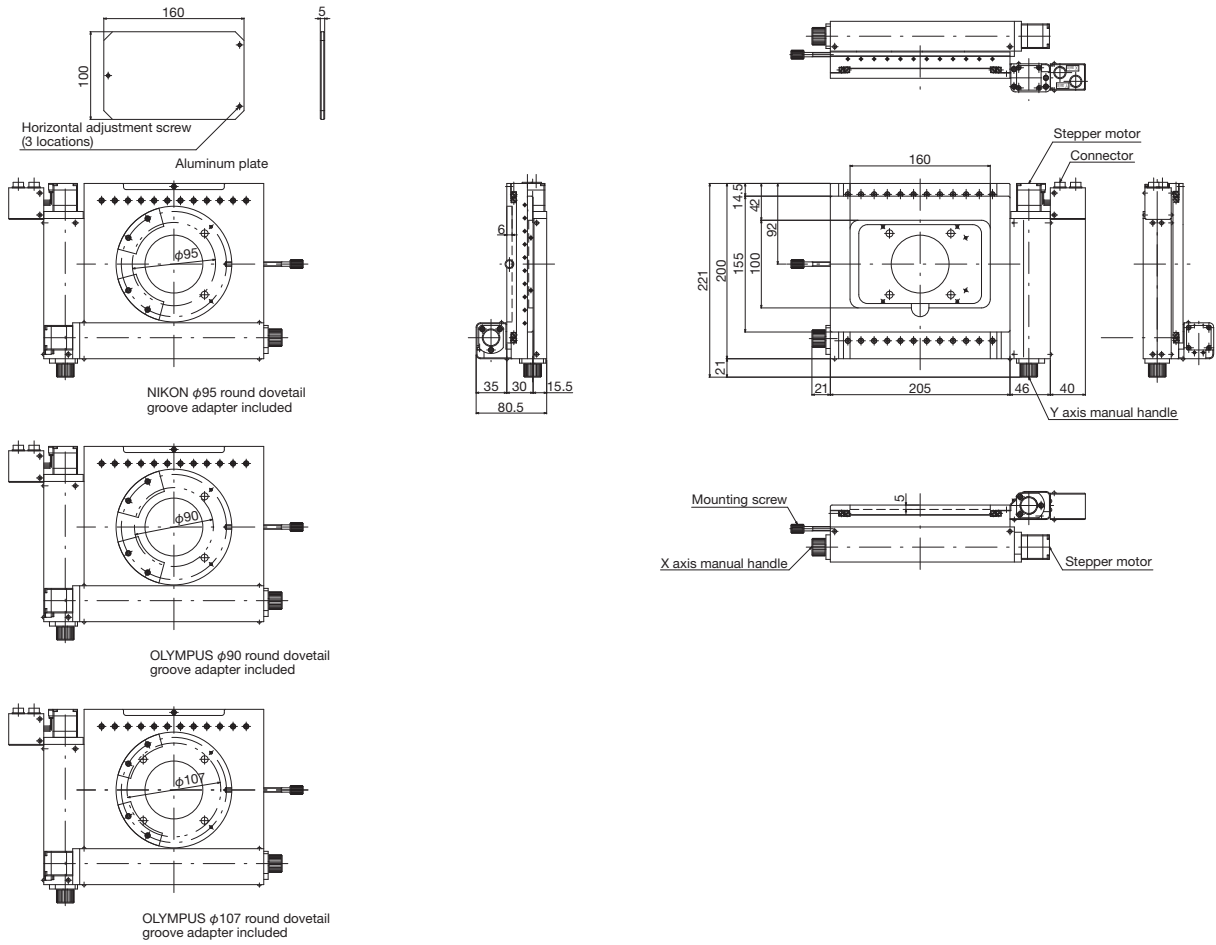


NIKON Microscope Combination Example
The photo shows TMSS-200D-NA



XY Stages for Microscopes ◀ Automated Products for Microscopes ▶

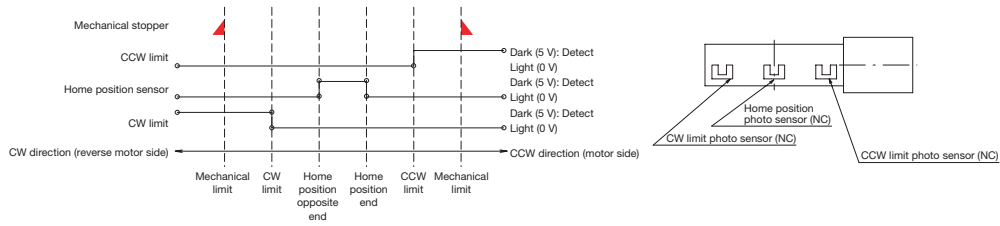
Product Appearance



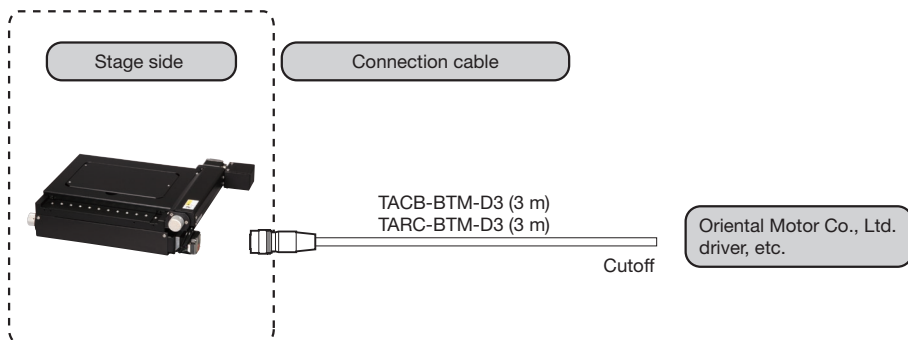
↑ TMSS-50WD

Motorized Stages
Automated Products for Microscopes
Manual Stages
Microscope XY Stages

◆ Sensor operating logic and timing chart



◆ Connection method: Connection cable and driver



Micro Scanning Stages

◆ V-CR method **0.75 A/phase** 0.75 A/phase motor



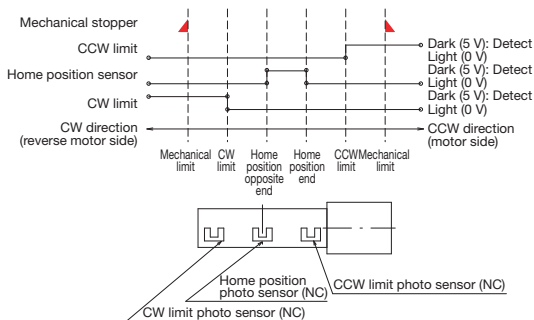
↑ TMSS-100D

Features

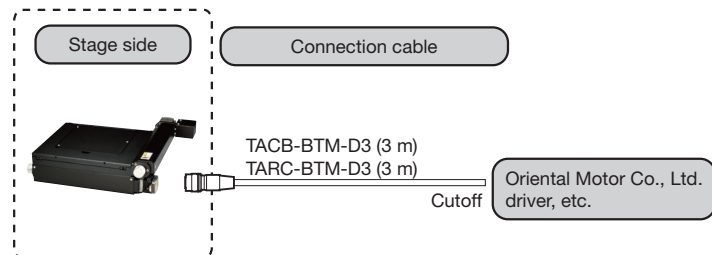
- Thin type lightweight stage that supports 4-inch objects with 100 mm x 100 mm travel amount.
- Thin and lightweight to support microscope applications without compromising accuracy.

Model number	TMSS-100D
Model name	Micro Scanning Stage
Travel direction	XY-axis double direction
Travel amount	±50 mm
Stage surface	205 mm x 183 mm
Motor used	PK523HPA equivalent (5-wire type pentagonal wiring, 0.75 A/phase)
Resolution	0.002 mm
Feed screw lead	1 mm
Travel guide	V-groove and cross rollers
Travel accuracy	Straightness: (horizontal) 0.010 mm, (vertical) 0.015 mm
Positioning accuracy (1/10 stroke)	X axis: 0.010 mm, Y axis: 0.010 mm
Positioning accuracy (full stroke)	X axis: 0.040 mm, Y axis: 0.040 mm
Repeatability	±0.002 mm
Lost motion	0.003 mm
Load capacity	29.4 N (3 kgf)
Mass	3.5 kg (excluding aluminum plate)
Maximum speed (at 8,000 pps)	16 mm/s
Main materials/surface treatment	Aluminum alloy/black satin anodized finish
Home position sensor	Normally closed contact point (break contact, B contact) operation, photo sensor
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor
Applicable cables	TACB-BTM-D3, TARC-BTM-D3
Standard accessories	Aluminum plate
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain

◆ Sensor operating logic and timing chart



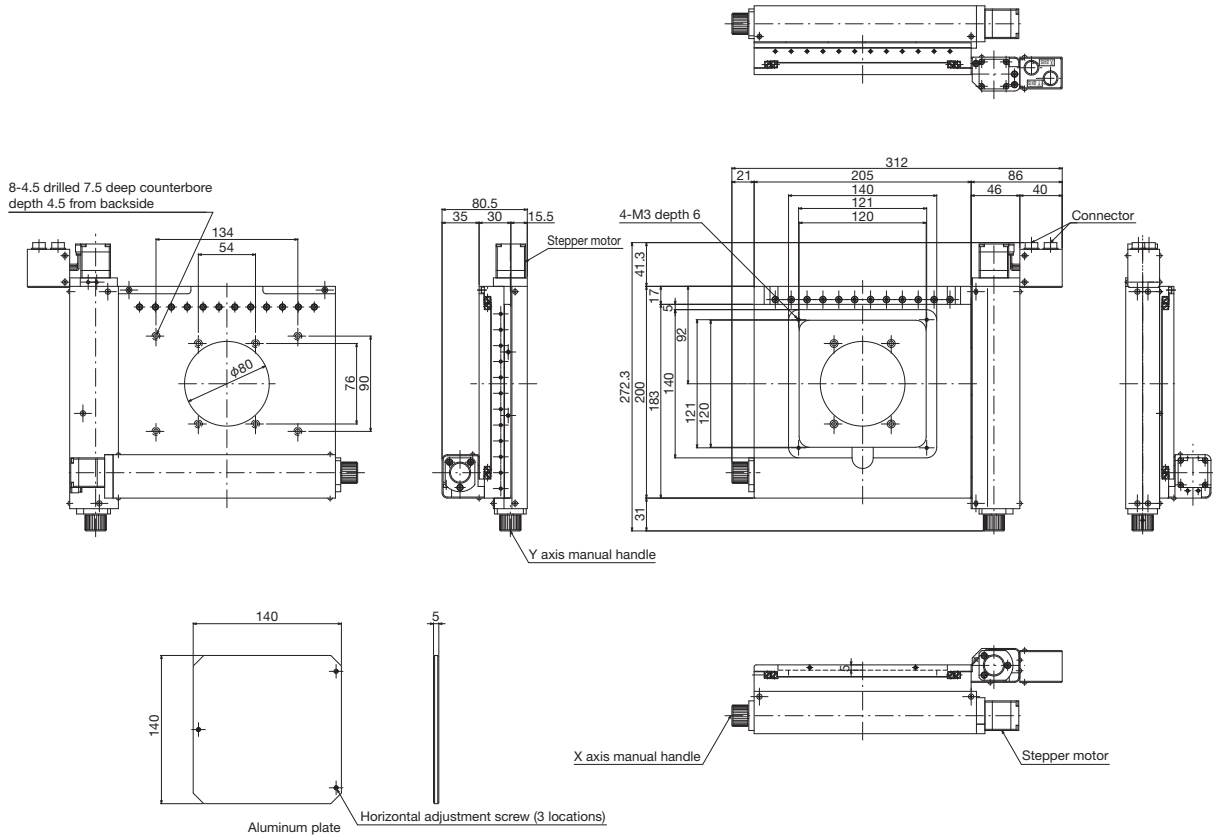
◆ Connection method: Connection cable and driver





XY Stages for Microscopes ◀ Automated Products for Microscopes ◀

Product Appearance



↑ TMSS-100D

Motorized Stages
Automated Products for Microscopes
Manual Stages
Microscope XY Stages

Micro Scanning Stages

V-CR method **0.75 A/phase** 0.75 A/phase motor



↑ TMSS-150D

Model number	Supported microscopes	
TMSS-150D	OLYMPUS	MX50, MX61, MX61L, MX63, MX80
	NIKON	OPTIPHOTO 150, Eclipse L150
TMSS-150D-OA	OLYMPUS	MX40, MX51
TMSS-150D-NA	NIKON	ECLIPSE LV150/LV150A
TMSS-150D-NB	NIKON	ECLIPSE LV100D
TMSS-150D-NC	NIKON	ECLIPSE L200/L200A

*Models with -OA, -NA, -NB, or -NC at the end of the model number include an adapter to support use with microscopes.

Microscope Combination Example

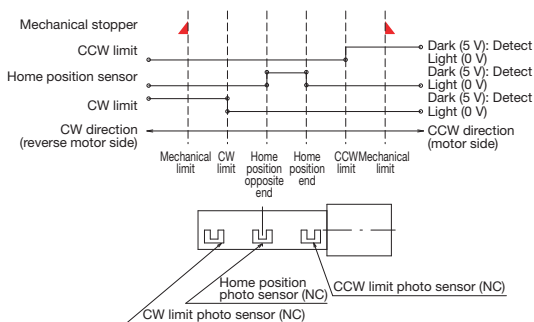


Features

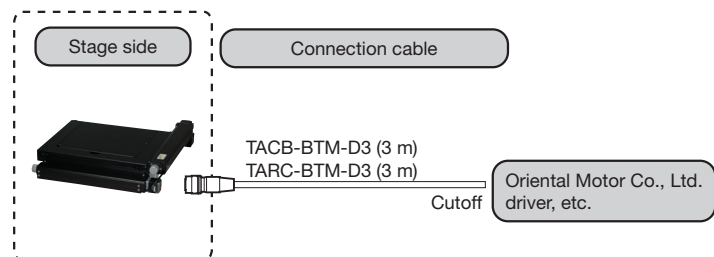
- Thin type lightweight stage that supports 6-inch objects with 150 mm x 150 mm travel amount.
- Thin and lightweight to support microscope applications without compromising accuracy.

Model number	TMSS-150D	TMSS-150D-OA	TMSS-150D-NA	TMSS-150D-NB	TMSS-150D-NC
Model name	Micro Scanning Stage				
Travel direction	XY-axis double direction				
Travel amount	±75 mm				
Stage surface	280 mm x 230 mm				
Motor used	PK523HPA equivalent (5-wire type pentagonal wiring, 0.75 A/phase)				
Resolution	0.002 mm				
Feed screw lead	1 mm				
Travel guide	V-groove and cross rollers				
Travel accuracy	Straightness: (horizontal) 0.010 mm, (vertical) 0.015 mm				
Positioning accuracy (1/10 stroke)	X axis: 0.010 mm, Y axis: 0.010 mm				
Positioning accuracy (full stroke)	X axis: 0.030 mm, Y axis: 0.030 mm				
Repeatability	±0.002 mm				
Lost motion	0.003 mm				
Load capacity	49 N (5 kgf)				
Mass	5.1 kg (excluding aluminum plate)				
Maximum speed (at 8,000 pps)	16 mm/s				
Main materials/surface treatment	Aluminum alloy/black satin anodized finish				
Home position sensor	Normally closed contact point (break contact, B contact) operation, photo sensor				
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor				
Applicable cables	TACB-BTM-D3, TARC-BTM-D3				
Standard accessories	Aluminum plate				
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain				

◆ Sensor operating logic and timing chart



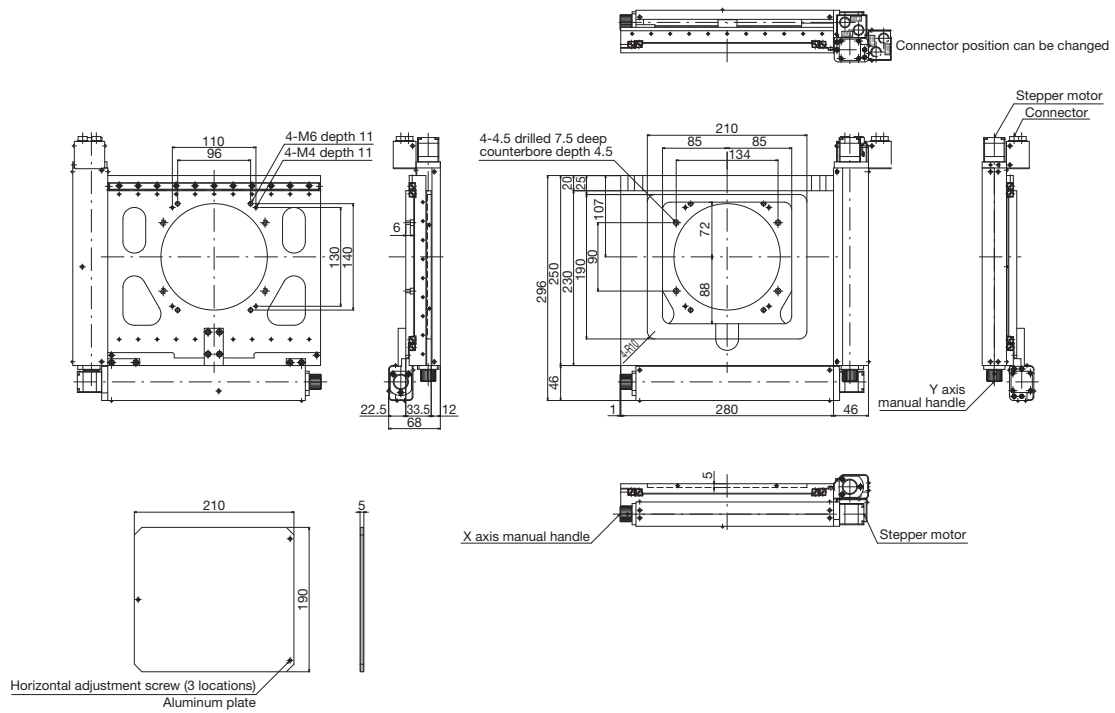
◆ Connection method: Connection cable and driver



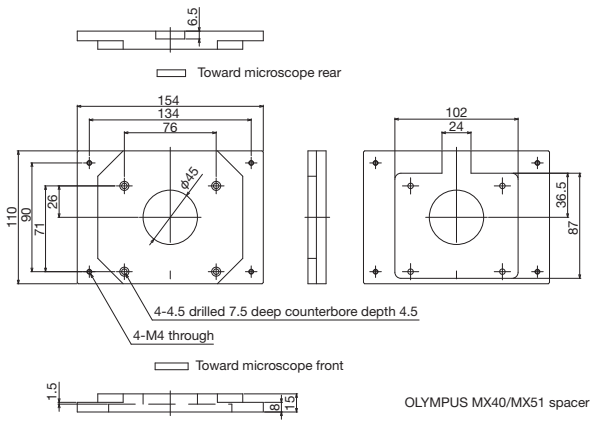


XY Stages for Microscopes ◀ Automated Products for Microscopes ▶

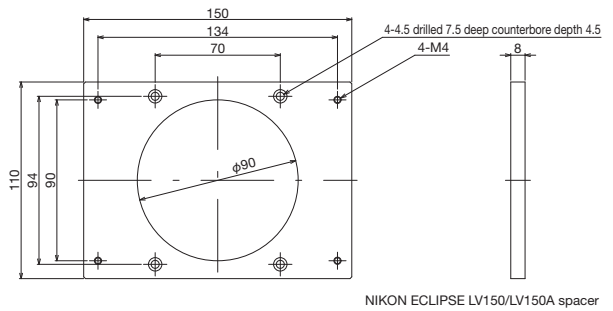
Product Appearance



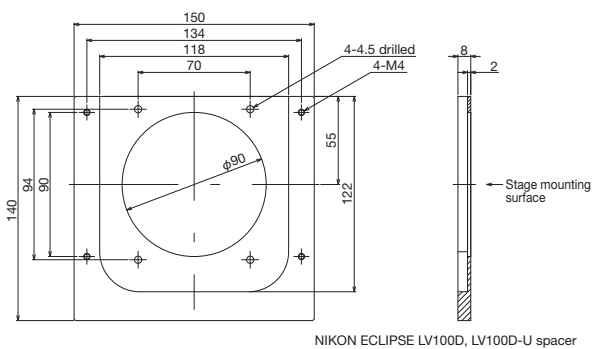
↑ TMSS-150D



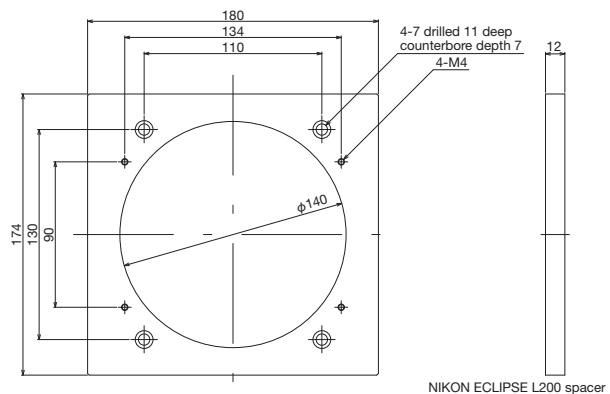
↑ TMSS-150D-OA spacer



↑ TMSS-150D-NA spacer



↑ TMSS-150D-NB spacer



↑ TMSS-150D-NC spacer

- Motorized Stages
- Automated Products for Microscopes
- Manual Stages
- Microscope XY Stages

Micro Scanning Stage

V-CR method

0.75 A/phase

0.75 A/phase motor



↑ TMSS-200D

Model number	Supported microscopes	
TMSS-200D	OLYMPUS	MX50, MX61, MX61A, MX61L, MX80
	NIKON	OPTIPHOTO 200
TMSS-200D-NA	NIKON	ECLIPSE L200/L200A/L200D/L200N/L200ND

*Models with -NA at the end of the model number include an adapter to support use with microscopes.

Microscope Combination Example

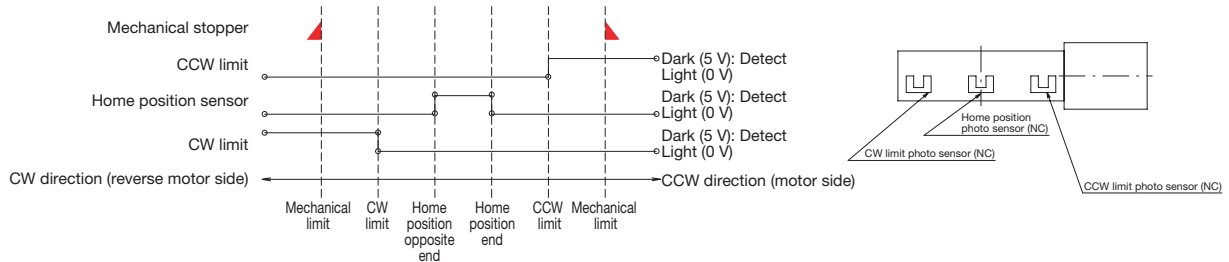


Features

- Thin type lightweight stage that supports 8-inch objects with 200 mm x 200 mm travel amount.
- Thin and lightweight to support microscope applications without compromising accuracy.

Model number	TMSS-200D	TMSS-200D-NA
Model name	Micro Scanning Stage	
Travel direction	XY-axis double direction	
Travel amount	±100 mm	
Stage surface	355 mm x 305 mm	
Motor used	PK523HPA equivalent (5-wire type pentagonal wiring, 0.75 A/phase)	
Resolution	0.002 mm	
Feed screw specification	Ball screw	
Feed screw lead	1 mm	
Travel guide	V-groove and cross rollers	
Travel accuracy	Straightness: (horizontal) 0.010 mm, (vertical) 0.025 mm	
Positioning accuracy (1/10 stroke)	X axis: 0.015 mm, Y axis: 0.015 mm	
Positioning accuracy (full stroke)	X axis: 0.060 mm, Y axis: 0.050 mm	
Repeatability	±0.002 mm	
Lost motion	0.003 mm	
Load capacity	49 N (5 kgf)	
Mass	7.3 kg (excluding aluminum plate)	
Maximum speed (at 8,000 pps)	16 mm/s	
Main materials/surface treatment	Aluminum alloy/black satin anodized finish	
Home position sensor	Normally closed contact point (break contact, B contact) operation, photo sensor	
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor	
Applicable cables	TACB-BTM-D3, TARC-BTM-D3	
Standard accessories	Aluminum plate	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain	

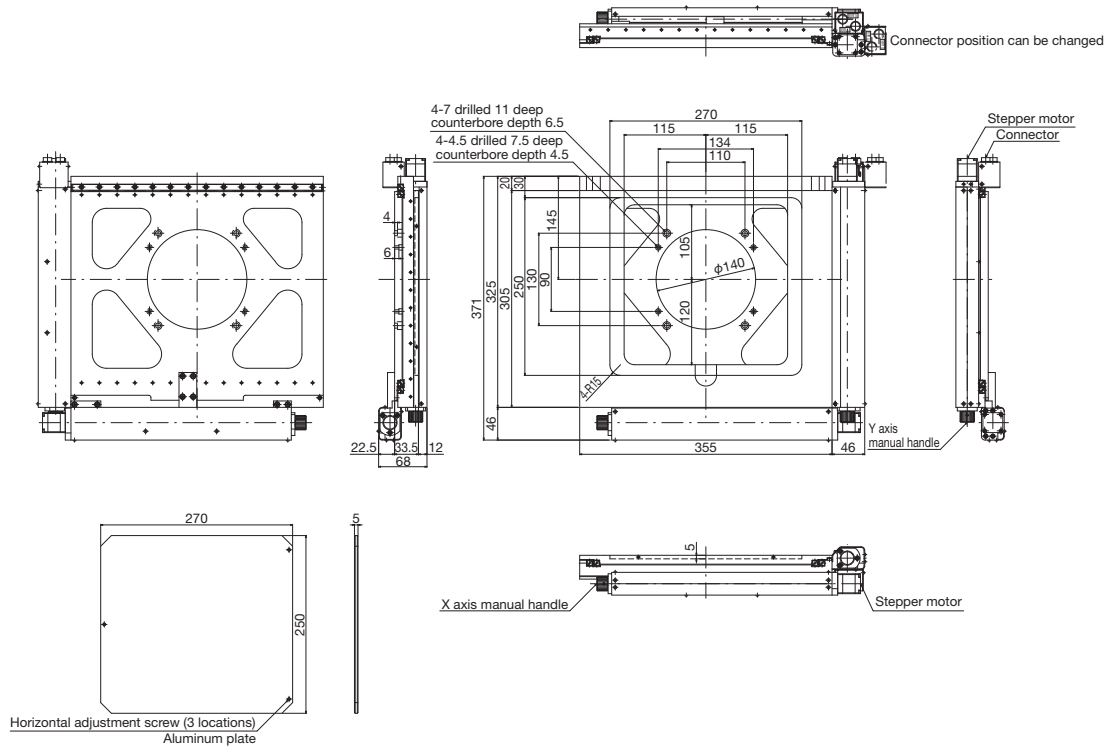
◆ Sensor operating logic and timing chart



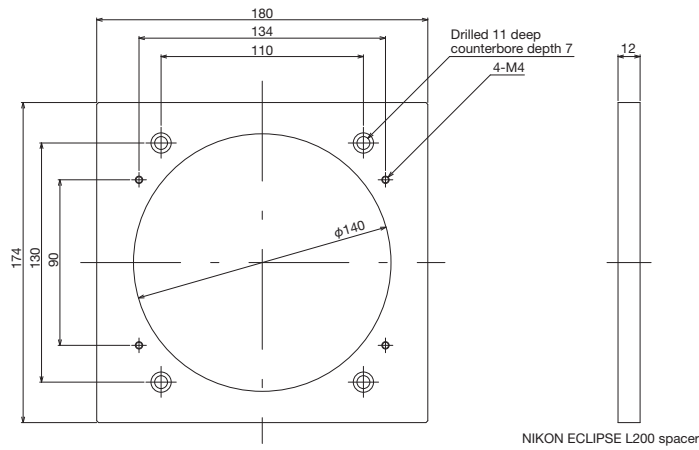


XY Stages for Microscopes ◀ Automated Products for Microscopes ▶

Product Appearance

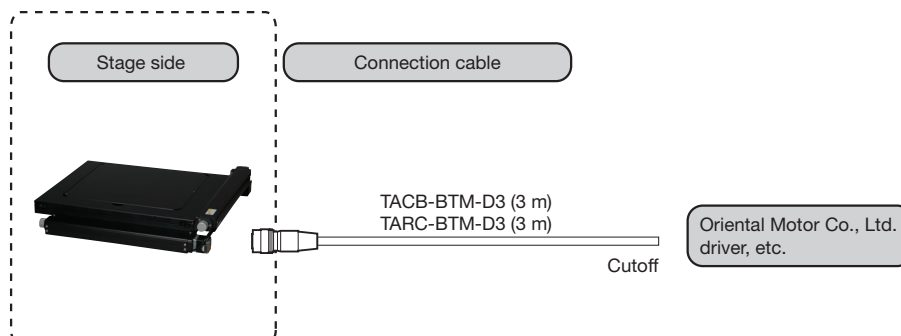


↑ TMSS-200D



↑ TMSS-200D-NA spacer

◆ Connection method: Connection cable and driver



Motorized Stages
Automated Products for Microscopes
Manual Stages
Microscope XY Stages

Micro Scanning Stage

V-CR method

0.75 A/phase

0.75 A/phase motor



↑ TMSS-300D

Model number	Supported microscopes	
TMSS-300D	OLYMPUS	MX61A, MX61L, MX80
TMSS-300D-NA	NIKON	OPTIPHOTO 300, Eclipse L300/L300D

*Models with -NA at the end of the model number include an adapter to support use with microscopes.

Microscope Combination Example

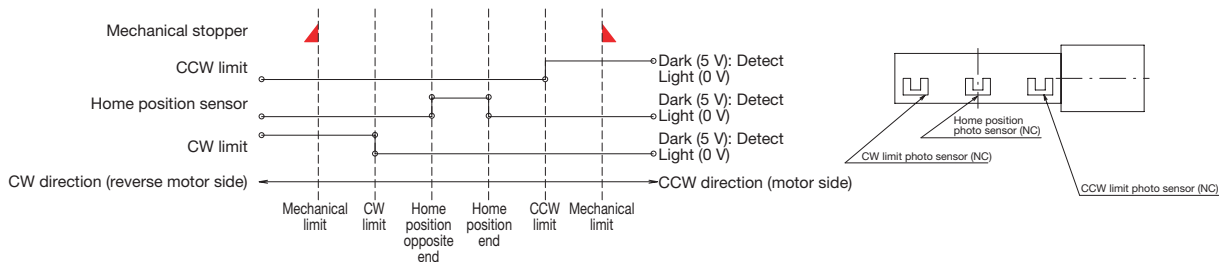


Features

- Thin type lightweight stage with 300 mm x 300 mm travel amount.
- Thin and lightweight to support microscope applications without compromising accuracy.

Model number	TMSS-300D	TMSS-300D-NA
Model name	Micro Scanning Stage	
Travel direction	XY-axis double direction	
Travel amount	±150 mm	
Stage surface	460 mm x 405 mm	
Motor used	PK525HPA equivalent (5-wire type pentagonal wiring, 0.75 A/phase)	
Resolution	0.002 mm	
Feed screw specification	Ball screw	
Feed screw lead	1 mm	
Travel guide	V-groove and cross rollers	
Positioning accuracy (1/10 stroke)	X axis: 0.040 mm, Y axis: 0.040 mm	
Positioning accuracy (full stroke)	X axis: 0.120 mm, Y axis: 0.100 mm	
Repeatability	±0.002 mm	
Lost motion	0.003 mm	
Load capacity	49 N (5 kgf)	
Mass	10.3 kg (excluding aluminum plate)	
Maximum speed (at 8,000 pps)	16 mm/s	
Main materials/surface treatment	Aluminum alloy/black satin anodized finish	
Home position sensor	Normally closed contact point (break contact, B contact) operation, photo sensor	
Limit sensor	Normally closed contact point (break contact, B contact) operation, photo sensor	
Applicable cables	TACB-BTM-D3, TARC-BTM-D3	
Standard accessories	Aluminum plate	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain	

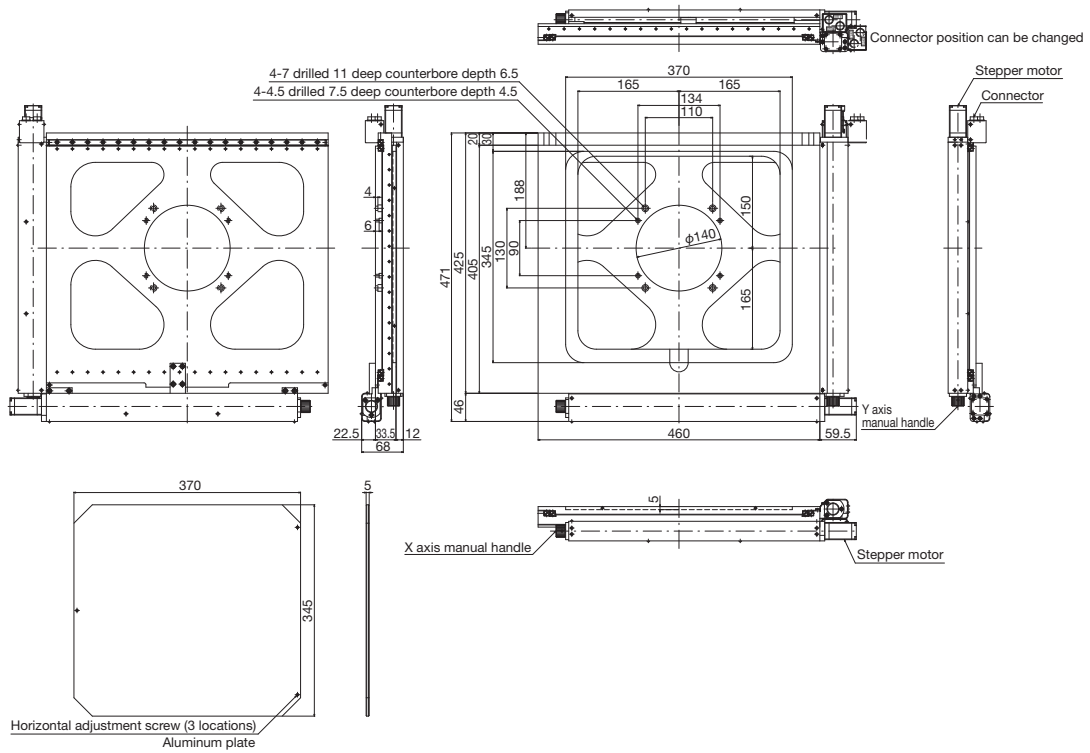
◆ Sensor operating logic and timing chart



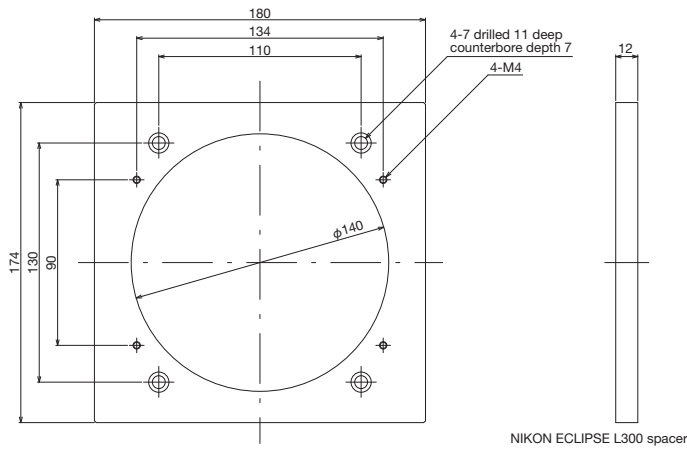


XY Stages for Microscopes ◀ Automated Products for Microscopes ▶

Product Appearance

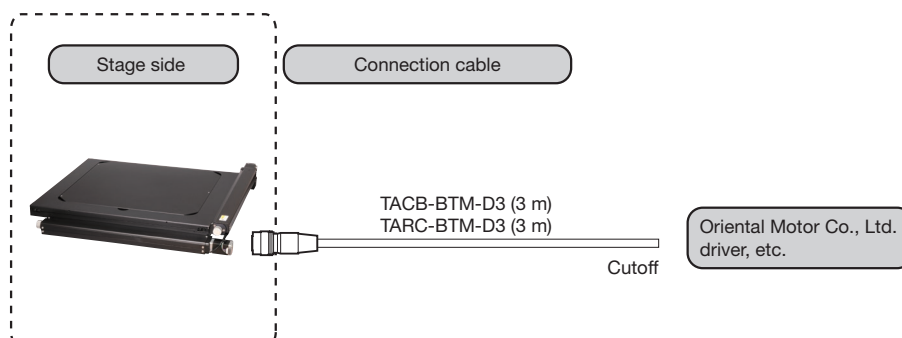


↑ TMSS-300D



↑ TMSS-300D-NA included spacer

◆ Connection method: Connection cable and driver



Motorized Stages
Automated Products for Microscopes
Manual Stages
Microscope XY Stages



THK CHUO Manual Stages

Foreword

THK CHUO sells a wide range of stages to meet the needs of our customers.

THK CHUO manual stages are available in a variety of models with each specification clearly defined to enable selection based on our customer's objectives.

THK CHUO motorized stages have common mounting screws and standard mounting reference holes for inter-compatibility.

1 Features

- 1 Selecting a manual stage to suit the application is easy because the stage surface dimensions, travel amount, travel accuracy, etc., are made clear.
- 2 The stage surface mounting screw holes and base surface mounting holes are compatible, enabling them to be combined to suit customer specifications.
- 3 Almost all stages are equipped with a clamping mechanism as standard.
- 4 We also have an extensive after-service and support system.

■ Stage surface size

THK CHUO manual stage basic surface sizes and types are listed in the following table.

X, XY, Z Tilt Stages	Rack & Pinion Stages	Rotary Stages
30 mm x 30 mm	30 mm x 30 mm	φ 30 mm
40 mm x 40 mm	40 mm x 40 mm	φ 40 mm
50 mm x 50 mm		φ 50 mm
60 mm x 60 mm	40 mm x 60 mm	φ 60 mm
70 mm x 70 mm		φ 70 mm
90 mm x 90 mm	40 mm x 90 mm	φ 90 mm
125 mm x 125 mm		φ 125 mm
125 mm x 150 mm	40 mm x 140 mm	φ 150 mm

Table 3 Basic Stage Surface Sizes

■ Base Mounting Holes (Fig. 1)

The positions and sizes of the holes drilled on the bottom surface of the basic stage are unified and compatible as shown in Fig. 1. Use this when combining various products. Also, take care to ensure planar accuracy of components for mounting stages. Depending on the stage, the accuracy of the stage may not be achieved if the planar accuracy of the parts used for installation is not sufficient.

■ Stage Surface Screw Holes (Fig. 2)

The screw positions and sizes for the top surface of the basic stage are unified and compatible as shown in Fig. 2. The stage top surface screws and stage bottom surface hole positions and sizes are compatible, enabling various combinations to be implemented. Use this when combining various products or loading objects (samples, etc.). Also, take care to ensure planar accuracy of components for mounting stages. Depending on the stage, the accuracy of the stage may not be achieved if the planar accuracy of the parts used for installation is not sufficient.

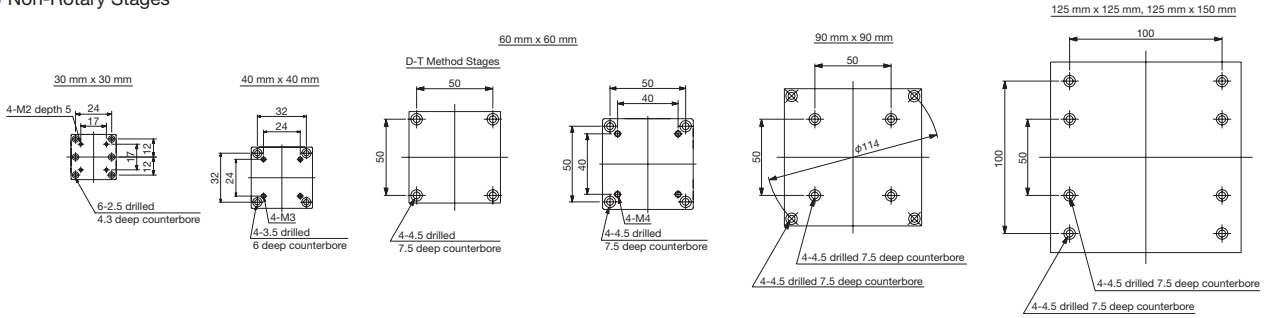


Manual Stages

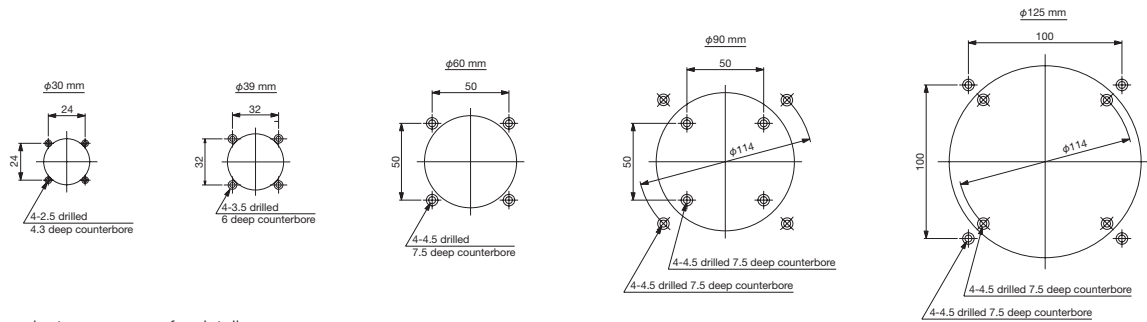
Motorized Stages
Automated Products for Microscopes
Manual Stages

▼ Base Mounting Holes (Fig. 1)

■ Non-Rotary Stages



■ Rotary Stages

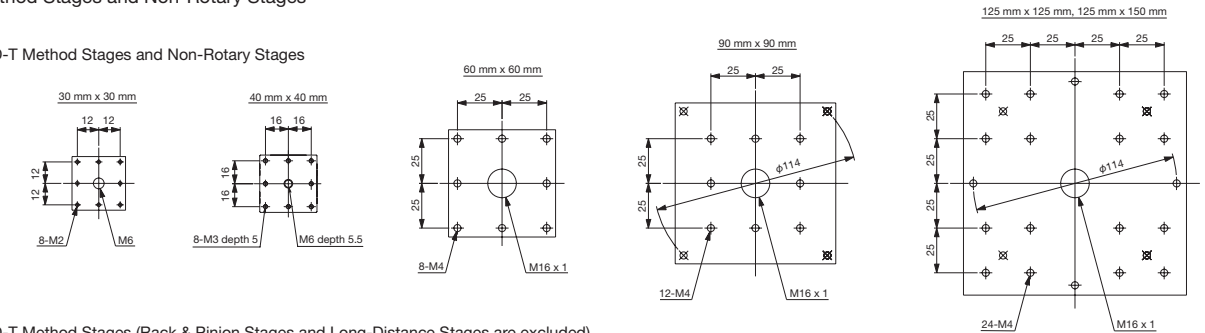


*See the product appearance for details.

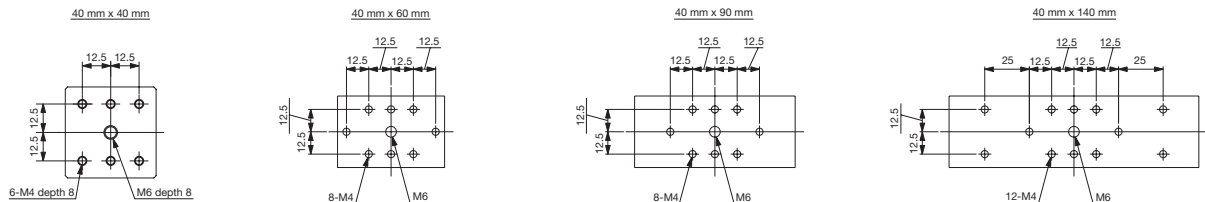
▼ Stage Surface Screw Holes (Fig. 2)

■ D-T Method Stages and Non-Rotary Stages

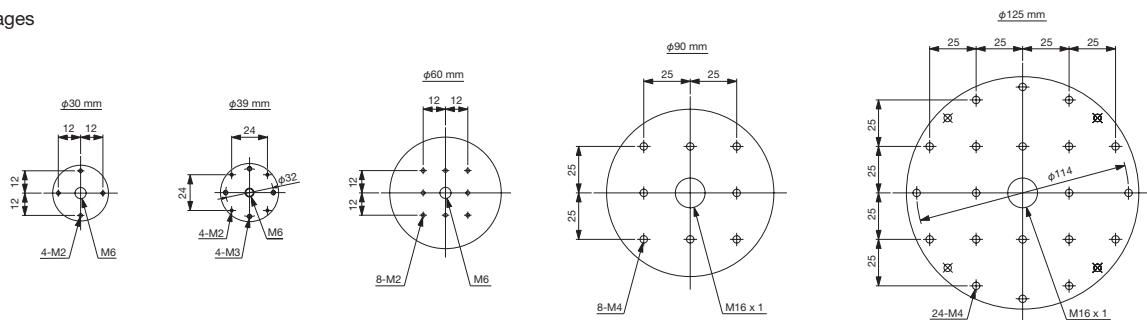
D-T Method Stages and Non-Rotary Stages



D-T Method Stages (Rack & Pinion Stages and Long-Distance Stages are excluded)



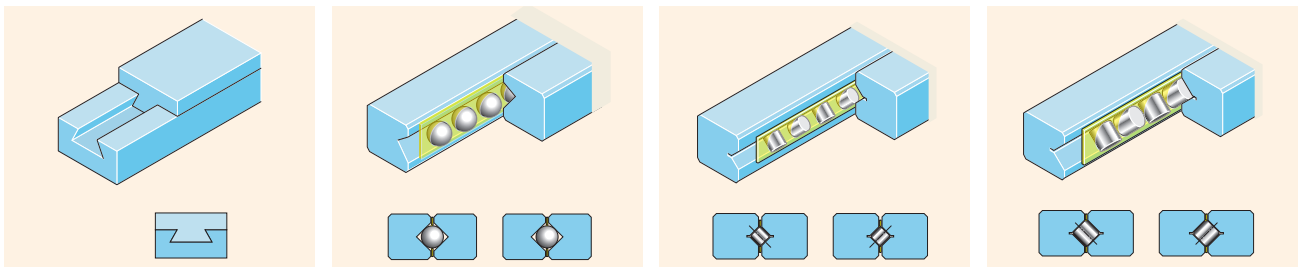
■ Rotary Stages



*See the product appearance for details.

2 Classification

THK CHUO stages are fundamentally classified into the following 4 guide methods.



Dovetail (D-T method)

V-groove rails and steel balls (V-B method)

V-groove and cross rollers (V-CR method)

V-groove and cross rollers (HG-VCR method)

■ Dovetail guide method (D-T method)

Structure: Rolling contact is not made with the raceway surface. Instead, sliding contact is made between a trapezoidal male and female dovetail mechanism.

Features: The guide part is in sliding contact, assembled such that the male and female dovetail sections slide smoothly against each other. THK CHUO stages mostly adopt rack & pinion drive mechanisms. Compared to other stages, these achieve long strokes at a low price.

Applications: Adopted for stages where accuracy is less important, as they are simply used for positioning. Ideal for combining with low power microscopes, CCTV focusing devices, and test sample positioning.

■ V-groove rails and steel balls (V-B method)

Structure: This guide has steel balls arranged on 2 V-groove rails along the raceway surface, and the steel balls roll along the V-groove for movement.

Features: The V-groove rail is hardened and then precision machined to achieve a guide with excellent straightness through high degrees of parallelism and planar precision.

The travel accuracy is the same as V-CR, but the load capacity is a little less than V-CR.

Applications: Ideal for precision feeding in optical experiments and for precise, fine positioning.

■ V-groove and cross rollers (V-CR method)

Structure: This guide has rollers arranged orthogonally on 2 V-groove rails along the raceway surface, and the rollers roll along the V-groove for movement.

Features: The V-groove rail is hardened and then precision machined for high a degree of parallelism and planar precision. In order to achieve smooth roller operation, the surfaces are specially finished to nearly a mirror surface, while the diameters are kept uniform for operation as an extremely high accuracy guide. As part of the structure, the V-grooves and rollers are in line contact, enabling high travel accuracy and large load capacity.

Applications: This type is adopted for precision positioning stages for high accuracy and large loads. Ideal for precision feeding in optical experiments and for precise, fine positioning. Can be used for precise positioning and measurement as part of various production or inspection equipment. Can be used for precise incremental feeding within equipment, or for measuring travel amounts.

■ V-groove and cross rollers (HG-VCR method)

Structure: V-grooves are machined into hardened steel rails, and 2 pairs of rails are arranged so that the V-grooves face each other. In the V-grooves, rollers are alternately arranged at 90°, wherein 2 pairs (4 rails to 1 set) form the guide rail mechanism.

These guide rails deliver the best in class for not only accuracy but also rigidity.

Features: THK CHUO received requests for more compact stages with increased rigidity from our customers. As a result, we developed a new type of guide rail with a completely new design, targeting improved cross roller guide performances. The roller diameters have been increased to the limit of the rail height dimensions, the distance between the rollers has been minimized as much as possible, and the number of rollers held by the retainer is increased. High preload, compact and ultra-high rigidity.

Applications: Adopted by THK CHUO's new motorized stages and manual stages. These support precise positioning of various sensors and cameras, in addition to enabling precise positioning and measurement in various production machines and inspection equipment. These can be used safely even in applications where a somewhat uneven load is applied.



3 Viewing Accuracy and Specification Tables

Model number (standard)	TLD-4042-C1	TLD-4042-S1	TLD-4042-C6	TLD-4042-S6	TLD-4042-C8	TLD-4042-S8
Model number (symmetrical)	TLD-4042-CR1	TLD-4042-SR1	TLD-4042-CR6	TLD-4042-SR6	TLD-4042-CR8	TLD-4042-SR8
Model name	High-Grade XY Stage 40 x 40					
(1) Travel direction	XY-axis double direction					
(2) Stage surface	40 mm x 40 mm					
(3) Clamp method	Plate clamp					
(4) Operating part mounting position	Center	Side	Center	Side	Center	Side
(5) Travel mechanism/feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
(6) Travel amount	±6.5 mm			±3 mm		
(7) Travel amount/1 knob rotation	0.5 mm			0.1 mm		
(8) Scale	Micrometer 0.01 mm		-	-	Micrometer 0.002 mm	
(9) Sensitivity	0.003 mm		0.01 mm		0.001 mm	
(10) Travel guide	HG-VCR (V-groove and cross rollers)					
(11) Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s					
(12) Permissible moment	Yaw 500 N-cm, pitch 500 N-cm, roll 500 N-cm					
(13) Moment rigidity	Yaw rigidity 0.08 s/N-cm, pitch rigidity 0.06 s/N-cm, roll rigidity 0.06 s/N-cm					
(14) Parallelism	0.030 mm					
(15) Parallelism of motion	0.014 mm					
(16) XY orthogonality	0.010 mm					
(17) Load capacity	95.2 N (9.7 kgf)					
(18) Mass	0.4 kg					
(19) Main materials/surface treatment	Stainless steel/Black oxide chrome					

(1) Travel Direction

The stage travel direction.

(2) Stage Surface

The size of the traveling part of the stage.

(3) Clamp Method

Indicates the clamp type.

(4) Operating Part Mounting Position

Indicates the mounting position of the operating part.

(5) Feed Method

Indicates the stage feed method.

(6) Travel Amount

Indicates how much the stage can travel.

(7) Travel Amount/1 Knob Rotation

Indicates the amount the stage travels per 1 rotation of the knob.

(8) Scale

The minimum range of the scale that can be read is displayed as the "scale."

(9) Sensitivity

Indicates the minimum increment by which people can operate by feel as the "sensitivity."

(10) Travel Guide

Indicates the guide method adopted.



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(11) Travel Accuracy

The travel accuracy is indicated as straightness (horizontal/vertical), yaw, and pitch criteria, with each defined as below.

■ Straightness (JIS B 6191-1993 compliant)

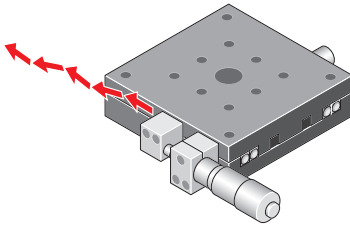
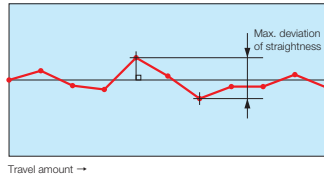
"The magnitude of the deviation from the geometrical straight line of motion of a part moving with linear motion."

Positioning is performed sequentially in one direction from the reference position. The difference between the displacement length at each position and the reference position is taken as the measured value at that position.

The maximum difference between the reference position and the geometric line connecting the measurement points at the final measurement position is defined as the "straightness."

Straightness is displayed in 2 directions: horizontal and vertical.

Vertical direction displacement



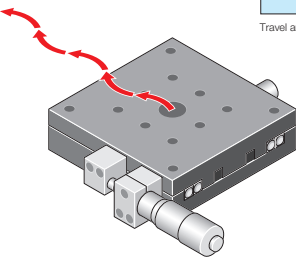
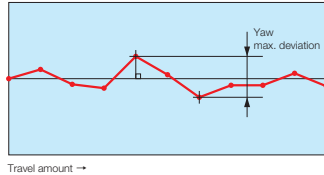
■ Yaw and Pitch (JIS B 6191-1993 compliant)

"The angular deviation that occurs when the moving part moves with linear motion. This is the magnitude of the deviation in orientation during movement of the moving part that should be moving linearly."

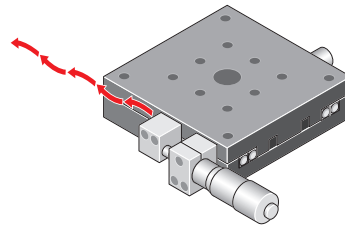
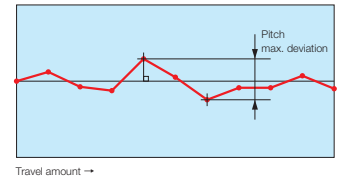
Positioning is sequentially performed in one direction from the reference position. The maximum horizontal displacement angle with respect to the reference position at each position is defined as the "yaw."

Similarly, the maximum vertical displacement angle with respect to the reference position at each position is defined as the "pitch."

Yaw deviation (angle)



Pitch deviation (angle)



**(12)** Permissible Moment (JIS B 6201-1993 compliant)

The moment load that can be applied when assembling parts between stages or on a stage is called the "permissible moment."

The permissible moment varies depending on the direction of the moment load and depending on the type of stage.

Three types of permissible moments are set for X, XY, and Z stages (yaw, pitch, and roll permissible moments), while one type is set for rotary stages and two types are set for tilt stages (yaw and roll permissible moments).

(13) Moment Rigidity (JIS B 6201-1993 compliant)

The displacement angle (sec) of the manual stage due to each 1 N-cm of moment load is called the "moment rigidity." The moment rigidity varies depending on the direction of the moment load and the type of manual stage. Three types of parameters for rigidity are set for X, XY, and Z stages: yaw, pitch, and roll rigidities. Rotary stages have moment rigidity parameters. The smaller the moment rigidity is, the smaller the displacement of the manual stage due to the moment load, which demonstrates the stage's superior rigidity.

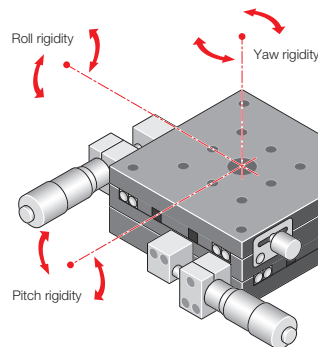
X, XY, and Z Stage Moment Rigidity

(1) Moment rigidity (yaw rigidity)

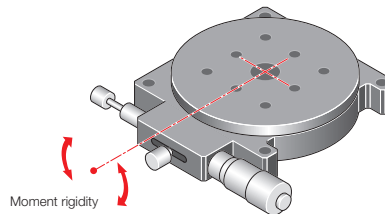
(2) Moment rigidity (pitch rigidity)

(3) Moment rigidity (roll rigidity)

*The lower axis is the reference for XY stages.



Rotary Stage Moment Rigidity

**(14)** Parallelism (JIS B 6330-1980 compliant)

"For each combination of planar surfaces, the magnitude of the deviation from one surface to another when one surface is taken as a parallel geometric reference plane."

"Parallelism" is defined by the degree of planar deviation of the table surface from the base surface at the center position of the total travel amount of the manual stage.

▶ Manual Stages

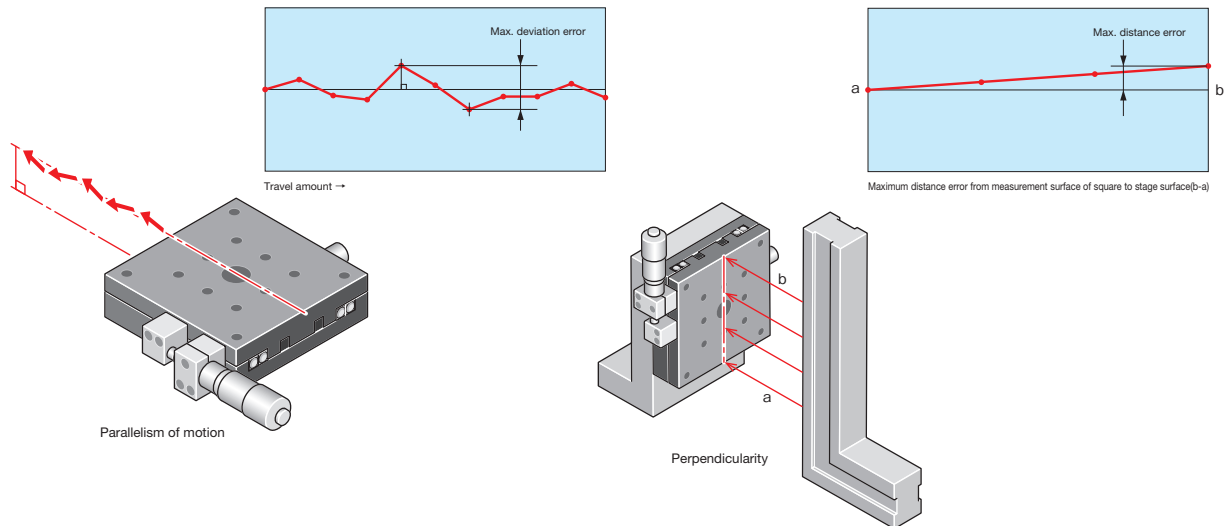
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(15) Parallelism of Motion/Perpendicularity

"This is the magnitude of the error in parallelism of other moving parts in motion, lines, or machine component surfaces that are required to move in parallel with each other."

The stage fixed on the reference plane is positioned at a fixed interval from the reference position in one direction, and the distance between the reference plane at each point and the measuring instrument fixed on the upper surface of the moving stage is measured. The maximum difference is taken as the parallelism of movement.

A square is placed on the reference plane, and the distance between the square and the measuring instrument fixed on the stage surface is measured. The maximum difference is taken as the perpendicularity of movement.

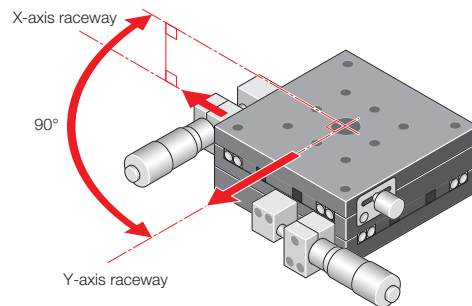


(16) XY Orthogonality (JIS B 7440-1987 compliant)

"The perpendicularity of two orthogonal axes is given by the magnitude of the deviation of linear motion relative to a geometric straight line drawn perpendicular to the geometric straight line in the direction of the linear motion."

The geometric straight line drawn from the X-axis stage reference position and the final measurement position is the reference line for straightness (horizontal).

"XY orthogonality" is the maximum horizontal error from the Y-axis stage reference position to the final measurement position with respect to a geometric line perpendicular to the X-axis stage reference axis.



(17) Load Capacity

The "load capacity" is defined as the uniform load that can be loaded onto the manual stage surface.

(18) Mass

Displays the stage unit mass.

(19) Main Materials/Surface Treatment

Displays the main materials used by the stage and any surface treatment (plating, coating, etc.).

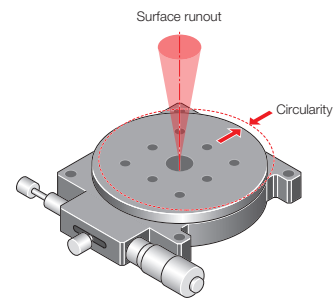


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● Circularity (JIS B 6191-1993, B 6194-1997 compliant)

"The size of the deviation from a geometric circle for parts that should be circular is defined as the circularity. This is quantified using two concentric circles in the same plane, one of which encompasses all points along the line inside the circle, the other with all points residing outside of the circle. The circularity shows the minimum difference in radii between these two concentric circles that satisfies the above."

The maximum deviation between the measured values for the geometric circle is the circularity.



● Surface Runout (JIS B 6191-1993 compliant)

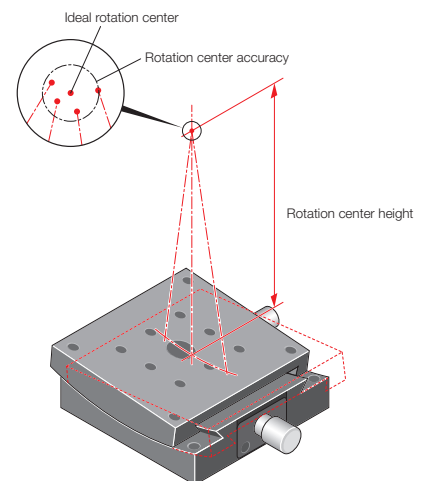
"The size of the deviation of an end face that rotates about one axis from a plane perpendicular to the axis during rotation."

The maximum value of the surface deviation in the thrust (vertical) direction for rotary stages is defined as the "surface runout."

● Rotation Center Accuracy

The position from the top of the goniometer stage to the ideal rotation center is used as a reference while the maximum difference from the ideal rotation center when the stage is positioned is measured.

The diameter of the sphere with the maximum difference as the radius is the "rotation center accuracy."



● Feed Accuracy

Many THK CHUO manual stages can be fed with fine resolution, usually by a micrometer head, with the span between the travel table and micrometer head spindle spring loaded for good reproducibility, effectively enabling backlash to be ignored. Therefore, the feed accuracy is very dependent on the feed accuracy of the micrometer head itself and the straightness of the stage movement.

Among THK CHUO stages, stages that use V-CR or HG-VCR methods for the travel guide (guide method) can be used for length measurement in addition to precision positioning. The combined error factors, including the accuracy of the micrometer head, the straightness of the stage, and the coupling accuracy of both, are as follows.

90 mm x 90 mm or less stages are within $(1 + 2L/10) \mu\text{m}$.

Stages more than 90 mm x 90 mm but less than 125 mm x 150 mm are within $(1 + L/10) \mu\text{m}$.

However, L is the feed amount (mm).

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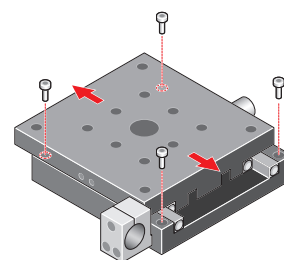
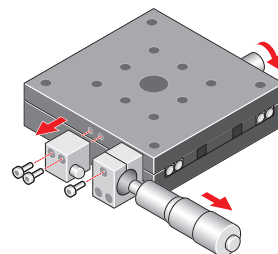
4 Stage Mounting Method

4.1 Stage Mounting Method

Take care to ensure planar accuracy of components for mounting stages. Depending on the stage, the accuracy of the stage may not be achieved if the planar accuracy of the parts used for installation is not sufficient. Products for which the mounting holes can be seen externally have been left out of this description for brevity.

4.1-1 X, XY Stages

1. Remove the micrometer head and check that the clamp screw is loosened.
Check the X-axis (lower axis) for XY stages.
Take care when loosening the clamp screw, as the table will forcibly return due to the spring tension.
2. Move the table until the mounting holes appear, then lightly fasten using the supplied mounting screws.
3. Move the table to the opposite side until the mounting holes appear, then secure using the supplied mounting screws.
4. Move the table to the opposite side once again and perform final fastening of the lightly fastened screws.



Operating Part Mounting Position Side Type

The mounting holes of some stages will not be visible until the clamp screw, micrometer platform, and micrometer contact are removed.

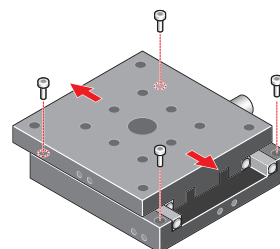
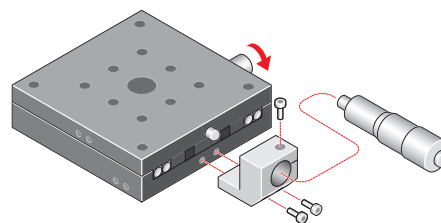
Remove these if the mounting holes cannot be seen.

If the micrometer head is mounted to the center of the stage, remove the micrometer platform.

If the micrometer head is mounted to the side of the stage, remove the micrometer contact.

After mounting the stage, mount the micrometer platform and micrometer contact. Mount the micrometer stage and micrometer contact so that they are as parallel or perpendicular to the stage unit as possible.

The stage accuracy will not be affected if the matching is not perfect.



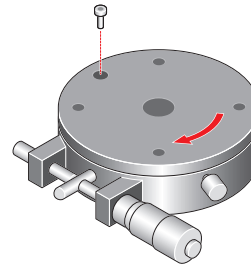
Operating Part Mounting Position Center Type



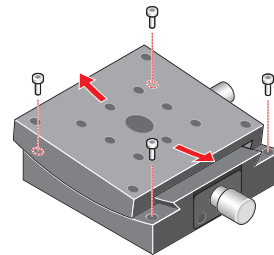
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4.1-2 Rotary Stages

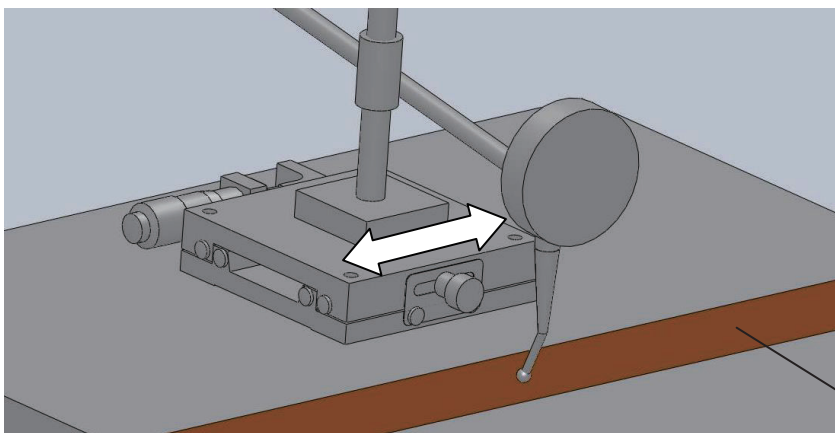
1. The table surface has mounting screw drop holes in addition to the screw holes.
Check that the clamp is not engaged.
2. Rotate the table to align the screw drop holes with the mounting holes, then lightly fasten using the supplied mounting screws. Do this for all of the mounting holes.
3. Rotate the table again to align the screw drop holes with the mounting holes, then securely fasten all of the screws.

**4.1-3 Tilt Stages**

1. Check that the clamp screw is loosened and move the table using the knob until the mounting holes appear, then lightly fasten using the supplied mounting screws.
2. Move the table to the opposite side using the knob until the mounting holes appear, then secure using the supplied mounting screws.
3. Move the table to the opposite side once again and perform final fastening of the lightly fastened screws.

**4.2 To install stages with correct accuracy.****4.2-1 Mounting with a Dial Gauge (Recommended Mounting Method)**

Use a dial gauge so that the reference surface set by the customer near the stage mount and the stage run parallel to each other. Measure this parallelism while moving the stage in the direction of the arrow and mount so that the displacement of the dial gauge is minimized.



Reference surface

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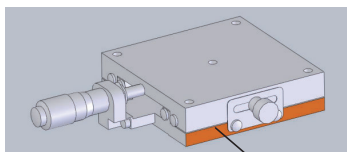
4.2-2 Simplified mounting using the stage machining reference surface

The high-grade stage has a machining reference surface as per the figure below.

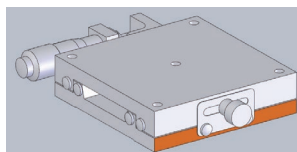
When installing the stage, it is possible to easily install it in parallel by simply touching the machining reference surface against the reference surface or reference pin of the location where you want to install it.

▼ High-Grade Stage Reference Surface

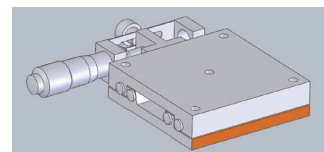
C: Center



S: Side

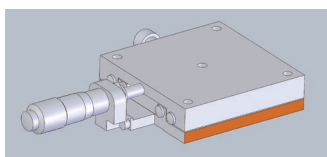


S: Side
(Operation Side Plate Clamp)

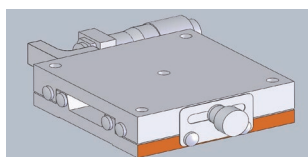


Machining reference surface

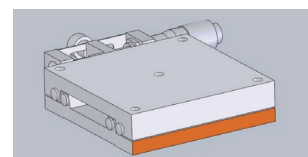
CR: Center Symmetrical Type



SR: Side Symmetrical Type



SR: Side Symmetrical Type
(Operation Side Plate Clamp)



4.3 Notes for Mounting Parts or Jigs to Stages

Take care to ensure planar accuracy of components being mounted to the stage.

Depending on the stage, the stage may be negatively impacted wherein the accuracy may not be achieved if the planar accuracy of the parts used for installation is not sufficient.

When mounting components to the stage, use a hand to hold the table in place. If a load in excess of the permissible load for the travel guide is applied, the guide may become scratched, and the accuracy will decrease. We recommend first mounting components to the stage, then mounting the stage after this is completed.



5 How to Read the Scale

Almost all THK CHUO stages have a scale attached to enable the table position (travel amount) to be read. The minimum read increment differs depending on the stage, but here we describe a typical scale.

5.1 Micrometer Head

For reading 0.01 mm increments

1. Determine the thimble end surface position relative to the sleeve position in 0.5 mm increments.

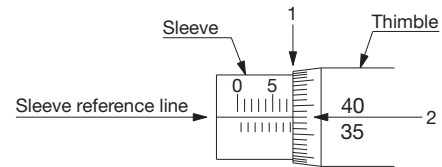
For the figure on the right, it is 7.5 mm.

2. Find the thimble value where the sleeve reference line matches up with the thimble scale line.

For the figure on the right, it is 0.38 mm.

3. Combine the values from steps 1 and 2 to get the current position of the stage.

For the figure on the right, it is 7.88 mm.



5.2 Main Scale and Vernier Scale

For reading 0.1 mm increments with linear stages

1. Determine the vernier scale 0 position relative to the main scale position in 1 mm increments.

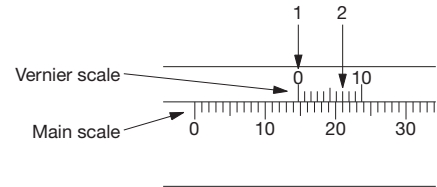
For the figure on the right, it is 14 mm.

2. Find the vernier scale value where the main scale graduation line matches up with the vernier line.

For the figure on the right, it is 0.7 mm.

3. Combine the values from steps 1 and 2 to get the current position of the stage.

For the figure on the right, it is 14.7 mm.



5.3 Main Scale and Vernier Scale

For reading 5' increments with rotary stages

1. Determine the vernier scale 0 position relative to the main scale position in 1° increments.

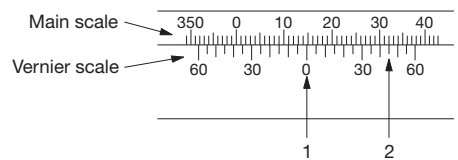
For the figure on the right, it is 14°.

2. Find the vernier scale value where the main scale graduation line matches up with the vernier line.

For the figure on the right, it is 45'.

3. Combine the values from steps 1 and 2 to get the current position of the stage.

For the figure on the right, it is 14° 45'.



5.4 Main Scale and Vernier Scale

For reading 5' increments with tilt stages

1. Determine the vernier scale 0 position relative to the main scale position in 1° increments.

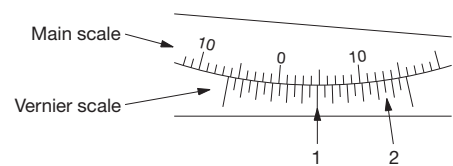
For the figure on the right, it is 4°.

2. Find the vernier scale value where the main scale graduation line matches up with the vernier line.

For the figure on the right, it is 45'.

3. Combine the values from steps 1 and 2 to get the current position of the stage.

For the figure on the right, it is 4° 45'.





▶ Manual Stages

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6 Rack & Pinion Stage Knob Types

The knob types used by rack & pinion stages are one of the following 4 types in the photos.



Single Knob



Double Knob



Single Coarse/Fine Movement Knob

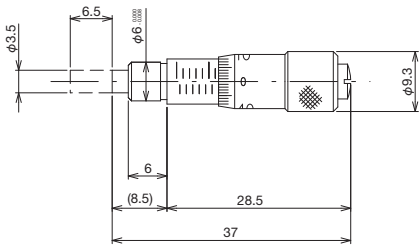


Double Coarse/Fine Movement Knob

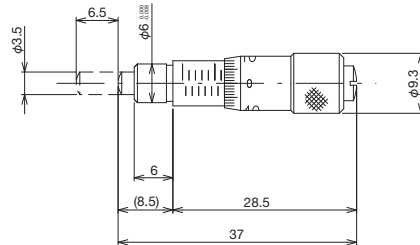
7 Micrometer Head Specifications

The specifications for micrometer heads used by THK CHUO products are as follows.

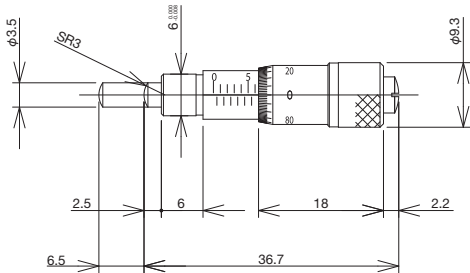
Model	Scale (mm)	Travel Amount (mm)	Tip Shape	Model	Scale (mm)	Travel Amount (mm)	Tip Shape
CMH-6.5FA	0.01	6.5	Flat	MHS4-6.5FP	0.002	6.5	Round
CMH-6.5RA	0.01	6.5	Round	MHM1-15	0.01	15	Flat
CMS-6.5F	0.01	6.5	Round	MHN1-25T	0.01	25	Flat
CMH-13FM	0.01	13	Flat	MHH1-50T	0.01	20	Flat
CMH-13RM	0.01	13	Round	MHN1-25MX	0.001	25	Flat
MHT3-6.5FP	0.002	6.5	Round	MHD-50MB	0.001	50	Flat



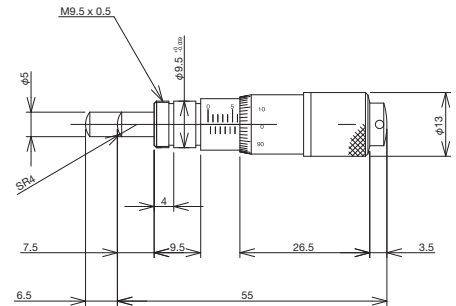
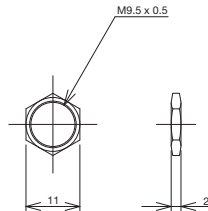
CMH-6.5FA



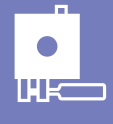
CMH-6.5RA



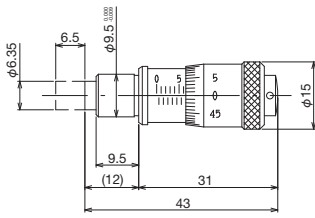
MHT3-6.5FP



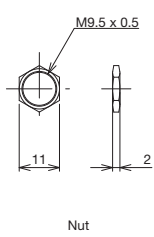
MHS4-6.5FP



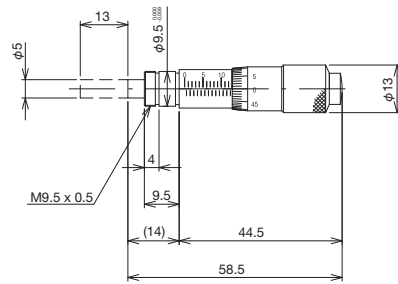
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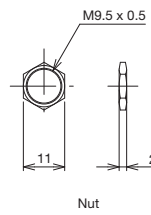
CMS-6.5F



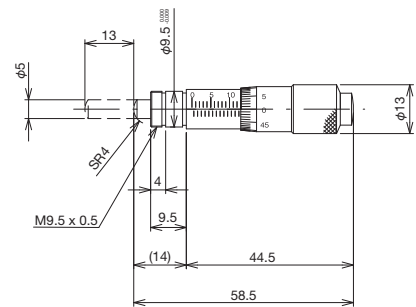
Nut



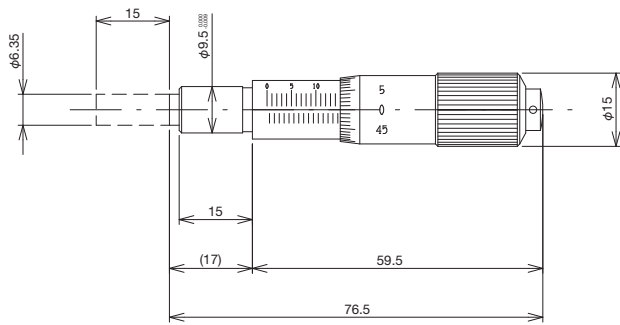
CMH-13FM



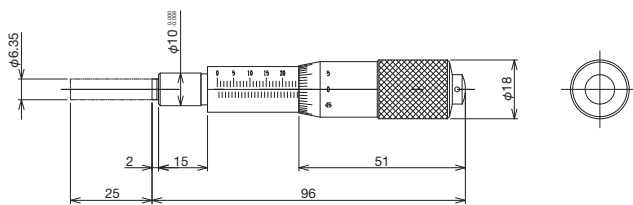
Nut



CMH-13RM



MHM1-15

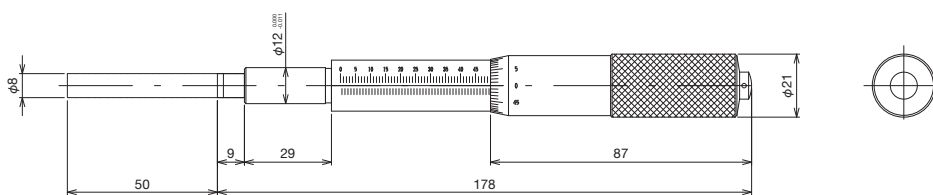


MHN1-25T

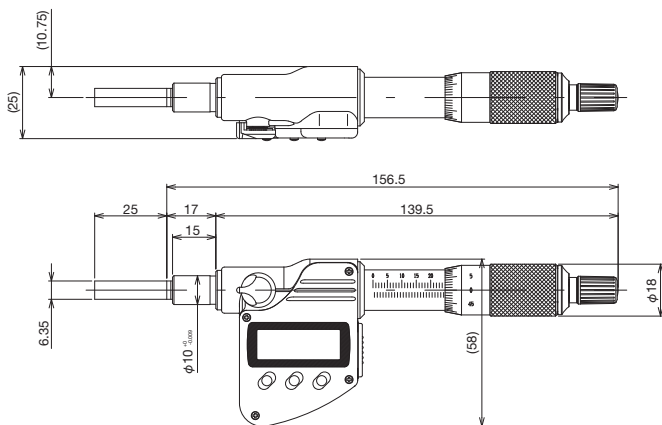


▶ Manual Stages

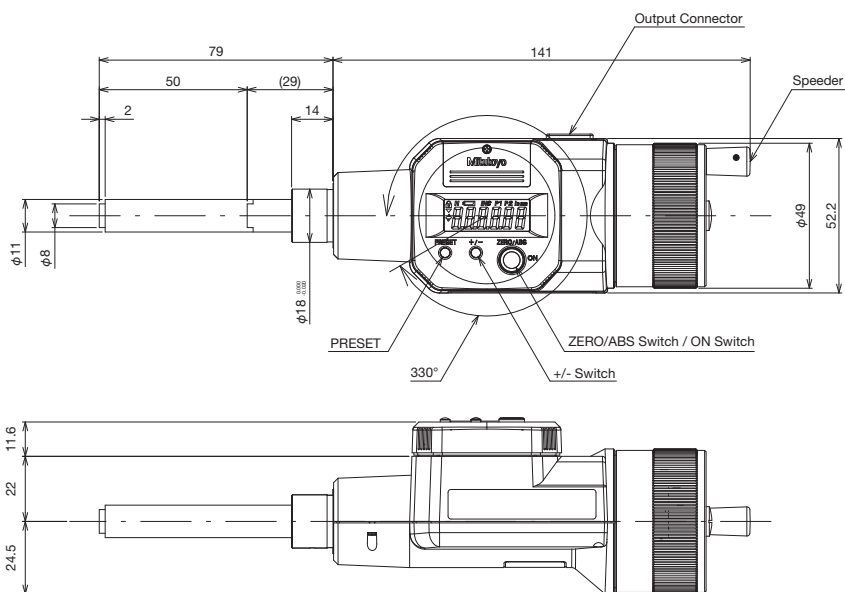
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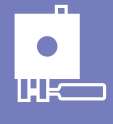
MHH1-50T



MHN1-25MX

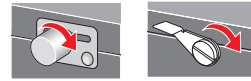


MHD-50MB



8 Stage Fixing Method

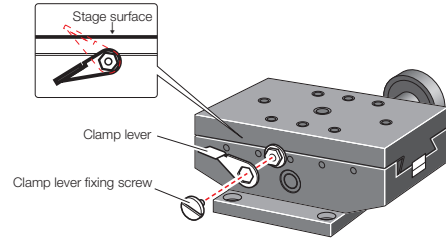
Stage fixing can be easily performed by tightening either a clamp screw or a clamp lever.



The clamp is designed to hold the table in place as much as possible.

Clamp lever types (D-T method stages) allow the lever position to be adjusted in 60-degree increments.

Lever position can be adjusted by removing the clamp lever fixing screw and the clamp lever itself, as per the figure, then shifting the lever to the desired position and reinstalling the clamp lever fixing screw.



9 Basic Structure and Travel Method

9.1 D-T Method Stages (Photo 1)

Removing the base plate enables combination with XY, Z, XYZ, or XZ units. D-T method stages typically adopt rack & pinion-based travel methods. The base and base plate are fixed while the table moves by turning the knob.

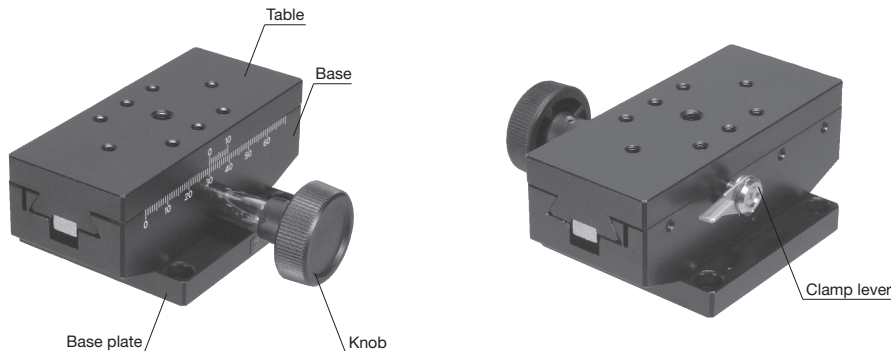
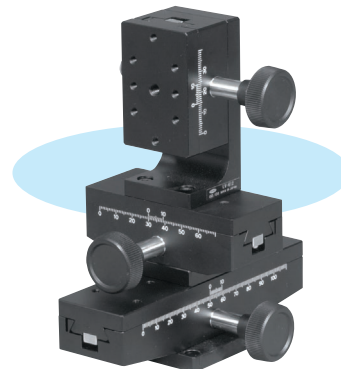


Photo 1



TLM-412+TSS-401+TTS-413
TLM-412 units with a travel amount of ± 10 mm and a TTS-413 goniometer stage have been combined. A compact X/Z tilt stage structured on a 40 mm x 40 mm stage.



TLS-112+TLS-912+TLV-612
An XYZ stage with a structure consisting of a TLS-112 unit with ± 50 mm travel, a TLS-912 unit with ± 30 mm travel, and a TLV-612 unit with ± 15 mm travel. A combination in which the stage size decreases as each upper level is added, providing better stability.



▶ Manual Stages

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Manual Stages

9.2 V-B, V-CR, HG-VCR Method Stages (Photo 3)

The span between the travel table and micrometer head spindle is spring-loaded for good reproducibility, effectively enabling backlash to be ignored.

An appropriate preload is applied to the guide to force the guide clearance to 0.

V-B and V-CR method stages primarily move the table using a micrometer head.

The base is fixed while the table moves by rotating the micrometer head.

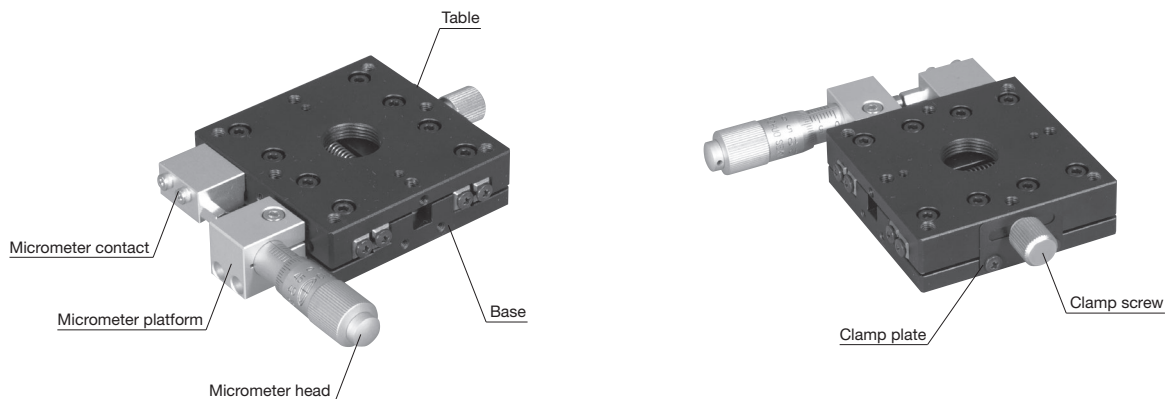


Photo 3

The micrometer head may be attached to the stage at the center or on the side. Symmetrical positions are available for either option. (Photo 4)

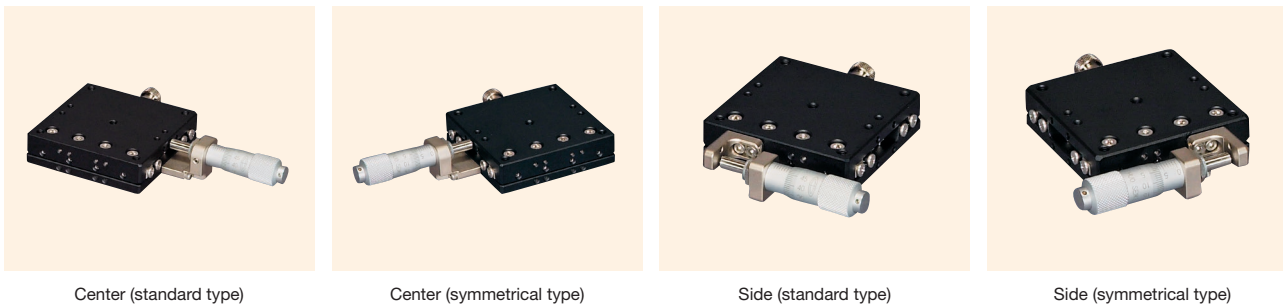
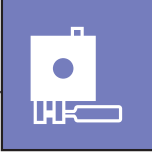


Photo 4

XY stages come in a type with stacked X-axis stages, or they can be a slim stage with a 3-piece integrated structure consisting of an X axis (lower axis) table and Y axis (upper axis) base to reduce the stage height.

Stages adopting the high accuracy, high rigidity HG-VCR method have stacked X stages assembled to have good perpendicularity. We can adjust the perpendicularity accurately before shipping when combining different stage types, so contact us if this is of interest.



Manual Stages ◀

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Manual Stages

9.3 Rotary Stages

Rotary stage with coarse movement only (Photo 5)

This simple structure does not have a knob or micrometer head for rotating the table. The table can be directly rotated by hand, etc. There is no clamp mechanism.

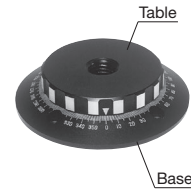


Photo 5

Rotary stage with coarse and fine movement (Photo 6)

The table can be directly rotated by hand for coarse operation when the clamp is not engaged. Secure the clamp screw into the coarse clamp and move with the micrometer head for fine movement.

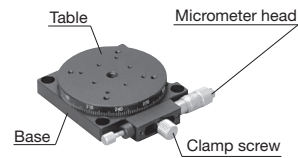


Photo 6

Gear type rotary stage (Photo 7)

Moves with minor rotation steps by turning the knob. 360° adjustment is possible.

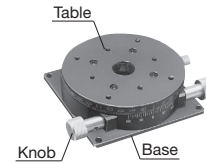


Photo 7

9.4 Tilt Stages

Stage capable of tilting in 2 directions and rotating (Photo 8)

Table tilts and rotates by turning each knob. The center of gravity of the sample (load) should be positioned at the center of the table.

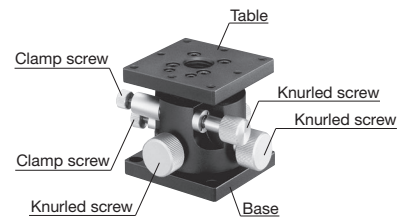
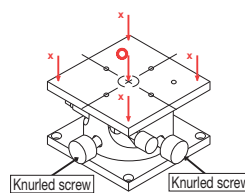
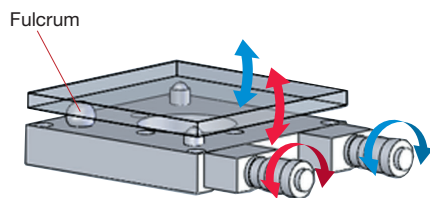


Photo 8

Stages capable of tilting in 2 directions (Photos 9 and 10)

The table is tilted by rotating each micrometer head or knurled screw. There is no clamp mechanism.



2-Axis Tilt Stage Operation Example

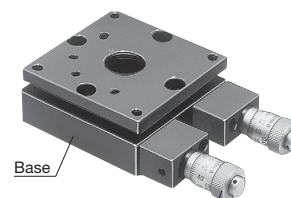
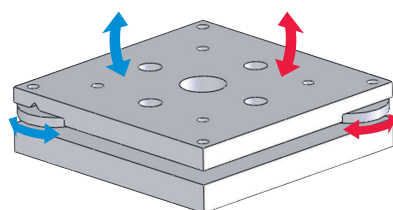


Photo 9



2-Axis Tilt Stage Operation Example

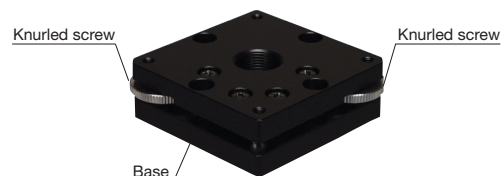


Photo 10



▶ Manual Stages

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Manual Stages

Goniometer Stage (Photo 11)

The table tilts by turning the knob. Stacking 2 units enables the 2 axes to tilt with the same center of rotation. Goniometer stages capable of circular motion along a horizontal plane are also available.

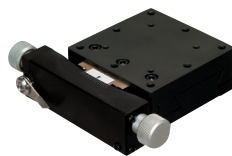
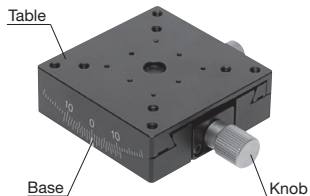
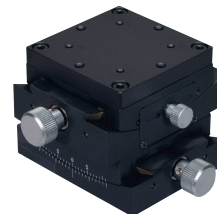
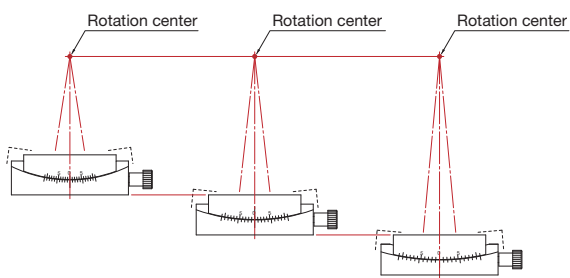


Photo 11

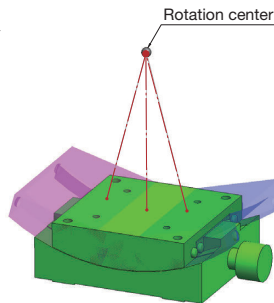


■ Goniometer Stage Rotation Center

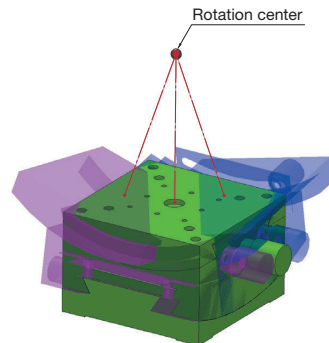


Goniometer stages adopting complex coupling mechanisms are available in 3 types with differing rotation centers, as per the figure.

The distance to the rotation center differs for each stage unit by an amount equal to the thickness of the stage body, enabling goniometer stages to have the same rotation center even when used in combination.



1-Axis Goniometer Stage Operation Example



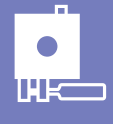
2-Axis Goniometer Stage Operation Example

10 Operating environment

If using a manual stage, be careful with the operating environment. Avoid places with extremely low or high temperatures, places with dramatic temperature changes, and dusty areas. Use at the temperature and humidity listed below.

Temperature 10°C to 40°C

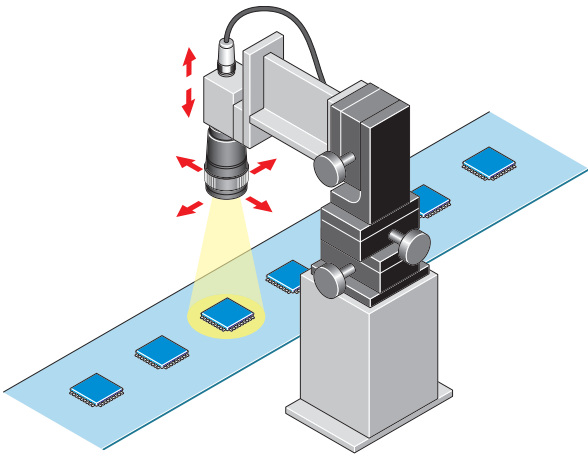
Humidity 20% to 80% RH



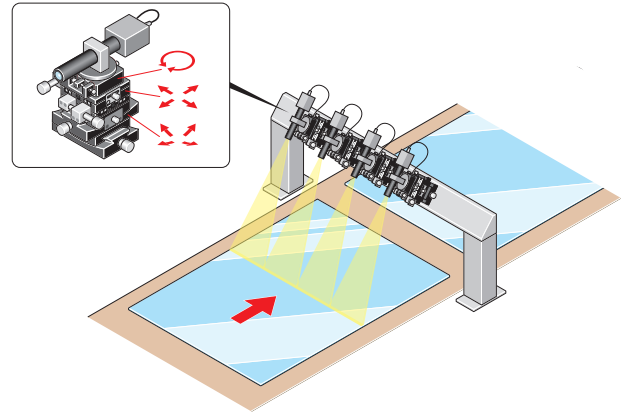
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Stage Usage Examples

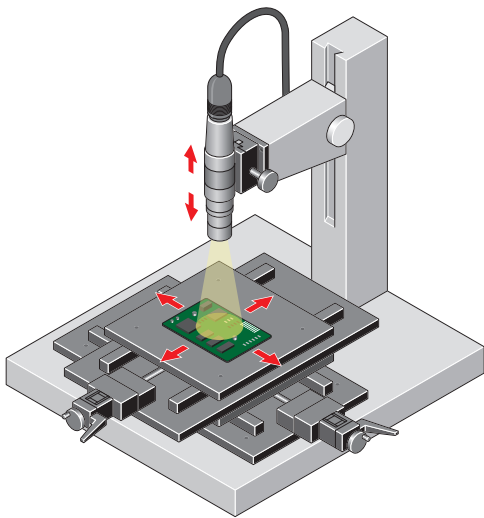
▼ Adjusting CCD camera position



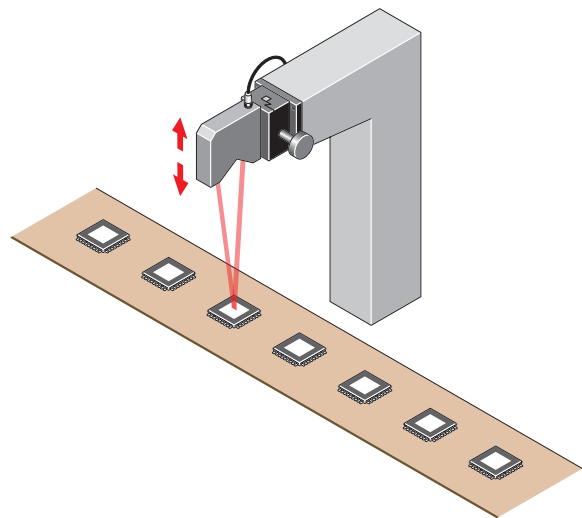
▼ Adjusting the camera position for glass substrate or film inspection machines



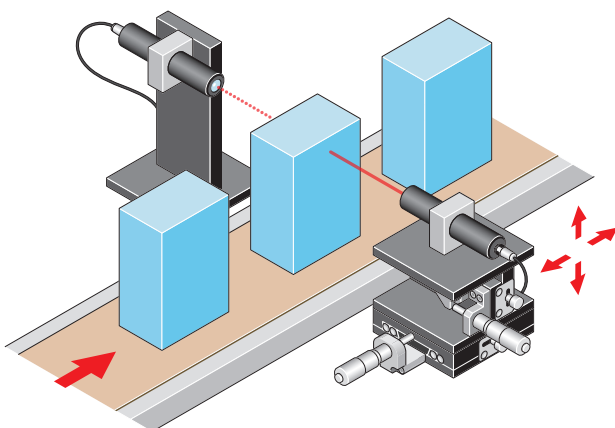
▼ Adjusting the focus or position of microscope samples



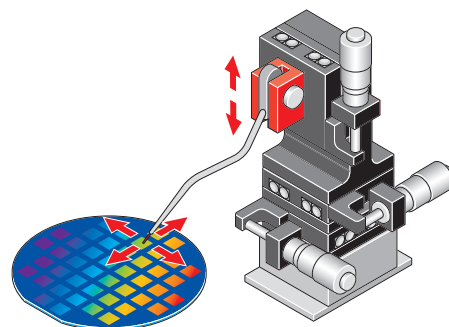
▼ Positioning laser displacement meters



▼ Positioning laser displacement meters



▼ Adjusting prober position





▶ Manual Stages ▶ Fix Stages | Product List

■ Fix Stages

Page	Example product photo	Type	Model number	Stage surface	Travel amount
131		X Stage	TLS-1251FX	11.8 mm x 24.8 mm	±1.5 mm
137			TLS-2551FX	25 mm x 25 mm	±3 mm
131			TLS-4051FX	40 mm x 40 mm	±3.5 mm
			TLS-6051FX	60 mm x 60 mm	±5.5 mm
131		XY Stage	TLD-1251FX	11.8 mm x 24.8 mm	±1.5 mm
137			TLD-2551FX	25 mm x 25 mm	±3 mm
			TLD-4051FX	40 mm x 40 mm	±3.5 mm
131			TLD-6051FX	60 mm x 60 mm	±5.5 mm
137		Z Lift Stage	TLV-2551FX	25 mm x 25 mm	0 to 1 mm
			TLV-4051FX	40 mm x 40 mm	0 to 1 mm
133			TLV-6051FX	60 mm x 60 mm	0 to 1 mm
137		Rotary Stage	TRS-P2551FX	25 mm x 25 mm	±5°
139		Goniometer Stage	TTS-2551FX	25 mm x 25 mm	±2°
			TTS-2552FX		
135			TTS-4051FX	40 mm x 40 mm	±3°
			TTS-4052FX		
			TTS-6051FX	60 mm x 60 mm	±3°
TTS-6052FX					
139		2-Axis Goniometer Stage	TTD-2551FX	25 mm x 25 mm	±2°
			TTD-4051FX	40 mm x 40 mm	±3°
135			TTD-6051FX	60 mm x 60 mm	±3°

■ Transmission Fix Stages

Page	Example product photo	Type	Model number	Stage surface	Travel amount
141		Transmission X Stage	TLS-P4051FX	40 mm x 40 mm	±3.5 mm
			TLS-P6051FX	60 mm x 60 mm	±5.5 mm
		Transmission XY Stage	TLD-P4051FX	40 mm x 40 mm	±3.5 mm
			TLD-P6051FX	60 mm x 60 mm	±5.5 mm
143		Transmission Rotary Stage	TRS-P4051FX	40 mm x 40 mm	±10°
			TRS-P6051FX	60 mm x 60 mm	±10°
		2-Axis Tilt Fix Stage for Alignment	TTD-A4051FX	40 mm x 40 mm	±1.5°
			TTD-A6051FX	60 mm x 60 mm	±1.5°

■ Thin Fix Stages

Page	Example product photo	Type	Model number	Stage surface	Travel amount
145		X Stage	TLS-T4052FX	40 mm x 40 mm	±3.5 mm
			TLS-T6052FX	60 mm x 60 mm	±5.5 mm
		XY Stage	TLD-T4052FX	40 mm x 40 mm	±3.5 mm
			TLD-T6052FX	60 mm x 60 mm	±5.5 mm



Features | Fix Stages, Thin Fix Stages ◀ Manual Stages ◀

■ Fix Stages

◆ Does not move after position adjustment

Clamping is unnecessary because the stage position is instantly fixed once the stage has been moved and set at the desired position. The proprietary and unique mechanism has created a stage that will not move from the set position after adjustment. In addition to the linear motion stages, our lineup of stages that will not move from the set position after adjustment has increased.

◆ Lineup

33 products are available from the 6 types of stages, namely linear X stages, XY stages, Z lift stages, rotary stages, goniometer stages, and 2-axis goniometer stages.



◆ Ideal for workpieces that should not be moved

Optimal for a workpiece such as a camera or sensor that must keep the position fixed, rather than one that requires constant positioning.

◆ Environmental measures

Products that do not contain 10 substances regulated by European RoHS.

■ Thin Fix Stages

◆ 8 mm thickness

The fix stage mechanism is kept the same, but a 8 mm thickness, equivalent to a spacer, has been achieved (X stages only; XY stages are 16 mm).

◆ 4 Lineups

X stages and XY stages are available in 40 mm x 40 mm and 60 mm x 60 mm sizes.

◆ Environmental measures

Compliant with the RoHS directive.

Fix stages are stages that **do not move after position adjustment.**

What does it mean to not move after position adjustment?

- Fix stages use a hex wrench for movement.
- The stage hardly moves even when the stage surface is directly manipulated. It will not move even when it is not clamped.

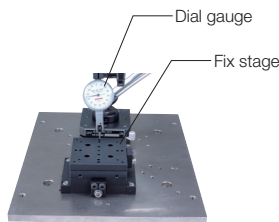


Photo 1 Before moving

The dial gauge touches the stage and is installed in a way that stage movement can be confirmed.



Photo 2 After moving

The stage has been moved using a hex wrench. The movement of the dial gauge can be seen.

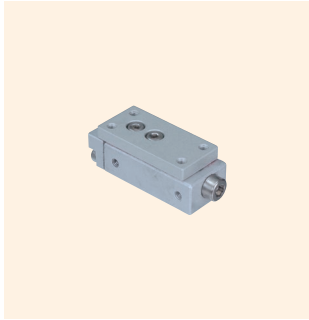


Photo 3 Does not move even when shaken

Afterwards, the dial gauge hardly moves even when the stage surface is directly manipulated and shaken.

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Fix Stages
Thin VB Stages
Back & Front Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z Lift Stages, Rotary Stages
TR Stages
TR/Rotary Stages
YZ, YZ Stages
XYZ Stages

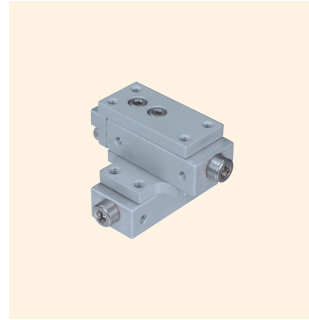
Fix Stages



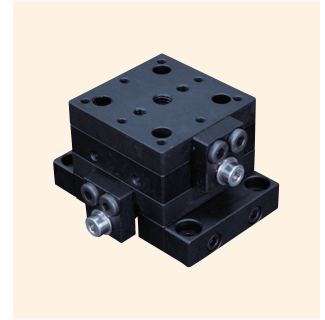
↑ TLS-1251FX



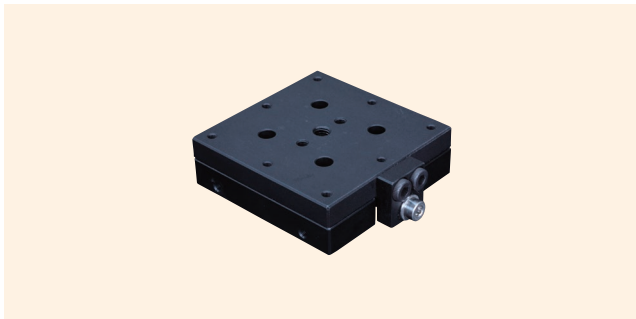
↑ TLS-4051FX



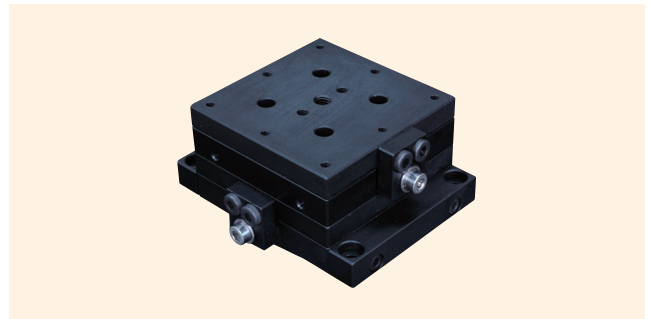
↑ TLD-1251FX



↑ TLD-4051FX



↑ TLS-6051FX



↑ TLD-6051FX

Features

- Clamp-free stages that do not move after position adjustment.
- The special mechanism suppresses backlash.
- A hex wrench is used for position adjustment.* The hex wrench is not included. This should be prepared by the customer.
- Optimal for a workpiece such as a camera or sensor that must keep the position fixed, rather than one that requires constant positioning.
- In addition to horizontal installation, vertical or inverted installation is also possible.

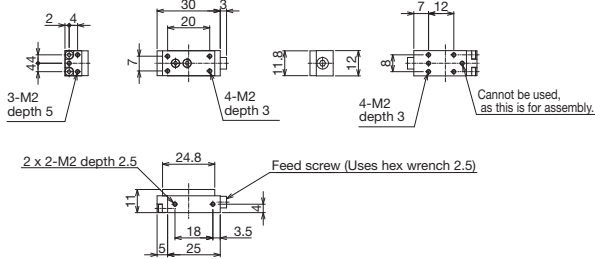
*There are limitations on the load capacity depending on the installation direction. Contact us for details.

Model number	TLS-1251FX	TLS-4051FX	TLS-6051FX	TLD-1251FX	TLD-4051FX	TLD-6051FX
Model name	X Fix Stage			XY Fix Stage		
Travel direction	X-axis single direction			XY-axis double direction		
Stage surface	11.8 mm x 24.8 mm	40 mm x 40 mm	60 mm x 60 mm	11.8 mm x 24.8 mm	40 mm x 40 mm	60 mm x 60 mm
Clamp method	Clamp-free					
Feed method	Feed screw P=0.5 mm	Feed screw P=0.7 mm		Feed screw P=0.5 mm	Feed screw P=0.7 mm	
Travel amount	±1.5 mm	±3.5 mm	±5.5 mm	±1.5 mm	±3.5 mm	±5.5 mm
Travel amount/1 knob rotation	Approx. 0.5 mm	Approx. 0.7 mm		Approx. 0.5 mm	Approx. 0.7 mm	
Travel guide	Sliding					
Parallelism	0.05 mm			0.075 mm		
Load capacity	4.9 N (0.5 kgf)	39.2 N (4 kgf)	58.8 N (6 kgf)	4.9 N (0.5 kgf)	39.2 N (4 kgf)	58.8 N (6 kgf)
Mass	0.01 kg	0.09 kg	0.19 kg	0.02 kg	0.19 kg	0.41 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					

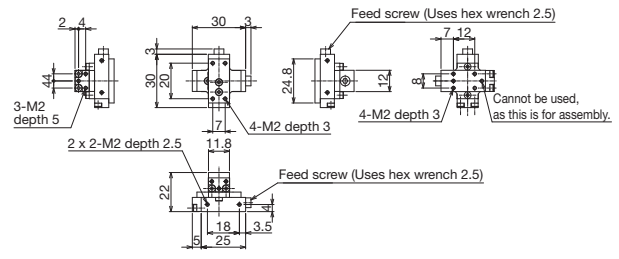


Fix Stages ◀ Manual Stages ◀

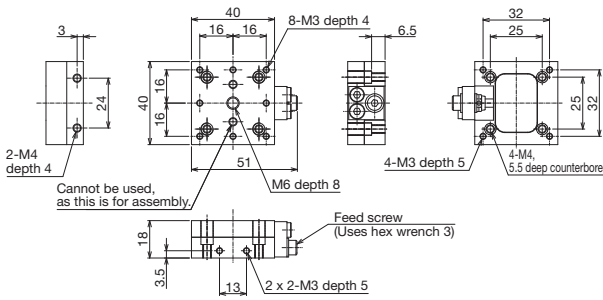
Product Appearance



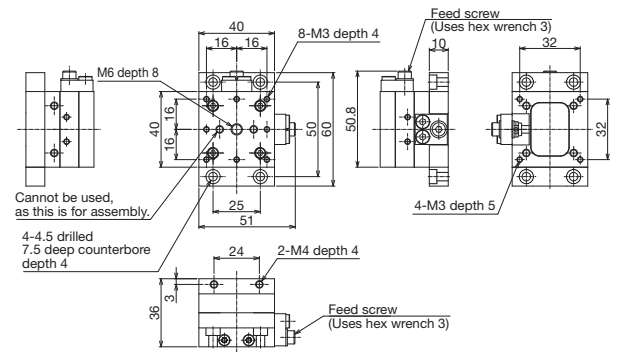
↑ TLS-1251FX



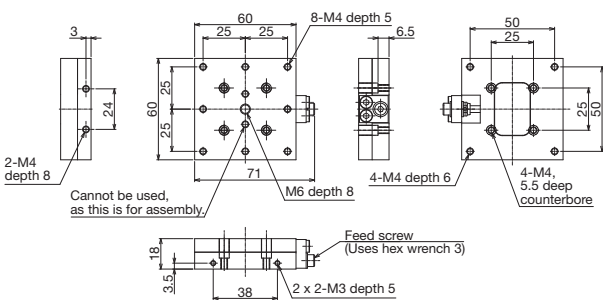
↑ TLD-1251FX



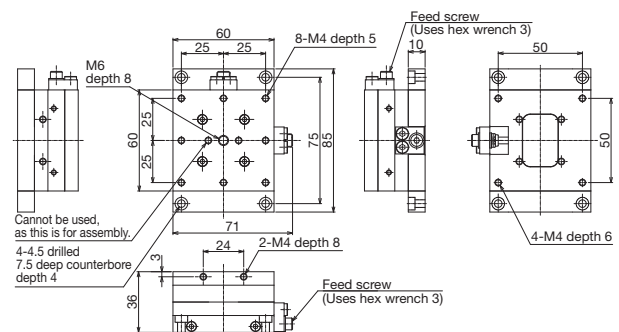
↑ TLS-4051FX



↑ TLD-4051FX



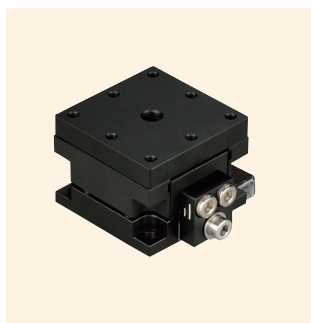
↑ TLS-6051FX



↑ TLD-6051FX

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin V8 Stages	Rack & Pinion Stages	High-Grade Stages	Spin Stages, Z-Like Stages, Z Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XYZ Stages
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Fix Stages



↑ TLV-4051FX



↑ TLV-6051FX

Features

- Clamp-free stages that do not move after position adjustment.
- The special mechanism suppresses backlash.
- A hex wrench is used for position adjustment.* The hex wrench is not included. This should be prepared by the customer.
- Optimal for a workpiece such as a camera or sensor that must keep the position fixed, rather than one that requires constant positioning.
- In addition to horizontal installation, vertical or inverted installation is also possible.

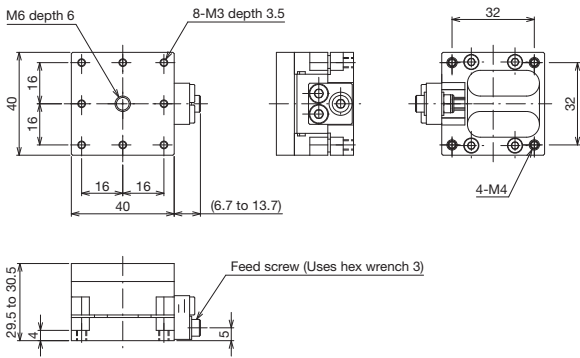
*There are limitations on the load capacity depending on the installation direction. Contact us for details.

Model number	TLV-4051FX	TLV-6051FX
Model name	Z Lift Fix Stage 40 x 40	Z Lift Fix Stage 60 x 60
Travel direction	Z-axis single direction	
Stage surface	40 mm x 40 mm	60 mm x 60 mm
Stage height	30 mm	
Clamp method	Clamp-free	
Feed method	Feed screw P=0.7 mm	
Travel amount	0 to 1 mm	
Travel amount/1 knob rotation	Approx. 0.1 mm	
Travel guide	Sliding	
Parallelism	0.1 mm	
Load capacity	24.5 N (2.5 kgf)	
Mass	0.13 kg	0.28 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain	

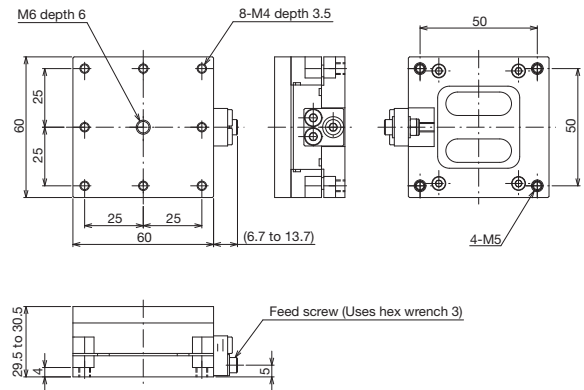


Fix Stages ◀ Manual Stages ◀

Product Appearance



↑ TLV-4051FX



↑ TLV-6051FX

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin V8 Stages	Rack & Pinion Stages	High-Grade Stages	Spin Stages, Cross Roller Stages	Z-Like Stages, Z Stages	Rotary Stages	TR Stages	TR/Rotary Stages	XZ, YZ Stages	XZ Stages
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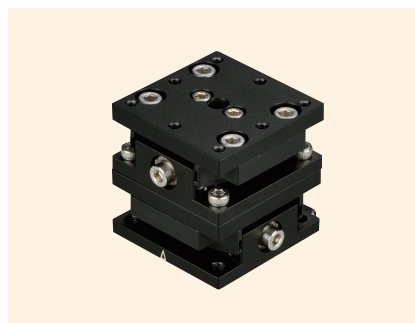
Fix Stages



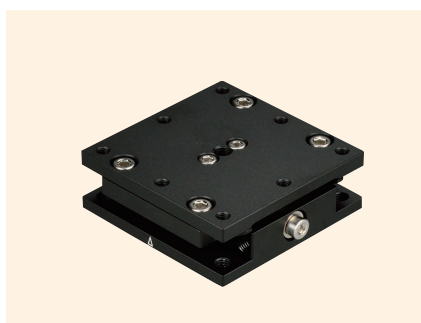
↑ TTS-4051FX



↑ TTS-4052FX



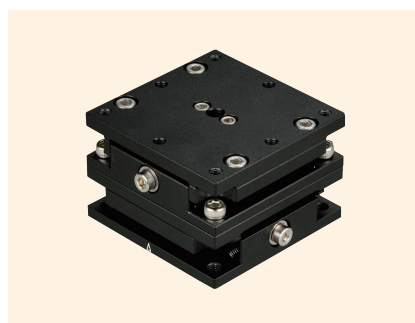
↑ TTD-4051FX



↑ TTS-6051FX



↑ TTS-6052FX



↑ TTD-6051FX

Features

- Clamp-free stages that do not move after position adjustment.
- The special mechanism suppresses backlash.
- A hex wrench is used for position adjustment.* The hex wrench is not included. This should be prepared by the customer.
- Optimal for a workpiece such as a camera or sensor that must keep the position fixed, rather than one that requires constant positioning.
- A tilt stage with differing rotation center height.
- 1-axis tilt stages with differing rotation center heights can be combined into a 2-axis tilt stage with a single rotation center height.
- In addition to horizontal installation, vertical or inverse installation is also possible.

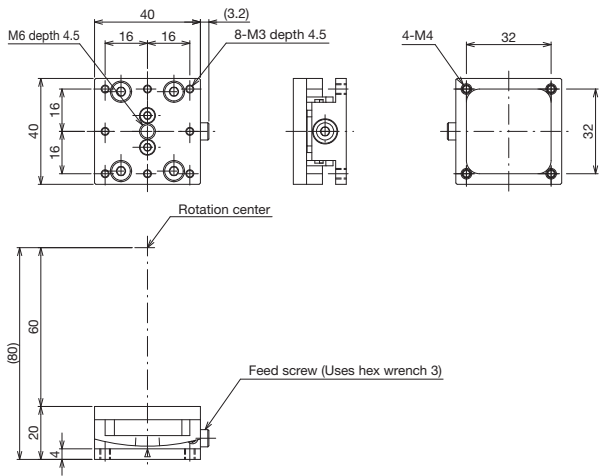
*There are limitations on the load capacity depending on the installation direction. Contact us for details.

Model number	TTS-4051FX	TTS-4052FX	TTS-6051FX	TTS-6052FX	TTD-4051FX	TTD-6051FX
Model name	Goniometer Fix Stage 40 x 40		Goniometer Fix Stage 60 x 60		2-Axis Goniometer Fix Stage 40 x 40	2-Axis Goniometer Fix Stage 60 x 60
Travel direction	Tilt single direction				Tilt double direction	
Stage surface	40 mm x 40 mm		60 mm x 60 mm		40 mm x 40 mm	60 mm x 60 mm
Stage height	20 mm				40 mm	
Rotation center (from stage top)	60 mm	40 mm	60 mm	40 mm	40 mm	
Clamp method	Clamp-free					
Feed method	Feed screw P=0.7 mm					
Travel amount	±3°					
Travel amount/1 knob rotation	Approx. 33' 25"	Approx. 46' 16"	Approx. 33' 25"	Approx. 46' 16"	Upper axis approx. 46' 16," Lower axis approx. 33' 25"	Upper axis approx. 46' 16," Lower axis approx. 33' 25"
Travel guide	Sliding					
Load capacity	24.5 N (2.5 kgf)					
Mass	0.08 kg		0.17 kg		0.16 kg	0.34 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					

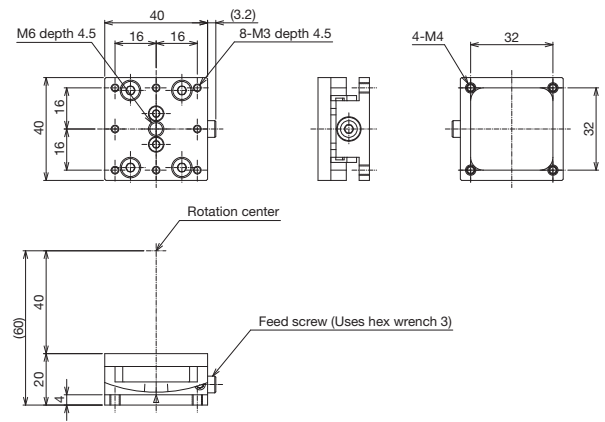


Fix Stages ◀ Manual Stages ◀

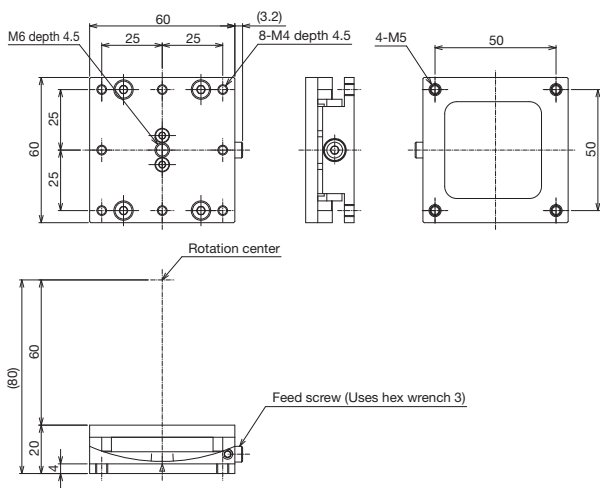
Product Appearance



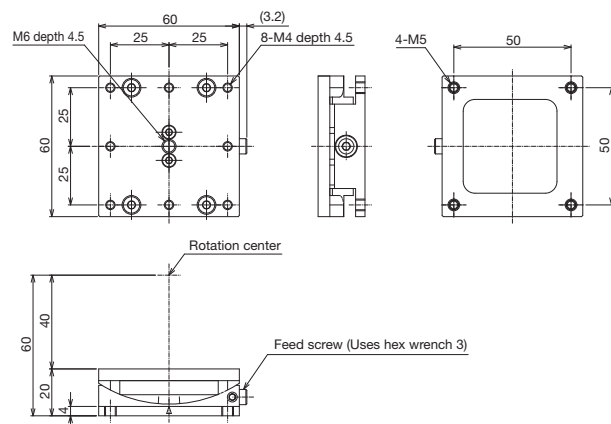
↑ TTS-4051FX



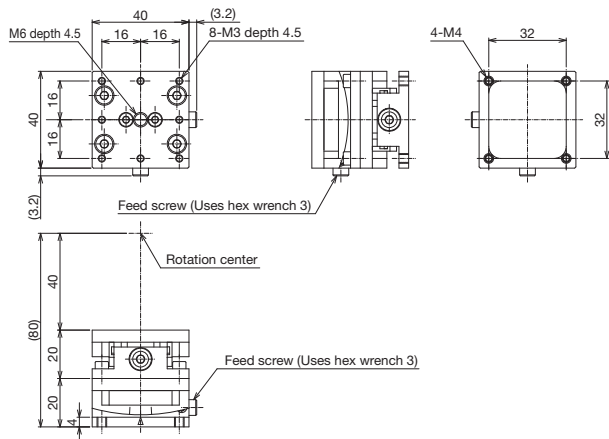
↑ TTS-4052FX



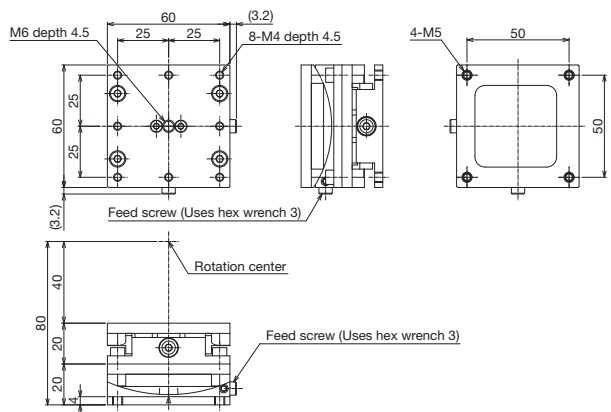
↑ TTS-6051FX



↑ TTS-6052FX



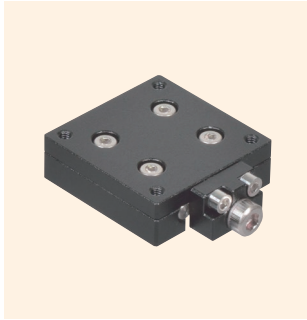
↑ TTD-4051FX



↑ TTD-6051FX

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin VIB Stages	Rack & Pinion Stages	High-Grade Stages	Swim Stages, Cross Roller Stages	Z-Like Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XYZ Stages
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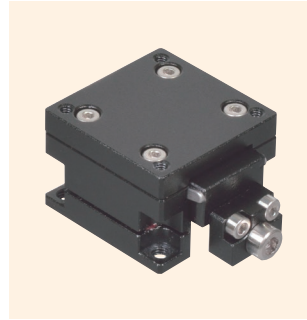
Fix Stages



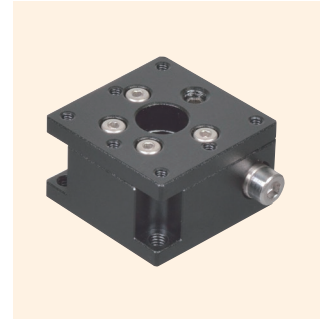
↑ TLS-2551FX



↑ TLD-2551FX



↑ TLV-2551FX



↑ TRS-P2551FX

Features

- Clamp-free stages that do not move after position adjustment.
- The special mechanism suppresses backlash.
- A hex wrench is used for position adjustment. *The hex wrench is not included. This should be prepared by the customer.
- It is possible to change out the hex wrench for a special wrench shape (optional).
- Optimal for a workpiece such as a camera or sensor that must keep the position fixed, rather than one that requires constant positioning.
- Compact stage size at just 25 x 25 mm, yet enables up to 6 axes to be configured.
- Rotary stages with a transmission hole in the stage center.

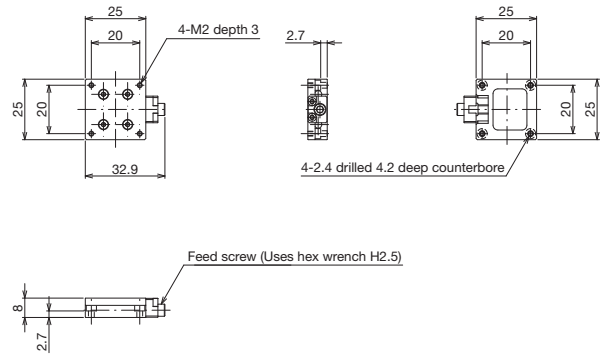
*There are limitations on the load capacity depending on the installation direction. Contact us for details.

Model number	TLS-2551FX	TLD-2551FX	TLV-2551FX	TRS-P2551FX
Model name	X Fix Stage 25 x 25	XY Fix Stage 25 x 25	Z Lift Fix Stage 25 x 25	Transmission Rotary Fix Stage 25 x 25
Travel direction	X-axis single direction	XY-axis double direction	Z-axis single direction	Rotation direction
Stage height	8 mm	16 mm	17.5 mm	15 mm
Stage surface	25 mm x 25 mm			
Clamp method	Clamp-free			
Feed method	Feed screw P=0.5 mm			
Travel amount	±3 mm		0 to 1 mm	±5°
Travel guide	Sliding			
Load capacity	4.9 N (0.5 kgf)			
Mass	0.02 kg	0.04 kg		0.03 kg
Main materials	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

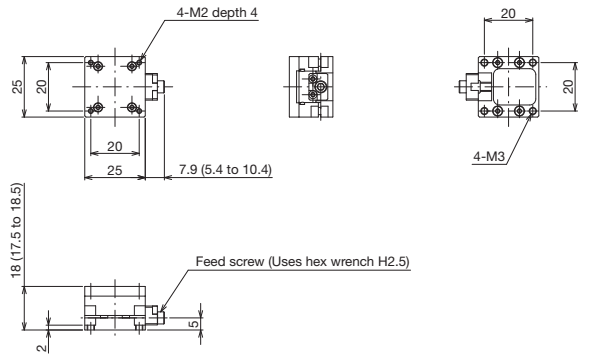


Fix Stages ◀ Manual Stages ◀

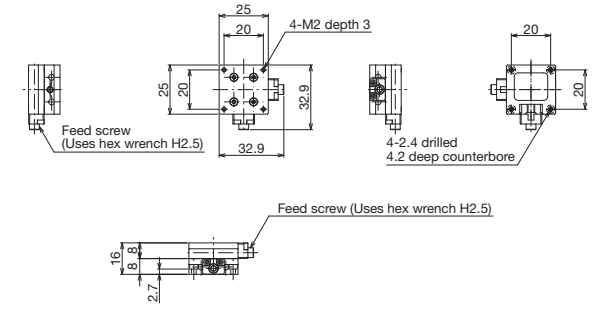
Product Appearance



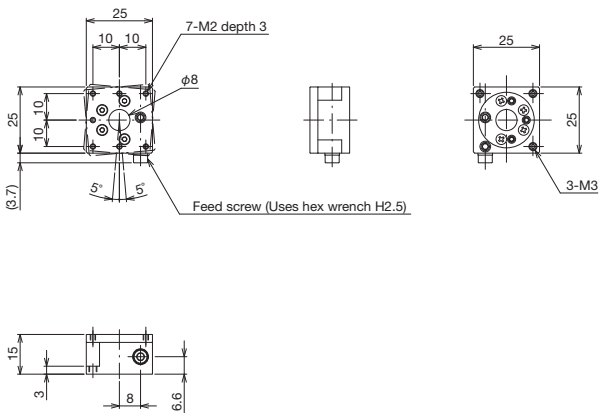
↑ TLS-2551FX



↑ TLV-2551FX



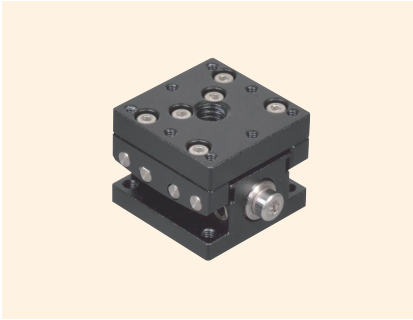
↑ TLD-2551FX



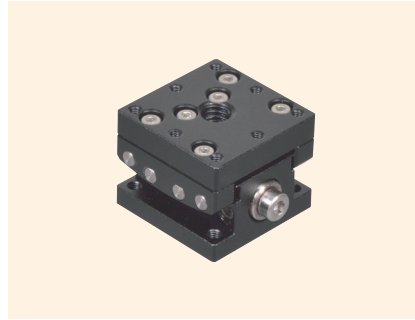
↑ TRS-P2551FX

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin V8 Stages	Rack & Pinion Stages	High-Grade Stages	Stein Stages, Cross Roller Stages	Z-Like Stages	Rotary Stages	TR Stages	TR/Rotary Stages	XZ, YZ Stages	XZ Stages
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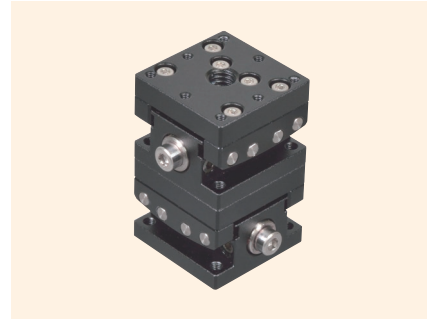
Fix Stages



↑ TTS-2551FX



↑ TTS-2552FX



↑ TTD-2551FX

Features

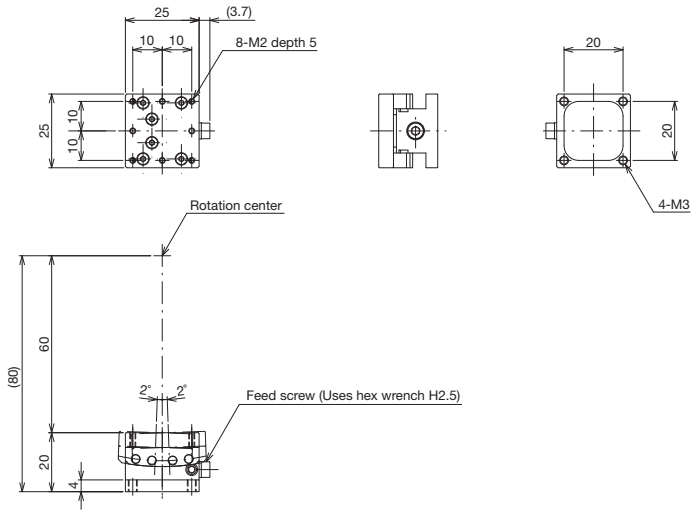
- Clamp-free stages that do not move after position adjustment.
- The special mechanism suppresses backlash.
- A hex wrench is used for position adjustment. *The hex wrench is not included. This should be prepared by the customer.
- It is possible to change out the hex wrench for a special wrench shape (optional).
- Optimal for a workpiece such as a camera or sensor that must keep the position fixed, rather than one that requires constant positioning.
- Compact stage size at just 25 x 25 mm, yet enables up to 6 axes to be configured.
- 1-axis tilt stages with differing rotation center heights can be combined into a 2-axis tilt stage with a single rotation center height.
- In addition to horizontal installation, vertical or inverse installation is also possible.

*There are limitations on the load capacity depending on the installation direction. Contact us for details.

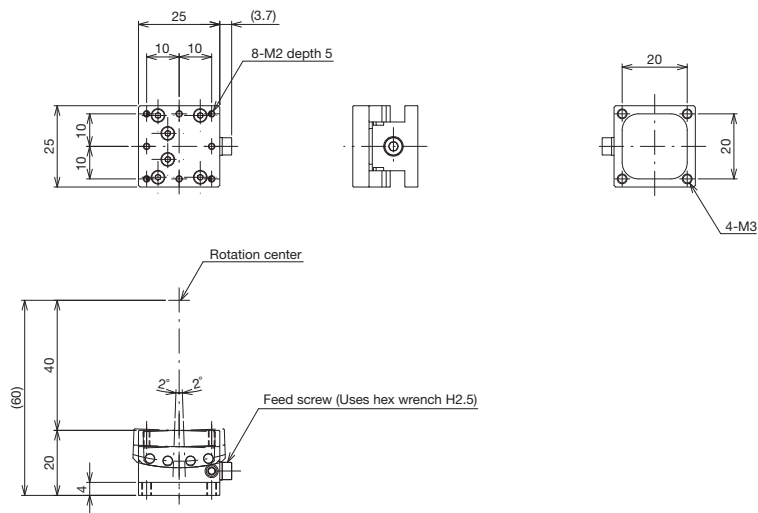
Model number	TTS-2551FX	TTS-2552FX	TTD-2551FX
Model name	Goniometer Fix Stage 25 x 25 (R1)	Goniometer Fix Stage 25 x 25 (R2)	2-Axis Goniometer Fix Stage 25 x 25
Travel direction	Tilt single direction		Tilt double direction
Stage height	20 mm		40 mm
Rotation center height	60 mm	40 mm	
Stage surface	25 mm x 25 mm		
Clamp method	Clamp-free		
Feed method	Feed screw P=0.5 mm		
Travel amount	±2°		
Travel guide	Sliding		
Load capacity	4.9 N (0.5 kgf)		
Mass	0.03 kg	0.06 kg	
Main materials	Aluminum alloy/black satin anodized finish		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		



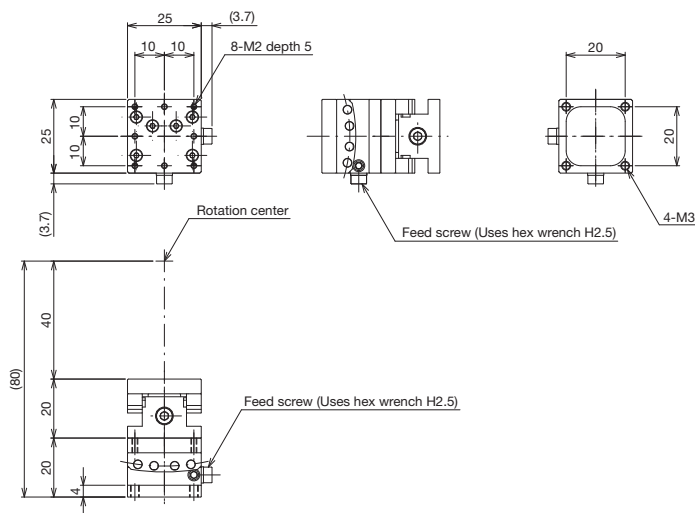
Product Appearance



↑ TTS-2551FX



↑ TTS-2552FX



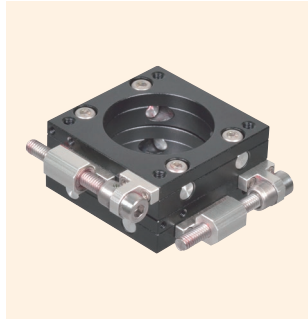
↑ TTD-2551FX

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VIB Stages	Rack & Pinion Stages
High-Grade Stages	Slit Stages, Cross Roller Stages	Z-Like Stages, Rotary Stages
TTR Stages	TTR/Rotary Stages	XZ, YZ Stages
XZ, YZ Stages	XZ Stages	

Transmission Fix Stages



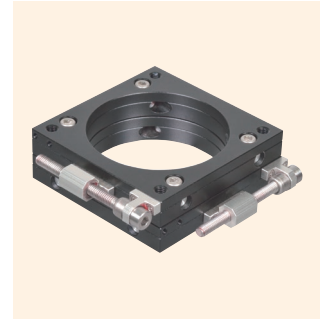
↑ TLS-P4051FX



↑ TLD-P4051FX



↑ TLS-P6051FX



↑ TLD-P6051FX

Features

- Clamp-free stages that do not move after position adjustment.
- The special mechanism suppresses backlash.
- A hex wrench is used for position adjustment. *The hex wrench is not included. This should be prepared by the customer.
- It is possible to change out the hex wrench for a special wrench shape (optional).
- Optimal for a workpiece such as a camera or sensor that must keep the position fixed, rather than one that requires constant positioning.
- There is a transmission hole in the stage center.
- In addition to horizontal installation, vertical or inverse installation is also possible.

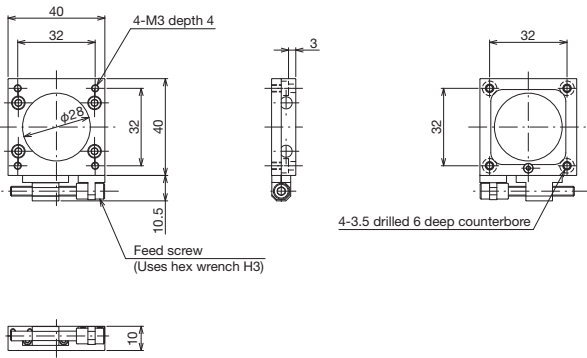
*There are limitations on the load capacity depending on the installation direction. Contact us for details.

Model number	TLS-P4051FX	TLD-P4051FX	TLS-P6051FX	TLD-P6051FX
Model name	Transmission Type X Fix Stage 40 x 40	Transmission Type XY Fix Stage 40 x 40	Transmission Type X Fix Stage 60 x 60	Transmission Type XY Fix Stage 60 x 60
Travel direction	X-axis single direction	XY-axis double direction	X-axis single direction	XY-axis double direction
Stage height	10 mm	20 mm	10 mm	20 mm
Stage surface	40 mm x 40 mm		60 mm x 60 mm	
Clamp method	Clamp-free			
Feed method	Feed screw P=0.7 mm			
Travel amount	±3.5 mm		±5.5 mm	
Travel guide	Sliding			
Load capacity	24.5 N (2.5 kgf)			
Mass	0.04 kg	0.08 kg	0.06 kg	0.12 kg
Main materials	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

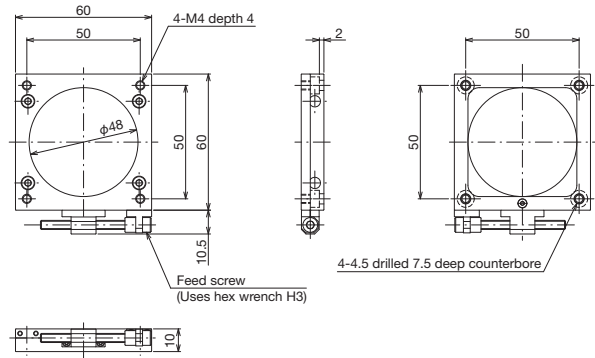


Fix Stages ◀ Manual Stages ◀

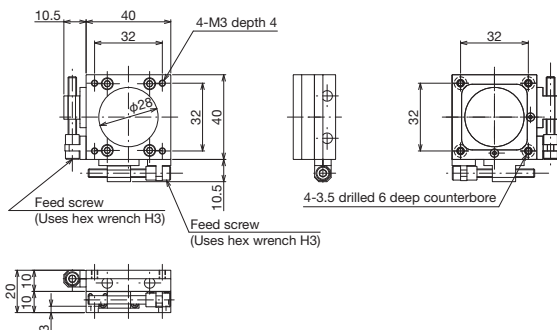
Product Appearance



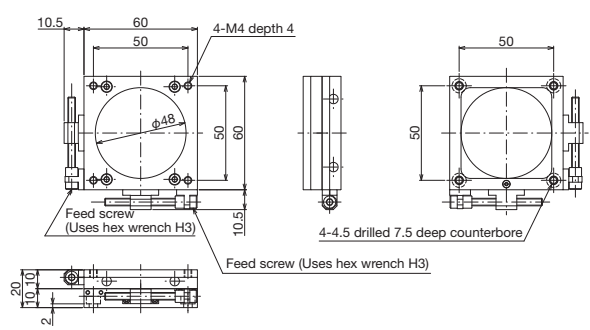
↑ TLS-P4051FX



↑ TLS-P6051FX



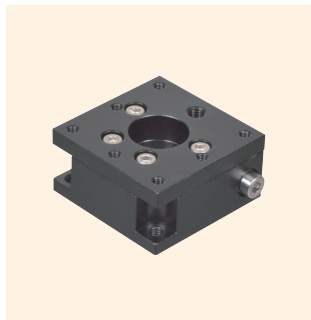
↑ TLD-P4051FX



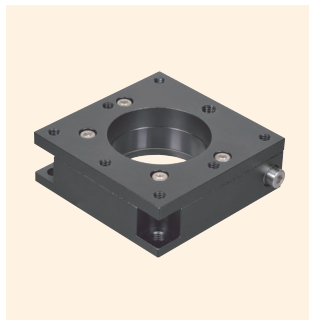
↑ TLD-P6051FX

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin VB Stages	Rack & Pinion Stages	High-Grade Stages	Spin Stages, Cross Roller Stages	Z-Like Stages, Z Stages	Rotary Stages	TR Stages	TR/Rotary Stages	XZ, YZ Stages	XZ Stages
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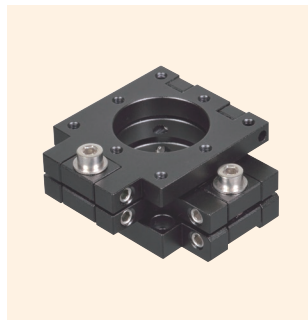
Transmission Fix Stages



↑ TRS-P4051FX



↑ TRS-P6051FX



↑ TTD-A4051FX



↑ TTD-A6051FX

Features

- Clamp-free stages that do not move after position adjustment.
- The special mechanism suppresses backlash.
- A hex wrench is used for position adjustment. *The hex wrench is not included. This should be prepared by the customer.
- It is possible to change out the hex wrench for a special wrench shape (optional).
- Optimal for a workpiece such as a camera or sensor that must keep the position fixed, rather than one that requires constant positioning.
- There is a transmission hole in the stage center.
- In addition to horizontal installation, vertical or inverse installation is also possible.

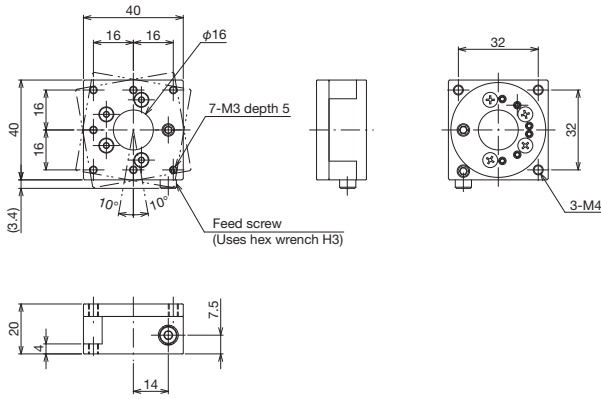
*There are limitations on the load capacity depending on the installation direction. Contact us for details.

Model number	TRS-P4051FX	TRS-P6051FX	TTD-A4051FX	TTD-A6051FX
Model name	Transmission Rotary Fix Stage 40 x 40	Transmission Rotary Fix Stage 60 x 60	2-Axis Tilt Fix Stage for Alignment 40 x 40	2-Axis Tilt Fix Stage for Alignment 60 x 60
Travel direction	Rotation direction		Tilt double direction	
Stage height	20 mm		25 mm	
Stage surface	40 mm x 40 mm	60 mm x 60 mm	40 mm x 40 mm	60 mm x 60 mm
Clamp method	Clamp-free			
Feed method	Feed screw P=0.7 mm			
Travel amount	±10°		±1.5°	
Travel guide	Sliding		Pivot	
Load capacity	24.5 N (2.5 kgf)			
Mass	0.09 kg	0.16 kg	0.08 kg	0.13 kg
Main materials	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

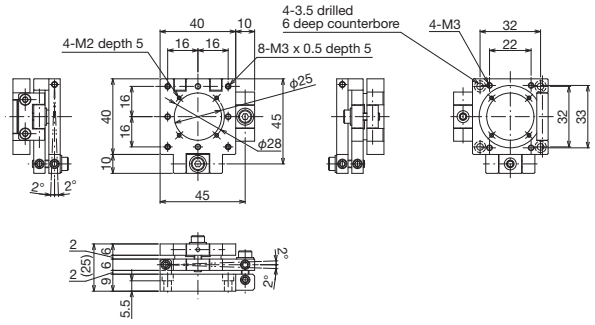


Fix Stages ◀ Manual Stages ◀

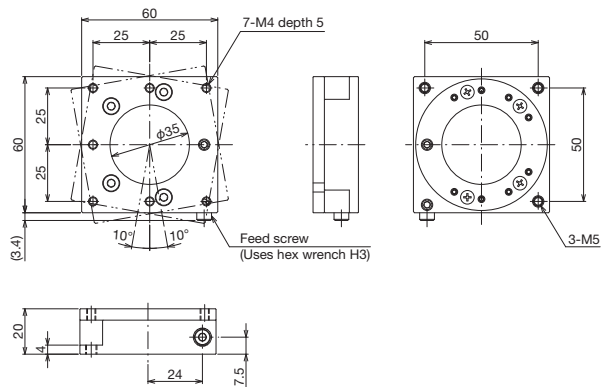
Product Appearance



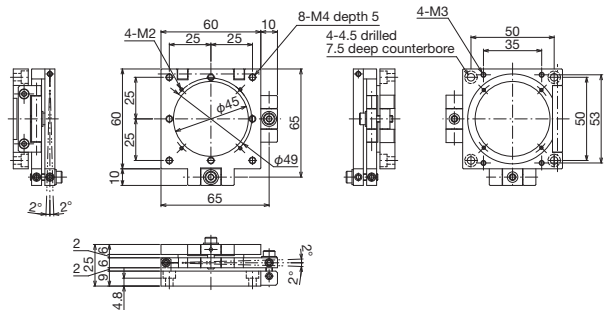
↑ TRS-P4051FX



↑ TTD-A4051FX



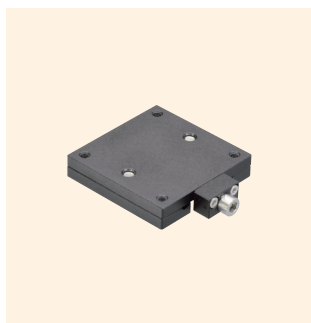
↑ TRS-P6051FX



↑ TTD-A6051FX

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin VB Stages	Rock & Pinion Stages	High-Grade Cross Roller Stages	Slit Stages, Z-Like Stages, Z Stages	Rotary Stages	TTR Stages	TTR/Rotary Stages	XZ, YZ Stages	XZ Stages
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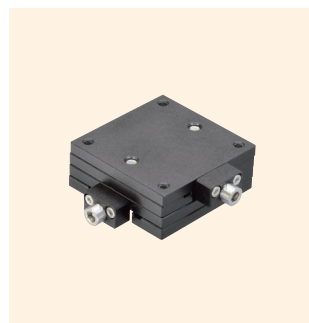
Thin Fix Stages



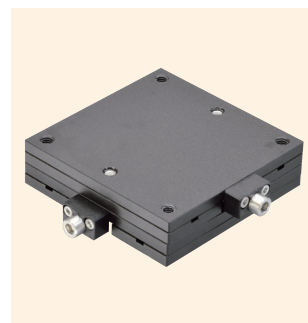
↑ TLS-T4052FX



↑ TLS-T6052FX



↑ TLD-T4052FX



↑ TLD-T6052FX

Features

- Clamp-free stages that do not move after position adjustment.
- The special mechanism suppresses backlash.
- A hex wrench is used for position adjustment.* The hex wrench is not included. This should be prepared by the customer.
- Optimal for a workpiece such as a camera or sensor that must keep the position fixed, rather than one that requires constant positioning.
- Positioning is possible with a stage as thin as a spacer (8 mm) (X stage only).
- Setting the feed screw position to the center of the table enables a shape with minimal protrusions, making it especially effective for installation in narrow spaces.
- In addition to horizontal installation, vertical or inverse installation is also possible.

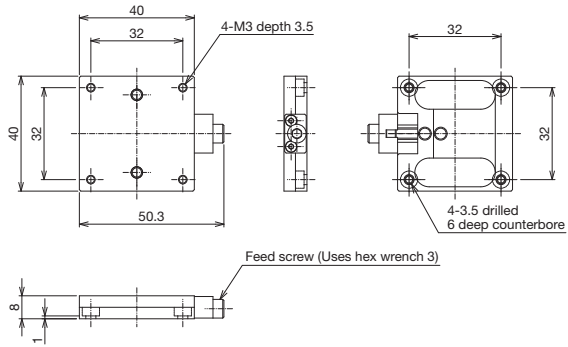
*There are limitations on the load capacity depending on the installation direction. Contact us for details.

Model number	TLS-T4052FX	TLS-T6052FX	TLD-T4052FX	TLD-T6052FX
Model name	Thin Type X Fix Stage 40 x 40	Thin Type X Fix Stage 60 x 60	Thin Type XY Fix Stage 40 x 40	Thin Type XY Fix Stage 60 x 60
Travel direction	X-axis single direction		XY-axis double direction	
Stage surface	40 mm x 40 mm	60 mm x 60 mm	40 mm x 40 mm	60 mm x 60 mm
Stage height	8 mm		16 mm	
Clamp method	Clamp-free			
Feed method	Feed screw P=0.7 mm			
Travel amount	±3.5 mm	±5.5 mm	±3.5 mm	±5.5 mm
Travel amount/1 knob rotation	Approx. 0.7 mm			
Travel guide	Sliding			
Parallelism	0.1 mm		0.2 mm	
Load capacity	24.5 N (2.5 kgf)			
Mass	0.04 kg	0.08 kg		0.16 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

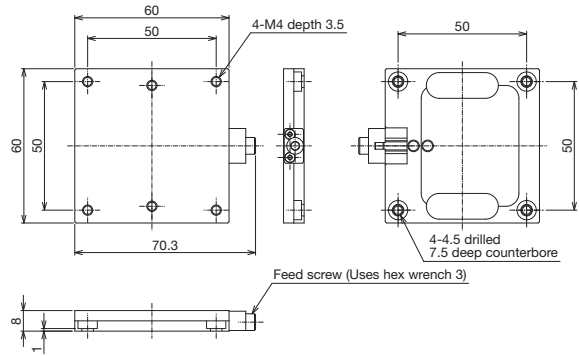


Fix Stages ◀ Manual Stages ◀

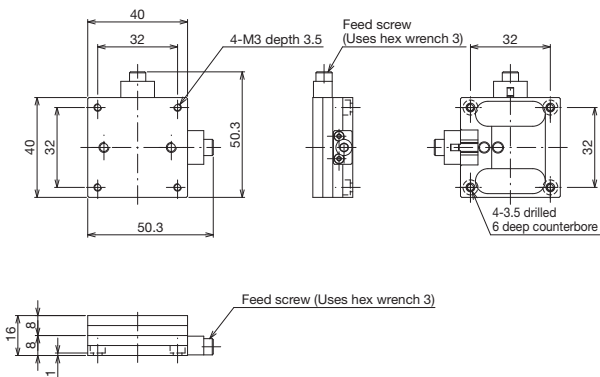
Product Appearance



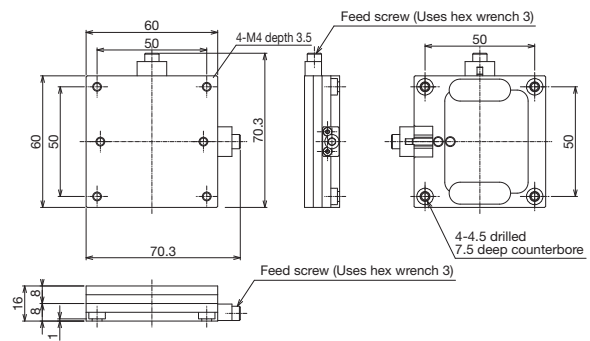
↑ TLS-T4052FX



↑ TLS-T6052FX

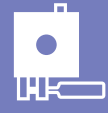


↑ TLD-T4052FX




↑ TLD-T6052FX

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin V8 Stages	Rock & Pinion Stages	High-Grade Stages	Spin Stages, Cross Roller Stages	Z-Like Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XZ Stages
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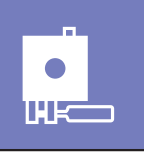
▶ Manual Stages ▶ Thin VB Stages | Product List

■ Thin VB Stages

Page	Example product photo	Type	Model number	Stage surface	Travel amount
149		X Stage	TLS-T4039-S6A	40 mm x 40 mm	±6.5 mm
			TLS-T6039-S6A	60 mm x 60 mm	±6.5 mm
		XY Stage	TLD-T4039-S6A	40 mm x 40 mm	±6.5 mm
			TLD-T6039-S6A	60 mm x 60 mm	±6.5 mm

- Motorized Stages
- Automated Products for Microscopes
- Manual Stages**

- Fx Stages
- Thin VB Stages**
- Rack & Pinion Stages
- High-Grade Stages
- Stein Stages, Cross Roller Stages
- Z-Lin Stages, Z Stages
- Rotary Stages
- Tilt Stages
- Thin/Polary Stages
- XZ, YZ Stages
- XZ Stages



Features | Thin VB Stages ◀ Manual Stages ◀

■ Thin VB Stages

◆ New Structure

A stage with a new structure that utilizes the attraction force of magnets.

*Do not place items sensitive to magnets in the vicinity, as this uses permanent magnets.

◆ Thickness 8 mm

Just like the thin fix stage, this stage achieves a thickness of 8 mm, which is equivalent to the thickness of a spacer (X stages only; XY stages are 16 mm).

◆ High Load Capacity

Despite the 8 mm thickness, the 40 mm x 40 mm stage has a 98 N (10 kgf) load capacity, while the 60 mm x 60 mm stage has a 147 N (15 kgf) load capacity (X stage only).

◆ Environmental measures

Products that do not contain 10 substances regulated by European RoHS.

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade
Spin Stages, Cross Roller Stages
Z-Like Stages, Z Stages
Rotary Stages
TTL Stages
TTR/Rotary Stages
XZ, YZ Stages
XYZ Stages

Thin VB Stages 40 x 40, 60 x 60



↑ TLS-T4039-S6A



↑ TLS-T6039-S6A



↑ TLD-T4039-S6A



↑ TLD-T6039-S6A

Features

- A stage with a new structure that utilizes the attraction force of magnets.
- Achieves a never-before-seen, surprisingly thin 8 mm form (XY stages are 16 mm).

Model number	TLS-T4039-S6A	TLS-T6039-S6A	TLD-T4039-S6A	TLD-T6039-S6A
Model name	Thin VB X Stage 40 x 40	Thin VB X Stage 60 x 60	Thin VB XY Stage 40 x 40	Thin VB XY Stage 60 x 60
Travel direction	X-axis single direction		XY-axis double direction	
Stage surface	40 mm x 40 mm	60 mm x 60 mm	40 mm x 40 mm	60 mm x 60 mm
Stage height	8 mm		16 mm	
Travel amount	±6.5 mm			
Feed mechanism	Side feed screw M3P0.5 (hex socket bolt)			
Clamp method	Plate clamp			
Travel guide	V-groove and steel balls			
Load capacity	98 N (10 kgf)	147 N (15 kgf)	97 N (9.9 kgf)	145 N (14.8 kgf)
Mass	0.09 kg	0.20 kg	0.18 kg	0.40 kg
Main materials/surface treatment	Steel/black oxide chrome			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

*Do not place items sensitive to magnets in the vicinity, as this product uses permanent magnets.

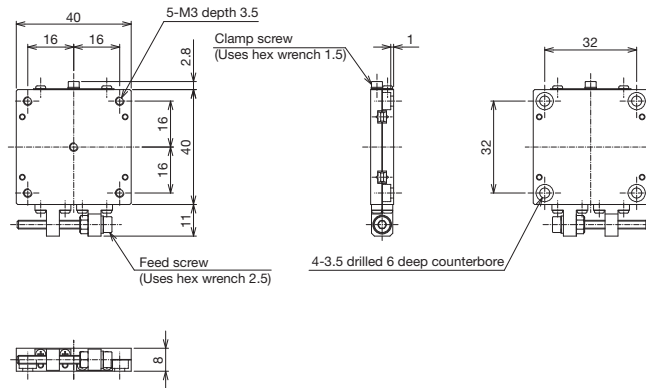
*The stage surface is finished using a face mill.

*Avoid using for the Z axis or in a manner in which unbalanced loads may be applied.

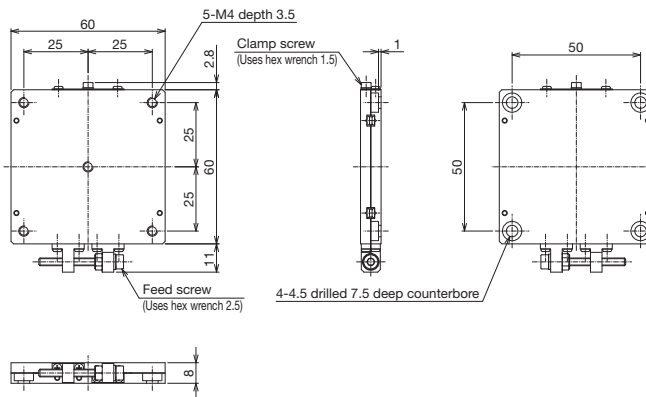


Thin VB Stages ◀ Manual Stages ◀

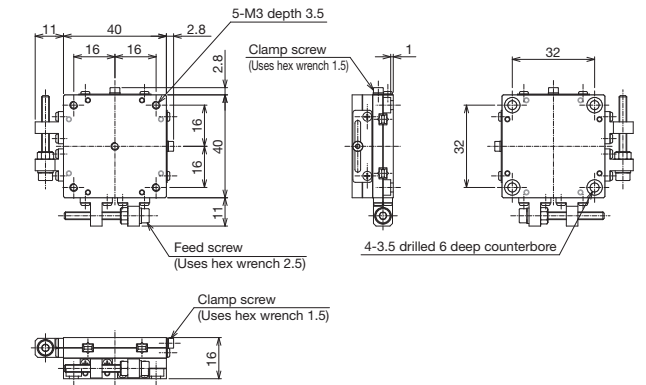
Product Appearance



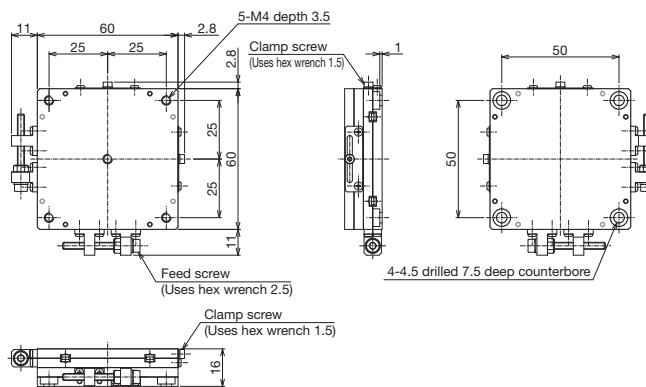
↑ TLS-T4039-S6A



↑ TLS-T6039-S6A



↑ TLD-T4039-S6A



↑ TLD-T6039-S6A

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Stein Stages, Cross Roller Stages
Z-Like Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
X/YZ Stages



▶ Manual Stages ▶ Rack & Pinion Stages | Product List

Motorized Stages
Automated Products for Microscopes
Manual Stages
FX Stages
Thin, V8 Stages
Rack & Pinion Stages
High-Grade Stages
Slim Stages, Cross Roller Stages
Z Lin Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

Page	Example product photo	Type	Model number	Model number	Stage surface	Travel amount (total travel amount)
153		X Stage	TLS-412	TLS-412W	40 mm x 40 mm	±10 mm (20 mm)
			TLS-412S	TLS-412WS	40 mm x 40 mm	±10 mm (20 mm)
			TLS-612	TLS-612W	40 mm x 60 mm	±15 mm (30 mm)
155		X Stage	TLS-612S	TLS-612WS	40 mm x 60 mm	±15 mm (30 mm)
			TLS-912	TLS-912W	40 mm x 90 mm	±30 mm (60 mm)
			TLS-112	TLS-112W	40 mm x 140 mm	±50 mm (100 mm)
157		XY Stage	TLS-112S	TLS-112WS	40 mm x 140 mm	±50 mm (100 mm)
			TLD-412	TLD-412W	40 mm x 40 mm	±10 mm (20 mm)
			TLD-412S	TLD-412WS	40 mm x 40 mm	±10 mm (20 mm)
159		XY Stage	TLD-612	TLD-612W	40 mm x 60 mm	±15 mm (30 mm)
			TLD-612S	TLD-612WS	40 mm x 60 mm	±15 mm (30 mm)
			TLD-912	TLD-912W	40 mm x 90 mm	±30 mm (60 mm)
161		Z Stage	TLD-912S	TLD-912WS	40 mm x 90 mm	±30 mm (60 mm)
			TLD-112	TLD-112W	40 mm x 140 mm	±50 mm (100 mm)
			TLD-112S	TLD-112WS	40 mm x 140 mm	±50 mm (100 mm)
163		Z Stage	TLV-412L	TLV-412WL	40 mm x 40 mm	10 mm
			TLV-412SL	TLV-412WSL	40 mm x 60 mm	10 mm
			TLV-412	TLV-412W	40 mm x 40 mm	±10 mm (20 mm)
165		Z Stage	TLV-412S	TLV-412WS	40 mm x 60 mm	±10 mm (20 mm)
			TLV-612L	TLV-612WL	40 mm x 60 mm	15 mm
			TLV-612SL	TLV-612WSL	40 mm x 60 mm	15 mm
167		Z Stage	TLV-612	TLV-612W	40 mm x 60 mm	±15 mm (30 mm)
			TLV-612S	TLV-612WS	40 mm x 60 mm	±15 mm (30 mm)
			TLV-912L	TLV-912WL	40 mm x 90 mm	30 mm
169		XZ Stage	TLV-912SL	TLV-912WSL	40 mm x 90 mm	30 mm
			TLV-912	TLV-912W	40 mm x 90 mm	±30 mm (60 mm)
			TLV-912S	TLV-912WS	40 mm x 90 mm	±30 mm (60 mm)
171		XZ Stage	TLV-112L	TLV-112WL	40 mm x 140 mm	50 mm
			TLV-112SL	TLV-112WSL	40 mm x 140 mm	50 mm
			TLV-112	TLV-112W	40 mm x 140 mm	±50 mm (100 mm)
173		XZ Stage	TLV-112S	TLV-112WS	40 mm x 140 mm	±50 mm (100 mm)
			TLM-412L	TLM-412WL	40 mm x 40 mm	X axis ±10 mm (20 mm), Z axis 10 mm
			TLM-412SL	TLM-412WSL	40 mm x 40 mm	X axis ±10 mm (20 mm), Z axis 10 mm
175		XZ Stage	TLM-412	TLM-412W	40 mm x 40 mm	±10 mm (20 mm)
			TLM-412S	TLM-412WS	40 mm x 40 mm	±10 mm (20 mm)
			TLM-612L	TLM-612WL	40 mm x 60 mm	X axis ±15 mm (30 mm), Z axis 15 mm
177		XYZ Stage	TLM-612SL	TLM-612WSL	40 mm x 60 mm	X axis ±15 mm (30 mm), Z axis 15 mm
			TLM-612	TLM-612W	40 mm x 60 mm	±15 mm (30 mm)
			TLM-612S	TLM-612WS	40 mm x 60 mm	±15 mm (30 mm)
179		XYZ Stage	TLM-912L	TLM-912WL	40 mm x 90 mm	X axis ±30 mm (60 mm), Z axis 30 mm
			TLM-912SL	TLM-912WSL	40 mm x 90 mm	X axis ±30 mm (60 mm), Z axis 30 mm
			TLM-912	TLM-912W	40 mm x 90 mm	±30 mm (60 mm)
181		XYZ Stage	TLM-912S	TLM-912WS	40 mm x 90 mm	±30 mm (60 mm)
			TLM-112L	TLM-112WL	40 mm x 140 mm	X axis ±50 mm (100 mm), Z axis 50 mm
			TLM-112SL	TLM-112WSL	40 mm x 140 mm	X axis ±50 mm (100 mm), Z axis 50 mm
183		XYZ Stage	TLM-112	TLM-112W	40 mm x 140 mm	±50 mm (100 mm)
			TLM-112S	TLM-112WS	40 mm x 140 mm	±50 mm (100 mm)
			TLT-412L	TLT-412WL	40 mm x 40 mm	XY axis ±10 mm (20 mm), Z axis 10 mm
185		Long-Distance Stages	TLT-412SL	TLT-412WSL	40 mm x 40 mm	XY axis ±10 mm (20 mm), Z axis 10 mm
			TLT-412	TLT-412W	40 mm x 40 mm	±10 mm (20 mm)
			TLT-412S	TLT-412WS	40 mm x 40 mm	±10 mm (20 mm)
187		Long-Distance Stage Block	TLT-612L	TLT-612WL	40 mm x 60 mm	XY axis ±15 mm (30 mm), Z axis 15 mm
			TLT-612SL	TLT-612WSL	40 mm x 60 mm	XY axis ±15 mm (30 mm), Z axis 15 mm
			TLT-612	TLT-612W	40 mm x 60 mm	±15 mm (30 mm)
185		Long-Distance Stages	TLT-612S	TLT-612WS	40 mm x 60 mm	±15 mm (30 mm)
			TLT-912L	TLT-912WL	40 mm x 90 mm	XY axis ±30 mm (60 mm), Z axis 30 mm
			TLT-912SL	TLT-912WSL	40 mm x 90 mm	XY axis ±30 mm (60 mm), Z axis 30 mm
185		Long-Distance Stages	TLT-912	TLT-912W	40 mm x 90 mm	±30 mm (60 mm)
			TLT-912S	TLT-912WS	40 mm x 90 mm	±30 mm (60 mm)
			TLT-112L	TLT-112WL	40 mm x 140 mm	XY axis ±50 mm (100 mm), Z axis 50 mm
185		Long-Distance Stages	TLT-112SL	TLT-112WSL	40 mm x 140 mm	XY axis ±50 mm (100 mm), Z axis 50 mm
			TLT-112	TLT-112W	40 mm x 140 mm	±50 mm (100 mm)
			TLT-112S	TLT-112WS	40 mm x 140 mm	±50 mm (100 mm)
185		Long-Distance Stages	TLS-414L1	TLS-414WL1	40 mm x 40 mm	60 mm
			TLS-414L2	TLS-414WL2	40 mm x 40 mm	160 mm
			TLS-414L3	TLS-414WL3	40 mm x 40 mm	260 mm
			TLS-414L4	TLS-414WL4	40 mm x 40 mm	360 mm
			TLS-414L5	TLS-414WL5	40 mm x 40 mm	460 mm
			TLS-414SL1	TLS-414WSL1	40 mm x 40 mm	60 mm
			TLS-414SL2	TLS-414WSL2	40 mm x 40 mm	160 mm
			TLS-414SL3	TLS-414WSL3	40 mm x 40 mm	260 mm
			TLS-414SL4	TLS-414WSL4	40 mm x 40 mm	360 mm
			TLS-414SL5	TLS-414WSL5	40 mm x 40 mm	460 mm
187		Long-Distance Stage Block	TBL-414	TBL-414W	40 mm x 40 mm	-
			TBL-414S	TBL-414WS	40 mm x 40 mm	-



Features | Rack & Pinion Stages ◀ Manual Stages ◀

◆ Large Travel Amount

Uses a rack & pinion for the feed method, achieving large travel amounts.

◆ Clamp

A lever type clamp enables fixing in a desired position with strong retention force. (See figure below)

◆ Knob

4 types of knobs are available and can be selected to suit the application. They are the single knob, double knob, single coarse/fine movement knob, and double coarse/fine movement knob.



↑ TLS-612

↑ TLS-612W

↑ TLS-612S

↑ TLS-612WS

◆ Lineup

Stage surfaces come in 4 sizes: 40 mm x 40 mm, 40 mm x 60 mm, 40 mm x 90 mm, and 40 mm x 140 mm. They are available as X stages, XY stages, Z stages, XZ stages, or XYZ stages.

Z stages, XZ stages, and XYZ stages have a low overall height when combined with short Z brackets.

■ Stage surface size and type (for single knob types, Z stages, XZ stages, and XYZ stages have the regular Z bracket mounted)

Stage surface	Travel amount (total travel amount)	X Stage	XY Stage	Z Stage	XZ Stage	XYZ Stage
40 mm x 40 mm	±10 mm	TLS-412	TLD-412	TLV-412	TLM-412	TLT-412
40 mm x 60 mm	±15 mm	TLS-612	TLD-612	TLV-612	TLM-612	TLT-612
40 mm x 90 mm	±30 mm	TLS-912	TLD-912	TLV-912	TLM-912	TLT-912
40 mm x 140 mm	±50 mm	TLS-112	TLD-112	TLV-112	TLM-112	TLT-112

40 mm x 40 mm stage surface types that allow long distance movement along rails are available.

It is also possible to add multiple blocks to the rail.

Stage surface size and type (for single knob types)

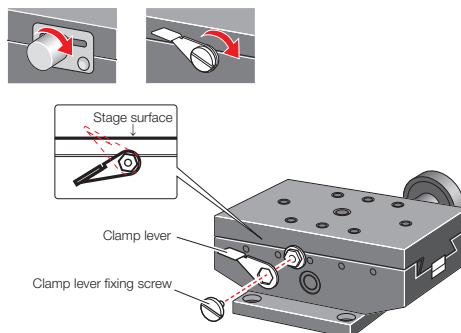
Stage surface	Rail 100 mm	Rail 200 mm	Rail 300 mm	Rail 400 mm	Rail 500 mm
40 mm x 40 mm	TLS-414L1	TLS-414L2	TLS-414L3	TLS-414L4	TLS-414L5



↑ Example with added blocks

◆ Environmental measures

Products that do not contain 10 substances regulated by European RoHS.



↑ Clamp method

- Motorized Stages
- Automated Products for Microscopes
- Manual Stages
- Fx Stages
- Thin VB Stages
- Rack & Pinion Stages
- High-Grade Stages
- Slim Stages, Cross Roller Stages
- Z-Like Stages, Z Stages
- Rotary Stages
- Tilt Stages
- Tilt/Rotary Stages
- XZ, YZ Stages
- XYZ Stages

Rack & Pinion - X Stages 40 x 40, 40 x 60



↑ TLS-412



↑ TLS-412W



↑ TLS-412S



↑ TLS-412WS



↑ TLS-612



↑ TLS-612W



↑ TLS-612S



↑ TLS-612WS

Features

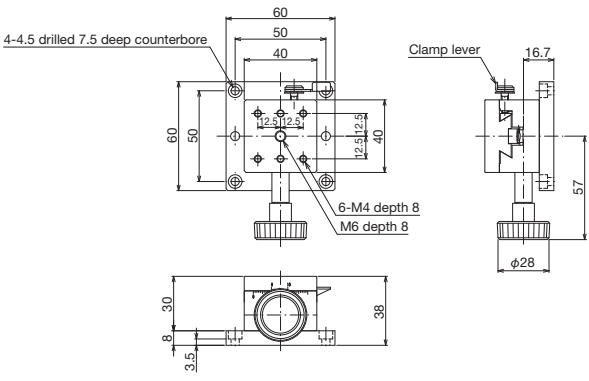
- The travel unit uses a dovetail (D-T method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A lever type clamp enables fixing in a desired position with strong retention force.

Model number	TLS-412	TLS-412W	TLS-412S	TLS-412WS	TLS-612	TLS-612W	TLS-612S	TLS-612WS
Model name	DT X Stage 40 x 40	DT X Stage 40 x 40 (Double Knob)	DT X Stage 40 x 40 (Coarse/ Fine Movement Knob)	DT X Stage 40 x 40 (Double Coarse/ Fine Movement Knob)	DT X Stage 40 x 60	DT X Stage 40 x 60 (Double Knob)	DT X Stage 40 x 60 (Coarse/ Fine Movement Knob)	DT X Stage 40 x 60 (Double Coarse/ Fine Movement Knob)
Travel direction	X-axis single direction							
Stage surface	40 mm x 40 mm				40 mm x 60 mm			
Clamp method	Lever method							
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method							
Travel amount	±10 mm				±15 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm		Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm							
Sensitivity	0.1 mm							
Travel guide	Dovetail							
Travel accuracy	Straightness: 0.03 mm							
Moment rigidity	Pitch rigidity: 0.7 s/N-cm, roll rigidity: 0.3 s/N-cm				Pitch rigidity: 0.6 s/N-cm, roll rigidity: 0.2 s/N-cm			
Parallelism	0.06 mm							
Parallelism of motion	0.03 mm				0.04 mm			
Load capacity	39.2 N (4 kgf)							
Mass	0.24 kg	0.27 kg	0.31 kg	0.37 kg	0.31 kg	0.33 kg	0.38 kg	0.44 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish							
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain							

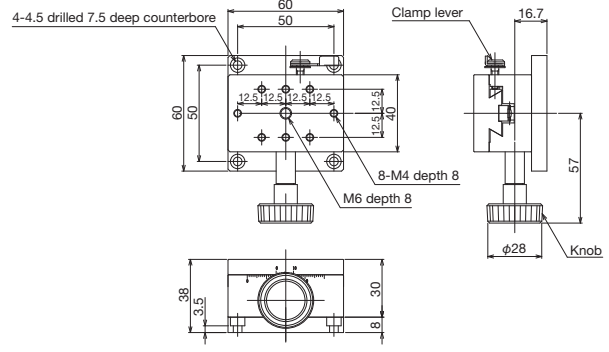


Rack & Pinion Stages ◀ Manual Stages ◀

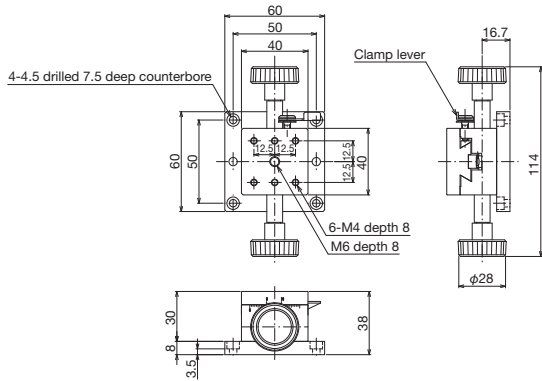
Product Appearance



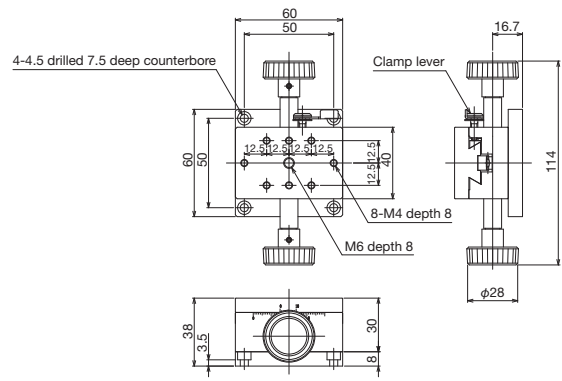
↑ TLS-412



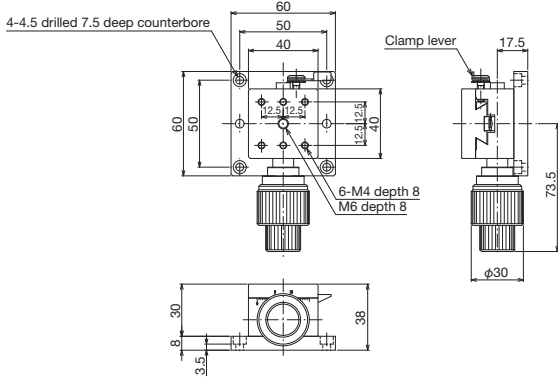
↑ TLS-612



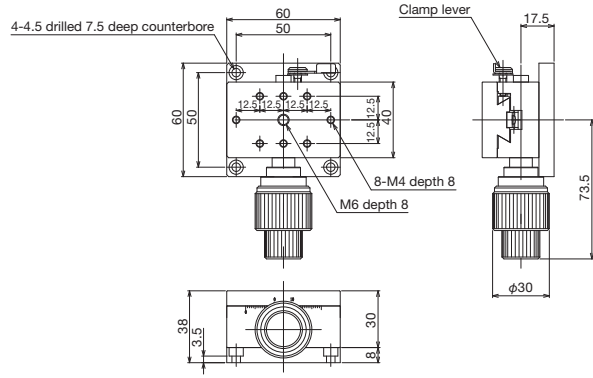
↑ TLS-412W



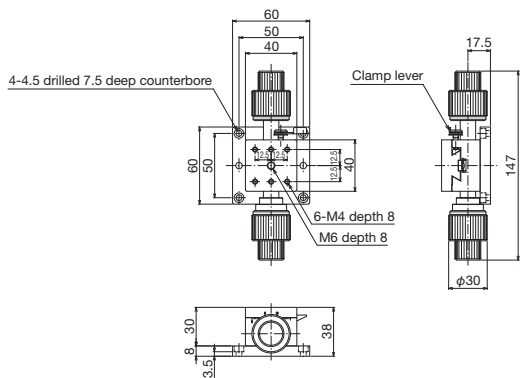
↑ TLS-612W



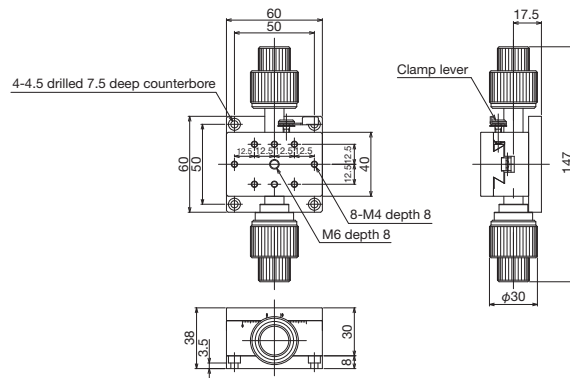
↑ TLS-412S



↑ TLS-612S



↑ TLS-412WS



↑ TLS-612WS

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rack & Pinion Stages
High-Carriage Stages	Stein Stages, Cross Roller Stages, Z-Like Stages	Rodless Stages
Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages
		XYZ Stages

Rack & Pinion - X Stages 40 x 90, 40 x 140



↑ TLS-912



↑ TLS-912W



↑ TLS-912S



↑ TLS-912WS



↑ TLS-112



↑ TLS-112W



↑ TLS-112S



↑ TLS-112WS

Features

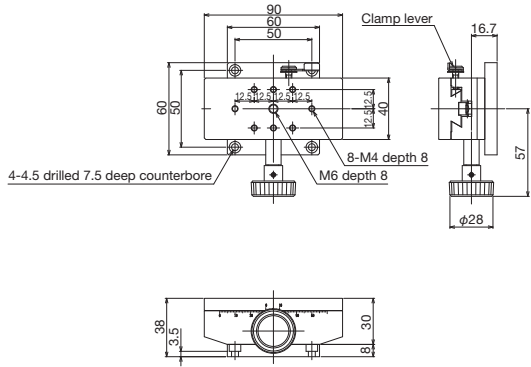
- The travel unit uses a dovetail (D-T method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A lever type clamp enables fixing in a desired position with strong retention force.

Model number	TLS-912	TLS-912W	TLS-912S	TLS-912WS	TLS-112	TLS-112W	TLS-112S	TLS-112WS
Model name	DT X Stage 40 x 90	DT X Stage 40 x 90 (Double Knob)	DT X Stage 40 x 90 (Coarse/ Fine Movement Knob)	DT X Stage 40 x 90 (Double Coarse/ Fine Movement Knob)	DT X Stage 40 x 140	DT X Stage 40 x 140 (Double Knob)	DT X Stage 40 x 140 (Coarse/ Fine Movement Knob)	DT X Stage 40 x 140 (Double Coarse/ Fine Movement Knob)
Travel direction	X-axis single direction							
Stage surface	40 mm x 90 mm				40 mm x 140 mm			
Clamp method	Lever method							
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method							
Travel amount	±30 mm				±50 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm		Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm							
Sensitivity	0.1 mm							
Travel guide	Dovetail							
Travel accuracy	Straightness: 0.03 mm							
Moment rigidity	Pitch rigidity: 0.5 s/N-cm, roll rigidity: 0.2 s/N-cm				Pitch rigidity: 0.4 s/N-cm, roll rigidity: 0.1 s/N-cm			
Parallelism	0.06 mm				0.08 mm			
Parallelism of motion	0.05 mm				0.06 mm			
Load capacity	39.2 N (4 kgf)							
Mass	0.4 kg	0.42 kg	0.47 kg	0.53 kg	0.55 kg	0.58 kg	0.61 kg	0.67 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish							
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain							

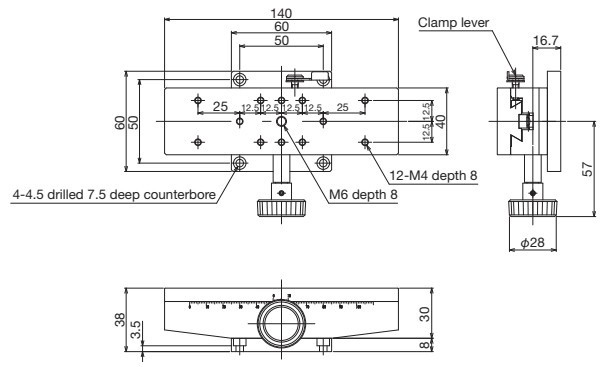


Rack & Pinion Stages ◀ Manual Stages ◀

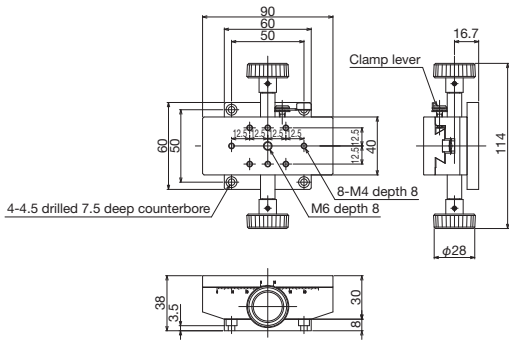
Product Appearance



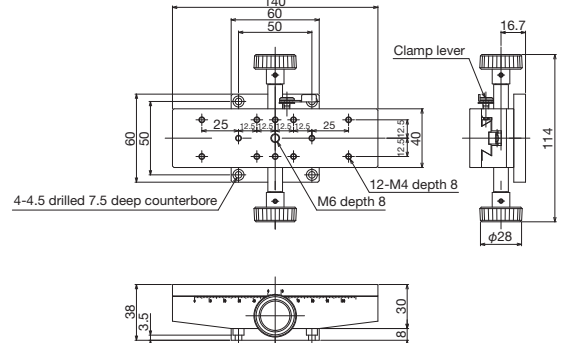
↑ TLS-912



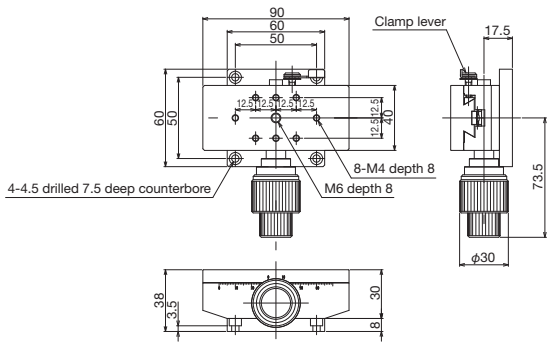
↑ TLS-112



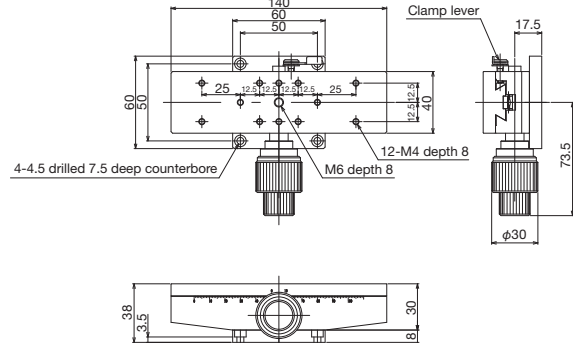
↑ TLS-912W



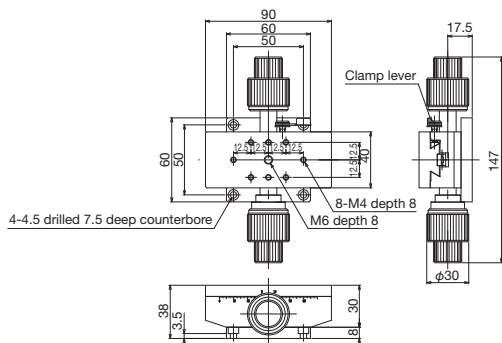
↑ TLS-112W



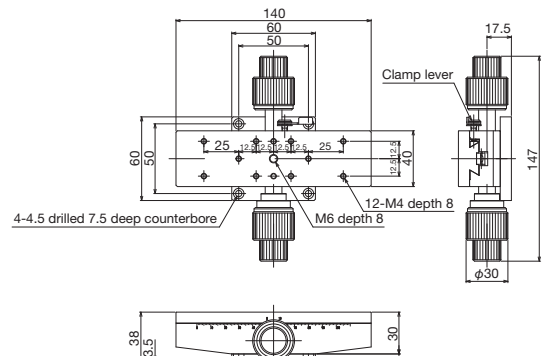
↑ TLS-912S



↑ TLS-112S



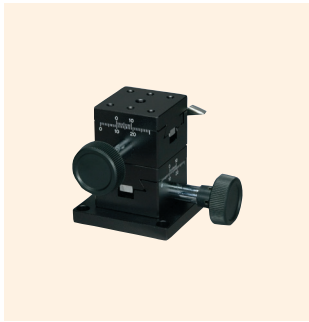
↑ TLS-912WS



↑ TLS-112WS

Motorized Stages	Automated Products for Microscopes
Manual Stages	
Fix Stages	
Thin VB Stages	
Rack & Pinion Stages	
High-Grade Stages	
Stein Stages, Cross Roller Stages	
Z-Like Stages, Z Stages	
Rotary Stages	
Tilt Stages	
Tilt/Rotary Stages	
XZ, YZ Stages	
XYZ Stages	

Rack & Pinion - XY Stages 40 x 40, 40 x 60



↑ TLD-412



↑ TLD-412W



↑ TLD-412S



↑ TLD-412WS



↑ TLD-612



↑ TLD-612W



↑ TLD-612S



↑ TLD-612WS

Features

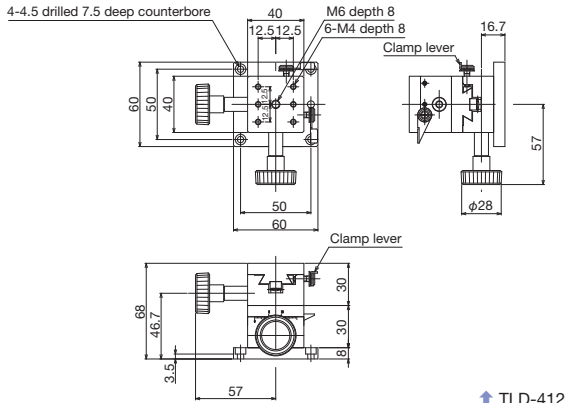
- The travel unit uses a dovetail (D-T method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A lever type clamp enables fixing in a desired position with strong retention force.

Model number	TLD-412	TLD-412W	TLD-412S	TLD-412WS	TLD-612	TLD-612W	TLD-612S	TLD-612WS
Model name	DT XY Stage 40 x 40	DT XY Stage 40 x 40 (Double Knob)	DT XY Stage 40 x 40 (Coarse/ Fine Movement Knob)	DT XY Stage 40 x 40 (Double Coarse/ Fine Movement Knob)	DT XY Stage 40 x 60	DT XY Stage 40 x 60 (Double Knob)	DT XY Stage 40 x 60 (Coarse/ Fine Movement Knob)	DT XY Stage 40 x 60 (Double Coarse/ Fine Movement Knob)
Travel direction	XY-axis double direction							
Stage surface	40 mm x 40 mm				40 mm x 60 mm			
Clamp method	Lever method							
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method							
Travel amount	±10 mm				±15 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm		Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm							
Sensitivity	0.1 mm							
Travel guide	Dovetail							
Travel accuracy	Straightness: 0.03 mm							
Load capacity	39.2 N (4 kgf)							
Mass	0.41 kg	0.46 kg	0.55 kg	0.66 kg	0.54 kg	0.59 kg	0.68 kg	0.8 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish							
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain							

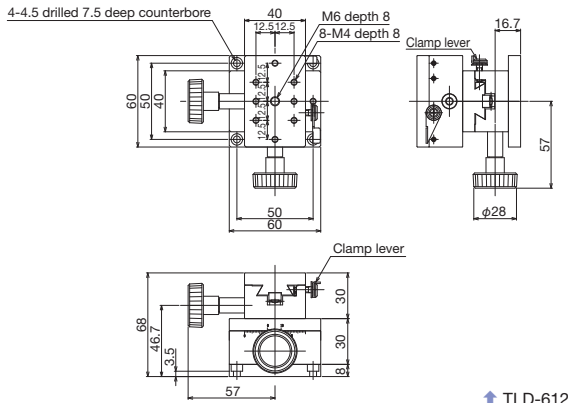


Rack & Pinion Stages ◀ Manual Stages ◀

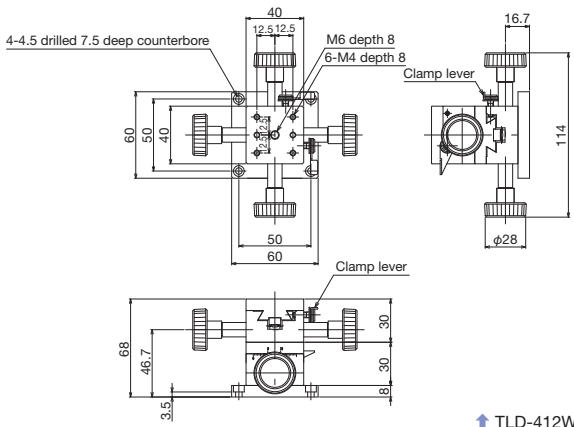
Product Appearance



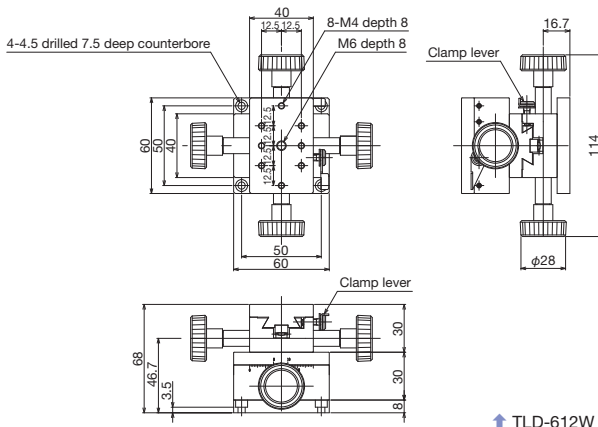
↑ TLD-412



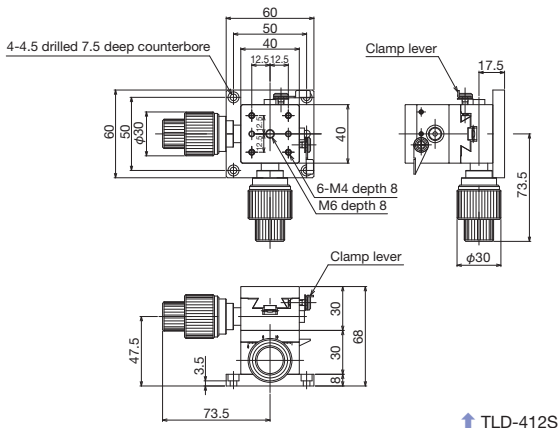
↑ TLD-612



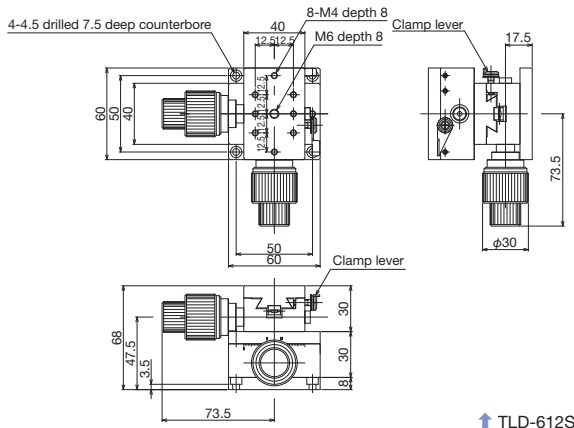
↑ TLD-412W



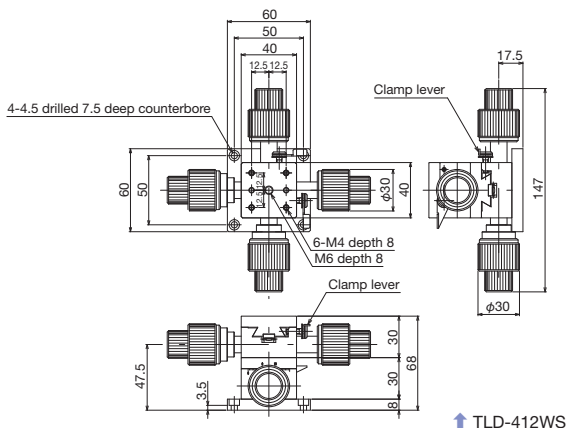
↑ TLD-612W



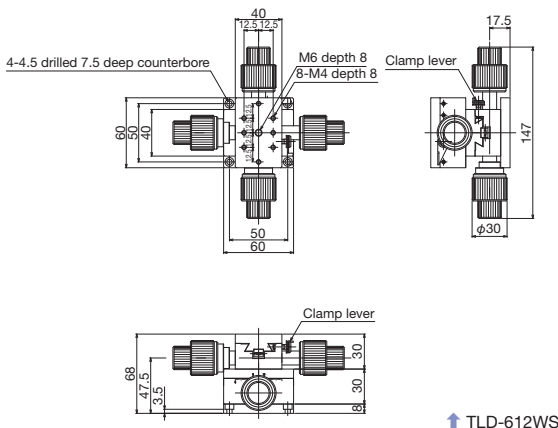
↑ TLD-412S



↑ TLD-612S



↑ TLD-412WS



↑ TLD-612WS

Motorized Stages	Automated Products for Microscopes
Manual Stages	Manual Stages
Fix Stages	Fix Stages
Thin VB Stages	Thin VB Stages
Rack & Pinion Stages	Rack & Pinion Stages
High-Grade Stages	High-Grade Stages
Swim Stages, Cross Roller Stages	Swim Stages, Z-Like Stages, Z Stages
Rotary Stages	Rotary Stages
Tilt Stages	Tilt Stages
Tilt/Rotary Stages	Tilt/Rotary Stages
XZ, YZ Stages	XZ, YZ Stages
XYZ Stages	XYZ Stages

Rack & Pinion - XY Stages 40 x 90, 40 x 140



↑ TLD-912



↑ TLD-912W



↑ TLD-912S



↑ TLD-912WS



↑ TLD-112



↑ TLD-112W



↑ TLD-112S



↑ TLD-112WS

Features

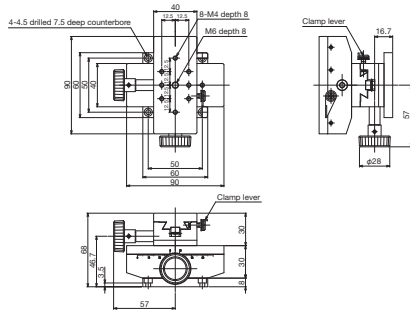
- The travel unit uses a dovetail (D-T method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A lever type clamp enables fixing in a desired position with strong retention force.

Model number	TLD-912	TLD-912W	TLD-912S	TLD-912WS	TLD-112	TLD-112W	TLD-112S	TLD-112WS
Model name	DT XY Stage 40 x 90	DT XY Stage 40 x 90 (Double Knob)	DT XY Stage 40 x 90 (Coarse/ Fine Movement Knob)	DT XY Stage 40 x 90 (Double Coarse/ Fine Movement Knob)	DT XY Stage 40 x 140	DT XY Stage 40 x 140 (Double Knob)	DT XY Stage 40 x 140 (Coarse/ Fine Movement Knob)	DT XY Stage 40 x 140 (Double Coarse/ Fine Movement Knob)
Travel direction	XY-axis double direction							
Stage surface	40 mm x 90 mm				40 mm x 140 mm			
Clamp method	Lever method							
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method							
Travel amount	±30 mm				±50 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm		Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm							
Sensitivity	0.1 mm							
Travel guide	Dovetail							
Travel accuracy	Straightness: 0.03 mm							
Load capacity	39.2 N (4 kgf)							
Mass	0.72 kg	0.77 kg	0.9 kg	1.01 kg	1.07 kg	1.12 kg	1.19 kg	1.3 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish							
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain							

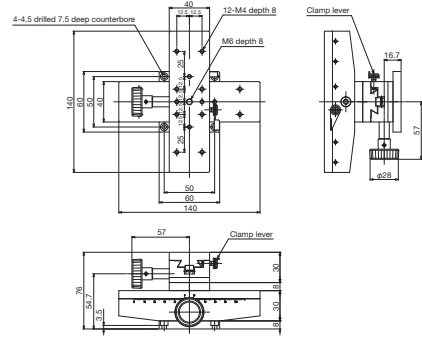


Rack & Pinion Stages ◀ Manual Stages ◀

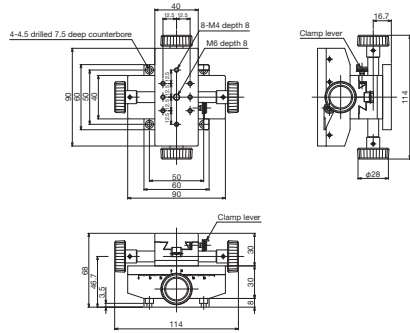
Product Appearance



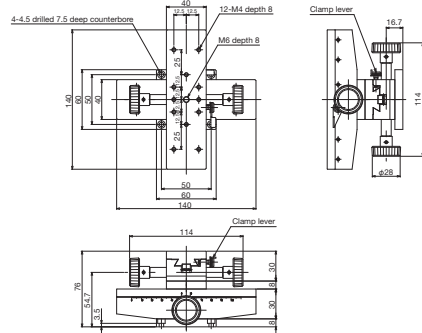
↑ TLD-912



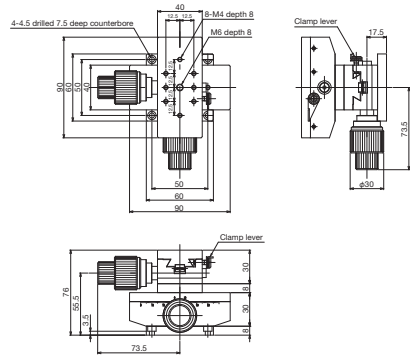
↑ TLD-112



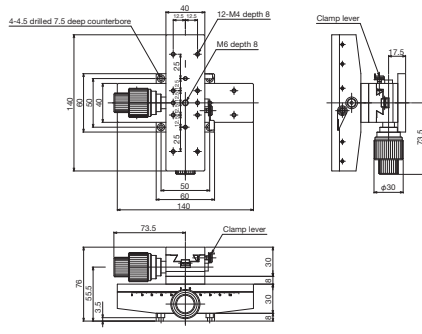
↑ TLD-912W



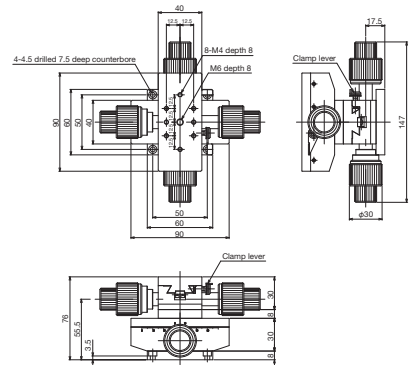
↑ TLD-112W



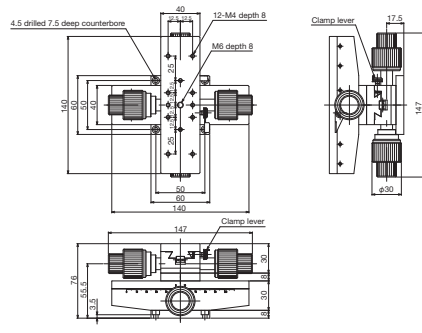
↑ TLD-912S



↑ TLD-112S



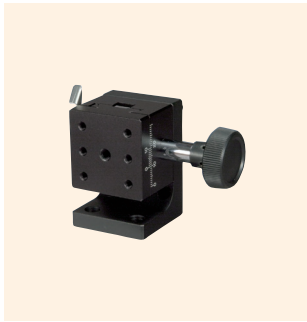
↑ TLD-912WS



↑ TLD-112WS

Motorized Stages	Automated Products for Microscopes
Fix Stages	Manual Stages
Thin VB Stages	
Rack & Pinion Stages	
High-Carriage Stages	
Stein Stages, Cross Roller Stages	
Z-Like Stages, Z Stages	
Rotary Stages	
Tilt Stages	
Tilt/Rotary Stages	
XZ, YZ Stages	
XYZ Stages	

Rack & Pinion - Z Stages 40 x 40



↑ TLV-412



↑ TLV-412W



↑ TLV-412S



↑ TLV-412WS

Features

- The travel unit uses a dovetail (D-T method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A lever type clamp enables fixing in a desired position with strong retention force.
- Low bracket products with a short Z bracket are available.

Low bracket

Model number	TLV-412L	TLV-412WL	TLV-412SL	TLV-412WSL
Model name	DT Z Stage 40 x 40	DT Z Stage 40 x 40 (Double Knob)	DT Z Stage 40 x 40 (Coarse/Fine Movement Knob)	DT Z Stage 40 x 40 (Double Coarse/Fine Movement Knob)
Travel direction	Z-axis single direction			
Stage surface	40 mm x 40 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	10 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.23 kg	0.26 kg	0.3 kg	0.36 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

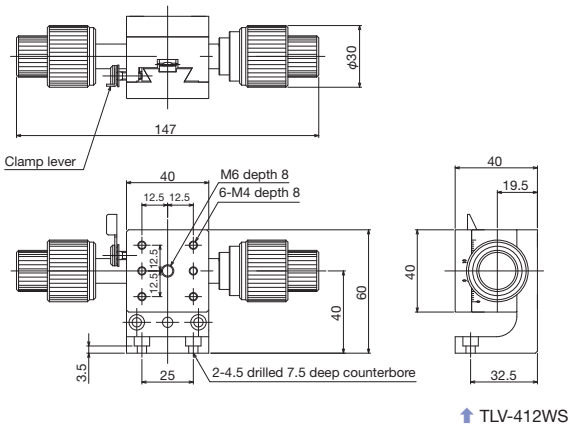
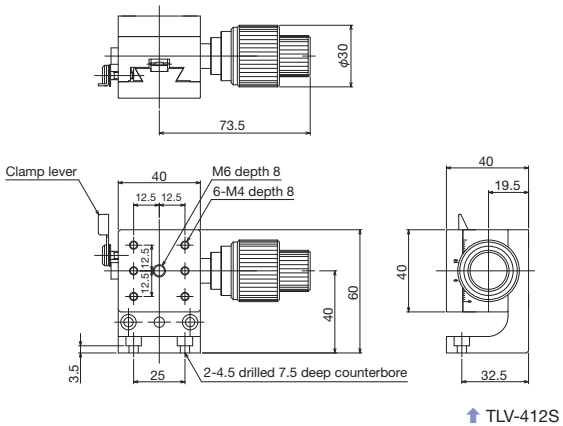
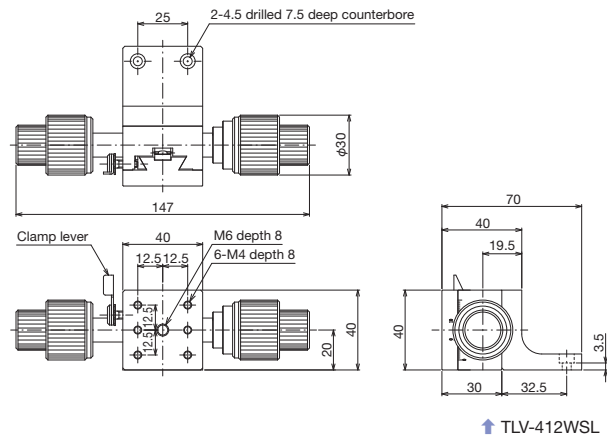
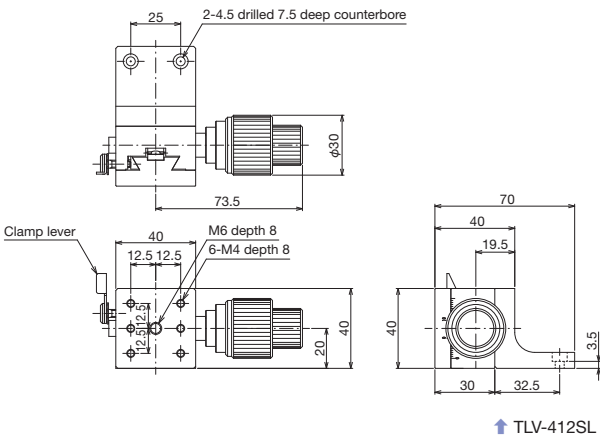
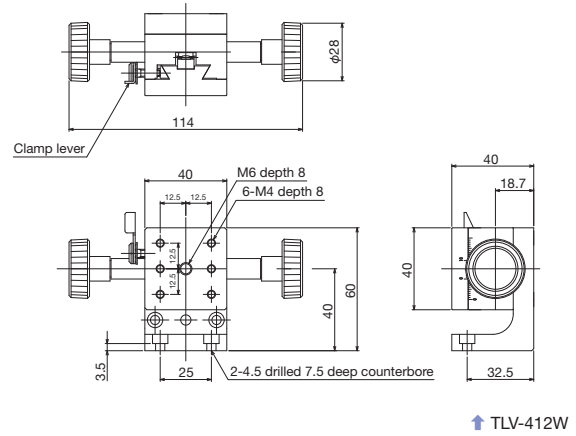
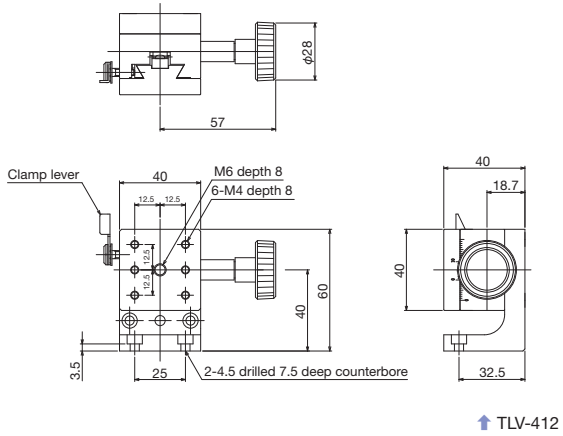
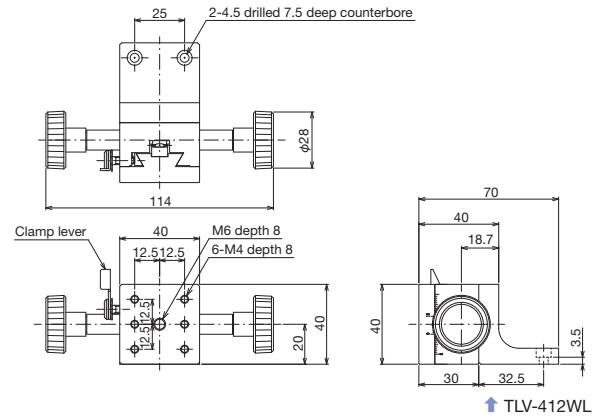
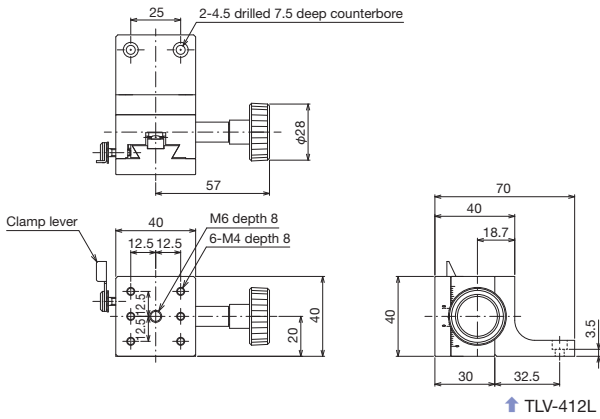
Regular bracket

Model number	TLV-412	TLV-412W	TLV-412S	TLV-412WS
Model name	DT Z Stage 40 x 40	DT Z Stage 40 x 40 (Double Knob)	DT Z Stage 40 x 40 (Coarse/Fine Movement Knob)	DT Z Stage 40 x 40 (Double Coarse/Fine Movement Knob)
Travel direction	Z-axis single direction			
Stage surface	40 mm x 40 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	±10 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.26 kg	0.28 kg	0.33 kg	0.38 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



Rack & Pinion Stages ◀ Manual Stages ◀

Product Appearance



Motorized Stages	Automated Products for Microscopes
Fix Stages	Manual Stages
Thin VB Stages	
Rack & Pinion Stages	
High-Grade Stages	
Swim Stages, Cross Roller Stages	
Z-Like Stages, Z Stages	
Rotary Stages	
Tilt Stages	
Tilt/Rotary Stages	
XZ, YZ Stages	
XYZ Stages	

Rack & Pinion - Z Stages 40 x 60



↑ TLV-612



↑ TLV-612W



↑ TLV-612S



↑ TLV-612WS

Features

- The travel unit uses a dovetail (D-T method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A lever type clamp enables fixing in a desired position with strong retention force.
- Low bracket products with a short Z bracket are available.

Low bracket

Model number	TLV-612L	TLV-612WL	TLV-612SL	TLV-612WSL
Model name	DT Z Stage 40 x 60	DT Z Stage 40 x 60 (Double Knob)	DT Z Stage 40 x 60 (Coarse/Fine Movement Knob)	DT Z Stage 40 x 60 (Double Coarse/Fine Movement Knob)
Travel direction	Z-axis single direction			
Stage surface	40 mm x 60 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	15 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.33 kg	0.35 kg	0.4 kg	0.46 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

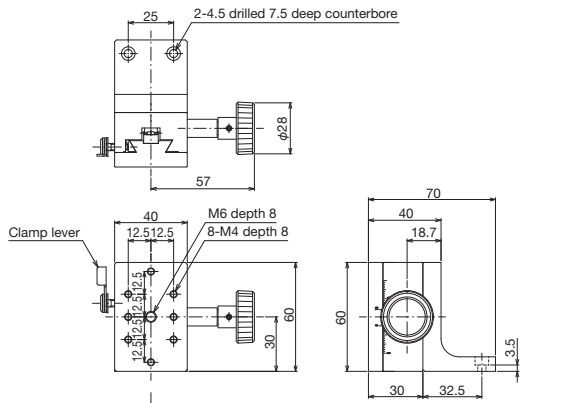
Regular bracket

Model number	TLV-612	TLV-612W	TLV-612S	TLV-612WS
Model name	DT Z Stage 40 x 60	DT Z Stage 40 x 60 (Double Knob)	DT Z Stage 40 x 60 (Coarse/Fine Movement Knob)	DT Z Stage 40 x 60 (Double Coarse/Fine Movement Knob)
Travel direction	Z-axis single direction			
Stage surface	40 mm x 60 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	±15 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.36 kg	0.38 kg	0.42 kg	0.48 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

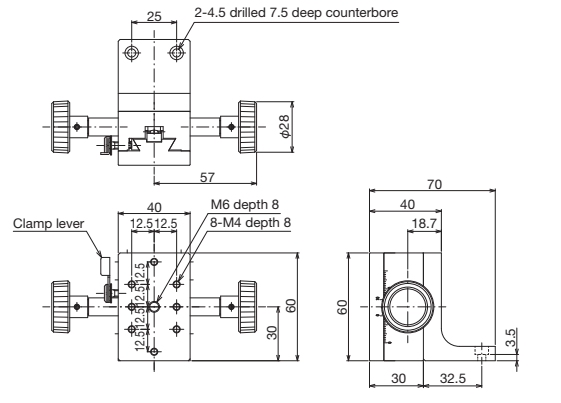


Rack & Pinion Stages ◀ Manual Stages ◀

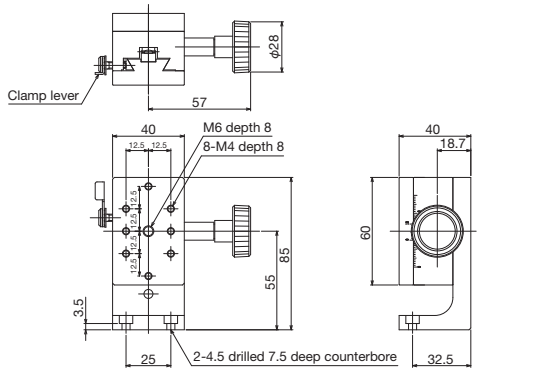
Product Appearance



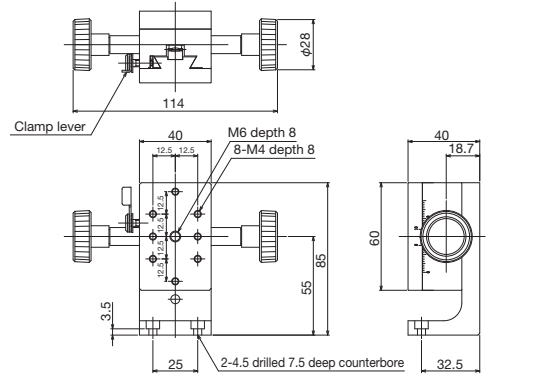
↑ TLV-612L



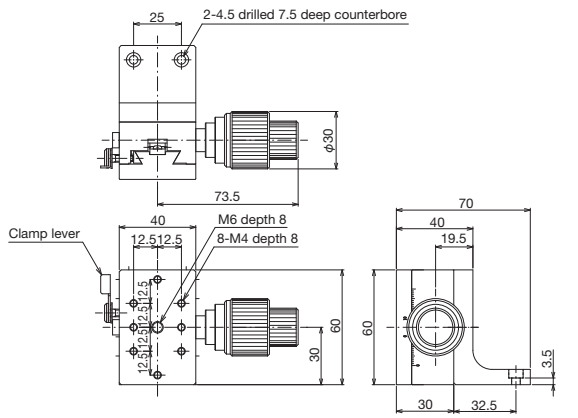
↑ TLV-612WL



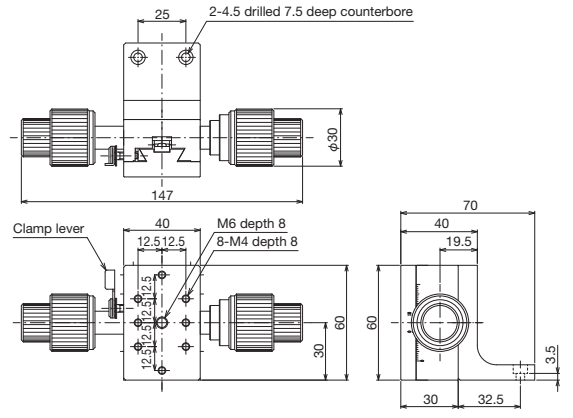
↑ TLV-612



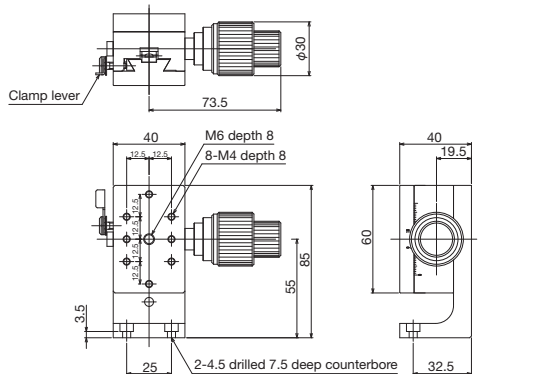
↑ TLV-612W



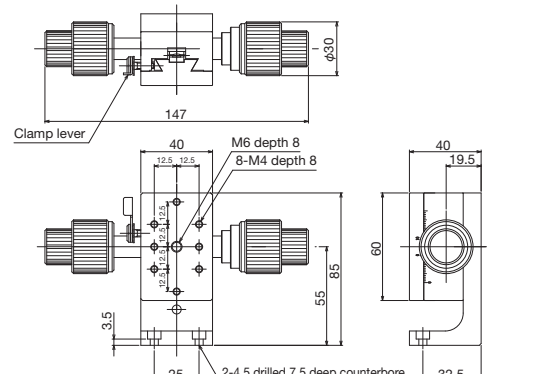
↑ TLV-612SL



↑ TLV-612WSL



↑ TLV-612S



↑ TLV-612WS

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fx Stages	Thru VB Stages	Rack & Pinion Stages
High-Carriage Stages	Stein Stages, Cross Roller Stages	Z-Like Stages, Z Stages
Rodless Stages	TR Stages	TR/Relay Stages
XZ, YZ Stages	XYZ Stages	

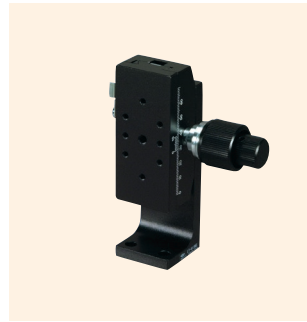
Rack & Pinion - Z Stages 40 x 90



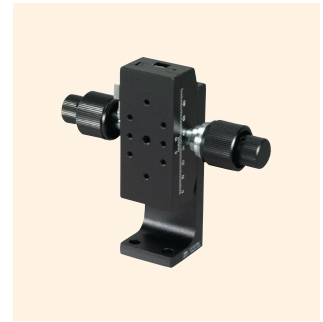
↑ TLV-912



↑ TLV-912W



↑ TLV-912S



↑ TLV-912WS

Features

- The travel unit uses a dovetail (D-T method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A lever type clamp enables fixing in a desired position with strong retention force.
- Low bracket products with a short Z bracket are available.

Low bracket

Model number	TLV-912L	TLV-912WL	TLV-912SL	TLV-912WSL
Model name	DT Z Stage 40 x 90	DT Z Stage 40 x 90 (Double Knob)	DT Z Stage 40 x 90 (Coarse/Fine Movement Knob)	DT Z Stage 40 x 90 (Double Coarse/Fine Movement Knob)
Travel direction	Z-axis single direction			
Stage surface	40 mm x 90 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	30 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.45 kg	0.47 kg	0.52 kg	0.58 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

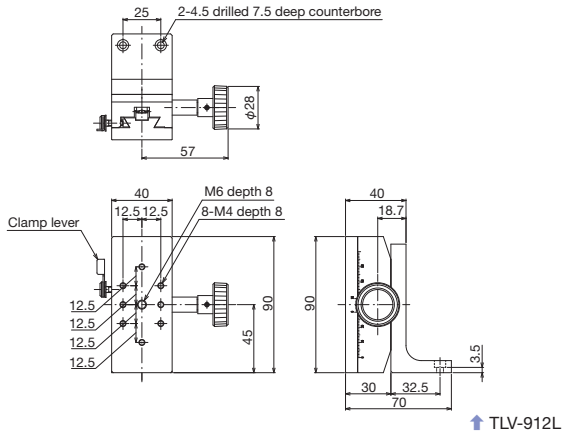
Regular bracket

Model number	TLV-912	TLV-912W	TLV-912S	TLV-912WS
Model name	DT Z Stage 40 x 90	DT Z Stage 40 x 90 (Double Knob)	DT Z Stage 40 x 90 (Coarse/Fine Movement Knob)	DT Z Stage 40 x 90 (Double Coarse/Fine Movement Knob)
Travel direction	Z-axis single direction			
Stage surface	40 mm x 90 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	±30 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.47 kg	0.5 kg	0.54 kg	0.6 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

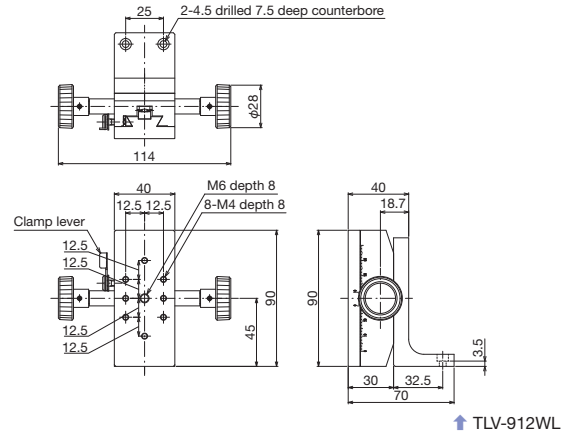


Rack & Pinion Stages ◀ Manual Stages ◀

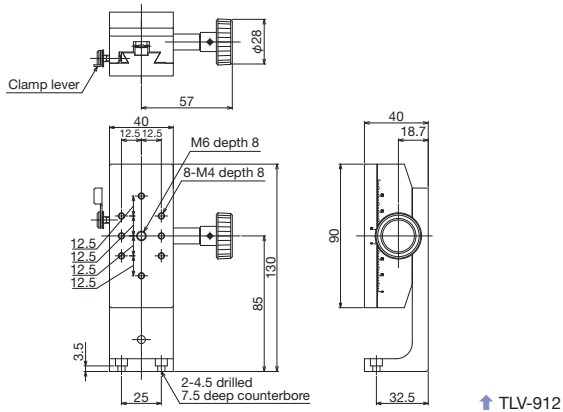
Product Appearance



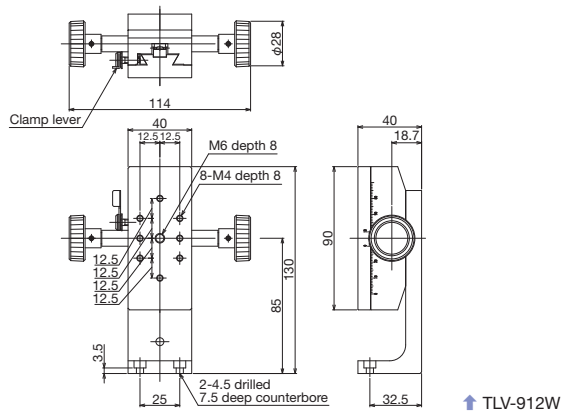
↑ TLV-912L



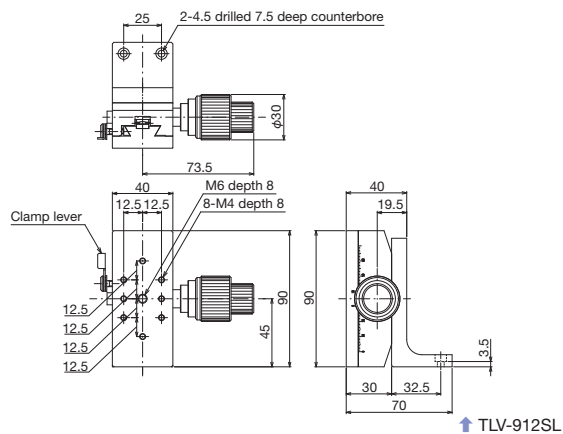
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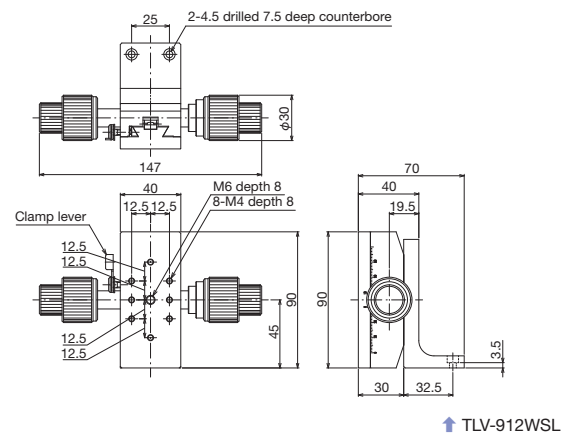
↑ TLV-912



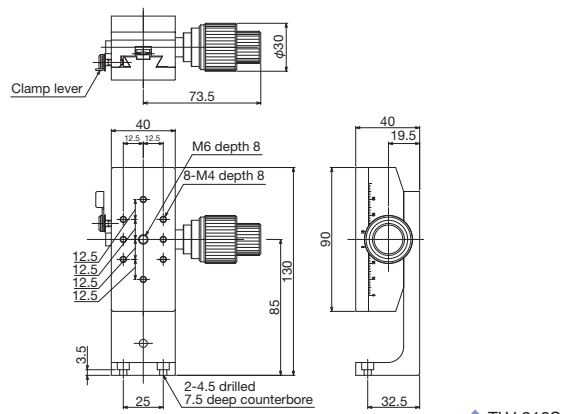
↑ TLV-912W



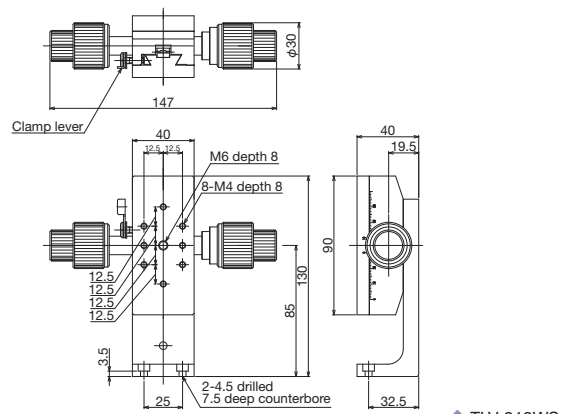
↑ TLV-912SL



↑ TLV-912WSL



↑ TLV-912S



↑ TLV-912WS

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rack & Pinion Stages
High-Grade Stages	Swim Stages, Cross Roller Stages	Z-Like Stages, Rotary Stages
TR Stages	TR/Rotary Stages	XZ, YZ Stages
		XYZ Stages

Rack & Pinion - Z Stages 40 x 140



↑ TLV-112



↑ TLV-112W



↑ TLV-112S



↑ TLV-112WS

Features

- The travel unit uses a dovetail (D-T method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A lever type clamp enables fixing in a desired position with strong retention force.
- Low bracket products with a short Z bracket are available.

Low bracket

Model number	TLV-112L	TLV-112WL	TLV-112SL	TLV-112WSL
Model name	DT Z Stage 40 x 140	DT Z Stage 40 x 140 (Double Knob)	DT Z Stage 40 x 140 (Coarse/Fine Movement Knob)	DT Z Stage 40 x 140 (Double Coarse/Fine Movement Knob)
Travel direction	Z-axis single direction			
Stage surface	40 mm x 140 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	50 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.63 kg	0.66 kg	0.69 kg	0.75 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

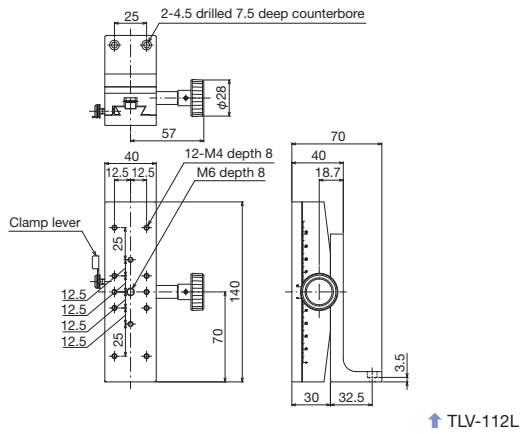
Regular bracket

Model number	TLV-112	TLV-112W	TLV-112S	TLV-112WS
Model name	DT Z Stage 40 x 140	DT Z Stage 40 x 140 (Double Knob)	DT Z Stage 40 x 140 (Coarse/Fine Movement Knob)	DT Z Stage 40 x 140 (Double Coarse/Fine Movement Knob)
Travel direction	Z-axis single direction			
Stage surface	40 mm x 140 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	±50 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.67 kg	0.7 kg	0.73 kg	0.79 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

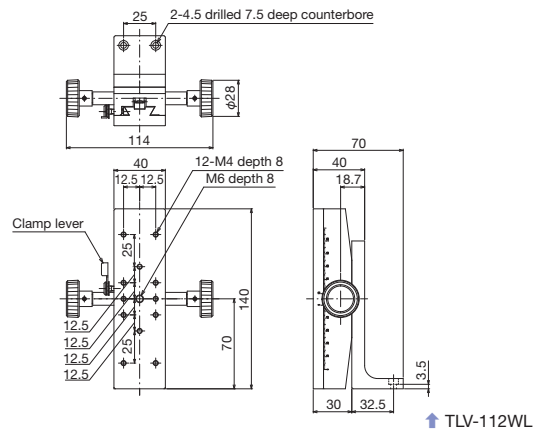


Rack & Pinion Stages ◀ Manual Stages ◀

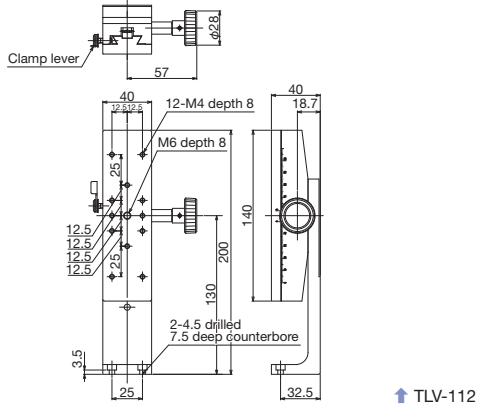
Product Appearance



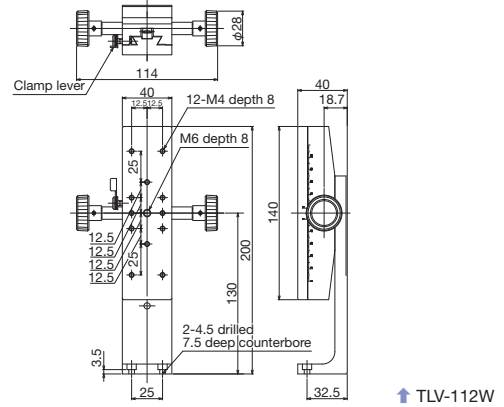
↑ TLV-112L



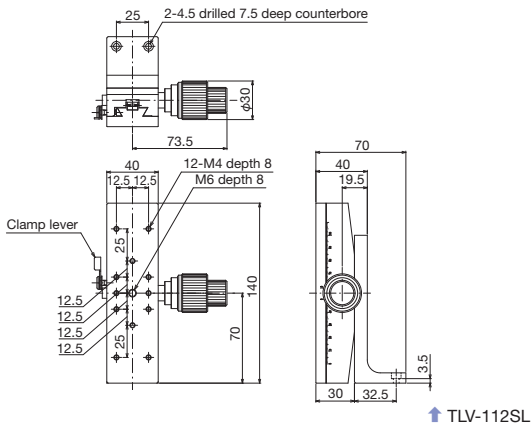
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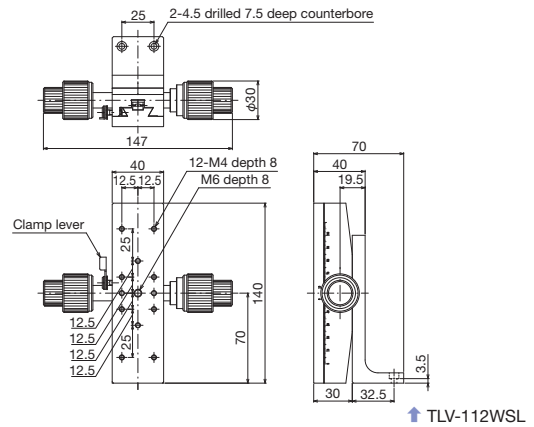
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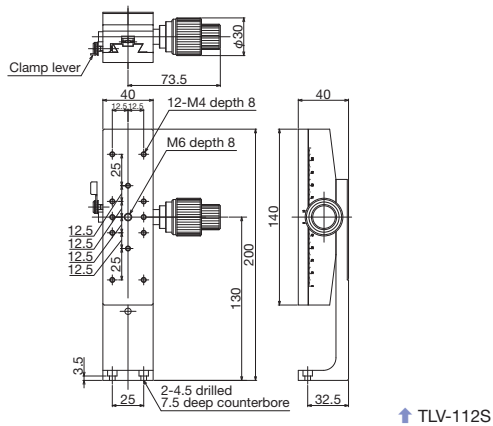
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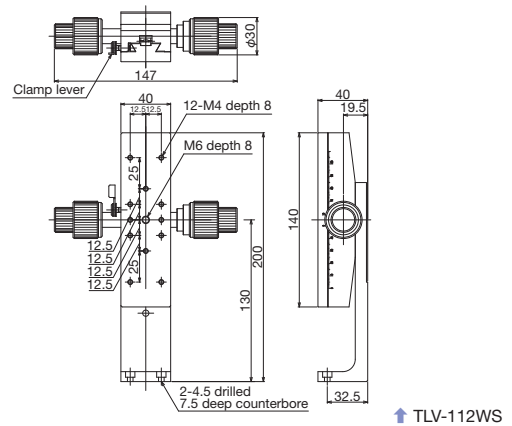
↑ TLV-112SL



↑ TLV-112WSL



↑ TLV-112S



↑ TLV-112WS

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin V8 Stages
Rack & Pinion Stages
High-Grade Stages
Swim Stages, Cross Roller Stages
Z-Lift Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

Rack & Pinion - XZ Stages 40 x 40



↑ TLM-412



↑ TLM-412W



↑ TLM-412S



↑ TLM-412WS

Features

- The travel unit uses a dovetail (D-T method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A lever type clamp enables fixing in a desired position with strong retention force.
- Low bracket products with a short Z bracket are available.

Low bracket

Model number	TLM-412L	TLM-412WL	TLM-412SL	TLM-412WSL
Model name	DT XZ Stage 40 x 40	DT XZ Stage 40 x 40 (Double Knob)	DT XZ Stage 40 x 40 (Coarse/Fine Movement Knob)	DT XZ Stage 40 x 40 (Double Coarse/Fine Movement Knob)
Travel direction	XZ-axis double direction			
Stage surface	40 mm x 40 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	X axis ±10 mm, Z axis 10 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.47 kg	0.52 kg	0.61 kg	0.72 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

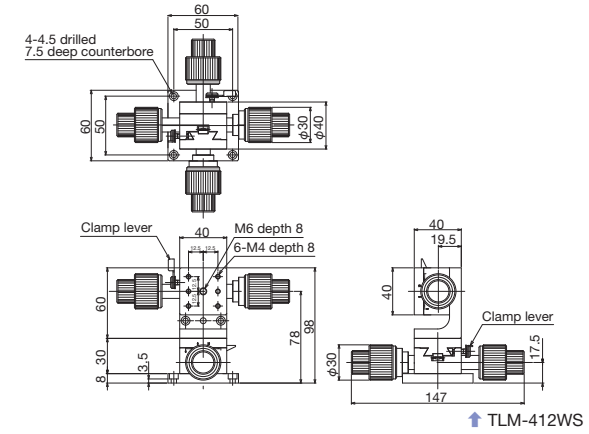
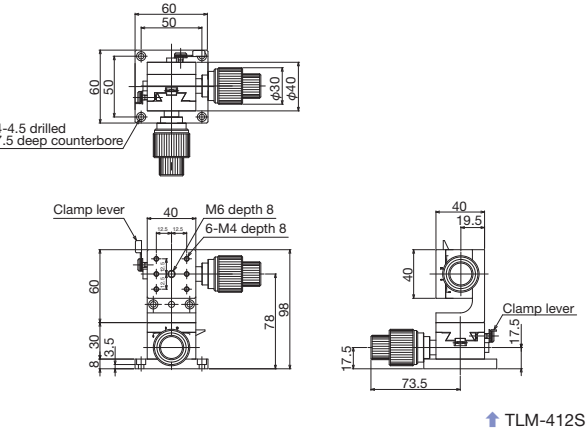
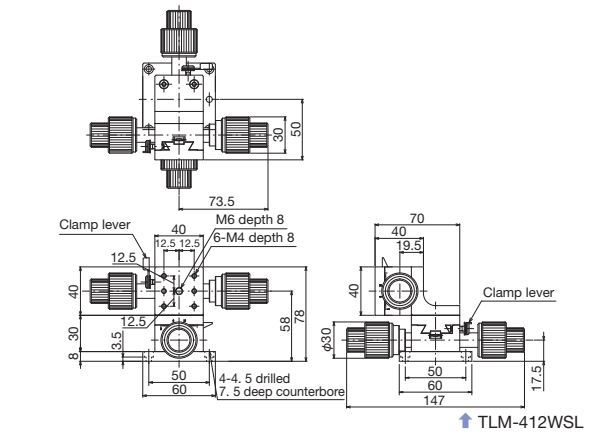
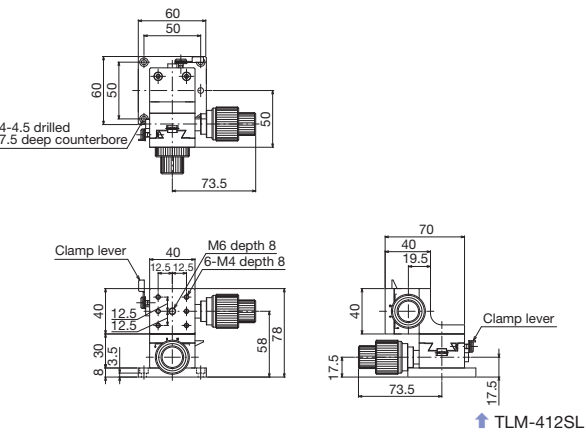
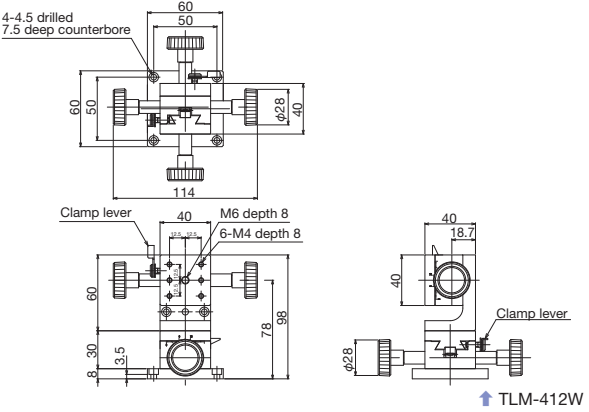
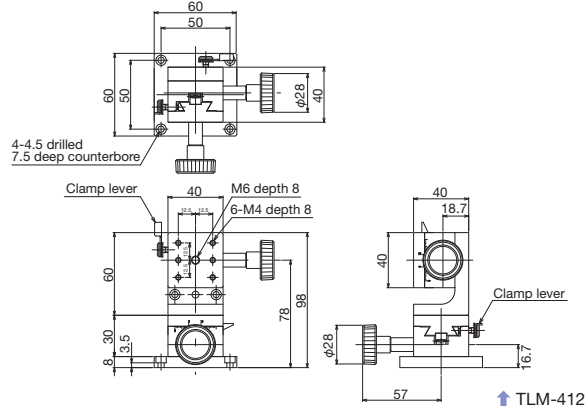
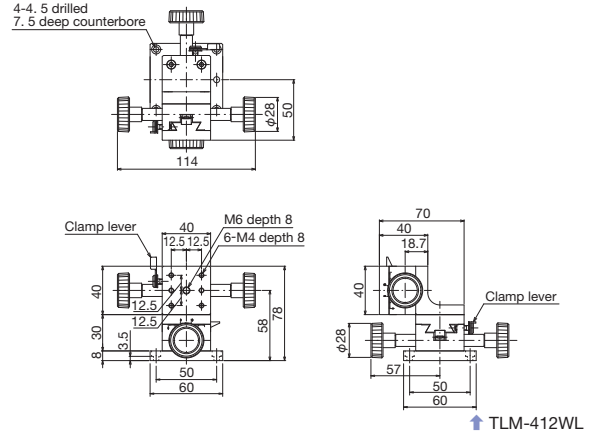
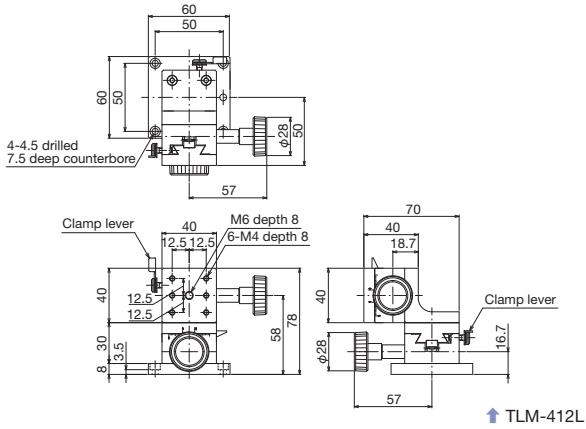
Regular bracket

Model number	TLM-412	TLM-412W	TLM-412S	TLM-412WS
Model name	DT XZ Stage 40 x 40	DT XZ Stage 40 x 40 (Double Knob)	DT XZ Stage 40 x 40 (Coarse/Fine Movement Knob)	DT XZ Stage 40 x 40 (Double Coarse/Fine Movement Knob)
Travel direction	XZ-axis double direction			
Stage surface	40 mm x 40 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	±10 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.5 kg	0.55 kg	0.64 kg	0.75 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



Rack & Pinion Stages ◀ Manual Stages ◀

Product Appearance



Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rack & Pinion Stages
High-Grade Stages	Slit Stages, Cross Roller Stages	Z-Like Stages, Z Stages
Relay Stages	TR Stages	TR/Relay Stages
XZ, YZ Stages	XZ Stages	

Rack & Pinion - XZ Stages 40 x 60



↑ TLM-612



↑ TLM-612W



↑ TLM-612S



↑ TLM-612WS

Features

- The travel unit uses a dovetail (D-T method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A lever type clamp enables fixing in a desired position with strong retention force.
- Low bracket products with a short Z bracket are available.

Low bracket

Model number	TLM-612L	TLM-612WL	TLM-612SL	TLM-612WSL
Model name	DT XZ Stage 40 x 60	DT XZ Stage 40 x 60 (Double Knob)	DT XZ Stage 40 x 60 (Coarse/Fine Movement Knob)	DT XZ Stage 40 x 60 (Double Coarse/Fine Movement Knob)
Travel direction	XZ-axis double direction			
Stage surface	40 mm x 60 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	X axis ±15 mm, Z axis 15 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.64 kg	0.68 kg	0.78 kg	0.9 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

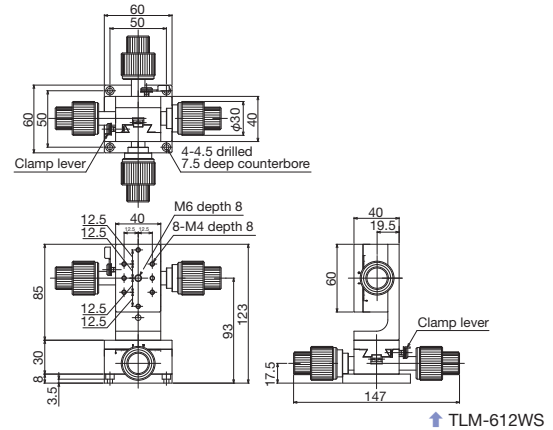
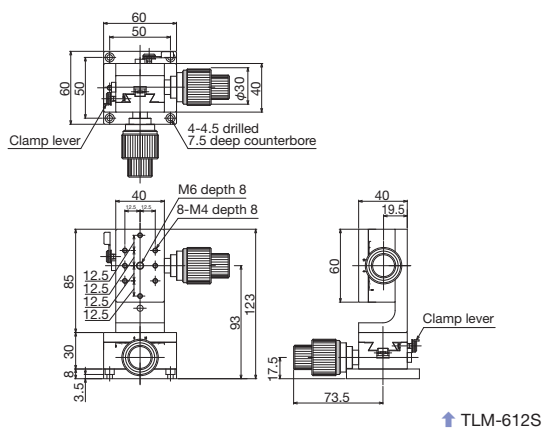
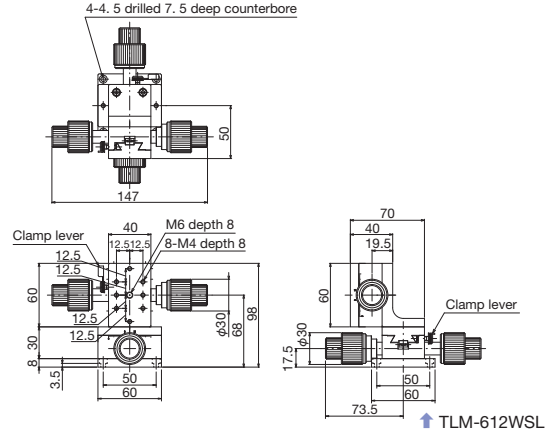
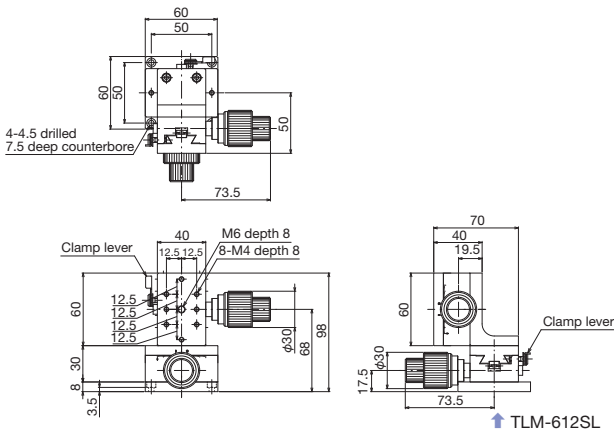
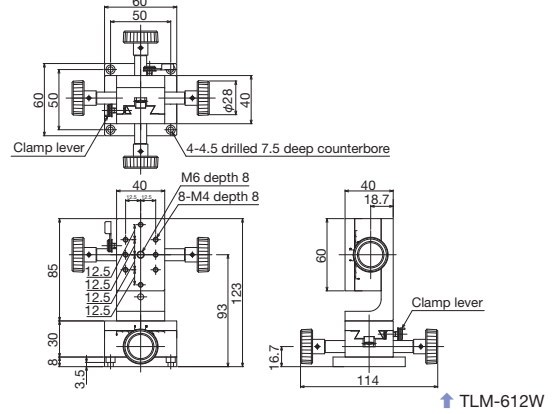
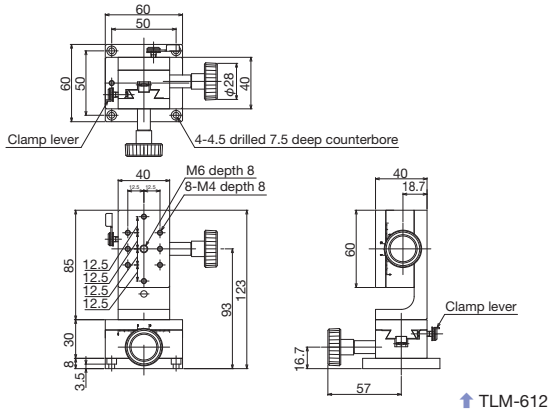
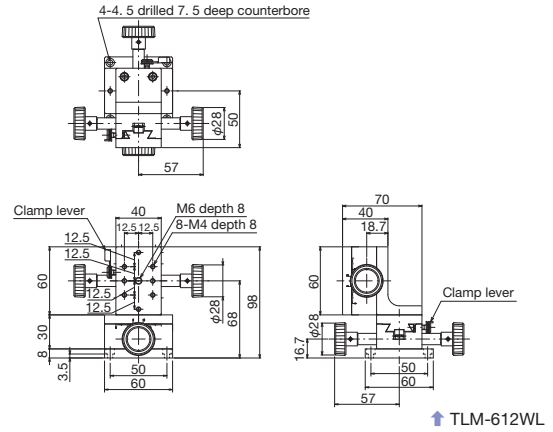
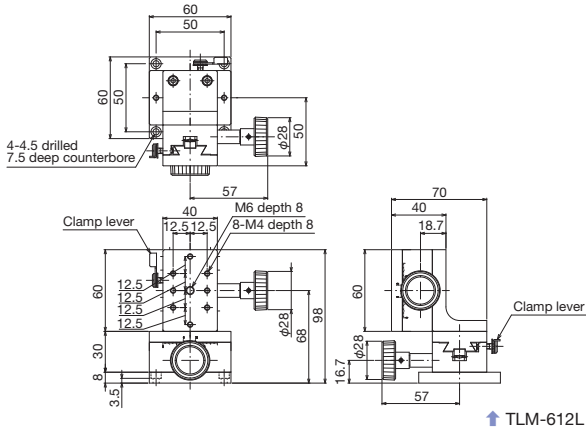
Regular bracket

Model number	TLM-612	TLM-612W	TLM-612S	TLM-612WS
Model name	DT XZ Stage 40 x 60	DT XZ Stage 40 x 60 (Double Knob)	DT XZ Stage 40 x 60 (Coarse/Fine Movement Knob)	DT XZ Stage 40 x 60 (Double Coarse/Fine Movement Knob)
Travel direction	XZ-axis double direction			
Stage surface	40 mm x 60 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	±15 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.67 kg	0.72 kg	0.8 kg	0.92 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



Rack & Pinion Stages ◀ Manual Stages ◀

Product Appearance



Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rack & Pinion Stages
High-Grade Stages	Swim Stages, Cross Roller Stages	Z-Like Stages, Rotary Stages
Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages, XYZ Stages

Rack & Pinion - XZ Stages 40 x 90



↑ TLM-912



↑ TLM-912W



↑ TLM-912S



↑ TLM-912WS

Features

- The travel unit uses a dovetail (D-T method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A lever type clamp enables fixing in a desired position with strong retention force.
- Low bracket products with a short Z bracket are available.

Low bracket

Model number	TLM-912L	TLM-912WL	TLM-912SL	TLM-912WSL
Model name	DT XZ Stage 40 x 90	DT XZ Stage 40 x 90 (Double Knob)	DT XZ Stage 40 x 90 (Coarse/Fine Movement Knob)	DT XZ Stage 40 x 90 (Double Coarse/Fine Movement Knob)
Travel direction	XZ-axis double direction			
Stage surface	40 mm x 90 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	X axis ±30 mm, Z axis 30 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.85 kg	0.89 kg	0.99 kg	1.11 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

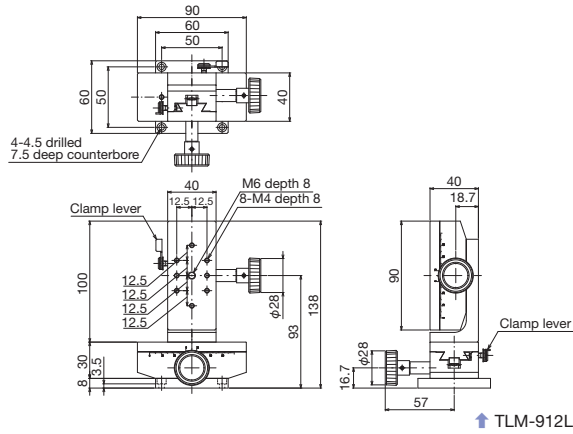
Regular bracket

Model number	TLM-912	TLM-912W	TLM-912S	TLM-912WS
Model name	DT XZ Stage 40 x 90	DT XZ Stage 40 x 90 (Double Knob)	DT XZ Stage 40 x 90 (Coarse/Fine Movement Knob)	DT XZ Stage 40 x 90 (Double Coarse/Fine Movement Knob)
Travel direction	XZ-axis double direction			
Stage surface	40 mm x 90 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	±30 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.87 kg	0.92 kg	1.01 kg	1.13 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

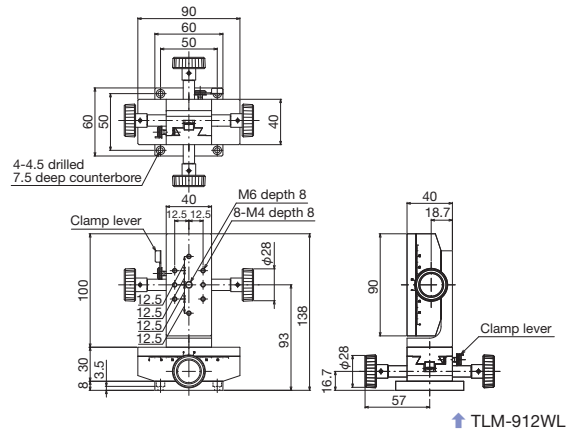


Rack & Pinion Stages ◀ Manual Stages ◀

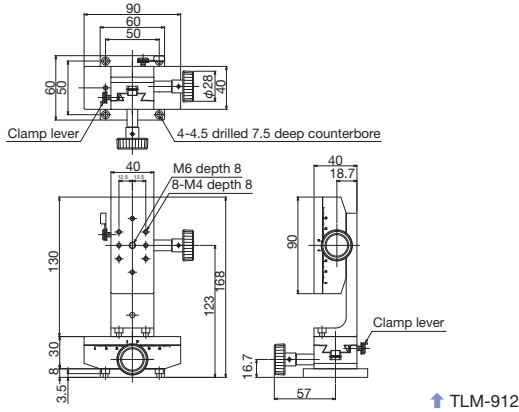
Product Appearance



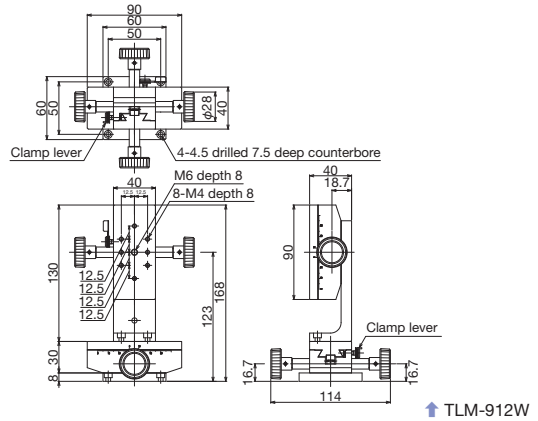
↑ TLM-912L



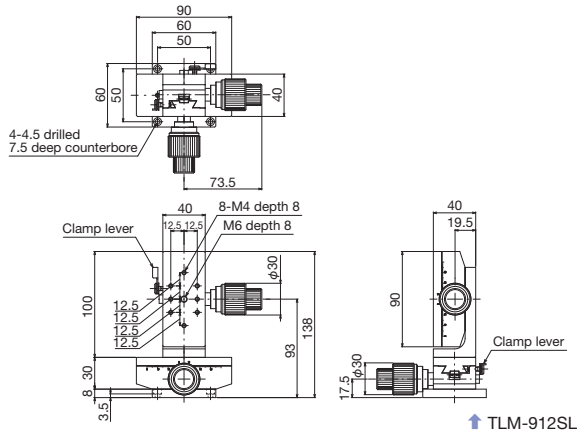
↑ TLM-912WL



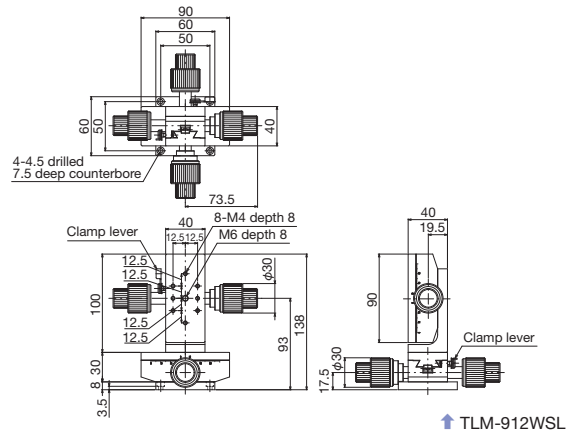
↑ TLM-912



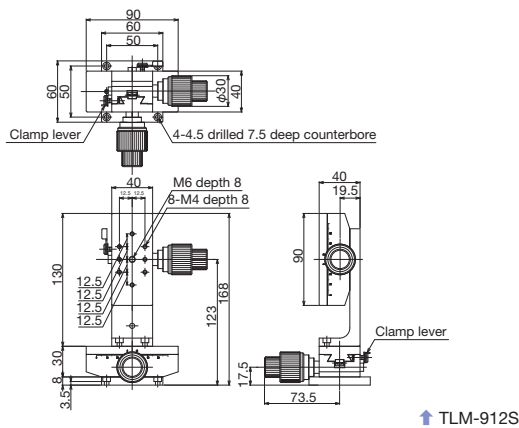
↑ TLM-912W



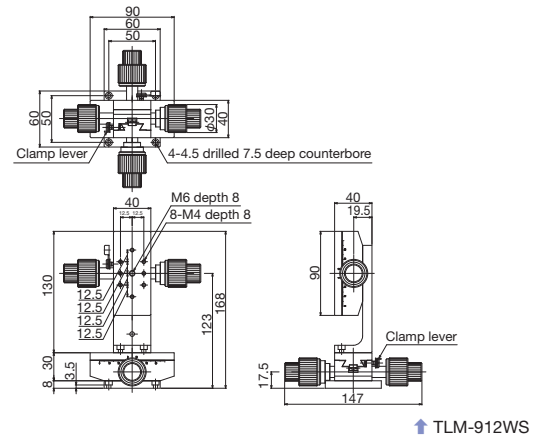
↑ TLM-912SL



↑ TLM-912WSL



↑ TLM-912S



↑ TLM-912WS

Motorized Stages	Automated Products for Microscopes
Fix Stages	Manual Stages
Thin V8 Stages	
Rack & Pinion Stages	
High-Grade Stages	
Stein Stages, Cross Roller Stages	
Z-Like Stages, Z Stages	
Rotary Stages	
Tilt Stages	
Tilt/Rotary Stages	
XZ, YZ Stages	
XYZ Stages	

Rack & Pinion - XZ Stages 40 x 140



↑ TLM-112



↑ TLM-112W



↑ TLM-112S



↑ TLM-112WS

Features

- The travel unit uses a dovetail (D-T method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A lever type clamp enables fixing in a desired position with strong retention force.
- Low bracket products with a short Z bracket are available.

Low bracket

Model number	TLM-112L	TLM-112WL	TLM-112SL	TLM-112WSL
Model name	DT XZ Stage 40 x 140	DT XZ Stage 40 x 140 (Double Knob)	DT XZ Stage 40 x 140 (Coarse/Fine Movement Knob)	DT XZ Stage 40 x 140 (Double Coarse/Fine Movement Knob)
Travel direction	XZ-axis double direction			
Stage surface	40 mm x 140 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	X axis ± 50 mm, Z axis 50 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	1.18 kg	1.24 kg	1.3 kg	1.42 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

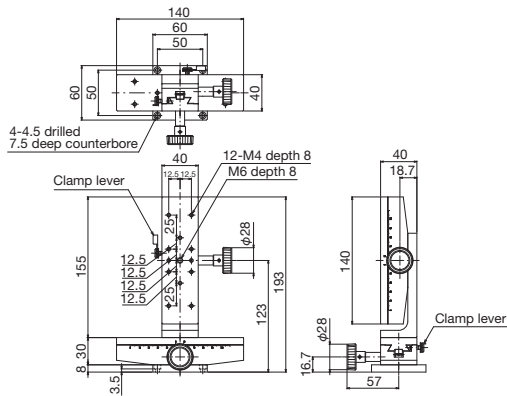
Regular bracket

Model number	TLM-112	TLM-112W	TLM-112S	TLM-112WS
Model name	DT XZ Stage 40 x 140	DT XZ Stage 40 x 140 (Double Knob)	DT XZ Stage 40 x 140 (Coarse/Fine Movement Knob)	DT XZ Stage 40 x 140 (Double Coarse/Fine Movement Knob)
Travel direction	XZ-axis double direction			
Stage surface	40 mm x 140 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	± 50 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	1.23 kg	1.28 kg	1.34 kg	1.46 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

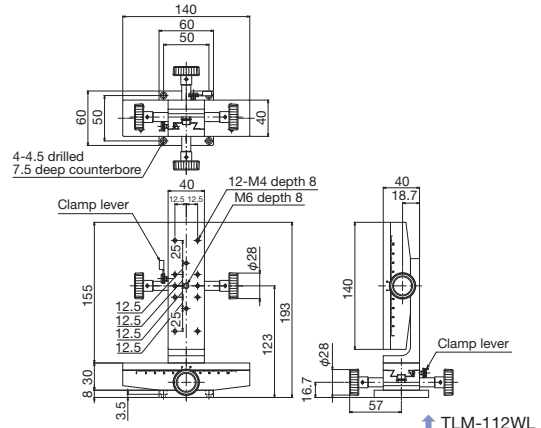


Rack & Pinion Stages ◀ Manual Stages ◀

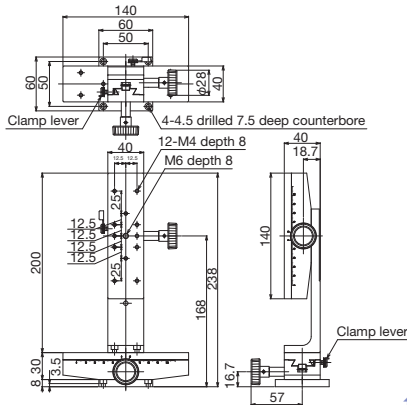
Product Appearance



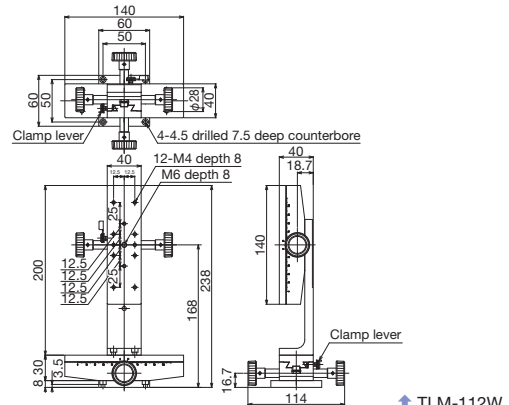
↑ TLM-112L



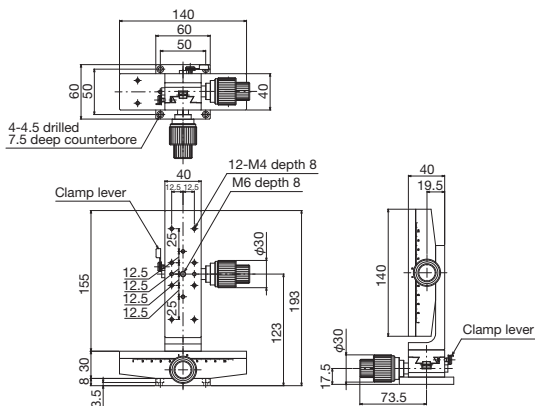
↑ TLM-112WL



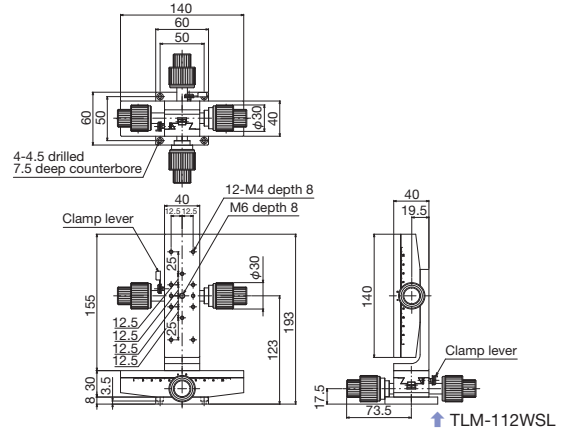
↑ TLM-112



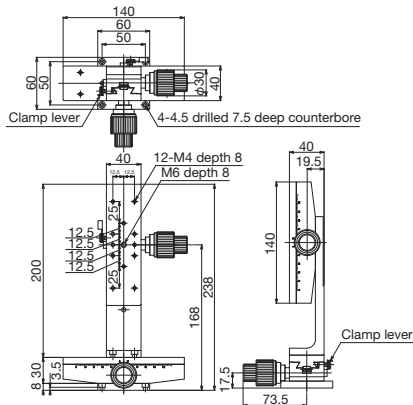
↑ TLM-112W



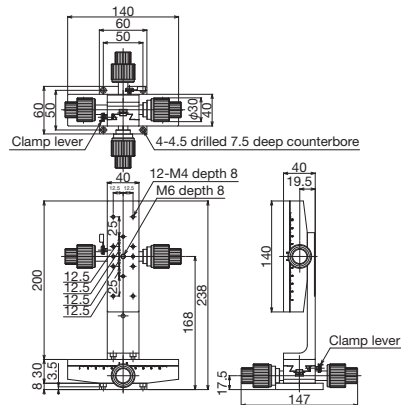
↑ TLM-112SL



↑ TLM-112WSL



↑ TLM-112S



↑ TLM-112WS

Motorized Stages	Automated Products for Microscopes
Flx Stages	Manual Stages
Thin VB Stages	
Rack & Pinion Stages	
High-Capacity Stages	
Spin Stages, Cross Roller Stages	
Z-Like Stages, Z Stages	
Rotary Stages	
Tilt Stages	
Tilt/Rotary Stages	
XZ, YZ Stages	
XYZ Stages	

Rack & Pinion - XYZ Stages 40 x 40



↑ TLT-412



↑ TLT-412W



↑ TLT-412S



↑ TLT-412WS

Features

- The travel unit uses a dovetail (D-T method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A lever type clamp enables fixing in a desired position with strong retention force.
- Low bracket products with a short Z bracket are available.

Low bracket

Model number	TLT-412L	TLT-412WL	TLT-412SL	TLT-412WSL
Model name	DT XYZ Stage 40 x 40	DT XYZ Stage 40 x 40 (Double Knob)	DT XYZ Stage 40 x 40 (Coarse/Fine Movement Knob)	DT XYZ Stage 40 x 40 (Double Coarse/Fine Movement Knob)
Travel direction	XYZ-axis triple direction			
Stage surface	40 mm x 40 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	XY axes ±10 mm, Z axis 10 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.64 kg	0.72 kg	0.85 kg	1.02 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

Regular bracket

Model number	TLT-412	TLT-412W	TLT-412S	TLT-412WS
Model name	DT XYZ Stage 40 x 40	DT XYZ Stage 40 x 40 (Double Knob)	DT XYZ Stage 40 x 40 (Coarse/Fine Movement Knob)	DT XYZ Stage 40 x 40 (Double Coarse/Fine Movement Knob)
Travel direction	XYZ-axis triple direction			
Stage surface	40 mm x 40 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	±10 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.67 kg	0.74 kg	0.88 kg	1.04 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

Rack & Pinion - XYZ Stages 40 x 60



↑ TLT-612



↑ TLT-612W



↑ TLT-612S



↑ TLT-612WS

Features

- The travel unit uses a dovetail (D-T method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A lever type clamp enables fixing in a desired position with strong retention force.
- Low bracket products with a short Z bracket are available.

Low bracket

Model number	TLT-612L	TLT-612WL	TLT-612SL	TLT-612WSL
Model name	DT XYZ Stage 40 x 60	DT XYZ Stage 40 x 60 (Double Knob)	DT XYZ Stage 40 x 60 (Coarse/Fine Movement Knob)	DT XYZ Stage 40 x 60 (Double Coarse/Fine Movement Knob)
Travel direction	XYZ-axis triple direction			
Stage surface	40 mm x 60 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	XY axes ±15 mm, Z axis 15 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.87 kg	0.94 kg	1.08 kg	1.23 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

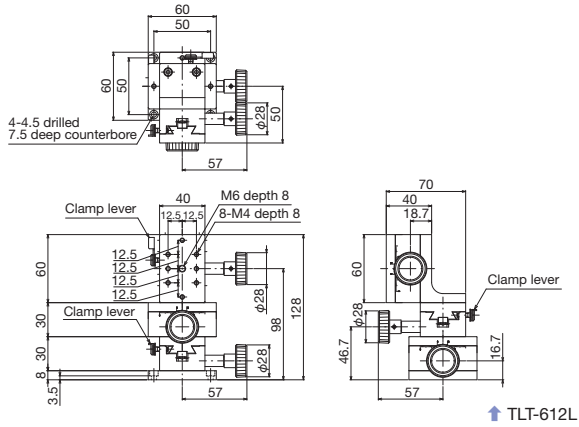
Regular bracket

Model number	TLT-612	TLT-612W	TLT-612S	TLT-612WS
Model name	DT XYZ Stage 40 x 60	DT XYZ Stage 40 x 60 (Double Knob)	DT XYZ Stage 40 x 60 (Coarse/Fine Movement Knob)	DT XYZ Stage 40 x 60 (Double Coarse/Fine Movement Knob)
Travel direction	XYZ-axis triple direction			
Stage surface	40 mm x 60 mm			
Clamp method	Lever Method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	±15 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.9 kg	0.98 kg	1.1 kg	1.28 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

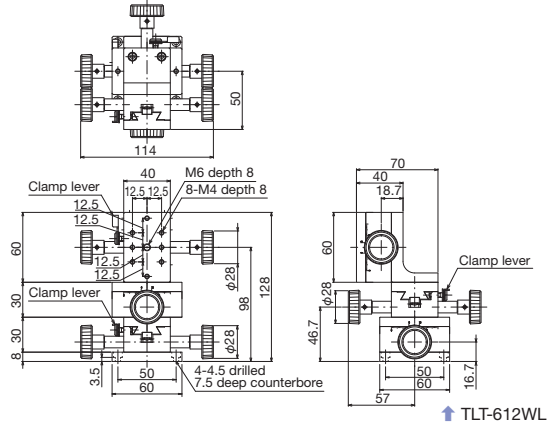


Rack & Pinion Stages ◀ Manual Stages ◀

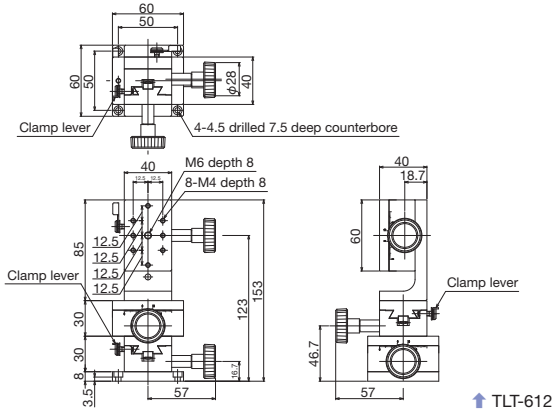
Product Appearance



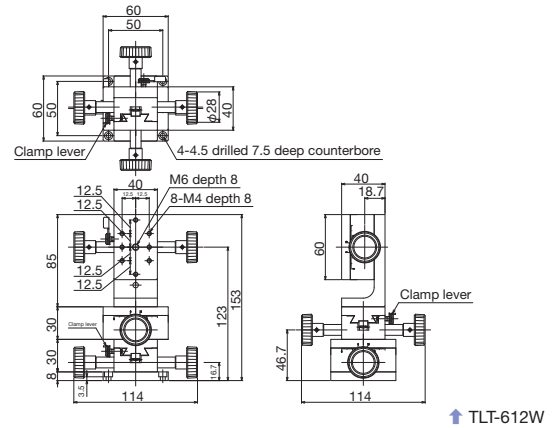
↑ TLT-612L



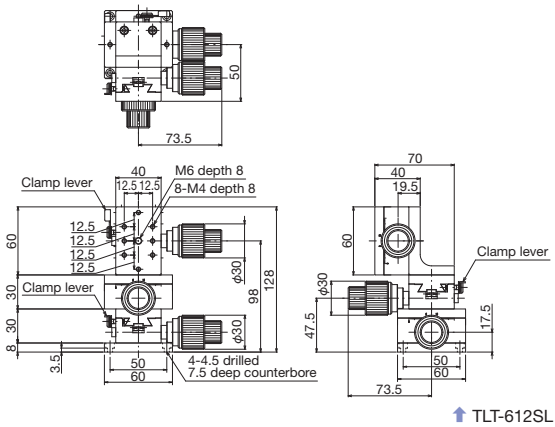
↑ TLT-612WL



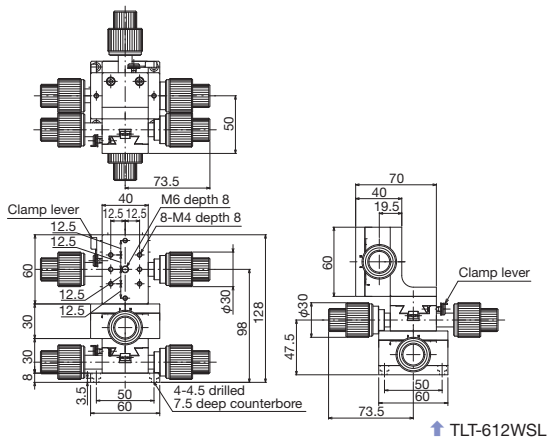
↑ TLT-612



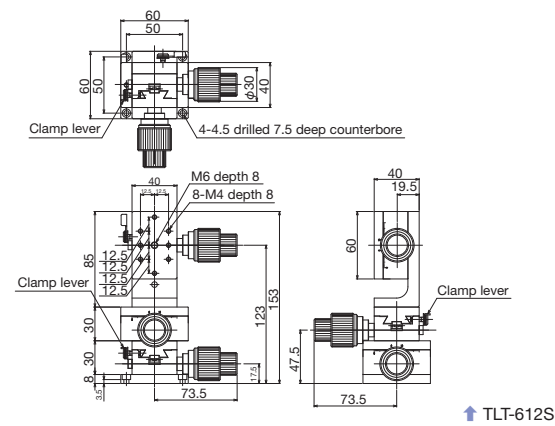
↑ TLT-612W



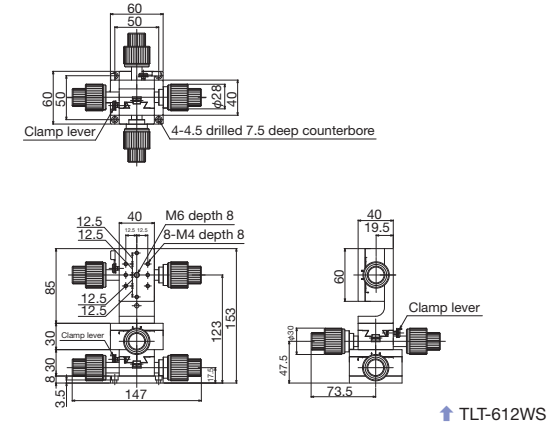
↑ TLT-612SL



↑ TLT-612WSL



↑ TLT-612S



↑ TLT-612WS

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Stein Stages, Cross Roller Stages
Z-Like Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

Rack & Pinion - XYZ Stages 40 x 90



↑ TLT-912



↑ TLT-912W



↑ TLT-912S



↑ TLT-912WS

Features

- The travel unit uses a dovetail (D-T method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A lever type clamp enables fixing in a desired position with strong retention force.
- Low bracket products with a short Z bracket are available.

Low bracket

Model number	TLT-912L	TLT-912WL	TLT-912SL	TLT-912WSL
Model name	DT XYZ Stage 40 x 90	DT XYZ Stage 40 x 90 (Double Knob)	DT XYZ Stage 40 x 90 (Coarse/Fine Movement Knob)	DT XYZ Stage 40 x 90 (Double Coarse/Fine Movement Knob)
Travel direction	XYZ-axis triple direction			
Stage surface	40 mm x 90 mm			
Clamp method	Lever method			
Operating part mounting position	Single Knob	Double Knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	XY axes ±30 mm, Z axis 30 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	1.17 kg	1.24 kg	1.42 kg	1.59 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

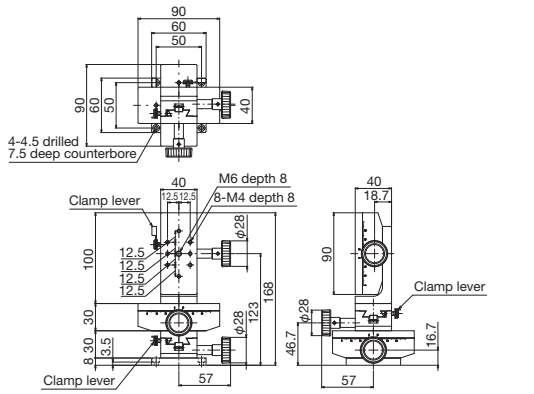
Regular bracket

Model number	TLT-912	TLT-912W	TLT-912S	TLT-912WS
Model name	DT XYZ Stage 40 x 90	DT XYZ Stage 40 x 90 (Double Knob)	DT XYZ Stage 40 x 90 (Coarse/Fine Movement Knob)	DT XYZ Stage 40 x 90 (Double Coarse/Fine Movement Knob)
Travel direction	XYZ-axis triple direction			
Stage surface	40 mm x 90 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	±30 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	1.2 kg	1.27 kg	1.44 kg	1.61 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

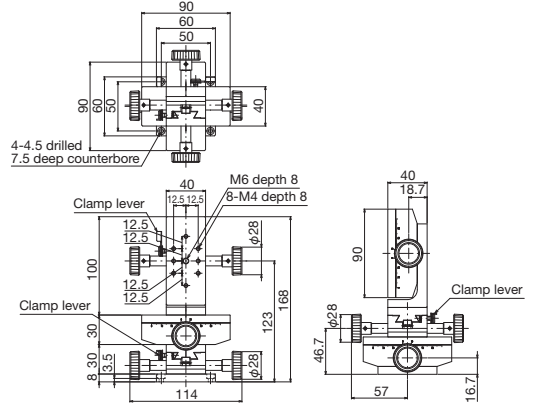


Rack & Pinion Stages ◀ Manual Stages ◀

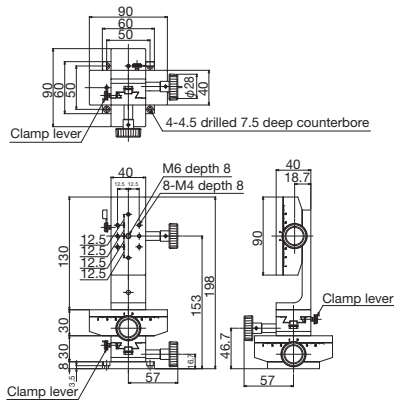
Product Appearance



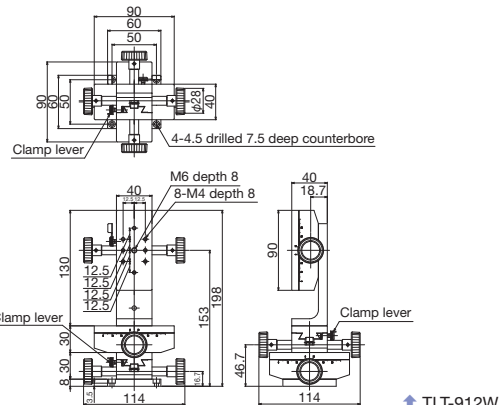
↑ TLT-912L



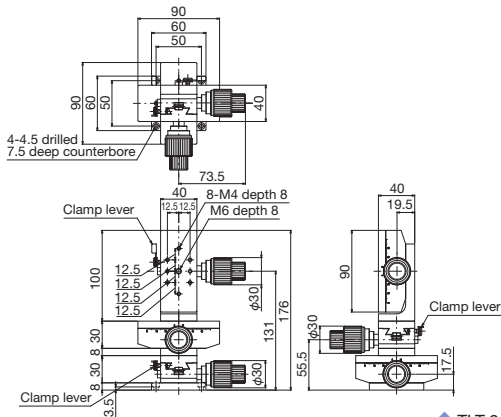
↑ TLT-912WL



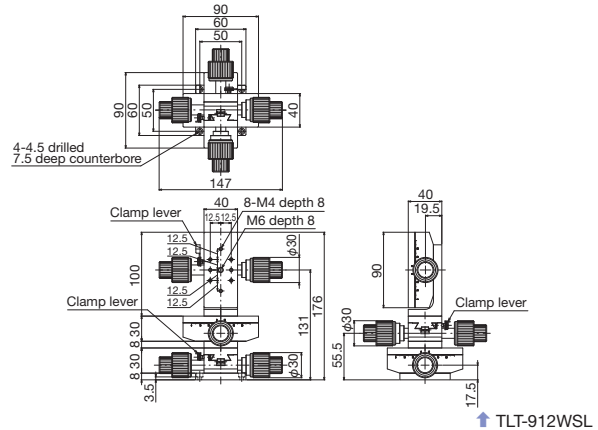
↑ TLT-912



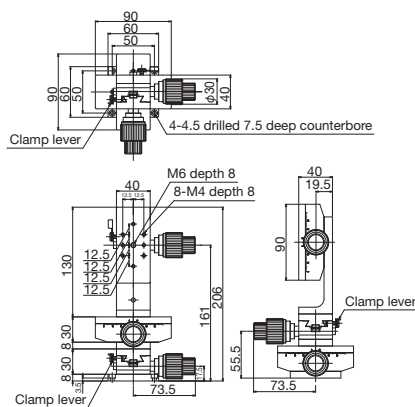
↑ TLT-912W



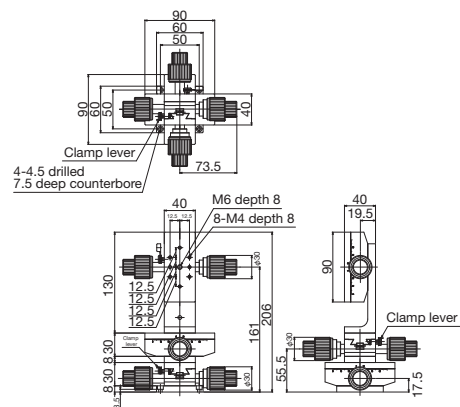
↑ TLT-912SL



↑ TLT-912WSL



↑ TLT-912S



↑ TLT-912WS

Motorized Stages	Automated Products for Microscopes
Manual Stages	Manual Stages
Fix Stages	Fix Stages
Thin VB Stages	Thin VB Stages
Rack & Pinion Stages	Rack & Pinion Stages
High-Carriage Stages	High-Carriage Stages
Swim Stages, Cross Roller Stages	Swim Stages, Cross Roller Stages
Z-Lift Stages, Z Stages	Z-Lift Stages, Z Stages
Rotary Stages	Rotary Stages
Tilt Stages	Tilt Stages
Tilt/Rotary Stages	Tilt/Rotary Stages
XZ, YZ Stages	XZ, YZ Stages
XYZ Stages	XYZ Stages

Rack & Pinion - XYZ Stages 40 x 140



↑ TLT-112



↑ TLT-112W



↑ TLT-112S



↑ TLT-112WS

Features

- The travel unit uses a dovetail (D-T method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A lever type clamp enables fixing in a desired position with strong retention force.
- Low bracket products with a short Z bracket are available.

Low bracket

Model number	TLT-112L	TLT-112WL	TLT-112SL	TLT-112WSL
Model name	DT XYZ Stage 40 x 140	DT XYZ Stage 40 x 140 (Double Knob)	DT XYZ Stage 40 x 140 (Coarse/Fine Movement Knob)	DT XYZ Stage 40 x 140 (Double Coarse/Fine Movement Knob)
Travel direction	XYZ-axis triple direction			
Stage surface	40 mm x 140 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	XY axes ±50 mm, Z axis 50 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	1.7 kg	1.78 kg	1.88 kg	2.05 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

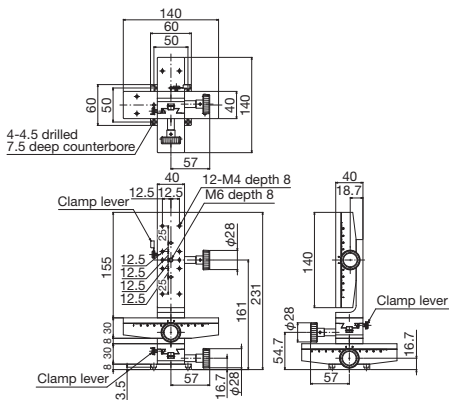
Regular bracket

Model number	TLT-112	TLT-112W	TLT-112S	TLT-112WS
Model name	DT XYZ Stage 40 x 140	DT XYZ Stage 40 x 140 (Double Knob)	DT XYZ Stage 40 x 140 (Coarse/Fine Movement Knob)	DT XYZ Stage 40 x 140 (Double Coarse/Fine Movement Knob)
Travel direction	XYZ-axis triple direction			
Stage surface	40 mm x 140 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method			
Travel amount	±50 mm			
Travel amount/1 knob rotation	Approx. 18 mm		Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	19.6 N (2 kgf)			
Mass	1.74 kg	1.82 kg	1.92 kg	2.09 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

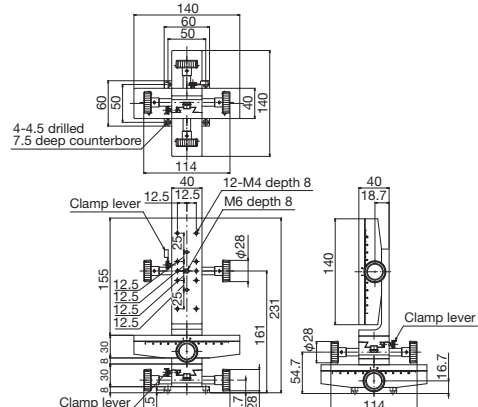


Rack & Pinion Stages ◀ Manual Stages ◀

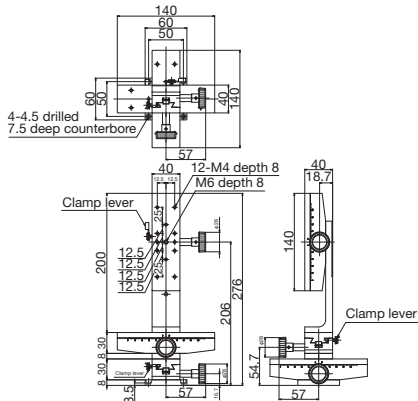
Product Appearance



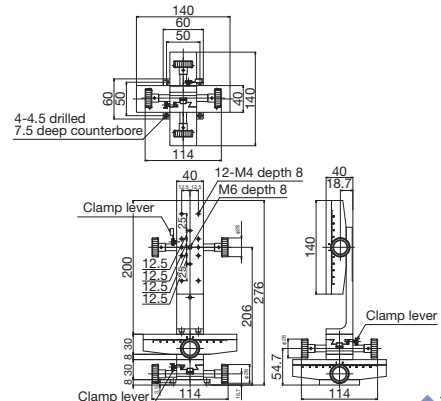
↑ TLT-112L



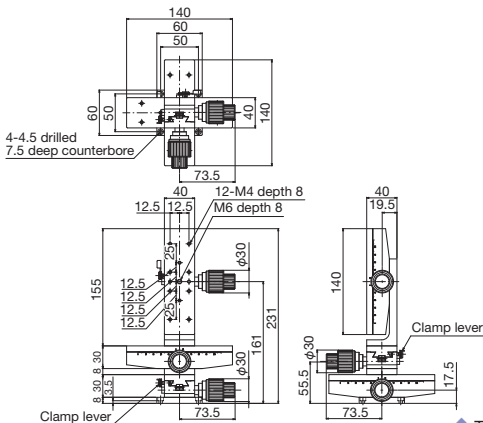
↑ TLT-112WL



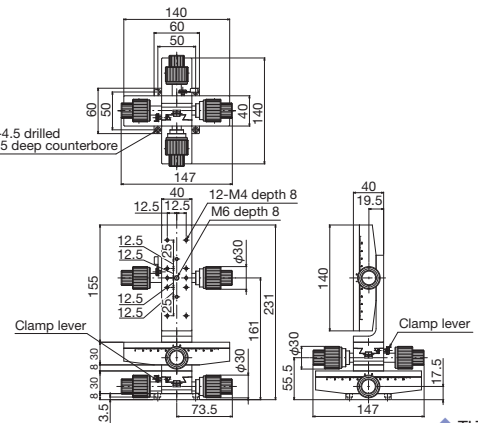
↑ TLT-112



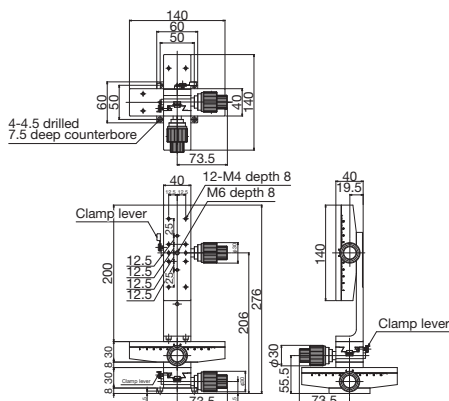
↑ TLT-112W



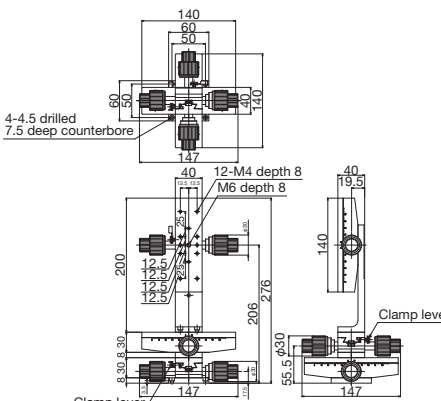
↑ TLT-112SL



↑ TLT-112WSL



↑ TLT-112S



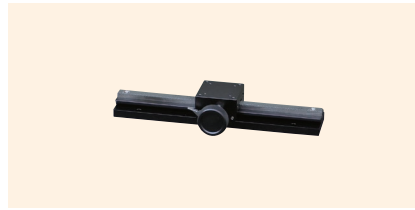
↑ TLT-112WS

Motorized Stages	Automated Products for Microscopes
Fix Stages	Manual Stages
Thin VB Stages	
Rack & Pinion Stages	
High-Grade Stages	
Swirl Stages, Cross Roller Stages	
Z-Lift Stages, Z Stages	
Rotary Stages	
Tilt Stages	
Tilt/Rotary Stages	
XZ, YZ Stages	
XYZ Stages	

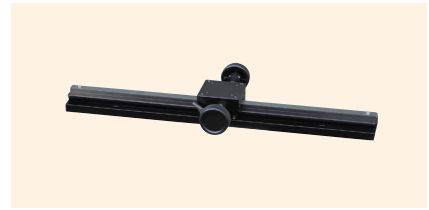
Long-Distance Stages



↑ TLS-414WL1



↑ TLS-414L2



↑ TLS-414WL3



↑ TLS-414WSL4



↑ TLS-414WSL5

Features

- The long-distance travel unit uses a dovetail (D-T method) for the travel guide.
- Versatile use for positioning of cameras, sensors, etc.
- Blocks can be added to enable multiple travel units to be installed on 1 rail.
- A lever type clamp enables fixing in a desired position with strong retention force.
- Includes a 1000 mm-long scale sticker with 1 mm graduations and position stickers. These can be stuck on at your desired position.



Example with added block

Model number	TLS-414L1	TLS-414L2	TLS-414L3	TLS-414L4	TLS-414L5	TLS-414WL1	TLS-414WL2	TLS-414WL3	TLS-414WL4	TLS-414WL5
Model name	Long-Distance Stage Rail length 100 mm	Long-Distance Stage Rail length 200 mm	Long-Distance Stage Rail length 300 mm	Long-Distance Stage Rail length 400 mm	Long-Distance Stage Rail length 500 mm	Long-Distance Stage Rail length 100 mm (double knob)	Long-Distance Stage Rail length 200 mm (double knob)	Long-Distance Stage Rail length 300 mm (double knob)	Long-Distance Stage Rail length 400 mm (double knob)	Long-Distance Stage Rail length 500 mm (double knob)
Travel direction	X-axis single direction									
Stage surface	40 mm x 40 mm									
Clamp method	Lever method									
Operating part mounting position	Single knob					Double knob				
Feed method	Rack & pinion method									
Travel amount	60 mm	160 mm	260 mm	360 mm	460 mm	60 mm	160 mm	260 mm	360 mm	460 mm
Travel amount/1 knob rotation	Approx. 18 mm									
Scale	1 mm									
Sensitivity	0.1 mm									
Travel guide	Dovetail									
Travel accuracy	Straightness: 0.05 mm	Straightness: 0.1 mm	Straightness: 0.15 mm	Straightness: 0.2 mm	Straightness: 0.25 mm	Straightness: 0.05 mm	Straightness: 0.1 mm	Straightness: 0.15 mm	Straightness: 0.2 mm	Straightness: 0.25 mm
Load capacity	29.4 N (3 kgf)									
Mass	0.26 kg	0.42 kg	0.57 kg	0.71 kg	0.86 kg	0.28 kg	0.44 kg	0.59 kg	0.73 kg	0.88 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish									
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain									

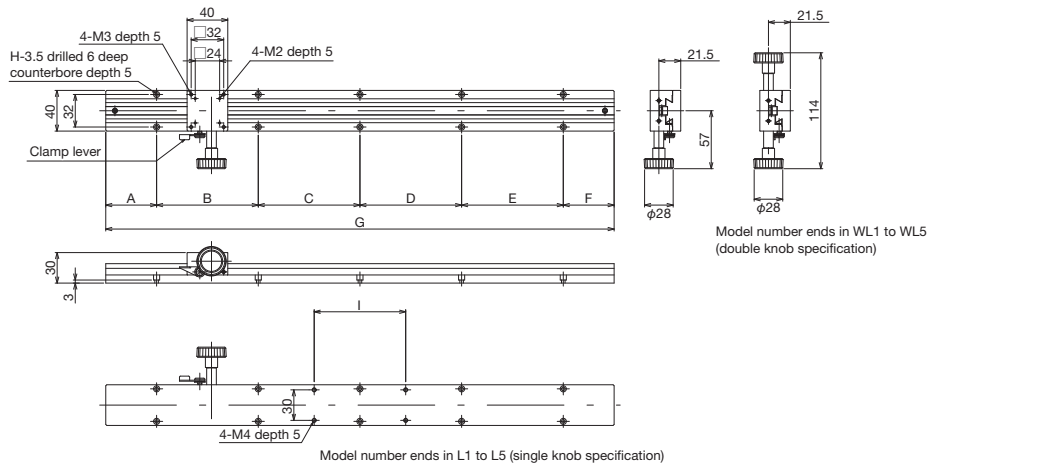
Model number	TLS-414SL1	TLS-414SL2	TLS-414SL3	TLS-414SL4	TLS-414SL5	TLS-414WSL1	TLS-414WSL2	TLS-414WSL3	TLS-414WSL4	TLS-414WSL5
Model name	Long-Distance Stage Rail length 100 mm (coarse/ fine movement knob)	Long-Distance Stage Rail length 200 mm (coarse/ fine movement knob)	Long-Distance Stage Rail length 300 mm (coarse/ fine movement knob)	Long-Distance Stage Rail length 400 mm (coarse/ fine movement knob)	Long-Distance Stage Rail length 500 mm (coarse/ fine movement knob)	Long-Distance Stage Rail length 100 mm (double coarse/ fine movement knob)	Long-Distance Stage Rail length 200 mm (double coarse/ fine movement knob)	Long-Distance Stage Rail length 300 mm (double coarse/ fine movement knob)	Long-Distance Stage Rail length 400 mm (double coarse/ fine movement knob)	Long-Distance Stage Rail length 500 mm (double coarse/ fine movement knob)
Travel direction	X-axis single direction									
Stage surface	40 mm x 40 mm									
Clamp method	Lever method									
Operating part mounting position	Single coarse/fine movement knob					Double coarse/fine movement knob				
Feed method	Rack & pinion method									
Travel amount	60 mm	160 mm	260 mm	360 mm	460 mm	60 mm	160 mm	260 mm	360 mm	460 mm
Travel amount/1 knob rotation	Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm									
Scale	1 mm									
Sensitivity	0.1 mm									
Travel guide	Dovetail									
Travel accuracy	Straightness: 0.05 mm	Straightness: 0.1 mm	Straightness: 0.15 mm	Straightness: 0.2 mm	Straightness: 0.25 mm	Straightness: 0.05 mm	Straightness: 0.1 mm	Straightness: 0.15 mm	Straightness: 0.2 mm	Straightness: 0.25 mm
Load capacity	29.4 N (3 kgf)									
Mass	0.34 kg	0.5 kg	0.65 kg	0.79 kg	0.94 kg	0.4 kg	0.56 kg	0.71 kg	0.85 kg	1 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish									
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain									



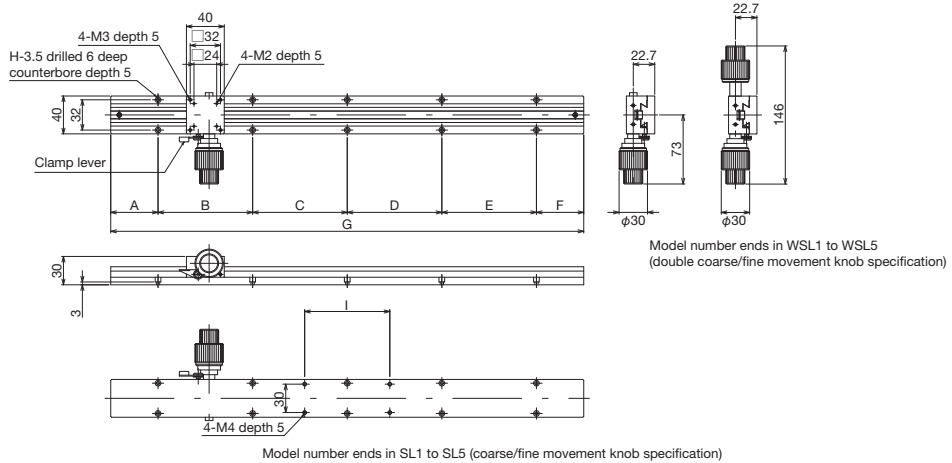
Rack & Pinion Stages ◀ Manual Stages ◀

Product Appearance

Model number	TLS-414L1, WL1	TLS-414L2, WL2	TLS-414L3, WL3	TLS-414L4, WL4	TLS-414L5, WL5
	TLS-414SL1, WSL1	TLS-414SL2, WSL2	TLS-414SL3, WSL3	TLS-414SL4, WSL4	TLS-414SL5, WSL5
Dimensions (mm)					
A	12.5	25	50	50	50
B	75	150	100	100	100
C	0	0	100	100	100
D	0	0	0	100	100
E	0	0	0	0	100
F	12.5	25	50	50	50
G	100	200	300	400	500
H	4	4	6	8	10
I	40	90	-	-	-

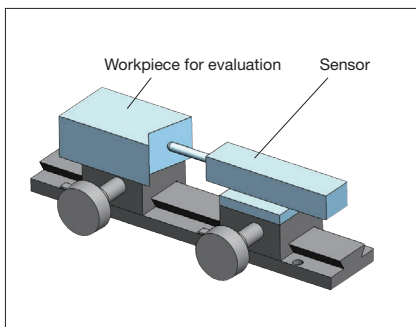


↑ TLS-414LO, WO common drawing

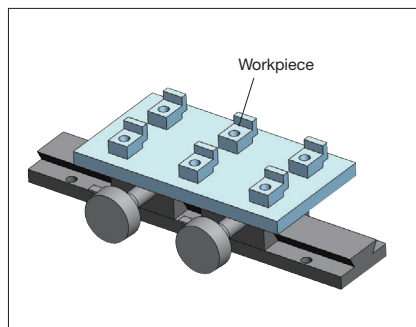


↑ TLS-414SLO, WSO common drawing

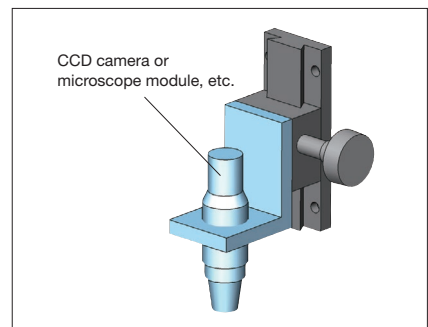
Product usage examples



↑ Workpiece and sensor positioning



↑ Connecting 2 blocks for use as a large sample stage



↑ Adjusting the focus of optical modules

- Motorized Stages
- Automated Products for Microscopes
- Manual Stages
- Fix Stages
- Thin VB Stages
- Rack & Pinion Stages
- High-Grade Stages
- Spin Stages, Cross Roller Stages
- Z Lift Stages, Z Stages
- Rotary Stages
- Tilt Stages
- Tilt/Rotary Stages
- XZ, YZ Stages
- XYZ Stages

Long-Distance Stage Blocks



↑ TBL-414



↑ TBL-414W



↑ TBL-414S



↑ TBL-414WS

Features

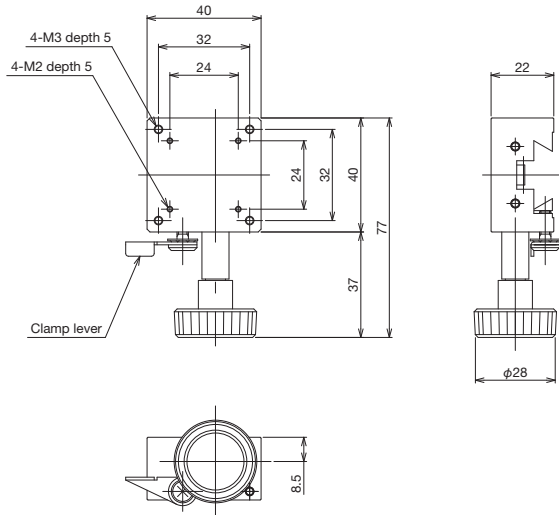
- These are blocks for long-distance stages. These can be added to rails.
- 4 knob types are available.
- Position stickers are supplied. These can be stuck on at your desired position.

Model number	TBL-414	TBL-414W	TBL-414S	TBL-414WS
Model name	Long-Distance Stage Block	Long-Distance Stage Block (Double Knob)	Long-Distance Stage Block (Coarse/Fine Movement Knob)	Long-Distance Stage Block (Double Coarse/Fine Movement Knob)
Stage surface	40 mm x 40 mm			
Clamp method	Lever method			
Operating part mounting position	Single knob	Double knob	Single coarse/fine movement knob	Double coarse/fine movement knob
Travel amount/1 knob rotation	Approx. 18 mm when added to long-distance stages		Coarse movement approx. 25.5 mm, Fine movement approx. 3.3 mm when added to long-distance stages	
Mass	0.1 kg	0.19 kg	0.13 kg	0.25 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

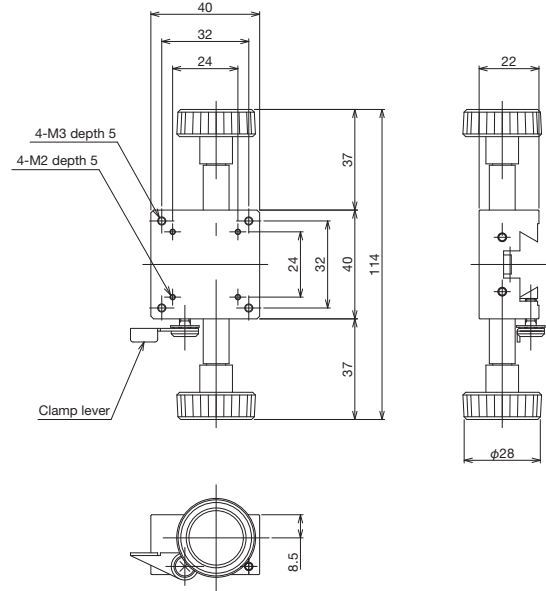


Rack & Pinion Stages ◀ Manual Stages ▶

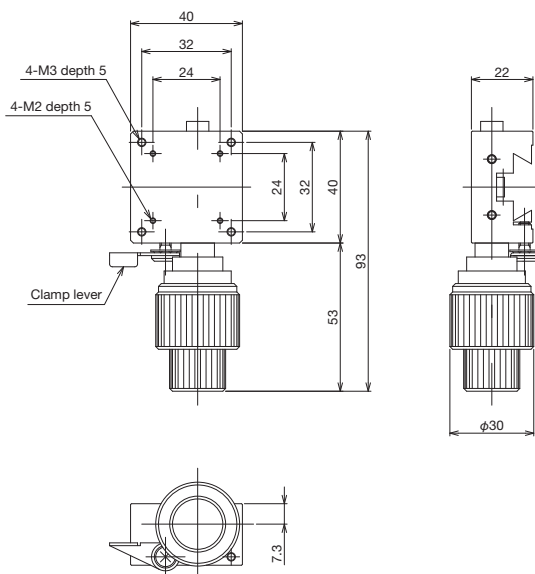
Product Appearance



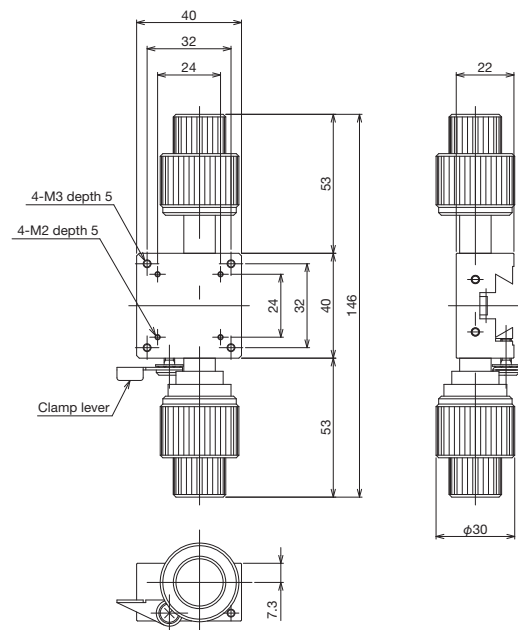
↑ TBL-414



↑ TBL-414W



↑ TBL-414S



↑ TBL-414WS

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin VB Stages	Rack & Pinion Stages	High-Grade Stages	Swim Stages, Cross Roller Stages	Z-Like Stages, Z Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XYZ Stages
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▶ Manual Stages ▶ High-Grade Stages | Product List/Features

■ High-Grade Aluminum Stages - Product List

Page	Example product photo	Type	Model number		Model number		Stage surface		
			Standard type	Symmetrical type	Standard type	Symmetrical type			
191		X Stage	TLS-3047-C1	TLS-3047-CR1	TLS-3047-C8	TLS-3047-CR8	30 mm x 30 mm	Small ↓ Large	
			TLS-3047-S1	TLS-3047-SR1	TLS-3047-S8	TLS-3047-SR8	30 mm x 30 mm		
193		X Stage	TLS-4047-C1	TLS-4047-CR1	TLS-4047-C6	TLS-4047-CR6	40 mm x 40 mm		
			TLS-4047-C8	TLS-4047-CR8	TLS-4047-S1	TLS-4047-SR1	40 mm x 40 mm		
			TLS-4047-S6	TLS-4047-SR6	TLS-4047-S8	TLS-4047-SR8	40 mm x 40 mm		
195		X Stage	TLS-5047-C1	TLS-5047-CR1	TLS-5047-C6	TLS-5047-CR6	50 mm x 50 mm		
			TLS-5047-C8	TLS-5047-CR8	TLS-5047-S1	TLS-5047-SR1	50 mm x 50 mm		
			TLS-5047-S6	TLS-5047-SR6	TLS-5047-S8	TLS-5047-SR8	50 mm x 50 mm		
197		X Stage	TLS-6047-C1	TLS-6047-CR1	TLS-6047-C6	TLS-6047-CR6	60 mm x 60 mm		
			TLS-6047-C8	TLS-6047-CR8	TLS-6047-S1	TLS-6047-SR1	60 mm x 60 mm		
			TLS-6047-S6	TLS-6047-SR6	TLS-6047-S8	TLS-6047-SR8	60 mm x 60 mm		
199		X Stage	TLS-7047-C1	TLS-7047-CR1	TLS-7047-C6	TLS-7047-CR6	70 mm x 70 mm		
			TLS-7047-C8	TLS-7047-CR8	TLS-7047-S1	TLS-7047-SR1	70 mm x 70 mm		
			TLS-7047-S6	TLS-7047-SR6	TLS-7047-S8	TLS-7047-SR8	70 mm x 70 mm		
201		XY Stage	TLD-3047-C1	TLD-3047-CR1	TLD-3047-C8	TLD-3047-CR8	30 mm x 30 mm		Small ↓ Large
			TLD-3047-S1	TLD-3047-SR1	TLD-3047-S8	TLD-3047-SR8	30 mm x 30 mm		
203		XY Stage	TLD-4047-C1	TLD-4047-CR1	TLD-4047-C6	TLD-4047-CR6	40 mm x 40 mm		
			TLD-4047-C8	TLD-4047-CR8	TLD-4047-S1	TLD-4047-SR1	40 mm x 40 mm		
			TLD-4047-S6	TLD-4047-SR6	TLD-4047-S8	TLD-4047-SR8	40 mm x 40 mm		
205		XY Stage	TLD-5047-C1	TLD-5047-CR1	TLD-5047-C6	TLD-5047-CR6	50 mm x 50 mm		
			TLD-5047-C8	TLD-5047-CR8	TLD-5047-S1	TLD-5047-SR1	50 mm x 50 mm		
			TLD-5047-S6	TLD-5047-SR6	TLD-5047-S8	TLD-5047-SR8	50 mm x 50 mm		
207		XY Stage	TLD-6047-C1	TLD-6047-CR1	TLD-6047-C6	TLD-6047-CR6	60 mm x 60 mm		
			TLD-6047-C8	TLD-6047-CR8	TLD-6047-S1	TLD-6047-SR1	60 mm x 60 mm		
			TLD-6047-S6	TLD-6047-SR6	TLD-6047-S8	TLD-6047-SR8	60 mm x 60 mm		
209		XY Stage	TLD-7047-C1	TLD-7047-CR1	TLD-7047-C6	TLD-7047-CR6	70 mm x 70 mm		
			TLD-7047-C8	TLD-7047-CR8	TLD-7047-S1	TLD-7047-SR1	70 mm x 70 mm		
			TLD-7047-S6	TLD-7047-SR6	TLD-7047-S8	TLD-7047-SR8	70 mm x 70 mm		
211		Z Stage	TLZ-3047-C1	TLZ-3047-CR1	TLZ-3047-C8	TLZ-3047-CR8	30 mm x 30 mm	Small ↓ Large	
			TLZ-3047-S1	TLZ-3047-SR1	TLZ-3047-S8	TLZ-3047-SR8	30 mm x 30 mm		
213		Z Stage	TLZ-4047-C1	TLZ-4047-CR1	TLZ-4047-C6	TLZ-4047-CR6	40 mm x 40 mm		
			TLZ-4047-C8	TLZ-4047-CR8	TLZ-4047-S1	TLZ-4047-SR1	40 mm x 40 mm		
			TLZ-4047-S6	TLZ-4047-SR6	TLZ-4047-S8	TLZ-4047-SR8	40 mm x 40 mm		
215		Z Stage	TLZ-5047-C1	TLZ-5047-CR1	TLZ-5047-C6	TLZ-5047-CR6	50 mm x 50 mm		
			TLZ-5047-C8	TLZ-5047-CR8	TLZ-5047-S1	TLZ-5047-SR1	50 mm x 50 mm		
			TLZ-5047-S6	TLZ-5047-SR6	TLZ-5047-S8	TLZ-5047-SR8	50 mm x 50 mm		
217		Z Stage	TLZ-6047-C1	TLZ-6047-CR1	TLZ-6047-C6	TLZ-6047-CR6	60 mm x 60 mm		
			TLZ-6047-C8	TLZ-6047-CR8	TLZ-6047-S1	TLZ-6047-SR1	60 mm x 60 mm		
			TLZ-6047-S6	TLZ-6047-SR6	TLZ-6047-S8	TLZ-6047-SR8	60 mm x 60 mm		
219		Z Stage	TLZ-7047-C1	TLZ-7047-CR1	TLZ-7047-C6	TLZ-7047-CR6	70 mm x 70 mm		
			TLZ-7047-C8	TLZ-7047-CR8	TLZ-7047-S1	TLZ-7047-SR1	70 mm x 70 mm		
			TLZ-7047-S6	TLZ-7047-SR6	TLZ-7047-S8	TLZ-7047-SR8	70 mm x 70 mm		
221		Rotary Stage	TRS-4012	TRS-4012-R	-	-	φ 40 mm		
			TRS-5012	TRS-5012-R	-	-	φ 50 mm		
			TRS-6012	TRS-6012-R	TRS-6042	TRS-6042-R	φ 60 mm		
			TRS-7012	TRS-7012-R	TRS-7042	TRS-7042-R	φ 70 mm		
223		XYZ Stage	TLT-3047-S1	TLT-3047-SR1	-	-	30 mm x 30 mm		
			TLT-4047-S1	TLT-4047-SR1	-	-	40 mm x 40 mm		
			TLT-5047-S1	TLT-5047-SR1	-	-	50 mm x 50 mm		
225		XYZ Stage	TLT-6047-S1	TLT-6047-SR1	-	-	60 mm x 60 mm		
			TLT-7047-S1	TLT-7047-SR1	-	-	70 mm x 70 mm		
227		XYZ Rotary Stage	TTR-3047-S1	TTR-3047-SR1	-	-	φ 30 mm		
			TTR-4047-S1	TTR-4047-SR1	-	-	φ 40 mm		
			TTR-5047-S1	TTR-5047-SR1	-	-	φ 50 mm		
229		XYZ Rotary Stage	TTR-6047-S1	TTR-6047-SR1	-	-	φ 60 mm		
			TTR-7047-S1	TTR-7047-SR1	-	-	φ 70 mm		

◆ HG-VCR method

THK CHUO's proprietary developed HG-VCR method, using a V-groove and cross rollers, enables the production of stages with high precision, high load capacity, and high rigidity.

*Excluding rotary stages.

◆ Support for symmetrical positioning

In order to handle horizontally symmetrical positioning, products with symmetrical operating parts and clamp positions (symmetrical types) are also available.

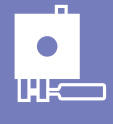
*Excluding rotary stages.

◆ Made of aluminum alloy

The body is made of lightweight aluminum alloy with high rigidity.

◆ Environmental measures

Products that do not contain 10 substances regulated by European RoHS.



Product List/Features | High-Grade Stages ◀ Manual Stages ◀

High-Grade Stages (Stainless Steel) - Product List

Page	Example product photo	Type	Model number		Model number		Stage surface	
			Standard type	Symmetrical type	Standard type	Symmetrical type		
231		X Stage	TLS-4042-C1	TLS-4042-CR1	TLS-4042-C6	TLS-4042-CR6	40 mm x 40 mm	Small ↓ Large
			TLS-4042-C8	TLS-4042-CR8	TLS-4042-S1	TLS-4042-SR1	40 mm x 40 mm	
			TLS-4042-S6	TLS-4042-SR6	TLS-4042-S8	TLS-4042-SR8	40 mm x 40 mm	
233	X Stage	TLS-4042-S1-2	TLS-4042-SR1-2	TLS-4042-S6-2	TLS-4042-SR6-2	40 mm x 40 mm		
		TLS-4042-S8-2	TLS-4042-SR8-2	-	-	40 mm x 40 mm		
235	X Stage	TLS-5042-C1	TLS-5042-CR1	TLS-5042-C6	TLS-5042-CR6	50 mm x 50 mm		
		TLS-5042-C8	TLS-5042-CR8	TLS-5042-S1	TLS-5042-SR1	50 mm x 50 mm		
		TLS-5042-S6	TLS-5042-SR6	TLS-5042-S8	TLS-5042-SR8	50 mm x 50 mm		
237	X Stage	TLS-5042-S1-2	TLS-5042-SR1-2	TLS-5042-S6-2	TLS-5042-SR6-2	50 mm x 50 mm		
		TLS-5042-S8-2	TLS-5042-SR8-2	-	-	50 mm x 50 mm		
239	X Stage	TLS-6042-C1	TLS-6042-CR1	TLS-6042-C6	TLS-6042-CR6	60 mm x 60 mm		
		TLS-6042-C7	TLS-6042-CR7	TLS-6042-C8	TLS-6042-CR8	60 mm x 60 mm		
241	X Stage	TLS-6042-S1	TLS-6042-SR1	TLS-6042-S6	TLS-6042-SR6	60 mm x 60 mm		
		TLS-6042-S7	-	TLS-6042-S8	TLS-6042-SR8	60 mm x 60 mm		
243	X Stage	TLS-6042-S1-2	TLS-6042-SR1-2	TLS-6042-S6-2	TLS-6042-SR6-2	60 mm x 60 mm		
		TLS-6042-S7-2	-	TLS-6042-S8-2	TLS-6042-SR8-2	60 mm x 60 mm		
245	X Stage	TLS-7042-C1	TLS-7042-CR1	TLS-7042-C6	TLS-7042-CR6	70 mm x 70 mm		
		TLS-7042-C7	TLS-7042-CR7	TLS-7042-C8	TLS-7042-CR8	70 mm x 70 mm		
247	X Stage	TLS-7042-S1	TLS-7042-SR1	TLS-7042-S6	TLS-7042-SR6	70 mm x 70 mm		
		TLS-7042-S7	-	TLS-7042-S8	TLS-7042-SR8	70 mm x 70 mm		
249	X Stage	TLS-7042-S1-2	TLS-7042-SR1-2	TLS-7042-S6-2	TLS-7042-SR6-2	70 mm x 70 mm		
		TLS-7042-S7-2	-	TLS-7042-S8-2	TLS-7042-SR8-2	70 mm x 70 mm		
251	XY Stage	TLD-4042-C1	TLD-4042-CR1	TLD-4042-C6	TLD-4042-CR6	40 mm x 40 mm	Small ↓ Large	
		TLD-4042-C8	TLD-4042-CR8	TLD-4042-S1	TLD-4042-SR1	40 mm x 40 mm		
		TLD-4042-S6	TLD-4042-SR6	TLD-4042-S8	TLD-4042-SR8	40 mm x 40 mm		
253	XY Stage	TLD-4042-S1-2	TLD-4042-SR1-2	TLD-4042-S6-2	TLD-4042-SR6-2	40 mm x 40 mm		
		TLD-4042-S8-2	TLD-4042-SR8-2	-	-	40 mm x 40 mm		
255	XY Stage	TLD-5042-C1	TLD-5042-CR1	TLD-5042-C6	TLD-5042-CR6	50 mm x 50 mm		
		TLD-5042-C8	TLD-5042-CR8	TLD-5042-S1	TLD-5042-SR1	50 mm x 50 mm		
		TLD-5042-S6	TLD-5042-SR6	TLD-5042-S8	TLD-5042-SR8	50 mm x 50 mm		
257	XY Stage	TLD-5042-S1-2	TLD-5042-SR1-2	TLD-5042-S6-2	TLD-5042-SR6-2	50 mm x 50 mm		
		TLD-5042-S8-2	TLD-5042-SR8-2	-	-	50 mm x 50 mm		
259	XY Stage	TLD-6042-C1	TLD-6042-CR1	TLD-6042-C6	TLD-6042-CR6	60 mm x 60 mm		
		TLD-6042-C7	TLD-6042-CR7	TLD-6042-C8	TLD-6042-CR8	60 mm x 60 mm		
261	XY Stage	TLD-6042-S1	TLD-6042-SR1	TLD-6042-S6	TLD-6042-SR6	60 mm x 60 mm		
		TLD-6042-S7	-	TLD-6042-S8	TLD-6042-SR8	60 mm x 60 mm		
263	XY Stage	TLD-6042-S1-2	TLD-6042-SR1-2	TLD-6042-S6-2	TLD-6042-SR6-2	60 mm x 60 mm		
		TLD-6042-S7-2	-	TLD-6042-S8-2	TLD-6042-SR8-2	60 mm x 60 mm		
265	XY Stage	TLD-7042-C1	TLD-7042-CR1	TLD-7042-C6	TLD-7042-CR6	70 mm x 70 mm		
		TLD-7042-C7	TLD-7042-CR7	TLD-7042-C8	TLD-7042-CR8	70 mm x 70 mm		
267	XY Stage	TLD-7042-S1	TLD-7042-SR1	TLD-7042-S6	TLD-7042-SR6	70 mm x 70 mm		
		TLD-7042-S7	-	TLD-7042-S8	TLD-7042-SR8	70 mm x 70 mm		
269	XY Stage	TLD-7042-S1-2	TLD-7042-SR1-2	TLD-7042-S6-2	TLD-7042-SR6-2	70 mm x 70 mm		
		TLD-7042-S7-2	-	TLD-7042-S8-2	TLD-7042-SR8-2	70 mm x 70 mm		
271	Z Stage	TLZ-4042-C1	TLZ-4042-CR1	TLZ-4042-C6	TLZ-4042-CR6	40 mm x 40 mm	Small ↓ Large	
		TLZ-4042-C8	TLZ-4042-CR8	TLZ-4042-S1	TLZ-4042-SR1	40 mm x 40 mm		
		TLZ-4042-S6	TLZ-4042-SR6	TLZ-4042-S8	TLZ-4042-SR8	40 mm x 40 mm		
273	Z Stage	TLZ-4042-S1-2	TLZ-4042-SR1-2	TLZ-4042-S6-2	TLZ-4042-SR6-2	40 mm x 40 mm		
		TLZ-4042-S8-2	TLZ-4042-SR8-2	-	-	40 mm x 40 mm		
275	Z Stage	TLZ-5042-C1	TLZ-5042-CR1	TLZ-5042-C6	TLZ-5042-CR6	50 mm x 50 mm		
		TLZ-5042-C8	TLZ-5042-CR8	TLZ-5042-S1	TLZ-5042-SR1	50 mm x 50 mm		
		TLZ-5042-S6	TLZ-5042-SR6	TLZ-5042-S8	TLZ-5042-SR8	50 mm x 50 mm		
277	Z Stage	TLZ-5042-S1-2	TLZ-5042-SR1-2	TLZ-5042-S6-2	TLZ-5042-SR6-2	50 mm x 50 mm		
		TLZ-5042-S8-2	TLZ-5042-SR8-2	-	-	50 mm x 50 mm		
279	Z Stage	TLZ-6042-C1	TLZ-6042-CR1	TLZ-6042-C6	TLZ-6042-CR6	60 mm x 60 mm		
		TLZ-6042-C7	TLZ-6042-CR7	TLZ-6042-C8	TLZ-6042-CR8	60 mm x 60 mm		
281	Z Stage	TLZ-6042-S1	TLZ-6042-SR1	TLZ-6042-S6	TLZ-6042-SR6	60 mm x 60 mm		
		TLZ-6042-S7	-	TLZ-6042-S8	TLZ-6042-SR8	60 mm x 60 mm		
283	Z Stage	TLZ-6042-S1-2	TLZ-6042-SR1-2	TLZ-6042-S6-2	TLZ-6042-SR6-2	60 mm x 60 mm		
		TLZ-6042-S7-2	-	TLZ-6042-S8-2	TLZ-6042-SR8-2	60 mm x 60 mm		
285	Z Stage	TLZ-7042-C1	TLZ-7042-CR1	TLZ-7042-C6	TLZ-7042-CR6	70 mm x 70 mm		
		TLZ-7042-C7	TLZ-7042-CR7	TLZ-7042-C8	TLZ-7042-CR8	70 mm x 70 mm		
287	Z Stage	TLZ-7042-S1	TLZ-7042-SR1	TLZ-7042-S6	TLZ-7042-SR6	70 mm x 70 mm		
		TLZ-7042-S7	-	TLZ-7042-S8	TLZ-7042-SR8	70 mm x 70 mm		
289	Z Stage	TLZ-7042-S1-2	TLZ-7042-SR1-2	TLZ-7042-S6-2	TLZ-7042-SR6-2	70 mm x 70 mm		
		TLZ-7042-S7-2	-	TLZ-7042-S8-2	TLZ-7042-SR8-2	70 mm x 70 mm		
Page	Example product photo	Type	Model number	Model number	Model number	Model number	Stage surface	
291		Z Lift Stage	TLV-3047-1	-	-	-	30 mm x 30 mm	
		Z Lift Stage	TLV-4042-1	TLV-4042-6	TLV-4042-8	-	40 mm x 40 mm	
293		Z Lift Stage	TLV-5042-1	TLV-5042-6	TLV-5042-8	-	50 mm x 50 mm	
		Z Lift Stage	TLV-6042-1	TLV-6042-6	TLV-6042-7	TLV-6042-8	60 mm x 60 mm	
			TLV-7042-1	TLV-7042-6	TLV-7042-7	TLV-7042-8	70 mm x 70 mm	

HG-VCR method

THK CHUO's proprietary developed HG-VCR method, using a V-groove and cross rollers, enables the production of stages with high precision, high load capacity, and high rigidity.

Support for symmetrical positioning

In order to handle horizontally symmetrical positioning, products with symmetrical operating parts and clamp positions (symmetrical types) are also available.

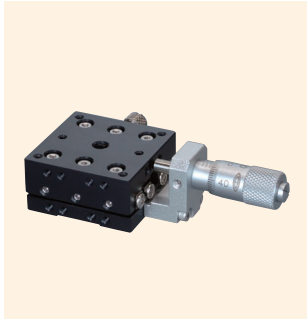
Stainless steel

The stage body is made of stainless steel to secure greater rigidity than those made with aluminum alloy.

Environmental measures

Products that do not contain 10 substances regulated by European RoHS.

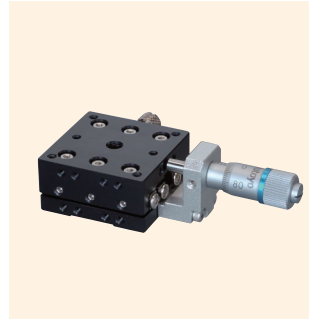
High-Grade Aluminum - X Stages 30 x 30



↑ TLS-3047-C1



↑ TLS-3047-S1



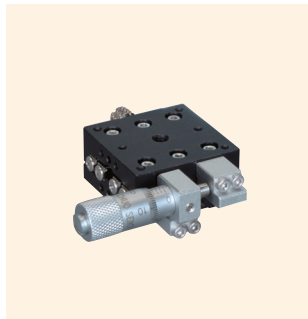
↑ TLS-3047-C8



↑ TLS-3047-S8



↑ TLS-3047-CR1



↑ TLS-3047-SR1



↑ TLS-3047-CR8



↑ TLS-3047-SR8

Features

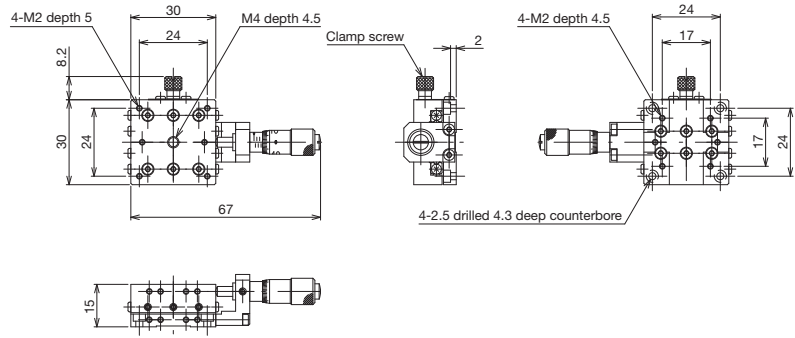
- Adopts an aluminum alloy as the main material and uses the HG-VCR method to achieve both high rigidity and light weight.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Standard micrometers and fine pitch micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (Standard type)	TLS-3047-C1	TLS-3047-S1	TLS-3047-C8	TLS-3047-S8
Model number (Symmetrical type)	TLS-3047-CR1	TLS-3047-SR1	TLS-3047-CR8	TLS-3047-SR8
Model name	High-Grade Aluminum X Stage 30 x 30			
Travel direction	X-axis single direction			
Stage surface	30 mm x 30 mm			
Clamp method	Plate clamp			
Operating part mounting position	Center	Side	Center	Side
Feed method	CMH-6.5RA (standard micrometer)		MHT3-6.5FP (Fine pitch micro)	
Travel amount	±3 mm			
Travel amount/1 knob rotation	0.5 mm		0.1 mm	
Scale	Micrometer 0.01 mm		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical) 0.002 mm Yawing 20 s, pitching 30 s			
Moment rigidity	Yaw rigidity 1.00 s/N-cm, pitch rigidity 1.00 s/N-cm, roll rigidity 1.00 s/N-cm			
Parallelism	0.030 mm			
Parallelism of motion	0.010 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.06 kg			
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

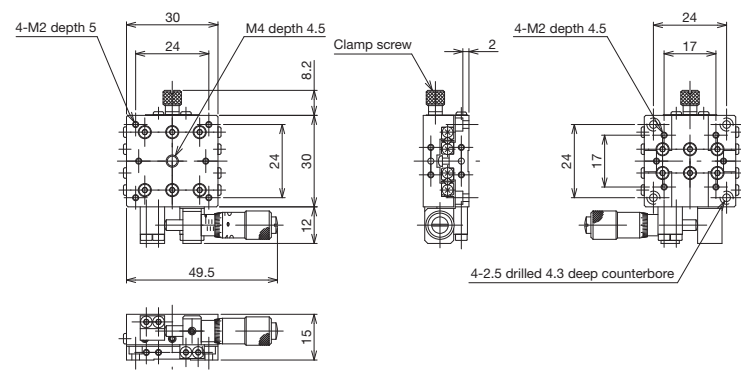


High-Grade Stages ◀ Manual Stages ◀

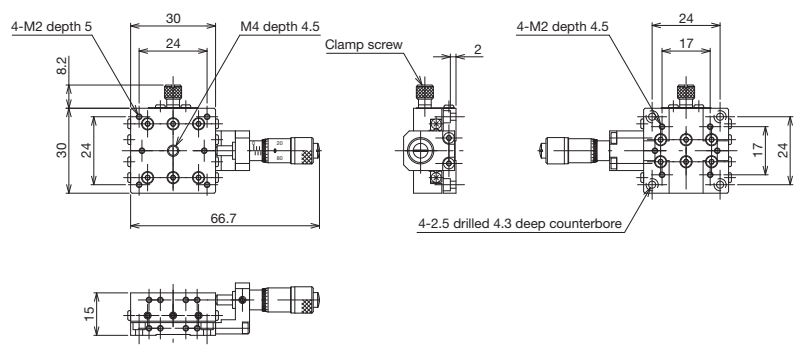
Product Appearance



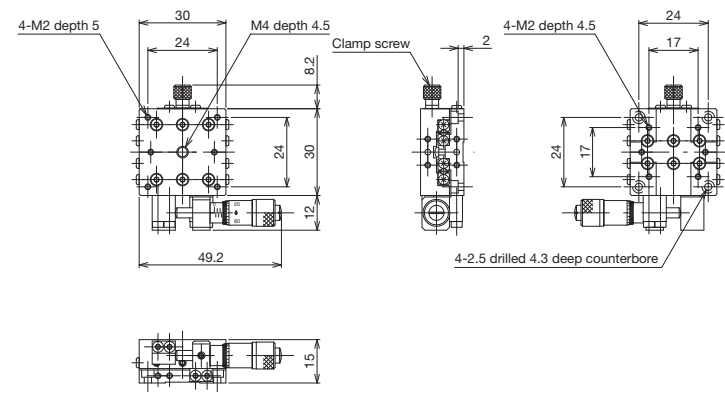
*TLS-3047-CR1 is a symmetrical type with the same dimensions as TLS-3047-C1. ↑ TLS-3047-C1



*TLS-3047-SR1 is a symmetrical type with the same dimensions as TLS-3047-S1. ↑ TLS-3047-S1



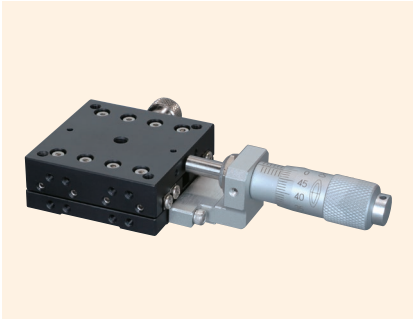
*TLS-3047-CR8 is a symmetrical type with the same dimensions as TLS-3047-C8. ↑ TLS-3047-C8



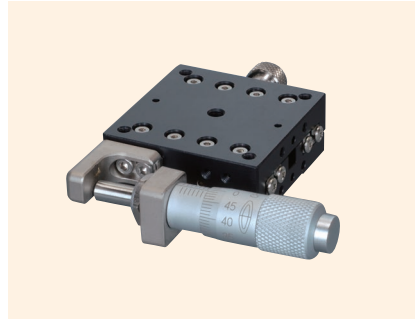
*TLS-3047-SR8 is a symmetrical type with the same dimensions as TLS-3047-S8. ↑ TLS-3047-S8

- Motorized Stages
- Automated Products for Microscopes
- Manual Stages**
- Fix Stages
- Thin VB Stages
- Rack & Pinion Stages
- High-Grade Stages
- Swim Stages, Cross Roller Stages
- Z-Like Stages, Z Stages
- Rotary Stages
- Tilt Stages
- Tilt/Rotary Stages
- XZ, YZ Stages
- X/YZ Stages

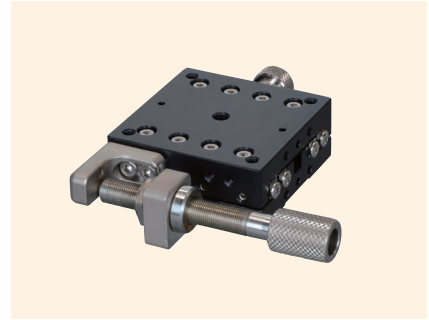
High-Grade Aluminum - X Stages 40 x 40



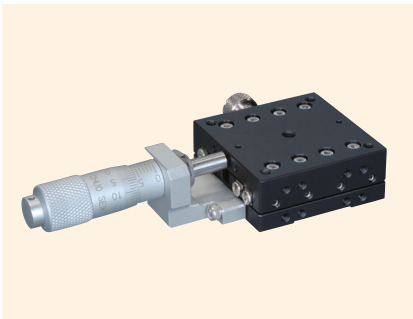
↑ TLS-4047-C1



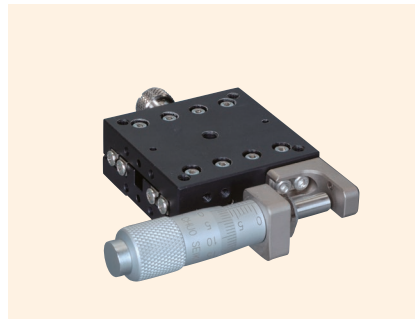
↑ TLS-4047-S1



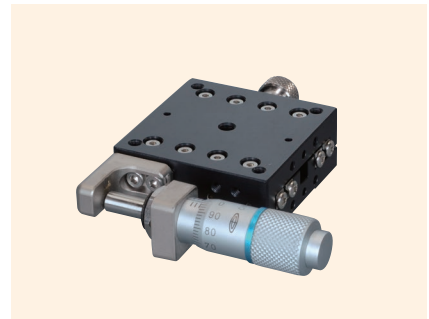
↑ TLS-4047-S6



↑ TLS-4047-CR1



↑ TLS-4047-SR1



↑ TLS-4047-S8

Features

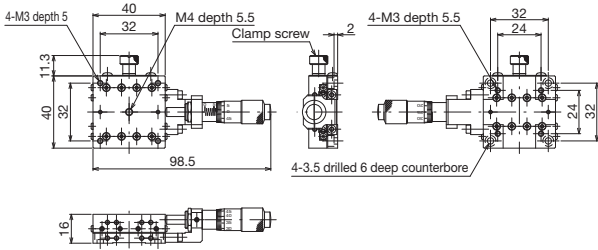
- Adopts an aluminum alloy as the main material and uses the HG-VCR method to achieve both high rigidity and light weight.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (Standard type)	TLS-4047-C1	TLS-4047-S1	TLS-4047-C6	TLS-4047-S6	TLS-4047-C8	TLS-4047-S8
Model number (Symmetrical type)	TLS-4047-CR1	TLS-4047-SR1	TLS-4047-CR6	TLS-4047-SR6	TLS-4047-CR8	TLS-4047-SR8
Model name	High-Grade Aluminum X Stage 40 x 40					
Travel direction	X-axis single direction					
Stage surface	40 mm x 40 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical) 0.002 mm Yawing 20 s, pitching 30 s					
Moment rigidity	Yaw rigidity 0.20 s/N-cm, pitch rigidity 0.50 s/N-cm, roll rigidity 0.50 s/N-cm					
Parallelism	0.030 mm					
Parallelism of motion	0.010 mm					
Load capacity	39.2 N (4 kgf)					
Mass	0.13 kg					
Main materials/surface treatment	Aluminum alloy/black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					



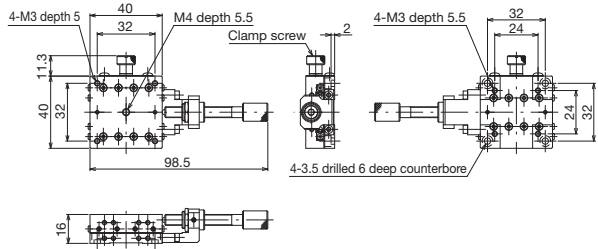
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



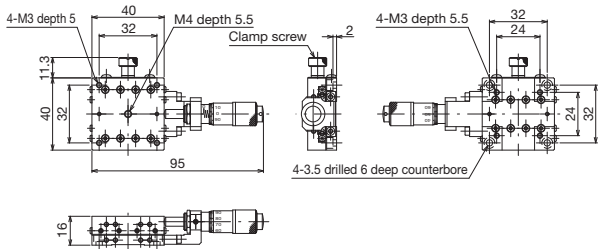
*TLS-4047-CR1 is a symmetrical type with the same dimensions as TLS-4047-C1.

↑ TLS-4047-C1



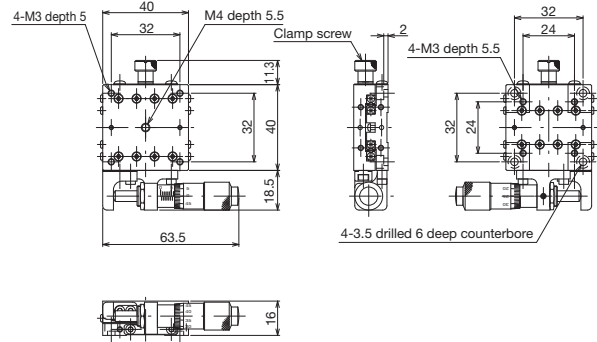
*TLS-4047-CR6 is a symmetrical type with the same dimensions as TLS-4047-C6.

↑ TLS-4047-C6



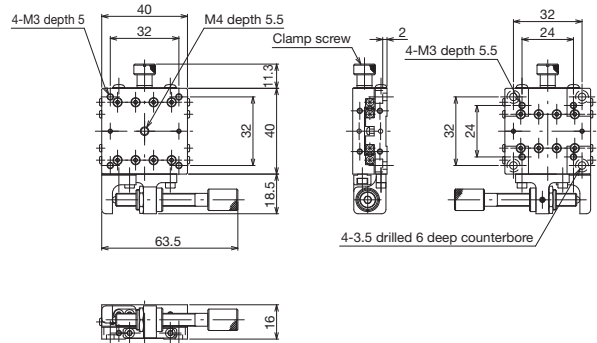
*TLS-4047-CR8 is a symmetrical type with the same dimensions as TLS-4047-C8.

↑ TLS-4047-C8



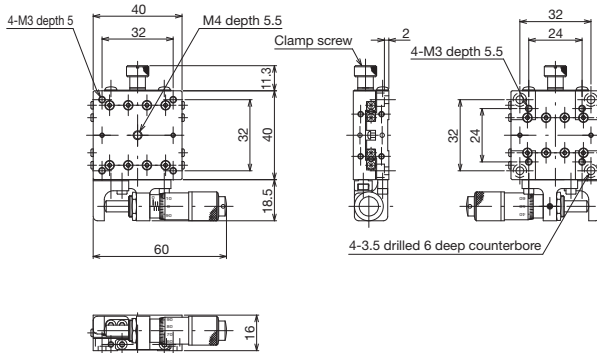
*TLS-4047-SR1 is a symmetrical type with the same dimensions as TLS-4047-S1.

↑ TLS-4047-S1



*TLS-4047-SR6 is a symmetrical type with the same dimensions as TLS-4047-S6.

↑ TLS-4047-S6

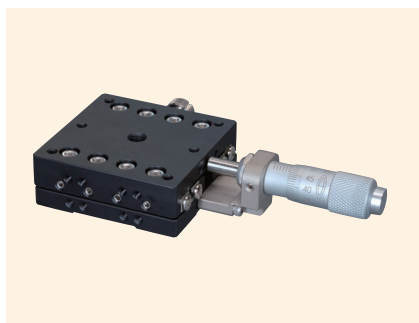


*TLS-4047-SR8 is a symmetrical type with the same dimensions as TLS-4047-S8.

↑ TLS-4047-S8

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Swim Stages, Cross Roller Stages
Z-Like Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

High-Grade Aluminum - X Stages 50 x 50



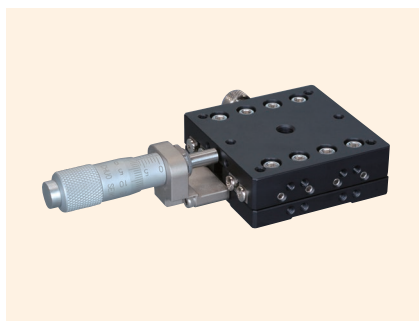
↑ TLS-5047-C1



↑ TLS-5047-S1



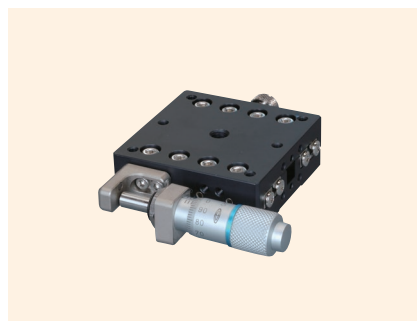
↑ TLS-5047-S6



↑ TLS-5047-CR1



↑ TLS-5047-SR1



↑ TLS-5047-S8

Features

- Adopts an aluminum alloy as the main material and uses the HG-VCR method to achieve both high rigidity and light weight.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

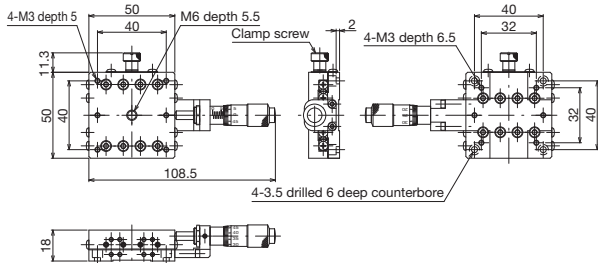
Model number (Standard type)	TLS-5047-C1	TLS-5047-S1	TLS-5047-C6	TLS-5047-S6	TLS-5047-C8	TLS-5047-S8
Model number (Symmetrical type)	TLS-5047-CR1	TLS-5047-SR1	TLS-5047-CR6	TLS-5047-SR6	TLS-5047-CR8	TLS-5047-SR8
Model name	High-Grade Aluminum X Stage 50 x 50					
Travel direction	X-axis single direction					
Stage surface	50 mm x 50 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical) 0.002 mm Yawing 20 s, pitching 30 s					
Moment rigidity	Yaw rigidity 0.10 s/N-cm, pitch rigidity 0.30 s/N-cm, roll rigidity 0.30 s/N-cm					
Parallelism	0.030 mm					
Parallelism of motion	0.010 mm					
Load capacity	49 N (5 kgf)					
Mass	0.19 kg					
Main materials/surface treatment	Aluminum alloy/black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					



High-Grade Stages ◀ Manual Stages ◀

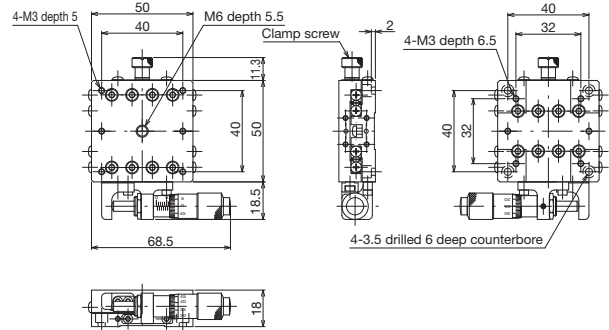
Product Appearance

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Swim Stages, Cross Roller Stages
Z-Like Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages



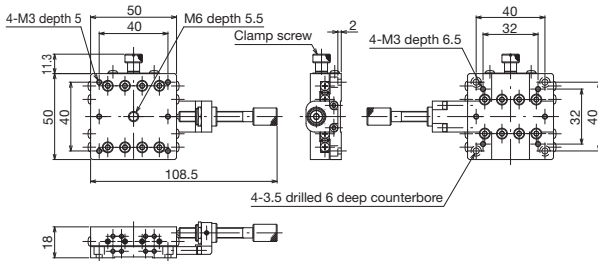
*TLS-5047-CR1 is a symmetrical type with the same dimensions as TLS-5047-C1.

↑ TLS-5047-C1



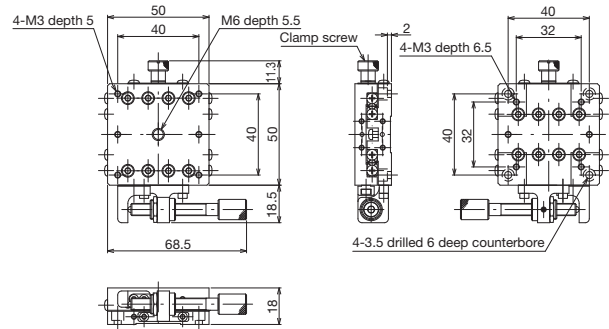
*TLS-5047-SR1 is a symmetrical type with the same dimensions as TLS-5047-S1.

↑ TLS-5047-S1



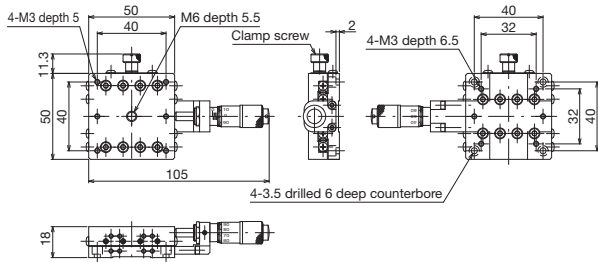
*TLS-5047-CR6 is a symmetrical type with the same dimensions as TLS-5047-C6.

↑ TLS-5047-C6



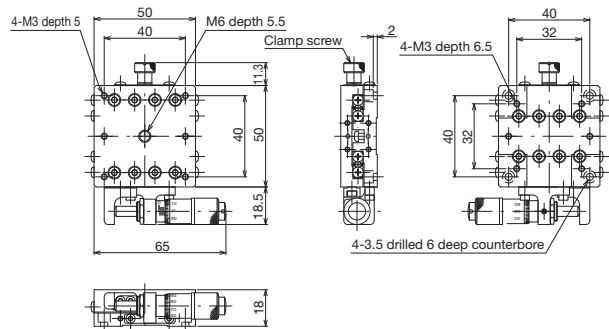
*TLS-5047-SR6 is a symmetrical type with the same dimensions as TLS-5047-S6.

↑ TLS-5047-S6



*TLS-5047-CR8 is a symmetrical type with the same dimensions as TLS-5047-C8.

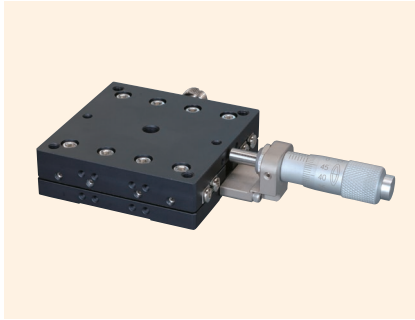
↑ TLS-5047-C8



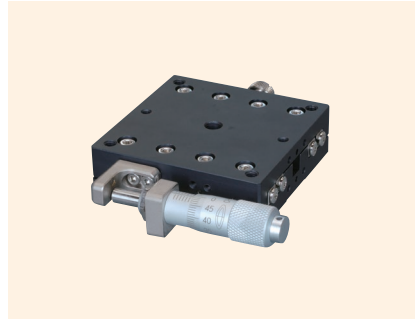
*TLS-5047-SR8 is a symmetrical type with the same dimensions as TLS-5047-S8.

↑ TLS-5047-S8

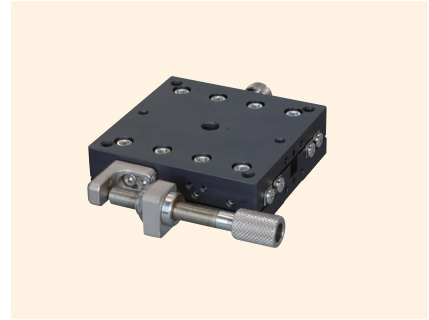
High-Grade Aluminum - X Stages 60 x 60



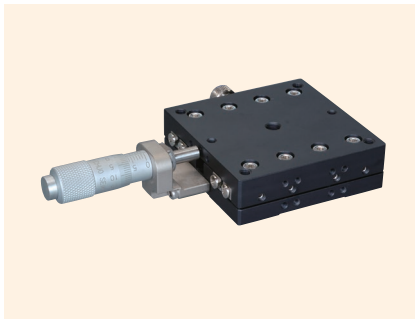
↑ TLS-6047-C1



↑ TLS-6047-S1



↑ TLS-6047-S6



↑ TLS-6047-CR1



↑ TLS-6047-SR1



↑ TLS-6047-S8

Features

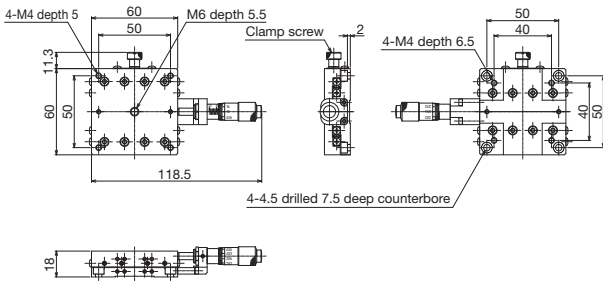
- Adopts an aluminum alloy as the main material and uses the HG-VCR method to achieve both high rigidity and light weight.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (Standard type)	TLS-6047-C1	TLS-6047-S1	TLS-6047-C6	TLS-6047-S6	TLS-6047-C8	TLS-6047-S8
Model number (Symmetrical type)	TLS-6047-CR1	TLS-6047-SR1	TLS-6047-CR6	TLS-6047-SR6	TLS-6047-CR8	TLS-6047-SR8
Model name	High-Grade Aluminum X Stage 60 x 60					
Travel direction	X-axis single direction					
Stage surface	60 mm x 60 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical) 0.002 mm Yawing 20 s, pitching 30 s					
Moment rigidity	Yaw rigidity 0.05 s/N-cm, pitch rigidity 0.20 s/N-cm, roll rigidity 0.20 s/N-cm					
Parallelism	0.030 mm					
Parallelism of motion	0.010 mm					
Load capacity	58.8 N (6 kgf)					
Mass	0.24 kg					
Main materials/surface treatment	Aluminum alloy/black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					



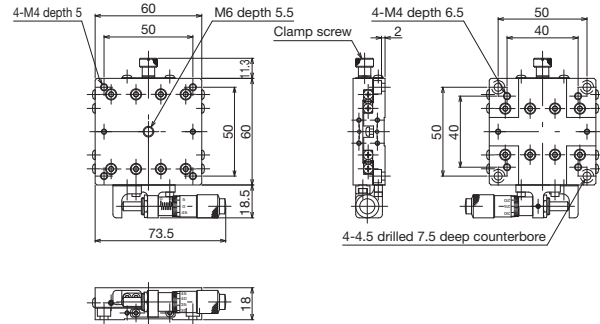
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



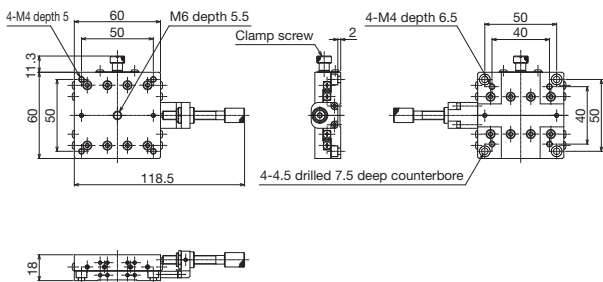
*TLS-6047-CR1 is a symmetrical type with the same dimensions as TLS-6047-C1.

↑ TLS-6047-C1



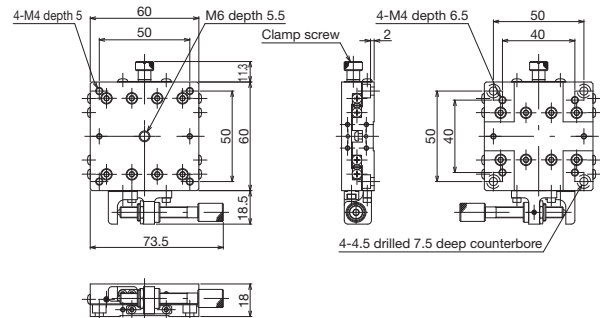
*TLS-6047-SR1 is a symmetrical type with the same dimensions as TLS-6047-S1.

↑ TLS-6047-S1



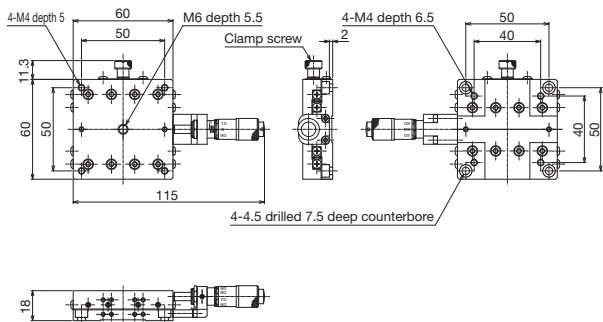
*TLS-6047-CR6 is a symmetrical type with the same dimensions as TLS-6047-C6.

↑ TLS-6047-C6



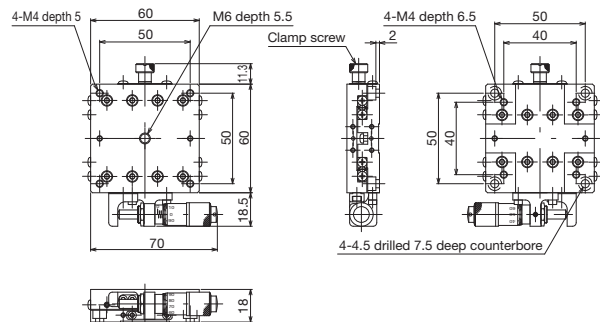
*TLS-6047-SR6 is a symmetrical type with the same dimensions as TLS-6047-S6.

↑ TLS-6047-S6



*TLS-6047-CR8 is a symmetrical type with the same dimensions as TLS-6047-C8.

↑ TLS-6047-C8

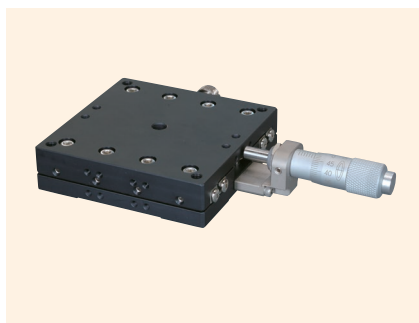


*TLS-6047-SR8 is a symmetrical type with the same dimensions as TLS-6047-S8.

↑ TLS-6047-S8

- Motorized Stages
- Automated Products for Microscopes
- Manual Stages**
- Fix Stages
- Thin VB Stages
- Rack & Pinion Stages
- High-Grade Stages
- Spin Stages, Cross Roller Stages
- Z-Like Stages
- Rotary Stages
- Tilt Stages
- Tilt/Rotary Stages
- XZ, YZ Stages
- XYZ Stages

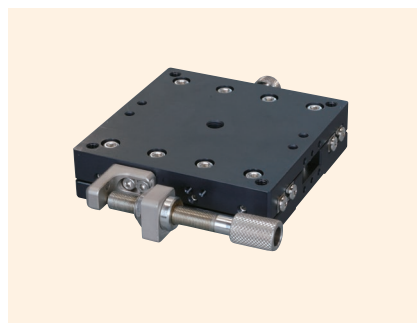
High-Grade Aluminum - X Stages 70 x 70



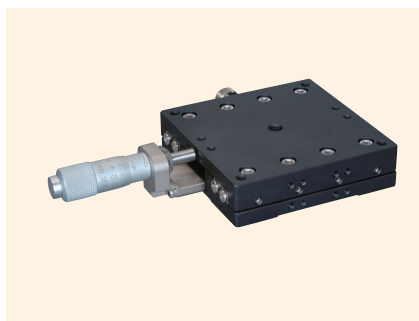
↑ TLS-7047-C1



↑ TLS-7047-S1



↑ TLS-7047-S6



↑ TLS-7047-CR1



↑ TLS-7047-SR1



↑ TLS-7047-S8

Features

- Adopts an aluminum alloy as the main material and uses the HG-VCR method to achieve both high rigidity and light weight.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

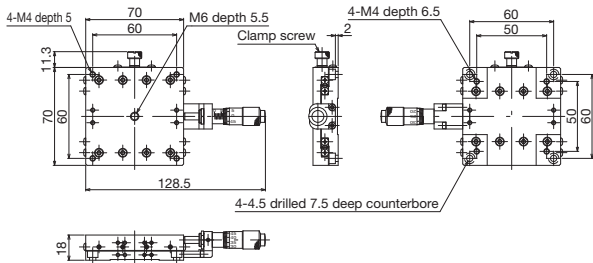
Model number (Standard type)	TLS-7047-C1	TLS-7047-S1	TLS-7047-C6	TLS-7047-S6	TLS-7047-C8	TLS-7047-S8
Model number (Symmetrical type)	TLS-7047-CR1	TLS-7047-SR1	TLS-7047-CR6	TLS-7047-SR6	TLS-7047-CR8	TLS-7047-SR8
Model name	High-Grade Aluminum X Stage 70 x 70					
Travel direction	X-axis single direction					
Stage surface	70 mm x 70 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical) 0.002 mm Yawing 20 s, pitching 30 s					
Moment rigidity	Yaw rigidity 0.03 s/N-cm, pitch rigidity 0.10 s/N-cm, roll rigidity 0.10 s/N-cm					
Parallelism	0.030 mm					
Parallelism of motion	0.010 mm					
Load capacity	78.4 N (8 kgf)					
Mass	0.30 kg					
Main materials/surface treatment	Aluminum alloy/black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					



High-Grade Stages ◀ Manual Stages ◀

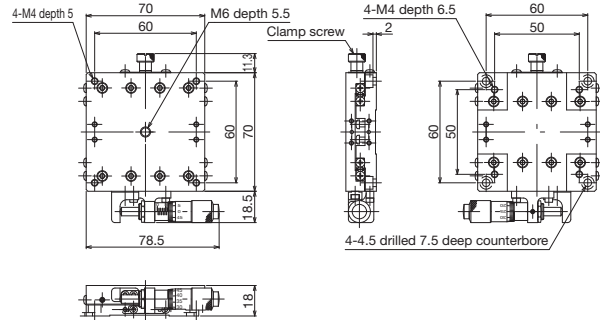
Product Appearance

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin V8 Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Like Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages



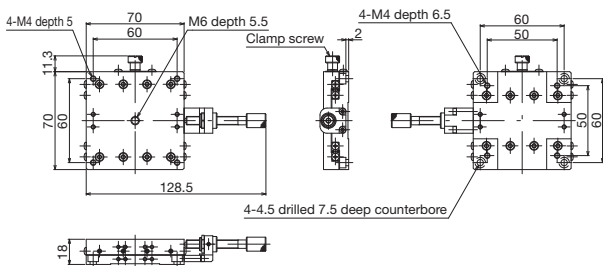
*TLS-7047-CR1 is a symmetrical type with the same dimensions as TLS-7047-C1.

↑ TLS-7047-C1



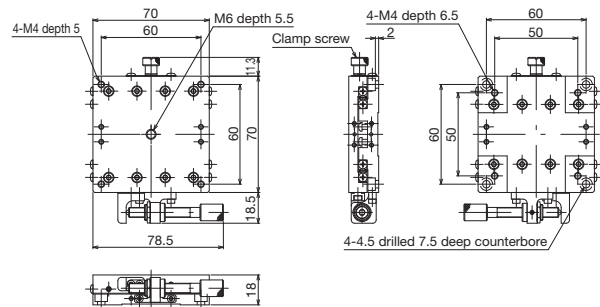
*TLS-7047-SR1 is a symmetrical type with the same dimensions as TLS-7047-S1.

↑ TLS-7047-S1



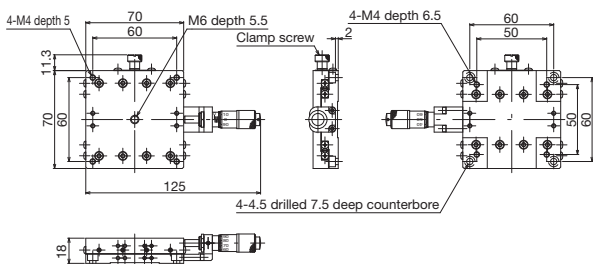
*TLS-7047-CR6 is a symmetrical type with the same dimensions as TLS-7047-C6.

↑ TLS-7047-C6



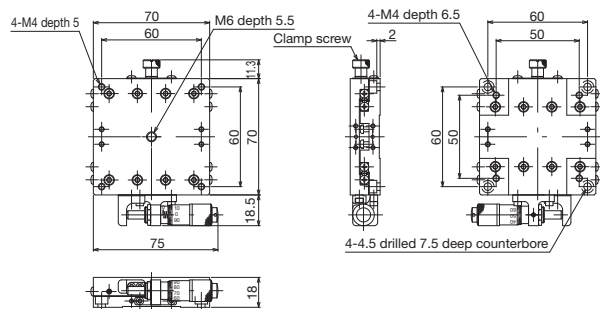
*TLS-7047-SR6 is a symmetrical type with the same dimensions as TLS-7047-S6.

↑ TLS-7047-S6



*TLS-7047-CR8 is a symmetrical type with the same dimensions as TLS-7047-C8.

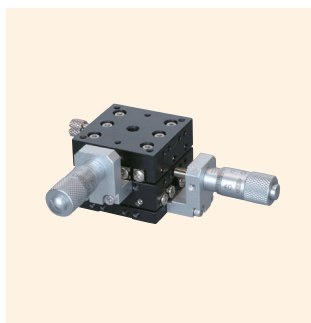
↑ TLS-7047-C8



*TLS-7047-SR8 is a symmetrical type with the same dimensions as TLS-7047-S8.

↑ TLS-7047-S8

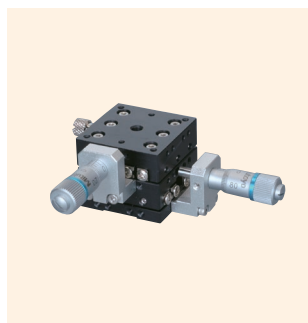
High-Grade Aluminum XY Stages 30 x 30



↑ TLD-3047-C1



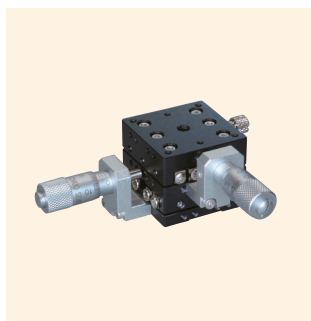
↑ TLD-3047-S1



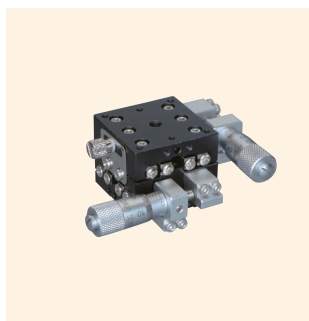
↑ TLD-3047-C8



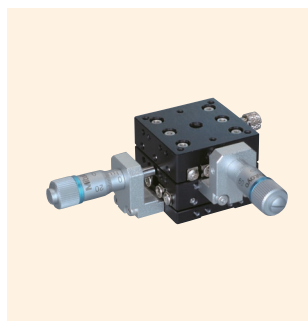
↑ TLD-3047-S8



↑ TLD-3047-CR1



↑ TLD-3047-SR1



↑ TLD-3047-CR8



↑ TLD-3047-SR8

Features

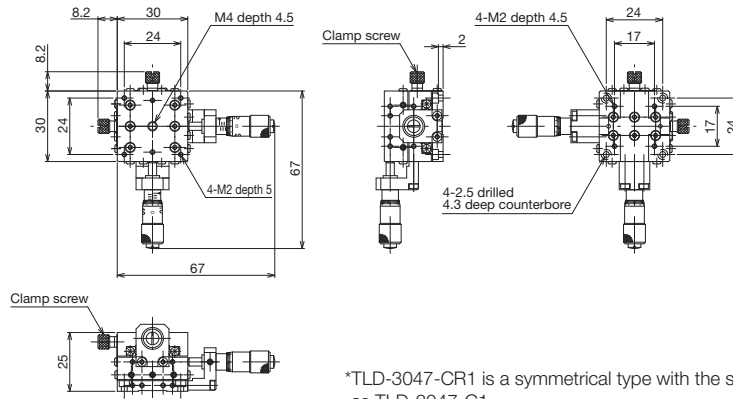
- Adopts an aluminum alloy as the main material and uses the HG-VCR method to achieve both high rigidity and light weight.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Standard micrometers and fine pitch micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (Standard type)	TLD-3047-C1	TLD-3047-S1	TLD-3047-C8	TLD-3047-S8
Model number (Symmetrical type)	TLD-3047-CR1	TLD-3047-SR1	TLD-3047-CR8	TLD-3047-SR8
Model name	High-Grade Aluminum XY Stage 30 x 30			
Travel direction	XY-axis double direction			
Stage surface	30 mm x 30 mm			
Clamp method	Plate clamp			
Operating part mounting position	Center	Side	Center	Side
Feed method	CMH-6.5RA (standard micrometer)		MHT3-6.5FP (Fine pitch micro)	
Travel amount	±3 mm			
Travel amount/1 knob rotation	0.5 mm		0.1 mm	
Scale	Micrometer 0.01 mm		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical) 0.002 mm			
Moment rigidity	Yaw rigidity 2.00 s/N-cm, pitch rigidity 2.00 s/N-cm, roll rigidity 2.00 s/N-cm			
Parallelism	0.050 mm			
Parallelism of motion	0.020 mm			
XY orthogonality	0.010 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.11 kg			
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

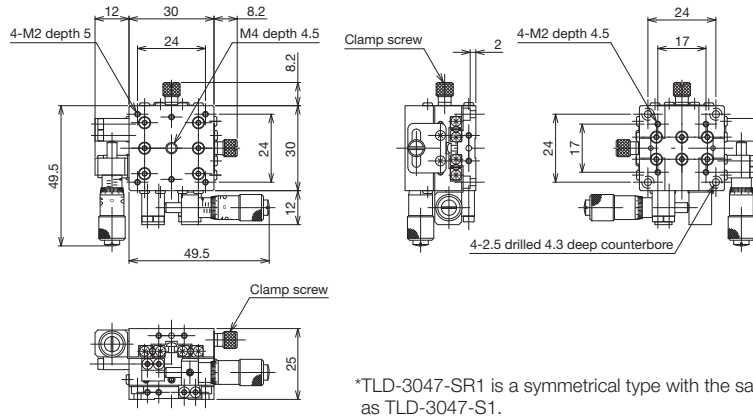


High-Grade Stages ◀ Manual Stages ◀

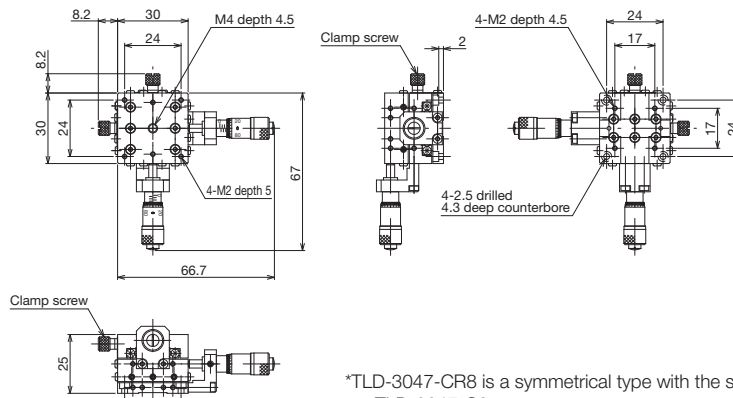
Product Appearance



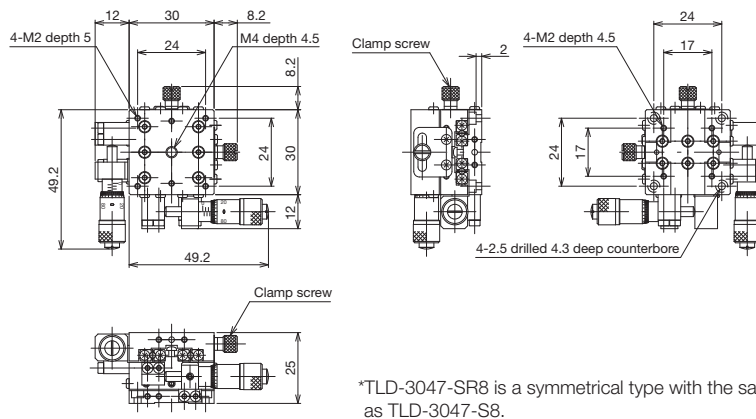
*TLD-3047-CR1 is a symmetrical type with the same dimensions as TLD-3047-C1. ↑ TLD-3047-C1



*TLD-3047-SR1 is a symmetrical type with the same dimensions as TLD-3047-S1. ↑ TLD-3047-S1



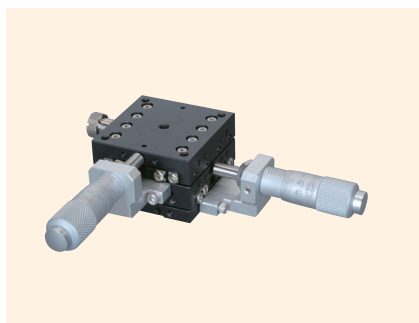
*TLD-3047-CR8 is a symmetrical type with the same dimensions as TLD-3047-C8. ↑ TLD-3047-C8



*TLD-3047-SR8 is a symmetrical type with the same dimensions as TLD-3047-S8. ↑ TLD-3047-S8

Motorized Stages	Automated Products for Microscopes
Fix Stages	Manual Stages
Thin VB Stages	
Rack & Pinion Stages	
High-Grade Stages	
Spin Stages, Cross Roller Stages	
Z-Like Stages, Z Stages	
Rotary Stages	
Tilt Stages	
Tilt/Rotary Stages	
XZ, YZ Stages	
XYZ Stages	

High-Grade Aluminum XY Stages 40 x 40



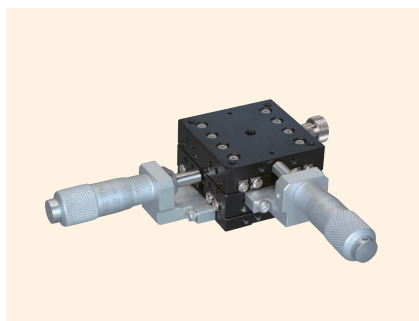
↑ TLD-4047-C1



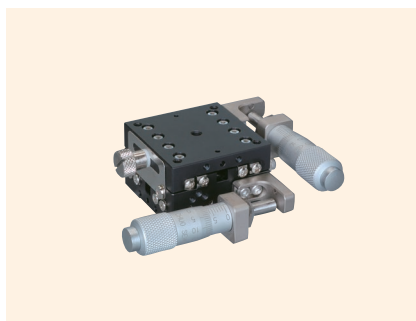
↑ TLD-4047-S1



↑ TLD-4047-S6



↑ TLD-4047-CR1



↑ TLD-4047-SR1



↑ TLD-4047-S8

Features

- Adopts an aluminum alloy as the main material and uses the HG-VCR method to achieve both high rigidity and light weight.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

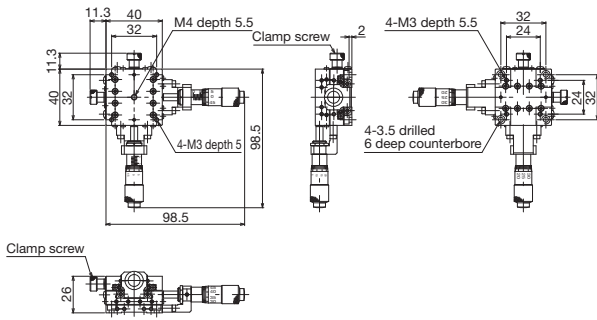
Model number (Standard type)	TLD-4047-C1	TLD-4047-S1	TLD-4047-C6	TLD-4047-S6	TLD-4047-C8	TLD-4047-S8
Model number (Symmetrical type)	TLD-4047-CR1	TLD-4047-SR1	TLD-4047-CR6	TLD-4047-SR6	TLD-4047-CR8	TLD-4047-SR8
Model name	High-Grade Aluminum XY Stage 40 x 40					
Travel direction	XY-axis double direction					
Stage surface	40 mm x 40 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical) 0.002 mm					
Moment rigidity	Yaw rigidity 0.40 s/N-cm, pitch rigidity 1.00 s/N-cm, roll rigidity 1.00 s/N-cm					
Parallelism	0.050 mm					
Parallelism of motion	0.020 mm					
XY orthogonality	0.010 mm					
Load capacity	39.2 N (4 kgf)					
Mass	0.23 kg					
Main materials/surface treatment	Aluminum alloy/black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					



High-Grade Stages ◀ Manual Stages ◀

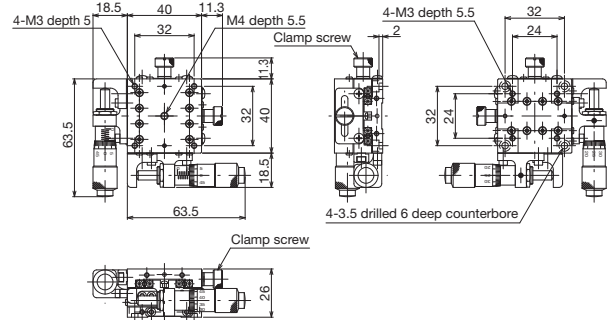
Product Appearance

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Swim Stages, Cross Roller Stages
Z-Like Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages



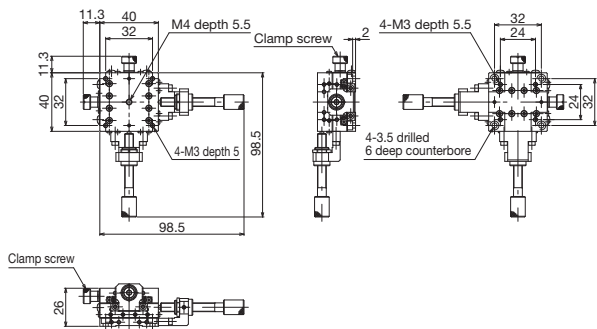
*TLD-4047-CR1 is a symmetrical type with the same dimensions as TLD-4047-C1.

↑ TLD-4047-C1



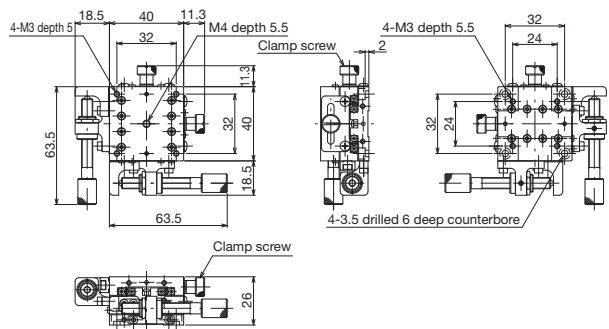
*TLD-4047-SR1 is a symmetrical type with the same dimensions as TLD-4047-S1.

↑ TLD-4047-S1



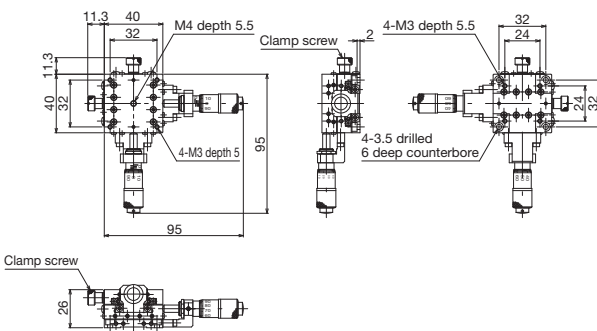
*TLD-4047-CR6 is a symmetrical type with the same dimensions as TLD-4047-C6.

↑ TLD-4047-C6



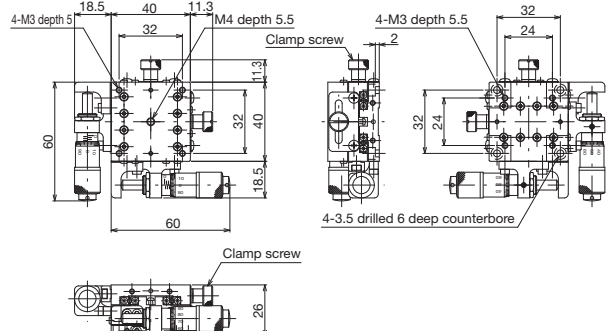
*TLD-4047-SR6 is a symmetrical type with the same dimensions as TLD-4047-S6.

↑ TLD-4047-S6



*TLD-4047-CR8 is a symmetrical type with the same dimensions as TLD-4047-C8.

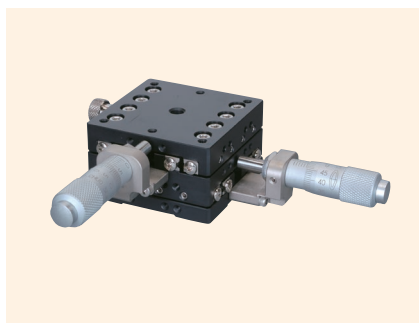
↑ TLD-4047-C8



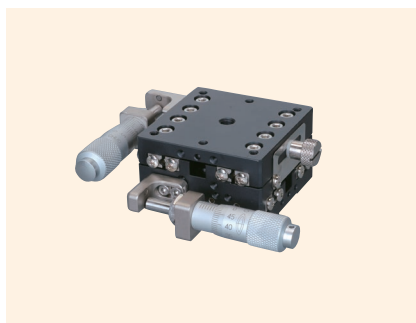
*TLD-4047-SR8 is a symmetrical type with the same dimensions as TLD-4047-S8.

↑ TLD-4047-S8

High-Grade Aluminum XY Stages 50 x 50



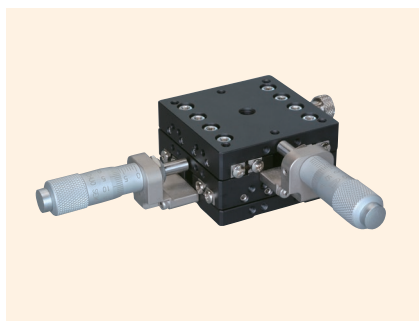
↑ TLD-5047-C1



↑ TLD-5047-S1



↑ TLD-5047-S6



↑ TLD-5047-CR1



↑ TLD-5047-SR1



↑ TLD-5047-S8

Features

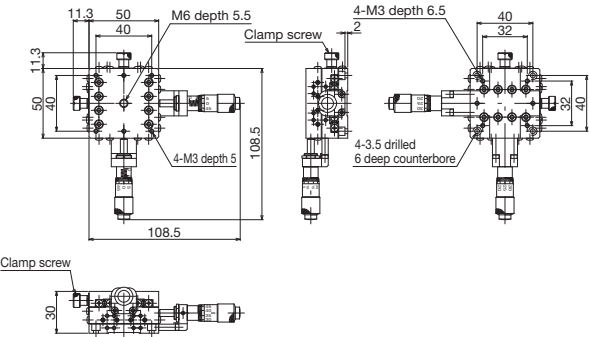
- Adopts an aluminum alloy as the main material and uses the HG-VCR method to achieve both high rigidity and light weight.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (Standard type)	TLD-5047-C1	TLD-5047-S1	TLD-5047-C6	TLD-5047-S6	TLD-5047-C8	TLD-5047-S8
Model number (Symmetrical type)	TLD-5047-CR1	TLD-5047-SR1	TLD-5047-CR6	TLD-5047-SR6	TLD-5047-CR8	TLD-5047-SR8
Model name	High-Grade Aluminum XY Stage 50 x 50					
Travel direction	XY-axis double direction					
Stage surface	50 mm x 50 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical) 0.002 mm					
Moment rigidity	Yaw rigidity 0.20 s/N-cm, pitch rigidity 0.60 s/N-cm, roll rigidity 0.60 s/N-cm					
Parallelism	0.050 mm					
Parallelism of motion	0.020 mm					
XY orthogonality	0.010 mm					
Load capacity	49 N (5 kgf)					
Mass	0.33 kg					
Main materials/surface treatment	Aluminum alloy/black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					



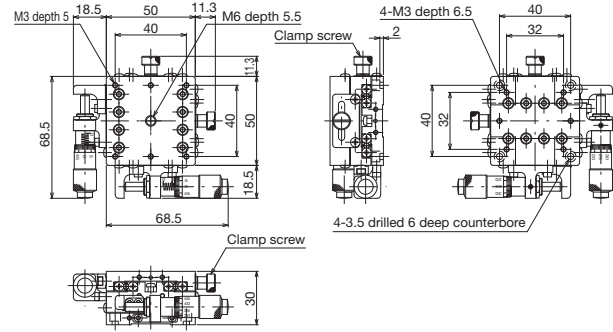
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



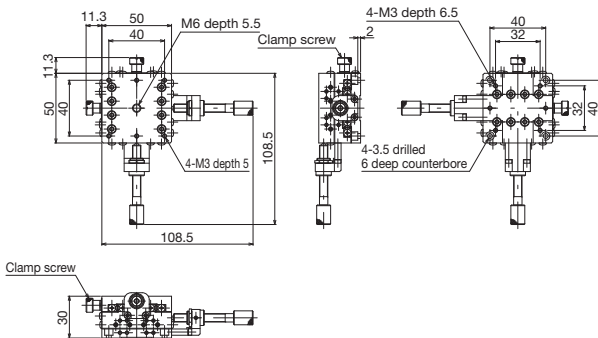
*TLD-5047-CR1 is a symmetrical type with the same dimensions as TLD-5047-C1.

↑ TLD-5047-C1



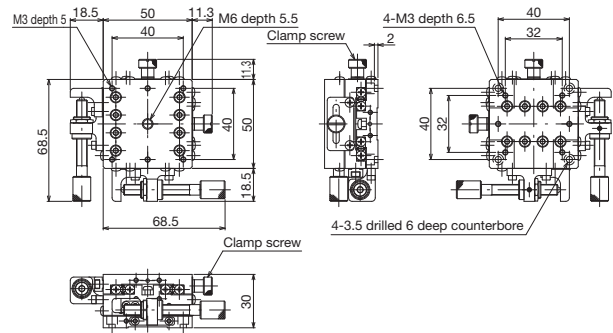
*TLD-5047-SR1 is a symmetrical type with the same dimensions as TLD-5047-S1.

↑ TLD-5047-S1



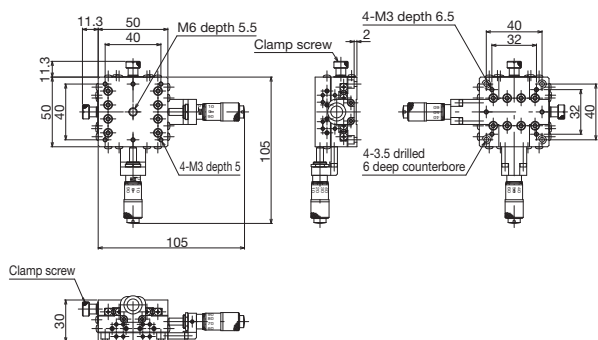
*TLD-5047-CR6 is a symmetrical type with the same dimensions as TLD-5047-C6.

↑ TLD-5047-C6



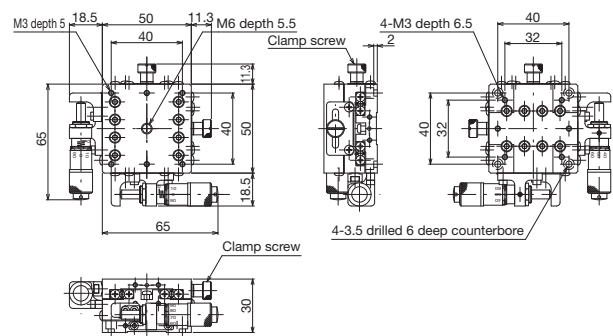
*TLD-5047-SR6 is a symmetrical type with the same dimensions as TLD-5047-S6.

↑ TLD-5047-S6



*TLD-5047-CR8 is a symmetrical type with the same dimensions as TLD-5047-C8.

↑ TLD-5047-C8

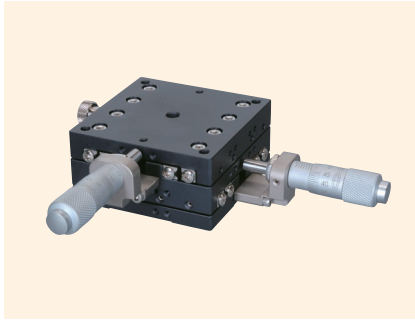


*TLD-5047-SR8 is a symmetrical type with the same dimensions as TLD-5047-S8.

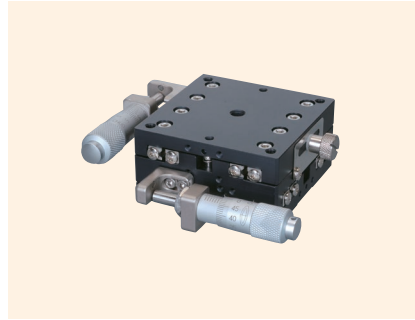
↑ TLD-5047-S8

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Swim Stages, Cross Roller Stages
Z-Like Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

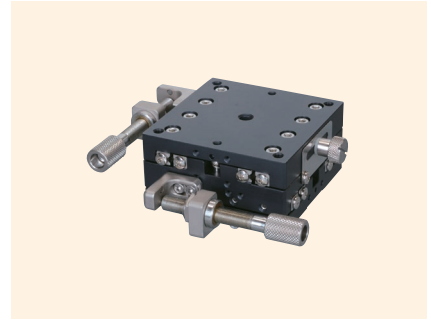
High-Grade Aluminum XY Stages 60 x 60



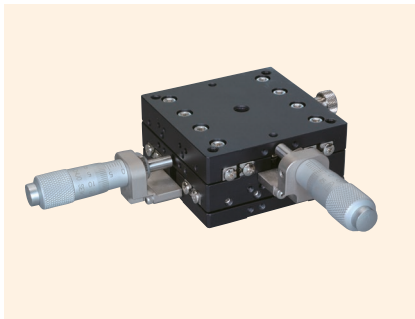
↑ TLD-6047-C1



↑ TLD-6047-S1



↑ TLD-6047-S6



↑ TLD-6047-CR1



↑ TLD-6047-SR1



↑ TLD-6047-S8

Features

- Adopts an aluminum alloy as the main material and uses the HG-VCR method to achieve both high rigidity and light weight.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

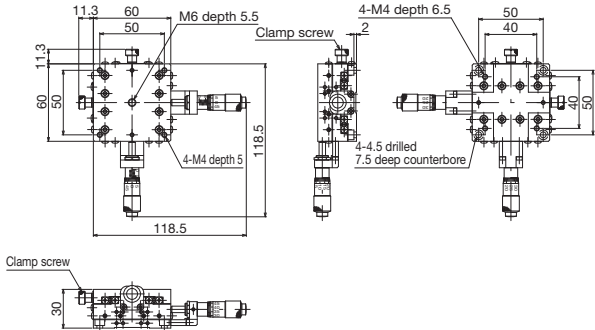
Model number (Standard type)	TLD-6047-C1	TLD-6047-S1	TLD-6047-C6	TLD-6047-S6	TLD-6047-C8	TLD-6047-S8
Model number (Symmetrical type)	TLD-6047-CR1	TLD-6047-SR1	TLD-6047-CR6	TLD-6047-SR6	TLD-6047-CR8	TLD-6047-SR8
Model name	High-Grade Aluminum XY Stage 60 x 60					
Travel direction	XY-axis double direction					
Stage surface	60 mm x 60 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical) 0.002 mm					
Moment rigidity	Yaw rigidity 0.10 s/N-cm, pitch rigidity 0.40 s/N-cm, roll rigidity 0.40 s/N-cm					
Parallelism	0.050 mm					
Parallelism of motion	0.020 mm					
XY orthogonality	0.010 mm					
Load capacity	58.8 N (6 kgf)					
Mass	0.42 kg					
Main materials/surface treatment	Aluminum alloy/black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					



High-Grade Stages ◀ Manual Stages ◀

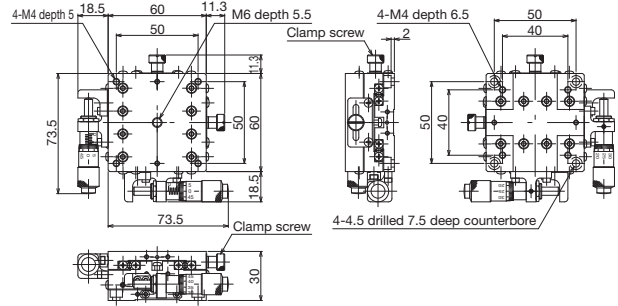
Product Appearance

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Swim Stages, Cross Roller Stages
Z-Like Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages



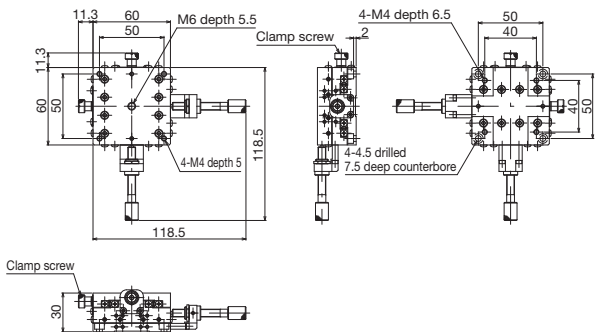
*TLD-6047-CR1 is a symmetrical type with the same dimensions as TLD-6047-C1.

↑ TLD-6047-C1



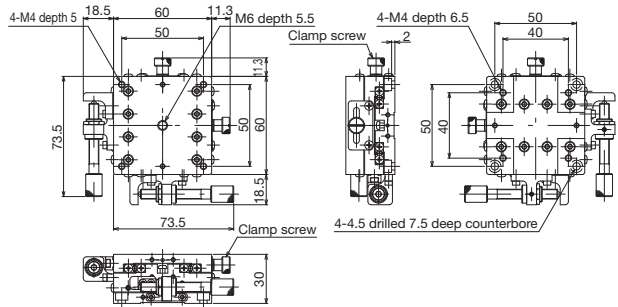
*TLD-6047-SR1 is a symmetrical type with the same dimensions as TLD-6047-S1.

↑ TLD-6047-S1



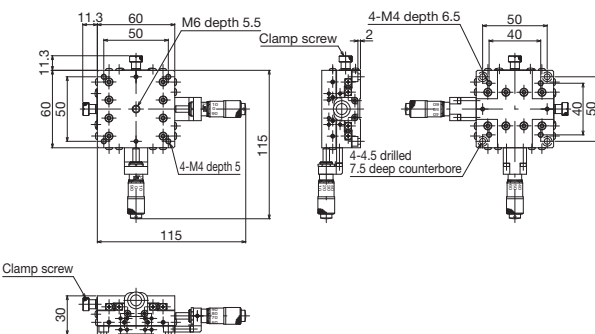
*TLD-6047-CR6 is a symmetrical type with the same dimensions as TLD-6047-C6.

↑ TLD-6047-C6



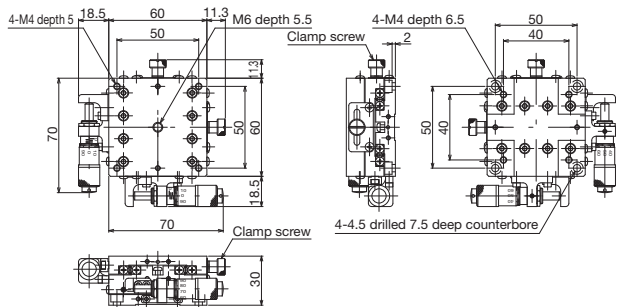
*TLD-6047-SR6 is a symmetrical type with the same dimensions as TLD-6047-S6.

↑ TLD-6047-S6



*TLD-6047-CR8 is a symmetrical type with the same dimensions as TLD-6047-C8.

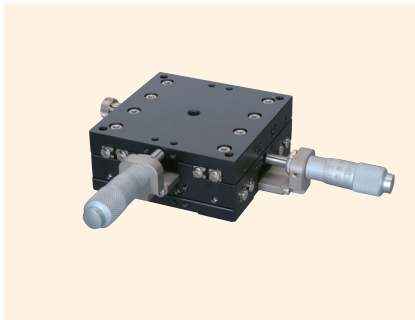
↑ TLD-6047-C8



*TLD-6047-SR8 is a symmetrical type with the same dimensions as TLD-6047-S8.

↑ TLD-6047-S8

High-Grade Aluminum XY Stages 70 x 70



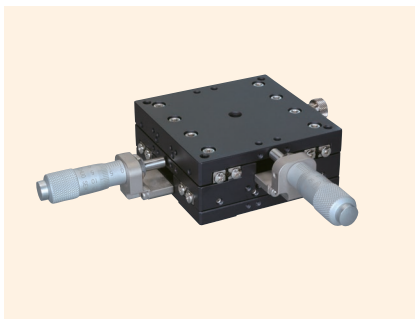
↑ TLD-7047-C1



↑ TLD-7047-S1



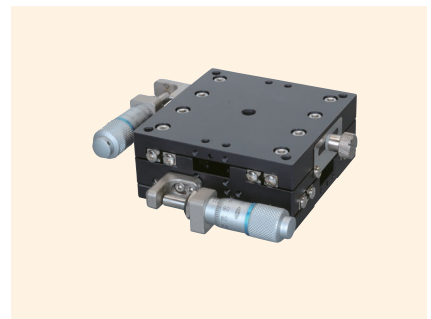
↑ TLD-7047-S6



↑ TLD-7047-CR1



↑ TLD-7047-SR1



↑ TLD-7047-S8

Features

- Adopts an aluminum alloy as the main material and uses the HG-VCR method to achieve both high rigidity and light weight.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

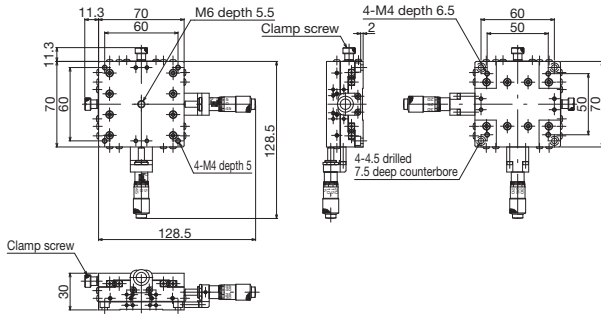
Model number (Standard type)	TLD-7047-C1	TLD-7047-S1	TLD-7047-C6	TLD-7047-S6	TLD-7047-C8	TLD-7047-S8
Model number (Symmetrical type)	TLD-7047-CR1	TLD-7047-SR1	TLD-7047-CR6	TLD-7047-SR6	TLD-7047-CR8	TLD-7047-SR8
Model name	High-Grade Aluminum XY Stage 70 x 70					
Travel direction	XY-axis double direction					
Stage surface	70 mm x 70 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical) 0.002 mm					
Moment rigidity	Yaw rigidity 0.06 s/N-cm, pitch rigidity 0.20 s/N-cm, roll rigidity 0.20 s/N-cm					
Parallelism	0.050 mm					
Parallelism of motion	0.020 mm					
XY orthogonality	0.010 mm					
Load capacity	78.4 N (8 kgf)					
Mass	0.50 kg					
Main materials/surface treatment	Aluminum alloy/black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					



High-Grade Stages ◀ Manual Stages ◀

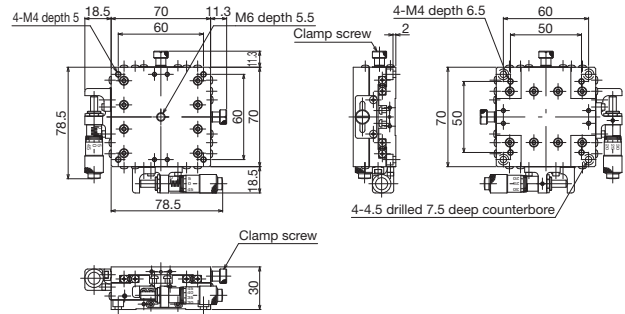
Product Appearance

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Swim Stages, Cross Roller Stages
Z Lin Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages



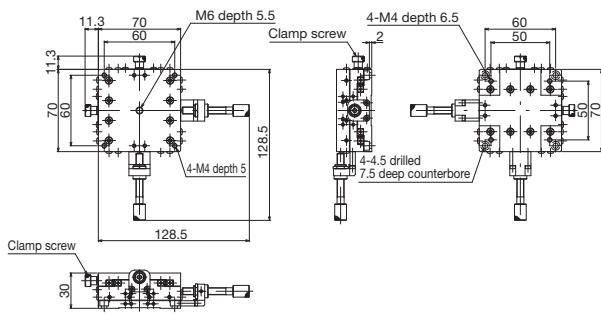
*TLD-7047-CR1 is a symmetrical type with the same dimensions as TLD-7047-C1.

↑ TLD-7047-C1



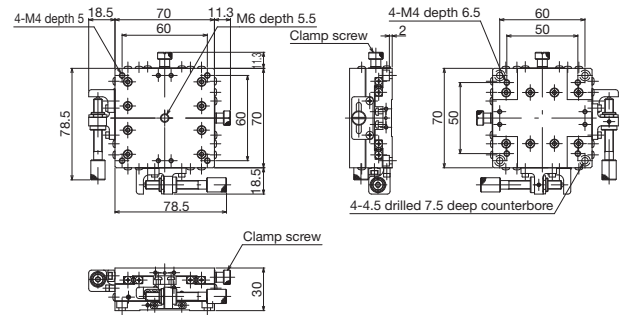
*TLD-7047-SR1 is a symmetrical type with the same dimensions as TLD-7047-S1.

↑ TLD-7047-S1



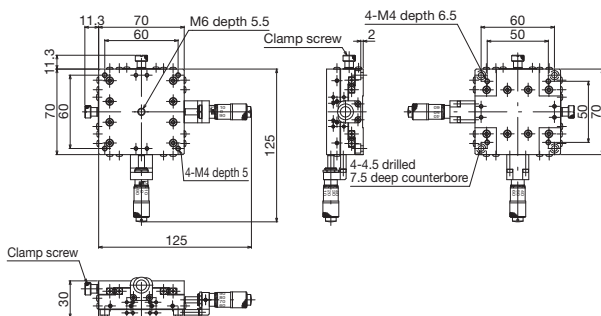
*TLD-7047-CR6 is a symmetrical type with the same dimensions as TLD-7047-C6.

↑ TLD-7047-C6



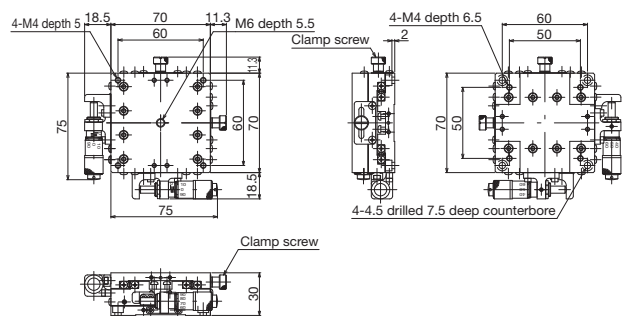
*TLD-7047-SR6 is a symmetrical type with the same dimensions as TLD-7047-S6.

↑ TLD-7047-S6



*TLD-7047-CR8 is a symmetrical type with the same dimensions as TLD-7047-C8.

↑ TLD-7047-C8



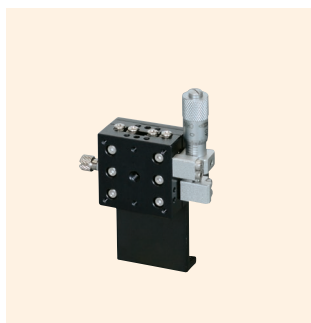
*TLD-7047-SR8 is a symmetrical type with the same dimensions as TLD-7047-S8.

↑ TLD-7047-S8

High-Grade Aluminum Z Stages 30 x 30



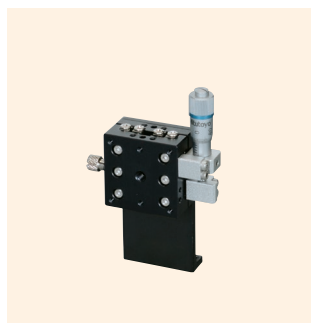
↑ TLZ-3047-C1



↑ TLZ-3047-S1



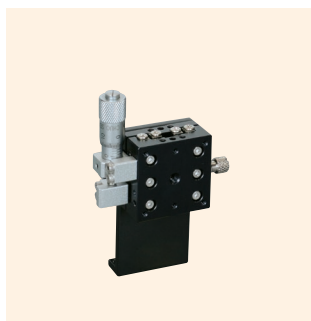
↑ TLZ-3047-C8



↑ TLZ-3047-S8



↑ TLZ-3047-CR1



↑ TLZ-3047-SR1



↑ TLZ-3047-CR8



↑ TLZ-3047-SR8

Features

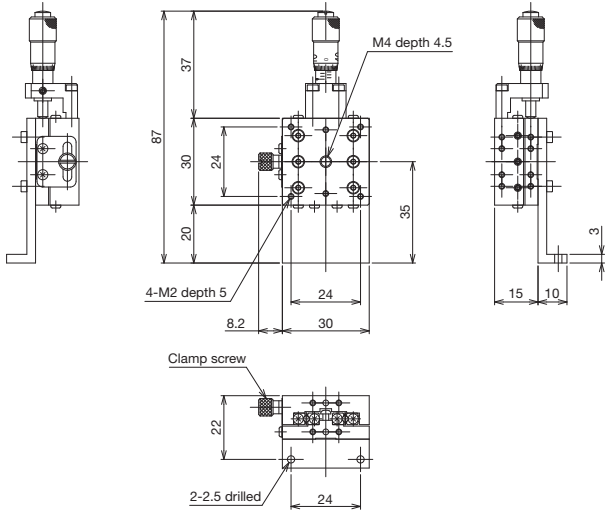
- Adopts an aluminum alloy as the main material and uses the HG-VCR method to achieve both high rigidity and light weight.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Standard micrometers and fine pitch micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (Standard type)	TLZ-3047-C1	TLZ-3047-S1	TLZ-3047-C8	TLZ-3047-S8
Model number (Symmetrical type)	TLZ-3047-CR1	TLZ-3047-SR1	TLZ-3047-CR8	TLZ-3047-SR8
Model name	High-Grade Aluminum Z Stage 30 x 30			
Travel direction	Z-axis single direction			
Stage surface	30 mm x 30 mm			
Clamp method	Plate clamp			
Operating part mounting position	Center	Side	Center	Side
Feed method	CMH-6.5RA (standard micrometer)		MHT3-6.5FP (Fine pitch micro)	
Travel amount	±3 mm			
Travel amount/1 knob rotation	0.5 mm		0.1 mm	
Scale	Micrometer 0.01 mm		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical) 0.002 mm Yawing 20 s, pitching 30 s			
Moment rigidity	Yaw rigidity 1.00 s/N-cm, pitch rigidity 1.00 s/N-cm, roll rigidity 1.00 s/N-cm			
Perpendicularity	0.080 mm			
Perpendicularity of motion	0.030 mm			
Load capacity	19.6 N (2 kgf)			
Mass	0.07 kg			
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



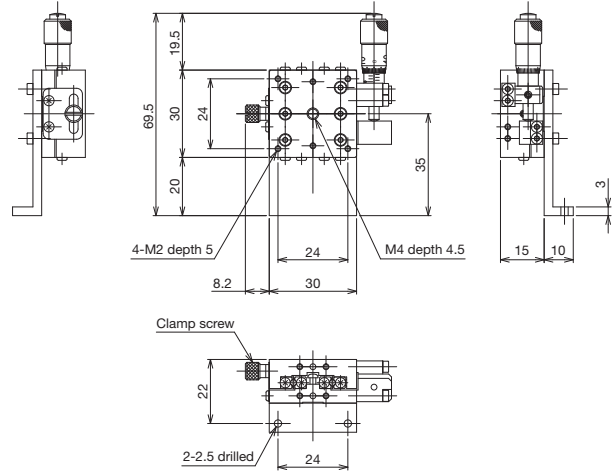
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



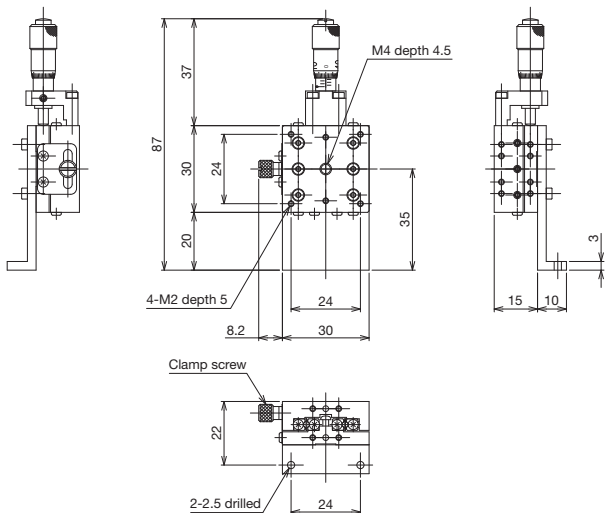
*TLZ-3047-CR1 is a symmetrical type with the same dimensions as TLZ-3047-C1.

↑ TLZ-3047-C1



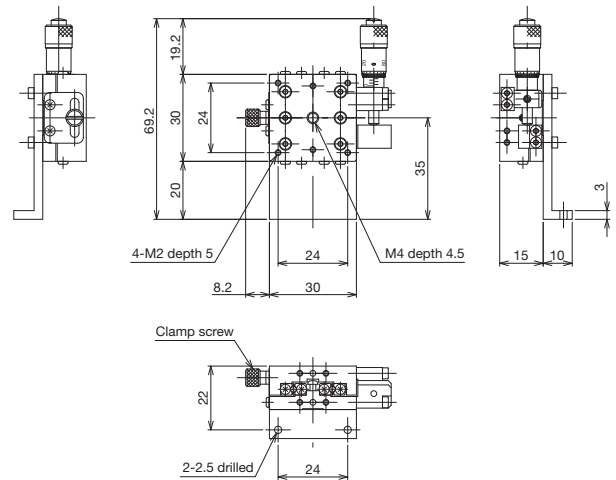
*TLZ-3047-SR1 is a symmetrical type with the same dimensions as TLZ-3047-S1.

↑ TLZ-3047-S1



*TLZ-3047-CR8 is a symmetrical type with the same dimensions as TLZ-3047-C8.

↑ TLZ-3047-C8



*TLZ-3047-SR8 is a symmetrical type with the same dimensions as TLZ-3047-S8.

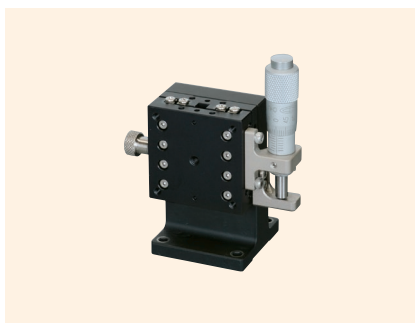
↑ TLZ-3047-S8

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin V8 Stages	Rack & Pinion Stages	High-Grade Stages	Spin Stages, Cross Roller Stages	Z-Like Stages, Z Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XZ Stages
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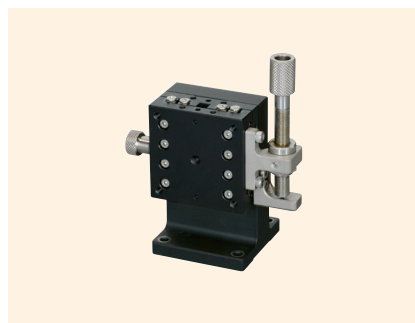
High-Grade Aluminum Z Stages 40 x 40



↑ TLZ-4047-C1



↑ TLZ-4047-S1



↑ TLZ-4047-S6



↑ TLZ-4047-CR1



↑ TLZ-4047-SR1



↑ TLZ-4047-S8

Features

- Adopts an aluminum alloy as the main material and uses the HG-VCR method to achieve both high rigidity and light weight.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

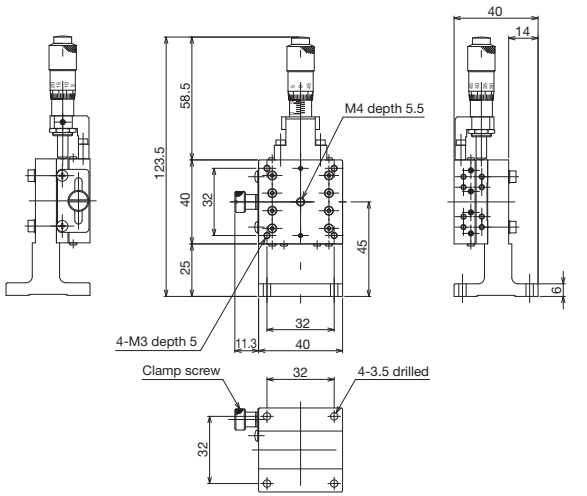
Model number (Standard type)	TLZ-4047-C1	TLZ-4047-S1	TLZ-4047-C6	TLZ-4047-S6	TLZ-4047-C8	TLZ-4047-S8
Model number (Symmetrical type)	TLZ-4047-CR1	TLZ-4047-SR1	TLZ-4047-CR6	TLZ-4047-SR6	TLZ-4047-CR8	TLZ-4047-SR8
Model name	High-Grade Aluminum Z Stage 40 x 40					
Travel direction	Z-axis single direction					
Stage surface	40 mm x 40 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical) 0.002 mm Yawing 20 s, pitching 30 s					
Moment rigidity	Yaw rigidity 0.20 s/N-cm, pitch rigidity 0.50 s/N-cm, roll rigidity 0.50 s/N-cm					
Perpendicularity	0.080 mm					
Perpendicularity of motion	0.030 mm					
Load capacity	19.6 N (2 kgf)					
Mass	0.23 kg					
Main materials/surface treatment	Aluminum alloy/black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					



High-Grade Stages ◀ Manual Stages ◀

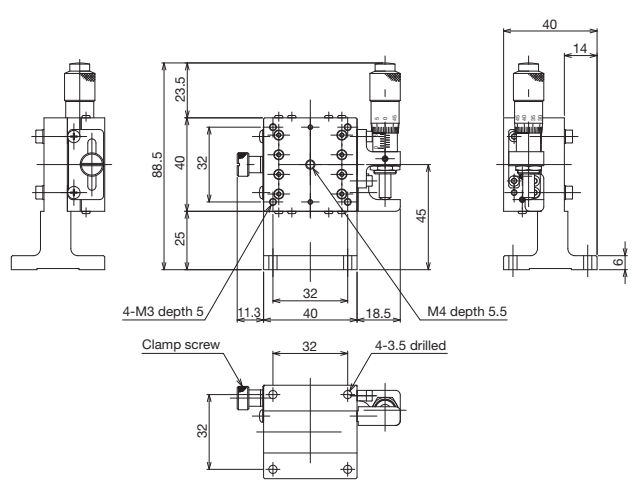
Product Appearance

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Lift Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages



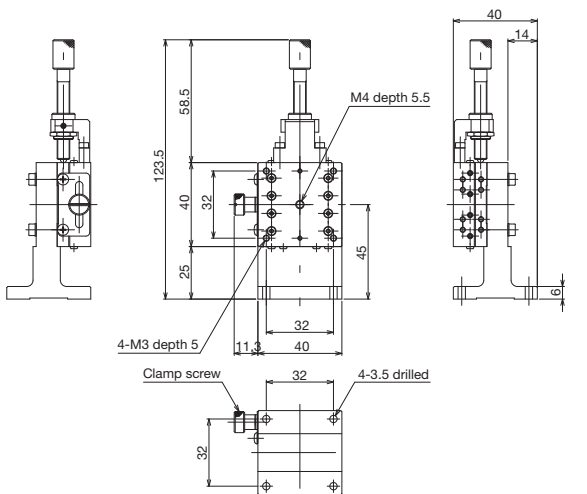
*TLZ-4047-CR1 is a symmetrical type with the same dimensions as TLZ-4047-C1.

↑ TLZ-4047-C1



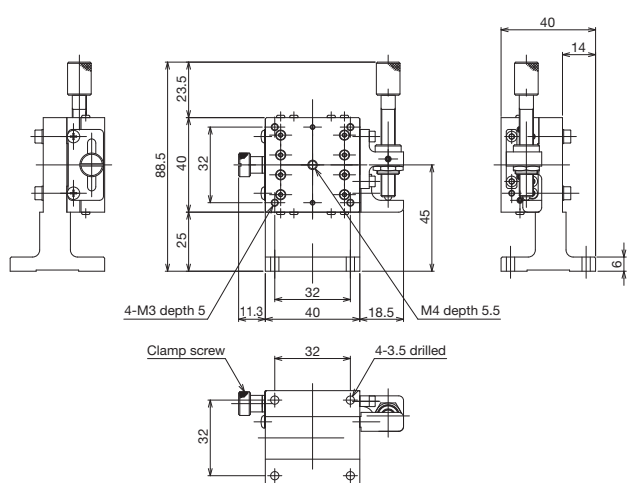
*TLZ-4047-SR1 is a symmetrical type with the same dimensions as TLZ-4047-S1.

↑ TLZ-4047-S1



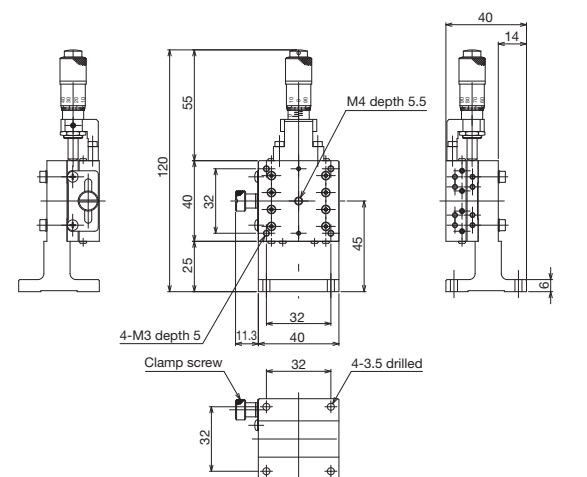
*TLZ-4047-CR6 is a symmetrical type with the same dimensions as TLZ-4047-C6.

↑ TLZ-4047-C6



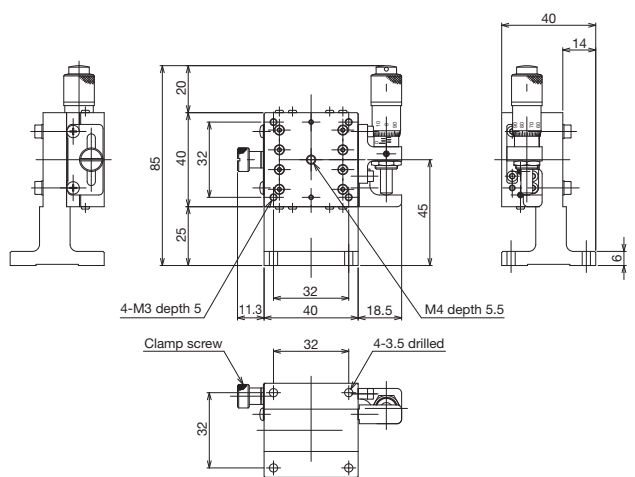
*TLZ-4047-SR6 is a symmetrical type with the same dimensions as TLZ-4047-S6.

↑ TLZ-4047-S6



*TLZ-4047-CR8 is a symmetrical type with the same dimensions as TLZ-4047-C8.

↑ TLZ-4047-C8



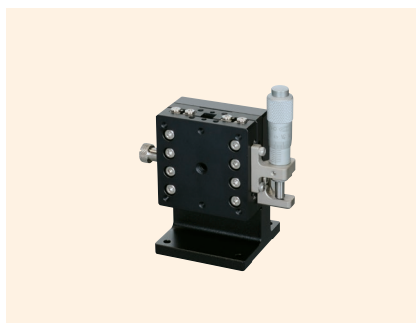
*TLZ-4047-SR8 is a symmetrical type with the same dimensions as TLZ-4047-S8.

↑ TLZ-4047-S8

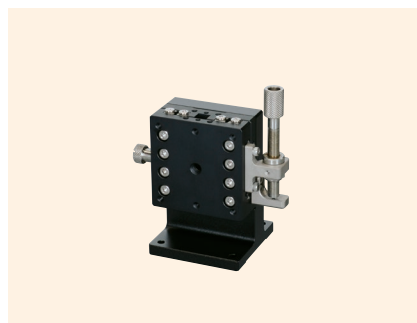
High-Grade Aluminum Z Stages 50 x 50



↑ TLZ-5047-C1



↑ TLZ-5047-S1



↑ TLZ-5047-S6



↑ TLZ-5047-CR1



↑ TLZ-5047-SR1



↑ TLZ-5047-S8

Features

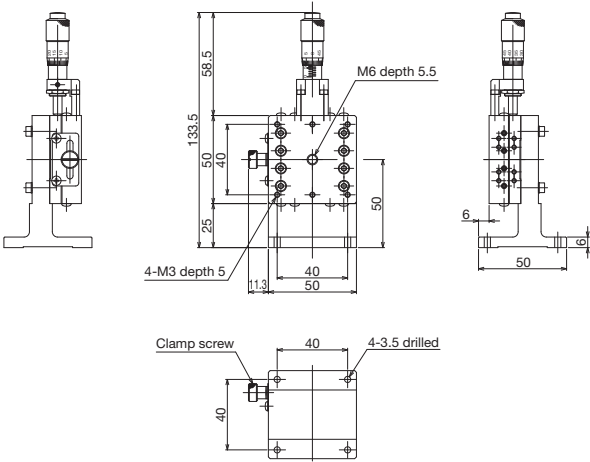
- Adopts an aluminum alloy as the main material and uses the HG-VCR method to achieve both high rigidity and light weight.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (Standard type)	TLZ-5047-C1	TLZ-5047-S1	TLZ-5047-C6	TLZ-5047-S6	TLZ-5047-C8	TLZ-5047-S8
Model number (Symmetrical type)	TLZ-5047-CR1	TLZ-5047-SR1	TLZ-5047-CR6	TLZ-5047-SR6	TLZ-5047-CR8	TLZ-5047-SR8
Model name	High-Grade Aluminum Z Stage 50 x 50					
Travel direction	Z-axis single direction					
Stage surface	50 mm x 50 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical) 0.002 mm Yawing 20 s, pitching 30 s					
Moment rigidity	Yaw rigidity 0.10 s/N-cm, pitch rigidity 0.30 s/N-cm, roll rigidity 0.30 s/N-cm					
Perpendicularity	0.080 mm					
Perpendicularity of motion	0.030 mm					
Load capacity	19.6 N (2 kgf)					
Mass	0.34 kg					
Main materials/surface treatment	Aluminum alloy/black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					



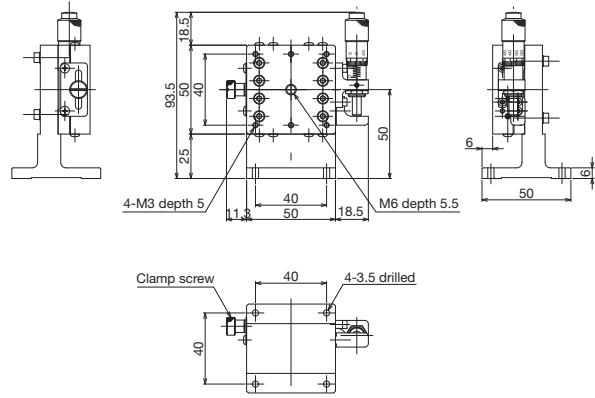
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



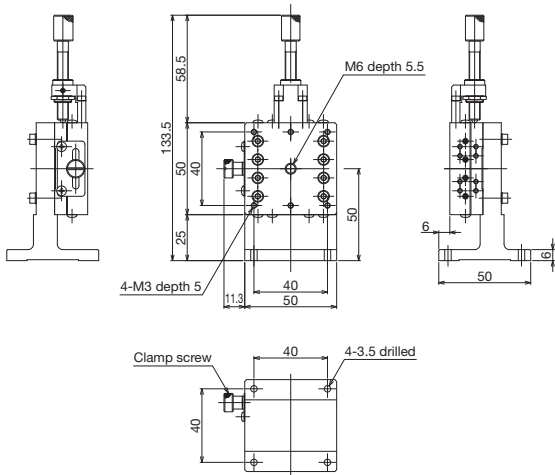
*TLZ-5047-CR1 is a symmetrical type with the same dimensions as TLZ-5047-C1.

↑ TLZ-5047-C1



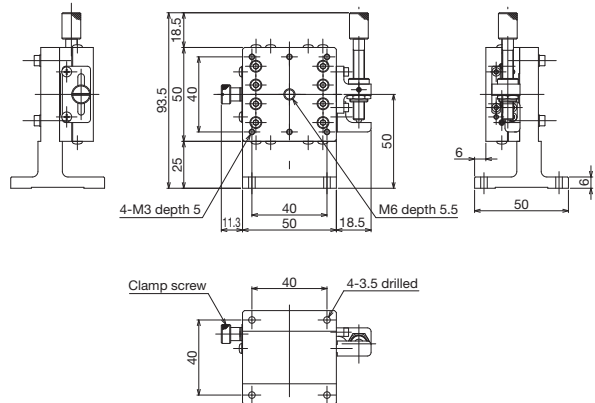
*TLZ-5047-SR1 is a symmetrical type with the same dimensions as TLZ-5047-S1.

↑ TLZ-5047-S1



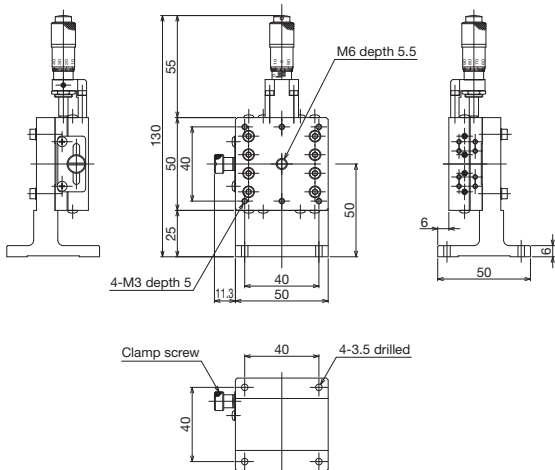
*TLZ-5047-CR6 is a symmetrical type with the same dimensions as TLZ-5047-C6.

↑ TLZ-5047-C6



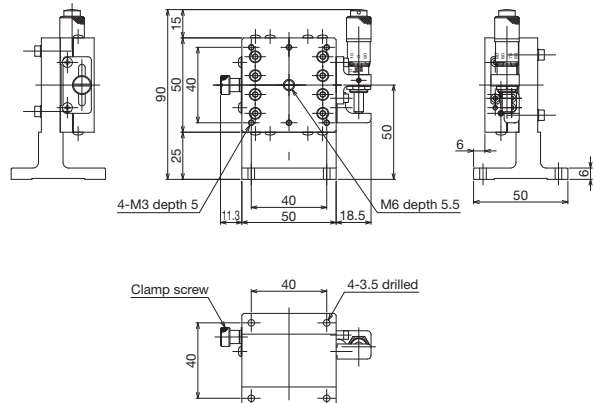
*TLZ-5047-SR6 is a symmetrical type with the same dimensions as TLZ-5047-S6.

↑ TLZ-5047-S6



*TLZ-5047-CR8 is a symmetrical type with the same dimensions as TLZ-5047-C8.

↑ TLZ-5047-C8



*TLZ-5047-SR8 is a symmetrical type with the same dimensions as TLZ-5047-S8.

↑ TLZ-5047-S8

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Like Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

High-Grade Aluminum Z Stages 60 x 60



↑ TLZ-6047-C1



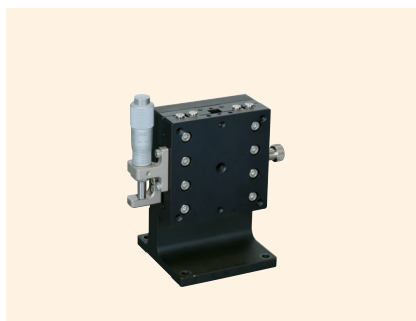
↑ TLZ-6047-S1



↑ TLZ-6047-S6



↑ TLZ-6047-CR1



↑ TLZ-6047-SR1



↑ TLZ-6047-S8

Features

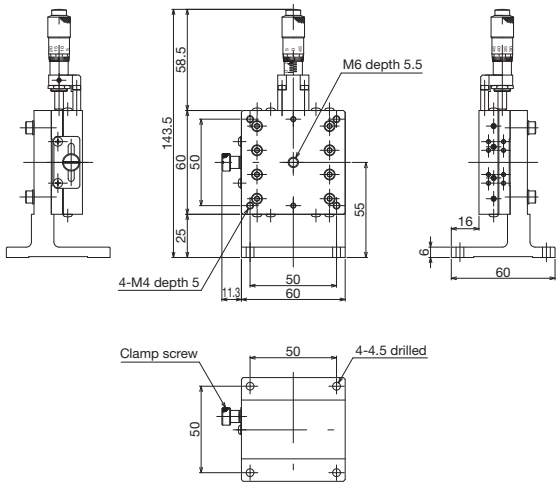
- Adopts an aluminum alloy as the main material and uses the HG-VCR method to achieve both high rigidity and light weight.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (Standard type)	TLZ-6047-C1	TLZ-6047-S1	TLZ-6047-C6	TLZ-6047-S6	TLZ-6047-C8	TLZ-6047-S8
Model number (Symmetrical type)	TLZ-6047-CR1	TLZ-6047-SR1	TLZ-6047-CR6	TLZ-6047-SR6	TLZ-6047-CR8	TLZ-6047-SR8
Model name	High-Grade Aluminum Z Stage 60 x 60					
Travel direction	Z-axis single direction					
Stage surface	60 mm x 60 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical) 0.002 mm Yawing 20 s, pitching 30 s					
Moment rigidity	Yaw rigidity 0.05 s/N-cm, pitch rigidity 0.20 s/N-cm, roll rigidity 0.20 s/N-cm					
Perpendicularity	0.080 mm					
Perpendicularity of motion	0.030 mm					
Load capacity	19.6 N (2 kgf)					
Mass	0.44 kg					
Main materials/surface treatment	Aluminum alloy/black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					



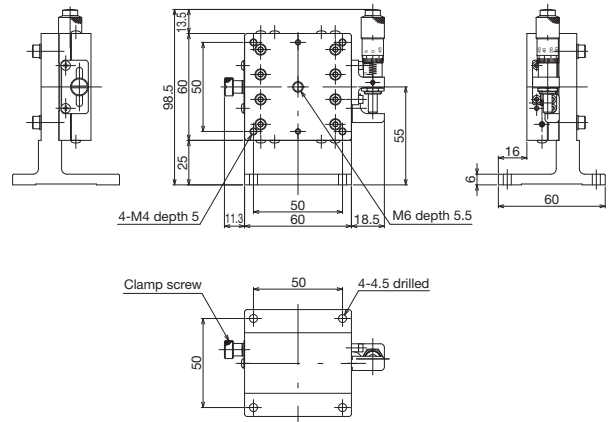
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



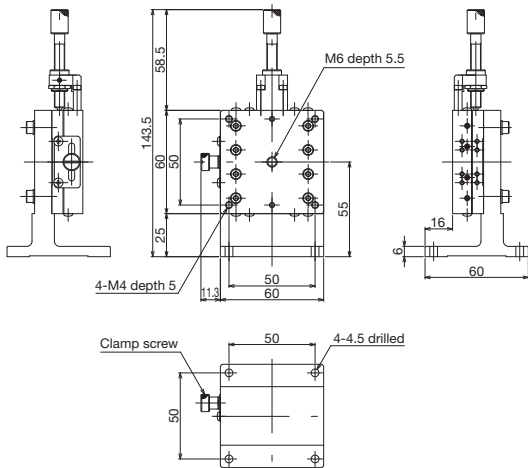
*TLZ-6047-CR1 is a symmetrical type with the same dimensions as TLZ-6047-C1.

↑ TLZ-6047-C1



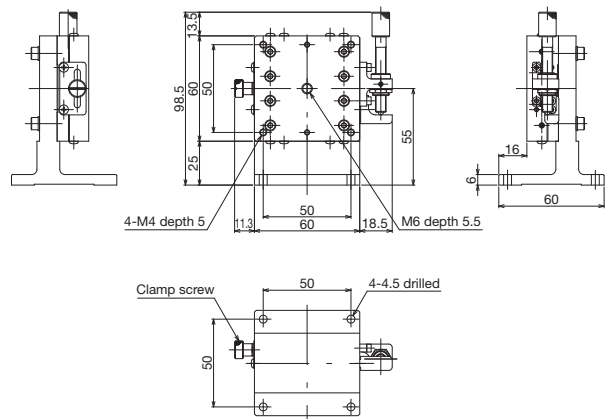
*TLZ-6047-SR1 is a symmetrical type with the same dimensions as TLZ-6047-S1.

↑ TLZ-6047-S1



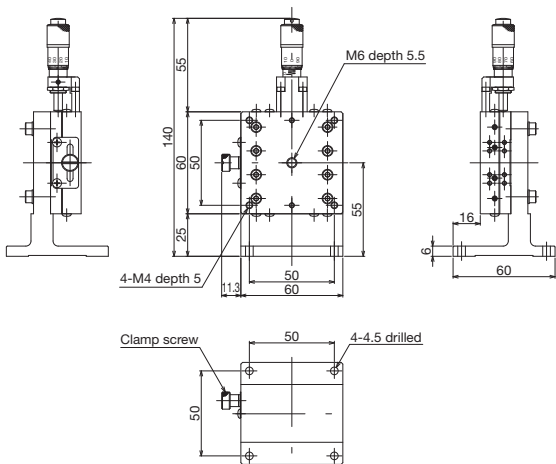
*TLZ-6047-CR6 is a symmetrical type with the same dimensions as TLZ-6047-C6.

↑ TLZ-6047-C6



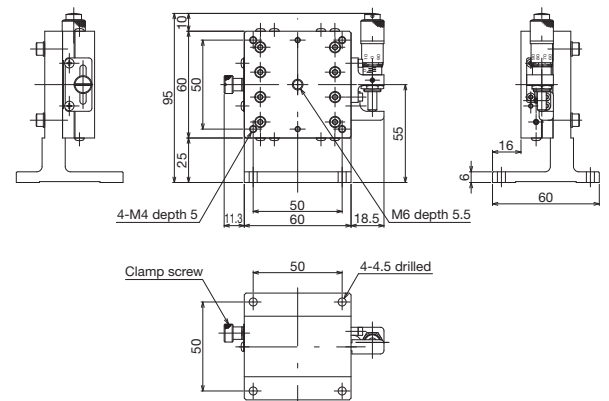
*TLZ-6047-SR6 is a symmetrical type with the same dimensions as TLZ-6047-S6.

↑ TLZ-6047-S6



*TLZ-6047-CR8 is a symmetrical type with the same dimensions as TLZ-6047-C8.

↑ TLZ-6047-C8



*TLZ-6047-SR8 is a symmetrical type with the same dimensions as TLZ-6047-S8.

↑ TLZ-6047-S8

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Like Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

High-Grade Aluminum Z Stages 70 x 70



↑ TLZ-7047-C1



↑ TLZ-7047-S1



↑ TLZ-7047-S6



↑ TLZ-7047-CR1



↑ TLZ-7047-SR1



↑ TLZ-7047-S8

Features

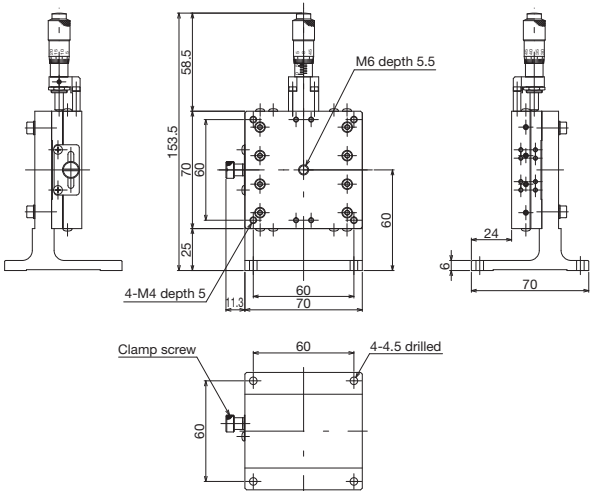
- Adopts an aluminum alloy as the main material and uses the HG-VCR method to achieve both high rigidity and light weight.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (Standard type)	TLZ-7047-C1	TLZ-7047-S1	TLZ-7047-C6	TLZ-7047-S6	TLZ-7047-C8	TLZ-7047-S8
Model number (Symmetrical type)	TLZ-7047-CR1	TLZ-7047-SR1	TLZ-7047-CR6	TLZ-7047-SR6	TLZ-7047-CR8	TLZ-7047-SR8
Model name	High-Grade Aluminum Z Stage 70 x 70					
Travel direction	Z-axis single direction					
Stage surface	70 mm x 70 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical) 0.002 mm Yawing 20 s, pitching 30 s					
Moment rigidity	Yaw rigidity 0.03 s/N-cm, pitch rigidity 0.10 s/N-cm, roll rigidity 0.10 s/N-cm					
Perpendicularity	0.080 mm					
Perpendicularity of motion	0.030 mm					
Load capacity	19.6 N (2 kgf)					
Mass	0.55 kg					
Main materials/surface treatment	Aluminum alloy/black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					



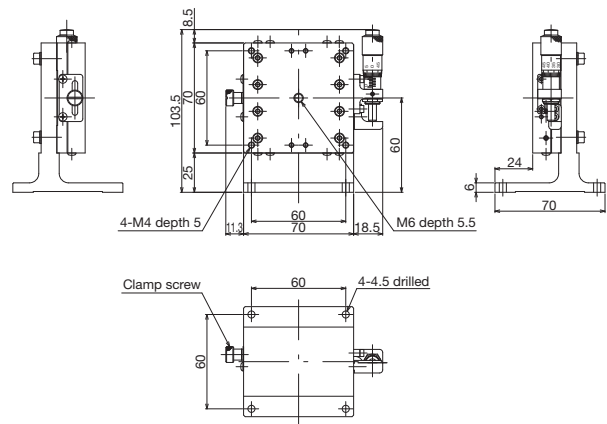
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



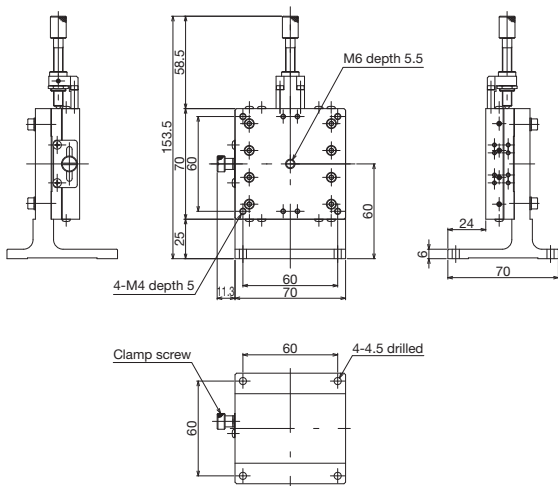
*TLZ-7047-CR1 is a symmetrical type with the same dimensions as TLZ-7047-C1.

↑ TLZ-7047-C1



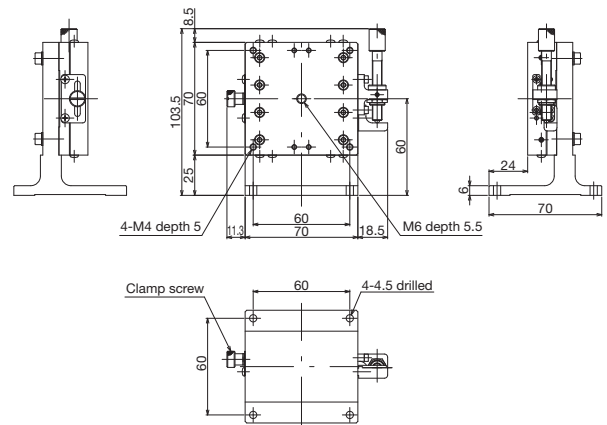
*TLZ-7047-SR1 is a symmetrical type with the same dimensions as TLZ-7047-S1.

↑ TLZ-7047-S1



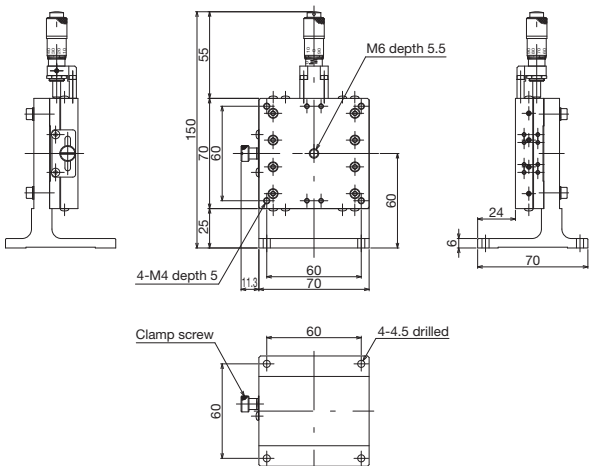
*TLZ-7047-CR6 is a symmetrical type with the same dimensions as TLZ-7047-C6.

↑ TLZ-7047-C6



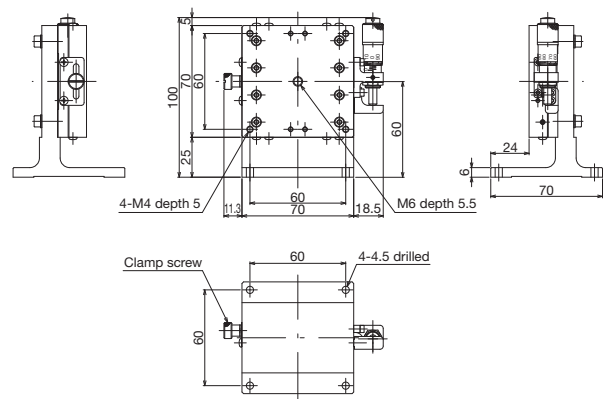
*TLZ-7047-SR6 is a symmetrical type with the same dimensions as TLZ-7047-S6.

↑ TLZ-7047-S6



*TLZ-7047-CR8 is a symmetrical type with the same dimensions as TLZ-7047-C8.

↑ TLZ-7047-C8

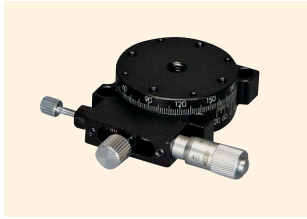


*TLZ-7047-SR8 is a symmetrical type with the same dimensions as TLZ-7047-S8.

↑ TLZ-7047-S8

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin Vθ Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Like Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

High-Grade Rotary Stage ϕ 40, ϕ 50, ϕ 60, ϕ 70



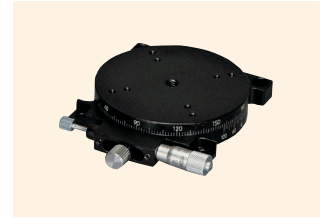
↑ TRS-4012



↑ TRS-6012



↑ TRS-6042



↑ TRS-7012

Features

- Rotary stages capable of coarse and fine feed movement. Standard types and symmetrical types are available for a left-right symmetrical structure.
- A vernier scale is present on both the left and right sides, enabling the position to be read from either side.
- The table surface can be grabbed and rotated with coarse movement 360 degrees. Secure the clamp screw after coarse movement and move with the micrometer head for fine movement.
- The table can also be secured in the desired position by securing both the fine and coarse movement clamps.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (Standard type)	TRS-4012	TRS-5012	TRS-6012	TRS-7012
Model number (Symmetrical type)	TRS-4012-R	TRS-5012-R	TRS-6012-R	TRS-7012-R
Model name	High-Grade Fine Movement Rotary Stage ϕ 40	High-Grade Fine Movement Rotary Stage ϕ 50	High-Grade Fine Movement Rotary Stage ϕ 60	High-Grade Fine Movement Rotary Stage ϕ 70
Travel direction	Rotation direction			
Stage surface	ϕ 39 mm	ϕ 50 mm	ϕ 60 mm	ϕ 70 mm
Clamp method	Compound clamp			
Operating part mounting position	Standard position *-R is the reversed micrometer position			
Fine feed method	CMH-6.5R (standard micrometer)			
Travel amount	Coarse movement 360°, fine movement $\pm 5^\circ$			
Travel amount/1 knob rotation	Approx. 0.99°	Approx. 0.92°	Approx. 0.8°	Approx. 0.7°
Scale	Vernier reading 10'/micrometer 0.01 mm (1 scale marking is approx. 0.020°)	Vernier reading 10'/micrometer 0.01 mm (1 scale marking is approx. 0.018°)	Vernier reading 10'/micrometer 0.01 mm (1 scale marking is approx. 0.016°)	Vernier reading 10'/micrometer 0.01 mm (1 scale marking is approx. 0.014°)
Travel guide	Sliding			
Permissible moment	30 N-cm	40 N-cm	50 N-cm	60 N-cm
Moment rigidity	1.8 s/N-cm	1.6 s/N-cm	1.4 s/N-cm	1.4 s/N-cm
Parallelism	0.02 mm	0.03 mm	0.02 mm	0.03 mm
Circularity	0.05 mm		0.04 mm	
Surface runout	0.02 mm			
Load capacity	14.7 N (1.5 kgf)	19.6 N (2 kgf)	29.4 N (3 kgf)	29.4 N (3 kgf)
Mass	0.07 kg	0.12 kg	0.17 kg	0.21 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

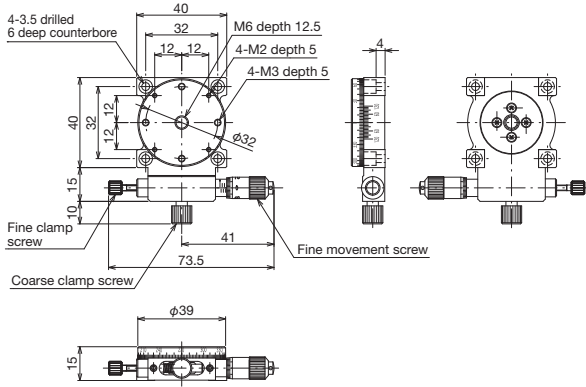
Model number (Standard type)	TRS-6042	TRS-7042
Model number (Symmetrical type)	TRS-6042-R	TRS-7042-R
Model name	High-Grade Fine Movement Rotary Stage ϕ 60 (Cross Roller Bearing)	High-Grade Fine Movement Rotary Stage ϕ 70 (Cross Roller Bearing)
Travel direction	Rotation direction	
Stage surface	ϕ 60 mm	ϕ 70 mm
Clamp method	Compound clamp	
Operating part mounting position	Standard position *-R is the reversed micrometer position	
Fine feed method	CMH-6.5R (standard micrometer)	CEH-13R (standard micrometer)
Travel amount	Coarse movement 360°, fine movement $\pm 4^\circ$	
Travel amount/1 knob rotation	Approx. 0.8°	
Scale	Vernier reading 10'/micrometer 0.01 mm (1 scale marking is approx. 0.016°)	Vernier reading 10'/micrometer 0.01 mm (1 scale marking is approx. 0.012°)
Sensitivity	17"	15"
Travel guide	V-groove and cross rollers	
Permissible moment	150 N-cm	
Moment rigidity	0.8 s/N-cm	
Parallelism	0.03 mm	0.04 mm
Circularity	0.01 mm	
Surface runout	0.015 mm	
Load capacity	98 N (10 kgf)	
Mass	0.22 kg	0.35 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain	



High-Grade Stages ◀ Manual Stages ◀

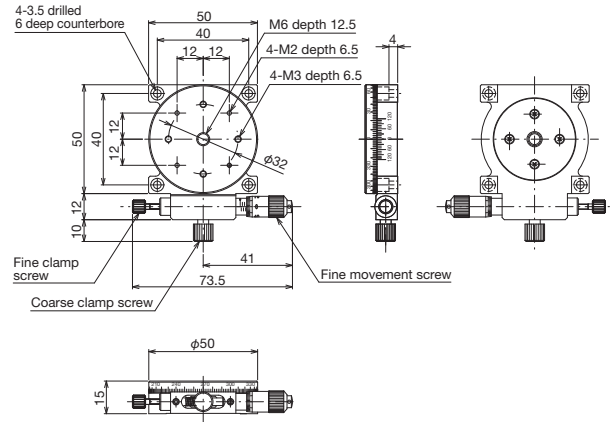
Product Appearance

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Swim Stages, Cross Roller Stages
Z-Lift Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages



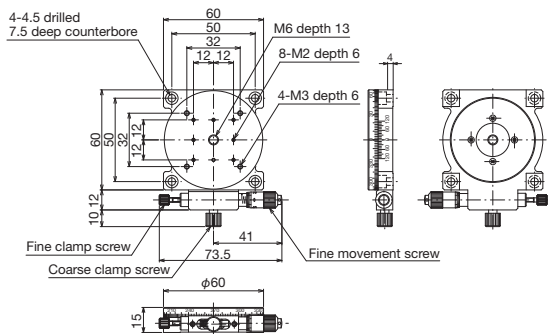
*TRS-4012-R is a symmetrical type with the same dimensions as TRS-4012.

↑ TRS-4012



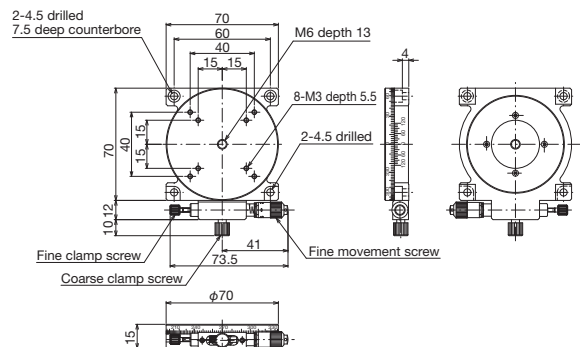
*TRS-5012-R is a symmetrical type with the same dimensions as TRS-5012.

↑ TRS-5012



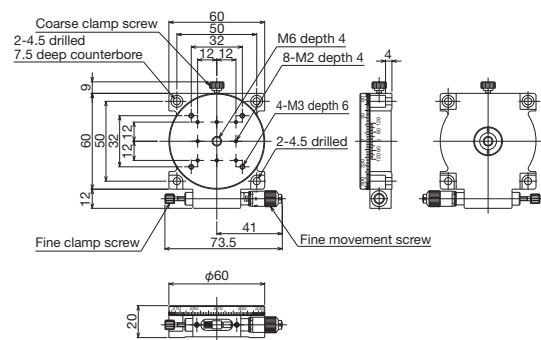
*TRS-6012-R is a symmetrical type with the same dimensions as TRS-6012.

↑ TRS-6012



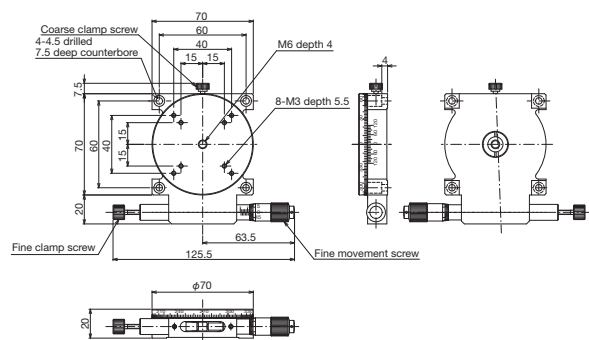
*TRS-7012-R is a symmetrical type with the same dimensions as TRS-7012.

↑ TRS-7012



*TRS-6042-R is a symmetrical type with the same dimensions as TRS-6042.

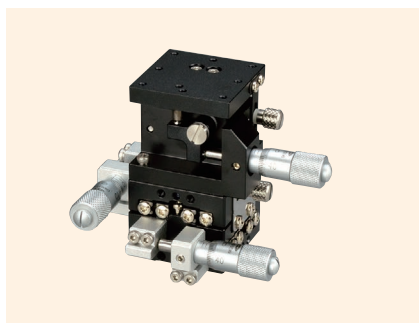
↑ TRS-6042



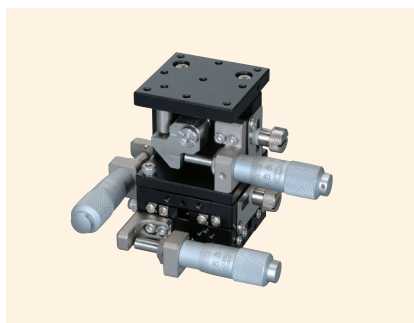
*TRS-7042-R is a symmetrical type with the same dimensions as TRS-7042.

↑ TRS-7042

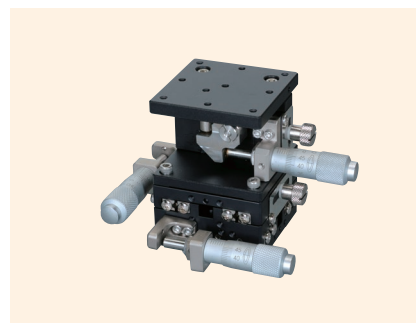
High-Grade Aluminum XYZ Stages 30 x 30, 40 x 40, 50 x 50



↑ TLT-3047-S1



↑ TLT-4047-S1



↑ TLT-5047-S1

Features

- An XYZ stage combining a high-grade aluminum XY stage with a high-grade Z lift stage.
- Standard types and symmetrical types are available for a left–right symmetrical structure.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

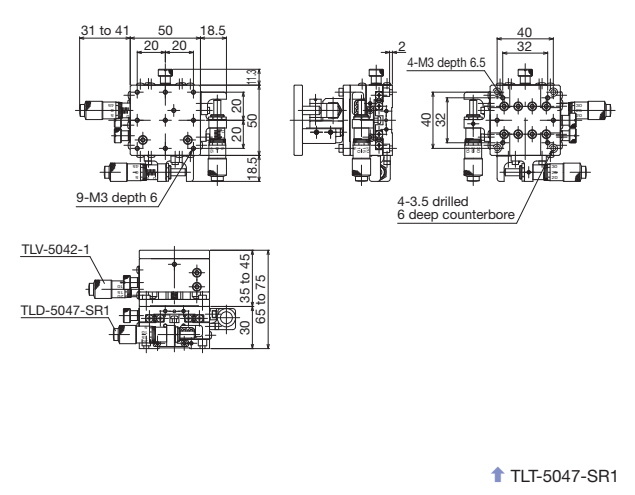
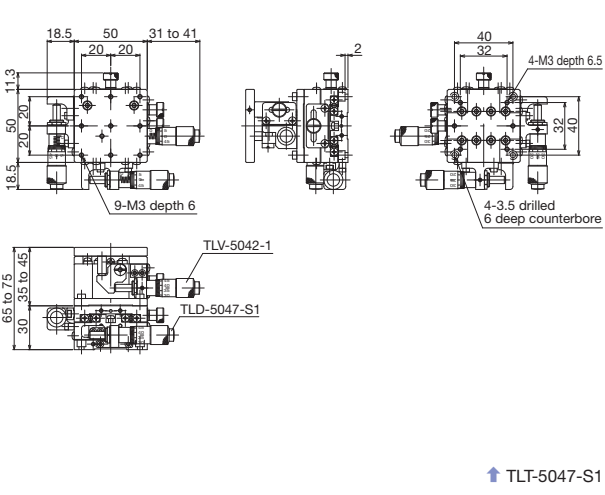
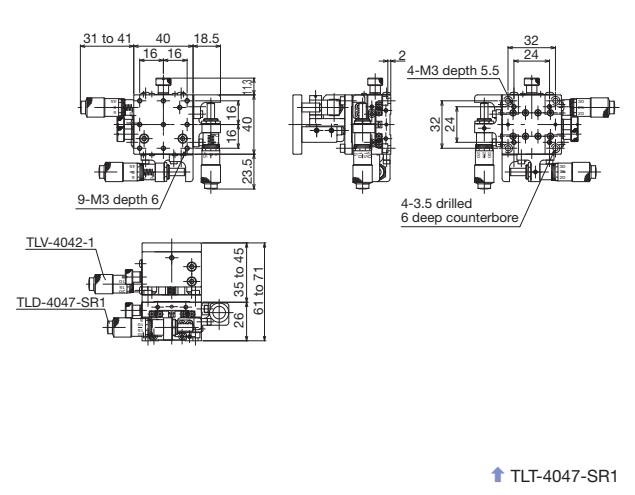
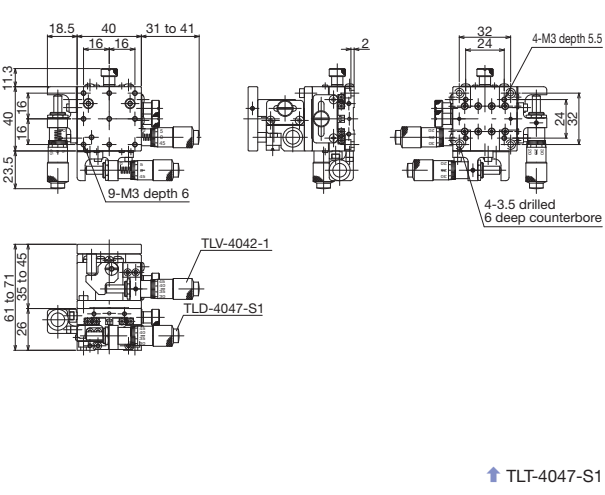
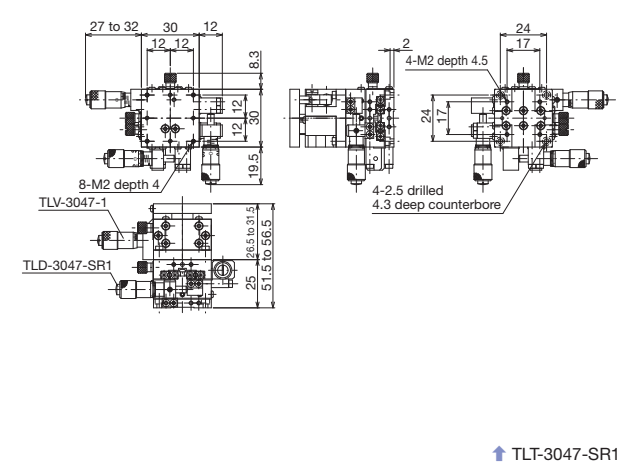
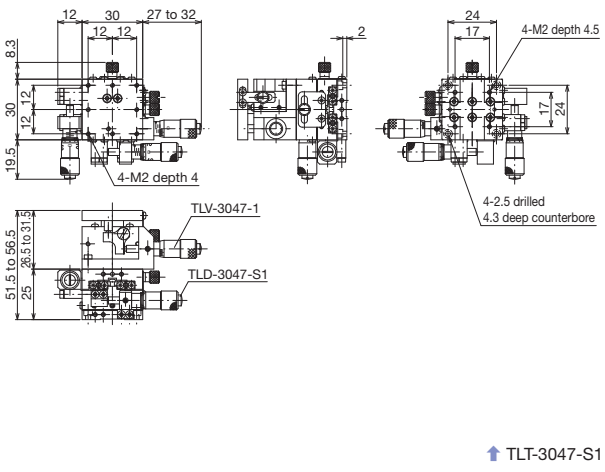
Model number (Standard type)	TLT-3047-S1	TLT-4047-S1	TLT-5047-S1
Model number (Symmetrical type)	TLT-3047-SR1	TLT-4047-SR1	TLT-5047-SR1
Model name	High-Grade Aluminum XYZ Stage 30 x 30	High-Grade Aluminum XYZ Stage 40 x 40	High-Grade Aluminum XYZ Stage 50 x 50
Travel direction	XYZ-axis triple direction		
Stage surface	30 mm x 30 mm	40 mm x 40 mm	50 mm x 50 mm
Clamp method	Plate clamp		
Operating part mounting position	XY axis side *-SR1 is the reverse side to the XY axis		
Travel mechanism/feed method	XY axis CMH-6.5RA, Z axis CMH-6.5F (each axis has a standard micrometer)	CMH-13RM (each axis has a standard micrometer)	
Travel amount	XY axes ±3 mm, Z axis 0 to 5 mm	XY axes ±6.5 mm, Z axis 0 to 10 mm	
Travel amount/1 knob rotation	Each axis 0.5 mm	Each axis 0.5 mm	
Scale	Micrometer 0.01 mm	Micrometer 0.01 mm	
Sensitivity	0.003 mm	0.003 mm	
Travel guide	XY axis HG-VCR (V-groove and cross rollers), Z axis V-groove and cross rollers	HG-VCR method (V-groove and cross rollers)	
Travel accuracy	Straightness: XY axes 0.002 mm, Z axis 0.003 mm		
XY orthogonality	0.01 mm		
Load capacity	14.7 N (1.5 kgf)	29.4 N (3 kgf)	
Mass	0.18 kg	0.43 kg	0.58 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish	XY axis aluminum alloy/black satin anodized finish, Z axis stainless steel, aluminum alloy/black chromium oxide, black satin anodized finish	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

*Z stages do not have left–right symmetry. Check the product appearance for details.



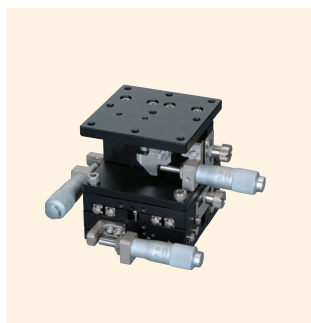
High-Grade Stages ◀ Manual Stages ◀

Product Appearance

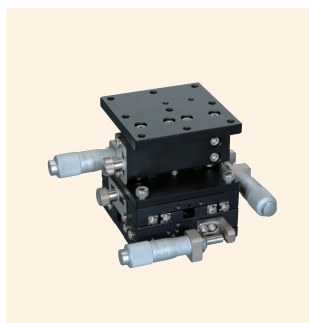


Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin V8 Stages	Rock & Pinion Stages	High-Grade Stages	Swim Stages, Cross Roller Stages	Z-Like Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XYZ Stages
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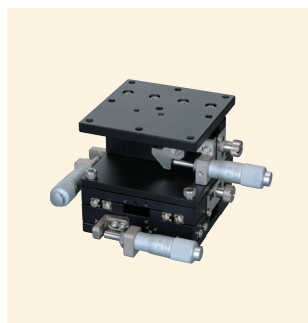
High-Grade Aluminum XYZ Stages 60 x 60, 70 x 70



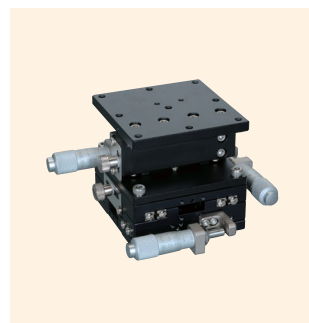
↑ TLT-6047-S1



↑ TLT-6047-SR1



↑ TLT-7047-S1



↑ TLT-7047-SR1

Features

- An XYZ stage combining a high-grade aluminum XY stage with a high-grade Z-lift stage.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

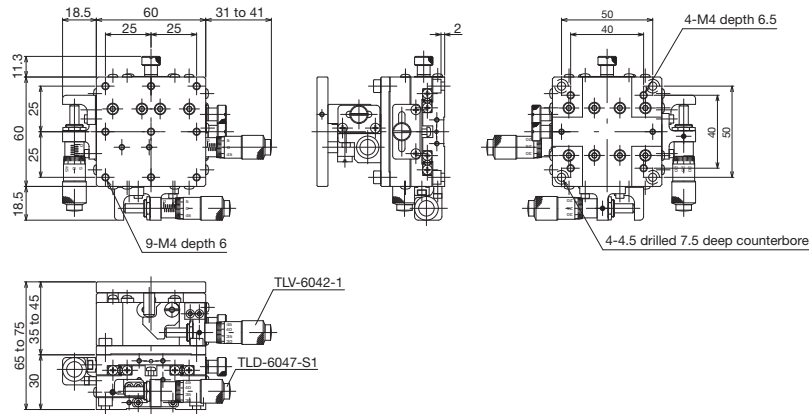
Model number (Standard type)	TLT-6047-S1	TLT-7047-S1
Model number (Symmetrical type)	TLT-6047-SR1	TLT-7047-SR1
Model name	High-Grade Aluminum XYZ Stage 60 x 60	High-Grade Aluminum XYZ Stage 70 x 70
Travel direction	XYZ-axis triple direction	
Stage surface	60 mm x 60 mm	70 mm x 70 mm
Clamp method	Plate clamp	
Operating part mounting position	XY axis side *-SR1 is the reverse side to the XY axis	
Feed method	CMH-13RM (each axis has a standard micrometer)	
Travel amount	XY axes ±6.5 mm, Z axis 0 to 10 mm	
Travel amount/1 knob rotation	Each axis 0.5 mm	
Scale	Micrometer 0.01 mm	
Sensitivity	0.003 mm	
Travel guide	HG-VCR method (V-groove and cross rollers)	
Travel accuracy	Straightness: XY axes 0.002 mm, Z axis 0.003 mm	Straightness: XY axes 0.002 mm, Z axis 0.005 mm
XY orthogonality	0.01 mm	
Load capacity	29.4 N (3 kgf)	
Mass	0.72 kg	0.90 kg
Main materials/surface treatment	XY axis aluminum alloy/black satin anodized finish, Z axis stainless steel, aluminum alloy/black chromium oxide, black satin anodized finish	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain	

*Z stages do not have left-right symmetry. Check the product appearance for details.

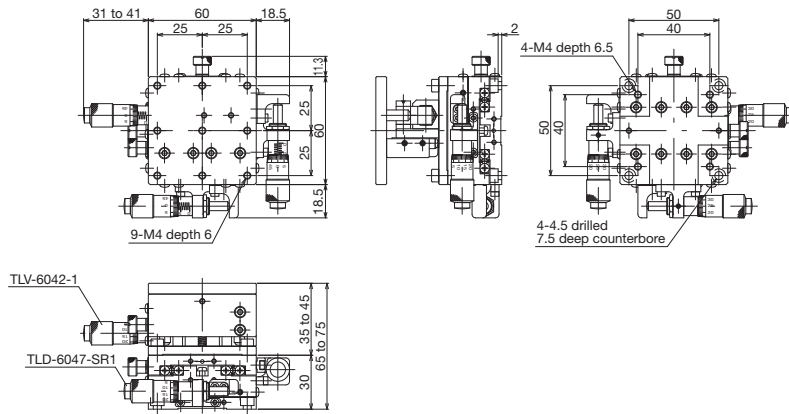


High-Grade Stages ◀ Manual Stages ◀

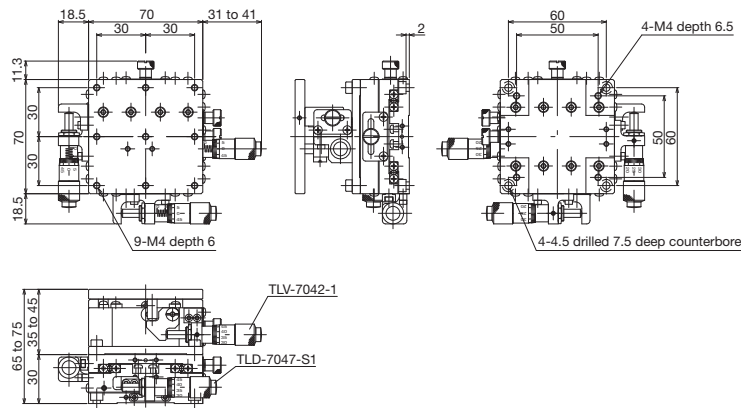
Product Appearance



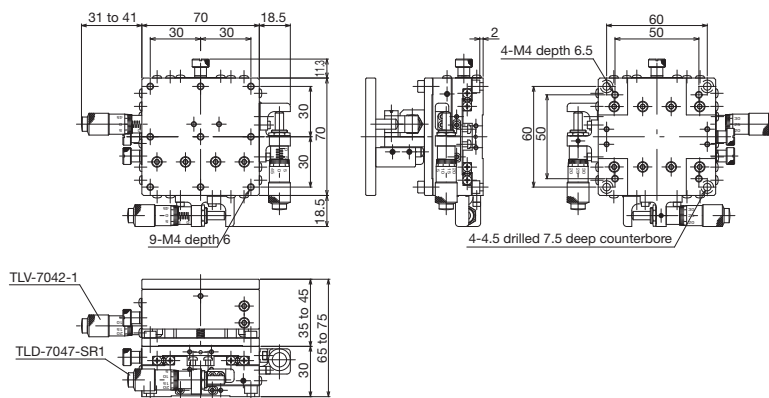
↑ TLT-6047-S1



↑ TLT-6047-SR1



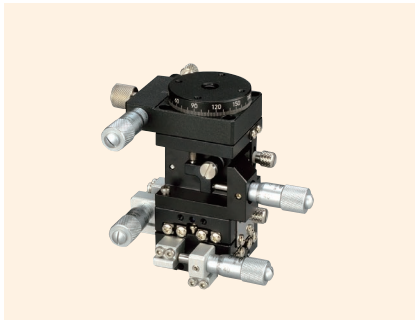
↑ TLT-7047-S1



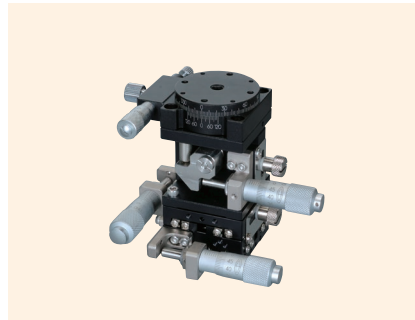
↑ TLT-7047-SR1

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rock & Pinion Stages
High-Grade Stages	Spin Stages, Cross Roller Stages	Z-Like Stages, Z Stages
Rotary Stages	Tilt Stages	Tilt/Rotary Stages
XZ, YZ Stages	XZ Stages	

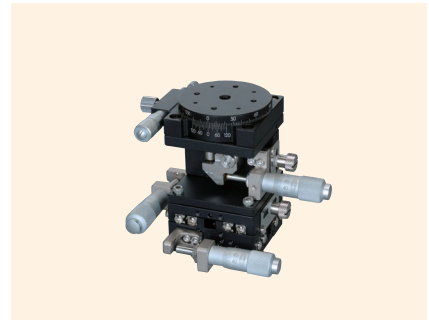
High-Grade Aluminum XYZ Rotary Stages 30 x 30, 40 x 40, 50 x 50



↑ TTR-3047-S1



↑ TTR-4047-S1



↑ TTR-5047-S1

Features

- An XYZ rotary stage combining a high-grade aluminum XY stage with a lightweight Z axis and rotary axis stage.
- Standard types and symmetrical types are available for a left–right symmetrical structure.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (Standard type)	TTR-3047-S1	TTR-4047-S1	TTR-5047-S1
Model number (Symmetrical type)	TTR-3047-SR1	TTR-4047-SR1	TTR-5047-SR1
Model name	High-Grade Aluminum XYZ Rotary Stage 30 x 30	High-Grade Aluminum XYZ Rotary Stage 40 x 40	High-Grade Aluminum XYZ Rotary Stage 50 x 50
Travel direction	XYZ rotary quadruple direction		
Stage surface	φ 30 mm	φ 39 mm	φ 50 mm
Clamp method	XYZ axis plate clamp, rotating axis compound clamp		
Operating part mounting position	XY axis side *-SR1 is the reverse side to the XY axis		
Travel mechanism/ feed method	XY axis CMH-6.5RA, Z axis CMH-6.5F, rotating axis CMH-6.5RA (each axis has a standard micrometer)	XYZ axis CMH-13RM, rotating axis CMH-6.5RA (each axis has a standard micrometer)	
Travel amount	XY axes ±3 mm, Z axis 0 to 5 mm, rotating axis moves 360° with coarse movement and ±5° with fine movement	XY axes ±6.5 mm, Z axis 0 to 10 mm, rotating axis moves 360° with coarse movement and ±5° with fine movement	
Travel amount/1 knob rotation	XYZ axes 0.5 mm, rotating axis moves approx. 1.36°	XYZ axes 0.5 mm, rotating axis moves approx. 0.99°	XYZ axes 0.5 mm, rotating axis moves approx. 0.92°
Scale	XYZ axis - micrometer 0.01 mm, rotating axis scale reading 2°/micrometer 0.01 mm (1 scale marking is approx. 0.027°)	XYZ axis micrometer 0.01 mm, rotating axis vernier reading 10°/micrometer 0.01 mm (1 scale marking is approx. 0.020°)	XYZ axis micrometer 0.01 mm, rotating axis vernier reading 10°/micrometer 0.01 mm (1 scale marking is approx. 0.018°)
Sensitivity	XYZ axes 0.003 mm		
Travel guide	XY axis HG-VCR (V-groove and cross rollers), Z axis V-groove and cross rollers, rotating axis, sliding	XYZ axis HG-VCR (V-groove and cross rollers), rotating axis, sliding	
Travel accuracy	Straightness: XY axes 0.002 mm, Z axis 0.003 mm, Circularity: rotating axis 0.02 mm, Surface runout: rotating axis 0.02 mm	Straightness: XY axes 0.002 mm, Z axis 0.003 mm, Circularity: rotating axis 0.05 mm, Surface runout: rotating axis 0.02 mm	
XY orthogonality	0.01 mm		
Load capacity	9.8 N (1 kgf)	14.7 N (1.5 kgf)	19.6 N (2 kgf)
Mass	0.28 kg	0.50 kg	0.70 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish	XY rotary axis aluminum alloy/black satin anodized finish, Z axis stainless steel, aluminum alloy/black chromium oxide, black satin anodized finish	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

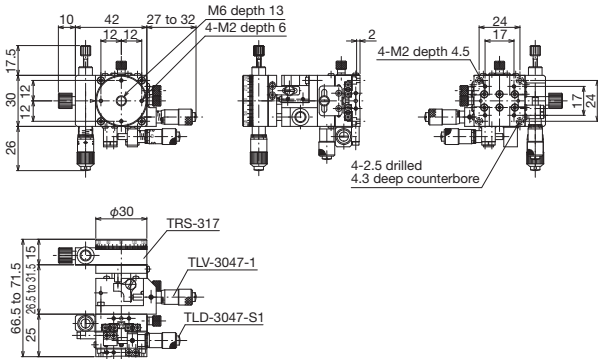
*Z stages do not have left–right symmetry. Check the product appearance for details.



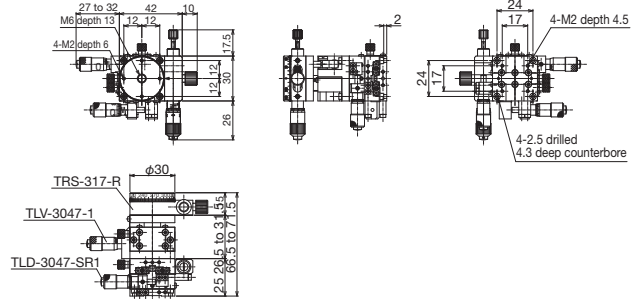
High-Grade Stages ◀ Manual Stages ◀

Product Appearance

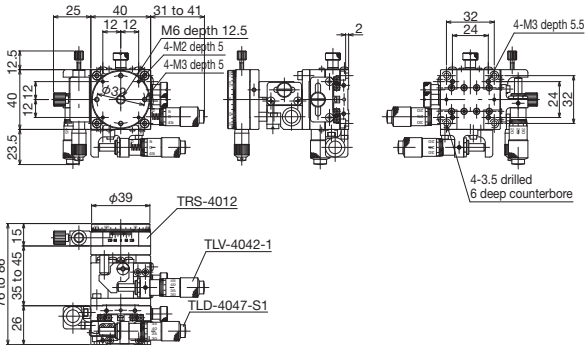
Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Swim Stages, Cross Roller Stages
Z-Like Stages
Rotary Stages
TTR Stages
TTR/Rotary Stages
XZ, YZ Stages
XYZ Stages



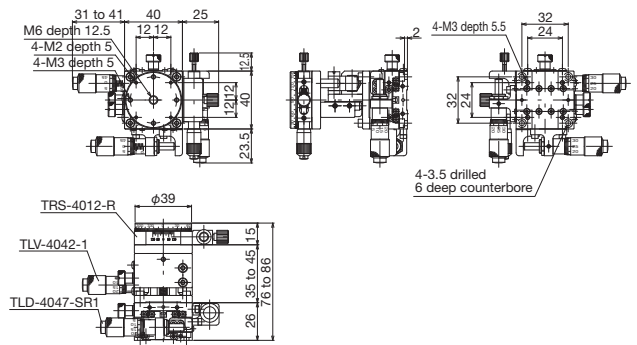
↑ TTR-3047-S1



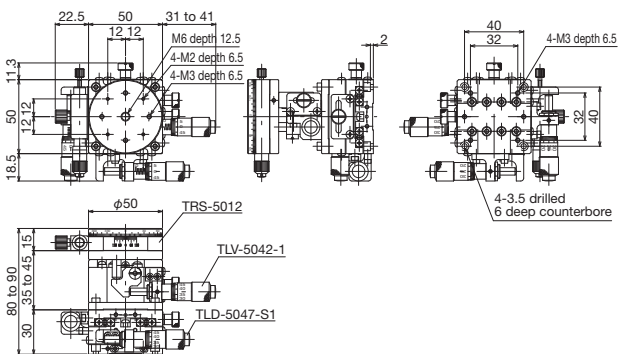
↑ TTR-3047-SR1



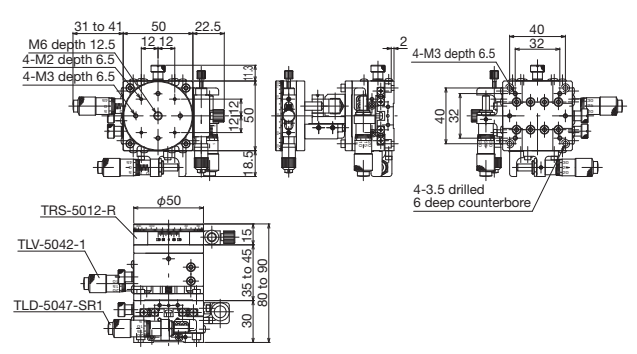
↑ TTR-4047-S1



↑ TTR-4047-SR1



↑ TTR-5047-S1

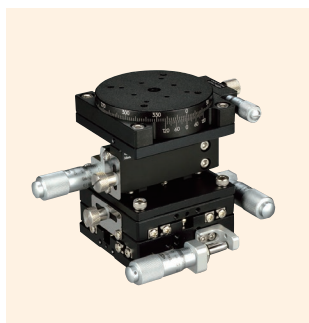


↑ TTR-5047-SR1

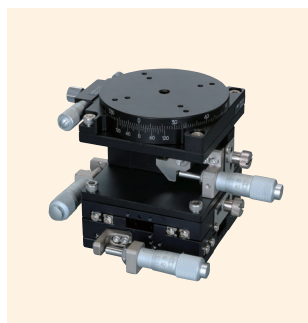
High-Grade Aluminum XYZ Rotary Stages 60 x 60, 70 x 70



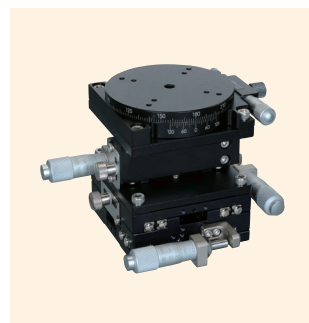
↑ TTR-6047-S1



↑ TTR-6047-SR1



↑ TTR-7047-S1



↑ TTR-7047-SR1

Features

- An XYZ stage combining a high-grade aluminum XY stage with a high-grade Z lift stage and fine rotary movement stage.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

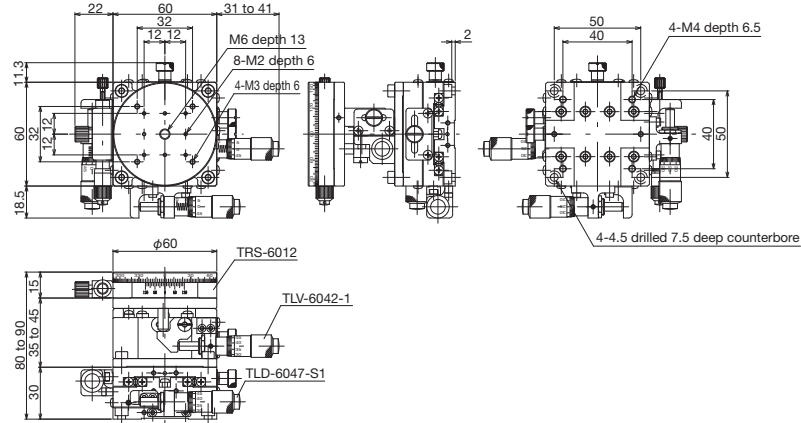
Model number (Standard type)	TTR-6047-S1	TTR-7047-S1
Model number (Symmetrical type)	TTR-6047-SR1	TTR-7047-SR1
Model name	High-Grade Aluminum XYZ Rotary Stage 60 x 60	High-Grade Aluminum XYZ Rotary Stage 70 x 70
Travel direction	XYZ rotary quadruple direction	
Stage surface	φ 60 mm	φ 70 mm
Clamp method	XYZ axis plate clamp, rotating axis compound clamp	
Operating part mounting position	XY axis side *-SR1 is the reverse side to the XY axis	
Feed method	XYZ axis CMH-13RM, rotating axis CMH-6.5RA (each axis has a standard micrometer)	
Travel amount	XY axes ±6.5 mm, Z axis 0 to 10 mm, rotating axis moves 360° with coarse movement and ±5° with fine movement	
Travel amount/1 knob rotation	XYZ axes 0.5 mm, rotating axis moves approx. 0.80°	XYZ axes 0.5 mm, rotating axis moves approx. 0.70°
Scale	XYZ axis micrometer 0.01 mm, rotating axis vernier reading 10'/micrometer 0.01 mm (1 scale marking is approx. 0.016°)	XYZ axis micrometer 0.01 mm, rotating axis vernier reading 10'/micrometer 0.01 mm (1 scale marking is approx. 0.014°)
Sensitivity	XYZ axes 0.003 mm	
Travel guide	XYZ axis HG-VCR (V-groove and cross rollers), rotating axis, sliding	
Travel accuracy	Straightness: XY axes 0.002 mm, Z axis 0.003 mm, Circularity: rotating axis 0.04 mm, Surface runout: rotating axis 0.02 mm	Straightness: XY axes 0.002 mm, Z axis 0.005 mm, Circularity: rotating axis 0.04 mm, Surface runout: rotating axis 0.02 mm
XY orthogonality	0.01 mm	
Load capacity	29.4 N (3 kgf)	
Mass	0.89 kg	1.11 kg
Main materials/surface treatment	XY rotary axis aluminum alloy/black satin anodized finish, Z axis stainless steel, aluminum alloy/black chromium oxide, black satin anodized finish	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain	

*Z stages do not have left-right symmetry. Check the product appearance for details.

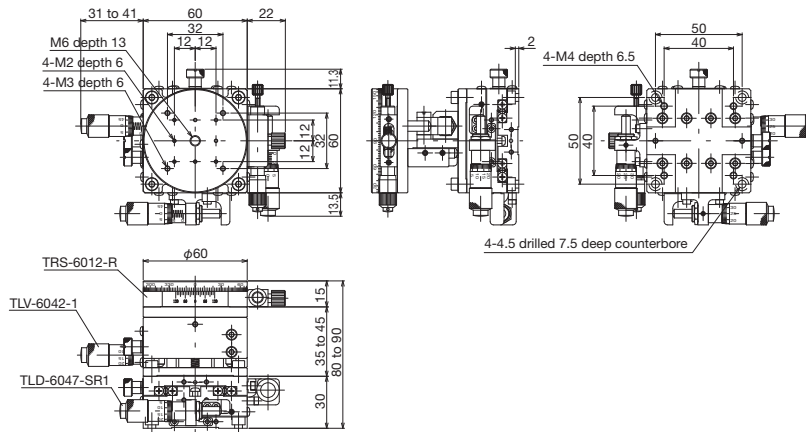


High-Grade Stages ◀ Manual Stages ◀

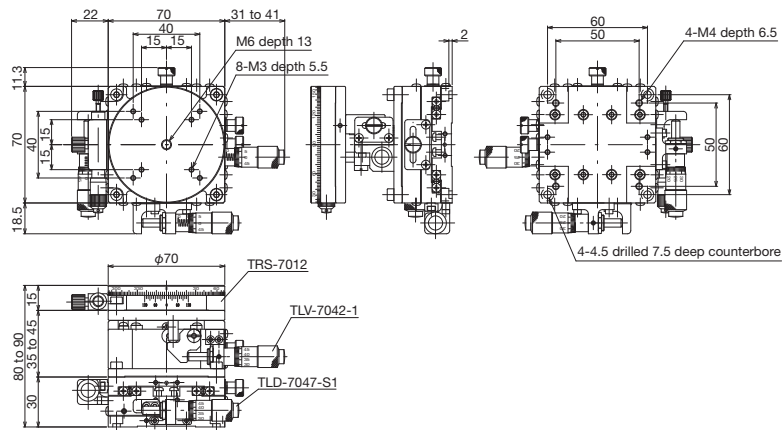
Product Appearance



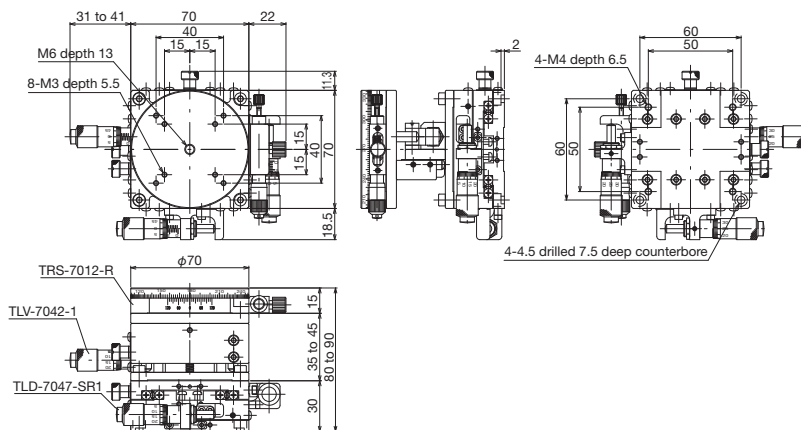
↑ TTR-6047-S1



↑ TTR-6047-SR1



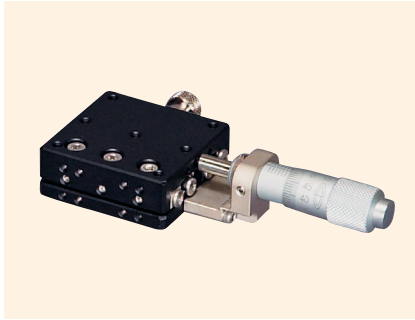
↑ TTR-7047-S1



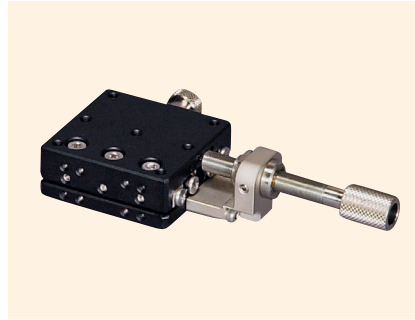
↑ TTR-7047-SR1

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rack & Pinion Stages
High-Grade Stages	Swim Stages, Cross Roller Stages	Z-Like Stages, Z Stages
Rotary Stages	TTR Stages	TTR Rotary Stages
XZ, YZ Stages	XZ, YZ Stages	XZ, YZ Stages

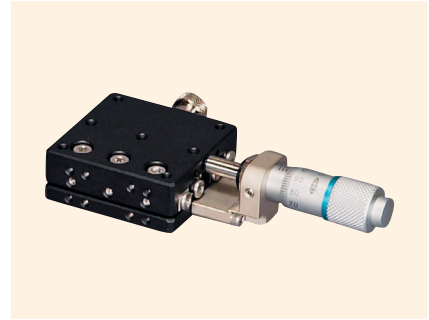
High-Grade X Stages 40 x 40 (Stainless Steel)



↑ TLS-4042-C1



↑ TLS-4042-C6



↑ TLS-4042-C8



↑ TLS-4042-S1



↑ TLS-4042-S6



↑ TLS-4042-S8

Features

- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

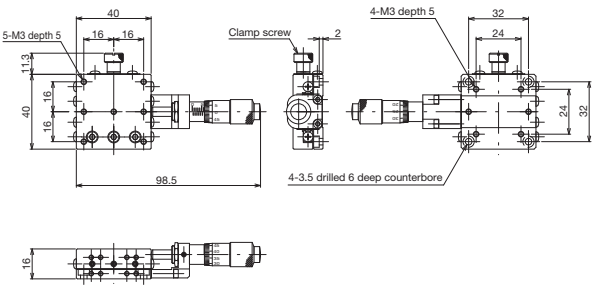
Model number (standard)	TLS-4042-C1	TLS-4042-S1	TLS-4042-C6	TLS-4042-S6	TLS-4042-C8	TLS-4042-S8
Model number (symmetrical)	TLS-4042-CR1	TLS-4042-SR1	TLS-4042-CR6	TLS-4042-SR6	TLS-4042-CR8	TLS-4042-SR8
Model name	High-Grade X Stage 40 x 40					
Travel direction	X-axis single direction					
Stage surface	40 mm x 40 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yawing 15 s, pitching 25 s					
Permissible moment load	Yaw 500 N-cm, pitch 500 N-cm, roll 500 N-cm					
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm					
Parallelism	0.015 mm					
Parallelism of motion	0.007 mm					
Load capacity	98 N (10 kgf)					
Mass	0.2 kg					
Main materials/surface treatment	Stainless steel/black oxide chrome					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					

Motorized Stages
 Automated Products for Microscopes
 Manual Stages
 FX Stages
 Thin VB Stages
 Rack & Pinion Stages
 High-Grade Stages
 Slim Stages, Cross Roller Stages
 Z Lin Stages
 Rotary Stages
 Tilt Stages
 Tilt/Rotary Stages
 XZ, YZ Stages
 XYZ Stages



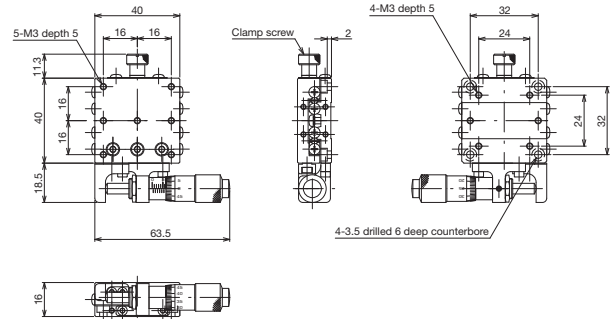
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



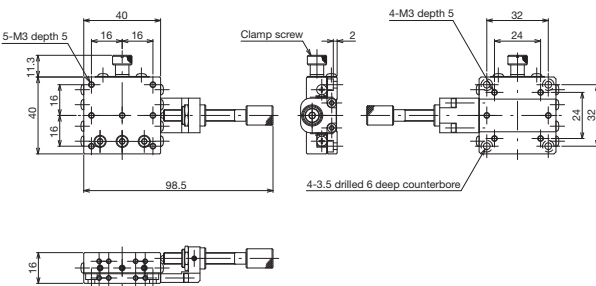
*TLS-4042-CR1 is a symmetrical type with the same dimensions as TLS-4042-C1.

↑ TLS-4042-C1



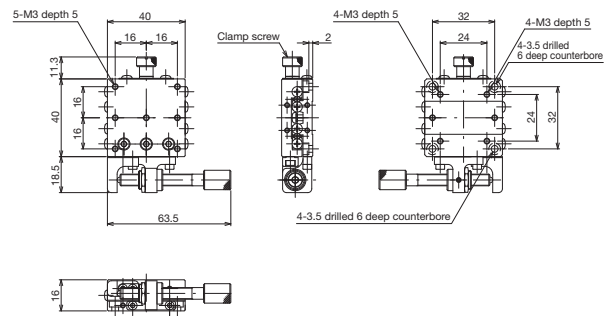
*TLS-4042-SR1 is a symmetrical type with the same dimensions as TLS-4042-S1.

↑ TLS-4042-S1



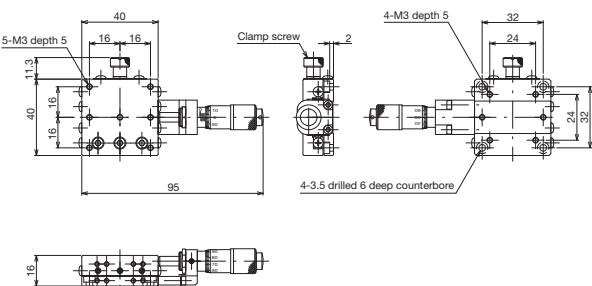
*TLS-4042-CR6 is a symmetrical type with the same dimensions as TLS-4042-C6.

↑ TLS-4042-C6



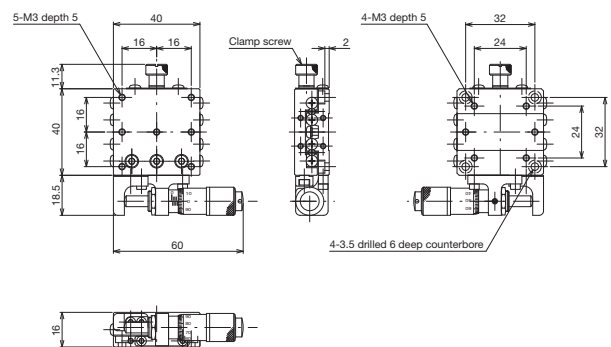
*TLS-4042-SR6 is a symmetrical type with the same dimensions as TLS-4042-S6.

↑ TLS-4042-S6



*TLS-4042-CR8 is a symmetrical type with the same dimensions as TLS-4042-C8.

↑ TLS-4042-C8



*TLS-4042-SR8 is a symmetrical type with the same dimensions as TLS-4042-S8.

↑ TLS-4042-S8

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin V8 Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Like Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

High-Grade X Stages 40 x 40 (Stainless Steel)



↑ TLS-4042-S1-2



↑ TLS-4042-S6-2



↑ TLS-4042-S8-2



↑ TLS-4042-SR1-2



↑ TLS-4042-SR6-2



↑ TLS-4042-SR8-2

Features

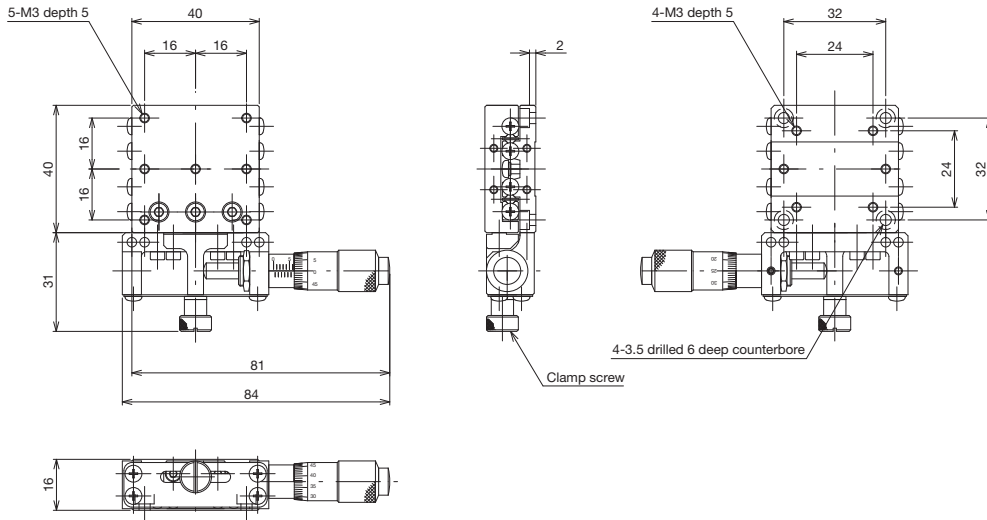
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Clamp method is an operator side plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (Standard type)	TLS-4042-S1-2	TLS-4042-S6-2	TLS-4042-S8-2
Model number (Symmetrical type)	TLS-4042-SR1-2	TLS-4042-SR6-2	TLS-4042-SR8-2
Model name	High-Grade X Stage 40 x 40		
Travel direction	X-axis single direction		
Stage surface	40 mm x 40 mm		
Clamp method	Operator side plate clamp (capable of feeding and clamping the stage on the same surface)		
Operating part mounting position	Side		
Feed method	CMH-13RM (standard micrometer)	Feed screw P=0.5 mm	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm		±3 mm
Travel amount/1 knob rotation	0.5 mm		0.1 mm
Scale	Micrometer 0.01 mm	-	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm
Travel guide	HG-VCR (V-groove and cross rollers)		
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yawing 15 s, pitching 25 s		
Permissible moment load	Yaw 500 N-cm, pitch 500 N-cm, roll 500 N-cm		
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm		
Parallelism	0.015 mm		
Parallelism of motion	0.007 mm		
Load capacity	98 N (10 kgf)		
Mass	0.2 kg		
Main materials/surface treatment	Stainless steel/black oxide chrome		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

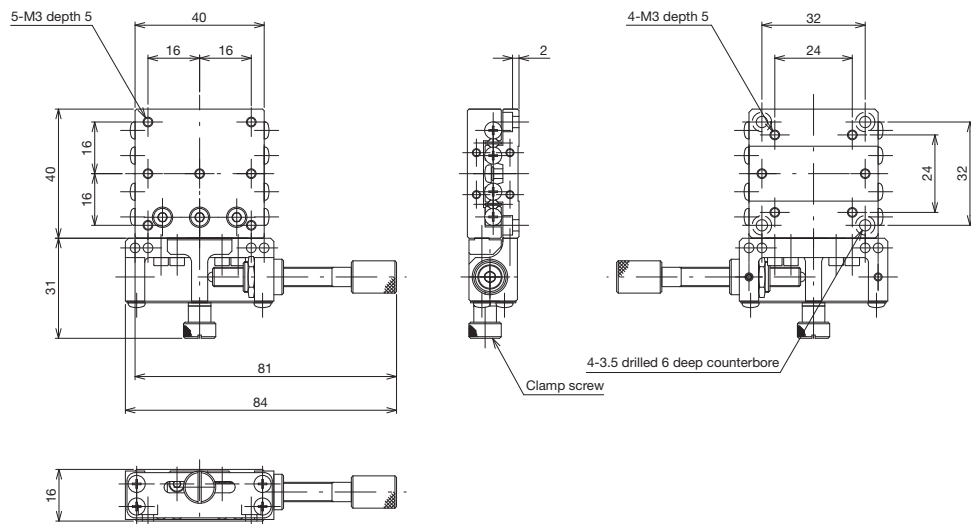


High-Grade Stages ◀ Manual Stages ◀

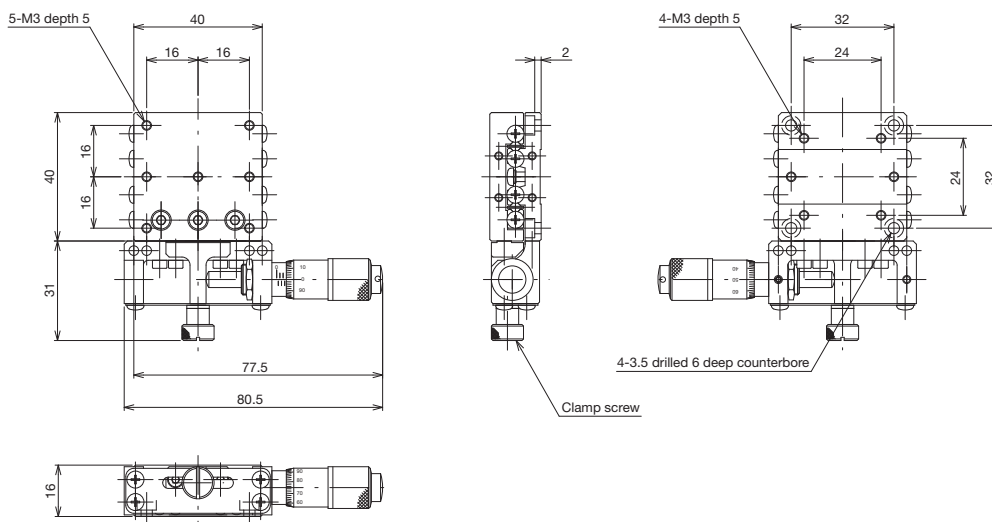
Product Appearance



*TLS-4042-SR1-2 is a symmetrical type with the same dimensions as TLS-4042-S1-2. [↑ TLS-4042-S1-2](#)



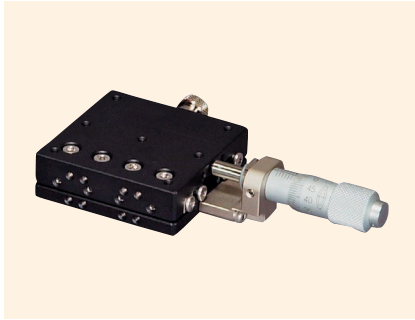
*TLS-4042-SR6-2 is a symmetrical type with the same dimensions as TLS-4042-S6-2. [↑ TLS-4042-S6-2](#)



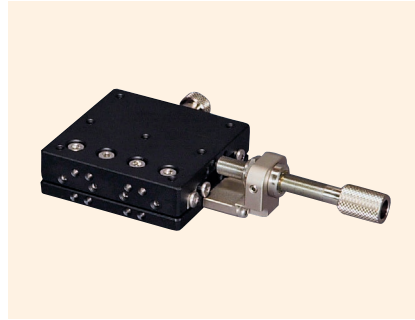
*TLS-4042-SR8-2 is a symmetrical type with the same dimensions as TLS-4042-S8-2. [↑ TLS-4042-S8-2](#)

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Like Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

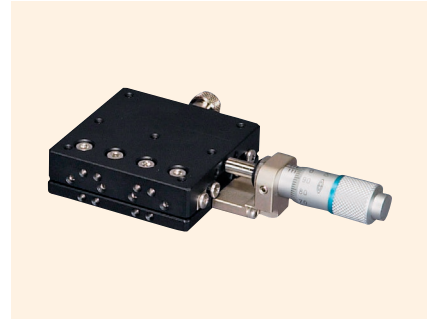
High-Grade X Stages 50 x 50 (Stainless Steel)



↑ TLS-5042-C1



↑ TLS-5042-C6



↑ TLS-5042-C8



↑ TLS-5042-S1



↑ TLS-5042-S6



↑ TLS-5042-S8

Features

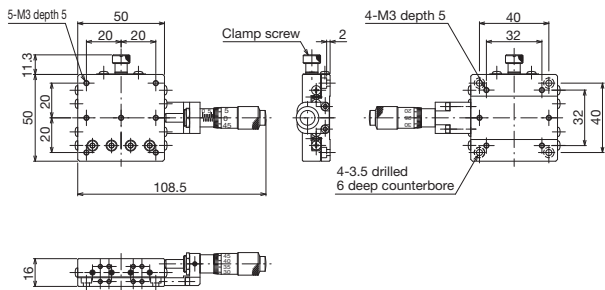
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (Standard type)	TLS-5042-C1	TLS-5042-S1	TLS-5042-C6	TLS-5042-S6	TLS-5042-C8	TLS-5042-S8
Model number (Symmetrical type)	TLS-5042-CR1	TLS-5042-SR1	TLS-5042-CR6	TLS-5042-SR6	TLS-5042-CR8	TLS-5042-SR8
Model name	High-Grade X Stage 50 x 50					
Travel direction	X-axis single direction					
Stage surface	50 mm x 50 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yawing 15 s, pitching 25 s					
Permissible moment load	Yaw 800 N-cm, pitch 800 N-cm, roll 800 N-cm					
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm					
Parallelism	0.015 mm					
Parallelism of motion	0.007 mm					
Load capacity	147 N (15 kgf)					
Mass	0.3 kg					
Main materials/surface treatment	Stainless steel/black oxide chrome					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					



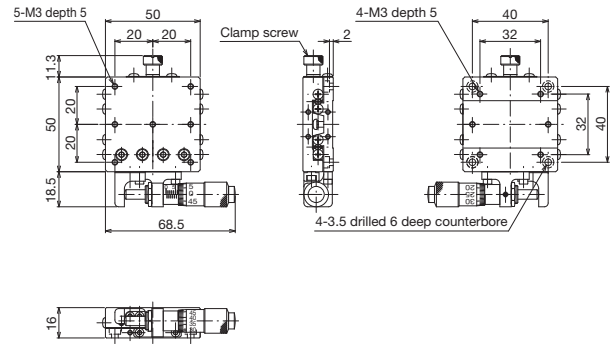
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



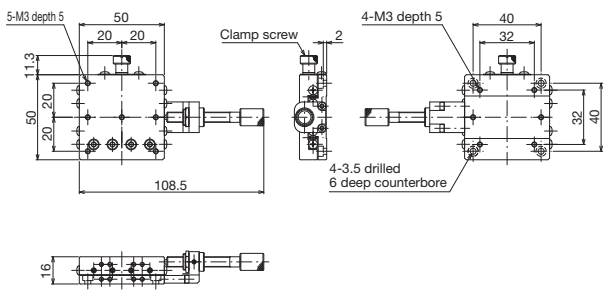
*TLS-5042-CR1 is a symmetrical type with the same dimensions as TLS-5042-C1.

↑ TLS-5042-C1



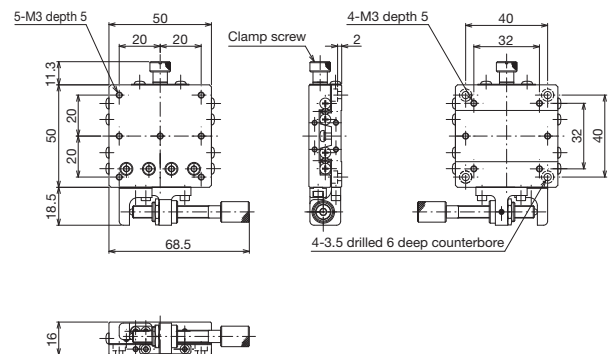
*TLS-5042-SR1 is a symmetrical type with the same dimensions as TLS-5042-S1.

↑ TLS-5042-S1



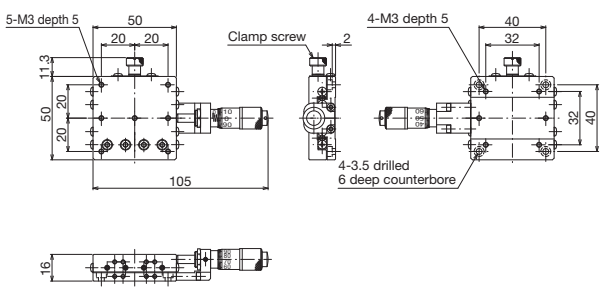
*TLS-5042-CR6 is a symmetrical type with the same dimensions as TLS-5042-C6.

↑ TLS-5042-C6



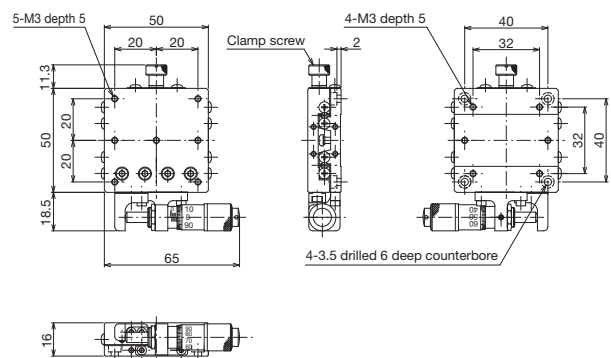
*TLS-5042-SR6 is a symmetrical type with the same dimensions as TLS-5042-S6.

↑ TLS-5042-S6



*TLS-5042-CR8 is a symmetrical type with the same dimensions as TLS-5041-C8.

↑ TLS-5042-C8



*TLS-5042-SR8 is a symmetrical type with the same dimensions as TLS-5042-S8.

↑ TLS-5042-S8

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin V8 Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Like Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

High-Grade X Stages 50 x 50 (Stainless Steel)



↑ TLS-5042-S1-2



↑ TLS-5042-S6-2



↑ TLS-5042-S8-2



↑ TLS-5042-SR1-2



↑ TLS-5042-SR6-2



↑ TLS-5042-SR8-2

Features

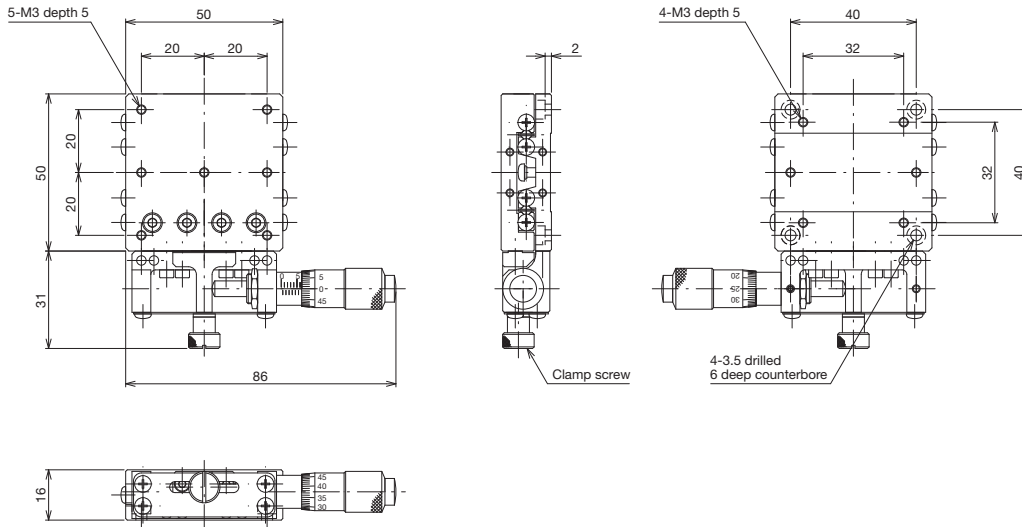
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Clamp method is an operator side plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (Standard type)	TLS-5042-S1-2	TLS-5042-S6-2	TLS-5042-S8-2
Model number (Symmetrical type)	TLS-5042-SR1-2	TLS-5042-SR6-2	TLS-5042-SR8-2
Model name	High-Grade X Stage 50 x 50		
Travel direction	X-axis single direction		
Stage surface	50 mm x 50 mm		
Clamp method	Operator side plate clamp (capable of feeding and clamping the stage on the same surface)		
Operating part mounting position	Side		
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm		±3 mm
Travel amount/1 knob rotation	0.5 mm		0.1 mm
Scale	Micrometer 0.01 mm	-	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm
Travel guide	HG-VCR (V-groove and cross rollers)		
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yawing 15 s, pitching 25 s		
Permissible moment load	Yaw 800 N-cm, pitch 800 N-cm, roll 800 N-cm		
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm		
Parallelism	0.015 mm		
Parallelism of motion	0.007 mm		
Load capacity	147 N (15 kgf)		
Mass	0.3 kg		
Main materials/surface treatment	Stainless steel/black oxide chrome		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

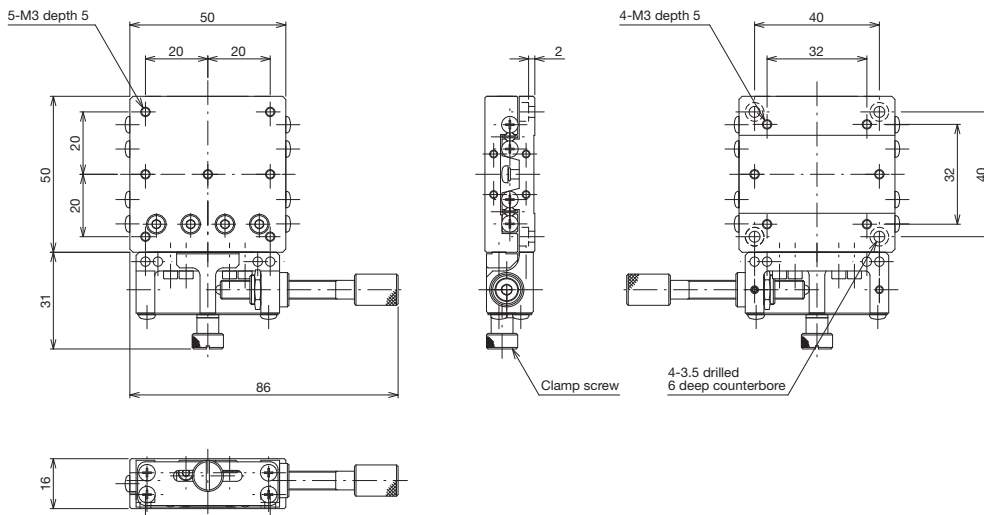


High-Grade Stages ◀ Manual Stages ◀

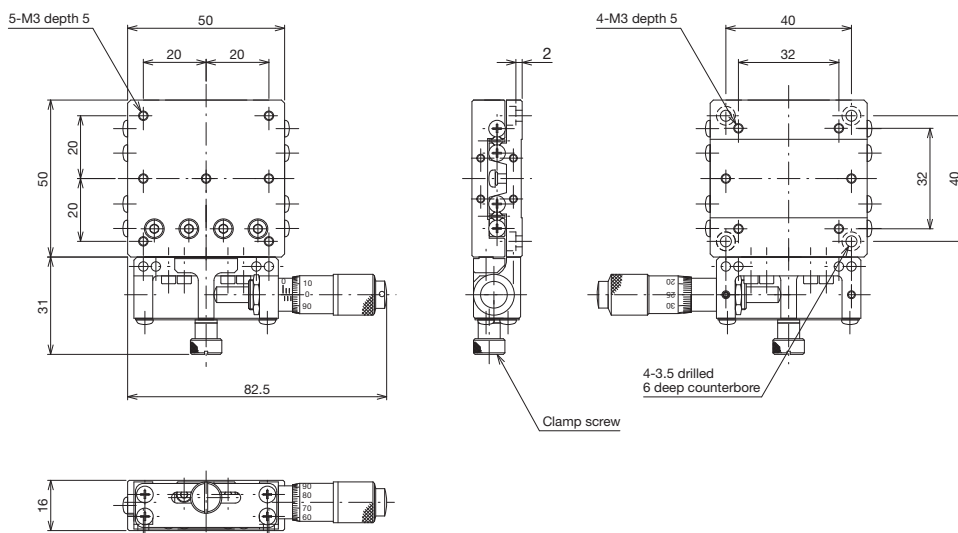
Product Appearance



*TLS-5042-SR1-2 is a symmetrical type with the same dimensions as TLS-5042-S1-2. [↑ TLS-5042-S1-2](#)



*TLS-5042-SR6-2 is a symmetrical type with the same dimensions as TLS-5042-S6-2. [↑ TLS-5042-S6-2](#)



*TLS-5042-SR8-2 is a symmetrical type with the same dimensions as TLS-5042-S8-2. [↑ TLS-5042-S8-2](#)

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fx Stages	Thin Vθ Stages	Rack & Pinion Stages	High-Grade Stages	Spin Stages, Cross Roller Stages	Z-Lin Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XYZ Stages
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High-Grade X Stages 60 x 60 (Stainless Steel)



↑ TLS-6042-C1



↑ TLS-6042-C6



↑ TLS-6042-C7



↑ TLS-6042-C8



↑ TLS-6042-CR1



↑ TLS-6042-CR6



↑ TLS-6042-CR7



↑ TLS-6042-CR8

Features

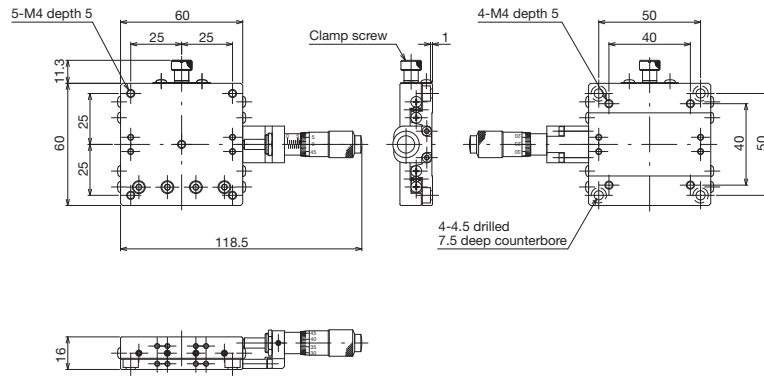
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (Standard type)	TLS-6042-C1	TLS-6042-C6	TLS-6042-C7	TLS-6042-C8
Model number (Symmetrical type)	TLS-6042-CR1	TLS-6042-CR6	TLS-6042-CR7	TLS-6042-CR8
Model name	High-Grade X Stage 60 x 60			
Travel direction	X-axis single direction			
Stage surface	60 mm x 60 mm			
Clamp method	Plate clamp			
Operating part mounting position	Center			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yawing 15 s, pitching 25 s			
Permissible moment load	Yaw 1200 N-cm, pitch 1200 N-cm, roll 1200 N-cm			
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm			
Parallelism	0.015 mm			
Parallelism of motion	0.007 mm			
Load capacity	196 N (20 kgf)			
Mass	0.4 kg		0.6 kg	0.4 kg
Main materials/surface treatment	Stainless Steel: Black Oxide Chrome			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

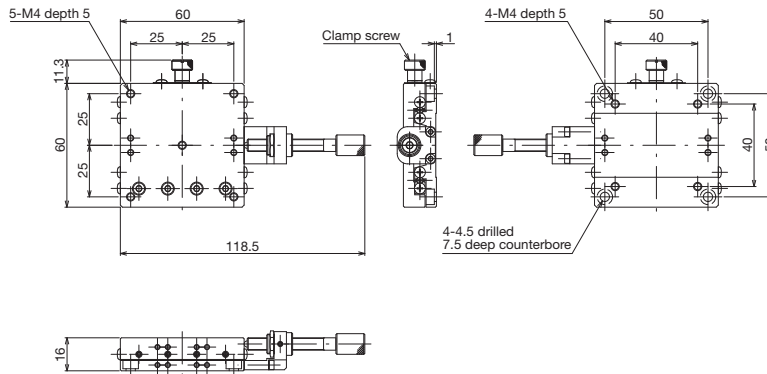


High-Grade Stages ◀ Manual Stages ◀

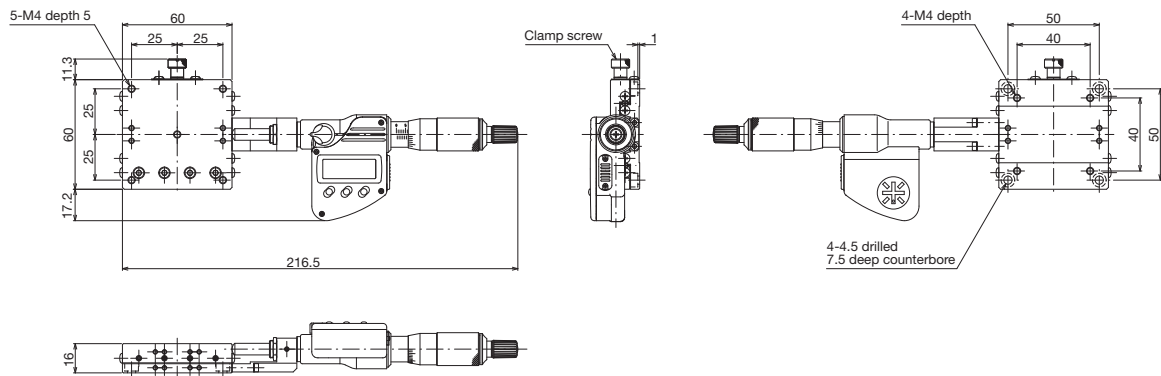
Product Appearance



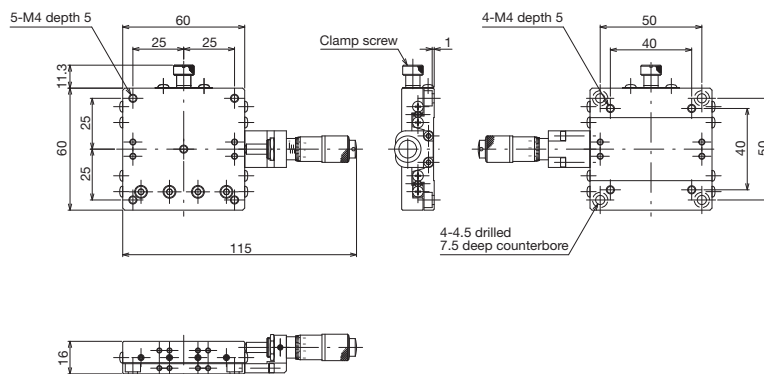
*TLS-6042-CR1 is a symmetrical type with the same dimensions as TLS-6042-C1. [↑ TLS-6042-C1](#)



*TLS-6042-CR6 is a symmetrical type with the same dimensions as TLS-6042-C6. [↑ TLS-6042-C6](#)



*TLS-6042-CR7 is a symmetrical type with the same dimensions as TLS-6042-C7. [↑ TLS-6042-C7](#)



*TLS-6042-CR8 is a symmetrical type with the same dimensions as TLS-6042-C8. [↑ TLS-6042-C8](#)

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z Lift Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

High-Grade X Stages 60 x 60 (Stainless Steel)



↑ TLS-6042-S1



↑ TLS-6042-S6



↑ TLS-6042-S7



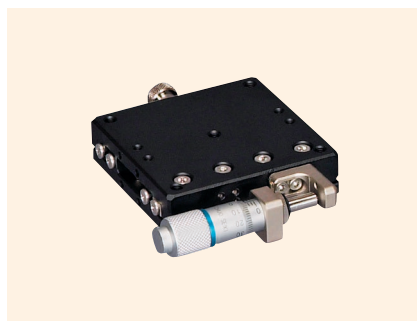
↑ TLS-6042-S8



↑ TLS-6042-SR1



↑ TLS-6042-SR6



↑ TLS-6042-SR8

Features

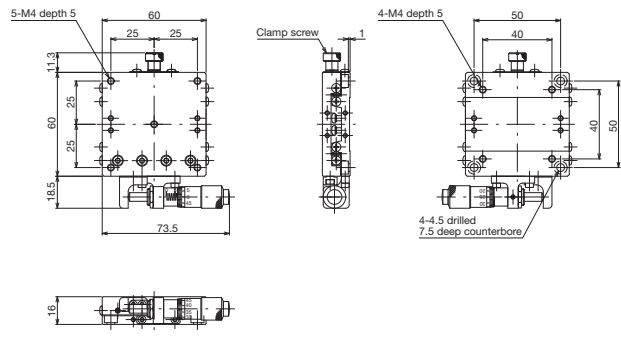
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (Standard type)	TLS-6042-S1	TLS-6042-S6	TLS-6042-S7	TLS-6042-S8
Model number (Symmetrical type)	TLS-6042-SR1	TLS-6042-SR6	-	TLS-6042-SR8
Model name	High-Grade X Stage 60 x 60			
Travel direction	X-axis single direction			
Stage surface	60 mm x 60 mm			
Clamp method	Plate clamp			
Operating part mounting position	Side			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	0.001 mm
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yawing 15 s, pitching 25 s			
Permissible moment load	Yaw 1200 N-cm, pitch 1200 N-cm, roll 1200 N-cm			
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm			
Parallelism	0.015 mm			
Parallelism of motion	0.007 mm			
Load capacity	196 N (20 kgf)			
Mass	0.4 kg		0.6 kg	0.4 kg
Main materials/surface treatment	Stainless steel/black oxide chrome			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

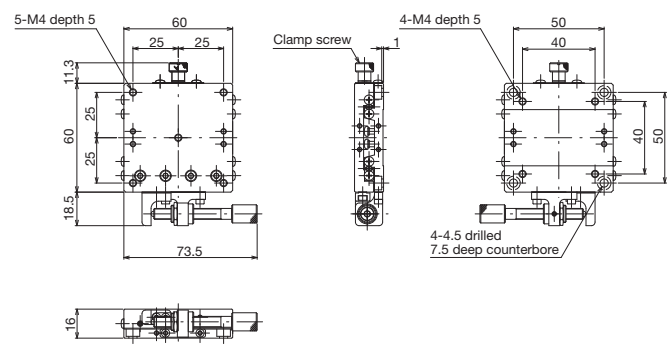


High-Grade Stages ◀ Manual Stages ◀

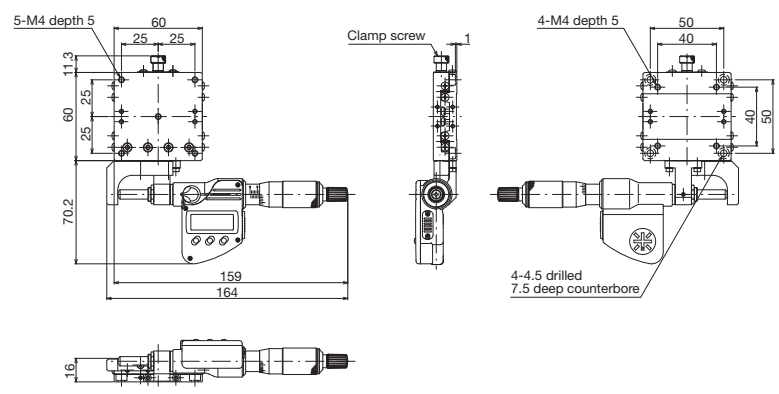
Product Appearance



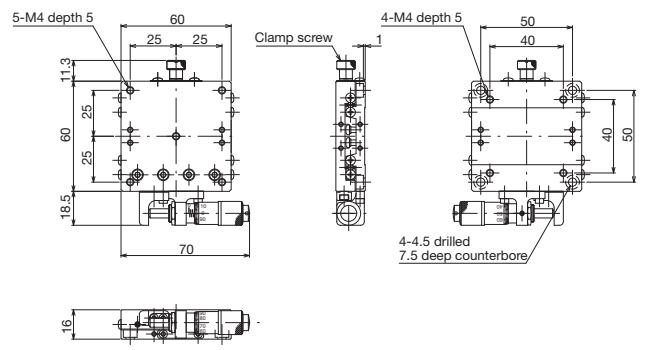
*TLS-6042-SR1 is a symmetrical type with the same dimensions as TLS-6042-S1. [↑ TLS-6042-S1](#)



*TLS-6042-SR6 is a symmetrical type with the same dimensions as TLS-6042-S6. [↑ TLS-6042-S6](#)



[↑ TLS-6042-S7](#)



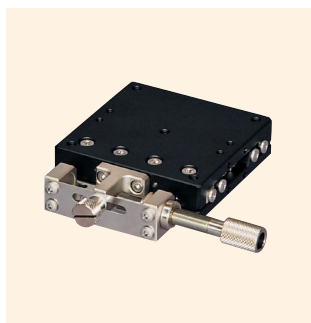
*TLS-6042-SR8 is a symmetrical type with the same dimensions as TLS-6042-S8. [↑ TLS-6042-S8](#)

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rack & Pinion Stages
High-Grade Stages	Swirl Stages, Cross Roller Stages, Z-Like Stages	Rotary Stages
Thin Stages	Thin/Rotary Stages	XZ, YZ Stages
		XVZ Stages

High-Grade X Stages 60 x 60 (Stainless Steel)



↑ TLS-6042-S1-2



↑ TLS-6042-S6-2



↑ TLS-6042-S7-2



↑ TLS-6042-S8-2



↑ TLS-6042-SR1-2



↑ TLS-6042-SR6-2



↑ TLS-6042-SR8-2

Features

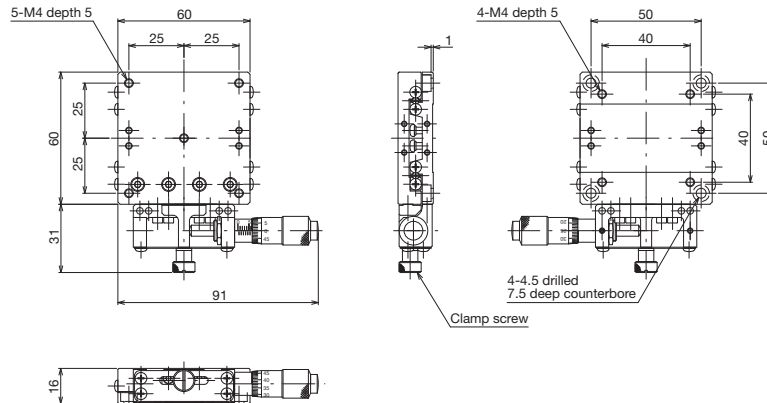
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is an operator side plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLS-6042-S1-2	TLS-6042-S6-2	TLS-6042-S7-2	TLS-6042-S8-2
Model number (symmetrical)	TLS-6042-SR1-2	TLS-6042-SR6-2	-	TLS-6042-SR8-2
Model name	High-Grade X Stage 60 x 60			
Travel direction	X-axis single direction			
Stage surface	60 mm x 60 mm			
Clamp method	Operator side plate clamp (capable of feeding and clamping the stage on the same surface)			
Operating part mounting position	Side			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yawing 15 s, pitching 25 s			
Permissible moment load	Yaw 1200 N-cm, pitch 1200 N-cm, roll 1200 N-cm			
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm			
Parallelism	0.015 mm			
Parallelism of motion	0.007 mm			
Load capacity	196 N (20 kgf)			
Mass	0.4 kg	0.6 kg		0.4 kg
Main materials/surface treatment	Stainless steel/black oxide chrome			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

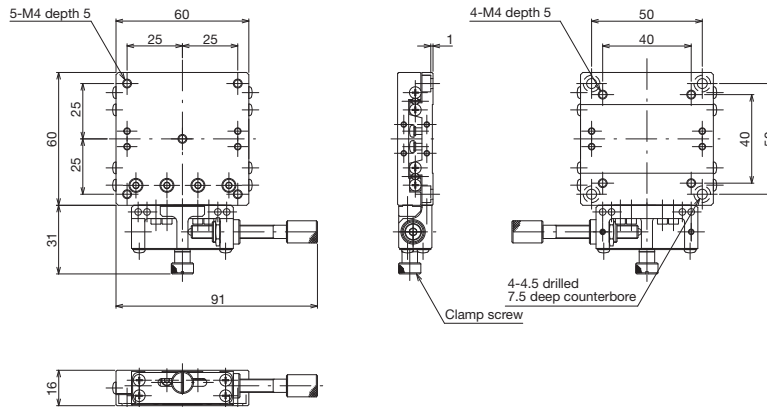


High-Grade Stages ◀ Manual Stages ◀

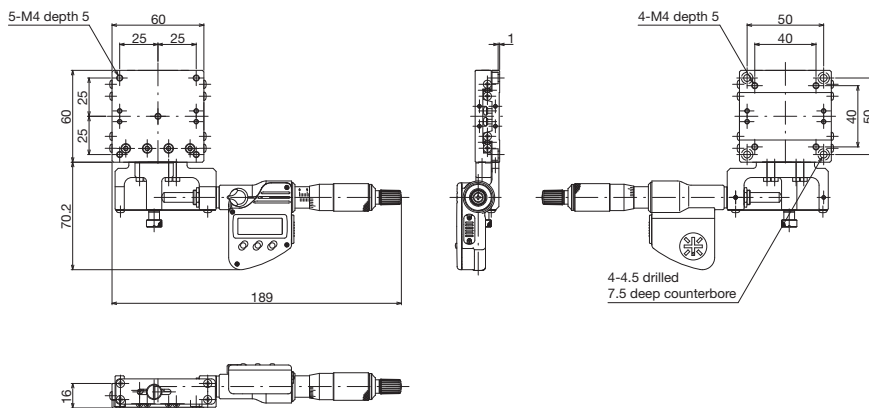
Product Appearance



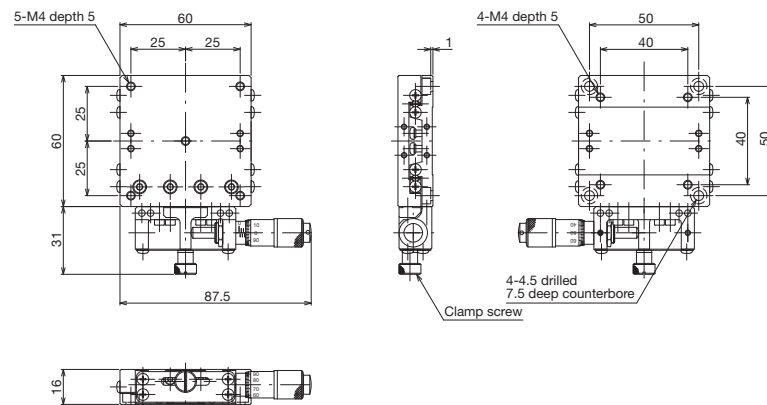
*TLS-6042-SR1-2 is a symmetrical type with the same dimensions as TLS-6042-S1-2. [↑ TLS-6042-S1-2](#)



*TLS-6042-SR6-2 is a symmetrical type with the same dimensions as TLS-6042-S6-2. [↑ TLS-6042-S6-2](#)



[↑ TLS-6042-S7-2](#)



*TLS-6042-SR8-2 is a symmetrical type with the same dimensions as TLS-6042-S8-2. [↑ TLS-6042-S8-2](#)

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Lift Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

High-Grade X Stages 70 x 70 (Stainless Steel)



↑ TLS-7042-C1



↑ TLS-7042-C6



↑ TLS-7042-C7



↑ TLS-7042-C8



↑ TLS-7042-CR1



↑ TLS-7042-CR6



↑ TLS-7042-CR7



↑ TLS-7042-CR8

Features

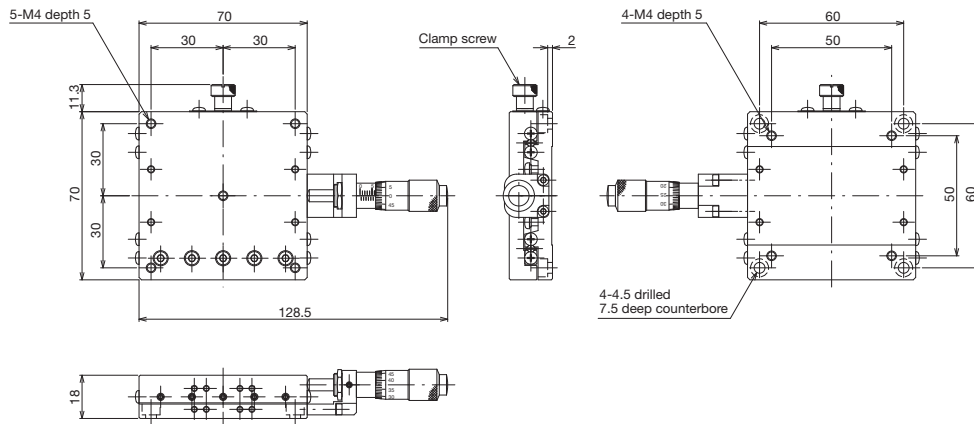
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLS-7042-C1	TLS-7042-C6	TLS-7042-C7	TLS-7042-C8
Model number (symmetrical)	TLS-7042-CR1	TLS-7042-CR6	TLS-7042-CR7	TLS-7042-CR8
Model name	High-Grade X Stage 70 x 70			
Travel direction	X-axis single direction			
Stage surface	70 mm x 70 mm			
Clamp method	Plate clamp			
Operating part mounting position	Center			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yawing 15 s, pitching 25 s			
Permissible moment load	Yaw 1500 N-cm, pitch 1500 N-cm, roll 1500 N-cm			
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm			
Parallelism	0.015 mm			
Parallelism of motion	0.007 mm			
Load capacity	245 N (25 kgf)			
Mass	0.6 kg	0.8 kg		0.6 kg
Main materials/surface treatment	Stainless steel/black oxide chrome			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



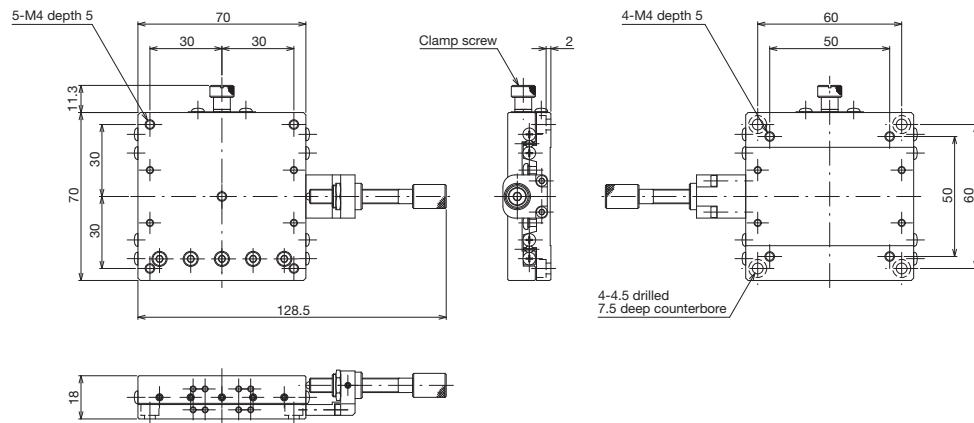
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



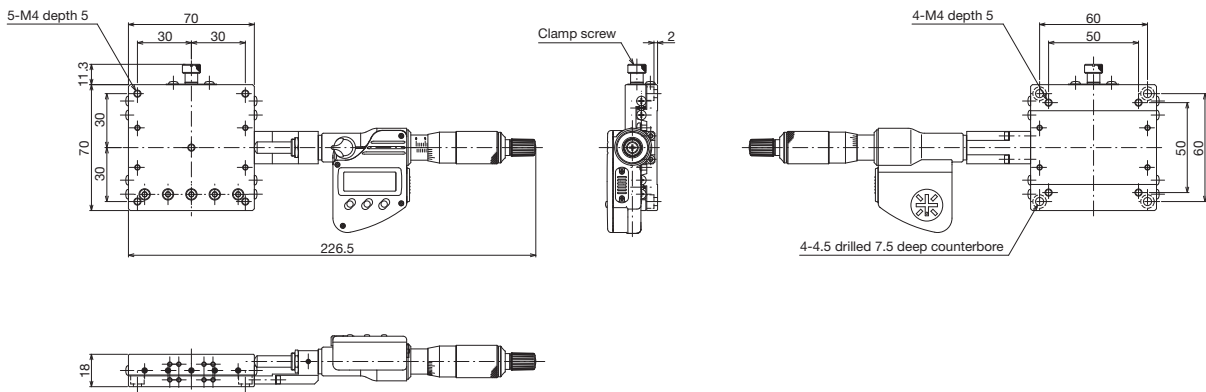
*TLS-7042-CR1 is a symmetrical type with the same dimensions as TLS-7042-C1.

↑ TLS-7042-C1



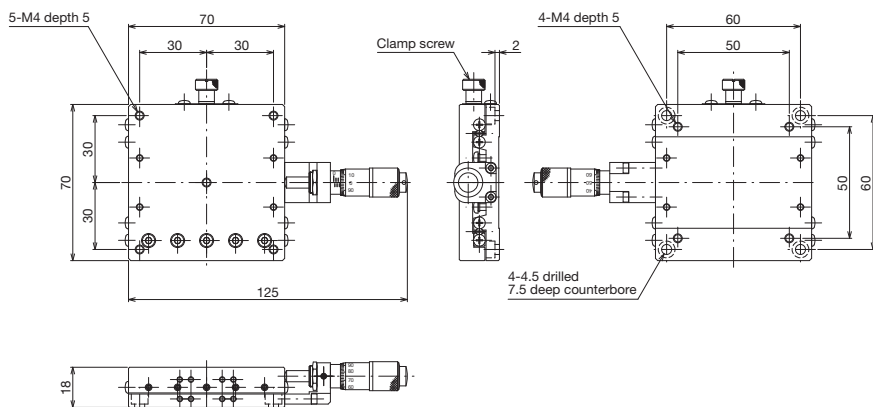
*TLS-7042-CR6 is a symmetrical type with the same dimensions as TLS-7042-C6.

↑ TLS-7042-C6



*TLS-7042-CR7 is a symmetrical type with the same dimensions as TLS-7042-C7.

↑ TLS-7042-C7

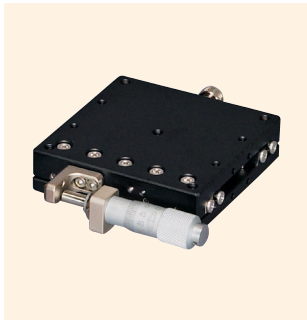


*TLS-7042-CR8 is a symmetrical type with the same dimensions as TLS-7042-C8.

↑ TLS-7042-C8

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rock & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages, Z Stages
Z Lift Stages, Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

High-Grade X Stages 70 x 70 (Stainless Steel)



↑ TLS-7042-S1



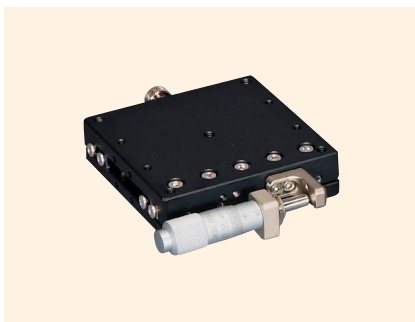
↑ TLS-7042-S6



↑ TLS-7042-S7



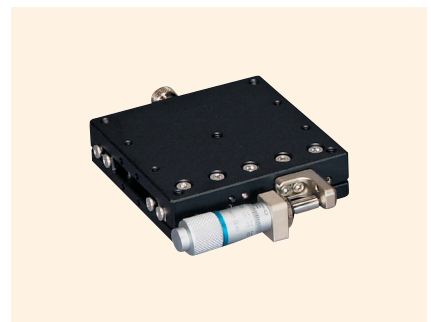
↑ TLS-7042-S8



↑ TLS-7042-SR1



↑ TLS-7042-SR6



↑ TLS-7042-SR8

Features

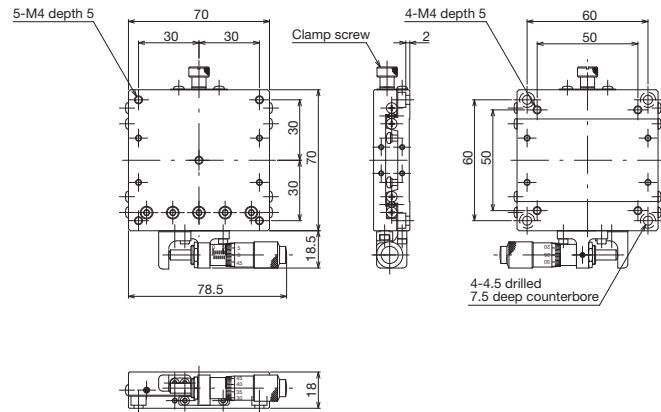
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is an operator side plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLS-7042-S1	TLS-7042-S6	TLS-7042-S7	TLS-7042-S8
Model number (symmetrical)	TLS-7042-SR1	TLS-7042-SR6	-	TLS-7042-SR8
Model name	High-Grade X Stage 70 x 70			
Travel direction	X-axis single direction			
Stage surface	70 mm x 70 mm			
Clamp method	Plate clamp			
Operating part mounting position	Side			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yawing 15 s, pitching 25 s			
Permissible moment load	Yaw 1500 N-cm, pitch 1500 N-cm, roll 1500 N-cm			
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm			
Parallelism	0.015 mm			
Parallelism of motion	0.007 mm			
Load capacity	245 N (25 kgf)			
Mass	0.6 kg	0.8 kg		0.6 kg
Main materials/surface treatment	Stainless steel/black oxide chrome			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



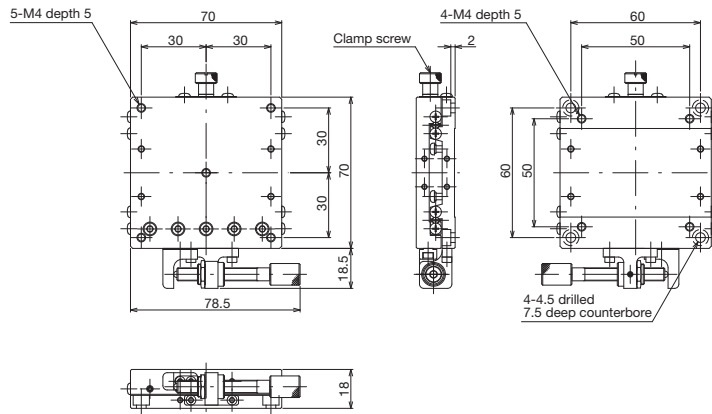
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



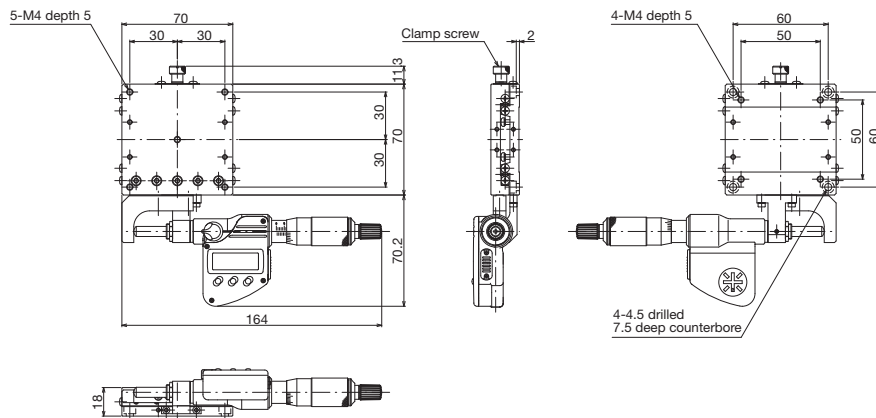
*TLS-7042-SR1 is a symmetrical type with the same dimensions as TLS-7042-S1.

↑ TLS-7042-S1

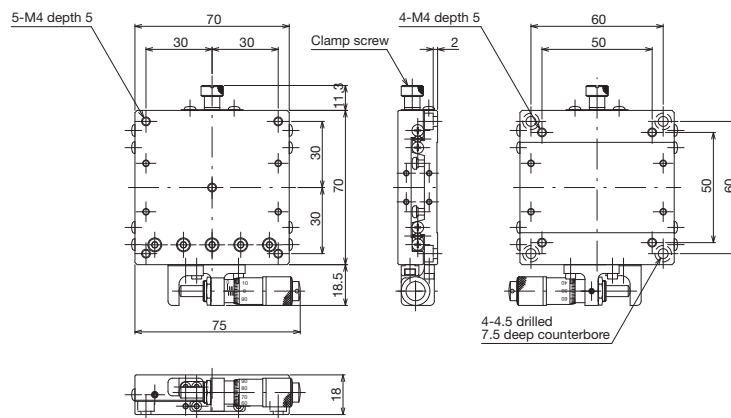


*TLS-7042-SR6 is a symmetrical type with the same dimensions as TLS-7042-S6.

↑ TLS-7042-S6



↑ TLS-7042-S7



*TLS-7042-SR8 is a symmetrical type with the same dimensions as TLS-7042-S8.

↑ TLS-7042-S8

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin V8 Stages	Rock & Pinion Stages	High-Grade Stages	Swim Stages, Cross Roller Stages	Z-Like Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	X/YZ Stages
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High-Grade X Stages 70 x 70 (Stainless Steel)



↑ TLS-7042-S1-2



↑ TLS-7042-S6-2



↑ TLS-7042-S7-2



↑ TLS-7042-S8-2



↑ TLS-7042-SR1-2



↑ TLS-7042-SR6-2



↑ TLS-7042-SR8-2

Features

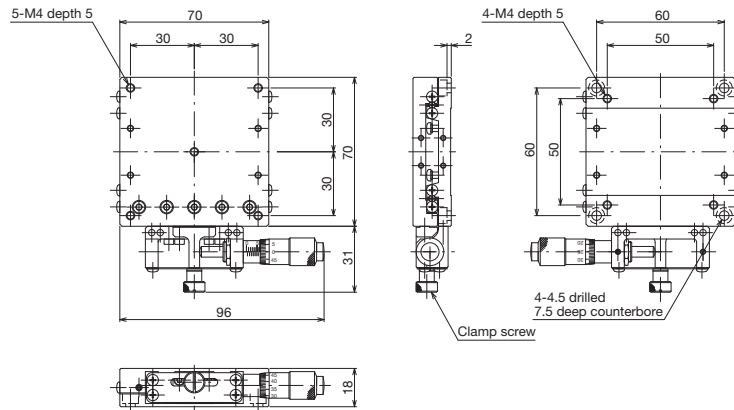
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is an operator side plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLS-7042-S1-2	TLS-7042-S6-2	TLS-7042-S7-2	TLS-7042-S8-2
Model number (symmetrical)	TLS-7042-SR1-2	TLS-7042-SR6-2	-	TLS-7042-SR8-2
Model name	High-Grade X Stage 70 x 70			
Travel direction	X-axis single direction			
Stage surface	70 mm x 70 mm			
Clamp method	Operator side plate clamp (capable of feeding and clamping the stage on the same surface)			
Operating part mounting position	Side			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yawing 15 s, pitching 25 s			
Permissible moment load	Yaw 1500 N-cm, pitch 1500 N-cm, roll 1500 N-cm			
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm			
Parallelism	0.015 mm			
Parallelism of motion	0.007 mm			
Load capacity	245 N (25 kgf)			
Mass	0.6 kg	0.8 kg		0.6 kg
Main materials/surface treatment	Stainless steel/black oxide chrome			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



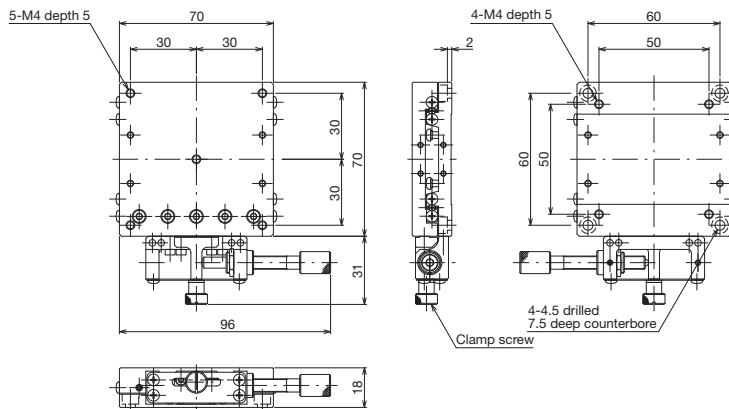
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



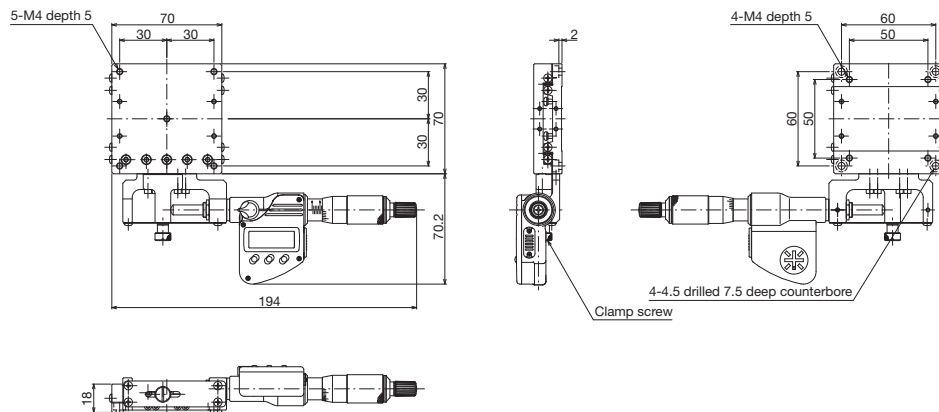
*TLS-7042-SR1-2 is a symmetrical type with the same dimensions as TLS-7042-S1-2.

↑ TLS-7042-S1-2

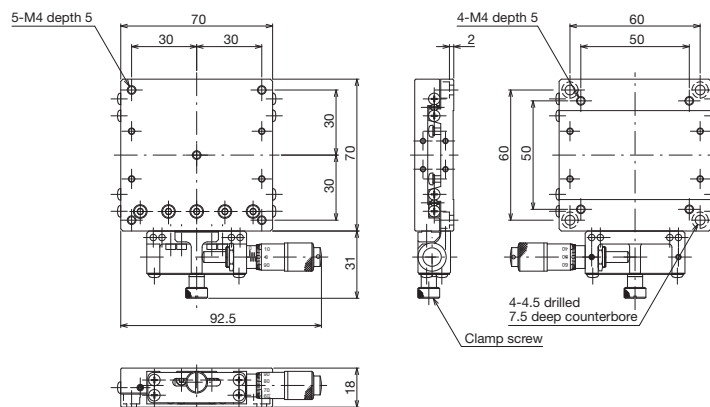


*TLS-7042-SR6-2 is a symmetrical type with the same dimensions as TLS-7042-S6-2.

↑ TLS-7042-S6-2



↑ TLS-7042-S7-2

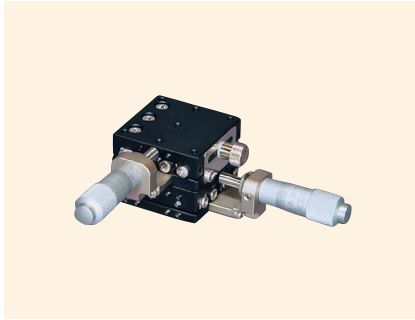


*TLS-7042-SR8-2 is a symmetrical type with the same dimensions as TLS-7042-S8-2.

↑ TLS-7042-S8-2

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin V8 Stages	Rock & Pinion Stages	High-Grade Stages	Swim Stages, Cross Roller Stages	Z-Lift Stages, Z Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	X/YZ Stages
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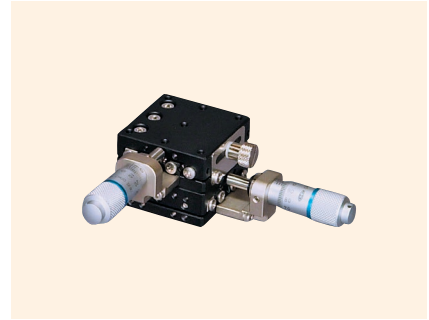
High-Grade XY Stages 40 x 40 (Stainless Steel)



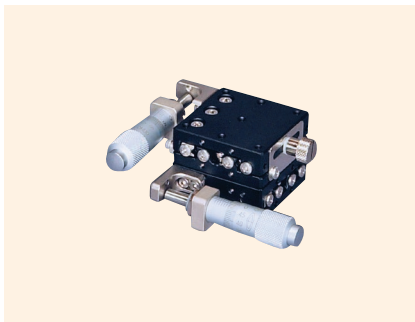
↑ TLD-4042-C1



↑ TLD-4042-C6



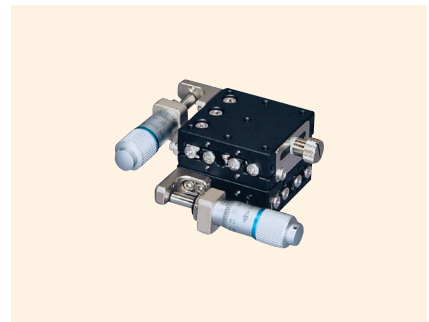
↑ TLD-4042-C8



↑ TLD-4042-S1



↑ TLD-4042-S6



↑ TLD-4042-S8

Features

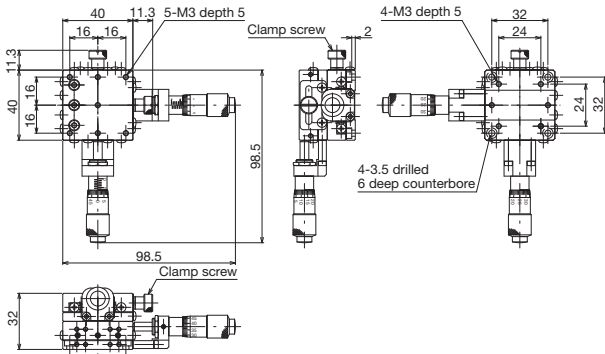
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLD-4042-C1	TLD-4042-S1	TLD-4042-C6	TLD-4042-S6	TLD-4042-C8	TLD-4042-S8
Model number (symmetrical)	TLD-4042-CR1	TLD-4042-SR1	TLD-4042-CR6	TLD-4042-SR6	TLD-4042-CR8	TLD-4042-SR8
Model name	High-Grade XY Stage 40 x 40					
Travel direction	XY-axis double direction					
Stage surface	40 mm x 40 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s					
Permissible moment	Yaw 500 N-cm, pitch 500 N-cm, roll 500 N-cm					
Moment rigidity	Yaw rigidity 0.08 s/N-cm, pitch rigidity 0.06 s/N-cm, roll rigidity 0.06 s/N-cm					
Parallelism	0.030 mm					
Parallelism of motion	0.014 mm					
XY orthogonality	0.010 mm					
Load capacity	95.2 N (9.7 kgf)					
Mass	0.4 kg					
Main materials/surface treatment	Stainless steel/black oxide chrome					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					

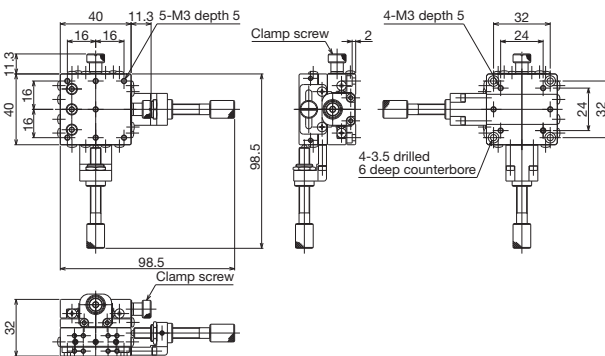


High-Grade Stages ◀ Manual Stages ◀

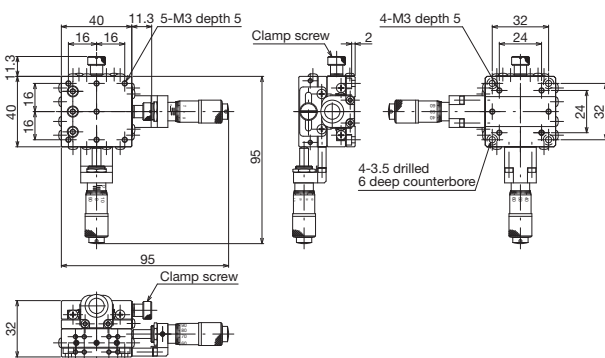
Product Appearance



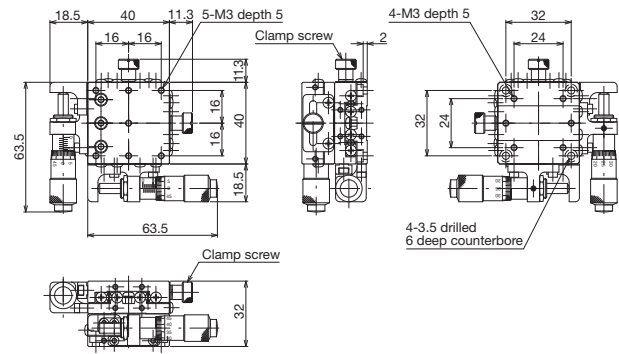
*TLD-4042-CR1 is a symmetrical type with the same dimensions as TLD-4042-C1. ↑ TLD-4042-C1



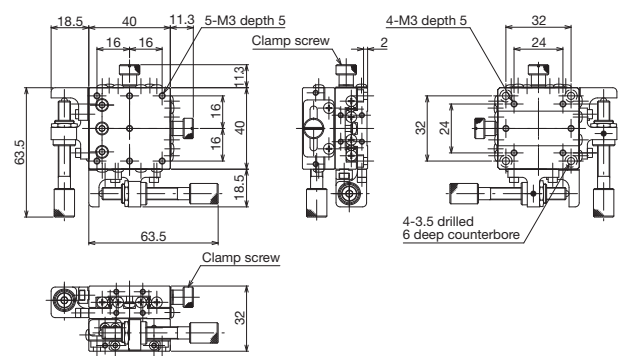
*TLD-4042-CR6 is a symmetrical type with the same dimensions as TLD-4042-C6. ↑ TLD-4042-C6



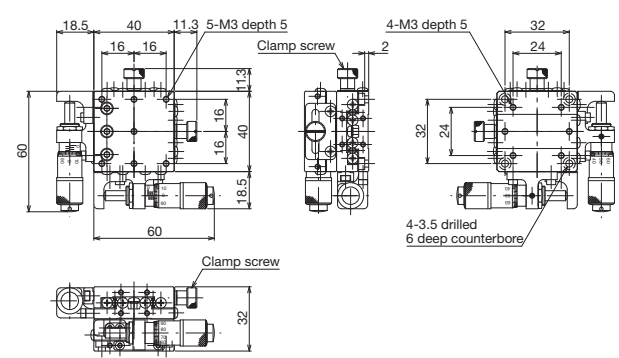
*TLD-4042-CR8 is a symmetrical type with the same dimensions as TLD-4042-C8. ↑ TLD-4042-C8



*TLD-4042-SR1 is a symmetrical type with the same dimensions as TLD-4042-S1. ↑ TLD-4042-S1



*TLD-4042-SR6 is a symmetrical type with the same dimensions as TLD-4042-S6. ↑ TLD-4042-S6



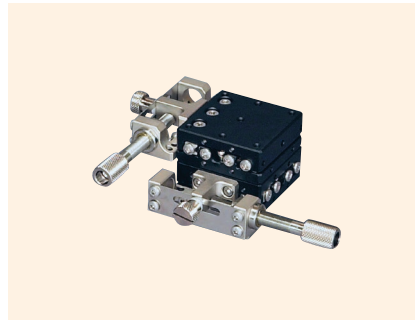
*TLD-4042-SR8 is a symmetrical type with the same dimensions as TLD-4042-S8. ↑ TLD-4042-S8

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Swim Stages, Cross Roller Stages
Z-Lift Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

High-Grade XY Stages 40 x 40 (Stainless Steel)



↑ TLD-4042-S1-2



↑ TLD-4042-S6-2



↑ TLD-4042-S8-2



↑ TLD-4042-SR1-2



↑ TLD-4042-SR6-2



↑ TLD-4042-SR8-2

Features

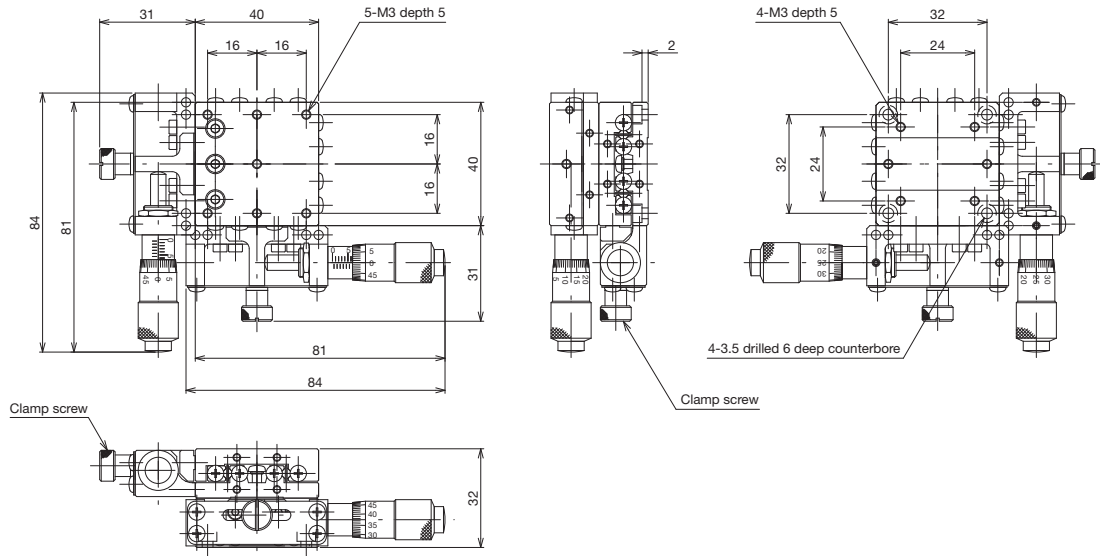
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Clamp method is an operator side plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLD-4042-S1-2	TLD-4042-S6-2	TLD-4042-S8-2
Model number (symmetrical)	TLD-4042-SR1-2	TLD-4042-SR6-2	TLD-4042-SR8-2
Model name	High-Grade XY Stage 40 x 40		
Travel direction	XY-axis double direction		
Stage surface	40 mm x 40 mm		
Clamp method	Operator side plate clamp (capable of feeding and clamping the stage on the same surface)		
Operating part mounting position	Side		
Feed method	CMH-13RM (standard micrometer)	Feed screw P=0.5 mm	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm		±3 mm
Travel amount/1 knob rotation	0.5 mm		0.1 mm
Scale	Micrometer 0.01 mm	-	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm
Travel guide	HG-VCR (V-groove and cross rollers)		
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s		
Permissible moment	Yaw 500 N-cm, pitch 500 N-cm, roll 500 N-cm		
Moment rigidity	Yaw rigidity 0.08 s/N-cm, pitch rigidity 0.06 s/N-cm, roll rigidity 0.06 s/N-cm		
Parallelism	0.030 mm		
Parallelism of motion	0.014 mm		
XY orthogonality	0.010 mm		
Load capacity	95.2 N (9.7 kgf)		
Mass	0.4 kg		
Main materials/surface treatment	Stainless steel/black oxide chrome		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

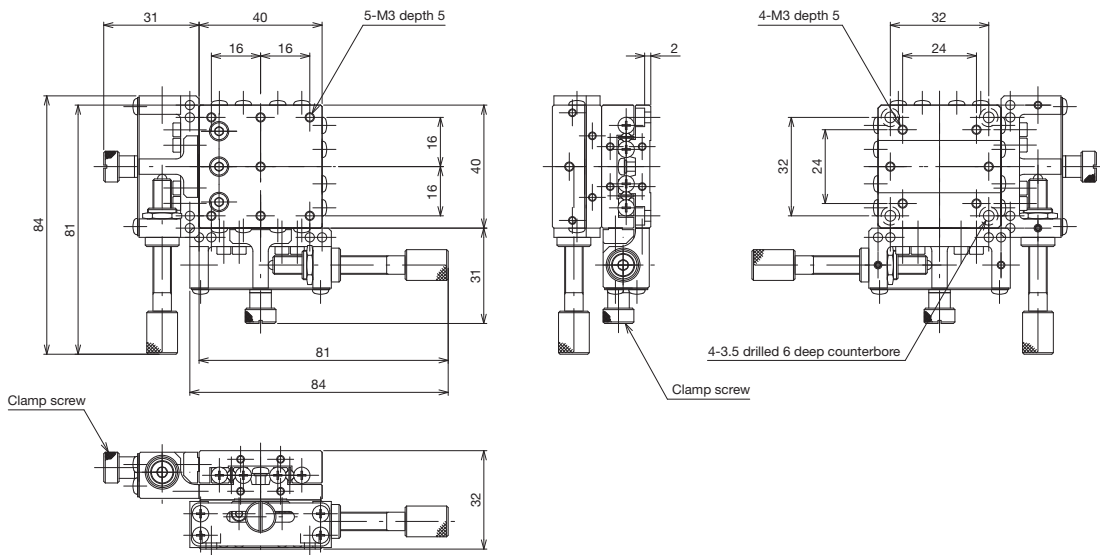


High-Grade Stages ◀ Manual Stages ◀

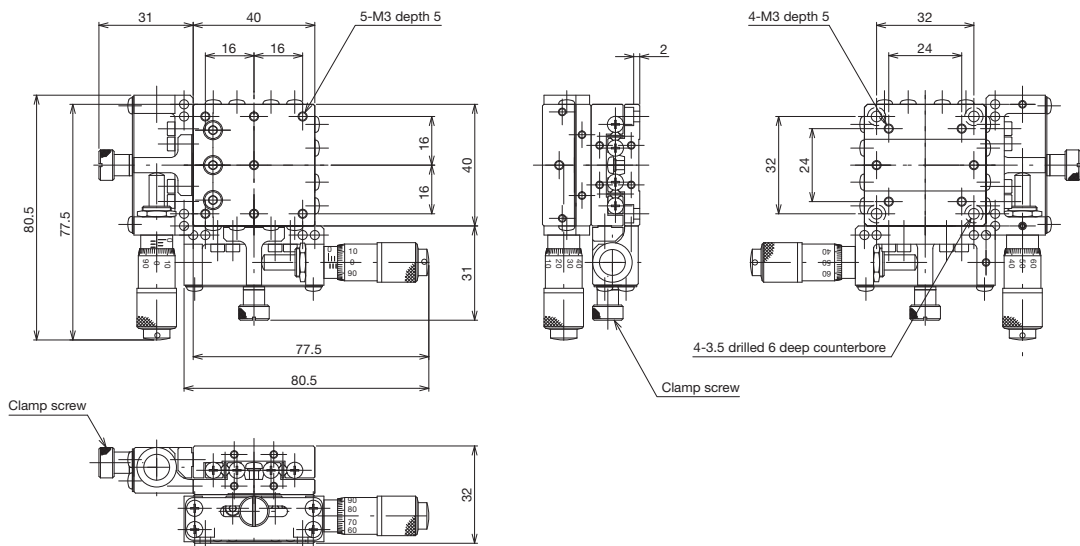
Product Appearance



*TLD-4042-SR1-2 is a symmetrical type with the same dimensions as TLD-4042-S1-2. ↑ TLD-4042-S1-2



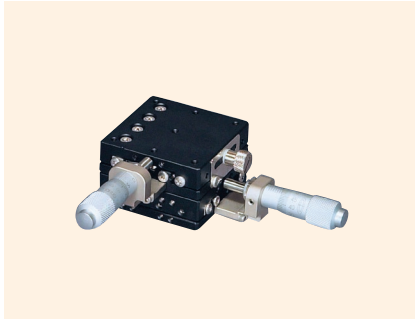
*TLD-4042-SR6-2 is a symmetrical type with the same dimensions as TLD-4042-S6-2. ↑ TLD-4042-S6-2



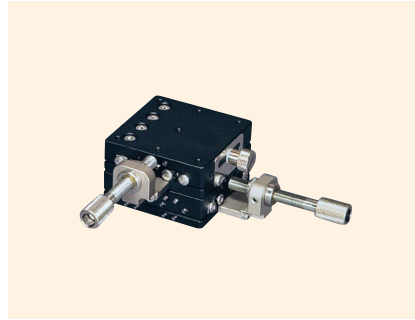
*TLD-4042-SR8-2 is a symmetrical type with the same dimensions as TLD-4042-S8-2. ↑ TLD-4042-S8-2

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Like Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

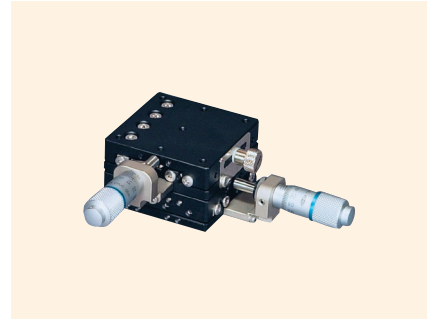
High-Grade XY Stages 50 x 50 (Stainless Steel)



↑ TLD-5042-C1



↑ TLD-5042-C6



↑ TLD-5042-C8



↑ TLD-5042-S1



↑ TLD-5042-S6



↑ TLD-5042-S8

Features

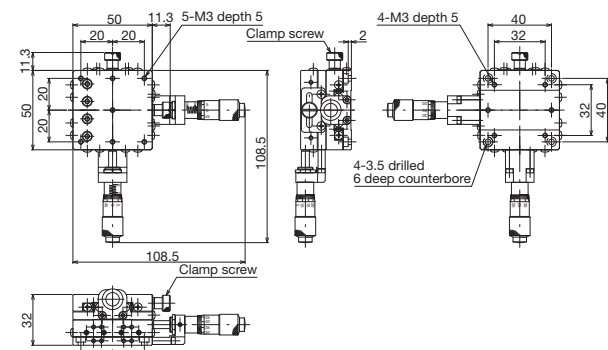
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLD-5042-C1	TLD-5042-S1	TLD-5042-C6	TLD-5042-S6	TLD-5042-C8	TLD-5042-S8
Model number (symmetrical)	TLD-5042-CR1	TLD-5042-SR1	TLD-5042-CR6	TLD-5042-SR6	TLD-5042-CR8	TLD-5042-SR8
Model name	High-Grade XY Stage 50 x 50					
Travel direction	XY-axis double direction					
Stage surface	50 mm x 50 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Travel mechanism/feed method	CMH-13RM (standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s					
Permissible moment	Yaw 800 N-cm, pitch 800 N-cm, roll 800 N-cm					
Moment rigidity	Yaw rigidity 0.08 s/N-cm, pitch rigidity 0.06 s/N-cm, roll rigidity 0.06 s/N-cm					
Parallelism	0.030 mm					
Parallelism of motion	0.014 mm					
XY orthogonality	0.010 mm					
Load capacity	144.2 N (14.7 kgf)					
Mass	0.6 kg					
Main materials/surface treatment	Stainless steel/black oxide chrome					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					



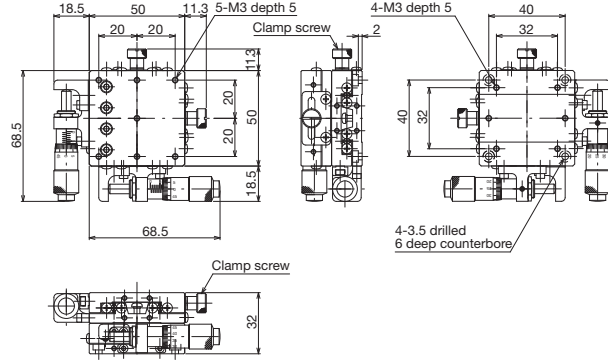
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



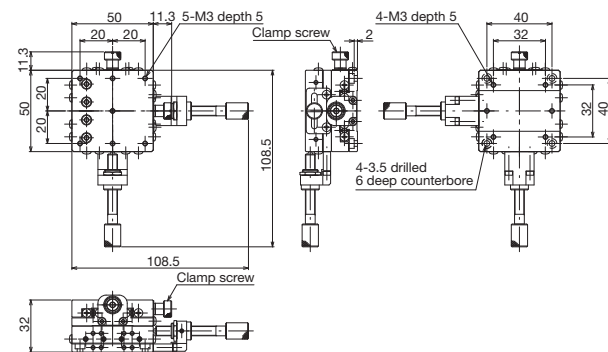
*TLD-5042-CR1 is a symmetrical type with the same dimensions as TLD-5042-C1.

↑ TLD-5042-C1



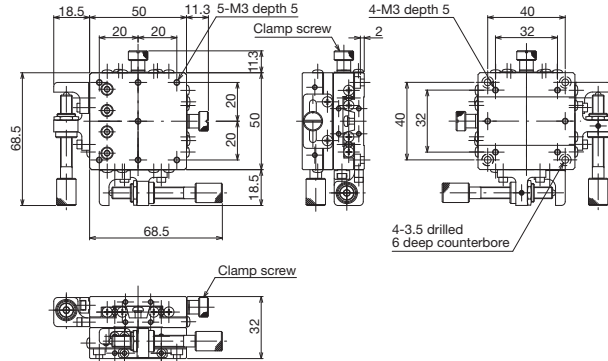
*TLD-5042-SR1 is a symmetrical type with the same dimensions as TLD-5042-S1.

↑ TLD-5042-S1



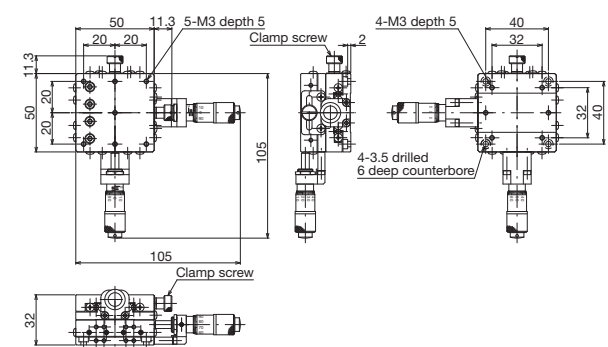
*TLD-5042-CR6 is a symmetrical type with the same dimensions as TLD-5042-C6.

↑ TLD-5042-C6



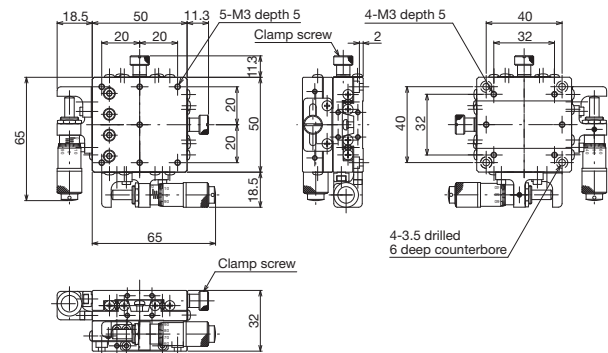
*TLD-5042-SR6 is a symmetrical type with the same dimensions as TLD-5042-S6.

↑ TLD-5042-S6



*TLD-5042-CR8 is a symmetrical type with the same dimensions as TLD-5042-C8.

↑ TLD-5042-C8



*TLD-5042-SR8 is a symmetrical type with the same dimensions as TLD-5042-S8.

↑ TLD-5042-S8

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Back & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Like Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

High-Grade XY Stages 50 x 50 (Stainless Steel)



↑ TLD-5042-S1-2



↑ TLD-5042-S6-2



↑ TLD-5042-S8-2



↑ TLD-5042-SR1-2



↑ TLD-5042-SR6-2



↑ TLD-5042-SR8-2

Features

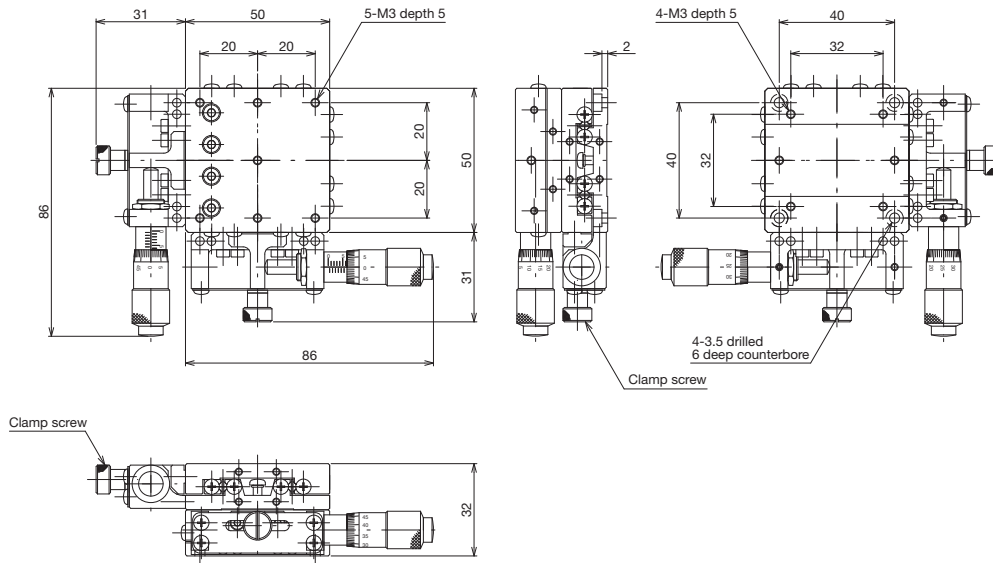
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Clamp method is an operator side plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLD-5042-S1-2	TLD-5042-S6-2	TLD-5042-S8-2
Model number (symmetrical)	TLD-5042-SR1-2	TLD-5042-SR6-2	TLD-5042-SR8-2
Model name	High-Grade XY Stage 50 x 50		
Travel direction	XY-axis double direction		
Stage surface	50 mm x 50 mm		
Clamp method	Operator side plate clamp (capable of feeding and clamping the stage on the same surface)		
Operating part mounting position	Side		
Feed method	CMH-13RM (standard micrometer)	Feed screw P=0.5 mm	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm		±3 mm
Travel amount/1 knob rotation	0.5 mm		0.1 mm
Scale	Micrometer 0.01 mm	-	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm
Travel guide	HG-VCR (V-groove and cross rollers)		
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s		
Permissible moment	Yaw 800 N-cm, pitch 800 N-cm, roll 800 N-cm		
Moment rigidity	Yaw rigidity 0.08 s/N-cm, pitch rigidity 0.06 s/N-cm, roll rigidity 0.06 s/N-cm		
Parallelism	0.030 mm		
Parallelism of motion	0.014 mm		
XY orthogonality	0.010 mm		
Load capacity	144.2 N (14.7 kgf)		
Mass	0.6 kg		
Main materials/surface treatment	Stainless steel/black oxide chrome		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		



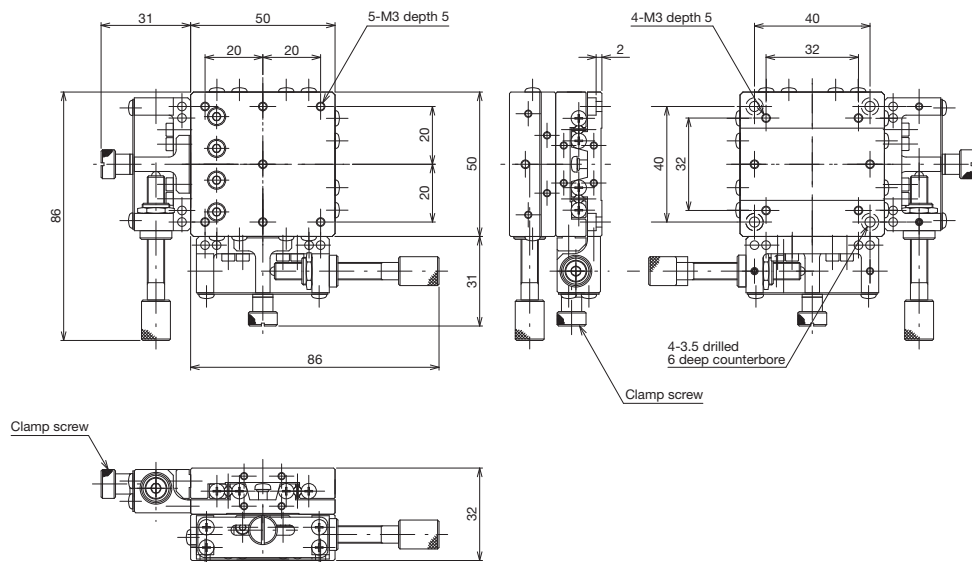
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



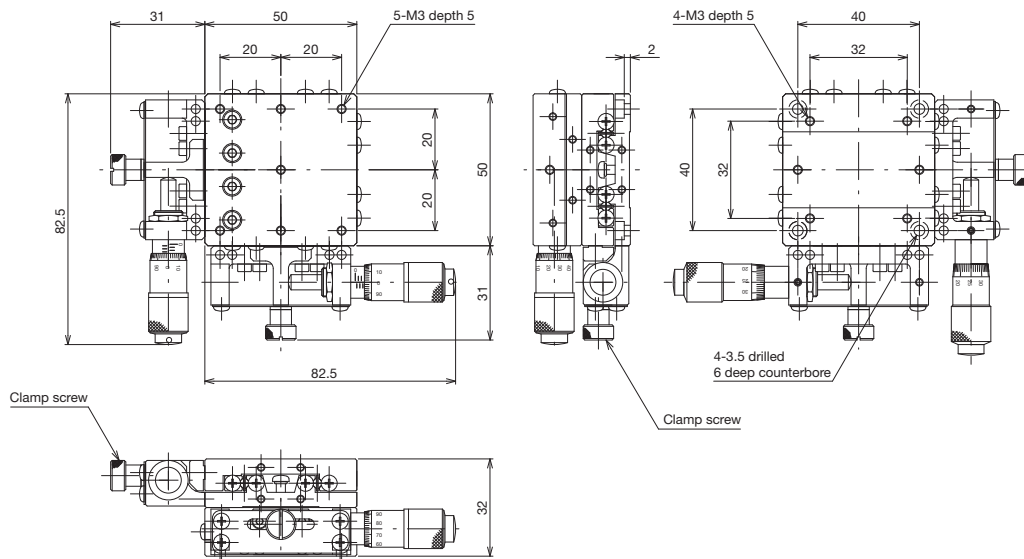
*TLD-5042-SR1-2 is a symmetrical type with the same dimensions as TLD-5042-S1-2.

↑ TLD-5042-S1-2



*TLD-5042-SR6-2 is a symmetrical type with the same dimensions as TLD-5042-S6-2.

↑ TLD-5042-S6-2



*TLD-5042-SR8-2 is a symmetrical type with the same dimensions as TLD-5042-S8-2.

↑ TLD-5042-S8-2

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin V8 Stages	Rack & Pinion Stages	High-Grade Stages	Spin Stages, Cross Roller Stages	Z-Like Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XYZ Stages
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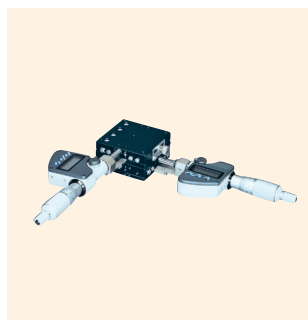
High-Grade XY Stages 60 x 60 (Stainless Steel)



↑ TLD-6042-C1



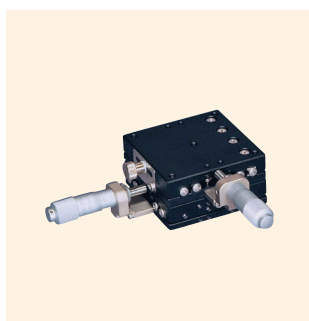
↑ TLD-6042-C6



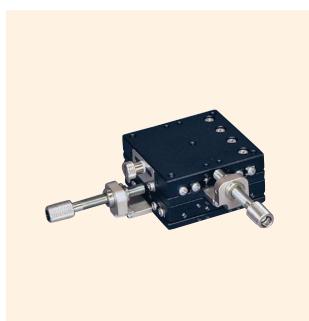
↑ TLD-6042-C7



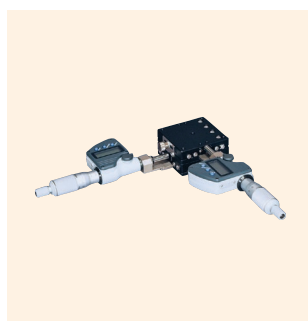
↑ TLD-6042-C8



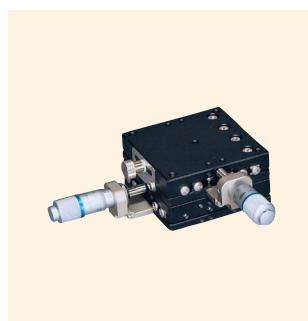
↑ TLD-6042-CR1



↑ TLD-6042-CR6



↑ TLD-6042-CR7



↑ TLD-6042-CR8

Features

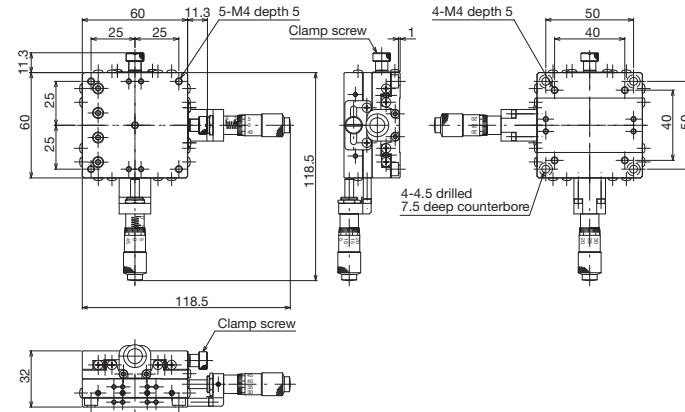
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLD-6042-C1	TLD-6042-C6	TLD-6042-C7	TLD-6042-C8
Model number (symmetrical)	TLD-6042-CR1	TLD-6042-CR6	TLD-6042-CR7	TLD-6042-CR8
Model name	High-Grade XY Stage 60 x 60			
Travel direction	XY-axis double direction			
Stage surface	60 mm x 60 mm			
Clamp method	Plate clamp			
Operating part mounting position	Center			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s			
Permissible moment	Yaw 1200 N-cm, pitch 1200 N-cm, roll 1200 N-cm			
Moment rigidity	Yaw rigidity 0.08 s/N-cm, pitch rigidity 0.06 s/N-cm, roll rigidity 0.06 s/N-cm			
Parallelism	0.030 mm			
Parallelism of motion	0.014 mm			
XY orthogonality	0.010 mm			
Load capacity	192.1 N (19.6 kgf)			
Mass	0.8 kg		1.2 kg	0.8 kg
Main materials/surface treatment	Stainless steel/black oxide chrome			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



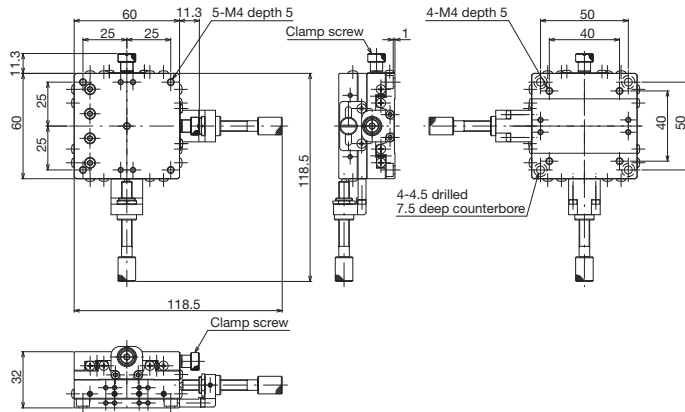
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



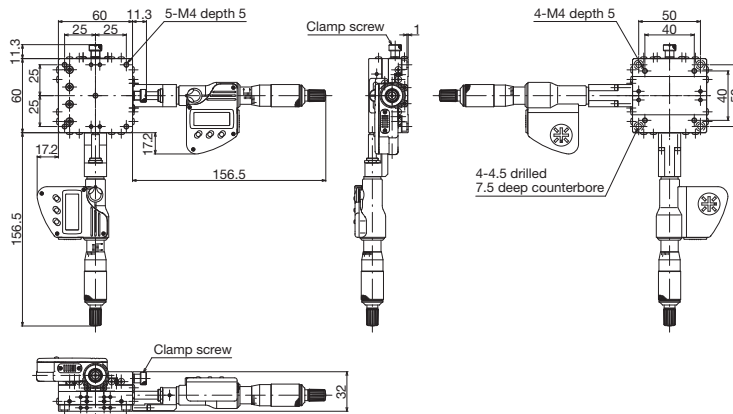
*TLD-6042-CR1 is a symmetrical type with the same dimensions as TLD-6042-C1.

↑ TLD-6042-C1



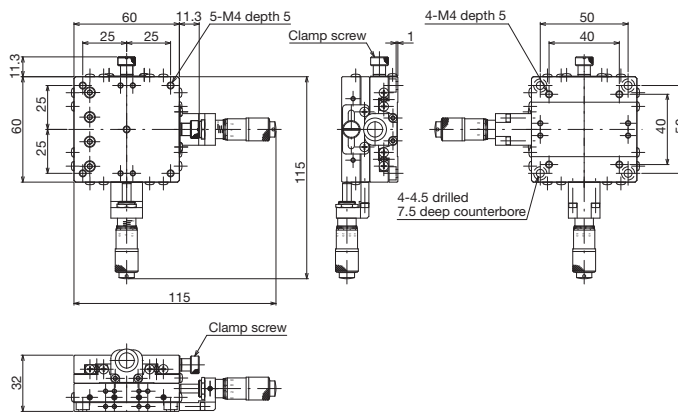
*TLD-6042-CR6 is a symmetrical type with the same dimensions as TLD-6042-C6.

↑ TLD-6042-C6



*TLD-6042-CR7 is a symmetrical type with the same dimensions as TLD-6042-C7.

↑ TLD-6042-C7

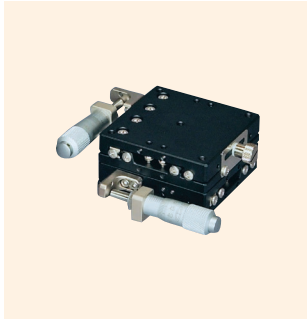


*TLD-6042-CR8 is a symmetrical type with the same dimensions as TLD-6042-C8.

↑ TLD-6042-C8

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rock & Pinion Stages
High-Grade Stages	Swim Stages, Cross Roller Stages, Z-Like Stages, Z Stages	Rodless Stages
Thin Stages	Tilt Stages	Tilt/Rotary Stages
XZ, YZ Stages	XZ, YZ Stages	XZ Stages

High-Grade XY Stages 60 x 60 (Stainless Steel)



↑ TLD-6042-S1



↑ TLD-6042-S6



↑ TLD-6042-S7



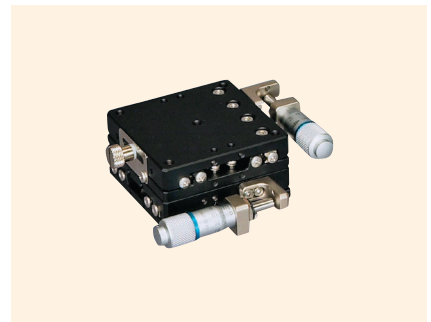
↑ TLD-6042-S8



↑ TLD-6042-SR1



↑ TLD-6042-SR6



↑ TLD-6042-SR8

Features

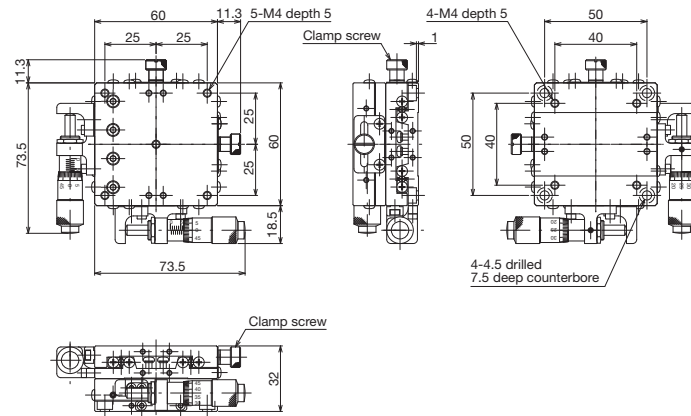
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLD-6042-S1	TLD-6042-S6	TLD-6042-S7	TLD-6042-S8
Model number (symmetrical)	TLD-6042-SR1	TLD-6042-SR6	-	TLD-6042-SR8
Model name	High-Grade XY Stage 60 x 60			
Travel direction	XY-axis double direction			
Stage surface	60 mm x 60 mm			
Clamp method	Plate clamp			
Operating part mounting position	Side			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s			
Permissible moment	Yaw 1200 N-cm, pitch 1200 N-cm, roll 1200 N-cm			
Moment rigidity	Yaw rigidity 0.08 s/N-cm, pitch rigidity 0.06 s/N-cm, roll rigidity 0.06 s/N-cm			
Parallelism	0.030 mm			
Parallelism of motion	0.014 mm			
XY orthogonality	0.010 mm			
Load capacity	192.1 N (19.6 kgf)			
Mass	0.8 kg		1.2 kg	0.8 kg
Main materials/surface treatment	Stainless steel/black oxide chrome			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



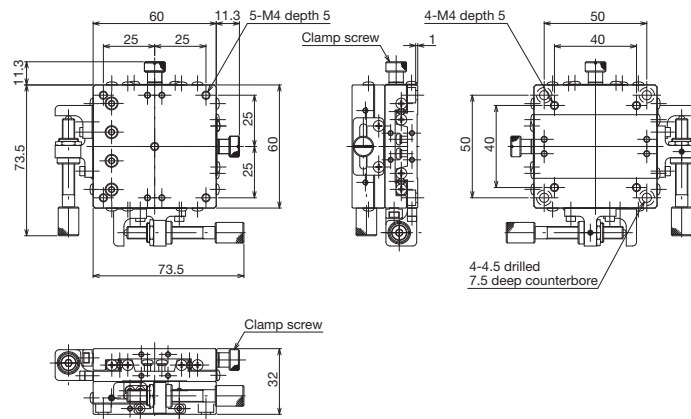
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



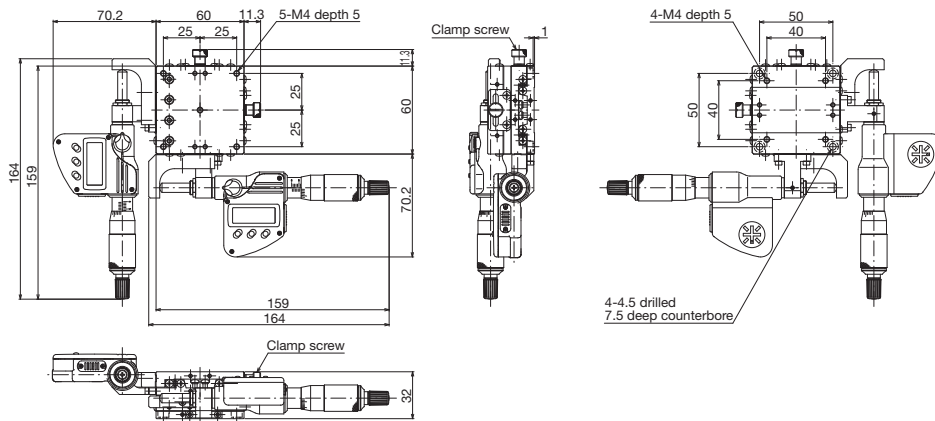
*TLD-6042-SR1 is a symmetrical type with the same dimensions as TLD-6042-S1.

↑ TLD-6042-S1

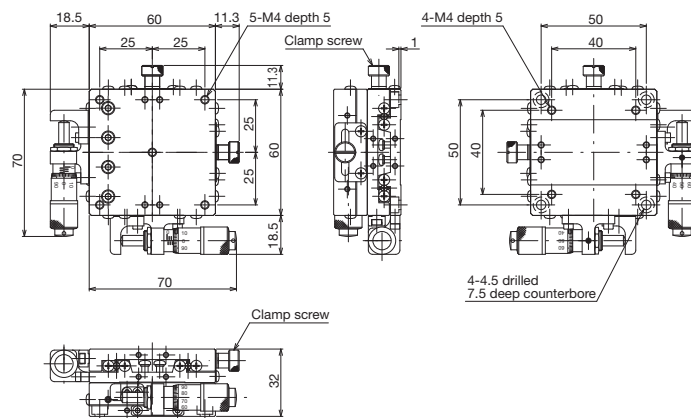


*TLD-6042-SR6 is a symmetrical type with the same dimensions as TLD-6042-S6.

↑ TLD-6042-S6



↑ TLD-6042-S7



*TLD-6042-SR8 is a symmetrical type with the same dimensions as TLD-6042-S8.

↑ TLD-6042-S8

Motorized Stages	Automated Products for Microscopes
Manual Stages	Manual Stages
Fix Stages	Fix Stages
Thin VB Stages	Thin VB Stages
Rack & Pinion Stages	Rack & Pinion Stages
High-Grade Stages	High-Grade Stages
Spin Stages, Cross Roller Stages	Spin Stages, Cross Roller Stages
Z-Like Stages, Z Stages	Z-Like Stages, Z Stages
Rotary Stages	Rotary Stages
Tilt Stages	Tilt Stages
Tilt/Rotary Stages	Tilt/Rotary Stages
XZ, YZ Stages	XZ, YZ Stages
XYZ Stages	XYZ Stages

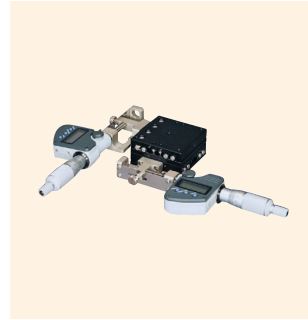
High-Grade XY Stages 60 x 60 (Stainless Steel)



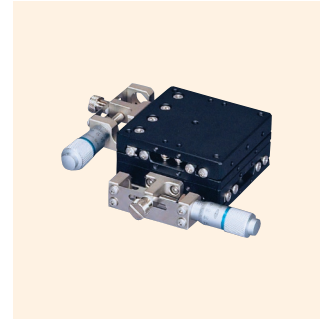
↑ TLD-6042-S1-2



↑ TLD-6042-S6-2



↑ TLD-6042-S7-2



↑ TLD-6042-S8-2



↑ TLD-6042-SR1-2



↑ TLD-6042-SR6-2



↑ TLD-6042-SR8-2

Features

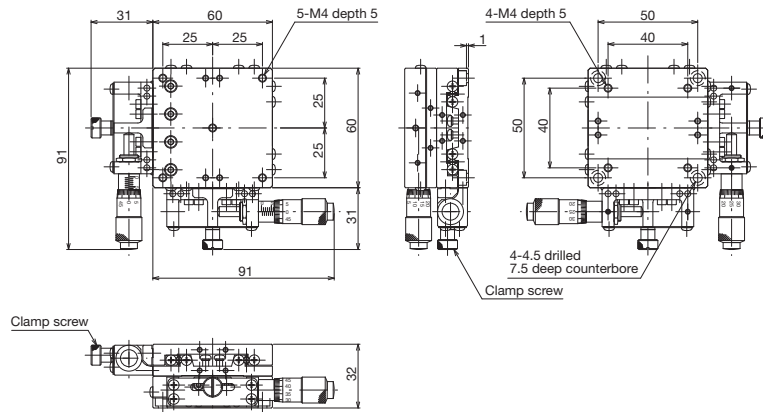
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is an operator side plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLD-6042-S1-2	TLD-6042-S6-2	TLD-6042-S7-2	TLD-6042-S8-2
Model number (symmetrical)	TLD-6042-SR1-2	TLD-6042-SR6-2	-	TLD-6042-SR8-2
Model name	High-Grade XY Stage 60 x 60			
Travel direction	XY-axis double direction			
Stage surface	60 mm x 60 mm			
Clamp method	Operator side plate clamp (capable of feeding and clamping the stage on the same surface)			
Operating part mounting position	Side			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s			
Permissible moment	Yaw 1200 N-cm, pitch 1200 N-cm, roll 1200 N-cm			
Moment rigidity	Yaw rigidity 0.08 s/N-cm, pitch rigidity 0.06 s/N-cm, roll rigidity 0.06 s/N-cm			
Parallelism	0.030 mm			
Parallelism of motion	0.014 mm			
XY orthogonality	0.010 mm			
Load capacity	192.1 N (19.6 kgf)			
Mass	0.8 kg		1.2 kg	0.8 kg
Main materials/surface treatment	Stainless steel/black oxide chrome			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



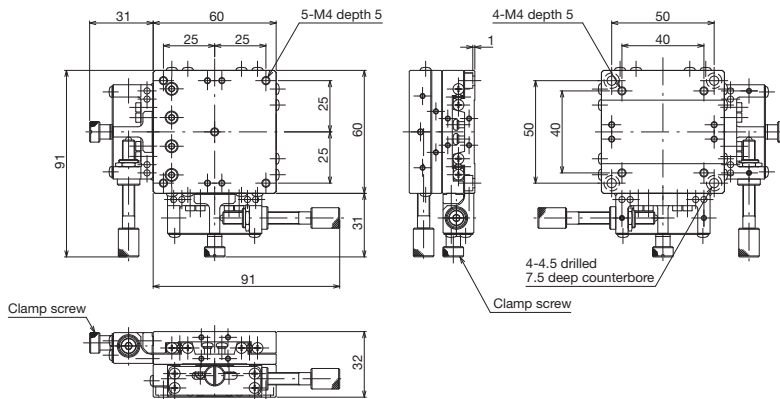
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



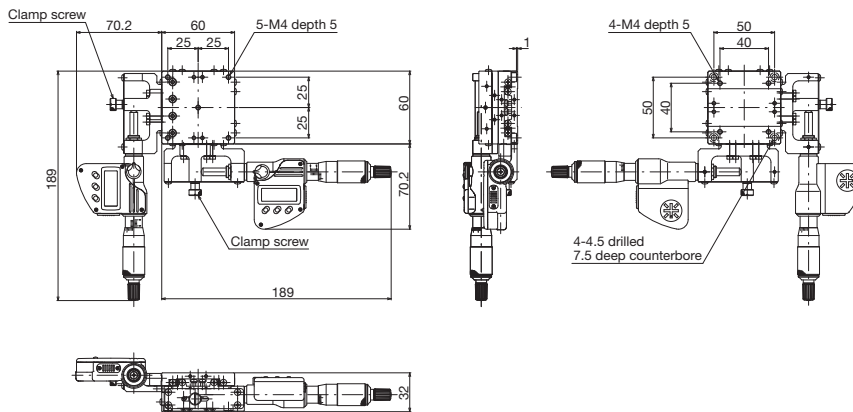
*TLD-6042-SR1-2 is a symmetrical type with the same dimensions as TLD-6042-S1-2.

↑ TLD-6042-S1-2

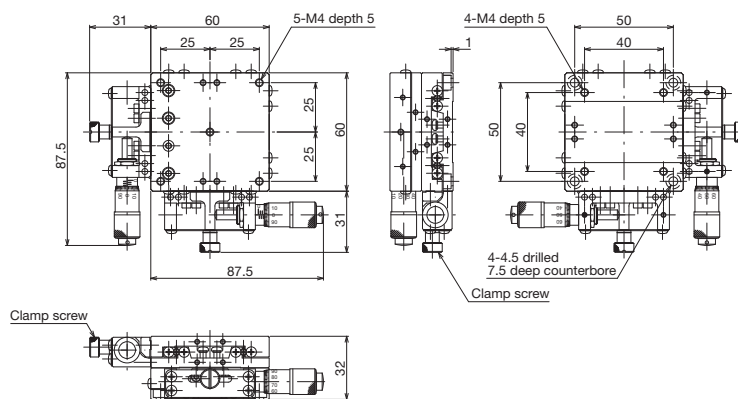


*TLD-6042-SR6-2 is a symmetrical type with the same dimensions as TLD-6042-S6-2.

↑ TLD-6042-S6-2



↑ TLD-6042-S7-2



*TLD-6042-SR8-2 is a symmetrical type with the same dimensions as TLD-6042-S8-2.

↑ TLD-6042-S8-2

Motorized Stages	Automated Products for Microscopes
Manual Stages	
Fix Stages	
Thin VB Stages	
Rock & Pinion Stages	
High-Grade Stages	
Swim Stages, Cross Roller Stages	
Z-Like Stages, Z Stages	
Rotary Stages	
Tilt Stages	
Tilt/Rotary Stages	
XZ, YZ Stages	
XYZ Stages	

High-Grade XY Stages 70 x 70 (Stainless Steel)



↑ TLD-7042-C1



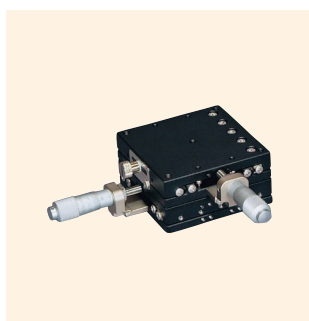
↑ TLD-7042-C6



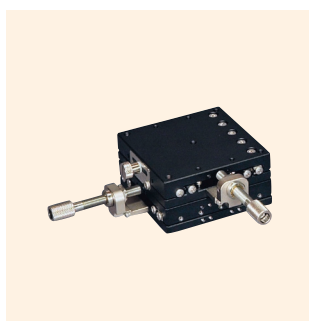
↑ TLD-7042-C7



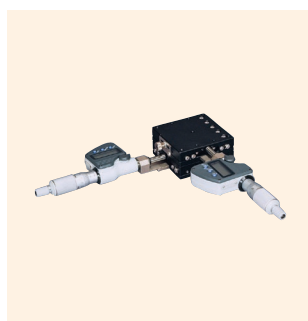
↑ TLD-7042-C8



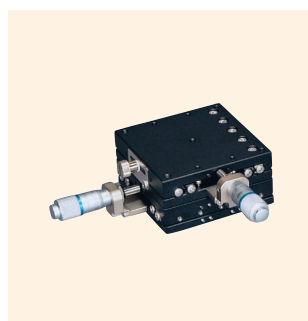
↑ TLD-7042-CR1



↑ TLD-7042-CR6



↑ TLD-7042-CR7



↑ TLD-7042-CR8

Features

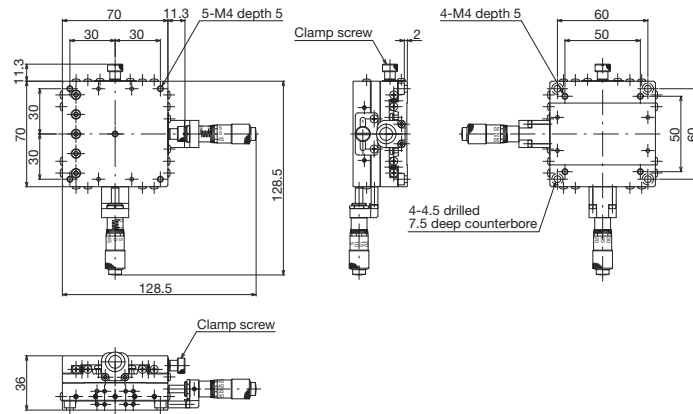
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLD-7042-C1	TLD-7042-C6	TLD-7042-C7	TLD-7042-C8
Model number (symmetrical)	TLD-7042-CR1	TLD-7042-CR6	TLD-7042-CR7	TLD-7042-CR8
Model name	High-Grade XY Stage 70 x 70			
Travel direction	XY-axis double direction			
Stage surface	70 mm x 70 mm			
Clamp method	Plate clamp			
Operating part mounting position	Center			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s			
Permissible moment	Yaw 1500 N-cm, pitch 1500 N-cm, roll 1500 N-cm			
Moment rigidity	Yaw rigidity 0.08 s/N-cm, pitch rigidity 0.06 s/N-cm, roll rigidity 0.06 s/N-cm			
Parallelism	0.030 mm			
Parallelism of motion	0.014 mm			
XY orthogonality	0.010 mm			
Load capacity	239.1 N (24.4 kgf)			
Mass	1.2 kg	1.6 kg		1.2 kg
Main materials/surface treatment	Stainless steel/black oxide chrome			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



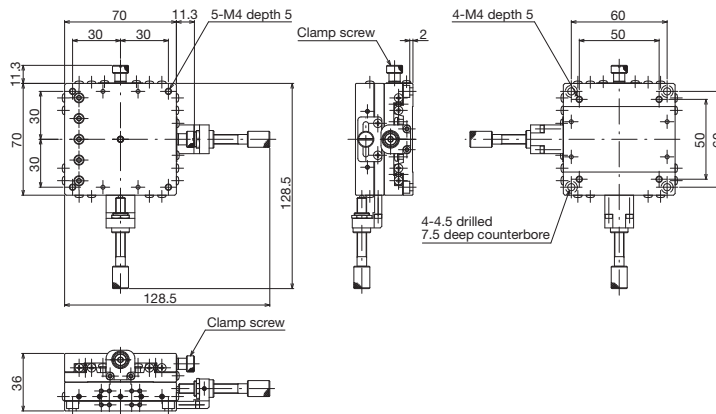
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



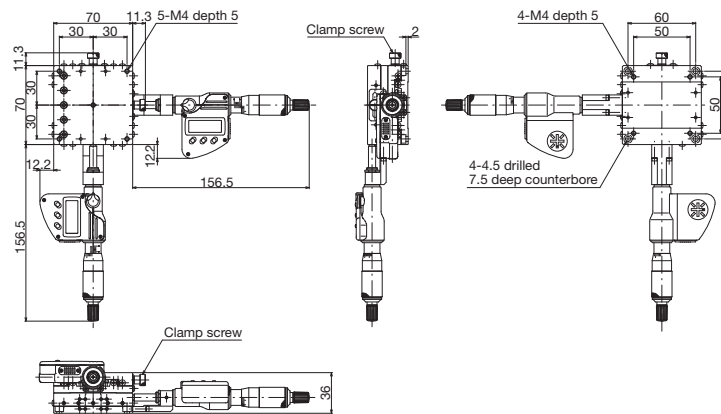
*TLD-7042-CR1 is a symmetrical type with the same dimensions as TLD-7042-C1.

[↑ TLD-7042-C1](#)



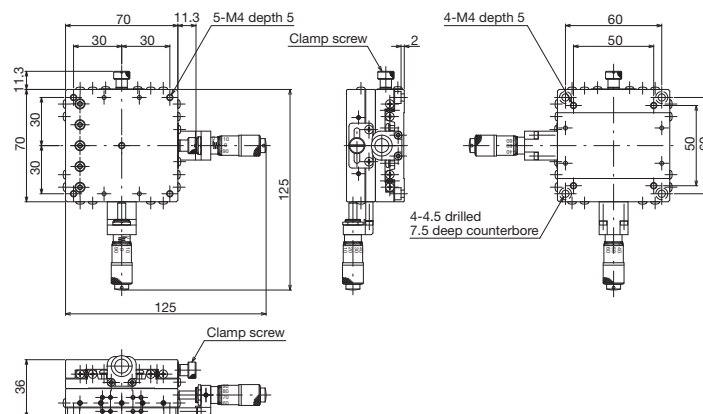
*TLD-7042-CR6 is a symmetrical type with the same dimensions as TLD-7042-C6.

[↑ TLD-7042-C6](#)



*TLD-7042-CR7 is a symmetrical type with the same dimensions as TLD-7042-C7.

[↑ TLD-7042-C7](#)



*TLD-7042-CR8 is a symmetrical type with the same dimensions as TLD-7042-C8.

[↑ TLD-7042-C8](#)

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rock & Pinion Stages
High-Grade Stages	Swim Stages, Cross Roller Stages	Z-Like Stages, Z Stages
Thin Rotary Stages	XY Stages	XYZ Stages

High-Grade XY Stages 70 x 70 (Stainless Steel)



↑ TLD-7042-S1



↑ TLD-7042-S6



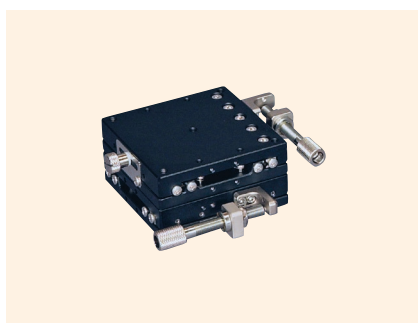
↑ TLD-7042-S7



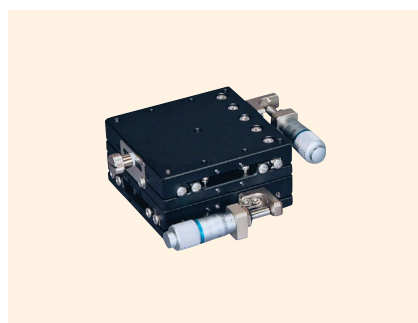
↑ TLD-7042-S8



↑ TLD-7042-SR1



↑ TLD-7042-SR6



↑ TLD-7042-SR8

Features

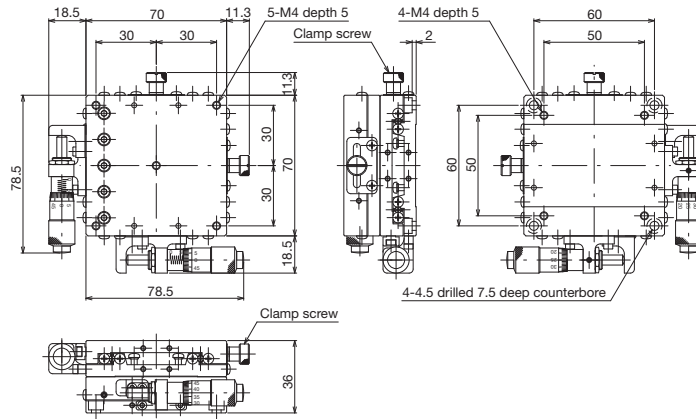
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLD-7042-S1	TLD-7042-S6	TLD-7042-S7	TLD-7042-S8
Model number (symmetrical)	TLD-7042-SR1	TLD-7042-SR6	-	TLD-7042-SR8
Model name	High-Grade XY Stage 70 x 70			
Travel direction	XY-axis double direction			
Stage surface	70 mm x 70 mm			
Clamp method	Plate clamp			
Operating part mounting position	Side			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s			
Permissible moment	Yaw 1500 N-cm, pitch 1500 N-cm, roll 1500 N-cm			
Moment rigidity	Yaw rigidity 0.08 s/N-cm, pitch rigidity 0.06 s/N-cm, roll rigidity 0.06 s/N-cm			
Parallelism	0.030 mm			
Parallelism of motion	0.014 mm			
XY orthogonality	0.010 mm			
Load capacity	239.1 N (24.4 kgf)			
Mass	1.2 kg		1.6 kg	1.2 kg
Main materials/surface treatment	Stainless steel/black oxide chrome			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



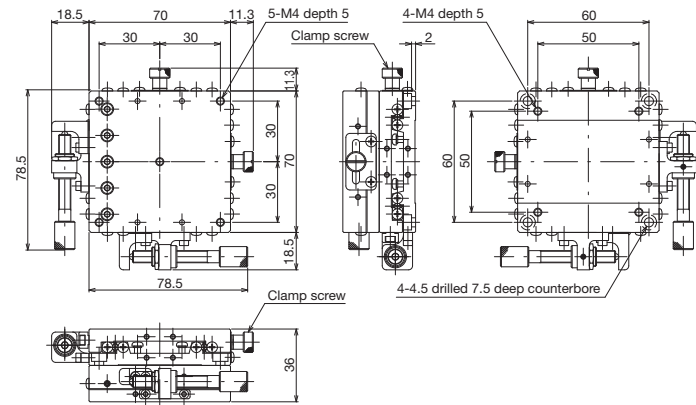
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



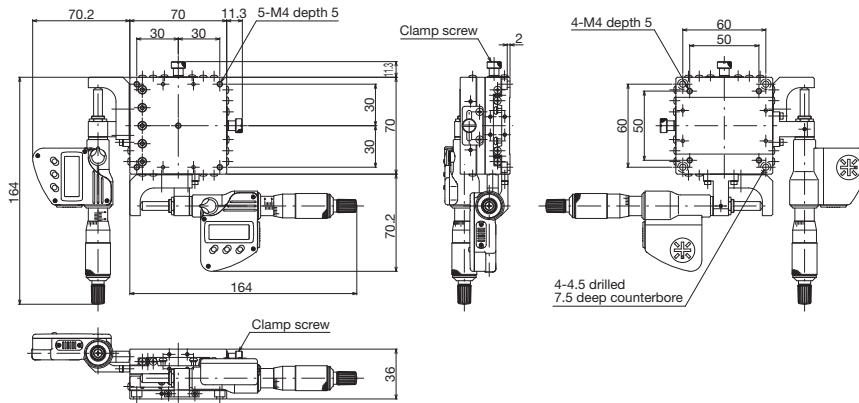
*TLD-7042-SR1 is a symmetrical type with the same dimensions as TLD-7042-S1.

↑ TLD-7042-S1

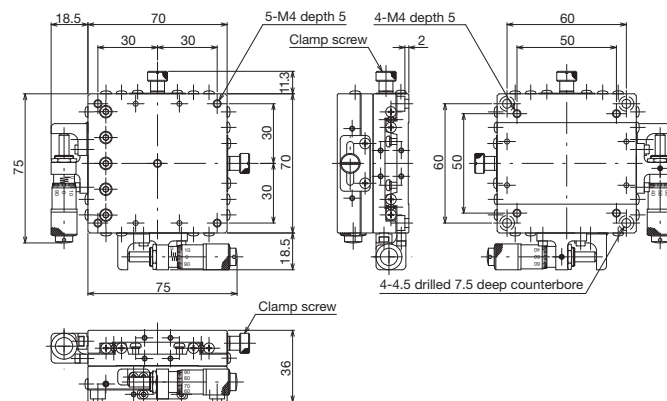


*TLD-7042-SR6 is a symmetrical type with the same dimensions as TLD-7042-S6.

↑ TLD-7042-S6



↑ TLD-7042-S7



*TLD-7042-SR8 is a symmetrical type with the same dimensions as TLD-7042-S8.

↑ TLD-7042-S8

Motorized Stages	Automated Products for Microscopes
Manual Stages	Manual Stages
Fix Stages	Fix Stages
Thin VB Stages	Thin VB Stages
Rock & Pinion Stages	Rock & Pinion Stages
High-Grade Stages	High-Grade Stages
Swim Stages, Cross Roller Stages	Swim Stages, Cross Roller Stages
Z-Lift Stages, Z Stages	Z-Lift Stages, Z Stages
Rotary Stages	Rotary Stages
Tilt Stages	Tilt Stages
Tilt/Rotary Stages	Tilt/Rotary Stages
XZ, YZ Stages	XZ, YZ Stages
XYZ Stages	XYZ Stages

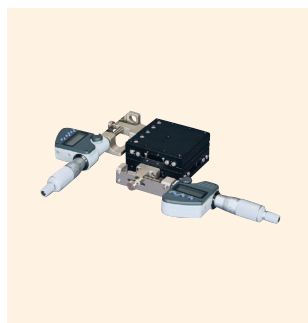
High-Grade XY Stages 70 x 70 (Stainless Steel)



↑ TLD-7042-S1-2



↑ TLD-7042-S6-2



↑ TLD-7042-S7-2



↑ TLD-7042-S8-2



↑ TLD-7042-SR1-2



↑ TLD-7042-SR6-2



↑ TLD-7042-SR8-2

Features

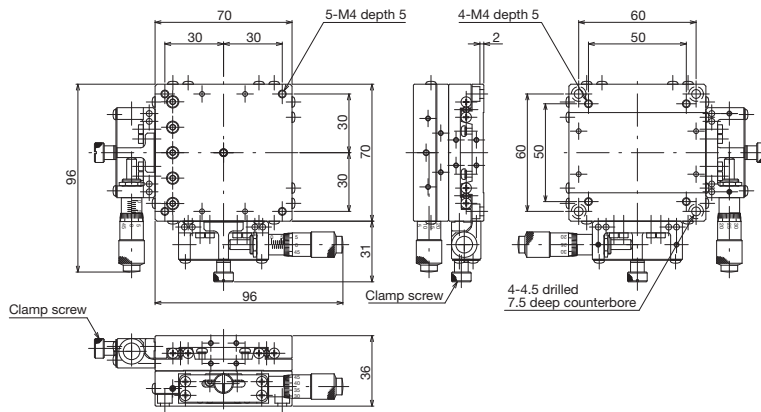
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is an operator side plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLD-7042-S1-2	TLD-7042-S6-2	TLD-7042-S7-2	TLD-7042-S8-2
Model number (symmetrical)	TLD-7042-SR1-2	TLD-7042-SR6-2	-	TLD-7042-SR8-2
Model name	High-Grade XY Stage 70 x 70			
Travel direction	XY-axis double direction			
Stage surface	70 mm x 70 mm			
Clamp method	Operator side plate clamp (capable of feeding and clamping the stage on the same surface)			
Operating part mounting position	Side			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s			
Permissible moment	Yaw 1500 N-cm, pitch 1500 N-cm, roll 1500 N-cm			
Moment rigidity	Yaw rigidity 0.08 s/N-cm, pitch rigidity 0.06 s/N-cm, roll rigidity 0.06 s/N-cm			
Parallelism	0.030 mm			
Parallelism of motion	0.014 mm			
XY orthogonality	0.010 mm			
Load capacity	239.1 N (24.4 kgf)			
Mass	1.2 kg	1.6 kg		1.2 kg
Main materials/surface treatment	Stainless steel/black oxide chrome			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

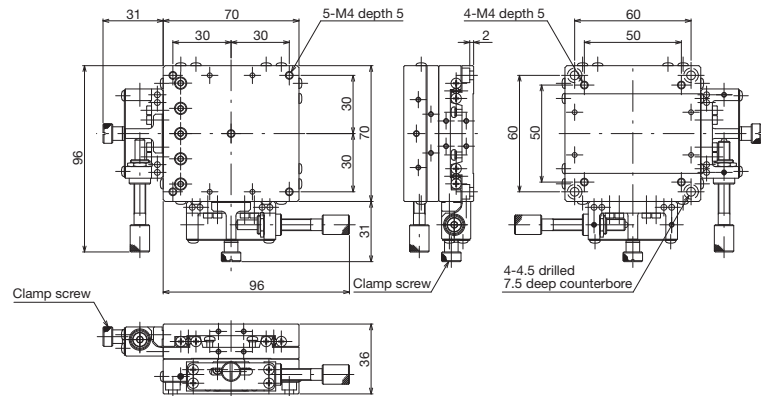


High-Grade Stages ◀ Manual Stages ◀

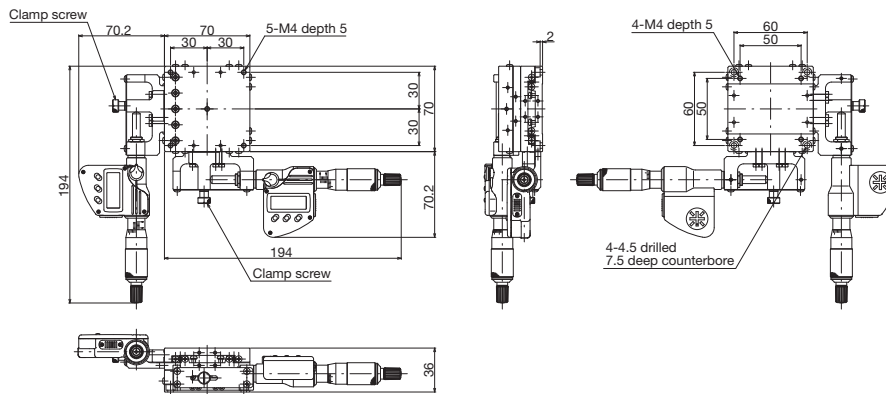
Product Appearance



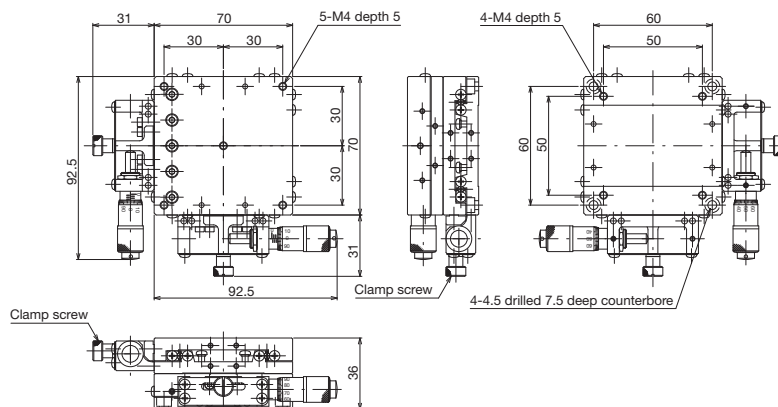
*TLD-7042-SR1-2 is a symmetrical type with the same dimensions as TLD-7042-S1-2. [↑ TLD-7042-S1-2](#)



*TLD-7042-SR6-2 is a symmetrical type with the same dimensions as TLD-7042-S6-2. [↑ TLD-7042-S6-2](#)



[↑ TLD-7042-S7-2](#)



*TLD-7042-SR8-2 is a symmetrical type with the same dimensions as TLD-7042-S8-2. [↑ TLD-7042-S8-2](#)

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rock & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Lift Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

High-Grade Z Stages 40 x 40 (Stainless Steel)



↑ TLZ-4042-C1



↑ TLZ-4042-C6



↑ TLZ-4042-C8



↑ TLZ-4042-S1



↑ TLZ-4042-S6



↑ TLZ-4042-S8

Features

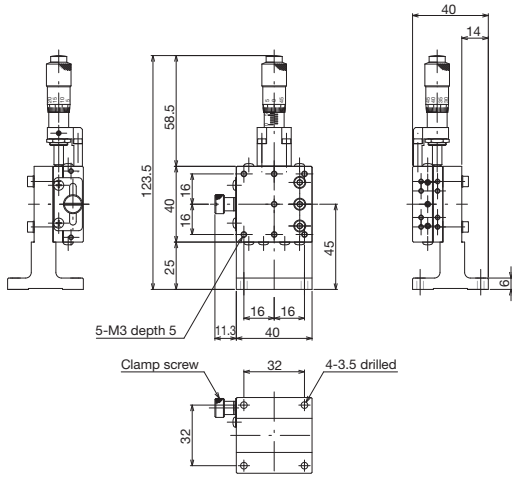
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLZ-4042-C1	TLZ-4042-S1	TLZ-4042-C6	TLZ-4042-S6	TLZ-4042-C8	TLZ-4042-S8
Model number (symmetrical)	TLZ-4042-CR1	TLZ-4042-SR1	TLZ-4042-CR6	TLZ-4042-SR6	TLZ-4042-CR8	TLZ-4042-SR8
Model name	High-Grade Z Stage 40 x 40					
Travel direction	Z-axis single direction					
Stage surface	40 mm x 40 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (Standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s					
Permissible moment	Yaw 500 N-cm, pitch 500 N-cm, roll 500 N-cm					
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm					
Perpendicularity	0.065 mm					
Perpendicularity of motion	0.025 mm					
Load capacity	49 N (5 kgf)					
Mass	0.3 kg					
Main materials/surface treatment	Stainless steel, aluminum alloy (Z bracket)/black oxide chrome, black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					



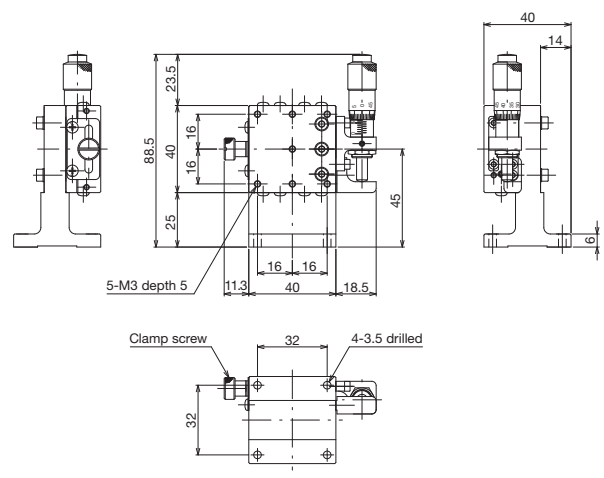
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



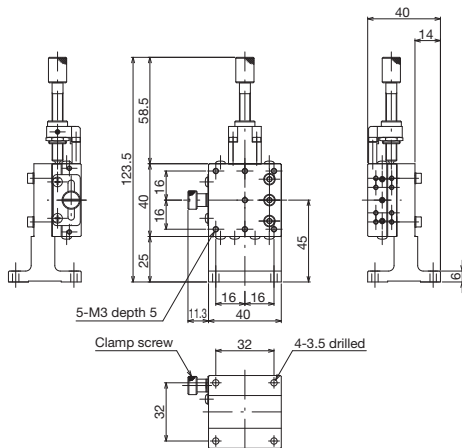
*TLZ-4042-CR1 is a symmetrical type with the same dimensions as TLZ-4042-C1.

↑ TLZ-4042-C1



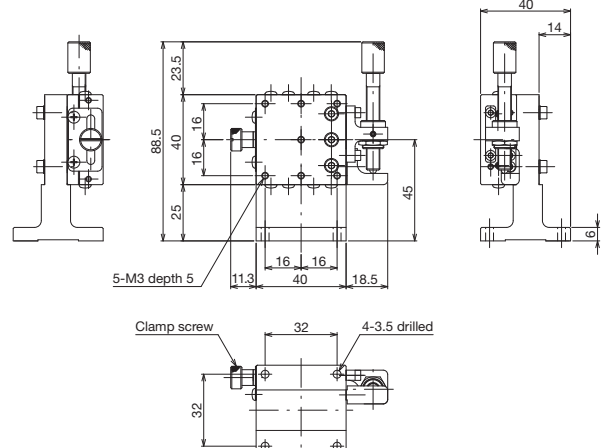
*TLZ-4042-SR1 is a symmetrical type with the same dimensions as TLZ-4042-S1.

↑ TLZ-4042-S1



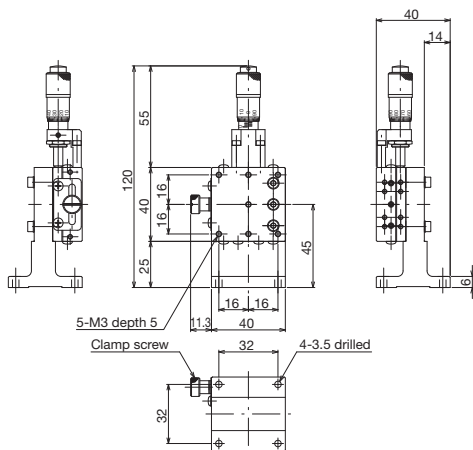
*TLZ-4042-CR6 is a symmetrical type with the same dimensions as TLZ-4042-C6.

↑ TLZ-4042-C6



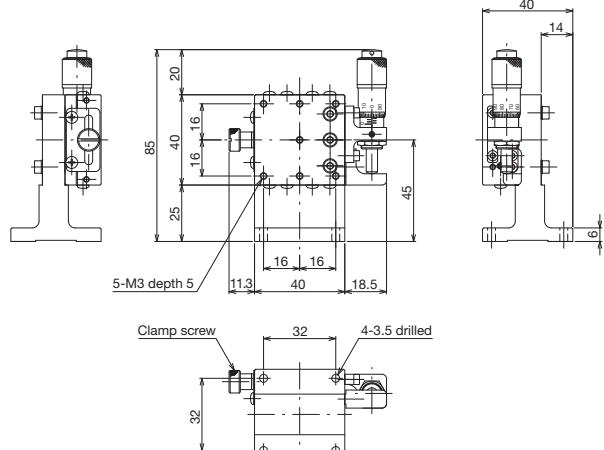
*TLZ-4042-SR6 is a symmetrical type with the same dimensions as TLZ-4042-S6.

↑ TLZ-4042-S6



*TLZ-4042-CR8 is a symmetrical type with the same dimensions as TLZ-4042-C8.

↑ TLZ-4042-C8

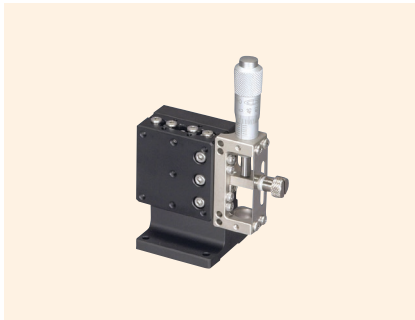


*TLZ-4042-SR8 is a symmetrical type with the same dimensions as TLZ-4042-S8.

↑ TLZ-4042-S8

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin V8 Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Like Stages
Rodless Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

High-Grade Z Stages 40 x 40 (Stainless Steel)



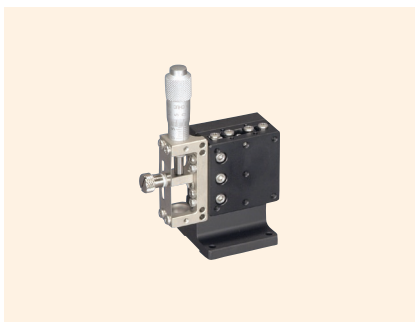
↑ TLZ-4042-S1-2



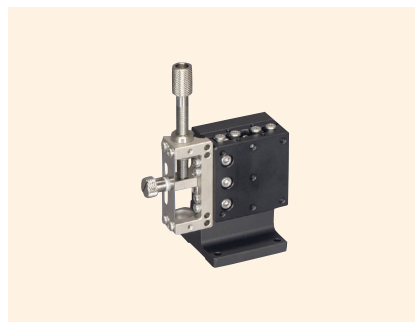
↑ TLZ-4042-S6-2



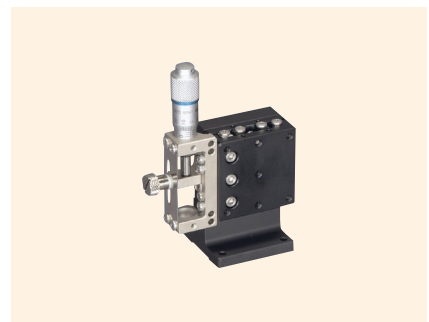
↑ TLZ-4042-S8-2



↑ TLZ-4042-SR1-2



↑ TLZ-4042-SR6-2



↑ TLZ-4042-SR8-2

Features

- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Clamp method is an operator side plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLZ-4042-S1-2	TLZ-4042-S6-2	TLZ-4042-S8-2
Model number (symmetrical)	TLZ-4042-SR1-2	TLZ-4042-SR6-2	TLZ-4042-SR8-2
Model name	High-Grade Z Stage 40 x 40		
Travel direction	Z-axis single direction		
Stage surface	40 mm x 40 mm		
Clamp method	Operator side plate clamp (capable of feeding and clamping the stage on the same surface)		
Operating part mounting position	Side		
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm		±3 mm
Travel amount/1 knob rotation	0.5 mm		0.1 mm
Scale	Micrometer 0.01 mm	-	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm
Travel guide	HG-VCR (V-groove and cross rollers)		
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s		
Permissible moment	Yaw 500 N-cm, pitch 500 N-cm, roll 500 N-cm		
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm		
Perpendicularity	0.065 mm		
Perpendicularity of motion	0.025 mm		
Load capacity	49 N (5 kgf)		
Mass	0.3 kg		
Main materials/surface treatment	Stainless steel, aluminum alloy (Z bracket)/black oxide chrome, black satin anodized finish		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

High-Grade Z Stages 50 x 50 (Stainless Steel)



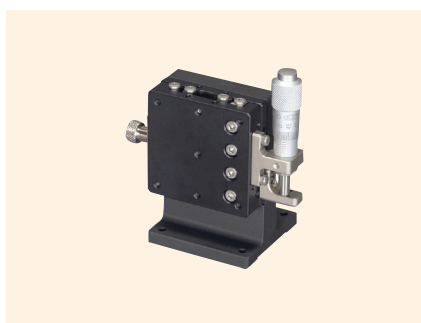
↑ TLZ-5042-C1



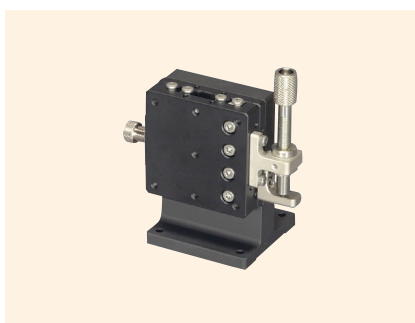
↑ TLZ-5042-C6



↑ TLZ-5042-C8



↑ TLZ-5042-S1



↑ TLZ-5042-S6



↑ TLZ-5042-S8

Features

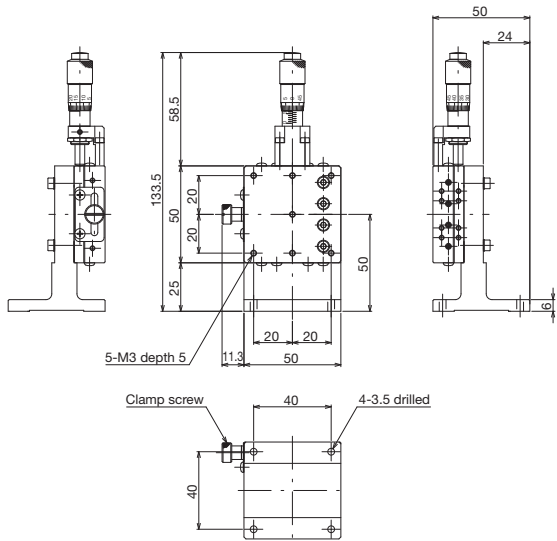
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLZ-5042-C1	TLZ-5042-S1	TLZ-5042-C6	TLZ-5042-S6	TLZ-5042-C8	TLZ-5042-S8
Model number (symmetrical)	TLZ-5042-CR1	TLZ-5042-SR1	TLZ-5042-CR6	TLZ-5042-SR6	TLZ-5042-CR8	TLZ-5042-SR8
Model name	High-Grade Z Stage 50 x 50					
Travel direction	Z-axis single direction					
Stage surface	50 mm x 50 mm					
Clamp method	Plate clamp					
Operating part mounting position	Center	Side	Center	Side	Center	Side
Feed method	CMH-13RM (Standard micrometer)		Feed screw P=0.5 mm		MHS4-6.5FP (Fine pitch micro)	
Travel amount	±6.5 mm				±3 mm	
Travel amount/1 knob rotation	0.5 mm				0.1 mm	
Scale	Micrometer 0.01 mm		-		Micrometer 0.002 mm	
Sensitivity	0.003 mm		0.01 mm		0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s					
Permissible moment	Yaw 800 N-cm, pitch 800 N-cm, roll 800 N-cm					
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm					
Perpendicularity	0.065 mm					
Perpendicularity of motion	0.025 mm					
Load capacity	49 N (5 kgf)					
Mass	0.45 kg					
Main materials/surface treatment	Stainless steel, aluminum alloy (Z bracket)/black oxide chrome, black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					



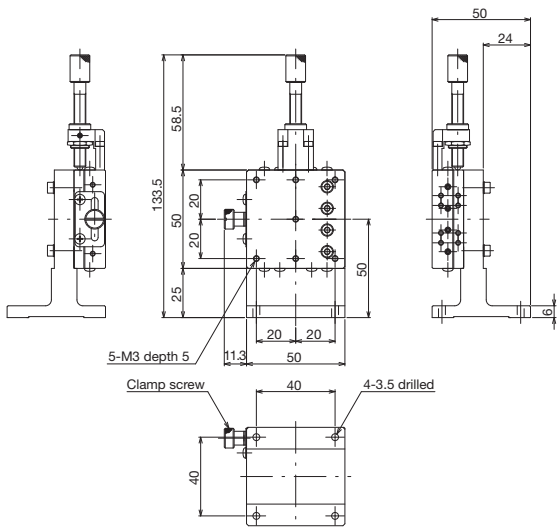
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



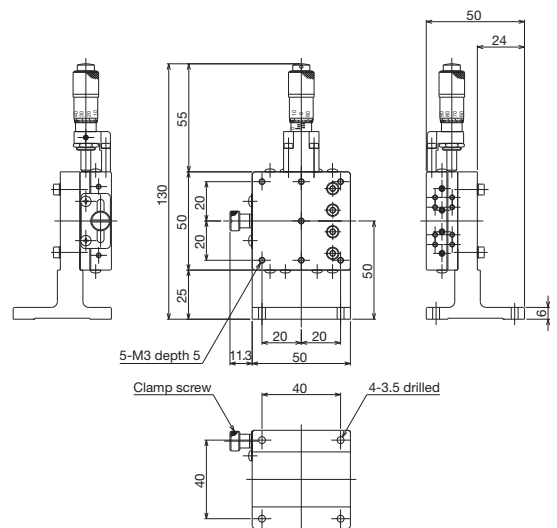
*TLZ-5042-CR1 is a symmetrical type with the same dimensions as TLZ-5042-C1.

↑ TLZ-5042-C1



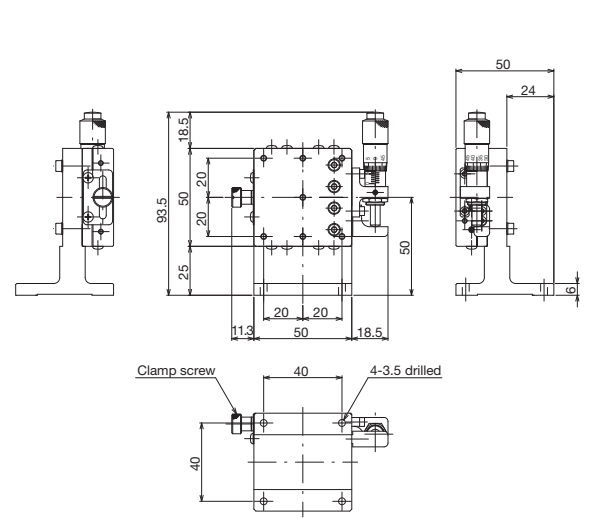
*TLZ-5042-CR6 is a symmetrical type with the same dimensions as TLZ-5042-C6.

↑ TLZ-5042-C6



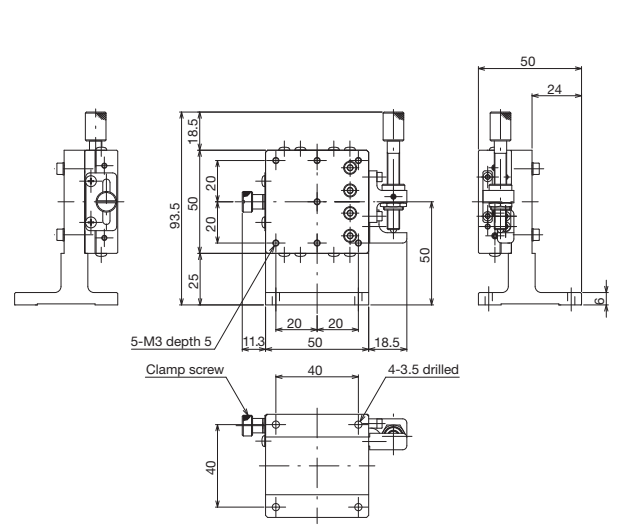
*TLZ-5042-CR8 is a symmetrical type with the same dimensions as TLZ-5042-C8.

↑ TLZ-5042-C8



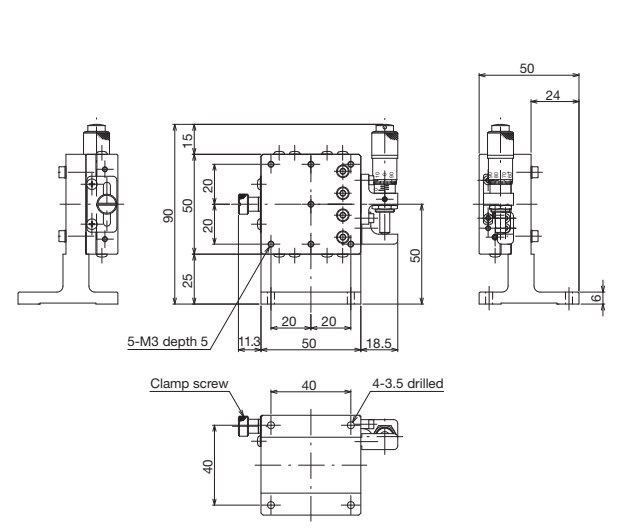
*TLZ-5042-SR1 is a symmetrical type with the same dimensions as TLZ-5042-S1.

↑ TLZ-5042-S1



*TLZ-5042-SR6 is a symmetrical type with the same dimensions as TLZ-5042-S6.

↑ TLZ-5042-S6



*TLZ-5042-SR8 is a symmetrical type with the same dimensions as TLZ-5042-S8.

↑ TLZ-5042-S8

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin Vθ Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Like Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

High-Grade Z Stages 50 x 50 (Stainless Steel)



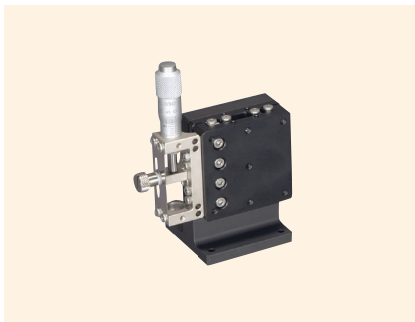
↑ TLZ-5042-S1-2



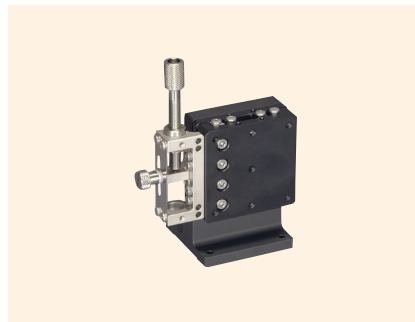
↑ TLZ-5042-S6-2



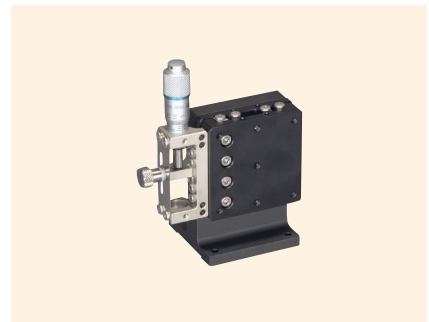
↑ TLZ-5042-S8-2



↑ TLZ-5042-SR1-2



↑ TLZ-5042-SR6-2



↑ TLZ-5042-SR8-2

Features

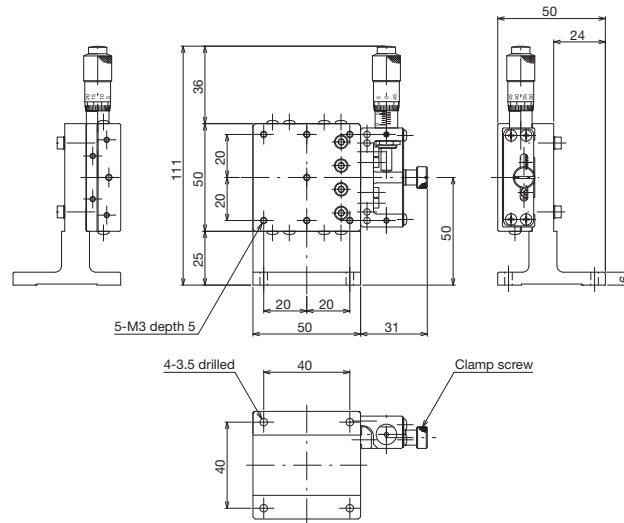
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Clamp method is an operator side plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLZ-5042-S1-2	TLZ-5042-S6-2	TLZ-5042-S8-2
Model number (symmetrical)	TLZ-5042-SR1-2	TLZ-5042-SR6-2	TLZ-5042-SR8-2
Model name	High-Grade Z Stage 50 x 50		
Travel direction	Z-axis single direction		
Stage surface	50 mm x 50 mm		
Clamp method	Operator side plate clamp (capable of feeding and clamping the stage on the same surface)		
Operating part mounting position	Side		
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm		±3 mm
Travel amount/1 knob rotation	0.5 mm		0.1 mm
Scale	Micrometer 0.01 mm	-	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm
Travel guide	HG-VCR (V-groove and cross rollers)		
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s		
Permissible moment	Yaw 800 N-cm, pitch 800 N-cm, roll 800 N-cm		
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm		
Perpendicularity	0.065 mm		
Perpendicularity of motion	0.025 mm		
Load capacity	49 N (5 kgf)		
Mass	0.45 kg		
Main materials/surface treatment	Stainless steel, aluminum alloy (Z bracket)/black oxide chrome, black satin anodized finish		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

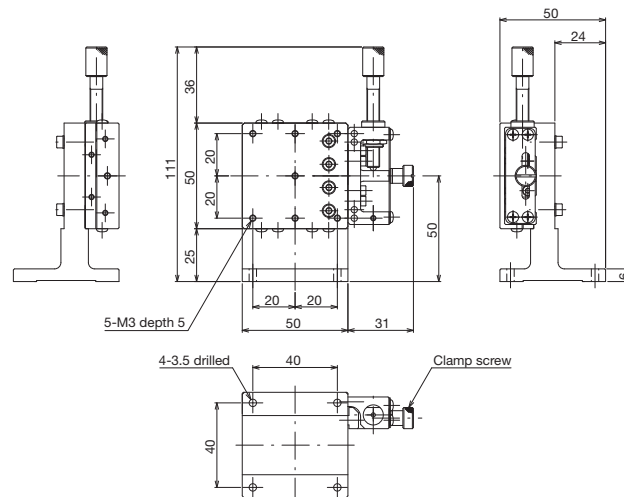


High-Grade Stages ◀ Manual Stages ◀

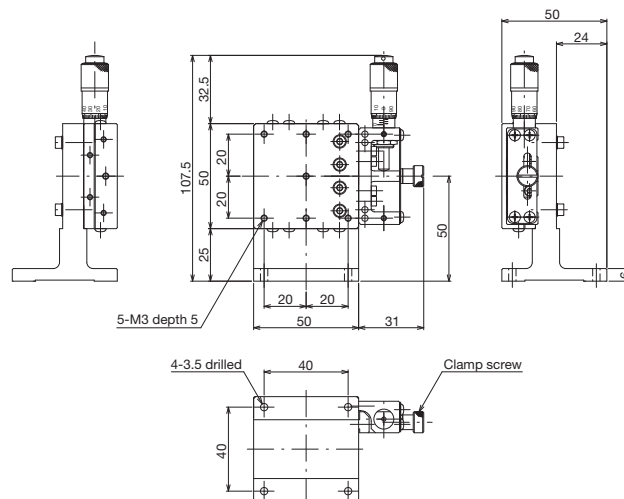
Product Appearance



*TLZ-5042-SR1-2 is a symmetrical type with the same dimensions as TLZ-5042-S1-2. [↑ TLZ-5042-S1-2](#)



*TLZ-5042-SR6-2 is a symmetrical type with the same dimensions as TLZ-5042-S6-2. [↑ TLZ-5042-S6-2](#)



*TLZ-5042-SR8-2 is a symmetrical type with the same dimensions as TLZ-5042-S8-2. [↑ TLZ-5042-S8-2](#)

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fx Stages	Thin Vθ Stages	Rack & Pinion Stages	High-Grade Stages	Swirl Stages, Cross Roller Stages	Z-Like Stages, Z Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XYZ Stages
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High-Grade Z Stages 60 x 60 (Stainless Steel)



↑ TLZ-6042-C1



↑ TLZ-6042-C6



↑ TLZ-6042-C7



↑ TLZ-6042-C8



↑ TLZ-6042-CR1



↑ TLZ-6042-CR6



↑ TLZ-6042-CR7



↑ TLZ-6042-CR8

Features

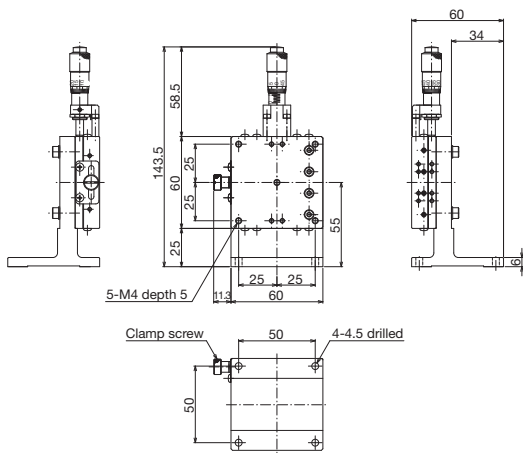
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLZ-6042-C1	TLZ-6042-C6	TLZ-6042-C7	TLZ-6042-C8
Model number (symmetrical)	TLZ-6042-CR1	TLZ-6042-CR6	TLZ-6042-CR7	TLZ-6042-CR8
Model name	High-Grade Z Stage 60 x 60			
Travel direction	Z-axis single direction			
Stage surface	60 mm x 60 mm			
Clamp method	Plate clamp			
Operating part mounting position	Center			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s			
Permissible moment	Yaw 1200 N-cm, pitch 1200 N-cm, roll 1200 N-cm			
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm			
Perpendicularity	0.065 mm			
Perpendicularity of motion	0.025 mm			
Load capacity	49 N (5 kgf)			
Mass	0.6 kg		0.8 kg	0.6 kg
Main materials/surface treatment	Stainless steel, aluminum alloy (Z bracket)/black oxide chrome, black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



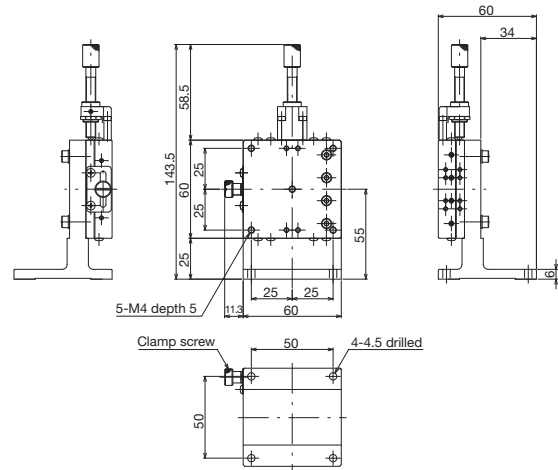
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



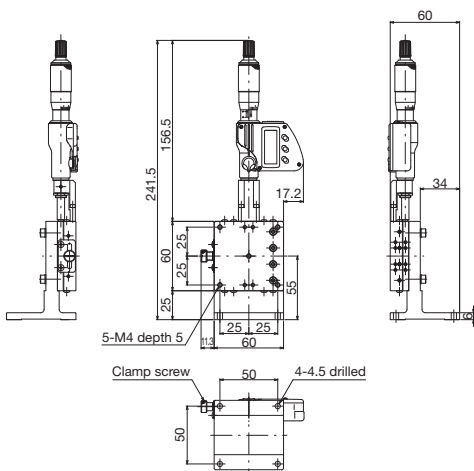
*TLZ-6042-CR1 is a symmetrical type with the same dimensions as TLZ-6042-C1.

↑ TLZ-6042-C1



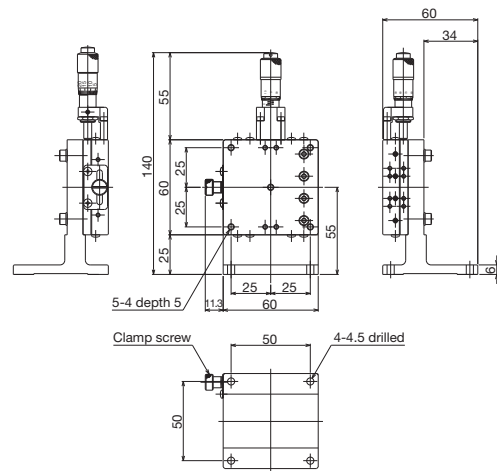
*TLZ-6042-CR6 is a symmetrical type with the same dimensions as TLZ-6042-C6.

↑ TLZ-6042-C6



*TLZ-6042-CR7 is a symmetrical type with the same dimensions as TLZ-6042-C7.

↑ TLZ-6042-C7

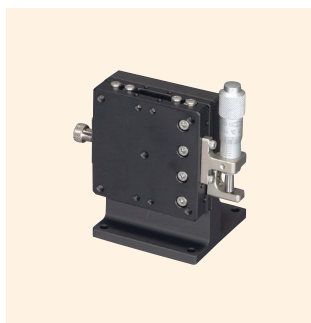


*TLZ-6042-CR8 is a symmetrical type with the same dimensions as TLZ-6042-C8.

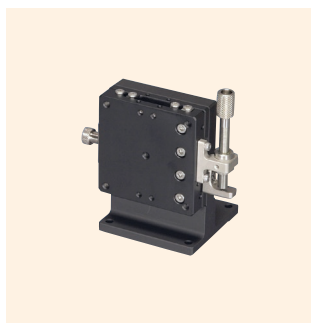
↑ TLZ-6042-C8

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin V8 Stages	Rack & Pinion Stages	High-Grade Stages	Spin Stages, Cross Roller Stages	Z-Like Stages	Rotary Stages	TR Stages	TR/Rotary Stages	XZ, YZ Stages	XZ Stages
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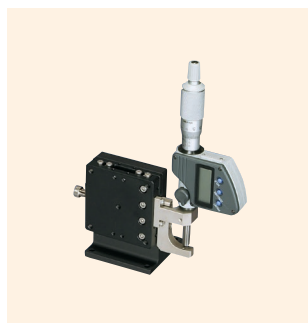
High-Grade Z Stages 60 x 60 (Stainless Steel)



↑ TLZ-6042-S1



↑ TLZ-6042-S6



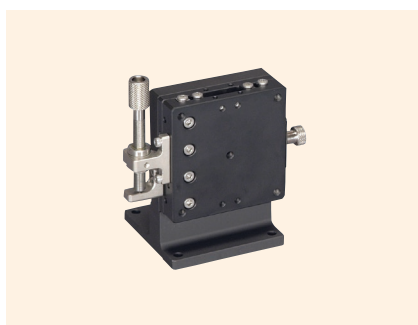
↑ TLZ-6042-S7



↑ TLZ-6042-S8



↑ TLZ-6042-SR1



↑ TLZ-6042-SR6



↑ TLZ-6042-SR8

Features

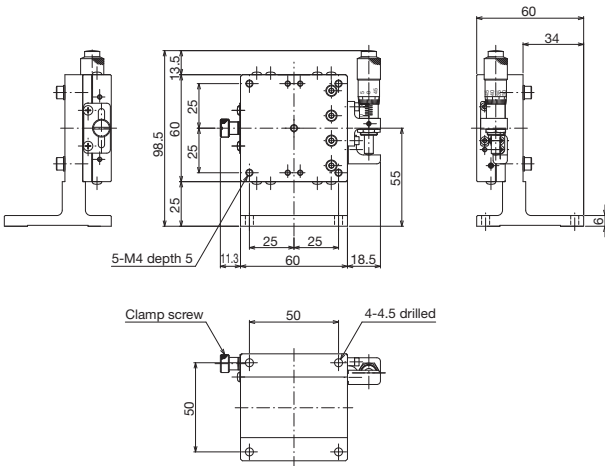
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLZ-6042-S1	TLZ-6042-S6	TLZ-6042-S7	TLZ-6042-S8
Model number (symmetrical)	TLZ-6042-SR1	TLZ-6042-SR6	-	TLZ-6042-SR8
Model name	High-Grade Z Stage 60 x 60			
Travel direction	Z-axis single direction			
Stage surface	60 mm x 60 mm			
Clamp method	Plate clamp			
Operating part mounting position	Side			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s			
Permissible moment	Yaw 1200 N-cm, pitch 1200 N-cm, roll 1200 N-cm			
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm			
Perpendicularity	0.065 mm			
Perpendicularity of motion	0.025 mm			
Load capacity	49 N (5 kgf)			
Mass	0.6 kg	0.8 kg		0.6 kg
Main materials/surface treatment	Stainless steel, aluminum alloy (Z bracket)/black oxide chrome, black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



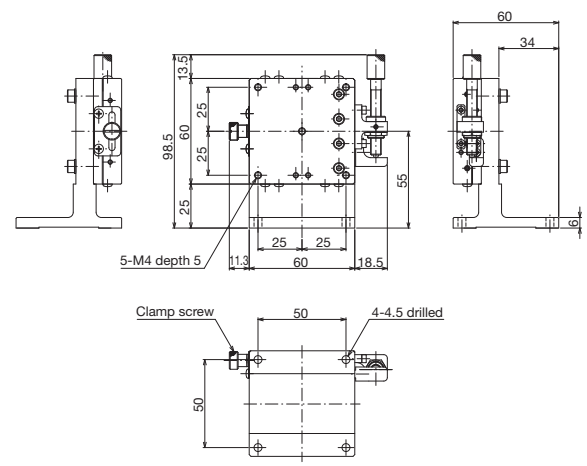
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



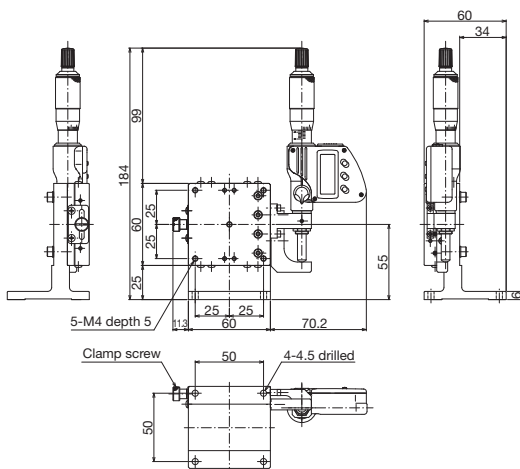
*TLZ-6042-SR1 is a symmetrical type with the same dimensions as TLZ-6042-S1.

↑ TLZ-6042-S1

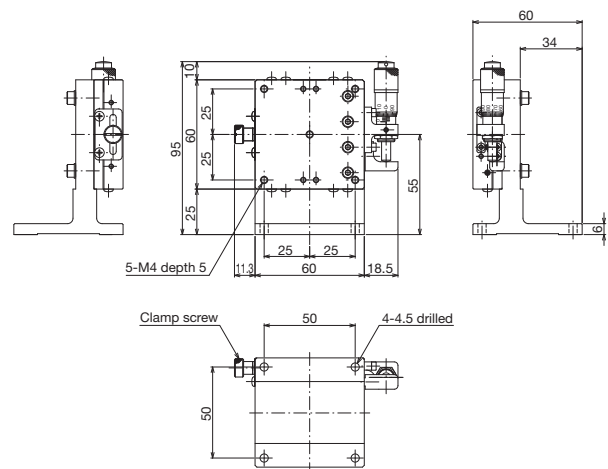


*TLZ-6042-SR6 is a symmetrical type with the same dimensions as TLZ-6042-S6.

↑ TLZ-6042-S6



↑ TLZ-6042-S7



*TLZ-6042-SR8 is a symmetrical type with the same dimensions as TLZ-6042-S8.

↑ TLZ-6042-S8

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Like Stages, Z Stages
Rotary Stages
TR Stages
TR/Rotary Stages
XZ, YZ Stages
XZ Stages

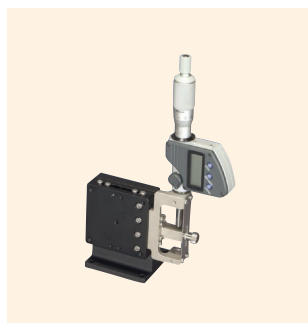
High-Grade Z Stages 60 x 60 (Stainless Steel)



↑ TLZ-6042-S1-2



↑ TLZ-6042-S6-2



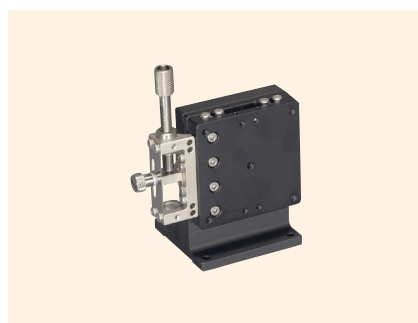
↑ TLZ-6042-S7-2



↑ TLZ-6042-S8-2



↑ TLZ-6042-SR1-2



↑ TLZ-6042-SR6-2



↑ TLZ-6042-SR8-2

Features

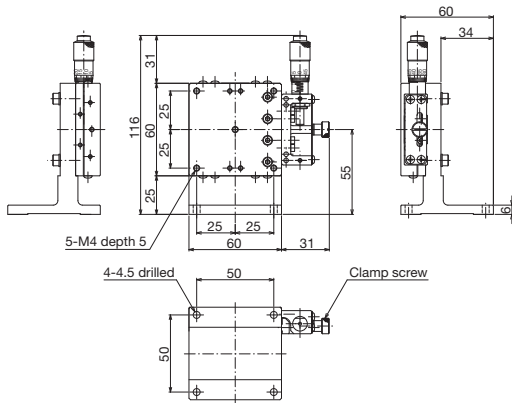
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is an operator side plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLZ-6042-S1-2	TLZ-6042-S6-2	TLZ-6042-S7-2	TLZ-6042-S8-2
Model number (symmetrical)	TLZ-6042-SR1-2	TLZ-6042-SR6-2	-	TLZ-6042-SR8-2
Model name	High-Grade Z Stage 60 x 60			
Travel direction	Z-axis single direction			
Stage surface	60 mm x 60 mm			
Clamp method	Operator side plate clamp (capable of feeding and clamping the stage on the same surface)			
Operating part mounting position	Side			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s			
Permissible moment	Yaw 1200 N-cm, pitch 1200 N-cm, roll 1200 N-cm			
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm			
Perpendicularity	0.065 mm			
Perpendicularity of motion	0.025 mm			
Load capacity	49 N (5 kgf)			
Mass	0.6 kg	0.8 kg		0.6 kg
Main materials/surface treatment	Stainless steel, aluminum alloy (Z bracket)/black oxide chrome, black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



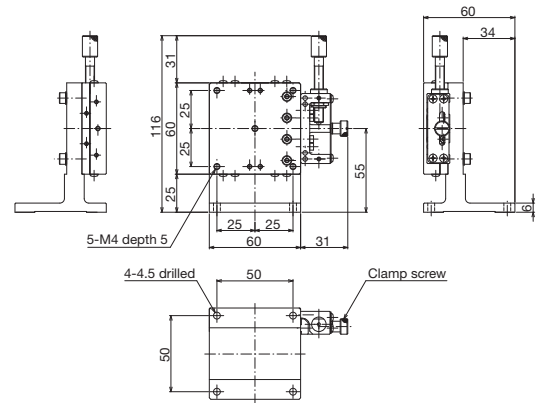
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



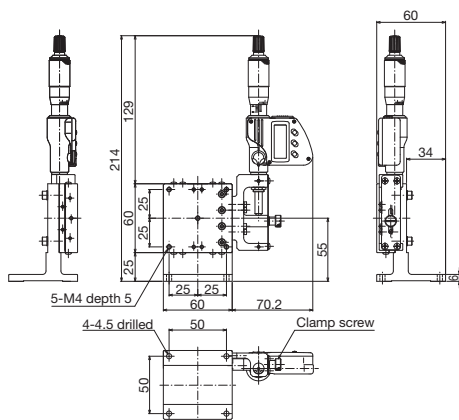
*TLZ-6042-SR1-2 is a symmetrical type with the same dimensions as TLZ-6042-S1-2.

↑ TLZ-6042-S1-2

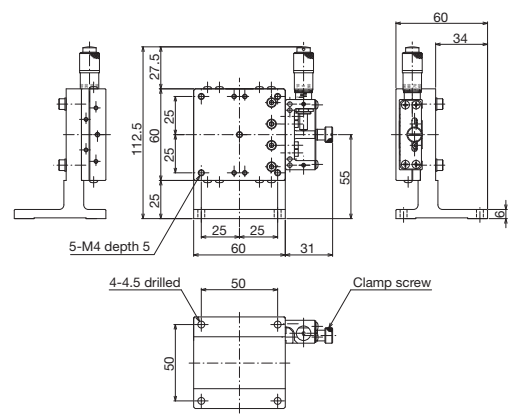


*TLZ-6042-SR6-2 is a symmetrical type with the same dimensions as TLZ-6042-S6-2.

↑ TLZ-6042-S6-2



↑ TLZ-6042-S7-2



*TLZ-6042-SR8-2 is a symmetrical type with the same dimensions as TLZ-6042-S8-2.

↑ TLZ-6042-S8-2

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin V8 Stages	Rack & Pinion Stages
High-Grade Stages	Spin Stages, Cross Roller Stages, Z-Like Stages, Z Stages	Rotary Stages
Thin Stages	Thin Rotary Stages	XZ, YZ Stages
		XZ Stages

High-Grade Z Stages 70 x 70 (Stainless Steel)



↑ TLZ-7042-C1



↑ TLZ-7042-C6



↑ TLZ-7042-C7



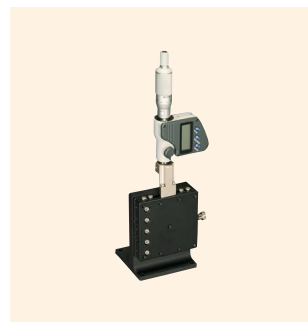
↑ TLZ-7042-C8



↑ TLZ-7042-CR1



↑ TLZ-7042-CR6



↑ TLZ-7042-CR7



↑ TLZ-7042-CR8

Features

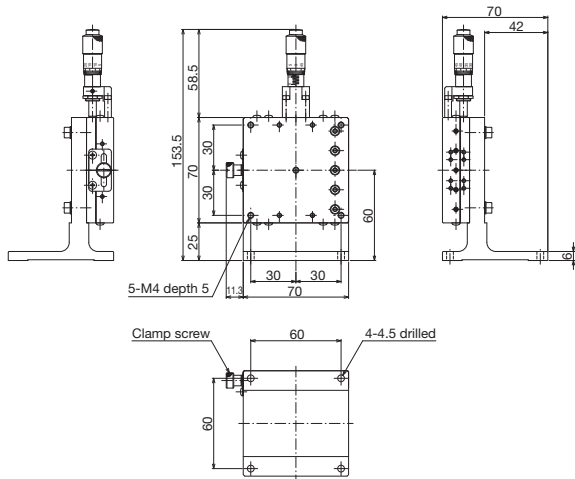
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLZ-7042-C1	TLZ-7042-C6	TLZ-7042-C7	TLZ-7042-C8
Model number (symmetrical)	TLZ-7042-CR1	TLZ-7042-CR6	TLZ-7042-CR7	TLZ-7042-CR8
Model name	High-Grade Z Stage 70 x 70			
Travel direction	Z-axis single direction			
Stage surface	70 mm x 70 mm			
Clamp method	Plate clamp			
Operating part mounting position	Center			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s			
Permissible moment	Yaw 1500 N-cm, pitch 1500 N-cm, roll 1500 N-cm			
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm			
Perpendicularity	0.065 mm			
Perpendicularity of motion	0.025 mm			
Load capacity	49 N (5 kgf)			
Mass	0.85 kg	1.05 kg		0.85 kg
Main materials/surface treatment	Stainless steel, aluminum alloy (Z bracket)/black oxide chrome, black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



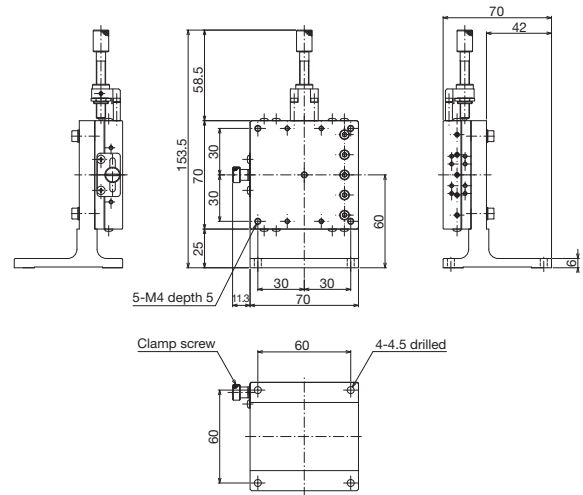
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



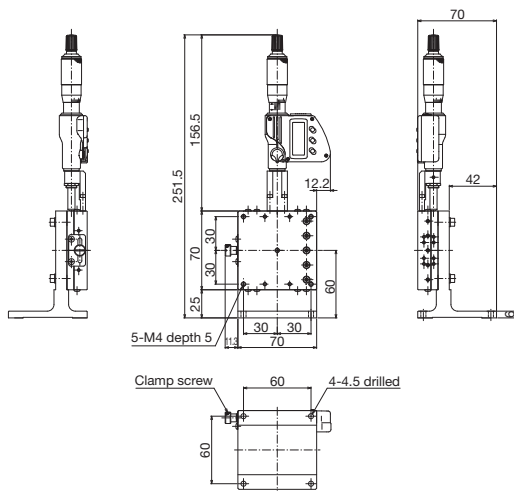
*TLZ-7042-CR1 is a symmetrical type with the same dimensions as TLZ-7042-C1.

↑ TLZ-7042-C1



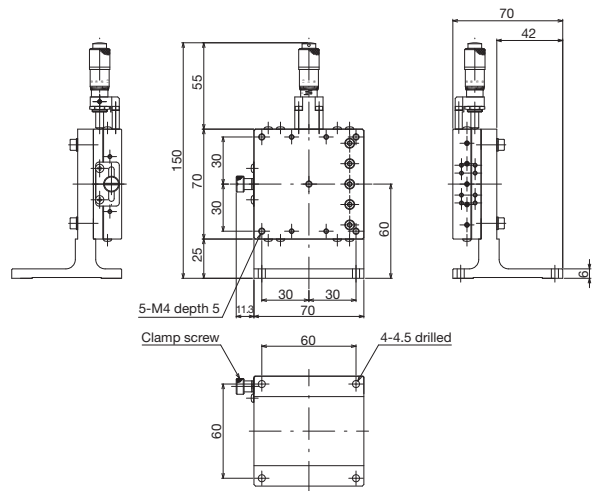
*TLZ-7042-CR6 is a symmetrical type with the same dimensions as TLZ-7042-C6.

↑ TLZ-7042-C6



*TLZ-7042-CR7 is a symmetrical type with the same dimensions as TLZ-7042-C7.

↑ TLZ-7042-C7

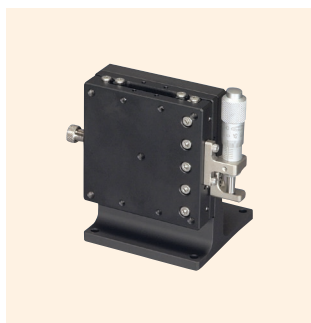


*TLZ-7042-CR8 is a symmetrical type with the same dimensions as TLZ-7042-C8.

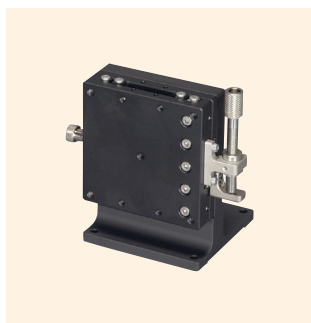
↑ TLZ-7042-C8

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fx Stages	Thin Vθ Stages	Rack & Pinion Stages
High-Grade Stages	Spin Stages, Cross Roller Stages	Z-Like Stages, Z Stages
TR Stages	TR Stages	TR/Rotary Stages
XZ Stages	XZ Stages	XZ Stages

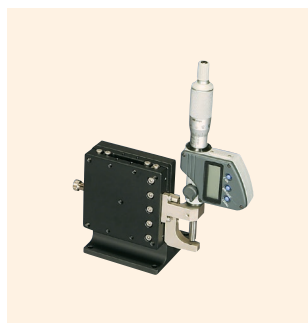
High-Grade Z Stages 70 x 70 (Stainless Steel)



↑ TLZ-7042-S1



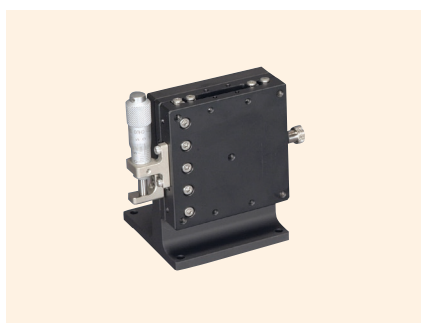
↑ TLZ-7042-S6



↑ TLZ-7042-S7



↑ TLZ-7042-S8



↑ TLZ-7042-SR1



↑ TLZ-7042-SR6



↑ TLZ-7042-SR8

Features

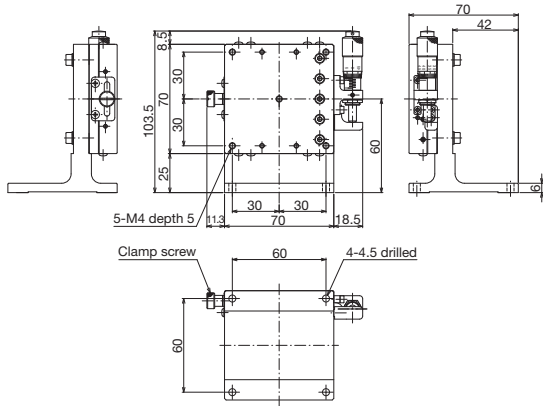
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is with a plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLZ-7042-S1	TLZ-7042-S6	TLZ-7042-S7	TLZ-7042-S8
Model number (symmetrical)	TLZ-7042-SR1	TLZ-7042-SR6	-	TLZ-7042-SR8
Model name	High-Grade Z Stage 70 x 70			
Travel direction	Z-axis single direction			
Stage surface	70 mm x 70 mm			
Clamp method	Plate clamp			
Operating part mounting position	Side			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s			
Permissible moment	Yaw 1500 N-cm, pitch 1500 N-cm, roll 1500 N-cm			
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm			
Perpendicularity	0.065 mm			
Perpendicularity of motion	0.025 mm			
Load capacity	49 N (5 kgf)			
Mass	0.85 kg	1.05 kg		0.85 kg
Main materials/surface treatment	Stainless steel, aluminum alloy (Z bracket)/black oxide chrome, black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



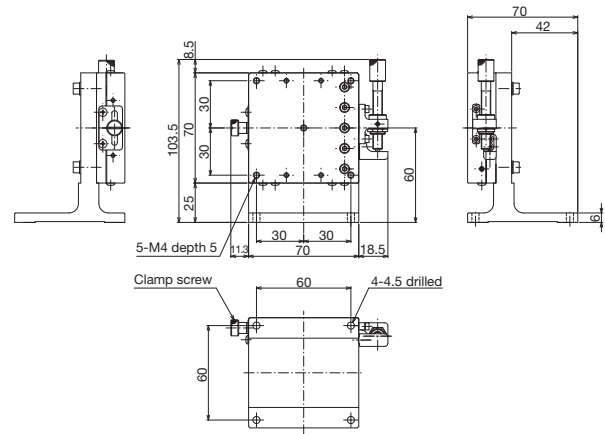
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



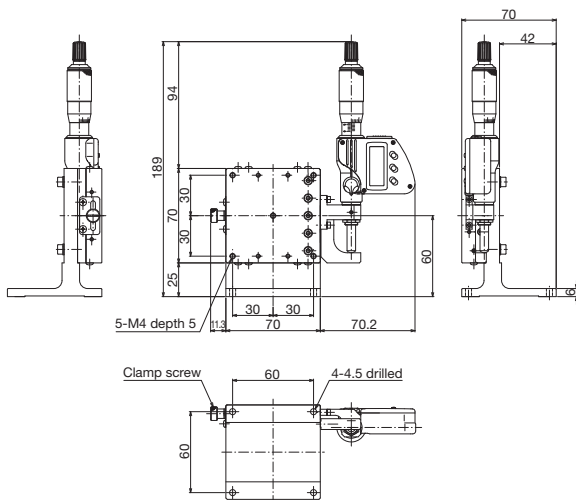
*TLZ-7042-SR1 is a symmetrical type with the same dimensions as TLZ-7042-S1.

↑ TLZ-7042-S1

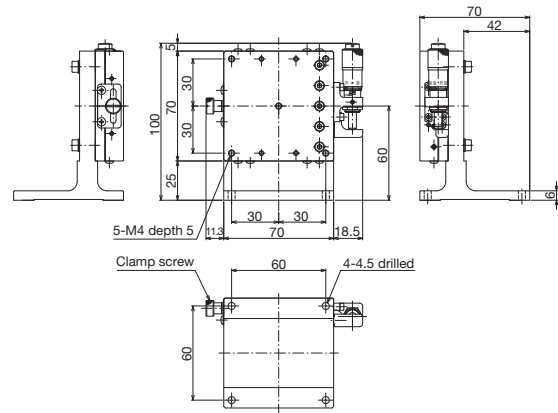


*TLZ-7042-SR6 is a symmetrical type with the same dimensions as TLZ-7042-S6.

↑ TLZ-7042-S6



↑ TLZ-7042-S7

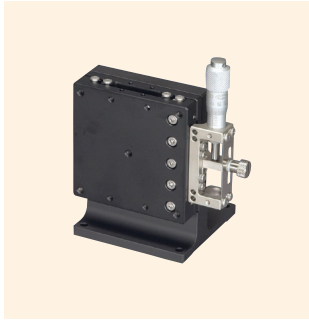


*TLZ-7042-SR8 is a symmetrical type with the same dimensions as TLZ-7042-S8.

↑ TLZ-7042-S8

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rock & Pinion Stages
High-Grade Stages	Spin Stages, Cross Roller Stages, Z-Like Stages	Rotary Stages
TR Stages	TR/Rotary Stages	XZ, YZ Stages
XZ, YZ Stages	XZ Stages	

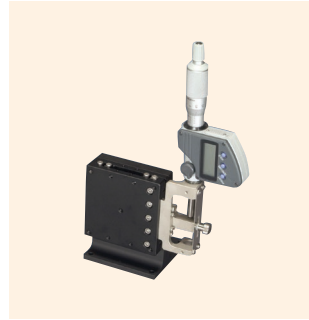
High-Grade Z Stages 70 x 70 (Stainless Steel)



↑ TLZ-7042-S1-2



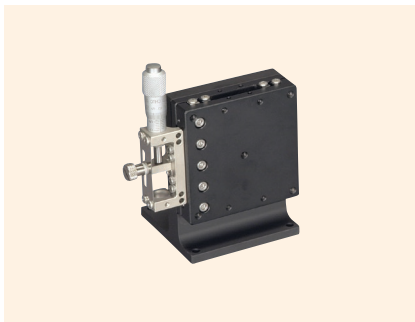
↑ TLZ-7042-S6-2



↑ TLZ-7042-S7-2



↑ TLZ-7042-S8-2



↑ TLZ-7042-SR1-2



↑ TLZ-7042-SR6-2



↑ TLZ-7042-SR8-2

Features

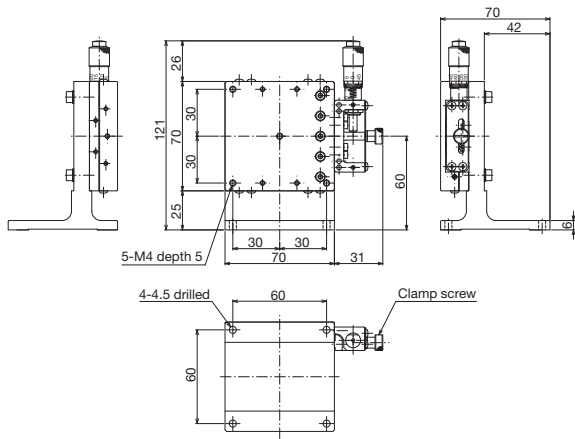
- A high-accuracy, high-rigidity stage using the HG-VCR method.
- Standard types and symmetrical types are available for a left-right symmetrical structure.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Clamp method is an operator side plate clamp.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number (standard)	TLZ-7042-S1-2	TLZ-7042-S6-2	TLZ-7042-S7-2	TLZ-7042-S8-2
Model number (symmetrical)	TLZ-7042-SR1-2	TLZ-7042-SR6-2	-	TLZ-7042-SR8-2
Model name	High-Grade Z Stage 70 x 70			
Travel direction	Z-axis single direction			
Stage surface	70 mm x 70 mm			
Clamp method	Operation side plate clamp			
Operating part mounting position	Side			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	±6.5 mm			±3 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.001 mm Yaw 15 s, pitch 25 s			
Permissible moment	Yaw 1500 N-cm, pitch 1500 N-cm, roll 1500 N-cm			
Moment rigidity	Yaw rigidity 0.04 s/N-cm, pitch rigidity 0.04 s/N-cm, roll rigidity 0.02 s/N-cm			
Perpendicularity	0.065 mm			
Perpendicularity of motion	0.025 mm			
Load capacity	49 N (5 kgf)			
Mass	0.85 kg	1.05 kg		0.85 kg
Main materials/surface treatment	Stainless steel, aluminum alloy (Z bracket)/black oxide chrome, black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



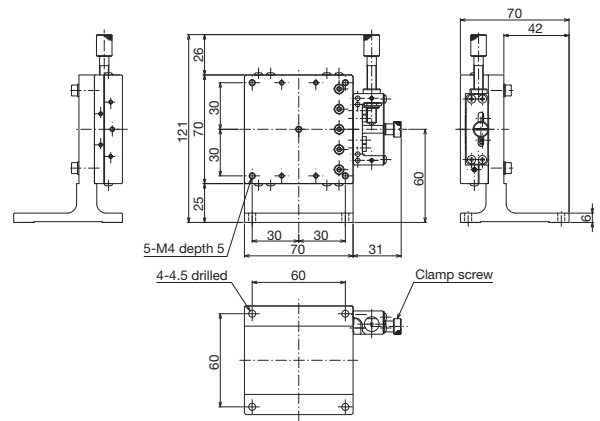
High-Grade Stages ◀ Manual Stages ◀

Product Appearance



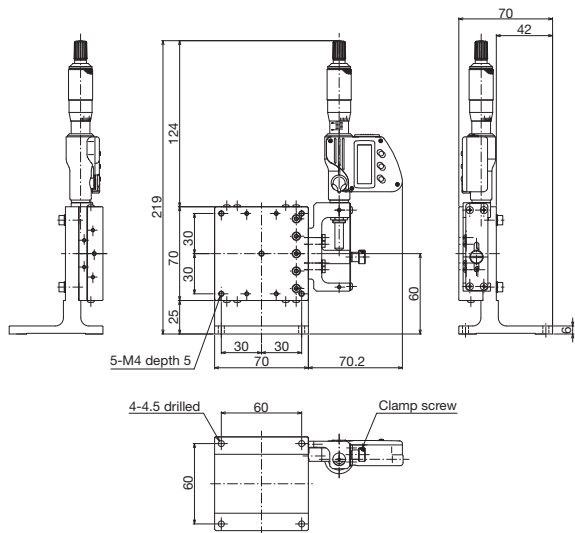
*TLZ-7042-SR1-2 is a symmetrical type with the same dimensions as TLZ-7042-S1-2.

↑ TLZ-7042-S1-2

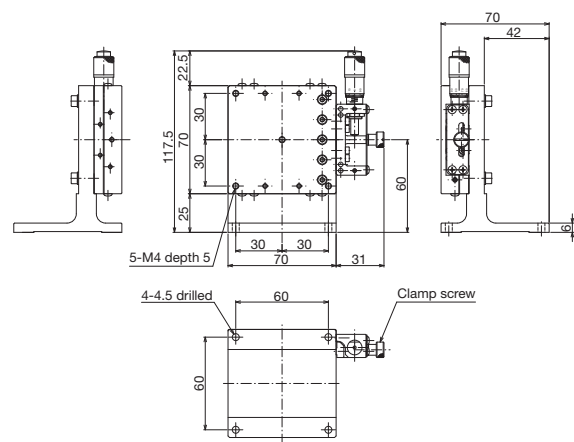


*TLZ-7042-SR6-2 is a symmetrical type with the same dimensions as TLZ-7042-S6-2.

↑ TLZ-7042-S6-2



↑ TLZ-7042-S7-2

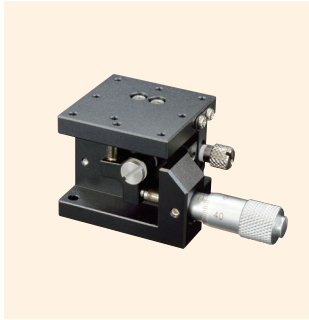


*TLZ-7042-SR8-2 is a symmetrical type with the same dimensions as TLZ-7042-S8-2.

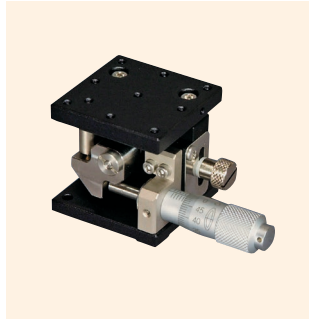
↑ TLZ-7042-S8-2

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fx Stages	Thin Vθ Stages	Rack & Pinion Stages
High-Grade Stages	Stair Stages, Cross Roller Stages, Z Stages	Z-θ Stages, L-θ Stages, Rotary Stages
TR Stages	TR/Rotary Stages	XZ, YZ Stages
XZ, YZ Stages	XZ Stages	

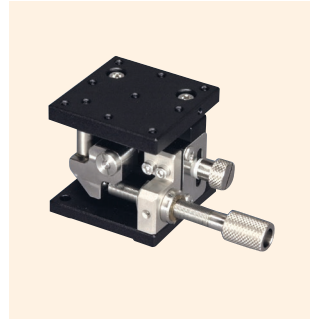
High-Grade Z Lift Stages 30 x 30, 40 x 40, 50 x 50



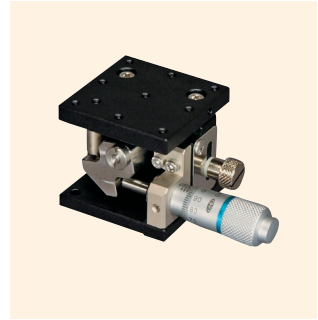
↑ TLV-3047-1



↑ TLV-4042-1



↑ TLV-4042-6



↑ TLV-4042-8

Features

(TLV-3047-1)

- A lift type small and light weight Z stage.
- Uses V-groove and cross roller type (V-CR method) travel guides.
- Versatile use for precision positioning of sensors, workpieces, and more.

(TLV-40~, 50~)

- Combines aluminum alloy with the HG-VCR method to be a Z axis lift type stage that achieves both high rigidity and light weight.
- Feed screws, standard micrometers, and fine pitch micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

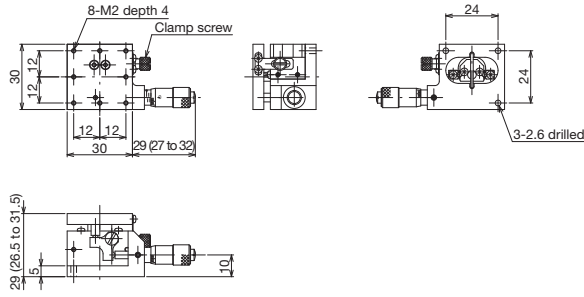
Model number	TLV-3047-1
Model name	High-Grade Aluminum Z Lift Stage 30 x 30
Travel direction	Z-axis single direction
Stage surface	30 mm x 30 mm
Clamp method	Plate clamp
Feed method	CMH-6.5F (Standard micrometer)
Travel amount	0 to 5 mm
Travel amount/1 knob rotation	0.5 mm
Scale	Micrometer 0.01 mm
Sensitivity	0.003 mm
Travel guide	V-groove and cross rollers
Travel accuracy	Straightness (horizontal/vertical) 0.003 mm
Permissible moment load	Yaw 70 N-cm, pitch 50 N-cm, roll 100 N-cm
Moment rigidity	Yaw rigidity 45 s/N-cm, pitch rigidity 5.5 s/N-cm, roll rigidity 2.5 s/N-cm
Parallelism	0.1 mm
Perpendicularity of motion	0.01 mm
Load capacity	14.7 N (1.5 kgf)
Mass	0.07 kg
Main materials/surface treatment	Stainless steel, aluminum alloy (table, base)/black oxide chrome, black satin anodized finish
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain

Model number	TLV-4042-1	TLV-4042-6	TLV-4042-8	TLV-5042-1	TLV-5042-6	TLV-5042-8
Model name	High-Grade Z Lift Stage 40 x 40			High-Grade Z Lift Stage 50 x 50		
Travel direction	Z-axis single direction					
Stage surface	40 mm x 40 mm			50 mm x 50 mm		
Clamp method	Plate clamp					
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHS4-6.5FP (Fine pitch micro)	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHS4-6.5FP (Fine pitch micro)
Travel amount	0 to 10 mm		0 to 6 mm	0 to 10 mm		0 to 6 mm
Travel amount/1 knob rotation	0.5 mm		0.1 mm	0.5 mm		0.1 mm
Scale	Micrometer 0.01 mm	-	Micrometer 0.002 mm	Micrometer 0.01 mm	-	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	0.003 mm	0.01 mm	0.001 mm
Travel guide	HG-VCR (V-groove and cross rollers)					
Travel accuracy	Straightness (horizontal/vertical) 0.003 mm					
Permissible moment load	Yaw 150 N-cm, pitch 100 N-cm, roll 160 N-cm					
Moment rigidity	Yaw rigidity 1.5 s/N-cm, pitch rigidity 3.0 s/N-cm, roll rigidity 0.7 s/N-cm			Yaw rigidity 1.5 s/N-cm, pitch rigidity 3.0 s/N-cm, roll rigidity 0.6 s/N-cm		
Parallelism	0.1 mm					
Perpendicularity of motion	0.01 mm					
Load capacity	29.3 N (3 kgf)					
Mass	0.2 kg			0.25 kg		
Main materials/surface treatment	Stainless steel, aluminum alloy (table, base)/black oxide chrome, black satin anodized finish					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					

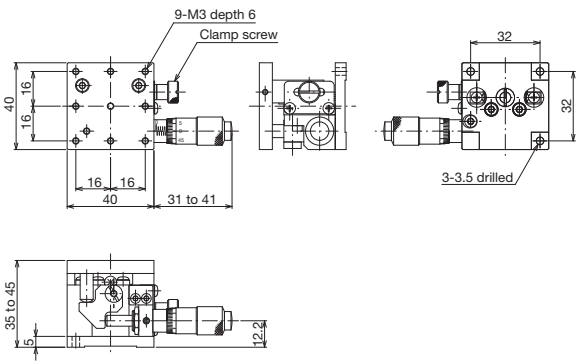


High-Grade Stages ◀ Manual Stages ◀

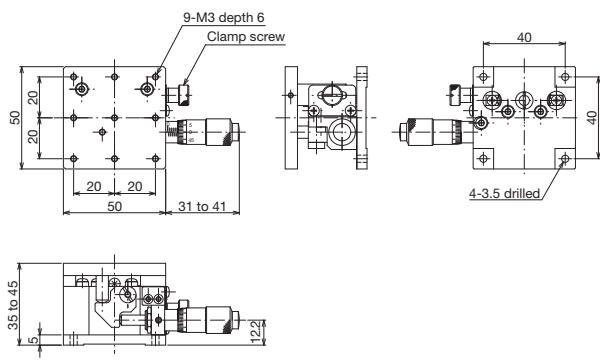
Product Appearance



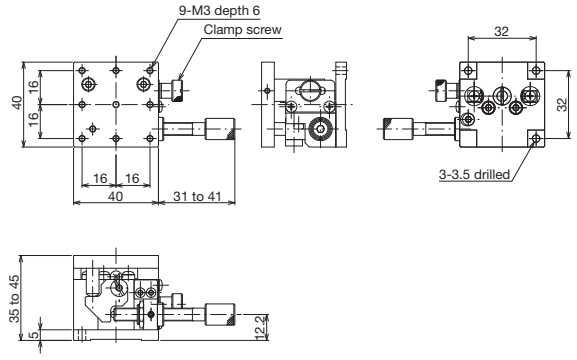
TLV-3047-1



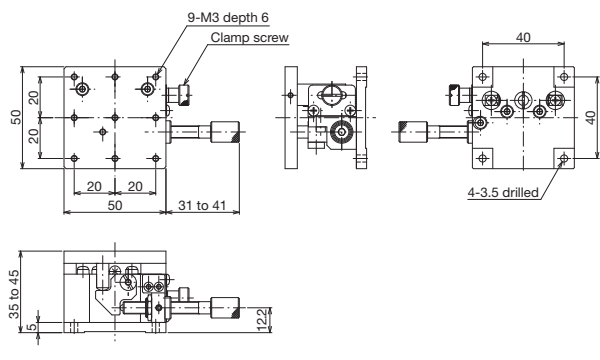
TLV-4042-1



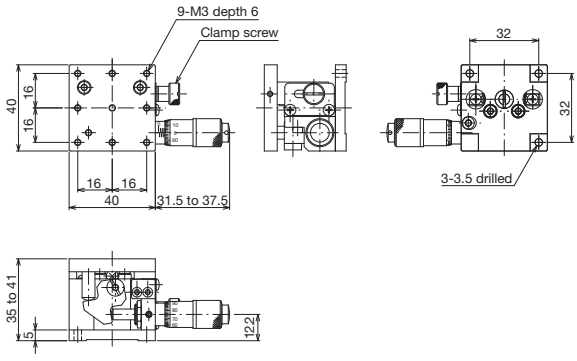
TLV-5042-1



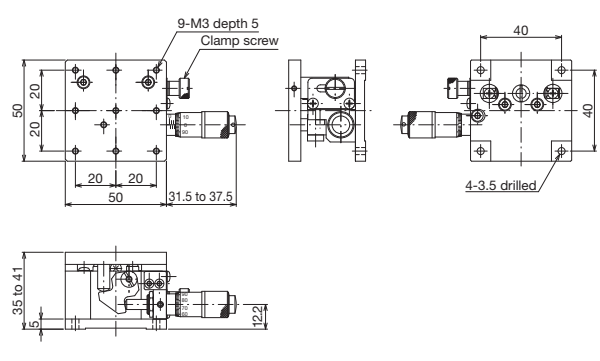
TLV-4042-6



TLV-5042-6



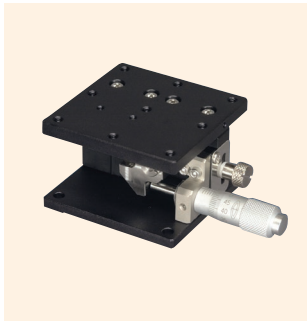
TLV-4042-8



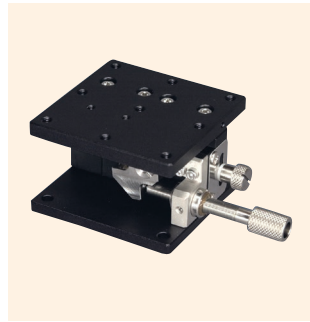
TLV-5042-8

Motorized Stages	Automated Products for Microscopes	Manual Stages	FX Stages	Thin V8 Stages	Rock & Pinion Stages	High-Grade Stages	Swim Stages, Cross Roller Stages	Z-Like Stages, Z Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XVZ Stages
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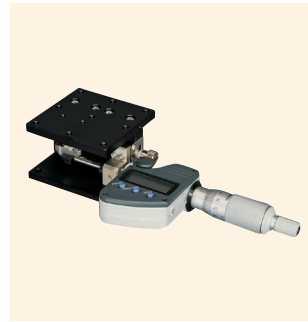
High-Grade Z Lift Stages 60 x 60, 70 x 70



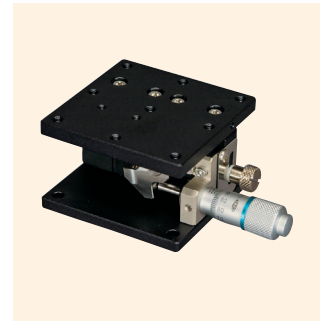
↑ TLV-6042-1



↑ TLV-6042-6



↑ TLV-6042-7



↑ TLV-6042-8

Features

- Combines aluminum alloy with the HG-VCR method to be a Z axis lift type stage that achieves both high rigidity and light weight.
- Feed screws, standard micrometers, fine pitch micrometers, and digimatic micrometers are available for the feed method.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

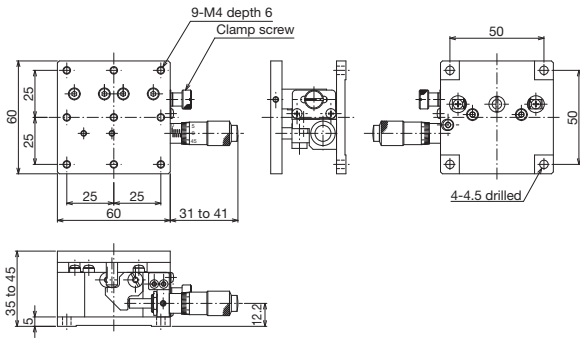
Model number	TLV-6042-1	TLV-6042-6	TLV-6042-7	TLV-6042-8
Model name	High-Grade Z Lift Stage 60 x 60			
Travel direction	Z-axis single direction			
Stage surface	60 mm x 60 mm			
Clamp method	Plate clamp			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	0 to 10 mm			0 to 6 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical) 0.003 mm			
Permissible moment load	Yaw 150 N·cm, pitch 100 N·cm, roll 160 N·cm			
Moment rigidity	Yaw rigidity 1.0 s/N·cm, pitch rigidity 2.5 s/N·cm, roll rigidity 0.4 s/N·cm			
Parallelism	0.1 mm			
Perpendicularity of motion	0.01 mm			
Load capacity	29.3 N (3 kgf)			
Mass	0.3 kg	0.5 kg		0.3 kg
Main materials/surface treatment	Stainless steel, aluminum alloy (table, base)/black oxide chrome, black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

Model number	TLV-7042-1	TLV-7042-6	TLV-7042-7	TLV-7042-8
Model name	High-Grade Z Lift Stage 70 x 70			
Travel direction	Z-axis single direction			
Stage surface	70 mm x 70 mm			
Clamp method	Plate clamp			
Feed method	CMH-13RM (Standard micrometer)	Feed screw P=0.5 mm	MHN4-25MX (Digimatic micrometer)	MHS4-6.5FP (Fine pitch micro)
Travel amount	0 to 10 mm			0 to 6 mm
Travel amount/1 knob rotation	0.5 mm			0.1 mm
Scale	Micrometer 0.01 mm	-	Digital display 0.001 mm	Micrometer 0.002 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm	
Travel guide	HG-VCR (V-groove and cross rollers)			
Travel accuracy	Straightness (horizontal/vertical): 0.005 mm			
Permissible moment load	Yaw 150 N·cm, pitch 100 N·cm, roll 160 N·cm			
Moment rigidity	Yaw rigidity 1.0 s/N·cm, pitch rigidity 2.5 s/N·cm, roll rigidity 0.4 s/N·cm			
Parallelism	0.1 mm			
Perpendicularity of motion	0.01 mm			
Load capacity	29.3 N (3 kgf)			
Mass	0.4 kg	0.6 kg		0.4 kg
Main materials/surface treatment	Stainless steel, aluminum alloy (table, base)/black oxide chrome, black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

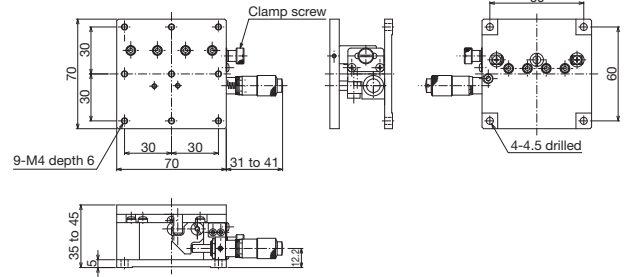


High-Grade Stages ◀ Manual Stages ◀

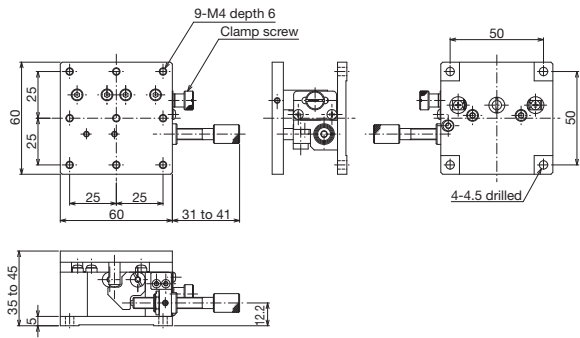
Product Appearance



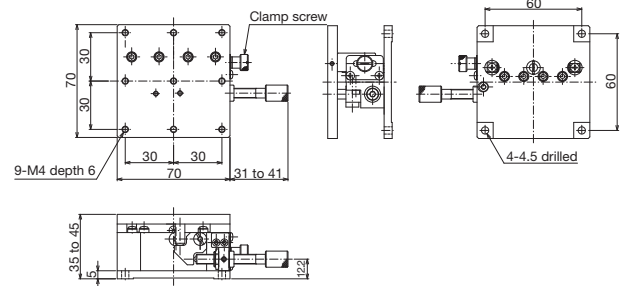
↑ TLV-6042-1



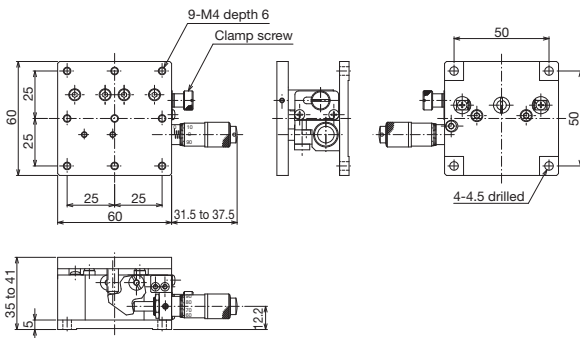
↑ TLV-7042-1



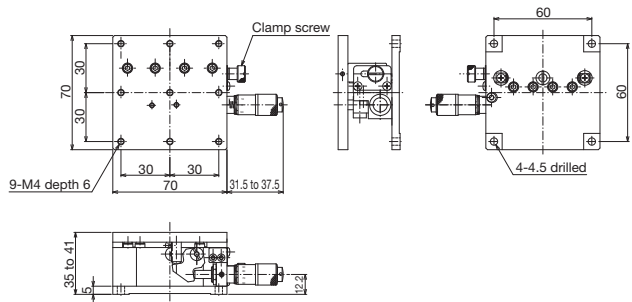
↑ TLV-6042-6



↑ TLV-7042-6



↑ TLV-6042-8



↑ TLV-7042-8

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fix Stages
Thin V8 Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Like Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

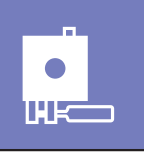


▶ Manual Stages ▶ Slim Stages, Cross Roller Stages | Product List

Motorized Stages
Automated Products for Microscopes
Manual Stages
FX Stages
Thin VB Stages
Rock & Pinion Stages
High-Grade Stages
Slim Stages, Cross Roller Stages
Z Lin Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

Page	Example product photo	Type	Model number	Model number	Model number	Stage surface
297		X Stage	TLS-947-C1	TLS-947-S1	TLS-947-R1	90 mm x 90 mm
		XY Stage	TLD-947-C1	TLD-947-S1	TLD-947-R1	90 mm x 90 mm
301		Z Stage	TLZ-947-S1	TLZ-947-R1	-	90 mm x 90 mm
303		XYZ Stage	TLT-907-S1	TLT-907-R1	-	90 mm x 90 mm
		XYZ Rotary Stage	TTR-907-S1	TTR-907-R1	-	φ90 mm
305		X Stage	TLS-149-C1	TLS-149-S1	TLS-149-R1	125 mm x 125 mm
			TLS-149-C7	TLS-149-S7	-	125 mm x 125 mm
307		XY Stage	TLD-149-C1	TLD-149-S1	TLD-149-R1	125 mm x 125 mm
			TLD-149-C7	TLD-149-S7	-	125 mm x 125 mm
309		Z Lift Stage	TLV-147-1	TLV-147-6	TLV-147-7	125 mm x 125 mm
311		XYZ Stage	TLT-140-S1	TLT-140-R1	-	125 mm x 125 mm
		XYZ Rotary Stage	TTR-101-S1	TTR-101-R1	-	φ 125 mm

313		X Stage	TLS-241-C1	TLS-241-S1	TLS-243-C7	125 mm x 150 mm
		XY Stage	TLD-241-C1	TLD-241-S1	TLD-243-C7	125 mm x 150 mm
315		X Stage	TLS-242	TLS-242-MS	-	130 mm x 200 mm
		XY Stage	TLD-242	TLD-242-MS	-	130 mm x 200 mm



Features | Slim Stages, Cross Roller Stages ◀ Manual Stages ◀

■ Slim Stages

◊ Cross Roller Method

Uses V-groove and cross rollers (V-CR method) for the travel guides.

◊ Operating Position Variation

Select between center, side, or reverse side for the operating part (micrometer head) position.

◊ 90 mm x 90 mm and 125 mm x 125 mm

90 mm x 90 mm aluminum products and 125 mm x 125 mm (X stage/XY stage only) steel products are available.

◊ Environmental measures

Products that do not contain 10 substances regulated by European RoHS.

■ Cross Roller Stages

◊ Cross Roller Method

Uses a V-groove and cross rollers (V-CR method) for the travel guides, enabling a wide range of uses from precision positioning to sampling stages to test equipment.

◊ Steel Stage Body

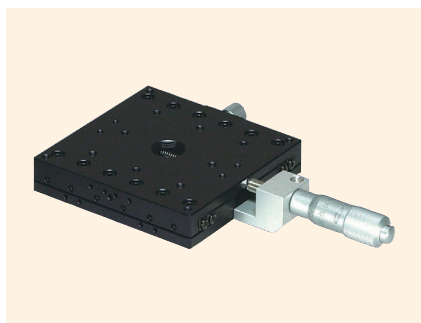
Uses steel for the stage surface for high precision/rigidity and adopts a rectangular stage surface.

◊ Environmental measures

Products that do not contain 10 substances regulated by European RoHS.

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fx Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Slim Stages, Cross Roller Stages
Z-Like Stages, Z Stages
Rotary Stages
TR Stages
TR/Rotary Stages
XZ, YZ Stages
XZ Stages

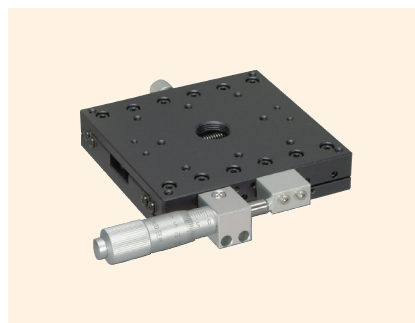
X Slim Stages 90 x 90



↑ TLS-947-C1



↑ TLS-947-S1



↑ TLS-947-R1

Features

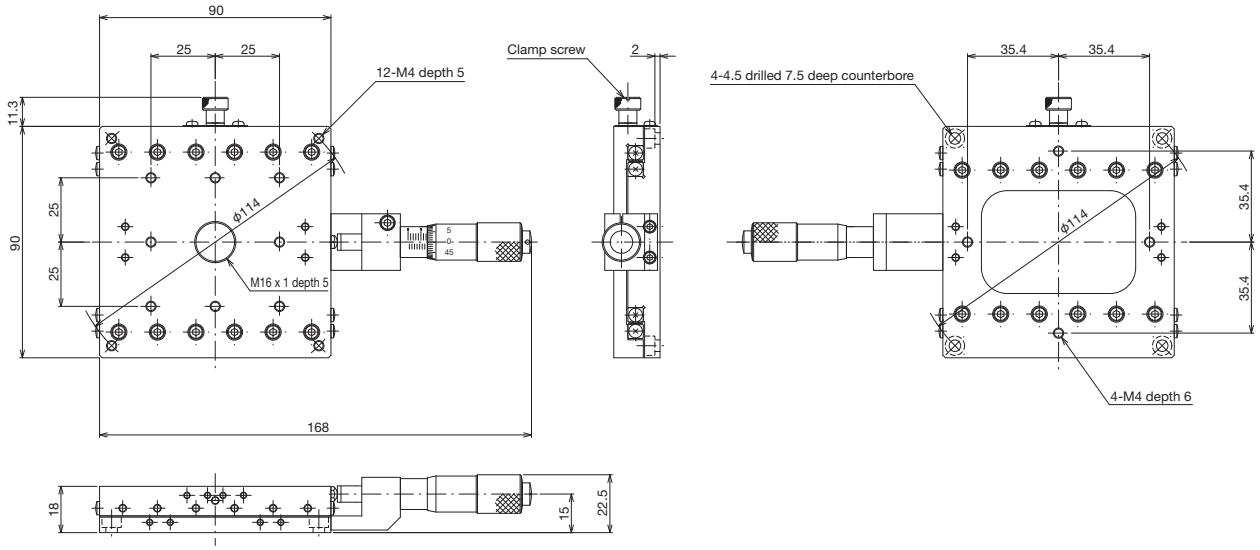
- A thin, lightweight stage that uses a V-groove and cross rollers (V-CR method) for the travel guides.
- Select between center, side, or reverse side for the operating part mounting position.
- Versatile use for precision positioning of workpieces or for the sample tables of measurement equipment.

Model number	TLS-947-C1	TLS-947-S1	TLS-947-R1
Model name	X Slim Stage 90 x 90		
Travel direction	X-axis single direction		
Stage surface	90 mm x 90 mm		
Clamp method	Plate clamp		
Operating part mounting position	Center	Side	Reverse side
Feed method	MHM1-15 (standard micrometer)		
Travel amount	±7.5 mm		
Travel amount/1 knob rotation	0.5 mm		
Scale	Micrometer 0.01 mm		
Sensitivity	0.003 mm		
Travel guide	V-groove and cross rollers		
Travel accuracy	Straightness: 0.003 mm		
Load capacity	78.4 N (8 kgf)		
Mass	0.45 kg		
Main materials/surface treatment	Aluminum alloy/black satin anodized finish		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

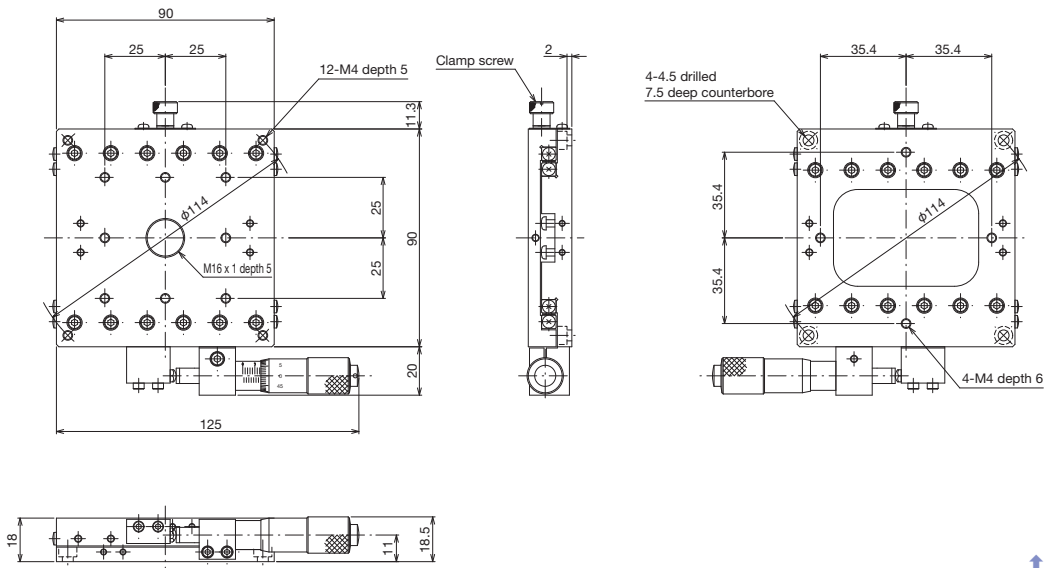


Slim Stages, Cross Roller Stages ◀ Manual Stages ◀

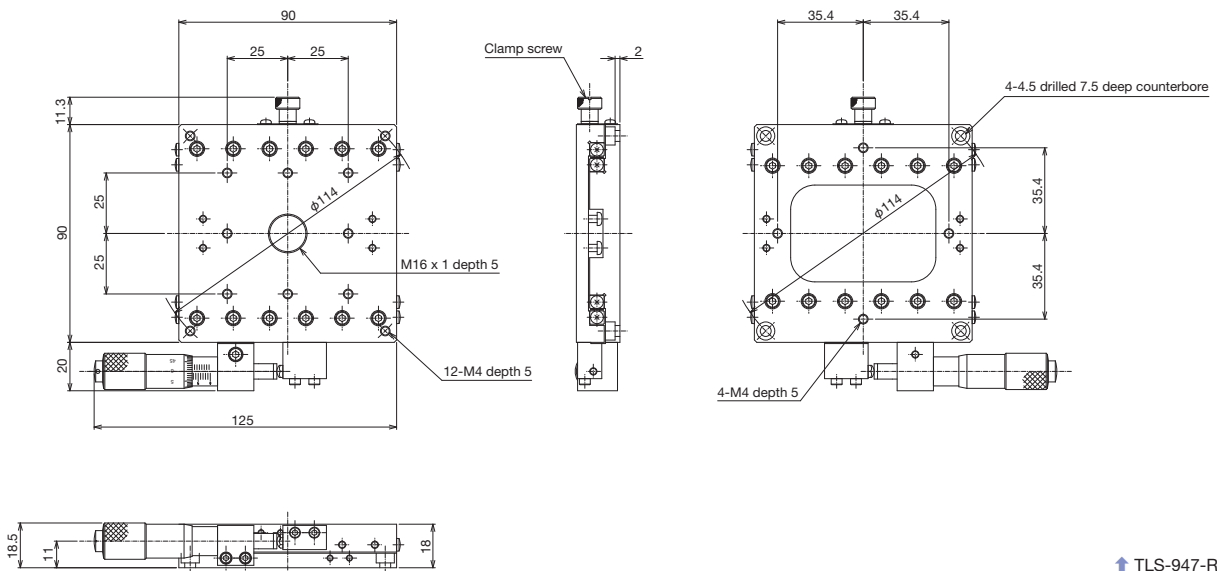
Product Appearance



↑ TLS-947-C1



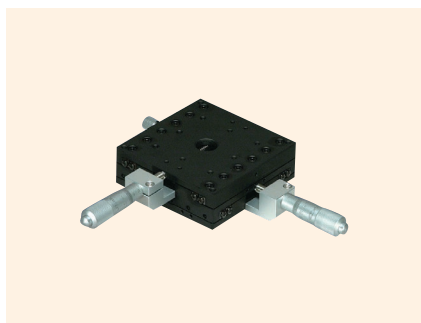
↑ TLS-947-S1



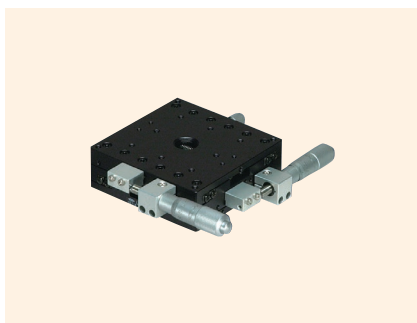
↑ TLS-947-R1

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin VB Stages	Rock & Pinion Stages	High-Grade Stages	Slim Stages, Cross Roller Stages	Z-Like Stages, Z Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XYZ Stages
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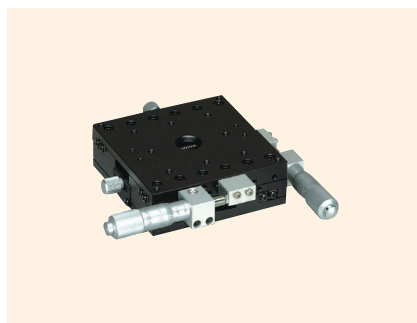
XY Slim Stages 90 x 90



↑ TLD-947-C1



↑ TLD-947-S1



↑ TLD-947-R1

Features

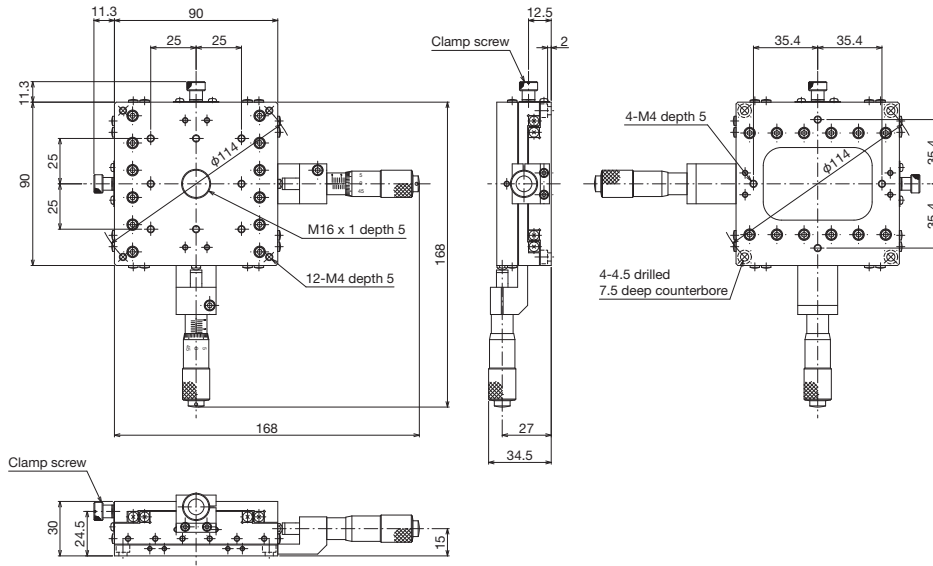
- A thin, lightweight stage that uses a V-groove and cross rollers (V-CR method) for the travel guides.
- Select between center, side, or reverse side for the operating part mounting position.
- Versatile use for precision positioning of workpieces or for the sample tables of measurement equipment.

Model number	TLD-947-C1	TLD-947-S1	TLD-947-R1
Model name	XY Slim Stage 90 x 90		
Travel direction	XY-axis double direction		
Stage surface	90 mm x 90 mm		
Clamp method	Plate clamp		
Operating part mounting position	Center	Side	Reverse side
Feed method	MHM1-15 (standard micrometer)		
Travel amount	±7.5 mm		
Travel amount/1 knob rotation	0.5 mm		
Scale	Micrometer 0.01 mm		
Sensitivity	0.003 mm		
Travel guide	V-groove and cross rollers		
Travel accuracy	Straightness: 0.003 mm		
XY orthogonality	0.02 mm		
Load capacity	78.4 N (8 kgf)		
Mass	0.85 kg		
Main materials/surface treatment	Aluminum alloy/black satin anodized finish		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

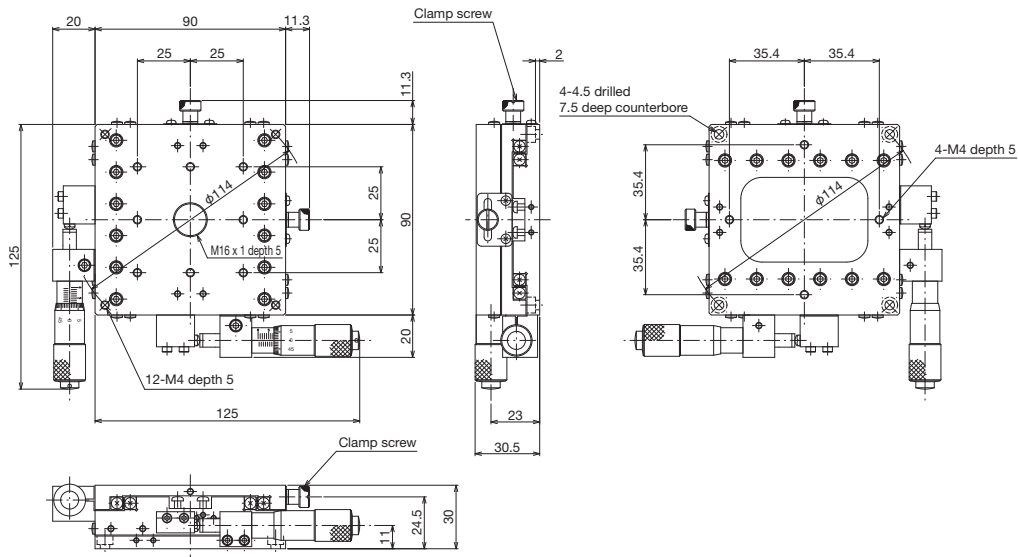


Slim Stages, Cross Roller Stages ◀ Manual Stages ◀

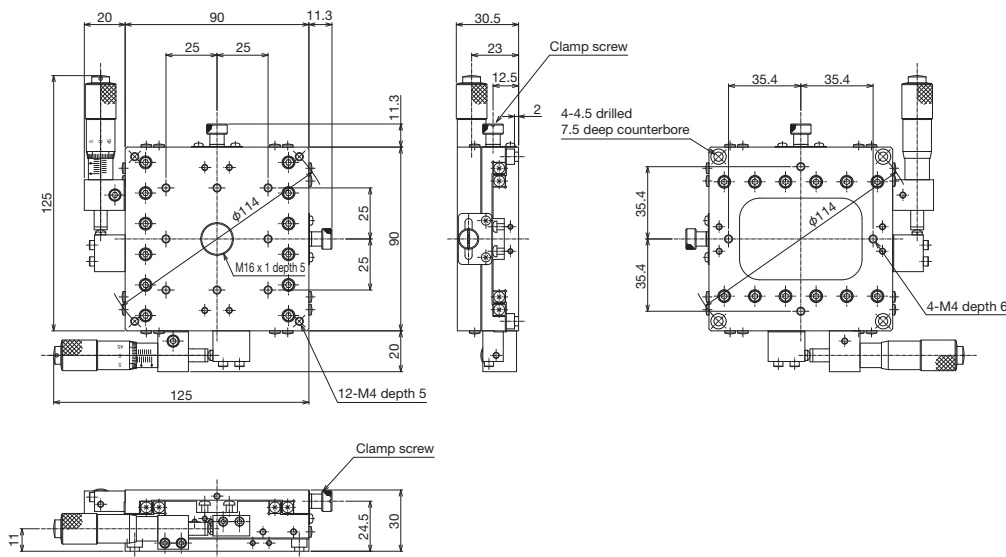
Product Appearance



↑ TLD-947-C1



↑ TLD-947-S1



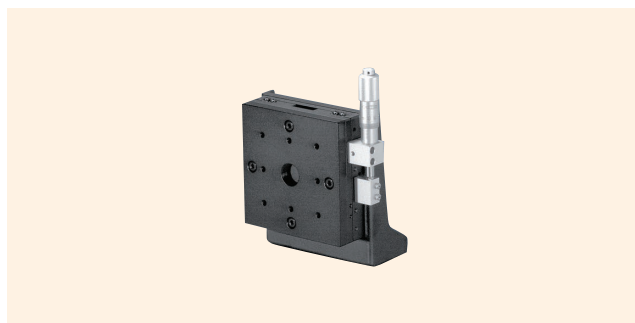
↑ TLD-947-R1

Motorized Stages	Automated Products for Microscopes
Manual Stages	Manual Stages
Fix Stages	Fix Stages
Thin VB Stages	Thin VB Stages
Rack & Pinion Stages	Rack & Pinion Stages
High-Grade Stages	High-Grade Stages
Slim Stages, Cross Roller Stages	Slim Stages, Cross Roller Stages
Z-Like Stages, Z Stages	Z-Like Stages, Z Stages
Rotary Stages	Rotary Stages
Tilt Stages	Tilt Stages
Tilt/Rotary Stages	Tilt/Rotary Stages
XZ, YZ Stages	XZ, YZ Stages
XZ Stages	XZ Stages

Z Slim Stages 90 x 90



↑ TLZ-947-S1



↑ TLZ-947-R1

Features

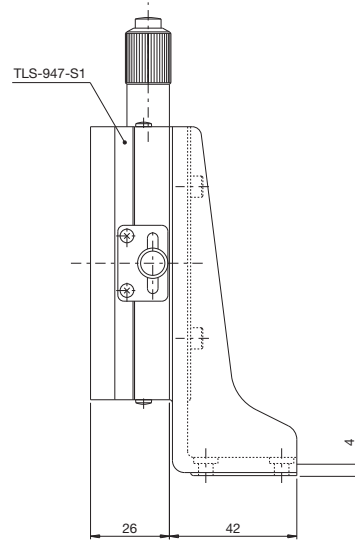
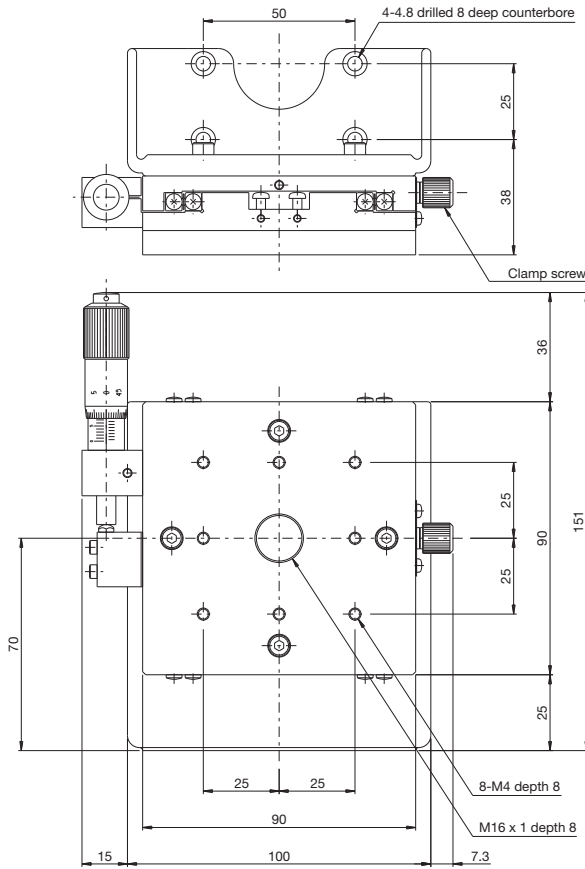
- A thin, lightweight stage that uses a V-groove and cross rollers (V-CR method) for the travel guides.
- Select between side or reverse side for the operating part mounting position.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number	TLZ-947-S1	TLZ-947-R1
Model name	Z Bracket Slim Stage 90 x 90	
Travel direction	Z-axis single direction	
Stage surface	90 mm x 90 mm	
Clamp method	Plate clamp	
Operating part mounting position	Side	Reverse side
Feed method	MHM1-15 (standard micrometer)	
Travel amount	±7.5 mm	
Travel amount/1 knob rotation	0.5 mm	
Scale	Micrometer 0.01 mm	
Sensitivity	0.003 mm	
Travel guide	V-groove and cross rollers	
Travel accuracy	Straightness: 0.003 mm	
Load capacity	29.4 N (3 kgf)	
Mass	0.91 kg	
Main materials/surface treatment	Aluminum alloy/black satin anodized finish	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain	

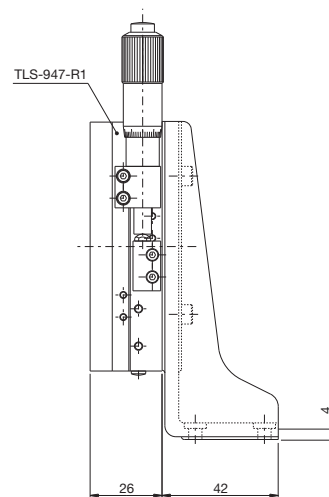
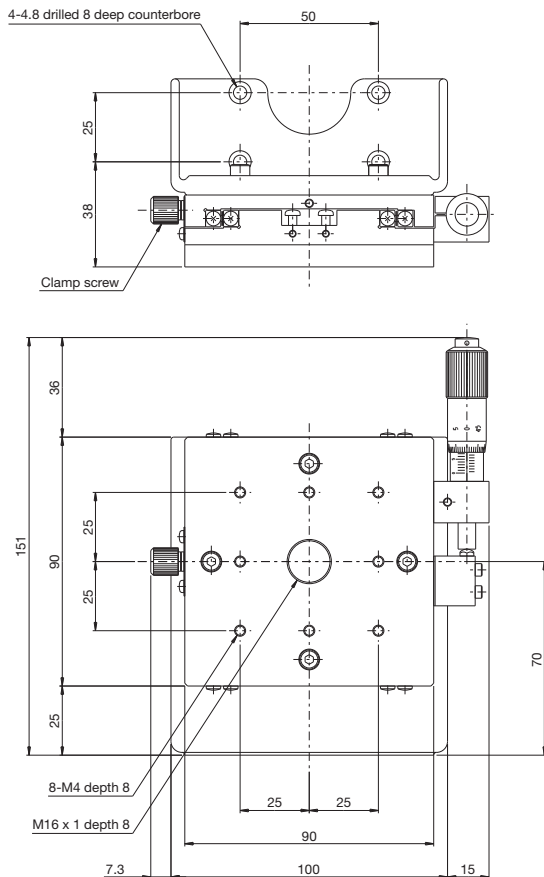


Slim Stages, Cross Roller Stages ◀ Manual Stages ◀

Product Appearance



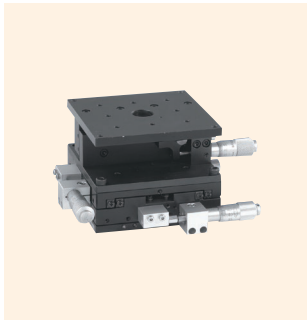
↑ TLS-947-S1



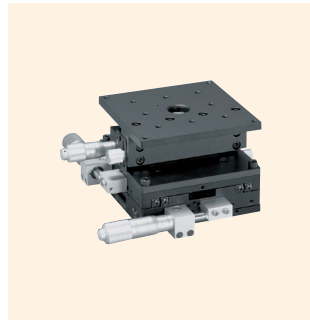
↑ TLS-947-R1

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin VB Stages	Rack & Pinion Stages	High-Grade Stages	Slim Stages, Cross Roller Stages, Z Stages	Z-Like Stages, Z Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XZ Stages
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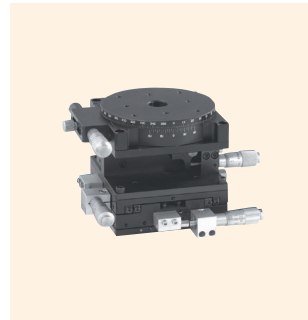
XYZ Slim Stages, XYZ Rotary Slim Stages 90 x 90



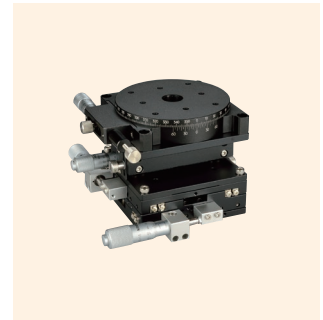
↑ TLT-907-S1



↑ TLT-907-R1



↑ TTR-907-S1



↑ TTR-907-R1

Features

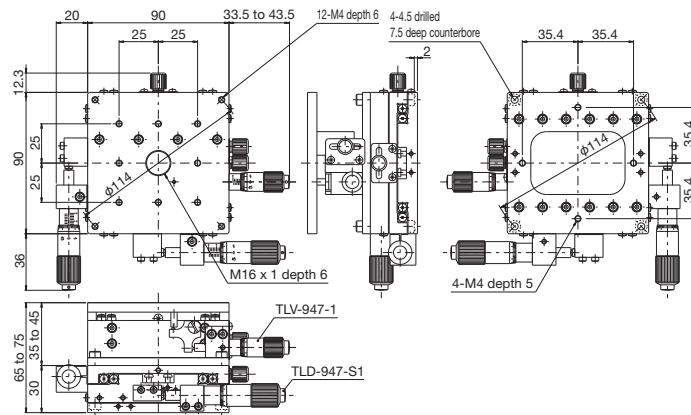
- An XYZ stage that uses V-CR method travel guides. (XY stages and Z stages are V-B type.)
- Side or reverse side options for the micrometer mounting position are available.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number	TLT-907-S1	TLT-907-R1	TTR-907-S1	TTR-907-R1
Model name	XYZ Slim Stage 90 x 90		XYZ Rotary Slim Stage ϕ 90	
Travel direction	XYZ-axis triple direction		XYZ rotary quadruple direction	
Stage surface	90 mm x 90 mm		ϕ 90 mm	
Clamp method	Plate clamp		XYZ axis plate clamp, rotating axis compound clamp	
Operating part mounting position	XY-axis side	XY-axis reverse side	XY-axis side	
Feed method	XY axis MHM1-15, Z axis CMH-13FM (each axis has a standard micrometer)		XY axis MHM1-15, Z axis CMH-13FM, Rotary CMH-13RM (each axis has a standard micrometer)	
Travel amount	XY axes ± 7.5 mm, Z axis 0 to 10 mm		XY axes ± 7.5 mm, Z axis 0 to 10 mm, rotating axis moves 360° with coarse movement and $\pm 5^\circ$ with fine movement	
Travel amount/1 knob rotation	Each axis is 0.5 mm		XYZ axes are 0.5 mm, rotating axis moves approx. 0.5°	
Scale	Micrometer 0.01 mm		XYZ axis micrometer 0.01 mm, rotating axis vernier reading 5'/micrometer 0.01 mm (1 scale marking is approx. 0.01°)	
Sensitivity	0.003 mm		XYZ axes 0.003 mm	
Travel guide	XY axis: V-groove and cross rollers, Z axis: V-groove rail and steel balls		XY axis: V-groove and cross rollers, Z axis: V-groove rail and steel balls, rotating axis: sliding	
Travel accuracy	Straightness: XY axes 0.003 mm, Z axis 0.008 mm		Straightness: XY axes 0.003 mm, Straightness: Z axis 0.008 mm, Circularity: rotating axis 0.04 mm, Surface runout: rotating axis 0.02 mm	
XY orthogonality	0.02 mm		0.02 mm	
Load capacity	49 N (5 kgf)		29.4 N (3 kgf)	
Mass	1.25 kg		1.75 kg	
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

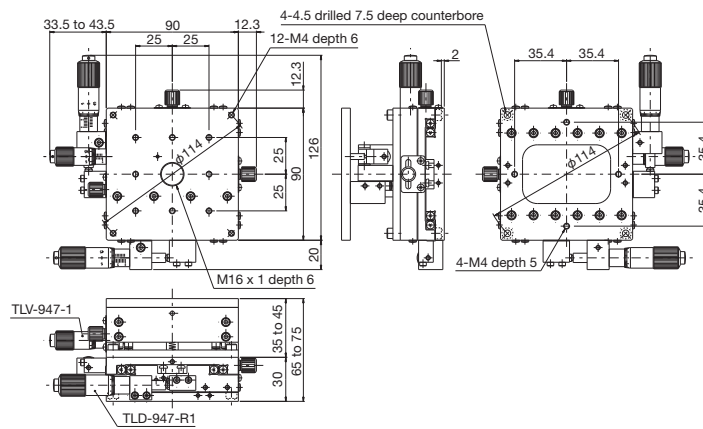


Slim Stages, Cross Roller Stages ◀ Manual Stages ◀

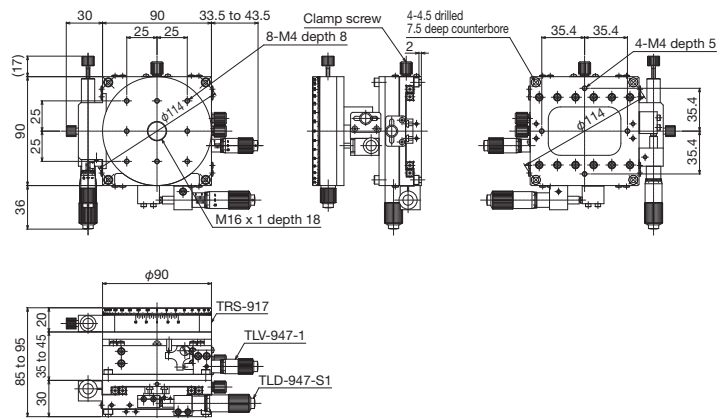
Product Appearance



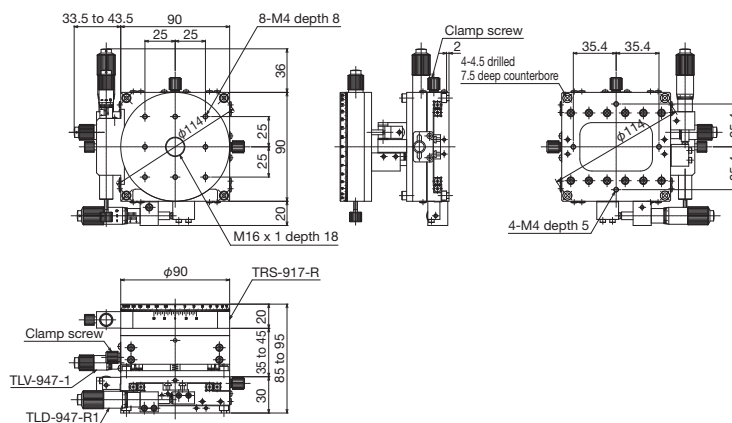
TL947-S1



TL947-R1



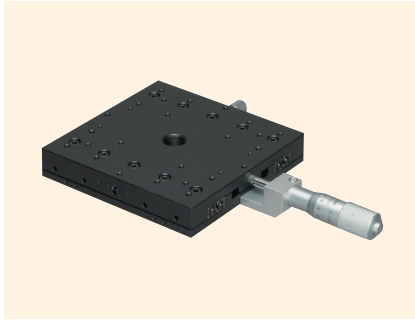
TTR947-S1



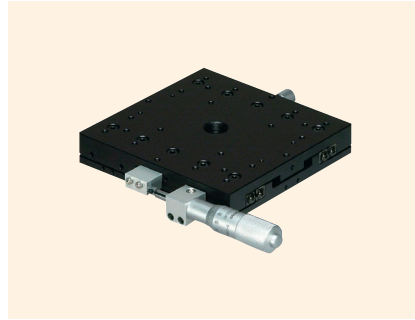
TTR947-R1

Motorized Stages	Automated Products for Microscopes
Manual Stages	
Fix Stages	
Thin V8 Stages	
Rack & Pinion Stages	
High-Grade Stages	
Slim Stages, Cross Roller Stages	
Z-Like Stages, Z Stages	
Rotary Stages	
TTR Stages	
TTR/Rotary Stages	
XZ, YZ Stages	
XYZ Stages	

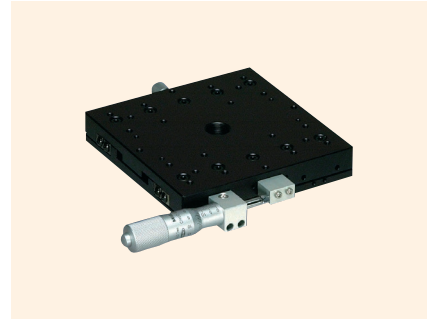
X Slim Stages 125 x 125



↑ TLS-149-C1



↑ TLS-149-S1



↑ TLS-149-R1

Features

- A thin-type stage that uses a V-groove and cross rollers (V-CR method) for the travel guides.
- Select between center, side, or reverse side for the operating part mounting position.
- Versatile use for precision positioning of workpieces or for the sample tables of measurement equipment.

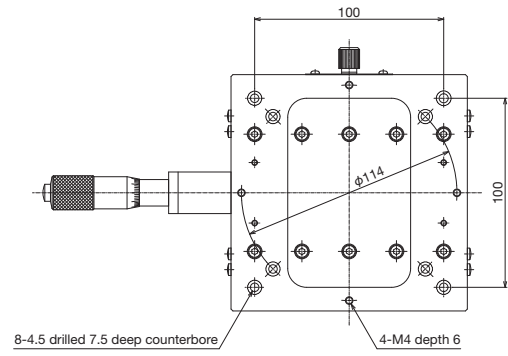
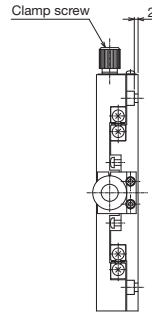
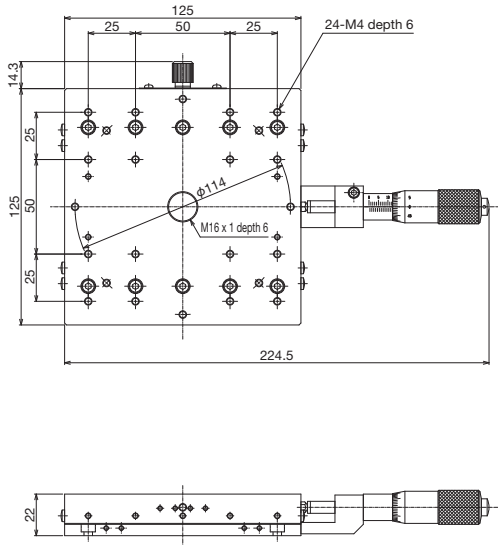
Model number	TLS-149-C1	TLS-149-S1	TLS-149-R1
Model name	X Slim Stage 125 x 125 (Steel)		
Travel direction	X-axis single direction		
Stage surface	125 mm x 125 mm		
Clamp method	Plate clamp		
Operating part mounting position	Center	Side	Reverse side
Feed method	MHN1-25T (standard micrometer)		
Travel amount	±12.5 mm		
Travel amount/1 knob rotation	0.5 mm		
Scale	Micrometer 0.01 mm		
Sensitivity	0.003 mm		
Travel guide	V-groove and cross rollers		
Travel accuracy	Straightness: 0.003 mm Yaw/pitch 15 s		
Moment rigidity	Yaw rigidity 0.05 s/N-cm, pitch rigidity 0.05 s/N-cm, roll rigidity 0.03 s/N-cm		
Parallelism	0.03 mm		
Load capacity	245 N (25 kgf)		
Mass	2.5 kg		
Main materials/surface treatment	Steel/hardened black chrome		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

Model number	TLS-149-C7	TLS-149-S7
Model name	X Slim Stage 125 x 125 (With Digital Display Micrometer) (Steel)	
Travel direction	X-axis single direction	
Stage surface	125 mm x 125 mm	
Clamp method	Plate clamp	
Operating part mounting position	Center	Side
Feed method	MHN1-25MX (digimatic micrometer)	
Travel amount	±12.5 mm	
Travel amount/1 knob rotation	0.5 mm	
Scale	Digital display micrometer 0.001 mm	
Sensitivity	0.003 mm	
Travel guide	V-groove and cross rollers	
Travel accuracy	Straightness: 0.003 mm Yaw/pitch 15 s	
Moment rigidity	Yaw rigidity 0.05 s/N-cm, pitch rigidity 0.05 s/N-cm, roll rigidity 0.03 s/N-cm	
Parallelism	0.03 mm	
Load capacity	245 N (25 kgf)	
Mass	2.6 kg	
Main materials/surface treatment	Steel/hardened black chrome	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain	

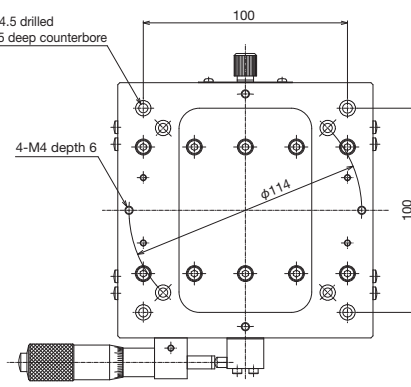
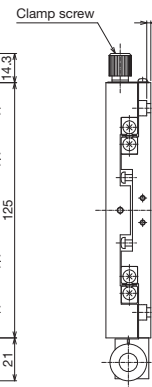
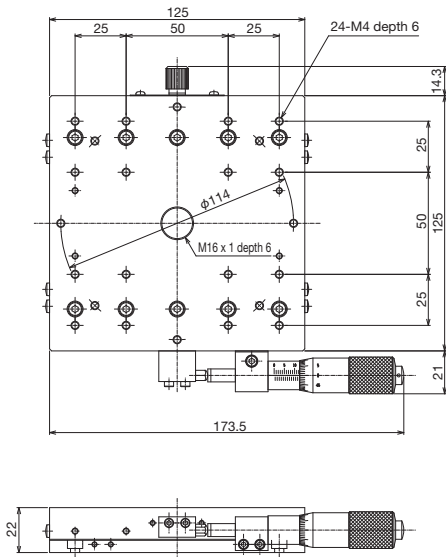


Slim Stages, Cross Roller Stages ◀ Manual Stages ◀

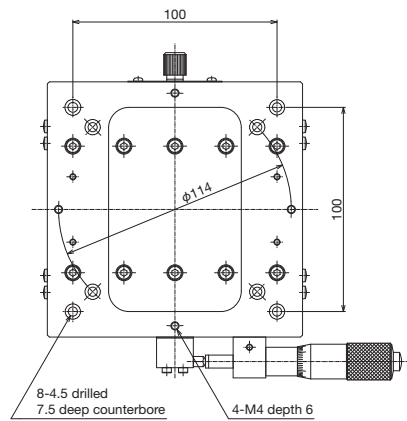
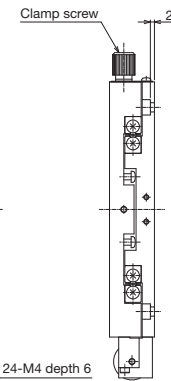
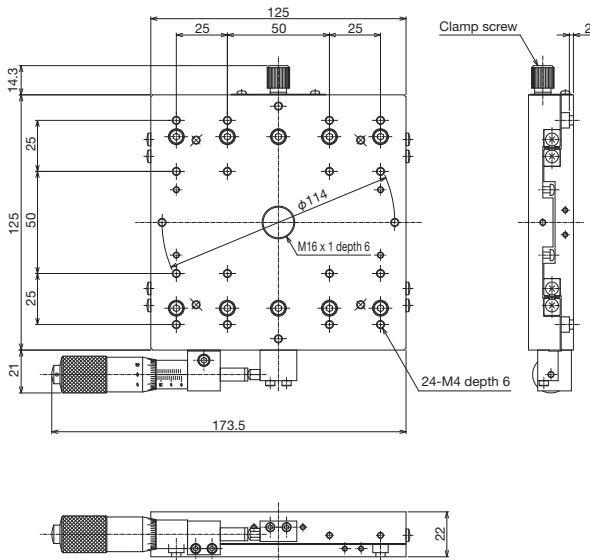
Product Appearance



↑ TLS-149-C1



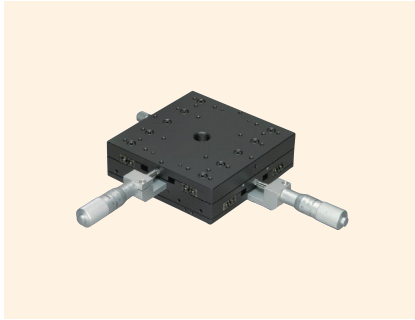
↑ TLS-149-S1



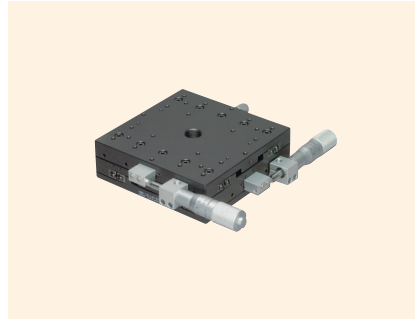
↑ TLS-149-R1

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin V8 Stages	Rack & Pinion Stages	High-Grade Stages	Slim Stages, Cross Roller Stages	Z-Like Stages, Z Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XYZ Stages
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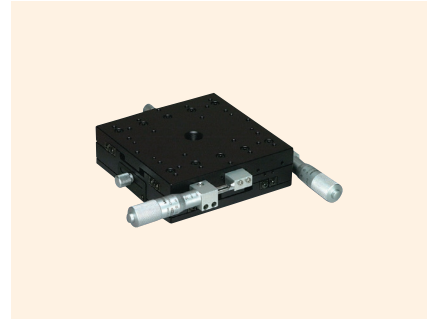
XY Slim Stages 125 x 125



↑ TLD-149-C1



↑ TLD-149-S1



↑ TLD-149-R1

Features

- A thin-type stage that uses a V-groove and cross rollers (V-CR method) for the travel guides.
- Select between center, side, or reverse side for the operating part mounting position.
- Versatile use for precision positioning of workpieces or for the sample tables of measurement equipment.

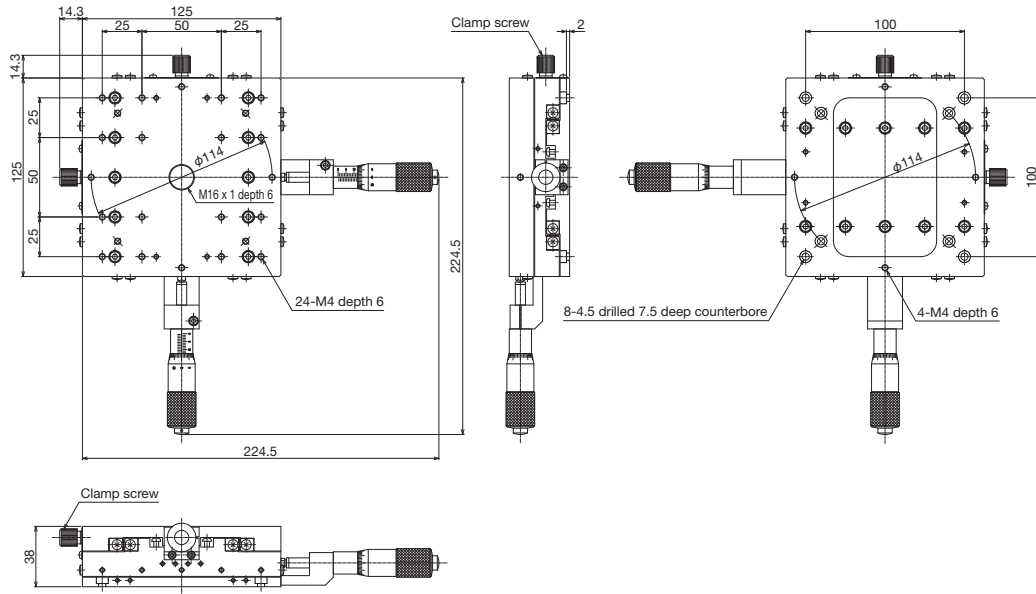
Model number	TLD-149-C1	TLD-149-S1	TLD-149-R1
Model name	XY Slim Stage 125 x 125 (Steel)		
Travel direction	XY-axis double direction		
Stage surface	125 mm x 125 mm		
Clamp method	Plate clamp		
Operating part mounting position	Center	Side	Reverse side
Feed method	MHN1-25T (standard micrometer)		
Travel amount	±12.5 mm		
Travel amount/1 knob rotation	0.5 mm		
Scale	Micrometer 0.01 mm		
Sensitivity	0.003 mm		
Travel guide	V-groove and cross rollers		
Travel accuracy	Straightness: 0.003 mm Yaw/pitch 15 s		
Moment rigidity	Yaw rigidity 0.05 s/N-cm, pitch rigidity 0.05 s/N-cm, roll rigidity 0.03 s/N-cm		
Parallelism	0.05 mm		
XY orthogonality	0.02 mm		
Load capacity	225 N (23 kgf)		
Mass	4.3 kg		
Main materials/surface treatment	Steel/hardened black chrome		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

Model number	TLD-149-C7	TLD-149-S7
Model name	XY Slim Stage 125 x 125 (With Digital Display Micrometer) (Steel)	
Travel direction	XY-axis double direction	
Stage surface	125 mm x 125 mm	
Clamp method	Plate clamp	
Operating part mounting position	Center	Side
Feed method	MHN1-25MX (digital display micrometer)	
Travel amount	±12.5 mm	
Travel amount/1 knob rotation	0.5 mm	
Scale	Digital display micrometer 0.001 mm	
Sensitivity	0.003 mm	
Travel guide	V-groove and cross rollers	
Travel accuracy	Straightness: 0.003 mm Yaw/pitch 15 s	
Moment rigidity	Yaw rigidity 0.05 s/N-cm, pitch rigidity 0.05 s/N-cm, roll rigidity 0.03 s/N-cm	
Parallelism	0.05 mm	
XY orthogonality	0.02 mm	
Load capacity	225 N (23 kgf)	
Mass	4.5 kg	
Main materials/surface treatment	Steel/hardened black chrome	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain	

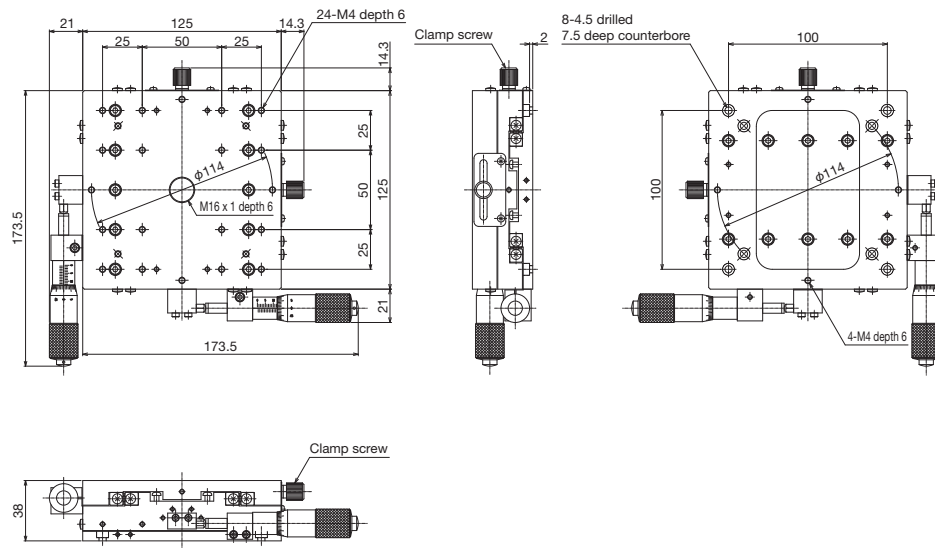


Slim Stages, Cross Roller Stages ◀ Manual Stages ◀

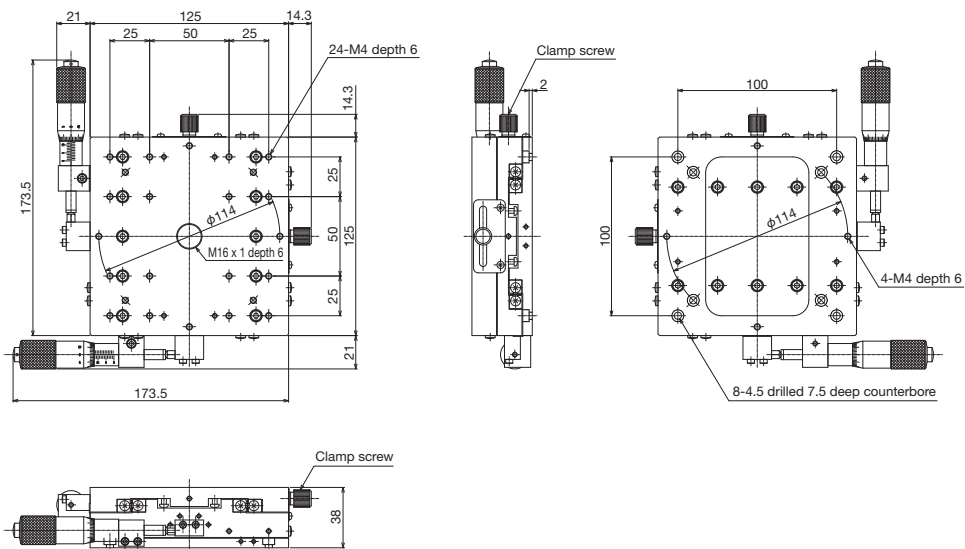
Product Appearance



↑ TLD-149-C1



↑ TLD-149-S1



↑ TLD-149-R1

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin V8 Stages	Rack & Pinion Stages
High-Grade Stages	Slim Stages, Cross Roller Stages	Z-Like Stages, Z Stages
	Rotary Stages	TTR Stages
	TTR/Rotary Stages	XZ, YZ Stages
		XZ Stages

Z Lift Slim Stages 125 x 125



↑ TLV-147-1



↑ TLV-147-6



↑ TLV-147-7

Features

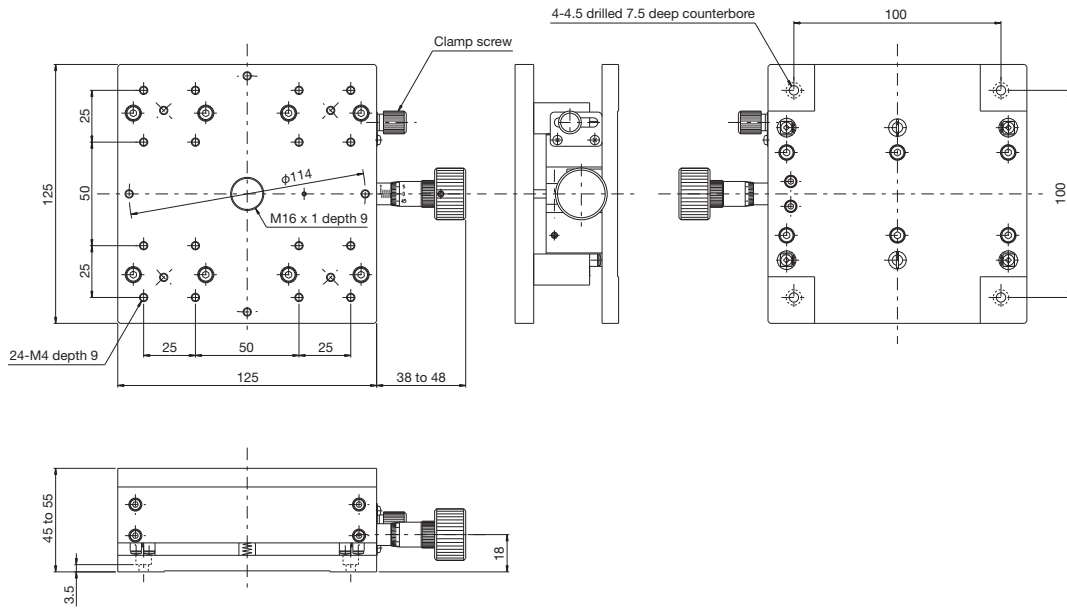
- A thin, lightweight, lift type Z axis stage.
- Rigidity is increased with numerous V-CR method guide combinations.
- Versatile use for precision positioning of sensors, workpieces, and more.

Model number	TLV-147-1	TLV-147-6	TLV-147-7
Model name	Z Slim Stage 125 x 125	Z Slim Stage 125 x 125 (With Feed Screw)	Z Slim Stage 125 x 125 (With Digital Display Micrometer)
Travel direction	Z-axis single direction		
Stage surface	125 mm x 125 mm		
Clamp method	Plate clamp		
Feed method	CMH-13FM (standard micrometer)	-	MHN1-25MX (digital display micrometer)
Travel amount	0 to 10 mm		
Travel amount/1 knob rotation	0.5 mm		
Scale	Micrometer 0.01 mm	Feed Screw Type - 1 Knob Rotation Approx. 0.5 mm	Digital display micrometer 0.001 mm
Sensitivity	0.003 mm	0.01 mm	0.001 mm
Travel guide	V-groove and cross rollers		
Travel accuracy	Straightness: 0.005 mm		
Load capacity	49 N (5 kgf)	98 N (10 kgf)	49 N (5 kgf)
Mass	1.4 kg		1.6 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

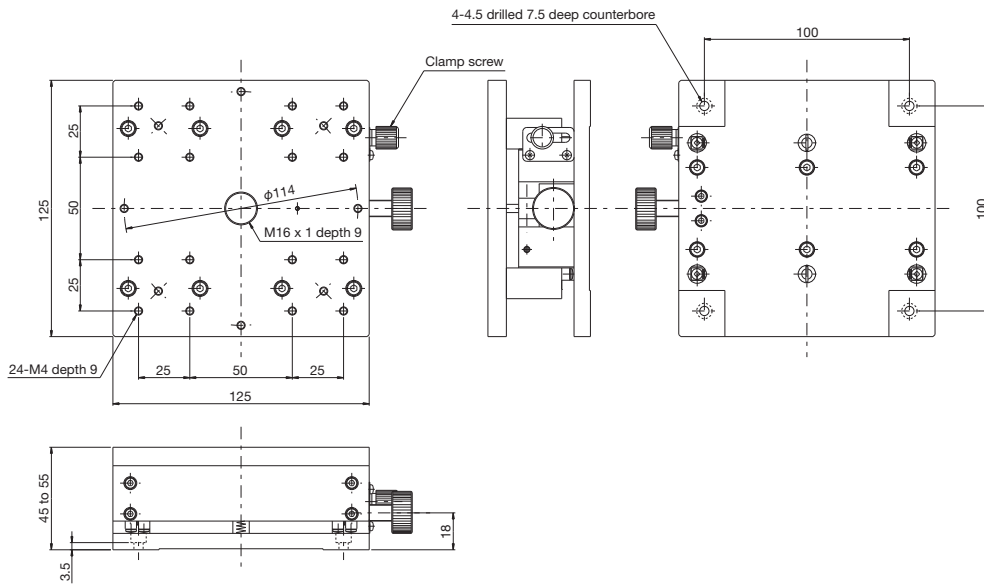


Slim Stages, Cross Roller Stages ◀ Manual Stages ◀

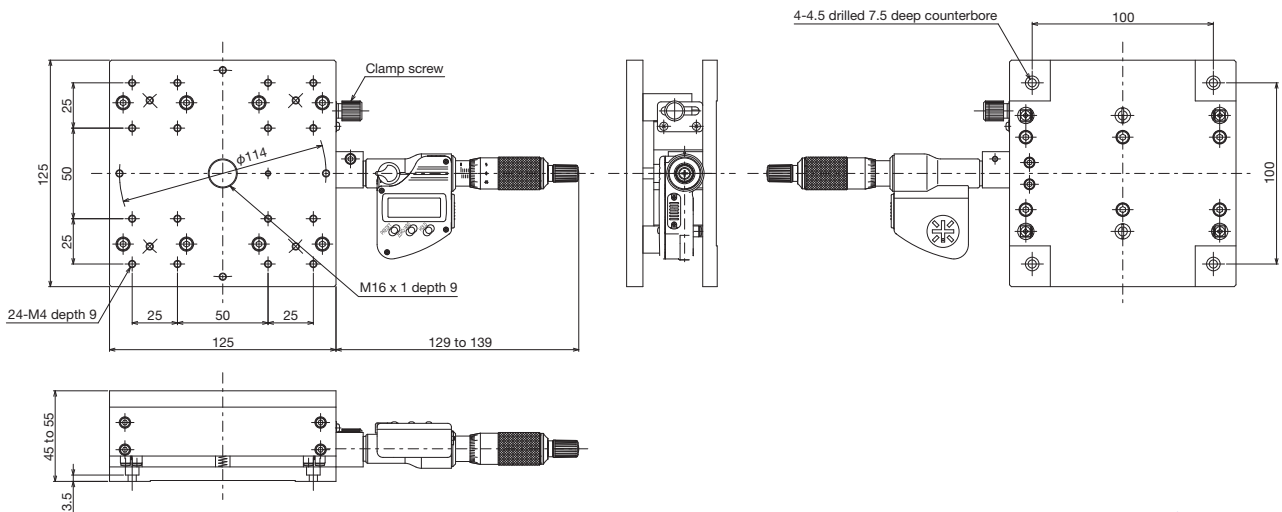
Product Appearance



TLV-147-1



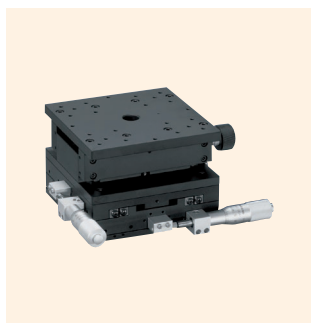
TLV-147-6



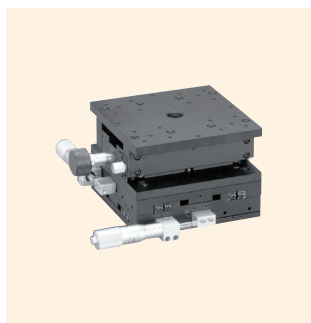
TLV-147-7

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rack & Pinion Stages
High-Grade Stages	Slim Stages, Cross Roller Stages	Z-Like Stages, Z Stages
Rotary Stages	Tilt Stages	Tilt/Rotary Stages
XZ, YZ Stages	XZ Stages	

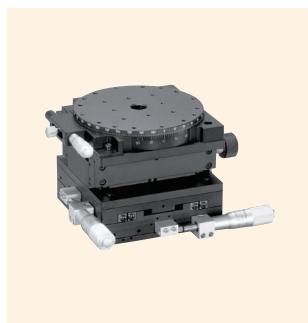
XYZ Slim Stages, XYZ Rotary Slim Stages 125 x 125



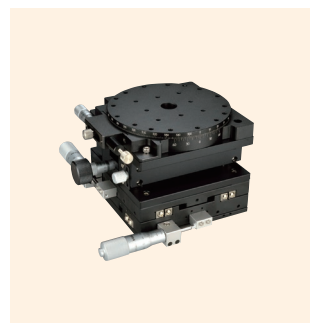
↑ TLT-140-S1



↑ TLT-140-R1



↑ TTR-101-S1



↑ TTR-101-R1

Features

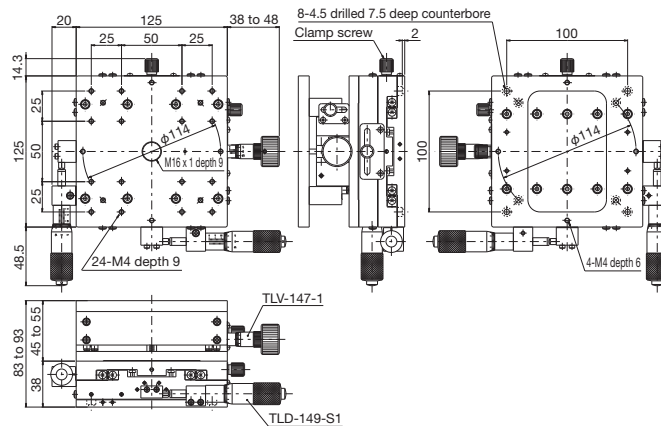
- XYZ stages combine XY stages with a Z stage, while XYZ rotary stages combine XY slim stages, Z slim stages, and rotary slim stages.
- Types with reverse micrometer orientation are available to enable operation from the left and right.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number	TLT-140-S1	TLT-140-R1	TTR-101-S1	TTR-101-R1
Model name	XYZ Slim Stage 125 x 125		XYZ Rotary Slim Stage ϕ 125	
Travel direction	XYZ-axis triple direction		XYZ rotary quadruple direction	
Stage surface	125 mm x 125 mm		ϕ 125 mm	
Clamp method	Plate clamp		XYZ axis plate clamp, rotating axis complex clamp	
Operating part mounting position	XY-axis side	XY-axis reverse side	XY-axis side	
Feed method	XY axis MHN1-25T, Z axis CMH-13FM, (each is a standard axis micrometer)		XY axis MHN1-25T, Z axis CMH-13FM, Rotary CMH-13RM, (each axis has a standard micrometer)	
Travel amount	XY axes ± 12.5 mm, Z axis 0 to 10 mm		XY axes ± 12.5 mm, Z axis 0 to 10 mm, rotating axis moves 360° with coarse movement and $\pm 5^\circ$ with fine movement	
Travel amount/1 knob rotation	Each axis is 0.5 mm		XYZ axes 0.5 mm, rotating axis approx. 0.39°	
Scale	Micrometer 0.01 mm		XYZ axis micrometer 0.01 mm, rotating axis vernier reading 5'/micrometer 0.01 mm (1 scale marking is approx. 0.008°)	
Sensitivity	0.003 mm		XYZ axes 0.003 mm	
Travel guide	V-groove and cross rollers		XYZ axis: V-groove and cross rollers, rotating axis: sliding	
Travel accuracy	Straightness: XY axes 0.003 mm, Z axis 0.005 mm		Straightness: XY axes 0.003 mm, Z axis 0.005 mm, Circularity: rotating axis 0.05 mm, Surface runout: rotating axis 0.03	
XY orthogonality	0.02 mm			
Load capacity	49 N (5 kgf)		29.4 N (3 kgf)	
Mass	5.7 kg		6.6 kg	
Main materials/surface treatment	XY axis: Steel/hardened black chrome, Z axis: Aluminum alloy/black satin anodized finish		XY axis: Steel/hardened black chrome, Z rotating axis: Aluminum alloy/black satin anodized finish	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

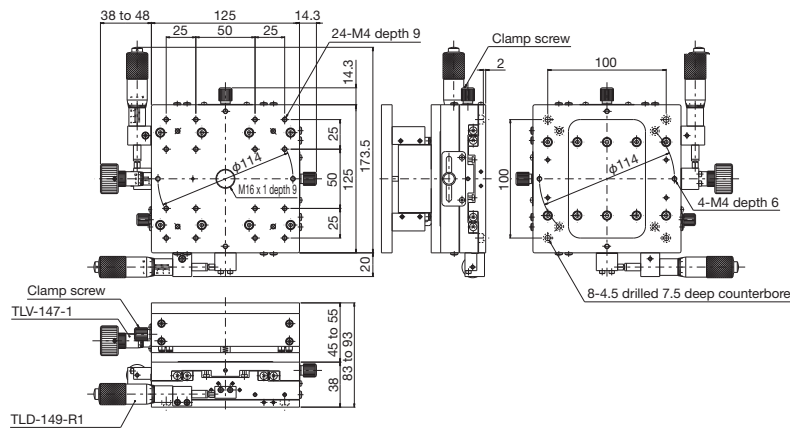


Slim Stages, Cross Roller Stages ◀ Manual Stages ◀

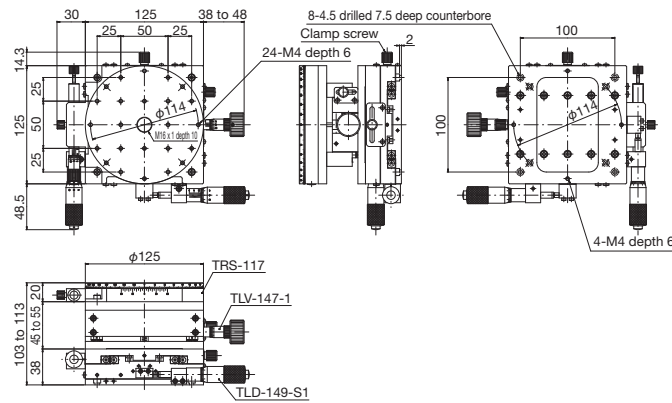
Product Appearance



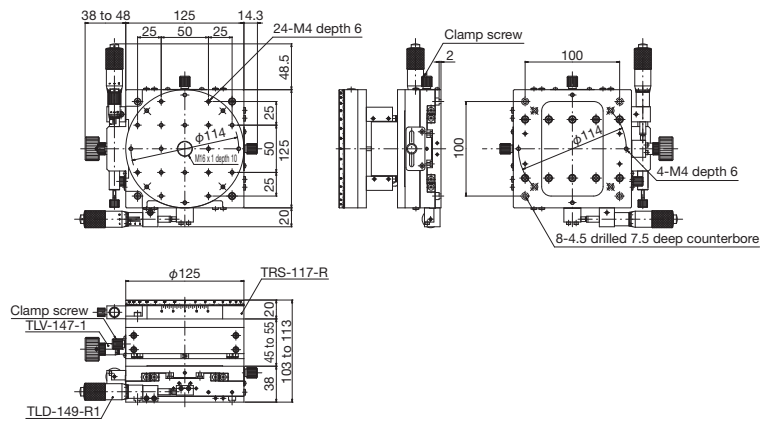
TLT-140-S1



TLT-140-R1



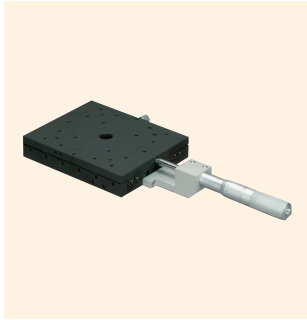
TTR-101-S1



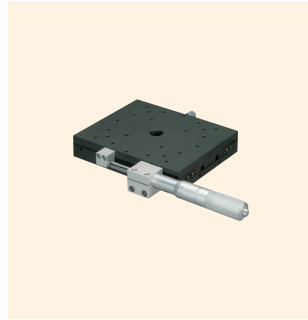
TTR-101-R1

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fine Stages	Thin VB Stages	Rock & Pinion Stages
High-Grade Stages	Slim Stages, Cross Roller Stages	Z-Like Stages, Z Stages
Rotary Stages	TTR Stages	TTR/Rotary Stages
XZ, YZ Stages	XZ Stages	

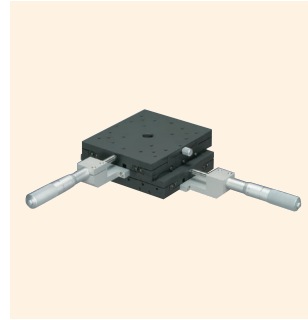
X Stages, XY Stages 125 x 150



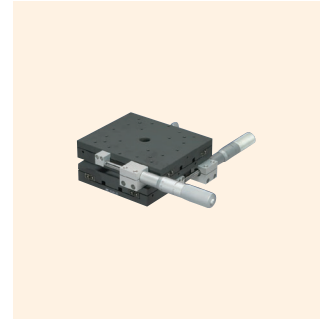
↑ TLS-241-C1



↑ TLS-241-S1



↑ TLD-241-C1



↑ TLD-241-S1

Features

- An ultra-precision stage that uses a V-groove and cross rollers (V-CR method) for the travel guides.
- Select between center or side for the operating part mounting position.
- Standard micrometers and digimatic micrometers are available for the feed method.
- Versatile use for precision positioning of workpieces or for the sample tables of measurement equipment.

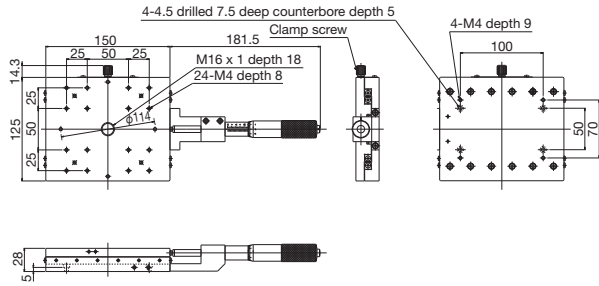
Model number	TLS-241-C1	TLS-241-S1	TLS-243-C7
Model name	VCR Ultra-Precision X Stage 125 x 150		VCR Ultra-Precision X Stage 125 x 150 (With Digital Display Micrometer)
Travel direction	X-axis single direction		
Stage surface	125 mm x 150 mm		
Clamp method	Plate clamp		
Operating part mounting position	Center	Side	Center
Feed method	MHH1-50T (standard micrometer)		MHD-50MB (digital display micrometer)
Travel amount	±25 mm		
Travel amount/1 knob rotation	0.5 mm		
Scale	Micrometer 0.01 mm		Digital display micrometer 0.001 mm
Sensitivity	0.003 mm		0.001 mm
Travel guide	V-groove and cross rollers		
Travel accuracy	Straightness: 0.003 mm, yaw/pitch: 15 s		
Moment rigidity	Yaw rigidity 0.02 s/N-cm, pitch rigidity 0.02 s/N-cm, roll rigidity 0.01 s/N-cm		
Parallelism	0.03 mm		
Load capacity	294 N (30 kgf)		
Mass	4.9 kg		5.3 kg
Main materials/surface treatment	Steel/hardened black chrome		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

Model number	TLD-241-C1	TLD-241-S1	TLD-243-C7
Model name	VCR Ultra-Precision XY Stage 125 x 150		VCR Ultra-Precision XY Stage 125 x 150 (With Digital Display Micrometer)
Travel direction	XY-axis double direction		
Stage surface	125 mm x 150 mm		
Clamp method	Plate clamp		
Operating part mounting position	Center	Side	Center
Feed method	MHH1-50T (standard micrometer)		MHD-50MB (digital display micrometer)
Travel amount	±25 mm		
Travel amount/1 knob rotation	0.5 mm		
Scale	Micrometer 0.01 mm		Digital display micrometer 0.001 mm
Sensitivity	0.003 mm		0.001 mm
Travel guide	V-groove and cross rollers		
Travel accuracy	Straightness: 0.003 mm, yaw/pitch: 15 s		
Moment rigidity	Yaw rigidity 0.02 s/N-cm, pitch rigidity 0.02 s/N-cm, roll rigidity 0.01 s/N-cm		
Parallelism	0.06 mm		
XY orthogonality	0.02 mm		
Load capacity	245 N (25 kgf)		
Mass	9.8 kg		10.6 kg
Main materials/surface treatment	Steel/hardened black chrome		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

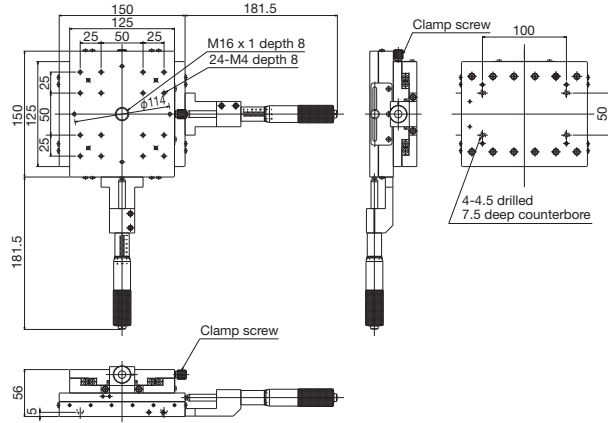


Slim Stages, Cross Roller Stages ◀ Manual Stages ◀

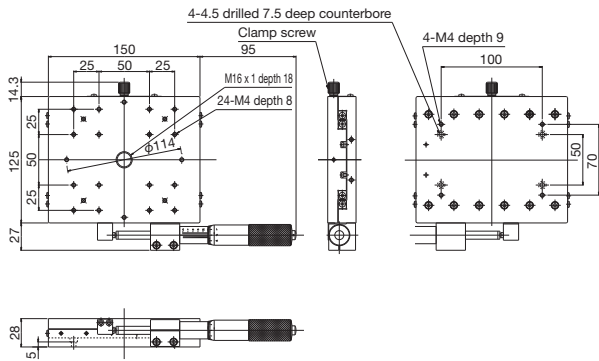
Product Appearance



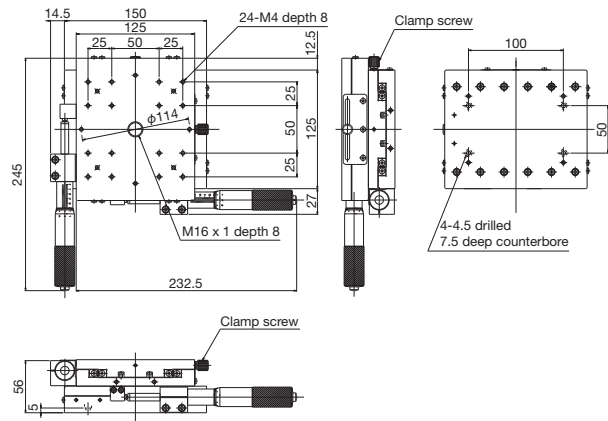
↑ TLS-241-C1



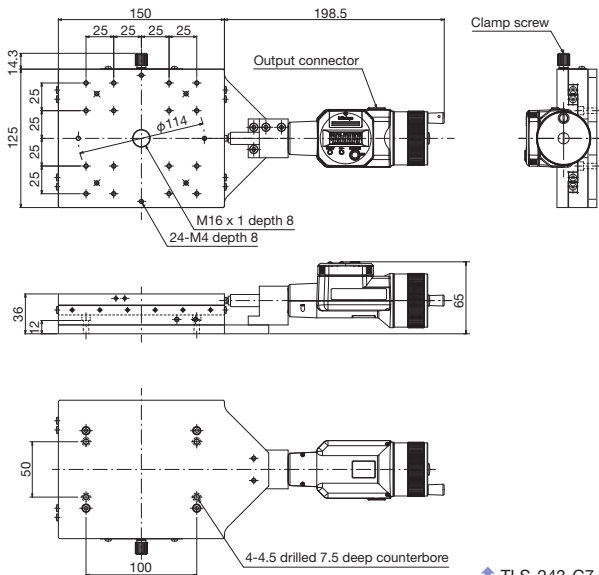
↑ TLD-241-C1



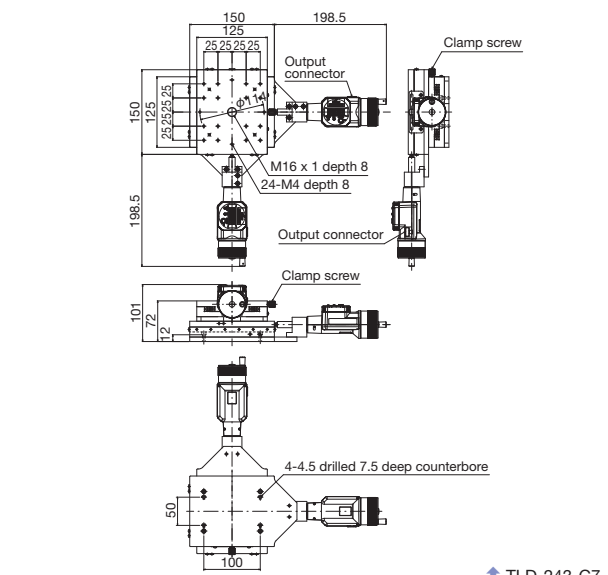
↑ TLS-241-S1



↑ TLD-241-S1



↑ TLS-243-C7

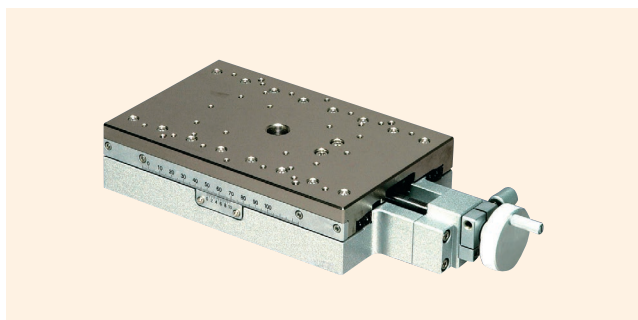


↑ TLD-243-C7

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin VB Stages	Rack & Pinion Stages	High-Grade Stages	Slim Stages, Cross Roller Stages	Z-Like Stages, Z Stages	Rotary Stages	TTR Stages	TTR/Rotary Stages	XZ, YZ Stages	XYZ Stages
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X Stages, XY Stages 130 x 200

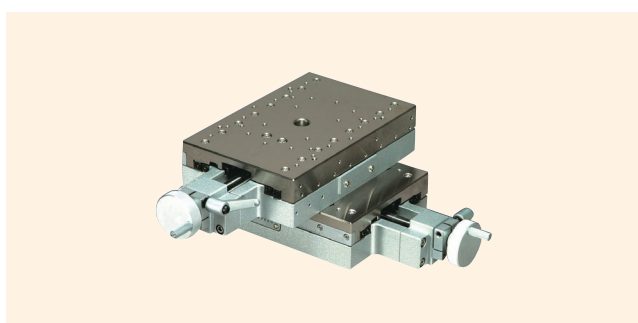
◆ V-CR method



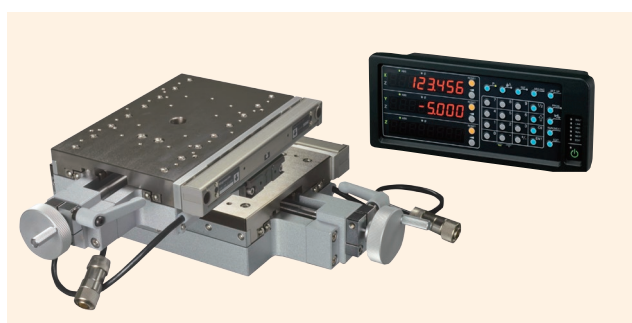
↑ TLS-242



↑ TLS-242-MS



↑ TLD-242



↑ TLD-242-MS

Features

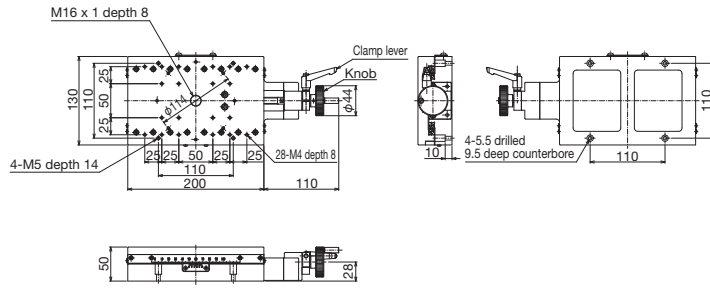
- An ultra-precision stage that uses a V-groove and cross rollers (V-CR method) for the travel guides.
- Types with a vernier scale and types with a magnetic scale are available.
- Versatile use for precision positioning of workpieces or for the sample tables of measurement equipment.

Model number	TLS-242	TLS-242-MS	TLD-242	TLD-242-MS
Model name	VCR Ultra-Precision X Stage 130 x 200	VCR Ultra-Precision X Stage 130 x 200 (With Magnetic Scale)	VCR Ultra-Precision XY Stage 130 x 200	VCR Ultra-Precision XY Stage 130 x 200 (With Magnetic Scale)
Travel direction	X-axis single direction		XY-axis double direction	
Stage surface	130 mm x 200 mm			
Clamp method	Split tightening method			
Feed method	Manual feed method			
Travel amount	±50 mm			
Travel amount/1 knob rotation	1 mm			
Scale	Vernier reading: 0.05 mm	Vernier reading: 0.05 mm/ scale display unit only: 0.0005 mm (0.5 μm)	Vernier reading: 0.05 mm	Vernier reading: 0.05 mm/ scale display unit only: 0.0005 mm (0.5 μm)
Travel guide	V-groove and cross rollers			
Travel accuracy	Straightness: 0.003 mm, yaw/pitch: 15 s			
Moment rigidity	Yaw rigidity 0.02 s/N-cm, pitch rigidity 0.02 s/N-cm, roll rigidity 0.01 s/N-cm			
Parallelism	0.03 mm		0.06 mm	
XY orthogonality	-		0.02 mm	
Load capacity	294 N (30 kgf)		216 N (22 kgf)	
Mass	8 kg		16 kg	
Main materials/surface treatment	Steel: Electroless nickel plating (table), coating (base)			
Linear scale	-	Magnetic scale or display unit included	-	Magnetic scale or display unit included
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

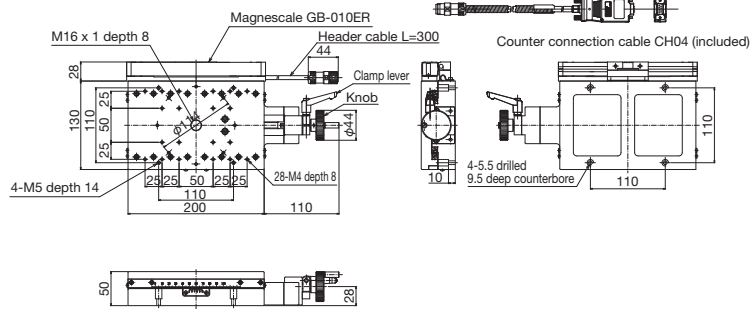


Slim Stages, Cross Roller Stages ◀ Manual Stages ◀

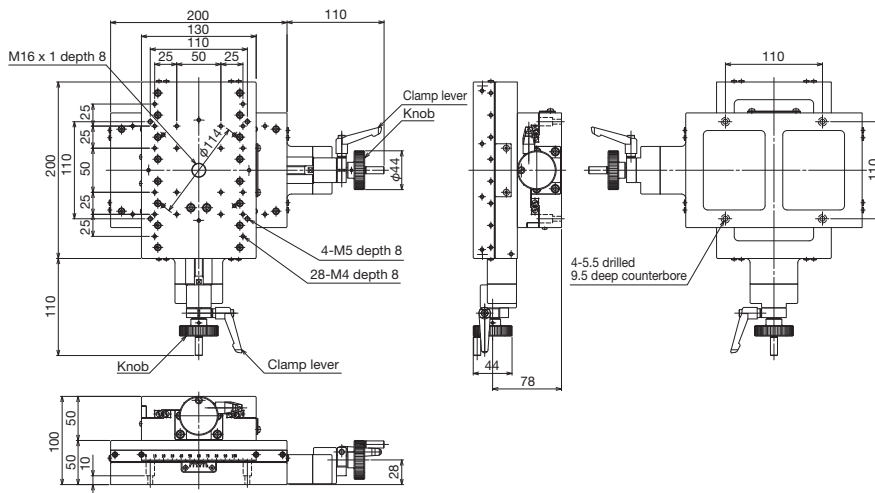
Product Appearance



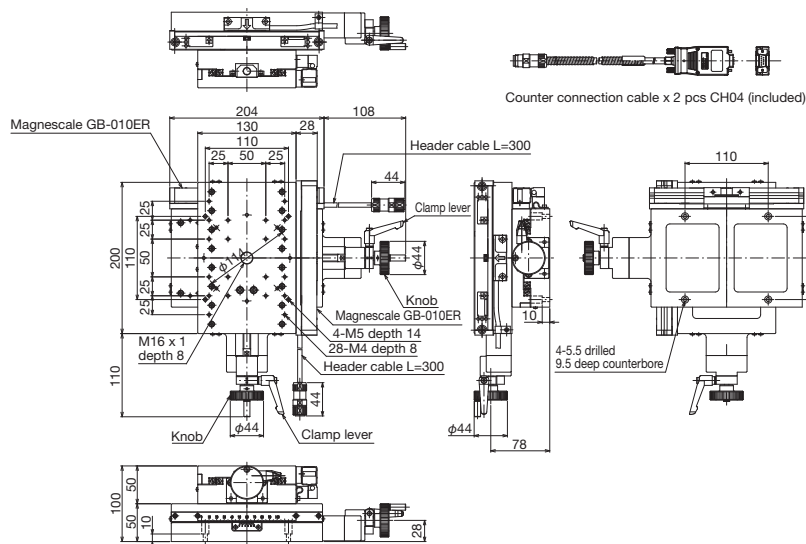
↑ TLS-242



↑ TLS-242-MSK



↑ TLD-242



↑ TLD-242-MSK

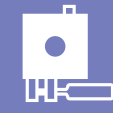
Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rack & Pinion Stages
High-Grade Stages	Slim Stages, Cross Roller Stages	Z-Like Stages, Z Stages
Rotary Stages	Tilt Stages	Tilt/Rotary Stages
XZ, YZ Stages	XZ, YZ Stages	XZ Stages



► Manual Stages ► Z Lift Stages, Z Stages | Product List

- Motorized Stages
- Automated Products for Microscopes
- Manual Stages**
- Fx Stages
- Thin Yθ Stages
- Rock & Pivot Stages
- High-Capacity Stages
- Slit Stages, Cross Roller Stages
- Z Lift Stages
- Rotary Stages
- Tilt Stages
- Tilt/Rotary Stages
- XZ, YZ Stages
- XYZ Stages

Page	Example product photo	Type	Model number	Stage surface	Travel amount (total travel amount)	Notes
319		Z Lift Stage	TLV-642-1	60 mm x 60 mm	0 to 10 mm	
			TLV-947-1	90 mm x 90 mm	0 to 10 mm	
321		Lab Jack	TLV-151-2	125 mm x 125 mm	0 to 40 mm	Lab jack, load capacity 147 N (15 kgf)
			TLV-251-2	150 mm x 200 mm	0 to 70 mm	Lab jack, load capacity 196 N (20 kgf)
323		Z Stage	TLV-111	40 mm x 50 mm	0 to 60 mm	Stage surface is vertical
			TLV-643	60 mm x 60 mm	±12.5 mm (25 mm)	Stage surface is vertical
			TLV-143	60 mm x 115 mm	±25 mm (50 mm)	Stage surface is vertical
			TLV-243	60 mm x 155 mm	±37.5 mm (75 mm)	Stage surface is vertical



Features | Z Lift Stages, Z Stages ◀ Manual Stages ◀

■ Z Lift Stages

◊ Guide method

Uses a V-groove and cross rollers (V-CR method) or a V-groove rail and steel balls (V-B method) for the travel guides.

◊ Large lift travel amount

The Z stage uses a pantograph type mechanism to achieve high load capacity for versatile use as a lab jack.

■ Z stage

◊ Stage body made of aluminum alloy

Stage body made of aluminum alloy to achieve a lighter weight.

◊ Guide method

Uses V-groove and cross rollers (V-CR method) or dovetail grooves (D-T method) for the travel guides.

◊ Large travel amount

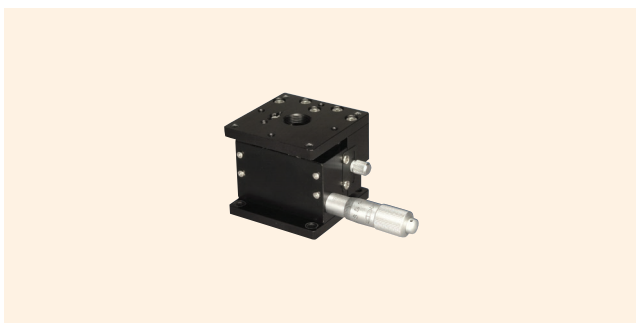
Rack & pinion feed method achieves large travel amounts.

◊ Coarse/fine movement

TLV-643, TLV-143, and TLV-243 are capable of coarse and fine movement adjustment, enabling use as a focus unit.

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fx Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z Lift Stages, Z Stages
Rodless Stages
TTL Stages
TTR/Rotary Stages
XZ, YZ Stages
XZ Stages

Z Lift Stage



↑ TLV-642-1



↑ TLV-947-1

Features

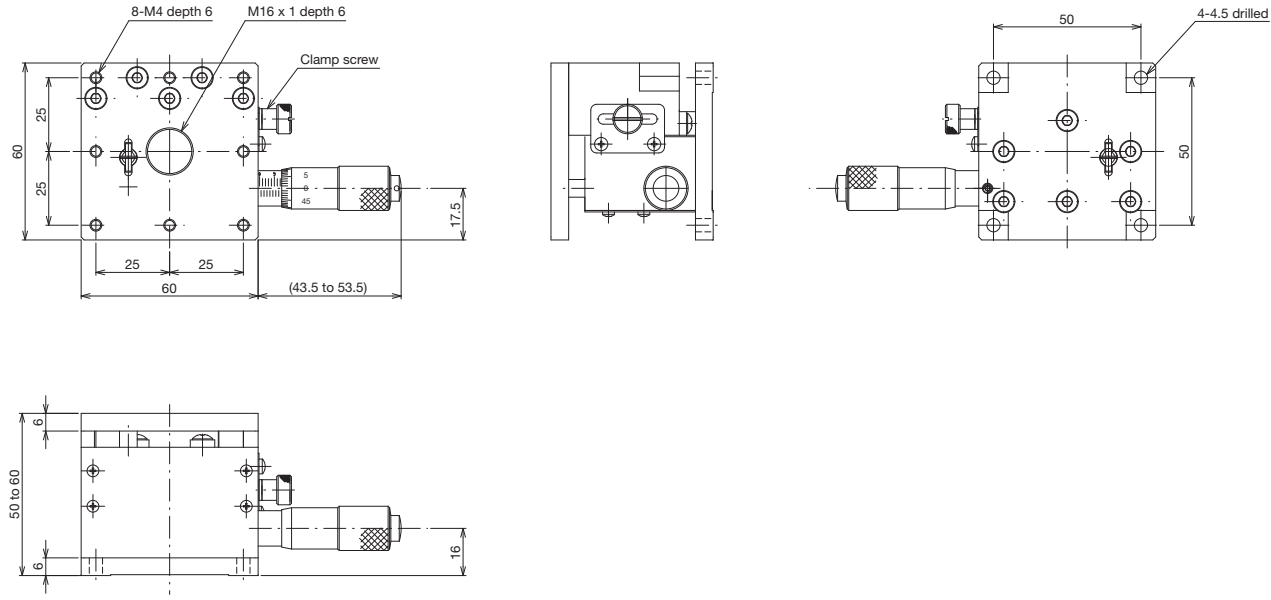
- A lift type Z axis stage.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number	TLV-642-1	TLV-947-1
Model name	Z Lift Stage	Z Slim Stages 90 x 90
Travel direction	Z-axis single direction	
Stage surface	60 mm x 60 mm	90 mm x 90 mm
Clamp method	Plate clamp	
Feed method	CMH-15F (standard micrometer)	CMH-13FM (standard micrometer)
Travel amount	0 to 10 mm	0 to 10 mm
Travel amount/1 knob rotation	0.5 mm	0.5 mm
Scale	Micrometer 0.01 mm	Micrometer 0.01 mm
Sensitivity	0.003 mm	0.003 mm
Travel guide	V-groove and cross rollers	V-groove and cross rollers (HG-VCR method)
Travel accuracy	Straightness: 0.003 mm	Straightness: 0.008 mm
Parallelism	0.08 mm	-
Load capacity	49 N (5 kgf)	
Mass	0.5 kg	0.4 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain	

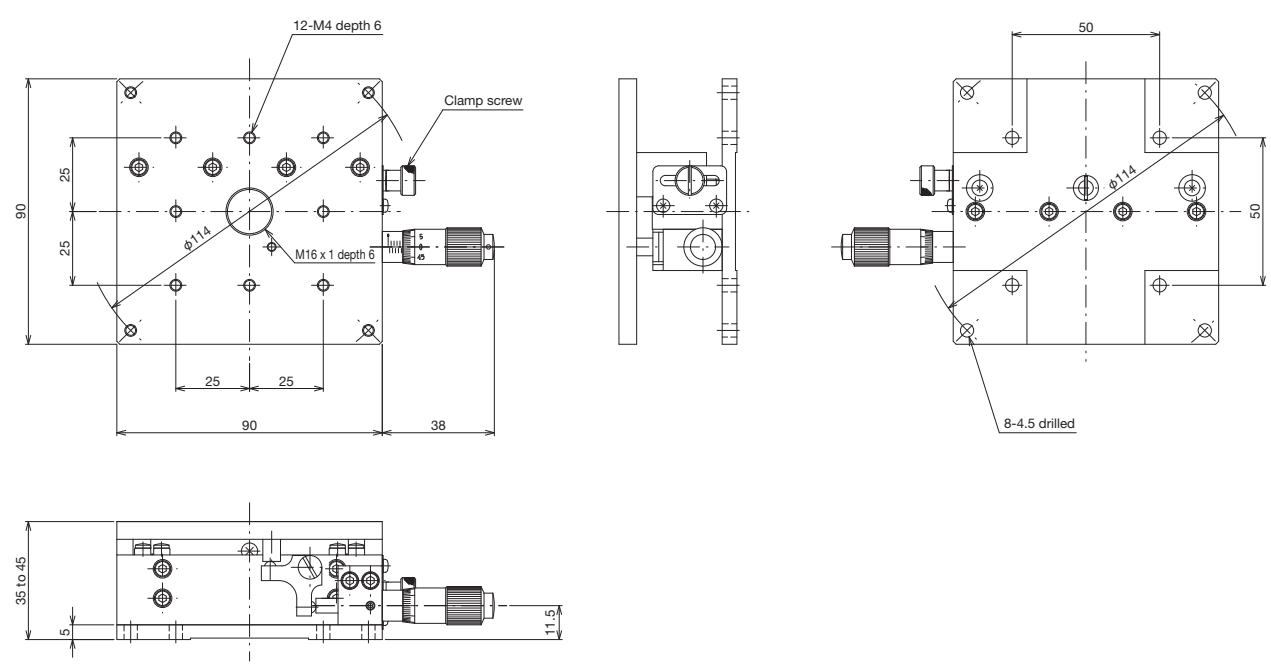


Z Lift Stages, Z Stages ◀ Manual Stages ◀

Product Appearance



TLV-642-1



TLV-947-1

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin VB Stages	Rack & Pinion Stages	High-Grade Stages	Spin Stages, Cross Roller Stages	Z Lift Stages, Z Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XYZ Stages
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Lab Jacks



↑ TLV-151-2



↑ TLV-251-2

Features

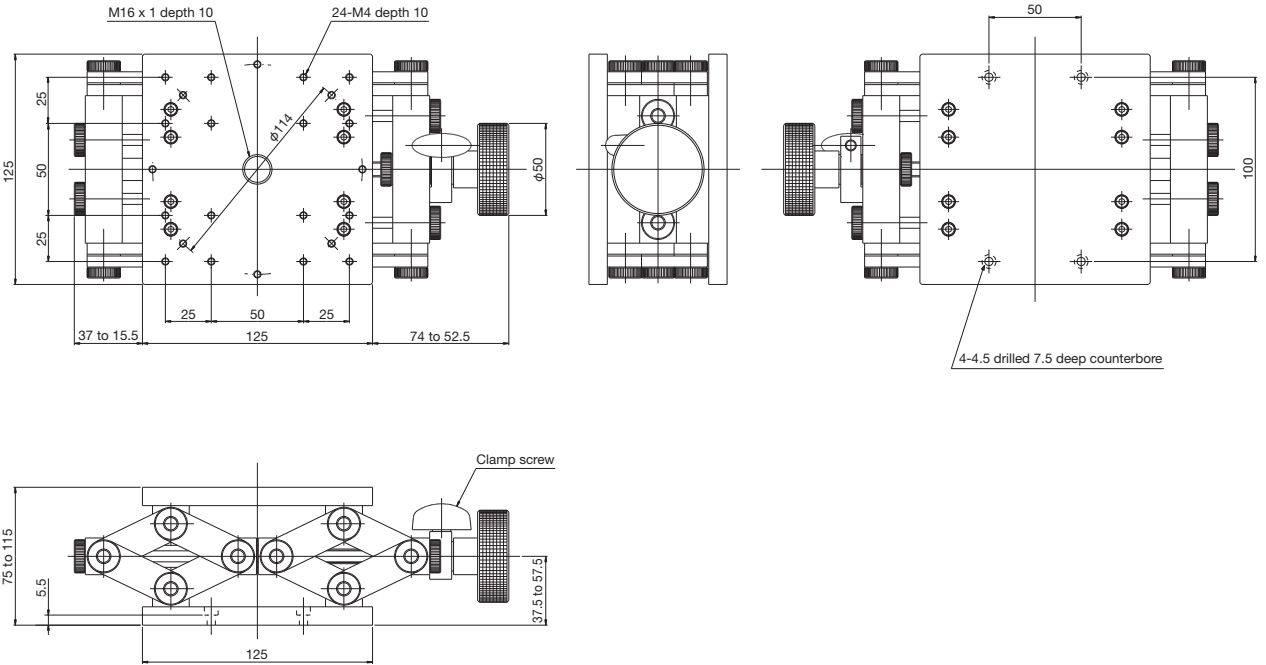
- A lift type Z axis stage adopting a pantograph mechanism.
- Has greater load capacity than other precision stages to enable heavy workpieces to be loaded.
- Versatile use for coarse positioning of laser transmitters and jigs for experiments.
- The mechanism lifts the stage by a lesser amount with each knob rotation.

Model number	TLV-151-2			TLV-251-2		
Model name	Lab Jack 125 x 125			Lab Jack 150 x 200		
Travel direction	Z-axis single direction					
Stage surface	125 mm x 125 mm			150 mm x 200 mm		
Clamp method	Split tightening method					
Feed method	Pantograph method					
Travel amount	0 to 40 mm			0 to 70 mm		
Travel amount/1 knob rotation	Travel position 5 mm vicinity	approx. 2.1 mm		Travel position 5 mm vicinity	approx. 3.0 mm	
	Travel position 10 mm vicinity	approx. 1.9 mm		Travel position 10 mm vicinity	approx. 2.7 mm	
	Travel position 15 mm vicinity	approx. 1.6 mm		Travel position 15 mm vicinity	approx. 2.4 mm	
	Travel position 20 mm vicinity	approx. 1.4 mm		Travel position 20 mm vicinity	approx. 2.2 mm	
	Travel position 25 mm vicinity	approx. 1.2 mm		Travel position 25 mm vicinity	approx. 2.0 mm	
	Travel position 30 mm vicinity	approx. 1.0 mm		Travel position 30 mm vicinity	approx. 1.8 mm	
	Travel position 35 mm vicinity	approx. 0.7 mm		Travel position 35 mm vicinity	approx. 1.6 mm	
	Travel position 40 mm vicinity	approx. 0.5 mm		Travel position 40 mm vicinity	approx. 1.4 mm	
	-	-		Travel position 45 mm vicinity	approx. 1.2 mm	
	-	-		Travel position 50 mm vicinity	approx. 1.1 mm	
	-	-		Travel position 55 mm vicinity	approx. 1.0 mm	
	-	-		Travel position 60 mm vicinity	approx. 0.8 mm	
-	-		Travel position 65 mm vicinity	approx. 0.6 mm		
-	-		Travel position 70 mm vicinity	approx. 0.5 mm		
Scale	-					
Load capacity	147 N (15 kgf)			196 N (20 kgf)		
Mass	5.5 kg			12 kg		
Main materials/surface treatment	Steel/hardened black chrome					
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain					

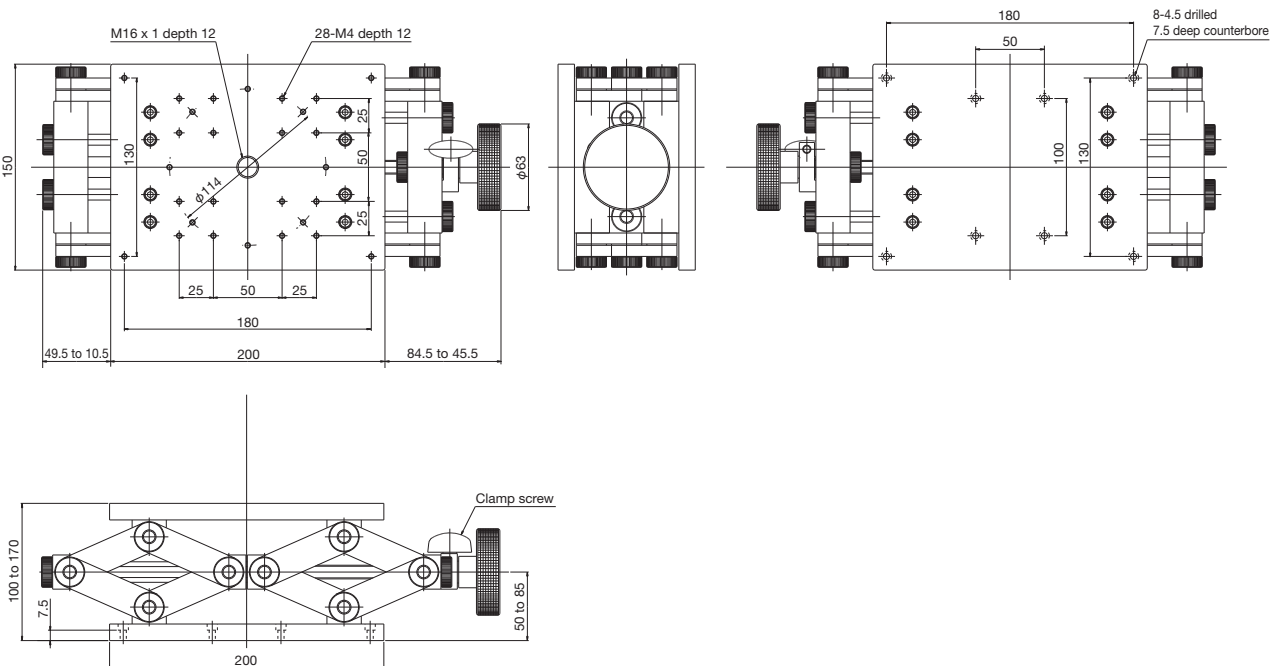


Z Lift Stages, Z Stages ◀ Manual Stages ◀

Product Appearance



TLV-151-2



TLV-251-2

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin VB Stages	Rock & Pinion Stages	High-Grade Stages	Spin Stages, Cross Roller Stages	Z Lift Stages, Z Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XYZ Stages
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Z Stage



↑ TLV-111



↑ TLV-643



↑ TLV-143



↑ TLV-243

Features

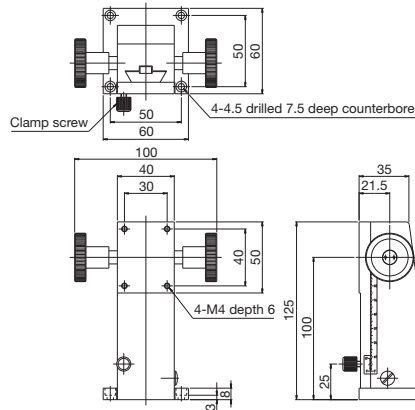
- A Z axis stage that uses a dovetail groove (D-T method) and V-groove and cross rollers (V-CR method) for the travel guides.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- TLV-643, 143, and 243 have a lever type clamp that enables fixing in a desired position with strong retention force.
- TLV-643, 143, and 243 are capable of precision positioning, enabling use as a focus unit for microscopes.

Model number	TLV-111	TLV-643	TLV-143	TLV-243
Model name	Long-Distance Z Stage 40 x 50	Precision Z Stage 60 x 60	Long-Distance Precision Z Stage 60 x 115	Long-Distance Precision Z Stage 60 x 155
Travel direction	Z-axis single direction			
Stage surface	40 mm x 50 mm	60 mm x 60 mm	60 mm x 115 mm	60 mm x 155 mm
Clamp method	Knob screw method	Lever method		
Operating part mounting position	Double knob	Double coarse/fine movement knob		
Feed method	Rack & pinion method			
Travel amount	0 to 60 mm	±12.5 mm	±25 mm	±37.5 mm
Travel amount/1 knob rotation	Approx. 18 mm	Coarse movement: 1 rotation approx. 6 mm, Fine movement: 1 rotation approx. 0.68 mm		
Scale	Vernier reading: 0.1 mm	Vernier reading: 0.05 mm		
Sensitivity	0.1 mm	-		
Travel guide	Dovetail	V-groove and cross rollers		
Travel accuracy	Straightness: 0.08 mm	Straightness: 0.005 mm	Straightness: 0.01 mm	Straightness: 0.015 mm
Load capacity	39.2 N (4 kgf)	49 N (5 kgf)	98 N (10 kgf)	
Mass	0.76 kg	0.9 kg	1.6 kg	2.1 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

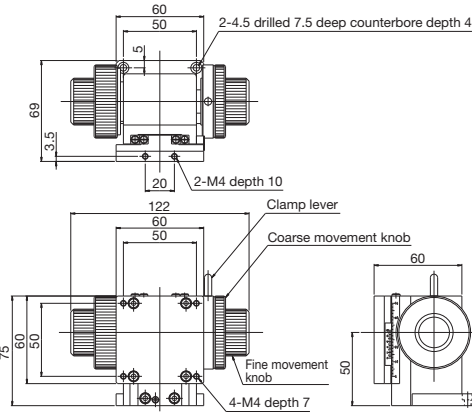


Z Lift Stages, Z Stages ◀ Manual Stages ◀

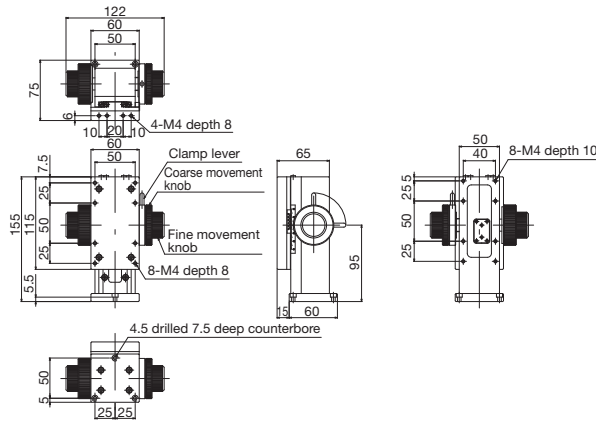
Product Appearance



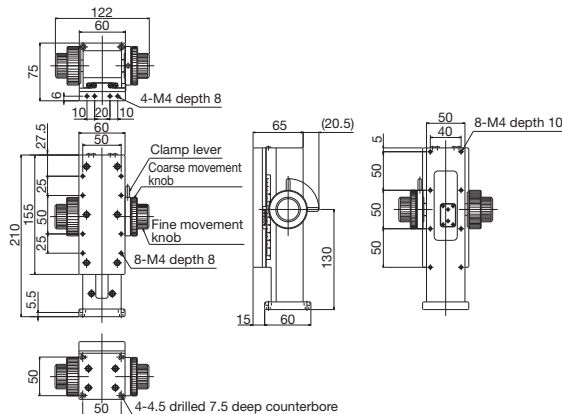
↑ TLV-111



↑ TLV-643



↑ TLV-143



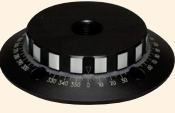

↑ TLV-243

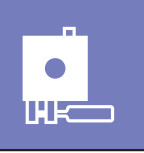
Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin VB Stages	Rack & Pinion Stages	High-Grade Stages	Spin Stages, Cross Roller Stages	Z Lift Stages, Z Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XYZ Stages
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▶ Manual Stages ▶ Rotary Stages | Product List

Motorized Stages
Automated Products for Microscopes
Manual Stages
FX Stages
Thin Yθ Stages
Rack & Pinion Stages
High-Grade Stages
Slim Stages, Cross Roller Stages
Z Lin Stages
Rotary Stages
TR Stages
TR/Rotary Stages
XZ, YZ Stages
XZ Stages

Page	Example product photo	Type	Model number		Stage surface	Travel amount	Notes
			Standard micrometer	Reverse micrometer			
327		Rotary Stage	TR-313	-	φ30 mm	Coarse movement 360°	Coarse movement only
			TR-314T	-	φ28 mm	Coarse movement 360°, fine movement ±1.5°	Transmission hole
			TR-317	TR-317-R	φ30 mm	Coarse movement 360°, fine movement ±5°	Slim type (thickness 15 mm)
			TR-612	-	φ62 mm	Coarse movement 360°	Coarse movement only
329		Rotary Stage	TR-917	TR-917-R	φ90 mm	Coarse movement 360°, fine movement ±5°	Slim type (thickness 20 mm)
			TR-112	-	φ100 mm	Coarse movement 360°	Coarse movement only
			TR-117	TR-117-R	φ125 mm	Coarse movement 360°, fine movement ±5°	Slim type (thickness 20 mm)
			TR-147-1	TR-147-1R	φ125 mm	Coarse movement 360°, fine movement ±5°	Slim type (thickness 20 mm)
331		Rotary Stage	TR-327	-	φ30 mm	Fine movement 360°	Gear type
			TR-627	-	φ60 mm	Fine movement 360°	Gear type
			TR-927	-	φ90 mm	Fine movement 360°	Gear type
			TR-127	-	φ125 mm	Fine movement 360°	Gear type
			TR-147-2	-	φ125 mm	Fine movement 360°	Gear type
333		Rotary Stage	TR-911T	TR-911T-R	φ90 mm	Coarse movement 360°, fine movement ±5°	Transmission hole
			TR-111T	TR-111T-R	φ125 mm	Coarse movement 360°, fine movement ±5°	Transmission hole
			TR-211T	TR-211T-R	φ150 mm	Coarse movement 360°, fine movement ±5°	Transmission hole



Features | Rotary Stages ◀ Manual Stages ◀

◊ Guide method

Uses a V-groove and cross rollers (V-CR method) or sliding types for the travel guides.

◊ Standard and reversed operating part position

Select between products with standard or reversed micrometer operating part position.



↑ TRS-917



↑ TRS-917-R

◊ Stage body made of aluminum alloy

The stage body is made of aluminum alloy to achieve a lighter weight.

■ Slim type

◊ Remarkably thin

Slim types have stages that are just 15 mm thick or 20 mm, making them convenient for their low center of gravity when stacked.

■ Transmission type

◊ Transmission hole to the center

The stage center has a transmission hole that makes it suitable for light axes or centering work with transmission applications.

* $\phi 90$, $\phi 125$, and $\phi 150$ stage transmission holes are threaded.

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fx Stages
Thin V8 Stages
Rack & Pinion Stages
High-Grade Stages
Slim Stages, Cross Roller Stages
Z-Like Stages, Z Stages
Rotary Stages
TR Stages
TR/Rotary Stages
XZ, YZ Stages
XZ Stages

Rotary Stage



↑ TRS-313



↑ TRS-314T



↑ TRS-317



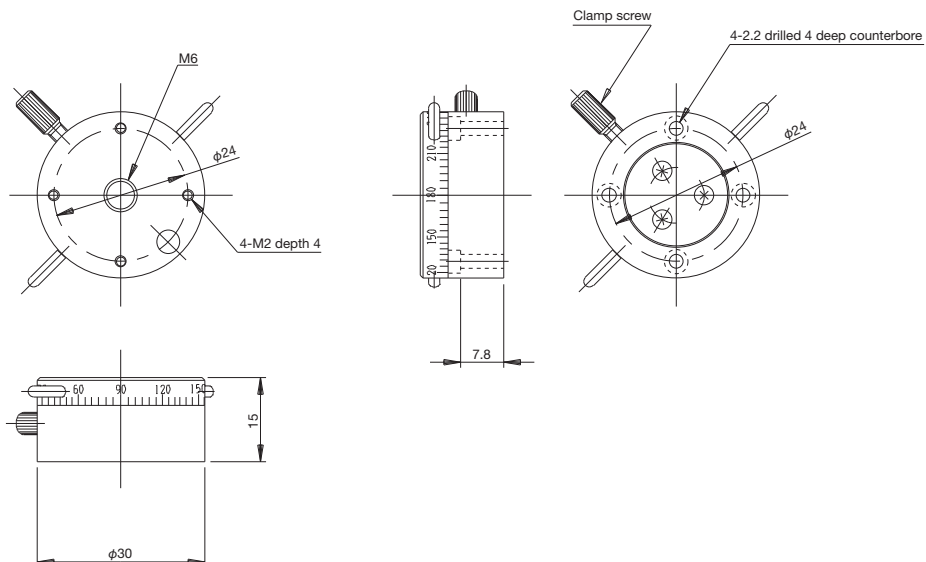
↑ TRS-612

Features

- Fine feed movement rotary stages.
- The table surface of each stage can be grabbed and rotated 360 degrees with coarse movement.
- Units capable of fine feed movement can be adjusted after the coarse feed clamp is set.
- Versatile use for positioning of cameras, sensors, etc.

Model number	TRS-313	TRS-314T	TRS-317	TRS-317-R	TRS-612
Model name	Rotary Stage ϕ 30	Transmission Precision Fine Movement Rotary Stage ϕ 30	Fine Movement Rotary Slim Stage ϕ 30	Fine Movement Rotary Slim Stage ϕ 30 (Reverse Micrometer)	Rotary Stage ϕ 62
Travel direction	Rotation direction				
Stage surface	ϕ 30 mm	ϕ 28 mm	ϕ 30 mm		ϕ 62 mm
Clamp method	Knob screw method		Compound clamp		-
Operating part mounting position	-	-	Standard position	Reverse micrometer position	-
Fine feed method	-	Feed screw P=0.5 mm	CEH-6.5R (standard micrometer)		-
Travel amount	Coarse movement 360°	Coarse movement 360°, fine movement \pm 1.5°	Coarse movement 360°, fine movement \pm 5°		Coarse movement 360°
Travel amount/1 knob rotation	-	Approx. 2.38°	Approx. 1.36°		-
Scale	Scale reading 5°	-	Scale reading 2°/micrometer 0.01 mm (1 scale marking is approx. 0.027°)		Scale reading 1°
Travel guide	Sliding				
Parallelism	-	-	0.03 mm		-
Circularity	-	-	0.02 mm		-
Surface runout	-	-	0.02 mm		-
Load capacity	19.6 N (2 kgf)		9.8 N (1 kgf)		49 N (5 kgf)
Mass	0.04 kg	0.03 kg	0.1 kg		0.2 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish				
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain				

Product Appearance

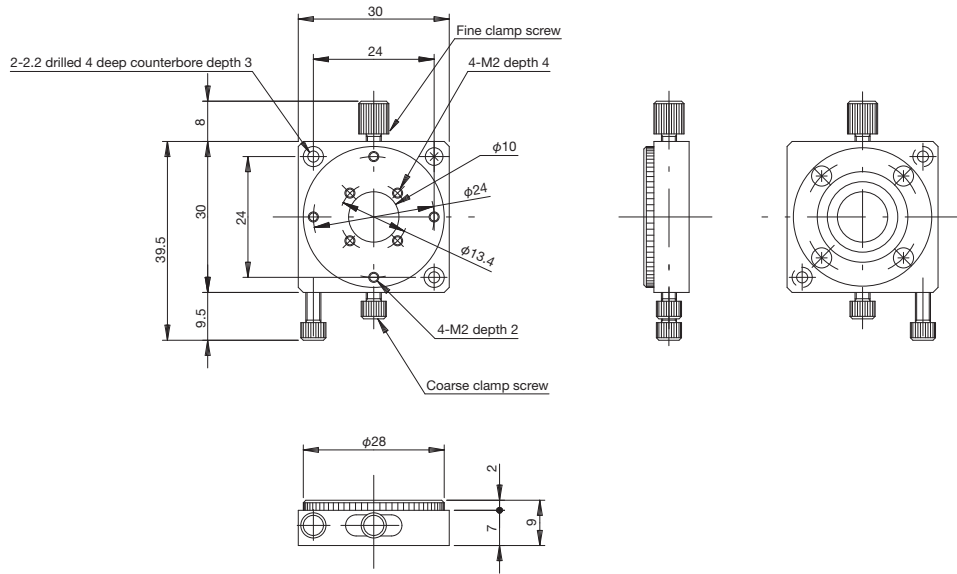


↑ TRS-313

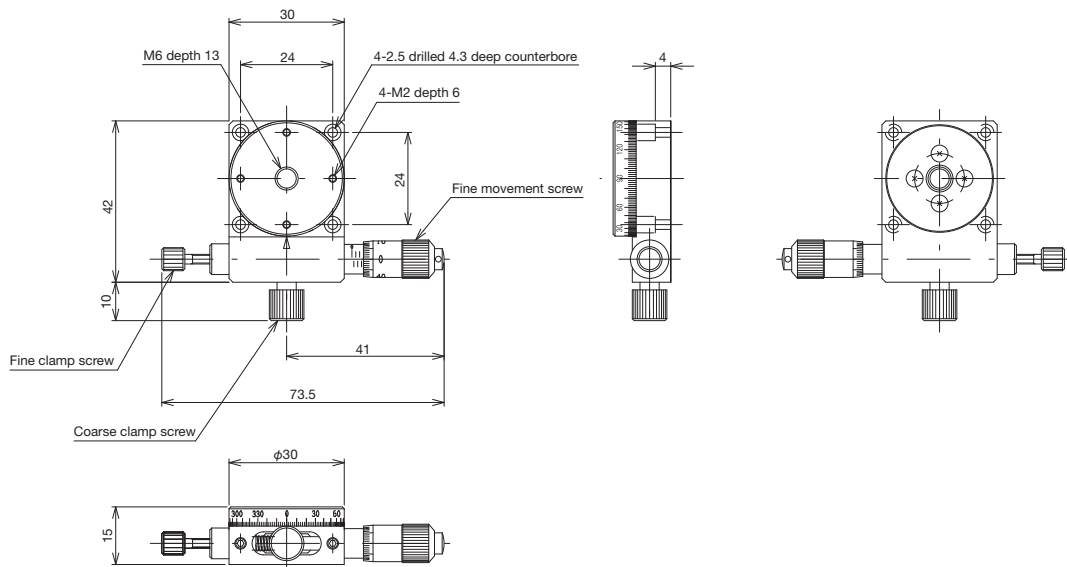


Rotary Stages ◀ Manual Stages ◀

Product Appearance

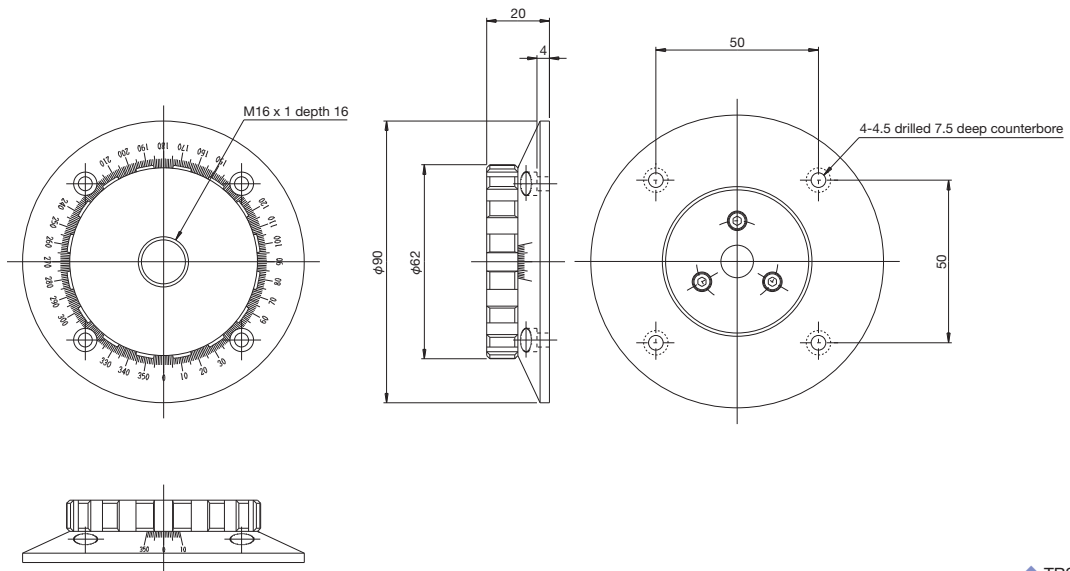


↑ TRS-314T



*TRS-317-R has the same dimensions as TRS-317 but with reversed micrometer position.

↑ TRS-317



↑ TRS-612

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fx Stages	Thin VB Stages	Rack & Pinion Stages	High-Grade Stages	Spin Stages, Cross Roller Stages	Z-Like Stages, Z Stages	Rotary Stages	TR Stages	TR/Rotary Stages	XZ, YZ Stages	XZ Stages
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Rotary Stage



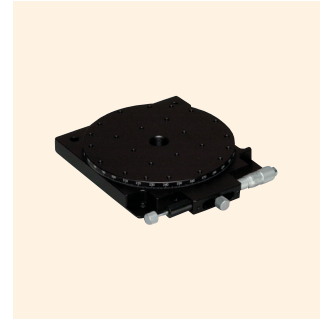
↑ TRS-917



↑ TRS-112



↑ TRS-117



↑ TRS-147-1

Features

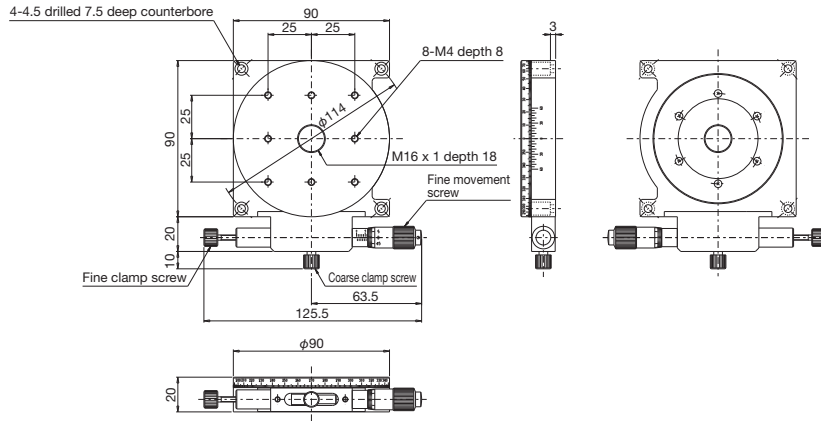
- Rotary stages with differing fine feed movement.
- The table surface of each stage can be grabbed and rotated with coarse movement 360 degrees.
- Units capable of fine feed movement have a table surface that can be grabbed and rotated 360 degrees with coarse movement. The clamp screw can then be secured after coarse movement, and the table can be moved with the micrometer head for fine movement.
- Units capable of fine feed movement can be adjusted after the coarse feed clamp is set.
- Versatile use for positioning of cameras, sensors, etc.

Model number	TRS-917	TRS-112	TRS-117	TRS-147-1
Model number (Reverse micrometer)	TRS-917-R	-	TRS-117-R	TRS-147-1R
Model name	Fine Movement Rotary Slim Stage ϕ 90	Rotary Stage ϕ 100	Fine Movement Rotary Slim Stage ϕ 125	
Travel direction	Rotation direction			
Stage surface	ϕ 90 mm	ϕ 100 mm	ϕ 125 mm	
Clamp method	Complex clamp	-	Complex clamp	
Operating part mounting position	Standard position *-R is the reversed micrometer position	-	Standard position *-R is the reversed micrometer position	
Fine feed method	CMH-13RM (standard micrometer)	-	CMH-13RM (standard micrometer)	
Travel amount	Coarse movement 360°, fine movement \pm 5°	Coarse movement 360°	Coarse movement 360°, fine movement \pm 5°	
Travel amount/1 knob rotation	Approx. 0.5°	-	Approx. 0.39°	
Scale	Vernier reading 5'/ micrometer 0.01 mm (1 scale marking is approx. 0.01°)	Scale reading 1°	Vernier reading 5'/ micrometer 0.01 mm (1 scale marking is approx. 0.008°)	
Travel guide	Sliding			V-groove and cross rollers
Parallelism	0.02 mm	-	0.05 mm	0.06 mm
Circularity	0.04 mm	-	0.05 mm	0.03 mm
Surface runout	0.02 mm	-	0.03 mm	0.04 mm
Load capacity	29.4 N (3 kgf)	98 N (10 kgf)	29.4 N (3 kgf)	147 N (15 kgf)
Mass	0.5 kg		0.9 kg	
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			



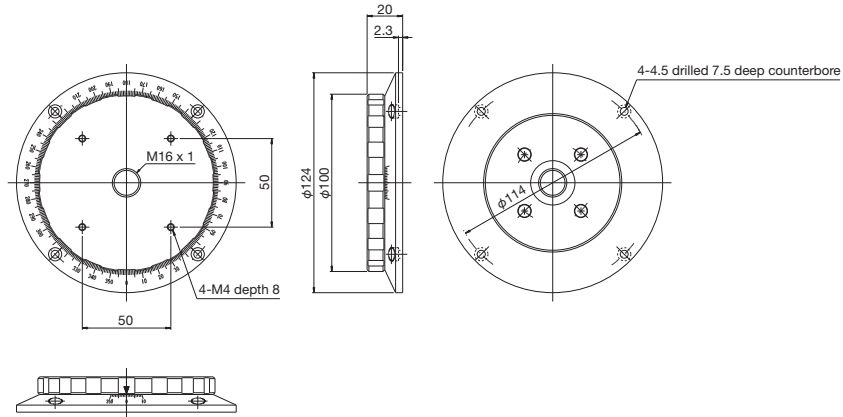
Rotary Stages ◀ Manual Stages ◀

Product Appearance

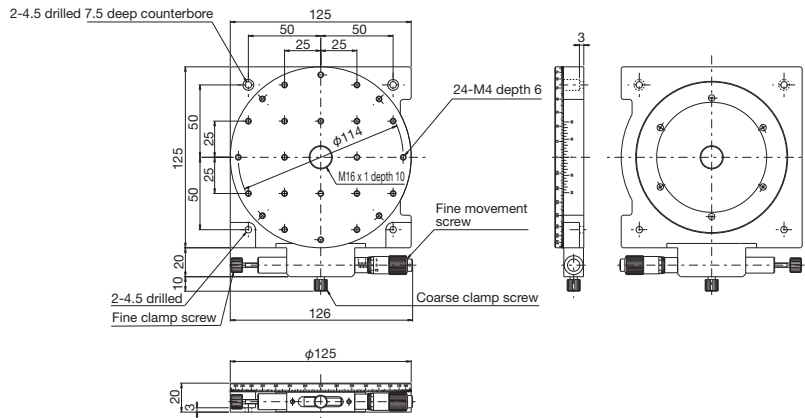


*TRS-917-R has the same dimensions as TRS-917 but with reversed micrometer position.

↑ TRS-917

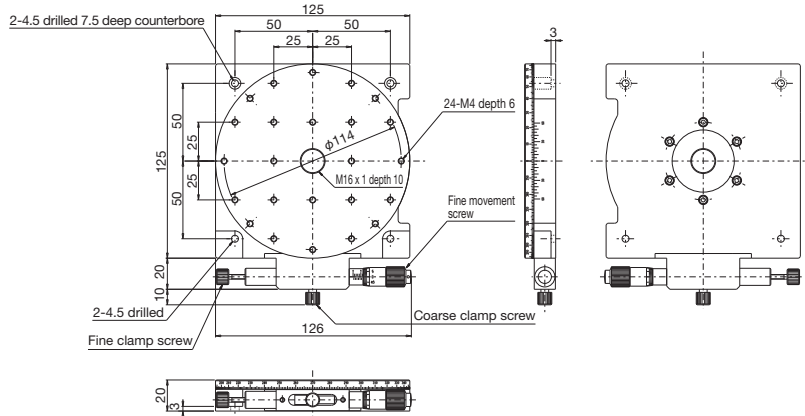


↑ TRS-112



*TRS-117-R has the same dimensions as TRS-117 but with reversed micrometer position.

↑ TRS-117



*TRS-147-1R has the same dimensions as TRS-147-1 but with reversed micrometer position.

↑ TRS-147-1

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fx Stages
Thru VB Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Like Stages, Z Stages
Rotary Stages
TTR Stages
TTR/Rotary Stages
XZ, YZ Stages
XYZ Stages

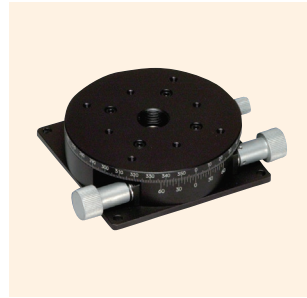
Gear Type Rotary Stages



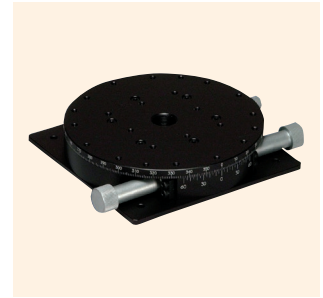
↑ TRS-327



↑ TRS-627



↑ TRS-927



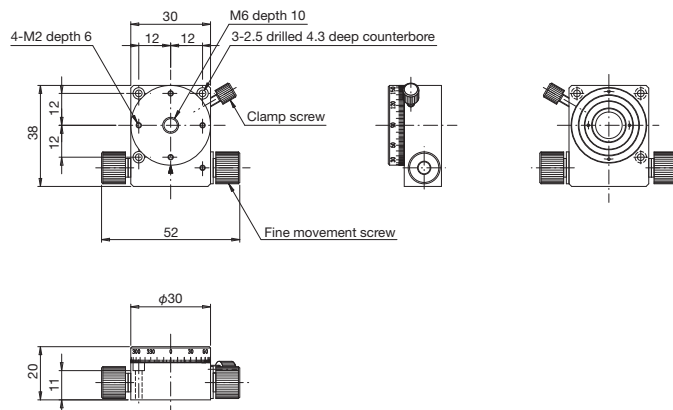
↑ TRS-127

Features

- Rotary stage using a worm gear for the feed method.
- 360-degree fine feed movement is possible.
- A clamp enables fixing in a desired position.
- There is a transmission hole in the stage surface center. (Excluding TRS-327 and TRS-627)
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number	TRS-327	TRS-627	TRS-927	TRS-127	TRS-147-2
Model name	Gear Type Rotary Slim Stage ϕ 30	Gear Type Rotary Slim Stage ϕ 60	Gear Type Rotary Slim Stage ϕ 90	Gear Type Rotary Slim Stage ϕ 125	Gear Type Rotary Slim Stage ϕ 125 (Cross Roller Bearing)
Travel direction	Rotation direction				
Stage surface	ϕ 30 mm	ϕ 60 mm	ϕ 90 mm	ϕ 125 mm	
Clamp method	Knob screw method				
Operating part mounting position	Double knob				
Fine feed method	Worm gear				
Travel amount	Fine movement 360°				
Travel amount/1 knob rotation	Approx. 7.5°	Approx. 6.5°	Approx. 3.5°	Approx. 2.5°	
Scale	Scale reading 2°	Vernier reading: 10'	Vernier reading: 5'	Vernier reading: 5'	
Travel guide	Sliding				V-groove and cross rollers
Parallelism	-	0.03 mm	0.05 mm		
Circularity	0.08 mm	0.04 mm	0.05 mm		0.03 mm
Surface runout	-	0.02 mm	0.03 mm		0.04 mm
Load capacity	9.8 N (1 kgf)	49 N (5 kgf)		147 N (15 kgf)	
Mass	0.1 kg	0.3 kg	0.6 kg	1 kg	
Main materials/surface treatment	Aluminum alloy/black satin anodized finish				
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain				

Product Appearance

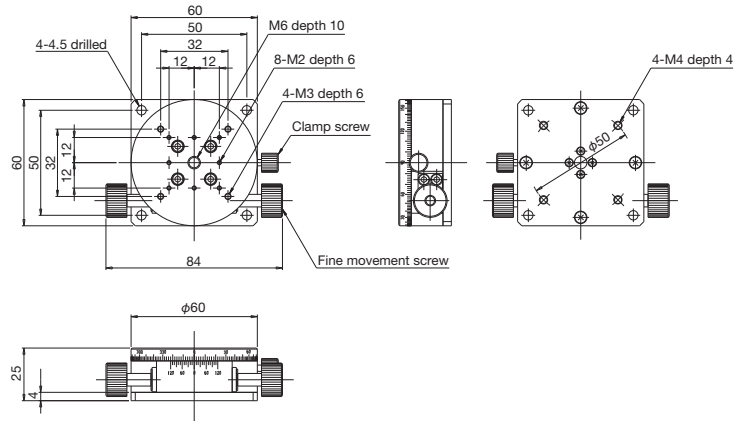


↑ TRS-327

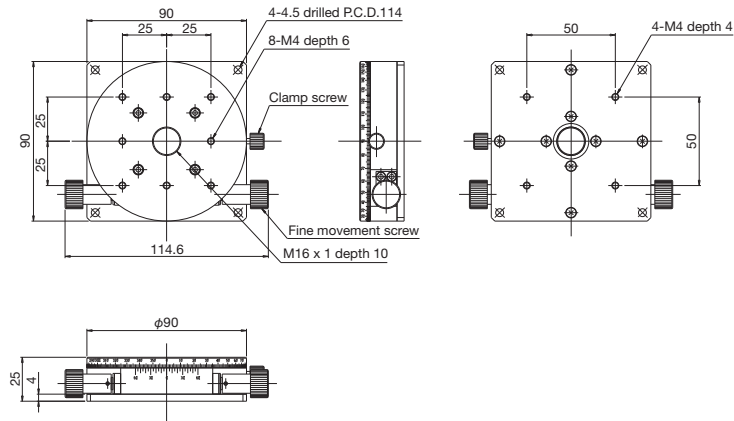


Rotary Stages ◀ Manual Stages ◀

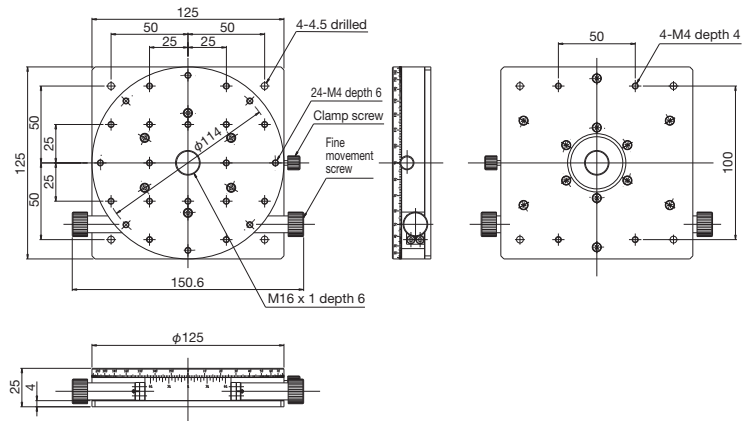
Product Appearance



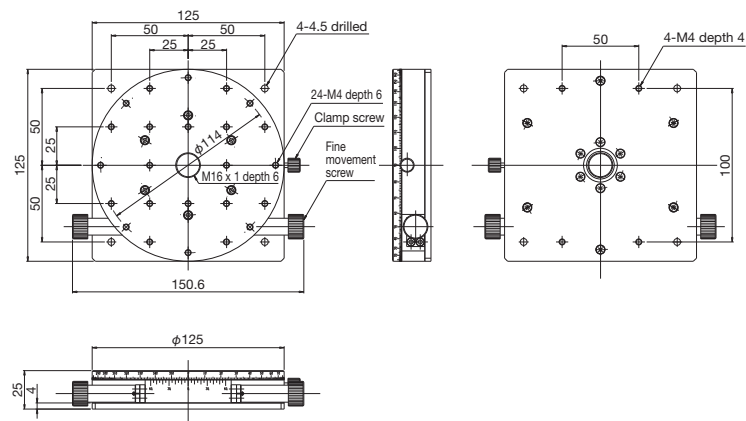
↑ TRS-627



↑ TRS-927



↑ TRS-127



↑ TRS-147-2

Motorized Stages	Automated Products for Microscopes	Manual Stages
FX Stages		
Thin VB Stages		
Rack & Pinion Stages		
High-Grade Stages		
Spin Stages, Cross Roller Stages		
Z-Like Stages, Z Stages		
Rotary Stages		
TTR Stages		
TTR/Rotary Stages		
XZ, YZ Stages		
XYZ Stages		

Transmission Rotary Stages



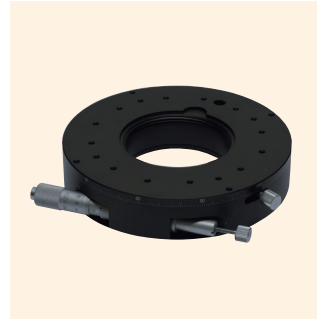
↑ TRS-911T



↑ TRS-111T



↑ TRS-211T



↑ TRS-211T-R

Features

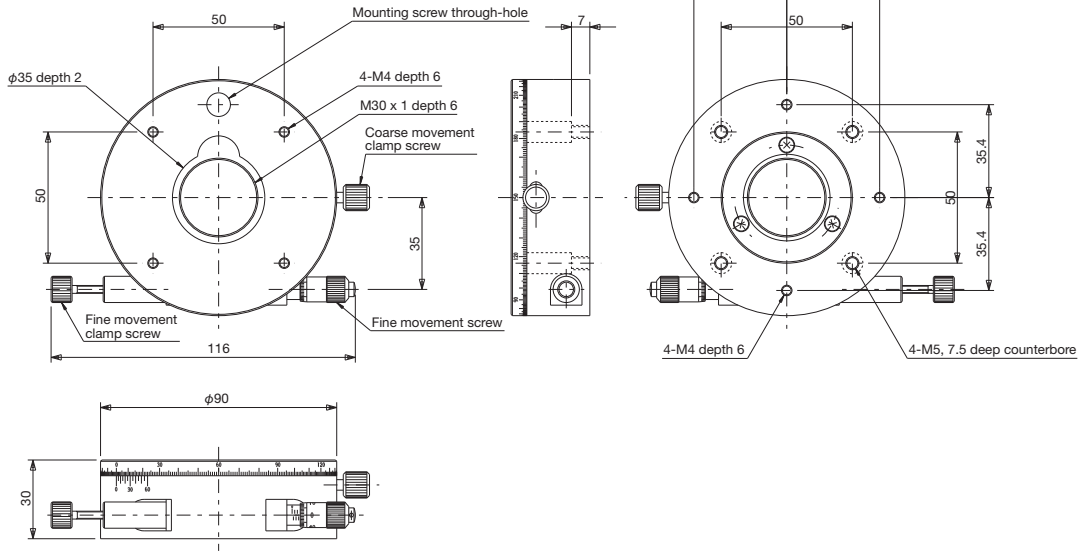
- A transmission type rotary stage using a sliding mechanism for the travel guide.
- Standard (right hand) and reverse (left hand) micrometer head mounting position options are available.
- The table surface can be grabbed and rotated 360 degrees with coarse movement. The clamp screw can then be secured after coarse movement, and the table can be moved with the micrometer head for fine movement.
- The table can also be secured in the desired position by securing both the fine and coarse movement clamps.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

Model number	TRS-911T	TRS-111T	TRS-211T
Model number (Reverse micrometer)	TRS-911T-R	TRS-111T-R	TRS-211T-R
Model name	Transmission Fine Movement Rotary Stage ϕ 90	Transmission Fine Movement Rotary Stage ϕ 125	Transmission Fine Movement Rotary Stage ϕ 150
Travel direction	Rotation direction		
Stage surface	ϕ 90 mm	ϕ 125 mm	ϕ 150 mm
Clamp method	Compound clamp		
Operating part mounting position	Standard position *-R is the reversed micrometer position		
Fine feed method	CMH-6.5FA (standard micrometer)	CMH-13FM (standard micrometer)	MHM1-15 (standard micrometer)
Travel amount	Coarse movement 360°, fine movement \pm 5°		
Travel amount/1 knob rotation	Approx. 0.82°	Approx. 0.55°	Approx. 0.46°
Scale	Vernier reading 5'/micrometer 0.01 mm (1 scale marking is approx. 0.016°)	Vernier reading 5'/micrometer 0.01 mm (1 scale marking is approx. 0.011°)	Vernier reading 5'/micrometer 0.01 mm (1 scale marking is approx. 0.009°)
Travel guide	Sliding		
Parallelism	0.05 mm		
Circularity	0.05 mm		
Surface runout	0.02 mm	0.03 mm	
Load capacity	29.4 N (3 kgf)		49 N (5 kgf)
Mass	0.5 kg	1 kg	1.4 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		



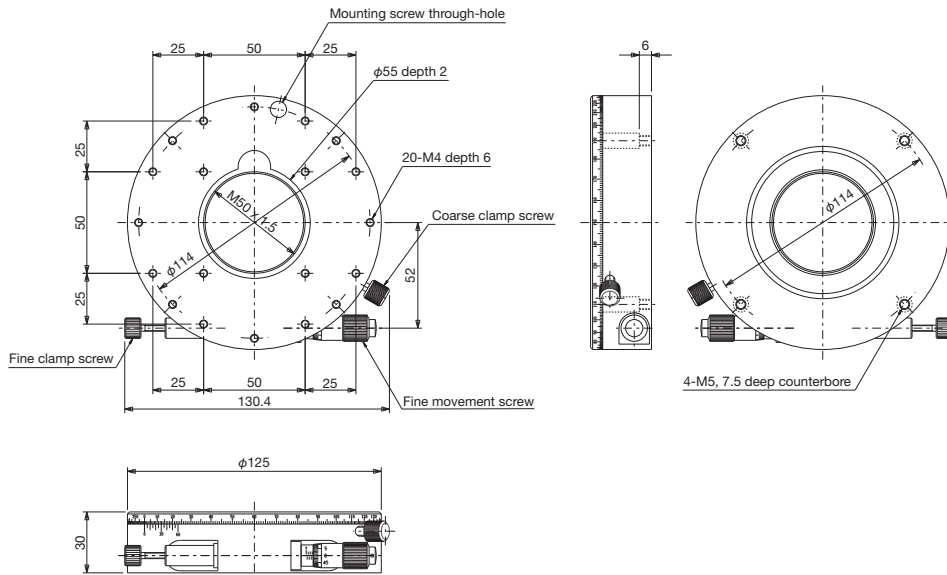
Rotary Stages ◀ Manual Stages ◀

Product Appearance



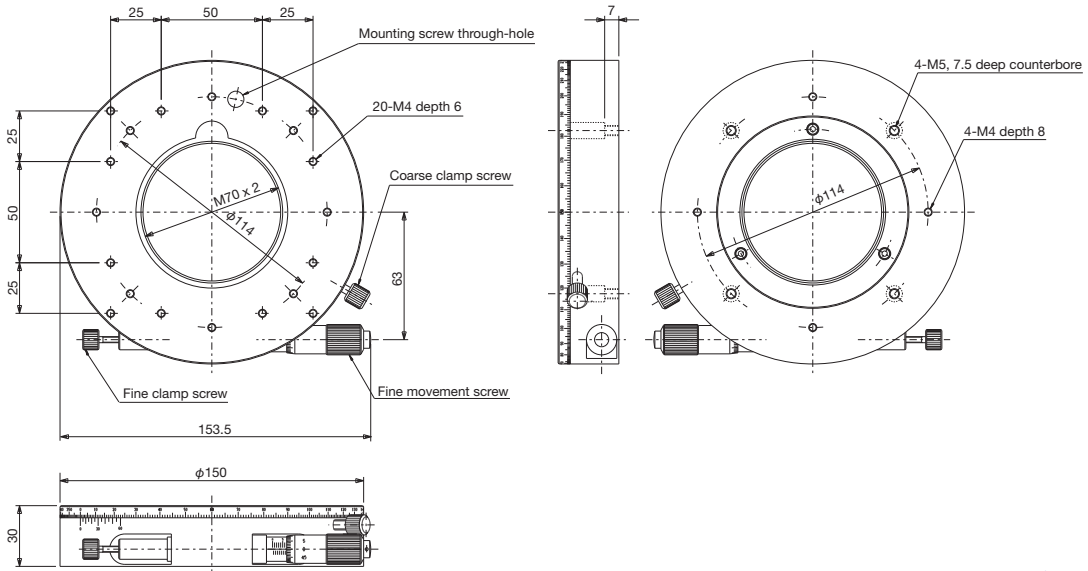
*TRS-911T-R has the same dimensions as TRS-911T but with reversed micrometer position.

↑ TRS-911T



*TRS-111T-R has the same dimensions as TRS-111T but with reversed micrometer position.

↑ TRS-111T



*TRS-211T-R has the same dimensions as TRS-211T but with reversed micrometer position.

↑ TRS-211T

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin VB Stages	Rack & Pinion Stages	High-Grade Stages	Spin Stages, Cross Roller Stages	Z-Like Stages, Z Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XYZ Stages
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▶ Manual Stages ▶ Tilt Stages | Product List

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fx Stages
Thin Yθ Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Z Stages
Z Lin Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

Page	Example product photo	Type	Model number	Model number	Model number	Stage surface	Notes
337		Goniometer Stage	TTS-311	TTS-312	-	30 mm x 30 mm	Separable knob method
		2-Axis Goniometer Stage	TTD-313	-	-	30 mm x 30 mm	Separable knob method
339		Goniometer Stage	TTS-411	TTS-412	TTS-413	40 mm x 40 mm	Worm gear method
		2-Axis Goniometer Stage	TTD-411	TTD-412	-	40 mm x 40 mm	Worm gear method
341		Goniometer Stage	TTS-611	TTS-612	TTS-613	60 mm x 60 mm	Worm gear method
		2-Axis Goniometer Stage	TTD-614	-	-	60 mm x 60 mm	Worm gear method
343		Goniometer Stage	TTS-C411	TTS-C412	TTS-C413	40 mm x 40 mm	Complex coupling method
		2-Axis Goniometer Stage	TTD-C411	TTD-C412	-	40 mm x 40 mm	Complex coupling method
345		Goniometer Stage	TTS-C611	TTS-C612	TTS-C613	60 mm x 60 mm	Complex coupling method
		2-Axis Goniometer Stage	TTD-C611	TTD-C612	-	60 mm x 60 mm	Complex coupling method
347		Goniometer Stage	TTS-911	TTS-912	-	90 mm x 90 mm	Worm gear method
		2-Axis Goniometer Stage	TTD-913	-	-	90 mm x 90 mm	Worm gear method
349		Goniometer Stage	TTS-211	-	-	60 mm x 120 mm	Worm gear method
351		Horizontal Goniometer Stage	TTS-R411	TTS-R412	-	40 mm x 40 mm	Precision screw, complex coupling method
			TTS-R611	TTS-R612	-	60 mm x 60 mm	Precision screw, complex coupling method
353		Horizontal Goniometer Stage	TTS-R911	TTS-R912	-	90 mm x 90 mm	Precision screw, complex coupling method
355		2-Axis Tilt Stage	TTD-302	-	-	30 mm x 30 mm	Micrometer feed
			TTD-304	-	-	30 mm x 30 mm	Screw feed
			TTD-602	-	-	60 mm x 60 mm	Micrometer feed
			TTD-604	-	-	60 mm x 60 mm	Screw feed
357		2-Axis Tilt Stage	TTD-902	-	-	90 mm x 90 mm	Micrometer feed
			TTD-904	-	-	90 mm x 90 mm	Screw feed
			TTD-104	-	-	125 mm x 125 mm	Screw feed



Features | Tilt Stages ◀ Manual Stages ◀

◆ Goniometer stages

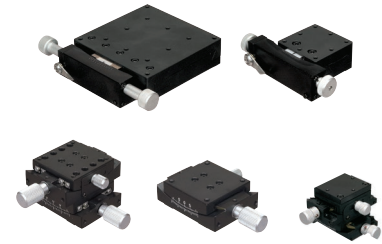
The center of rotation is within the vacant area above the stage surface, so the stage moves such that it draws an arc around it. A two-axis goniometer stage can be configured by combining two products with different rotation center distances that have the same rotational center.

◆ Tilt stages

The ball between the upper stage and the base forms the fulcrum for the tilting action. Fine movement in two directions is possible with this product alone.

Complex coupling mechanism overview

This complex coupling mechanism uses a feed screw instead of the worm gear used in conventional THK CHUO products as the drive mechanism for the tilt stage. It connects the feed screw and the tilting part with components that convert linear motion into angular motion, resulting in the linear path of the feed screw being transmitted into the arc-shaped path of the tilting part. Adopting this mechanism makes use of the advantages of precision screws and achieves high resolution, smooth movement, and high durability.



Conventional technology and problem points

■ Worm gear method

This is the general drive mechanism with a worm wheel and worm gear. Tilt stages have a part of the upper table with a worm wheel shape that is driven by a worm gear. If this mechanism has a fixed amount of backlash or sufficient wrapping adjustment is not performed, the worm gear may become difficult to operate, or rotational torque unevenness may occur due to the eccentricity of the worm gear. The small sliding surfaces of the worm wheel and worm gear also make it difficult to achieve resistance to wear.

■ Actuator + spring method

This is a drive mechanism that is used for general fine movement tilt stages, consisting of actuators and springs. This mechanism eliminates backlash by pushing the upper table with an actuator and returning the upper table to the actuator with a spring. The problem with this mechanism is that if the spring force is too strong, the load on the actuator becomes difficult to manipulate. Additionally, if the load being driven is large, the table can become too heavy, and if the spring force is too weak, the table may not be able to be moved back into position.

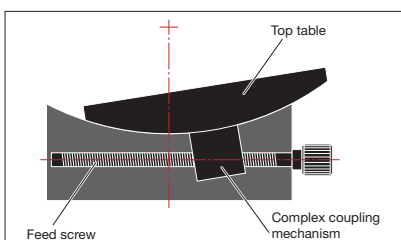
Complex coupling mechanism features

The complex coupling mechanism drive employs a feed screw and special connecting parts, giving it the following features compared to conventional technology.

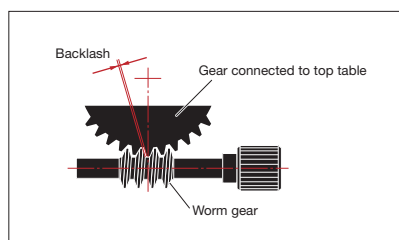
- Has higher resolution than worm gears.
- Free movement of the special connecting parts enable uneven rotation to be absorbed.
- Smooth movement can be realized because of the low driving torque requirements.
- Has more sliding surfaces than worm gears for increased durability.
- Does not use a spring, so it can be fed securely.
- Resolution and moving speed can be changed by changing the lead of the feed screw.

Table Complex Coupling Mechanism and Conventional Method Comparison

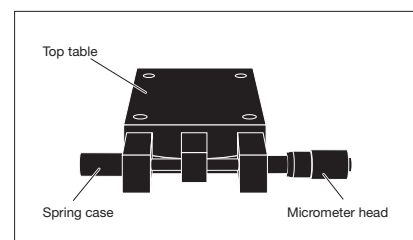
Item	Complex coupling mechanism	Worm gear method	Actuator + spring method
Resolution	Fine	Coarse	Fine
Rotational torque variation	Small	Uneven rotation due to worm gear eccentricity	Low, but becomes heavy due to spring strength
Drive torque	Small	Worm gear adjustments cause variations	Becomes heavy due to spring strength
Durability	Good	Wears quickly	Good
Scalable	Can be easily changed by changing the lead of the feed screw	Difficult to change due to design restrictions such as the number of teeth and modules	Feed screw lead cannot be changed



Complex coupling mechanism Diagram



Worm gear method Diagram



Actuator + spring method Diagram

- Motorized Stages
- Automated Products for Microscopes
- Manual Stages
- Fix Stages
- Thin VB Stages
- Rack & Pinion Stages
- High-Grade Stages
- Spin Stages, Cross Roller Stages
- Z-Like Stages, Z Stages
- Rotary Stages
- Tilt Stages
- Tilt/Rotary Stages
- XZ, YZ Stages
- XYZ Stages

Goniometer Stages 30 x 30 1-Axis, 2-Axis



↑ TTS-311



↑ TTS-312



↑ TTD-313

Features

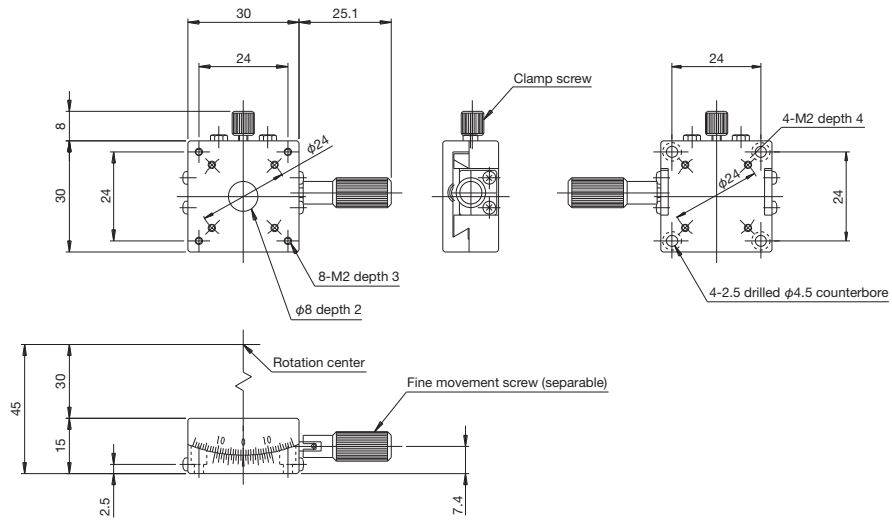
- A 1-axis tilt stage with differing rotation center height and travel amount.
- 1-axis tilt stages with different rotation center heights are available. They can also be combined into a 2-axis tilt stage with a single rotation center height.
- Dovetails (D-T Method) are used for the travel guide.
- Separable knob type.
- Versatile use for positioning of cameras, sensors, etc.

Model number	TTS-311	TTS-312	TTD-313
Model name	Goniometer Stage 30 x 30		2-Axis Goniometer Stage 30 x 30
Travel direction	Tilt single direction		Tilt double direction
Stage surface	30 mm x 30 mm		
Feed method	Worm gear method		
Travel amount	±15°	±10°	Upper axis ±15°/lower axis ±10°
Travel amount/1 knob rotation	Approx. 2° 34'	Approx. 1° 48'	Upper axis approx. 2° 34', lower axis approx. 1° 48'
Scale	Vernier reading: 5'		
Travel guide	Dovetail		
Rotation center (from stage top)	30 mm	45 mm	30 mm
Rotation center accuracy	φ 0.1		
Load capacity	19.6 N (2 kgf)		
Mass	0.1 kg	0.2 kg	
Main materials/surface treatment	Brass/hardened black chrome		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

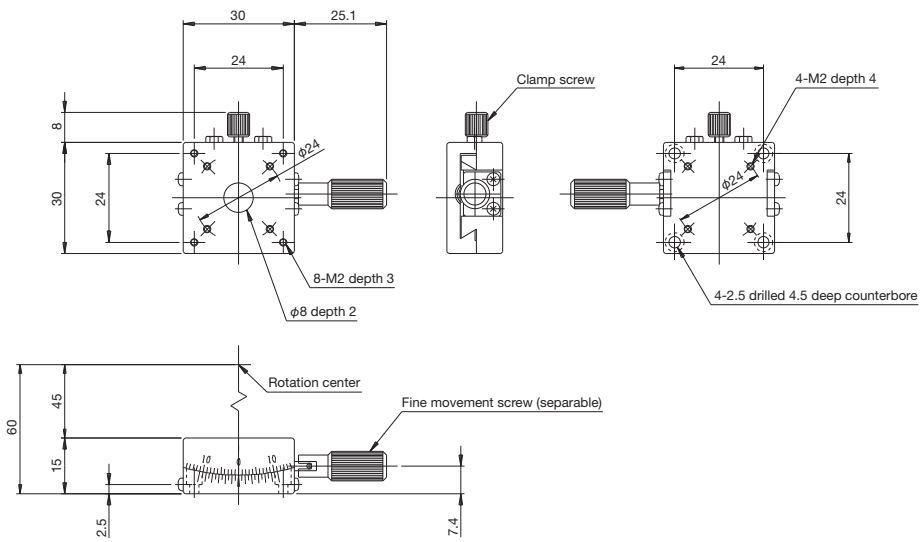


Tilt Stages ◀ Manual Stages ▶

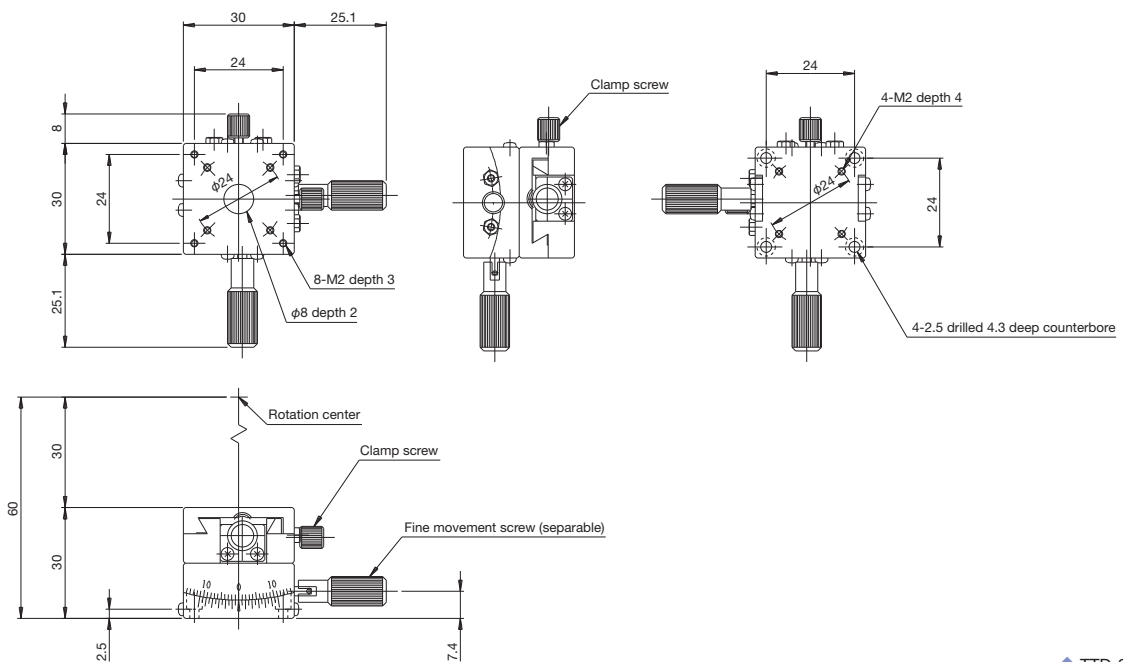
Product Appearance



↑ TTS-311



↑ TTS-312



↑ TTD-313

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rack & Pinion Stages
High-Grade Stages	Swim Stages, Cross Roller Stages	Z-Like Stages, Z Stages
Rotary Stages	Tilt Stages	Tilt/Rotary Stages
XZ, YZ Stages	XZ, YZ Stages	XZ Stages

Goniometer Stages 40 x 40 1-Axis, 2-Axis



↑ TTS-411



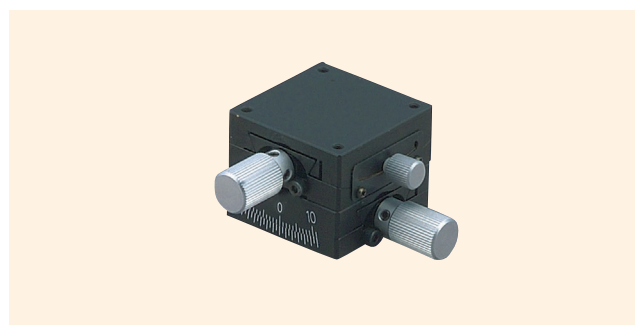
↑ TTS-412



↑ TTS-413



↑ TTD-411



↑ TTD-412

Features

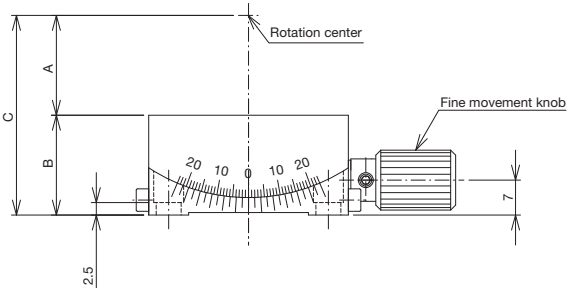
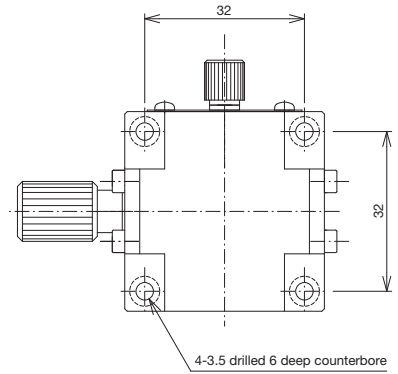
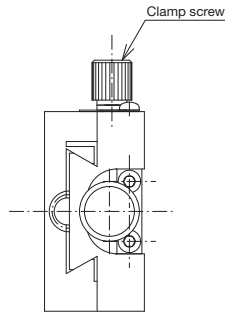
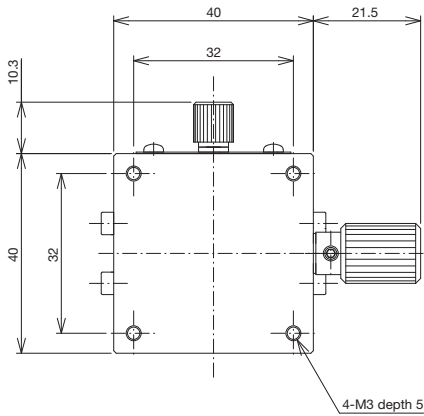
- A 1-axis tilt stage with differing rotation center height and travel amount.
- 1-axis tilt stages with different rotation center heights can be combined into a 2-axis tilt stage with a single rotation center height.
- Dovetails (D-T Method) are used for the travel guide.
- Versatile use for positioning of cameras, sensors, etc.

Model number	TTS-411	TTS-412	TTS-413	TTD-411	TTD-412
Model name	Goniometer Stage 40 x 40			2-Axis Goniometer Stage 40 x 40	
Travel direction	Tilt single direction			Tilt double direction	
Stage surface	40 mm x 40 mm				
Feed method	Worm gear method				
Travel amount	±20°	±15°	±10°	Upper axis ±20°/ lower axis ±15°	Upper axis ±15°/ lower axis ±10°
Travel amount/1 knob rotation	Approx. 2° 8' 34"	Approx. 1° 20'	Approx. 1° 1' 32"	Upper axis approx. 2° 8' 34", lower axis approx. 1° 20'	Upper axis approx. 1° 20', lower axis approx. 1° 1' 32"
Scale	Vernier reading: 5'				
Travel guide	Dovetail				
Rotation center (from stage top)	20 mm	40 mm	57 mm	20 mm	40 mm
Rotation center accuracy	φ0.1				
Load capacity	29.4 N (3 kgf)				
Mass	0.24 kg	0.21 kg	0.19 kg	0.45 kg	0.4 kg
Main materials/surface treatment	Brass/hardened black chrome				
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain				

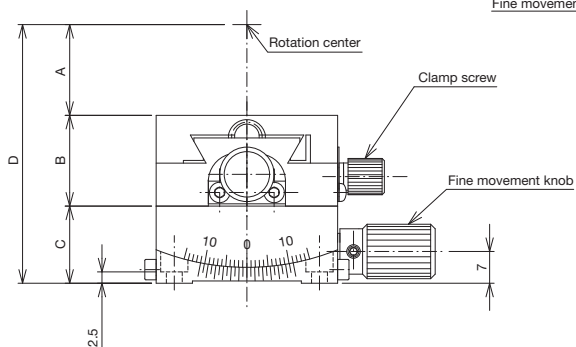
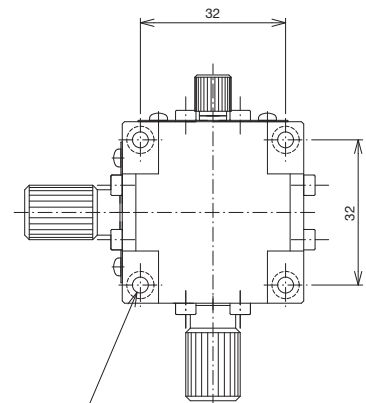
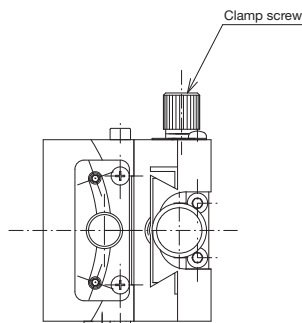
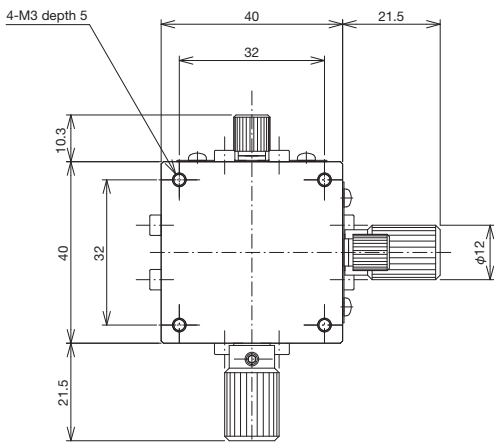


Tilt Stages ◀ Manual Stages ▶

Product Appearance



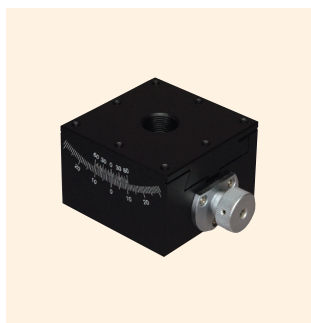
Model number	A (mm)	B (mm)	C (mm)
TTS-411	20	20	40
TTS-412	40	17	57
TTS-413	57	15	72



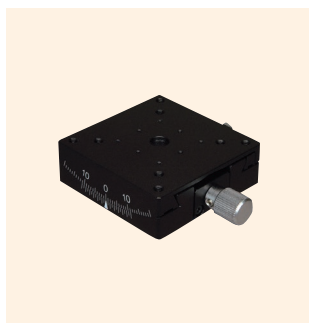
Model number	A (mm)	B (mm)	C (mm)	D (mm)
TTD-411	20	20	17	57
TTD-412	40	17	15	72

- Motorized Stages
- Automated Products for Microscopes
- Manual Stages**
- Fix Stages
- Thin VB Stages
- Rack & Pinion Stages
- High-Grade Stages
- Swiv Stages, Cross Roller Stages
- Z-Like Stages, Z Stages
- Rotary Stages
- Tilt Stages
- Tilt/Rotary Stages
- XZ, YZ Stages
- XYZ Stages

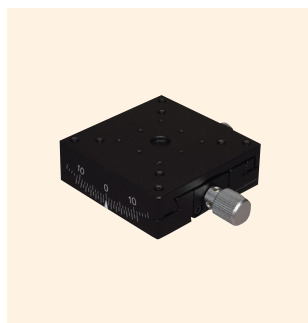
Goniometer Stages 60 x 60 1-Axis, 2-Axis



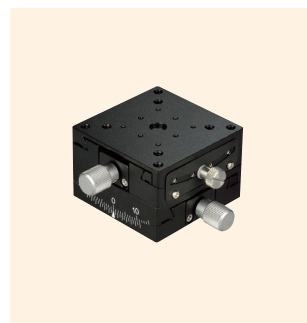
↑ TTS-611



↑ TTS-612



↑ TTS-613



↑ TTD-614

Features

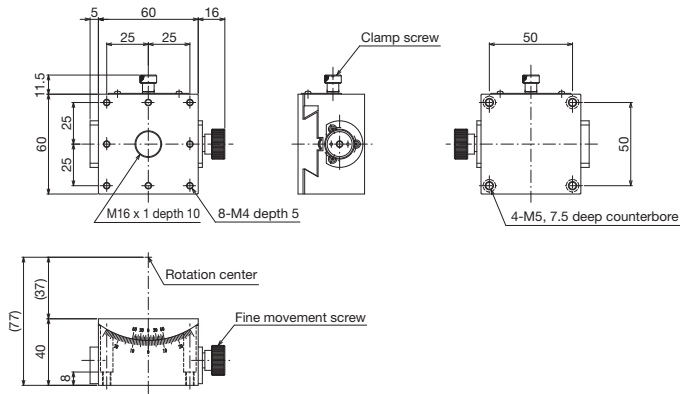
- A 1 axis tilt stage with differing rotation center height and travel amount.
- 1-axis tilt stages with different rotation center heights are available. They can also be combined into a 2-axis tilt stage with a single rotation center height.
- Dovetails (D-T Method) are used for the travel guide.
- Versatile use for positioning of cameras, sensors, etc.
- TTS-611 is a long-distance tilt stage that can become a 2-axis tilt stage with a single rotation center by combining with TTS-211.

Model number	TTS-611	TTS-612	TTS-613	TTD-614
Model name	Goniometer Stage 60 x 60	Goniometer Slim Stage 60 x 60		2-Axis Goniometer Slim Stage 60 x 60
Travel direction	Tilt single direction			Tilt double direction
Stage surface	60 mm x 60 mm			
Feed method	Worm gear method			
Travel amount	±20°	±15°	±10°	Upper axis ±15°/lower axis ±10°
Travel amount/1 knob rotation	Approx. 1° 33'	Approx. 1° 19' 25"	Approx. 1° 1' 22"	Upper axis approx. 1° 19' 25", lower axis approx. 1° 1' 22"
Scale	Vernier reading: 5'			
Travel guide	Dovetail			
Rotation center (from stage top)	37 mm	60 mm	80 mm	60 mm
Rotation center accuracy	φ 0.1 mm			
Load capacity	49 N (5 kgf)			
Mass	0.5 kg	0.2 kg		0.4 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

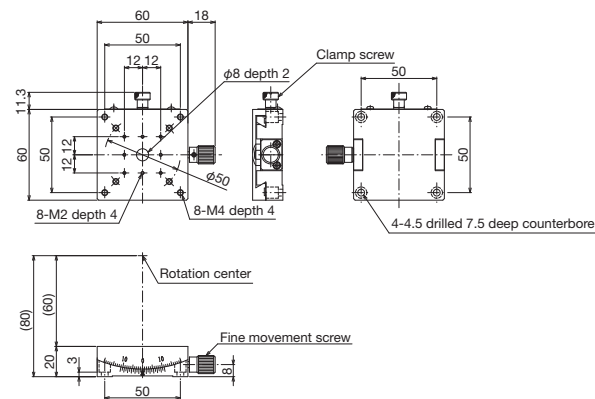


Tilt Stages ◀ Manual Stages ▶

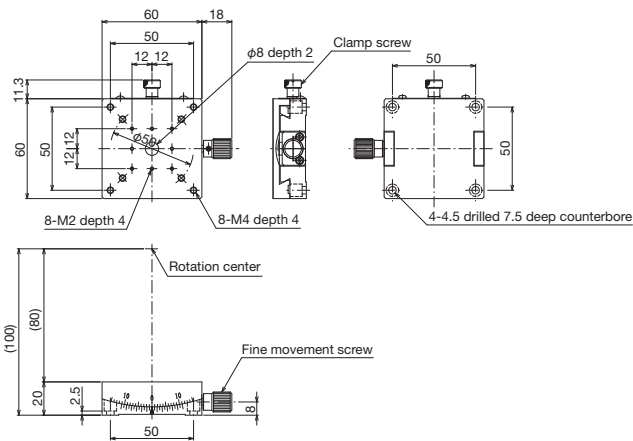
Product Appearance



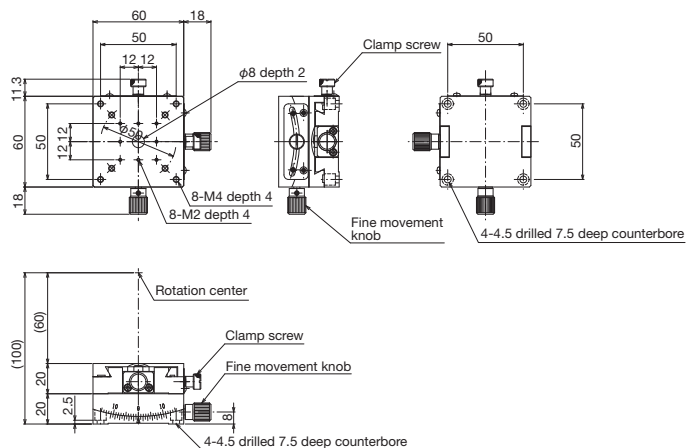
↑ TTS-611



↑ TTS-612



↑ TTS-613



↑ TTD-614

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fx Stages	Thin VB Stages	Rock & Pinion Stages
High-Grade Stages	Swirl Stages, Cross Roller Stages	Z-Like Stages, Z Stages
Rodary Stages	Tilt Stages	Tilt/Rotary Stages
XZ, YZ Stages	XYZ Stages	

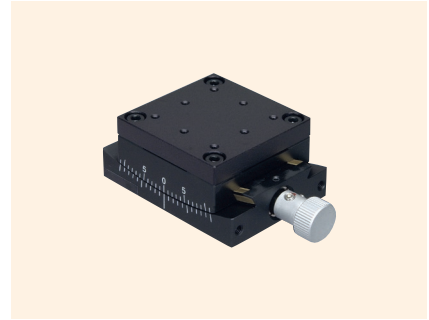
Goniometer Stages 40 x 40 1-Axis, 2-Axis (Complex Coupling Mechanism)



↑ TTS-C411



↑ TTS-C412



↑ TTS-C413



↑ TTD-C411



↑ TTD-C412

Features

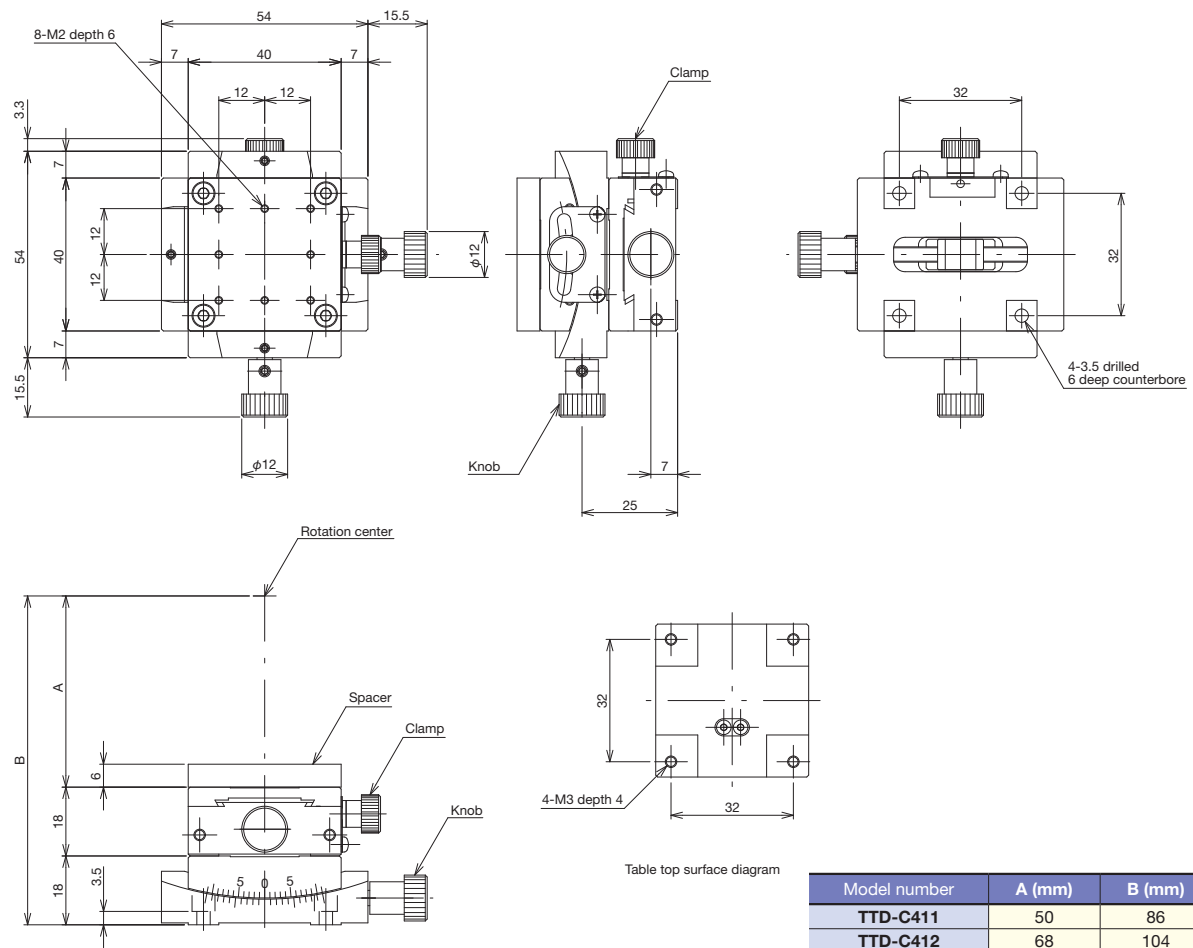
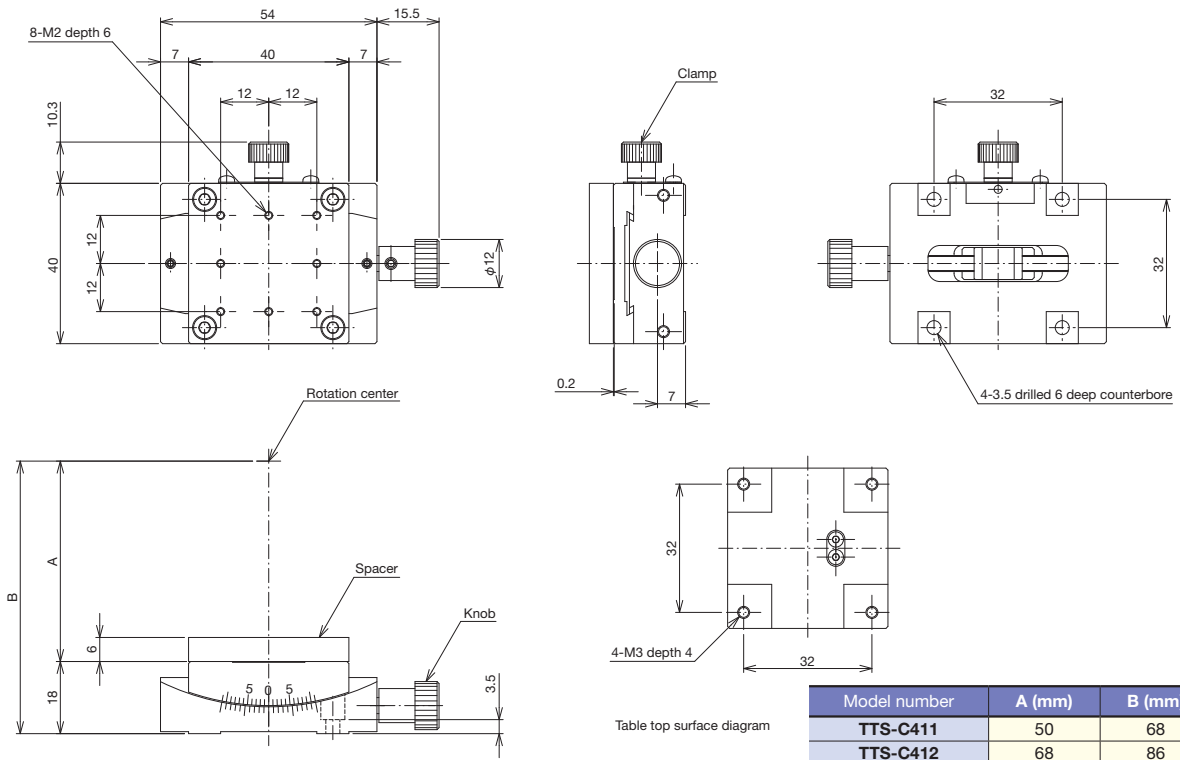
- A 1-axis tilt stage with differing rotation center height and travel amount.
- 1-axis tilt stages with different rotation center heights can be combined into a 2-axis tilt stage with a single rotation center height.
- THK CHUO's proprietary complex coupling structure enables fine movements to be made extraordinarily smoothly.
- Dovetails (D-T Method) are used for the travel guide.
- Versatile use for precision positioning of cameras, sensors, etc.

Model number	TTS-C411	TTS-C412	TTS-C413	TTD-C411	TTD-C412
Model name	Goniometer Stage 40 x 40			2-Axis Goniometer Stage 40 x 40	
Travel direction	Tilt single direction			Tilt double direction	
Stage surface	40 mm x 40 mm				
Feed method	Precision screw, complex coupling method				
Travel amount	±8°	±6°	±5°	Upper axis ±8°/lower axis ±6°	Upper axis ±6°/lower axis ±5°
Travel amount/1 knob rotation	Approx. 28' 11"	Approx. 21' 45"	Approx. 17' 43"	Approx 28' 11", lower axis approx. 21' 45"	Upper axis approx. 21' 45", lower axis approx. 17' 43"
Scale	Vernier reading: 6'				
Travel guide	Dovetail				
Rotation center (from stage top)	50 mm	68 mm	86 mm	50 mm	68 mm
Rotation center accuracy	φ0.1 mm			-	
Load capacity	29.4 N (3 kgf)				
Mass	0.3 kg			0.6 kg	
Main materials/surface treatment	Brass/hardened black chrome				
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain				



Tilt Stages ◀ Manual Stages ▶

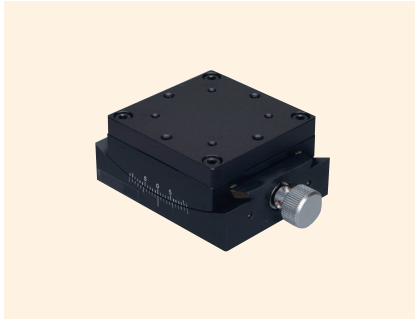
Product Appearance



- Motorized Stages
- Automated Products for Microscopes
- Manual Stages**
- Fix Stages
- Thin VB Stages
- Rack & Pinion Stages
- High-Grade Stages
- Spin Stages, Cross Roller Stages
- Z-Like Stages, Z Stages
- Rotary Stages
- Tilt Stages
- Tilt/Rotary Stages
- XZ, YZ Stages
- XYZ Stages



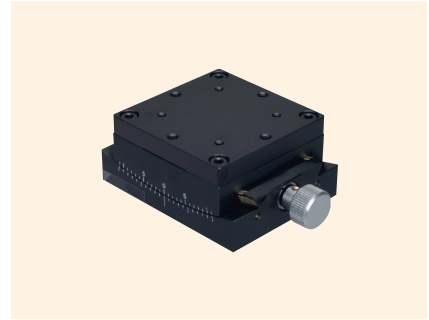
Goniometer Stages 60 x 60 1-Axis, 2-Axis (Complex Coupling Mechanism)



↑ TTS-C611



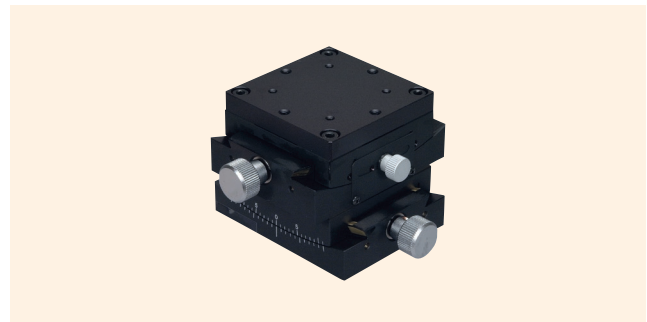
↑ TTS-C612



↑ TTS-C613



↑ TTD-C611



↑ TTD-C612

Features

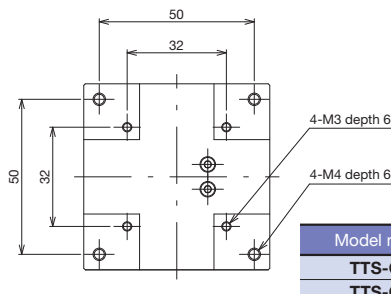
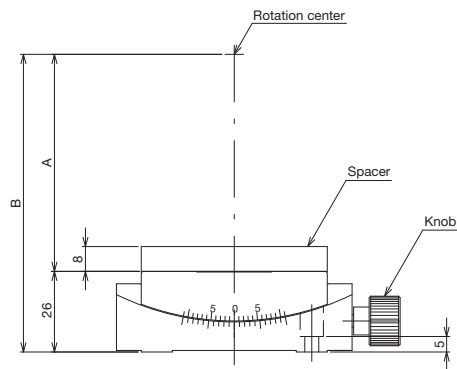
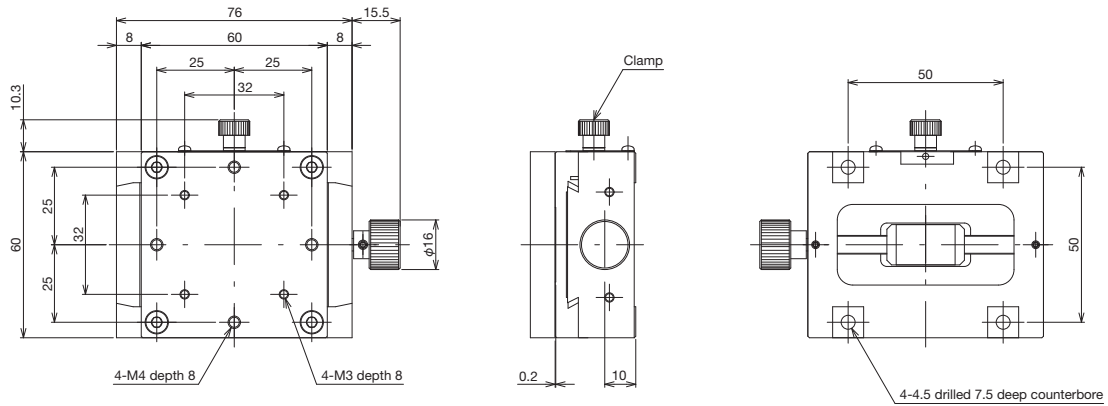
- A 1-axis tilt stage with differing rotation center height and travel amount.
- 1-axis tilt stages with different rotation center heights can be combined into a 2-axis tilt stage with a single rotation center height.
- THK CHUO's proprietary complex coupling structure enables fine movements to be made extraordinarily smoothly.
- Dovetails (D-T Method) are used for the travel guide.
- Versatile use for precision positioning of cameras, sensors, etc.

Model number	TTS-C611	TTS-C612	TTS-C613	TTD-C611	TTD-C612
Model name	Goniometer Stage 60 x 60			2-Axis Goniometer Stage 60 x 60	
Travel direction	Tilt single direction			Tilt double direction	
Stage surface	60 mm x 60 mm				
Feed method	Precision screw, complex coupling method				
Travel amount	±8°	±6°	±5°	Upper axis ±8°/lower axis ±6°	Upper axis ±6°/lower axis ±5°
Travel amount/1 knob rotation	Approx. 19' 59"	Approx. 15' 21"	Approx. 12' 27"	Upper axis approx. 19' 59", lower axis approx. 15' 21"	Upper axis approx. 15' 21", lower axis approx. 12' 27"
Scale	Vernier reading: 6'				
Travel guide	Dovetail				
Rotation center (from stage top)	70 mm	96 mm	122 mm	70 mm	96 mm
Rotation center accuracy	φ 0.1 mm			-	
Load capacity	49 N (5 kgf)			39.2 N (4 kgf)	
Mass	0.7 kg			1.4 kg	
Main materials/surface treatment	Brass/hardened black chrome				
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain				

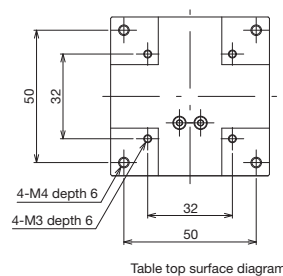
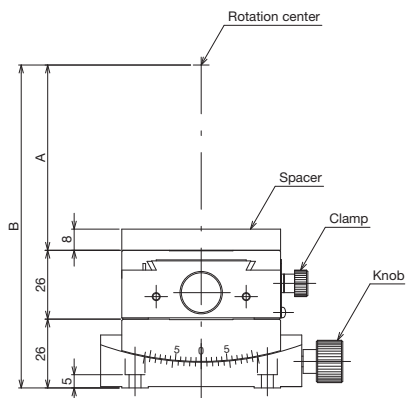
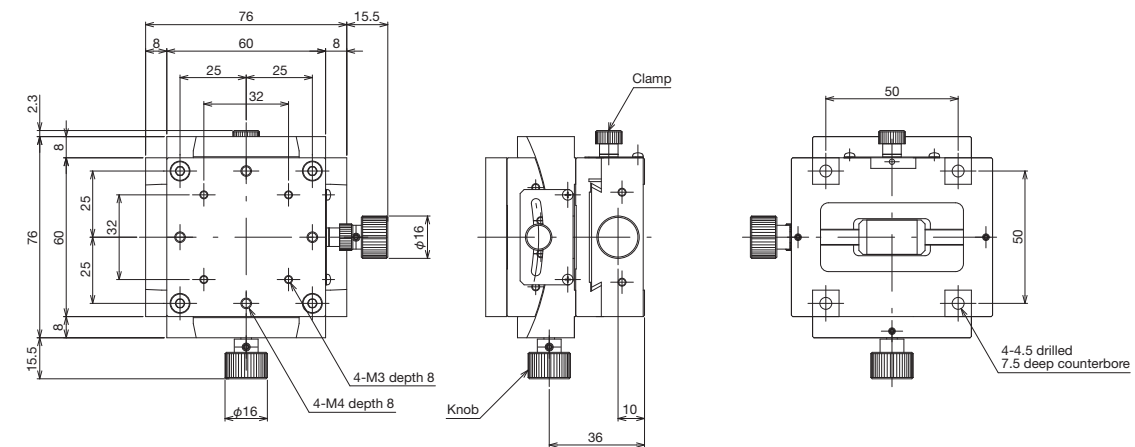


Tilt Stages ◀ Manual Stages ▶

Product Appearance

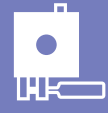


Model number	A (mm)	B (mm)
TTS-C611	70	96
TTS-C612	96	122
TTS-C613	122	148

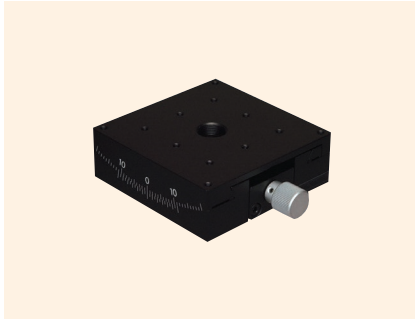


Model number	A (mm)	B (mm)
TTD-C611	70	122
TTD-C612	96	148

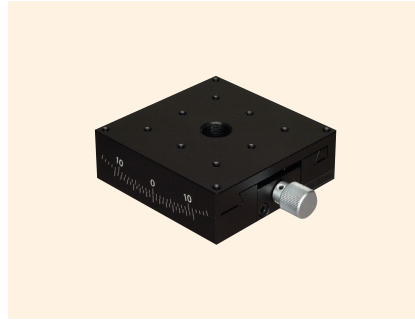
- Motorized Stages
- Automated Products for Microscopes
- Manual Stages**
- Tilt Stages
- Thin VIB Stages
- Rack & Pinion Stages
- High-Grade Stages
- Stein Stages, Cross Roller Stages, Z Stages
- Z Lift Stages
- Rotary Stages
- Tilt Stages
- Tilt/Rotary Stages
- XZ, YZ Stages
- XYZ Stages



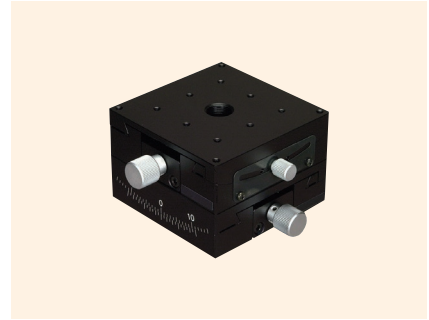
Goniometer Stages 90 x 90 1-Axis, 2-Axis



↑ TTS-911



↑ TTS-912



↑ TTD-913

Features

- A 1-axis tilt stage with differing rotation center height and travel amount.
- 1-axis tilt stages with different rotation center heights are available. They can also be combined into a 2-axis tilt stage with a single rotation center height.
- Dovetails (D-T Method) are used for the travel guide.
- Versatile use for positioning of cameras, sensors, etc.

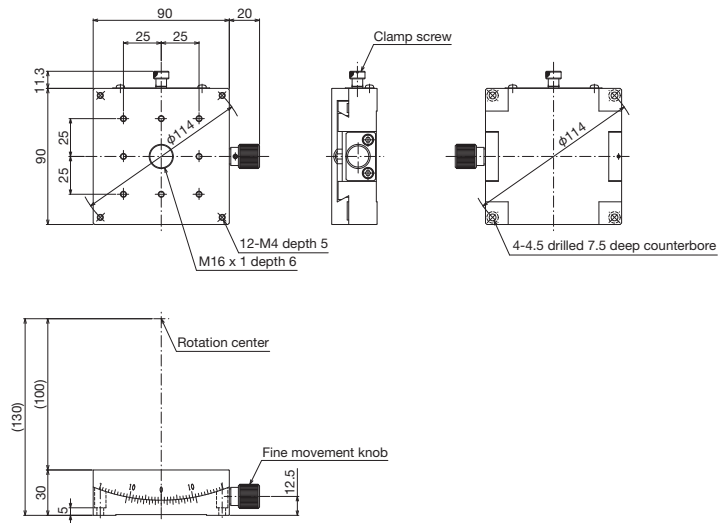
Model number	TTS-911	TTS-912	TTD-913
Model name	Goniometer Slim Stage 90 x 90		2-Axis Goniometer Slim Stage 90 x 90
Travel direction	Tilt single direction		Tilt double direction
Stage surface	90 mm x 90 mm		
Feed method	Worm gear method		
Travel amount	±12°	±10°	Upper axis ±12°/lower axis ±10°
Travel amount/1 knob rotation	Approx. 1° 17' 25"	Approx. 59'	Upper axis approx. 1° 17' 25", lower axis approx. 59'
Scale	Vernier reading: 5'		
Travel guide	Dovetail		
Rotation center (from stage top)	100 mm	130 mm	100 mm
Rotation center accuracy	φ0.1 mm		
Load capacity	78.4 N (8 kgf)		68.6 N (7 kgf)
Mass	0.7 kg		1.4 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

Motorized Stages
Automated Products for Microscopes
Manual Stages
FX Stages
Thin VB Stages
Rack & Pinion Stages
High-Capacity Stages
Slim Stages, Cross Roller Stages
Z-Lin Stages
Rotary Stages
Tilt/Rotary Stages
XZ, YZ Stages
XZ Stages

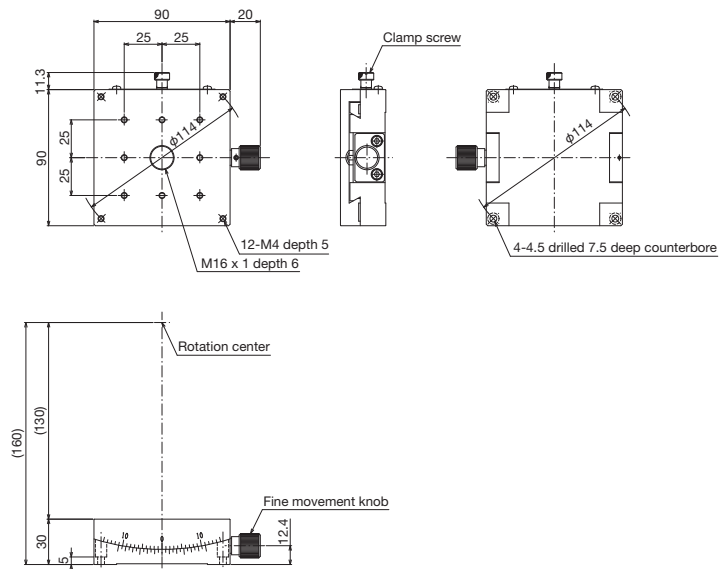


Tilt Stages ◀ Manual Stages ▶

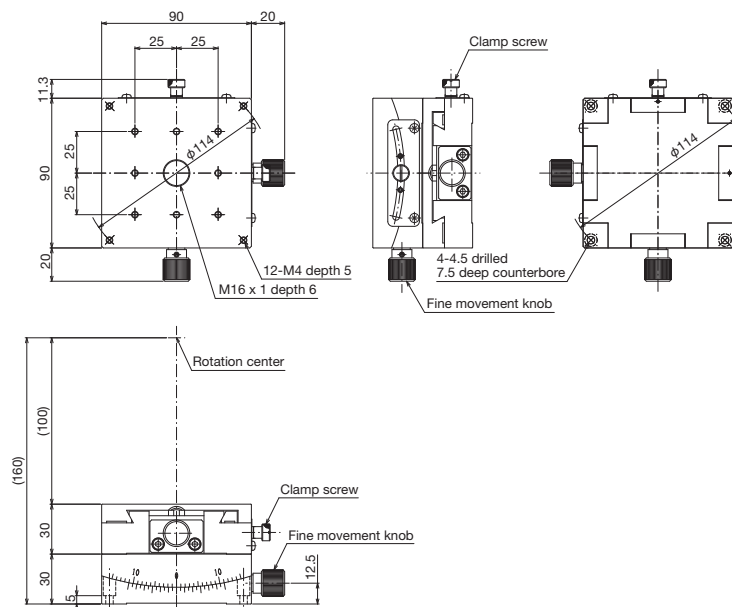
Product Appearance



↑ TTS-911



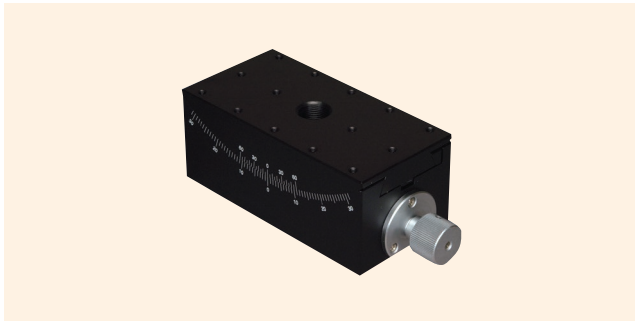
↑ TTS-912



↑ TTD-913

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rack & Pinion Stages
High-Grade Stages	Swirl Stages, Cross Roller Stages	Z-Like Stages, Z Stages
Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages
		XZ Stages

Goniometer Stages 60 x 120



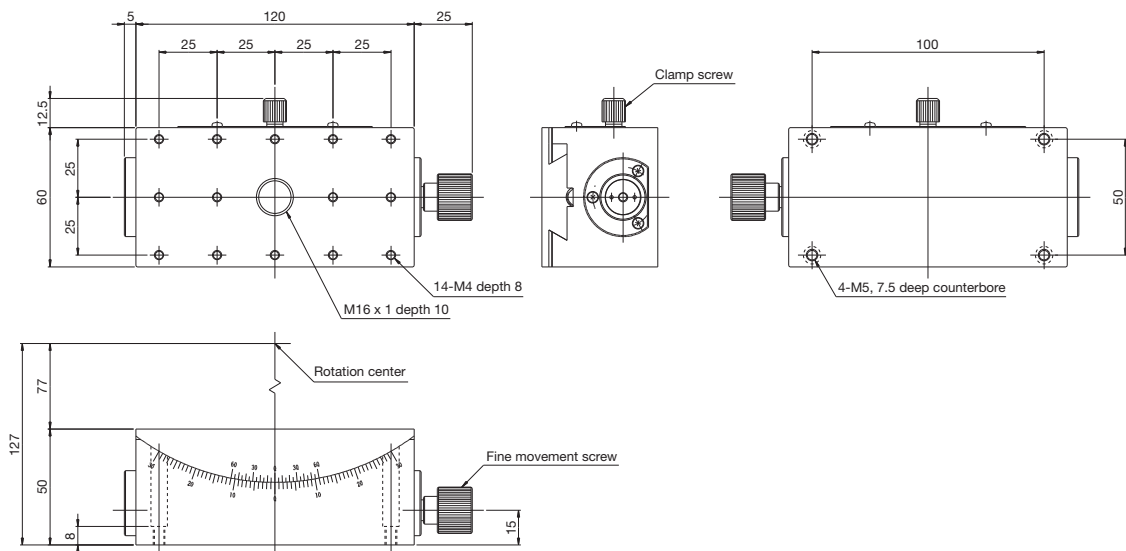
↑ TTS-211

Features

- A 1-axis tilt stage possessing a rotation center and supporting long travel distances and high load capacity.
- Combine with TTS-611, which has a differing rotation center height, to form a 2-axis tilt stage with a single rotation center.
- Dovetails (D-T Method) are used for the travel guide.
- Versatile use for positioning of cameras, sensors, and various experiment jigs.

Model number	TTS-211
Model name	Goniometer Stage 60 x 120
Travel direction	Tilt single direction
Stage surface	60 mm x 120 mm
Feed method	Worm gear method
Travel amount	±20°
Travel amount/1 knob rotation	Approx. 49'
Scale	Vernier reading: 5'
Travel guide	Dovetail
Rotation center (from stage top)	77 mm
Rotation center accuracy	φ 0.1
Load capacity	98 N (10 kgf)
Mass	1 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain

Product Appearance



↑ TTS-211

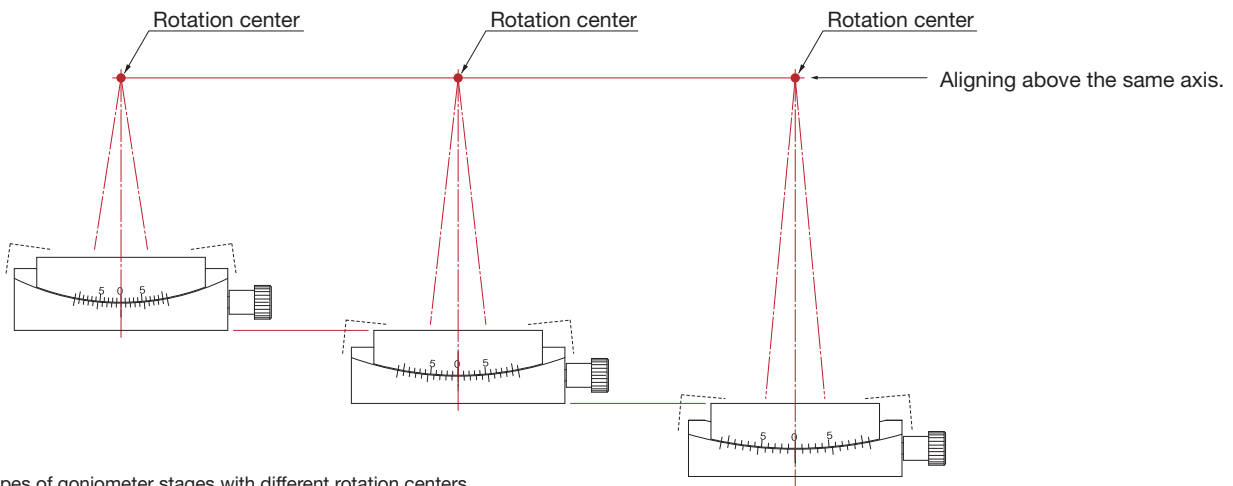


Goniometer Stage Features

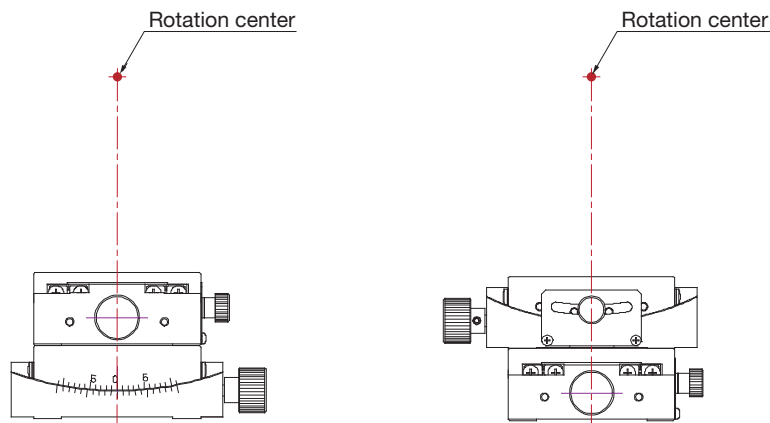
THK CHUO's goniometer stages are designed so that the center of rotation aligns in the same position as the rest of the lineup, as shown in the figure below.

The 2-axis goniometer stage product has lower and upper axes positioned orthogonally (at 90° to each other), but they can also be combined in the same direction in order to extend the travel distance.

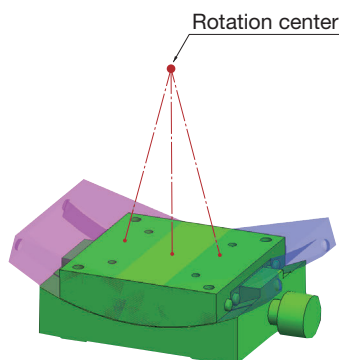
Check the product appearance for details.



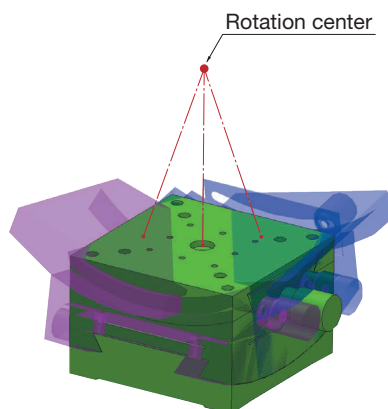
■ 3 types of goniometer stages with different rotation centers



■ 2-axis goniometer stage combination example



■ 1-axis goniometer stage travel example



■ 2-axis goniometer stage travel example

- Motorized Stages
- Automated Products for Microscopes
- Manual Stages
- Fx Stages
- Thru V8 Stages
- Rack & Pinion Stages
- High-Grade Stages
- Spin Stages, Cross Roller Stages
- Z Lift Stages, Z Stages
- Rotary Stages
- Tilt Stages
- Tilt/Rotary Stages
- XZ, YZ Stages
- XYZ Stages

Horizontal Goniometer Stages



↑ TTS-R411



↑ TTS-R412



↑ TTS-R611



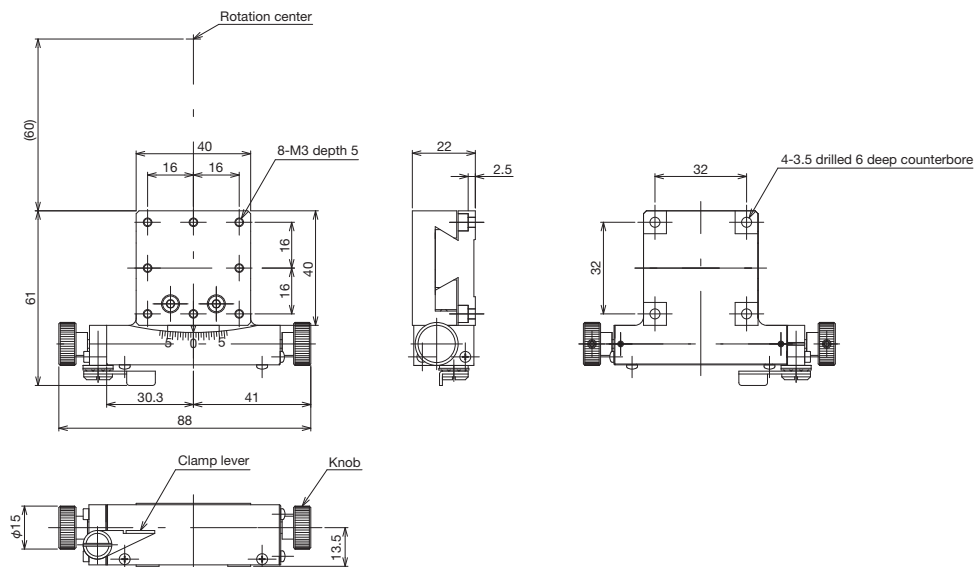
↑ TTS-R612

Features

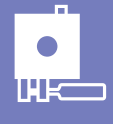
- A 1-axis horizontal tilt stage with differing rotation center position and travel amount.
- THK CHUO's proprietary complex coupling structure enables fine movements to be made extraordinarily smoothly.
- Dovetails (D-T Method) are used for the travel guide.
- Versatile use for precision positioning of cameras, sensors, etc.

Model number	TTS-R411	TTS-R412	TTS-R611	TTS-R612
Model name	Horizontal Goniometer Stage 40 x 40		Horizontal Goniometer Stage 60 x 60	
Travel direction	Rotation 1 direction			
Stage surface	40 mm x 40 mm		60 mm x 60 mm	
Feed method	Precision screw, complex coupling method			
Travel amount	±6°		±5°	±4.5°
Travel amount/1 knob rotation	Approx. 16' 8"	Approx. 13' 35"	Approx. 10' 37"	Approx. 9' 27"
Scale	Scale reading 30'			
Travel guide	Dovetail			
Rotation center (from stage surface center)	80 mm	100 mm	120 mm	140 mm
Rotation center accuracy	-		φ0.1 mm	
Load capacity	19.6 N (2 kgf)		29.4 N (3 kgf)	
Mass	0.4 kg		0.8 kg	
Main materials/surface treatment	Brass/hardened black chrome			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

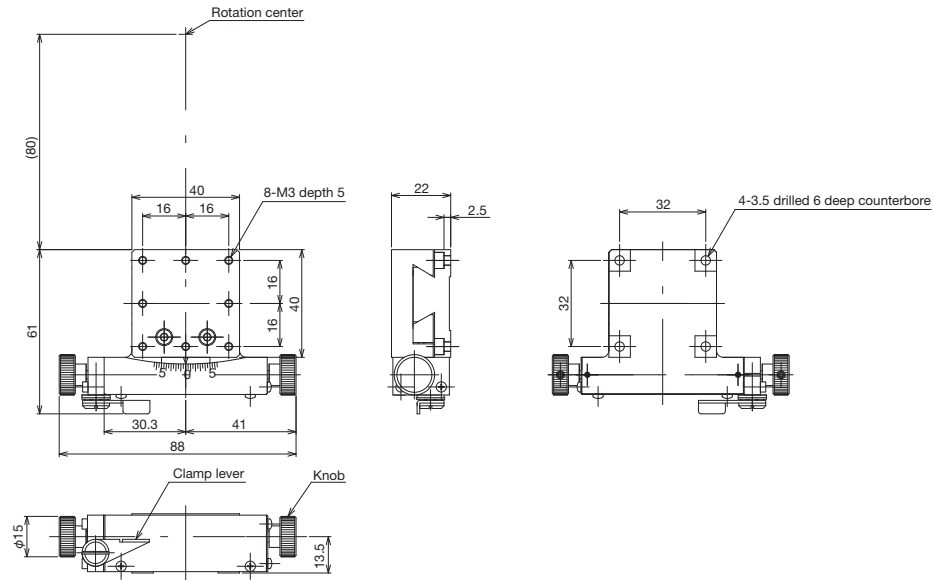
Product Appearance



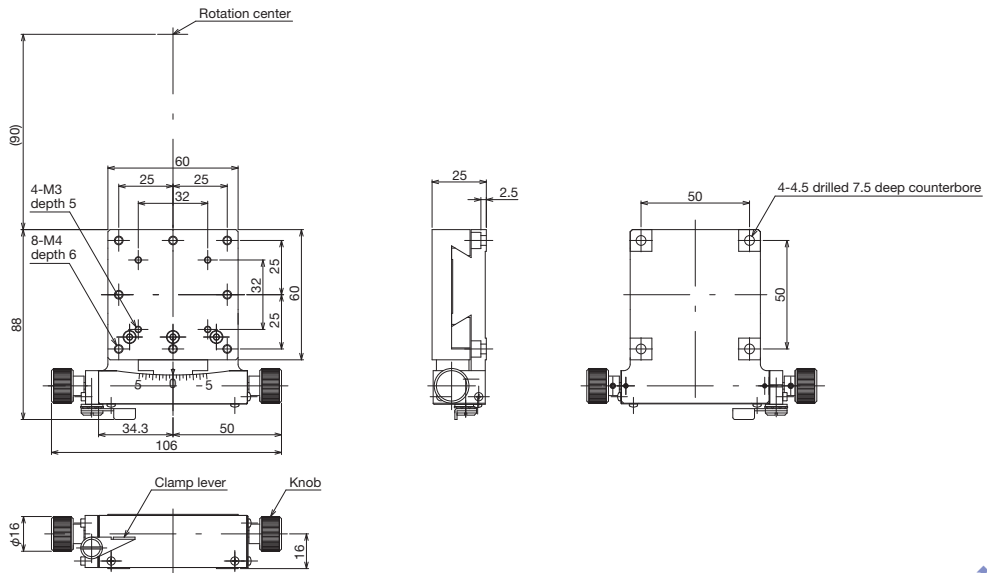
↑ TTS-R411



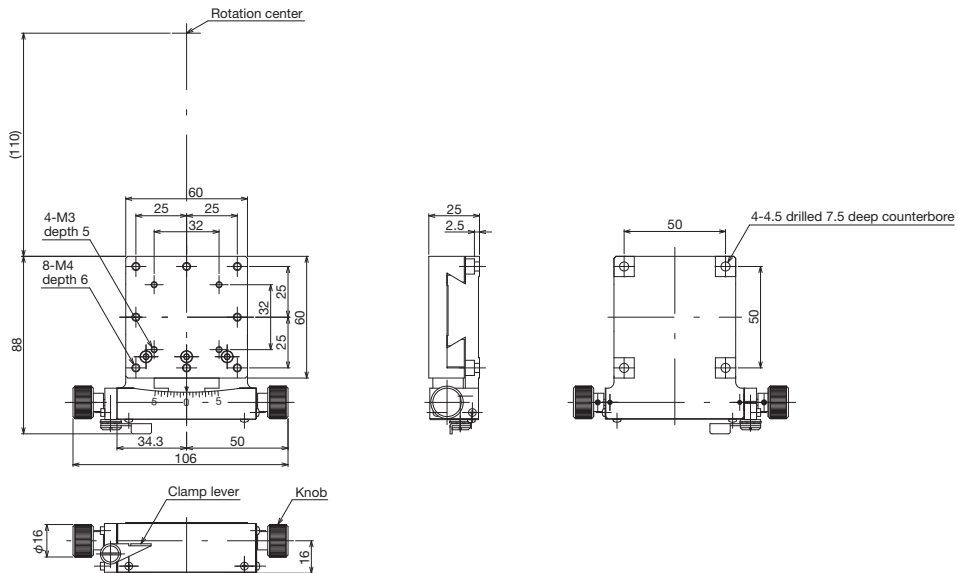
Product Appearance



↑ TTS-R412



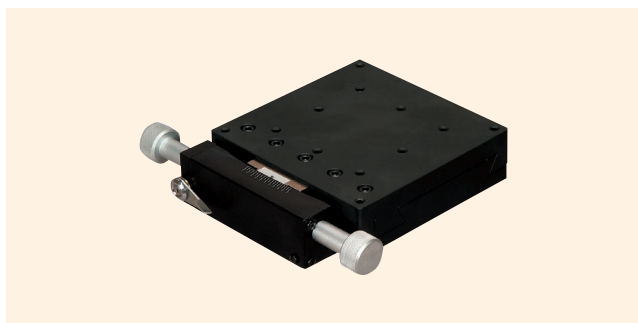
↑ TTS-R611



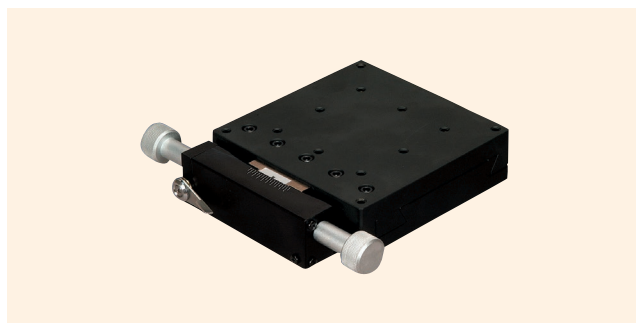
↑ TTS-R612

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fix Stages	Thin V8 Stages	Rack & Pinion Stages	High-Grade Stages	Swim Stages, Cross Roller Stages	Z-Like Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XZ Stages
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Horizontal Goniometer Stages



↑ TTS-R911



↑ TTS-R912

Features

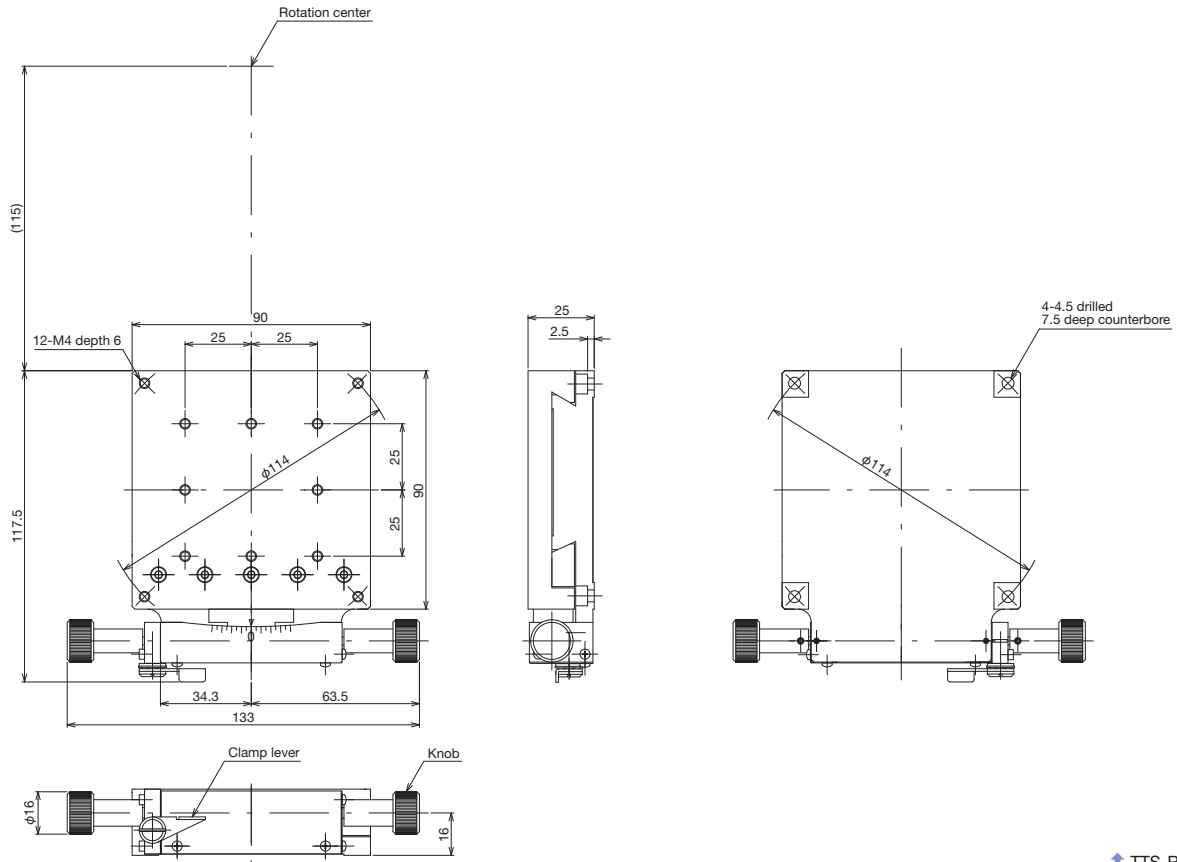
- A 1-axis horizontal tilt stage with differing rotation center position and travel amount.
- THK CHUO's proprietary complex coupling structure enables fine movements to be made extraordinarily smoothly.
- Dovetails (D-T Method) are used for the travel guide.
- Versatile use for precision positioning of cameras, sensors, etc.

Model number	TTS-R911	TTS-R912
Model name	Horizontal Goniometer Stage 90 x 90	
Travel direction	Rotation single direction	
Stage surface	90 mm x 90 mm	
Feed method	Precision screw, complex coupling method	
Travel amount	±4°	±3.5°
Travel amount/1 knob rotation	Approx. 7' 55"	Approx. 7' 15"
Scale	Scale reading 30'	
Travel guide	Dovetail	
Rotation center (from stage surface center)	160 mm	180 mm
Rotation center accuracy	φ 0.1 mm	
Load capacity	39.2 N (4 kgf)	
Mass	1.6 kg	
Main materials/surface treatment	Brass/hardened black chrome	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain	

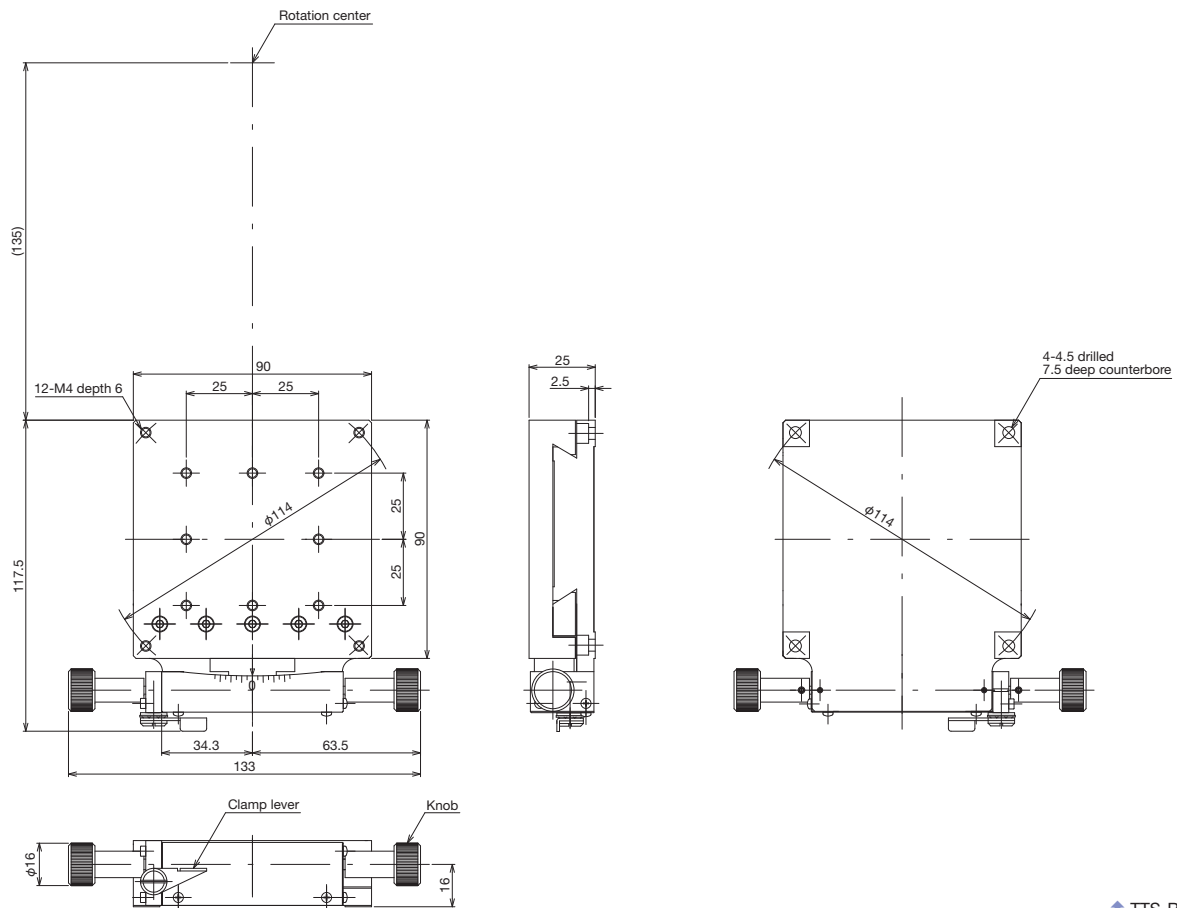


Tilt Stages ◀ Manual Stages ▶

Product Appearance

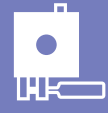


↑ TTS-R911

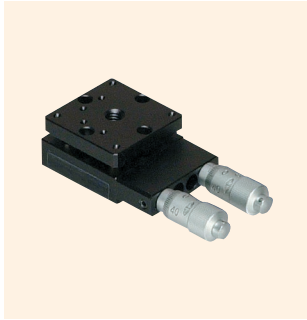


↑ TTS-R912

Motorized Stages	Automated Products for Microscopes	Manual Stages	Fx Stages	Thru V8 Stages	Rack & Pinion Stages	High-Grade Stages	Spin Stages, Cross Roller Stages	Z-Like Stages, Z Stages	Rotary Stages	Tilt Stages	Tilt/Rotary Stages	XZ, YZ Stages	XZ Stages
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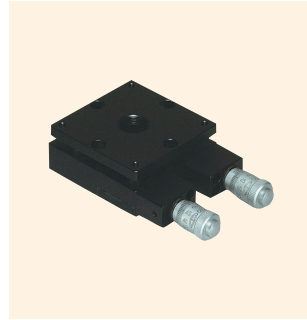
2-Axis Tilt Stage



↑ TTD-302



↑ TTD-304



↑ TTD-602



↑ TTD-604

Features

- A 2-axis tilt stage with differing feed methods.
- The ball between the upper stage and the base forms the fulcrum for the tilting action.
- A low-cost manual screw type and a micrometer type that is capable of fine adjustments are available.
- Versatile use for positioning of cameras, sensors, etc.

Model number	TTD-302	TTD-304	TTD-602	TTD-604
Model name	Tilt Slim Stage 30 x 30	2-Axis Tilt Stage 30 x 30	Tilt Slim Stage 60 x 60	2-Axis Tilt Stage 60 x 60
Travel direction	Tilt double direction			
Stage surface	30 mm x 30 mm		60 mm x 60 mm	
Feed method	CMH-6.5FA (standard micrometer)	Manual feed method	CMS-6.5F (standard micrometer)	Manual feed method
Travel amount	±3°	±2°	±3°	±2°
Travel amount/1 knob rotation	Approx. 1° 36'	Approx. 1° 25'	Approx. 0° 45'	Approx. 0° 40'
Scale	Micrometer 0.01 mm (1 scale marking is approx. 1' 55")	-	Micrometer 0.01 mm (1 scale marking is approx. 54")	-
Load capacity	19.6 N (2 kgf)		29.4 N (3 kgf)	39.2 N (4 kgf)
Mass	0.06 kg	0.03 kg	0.27 kg	0.15 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

Motorized Stages

Automated Products for Microscopes

Manual Stages

Fx Stages

Thin Yθ Stages

Rack & Pinion Stages

High-Capacity Stages

Slim Stages, Cross Roller Stages

Z Lin Stages, Z Stages

Rotary Stages

Tilt Stages

Thin/Rotary Stages

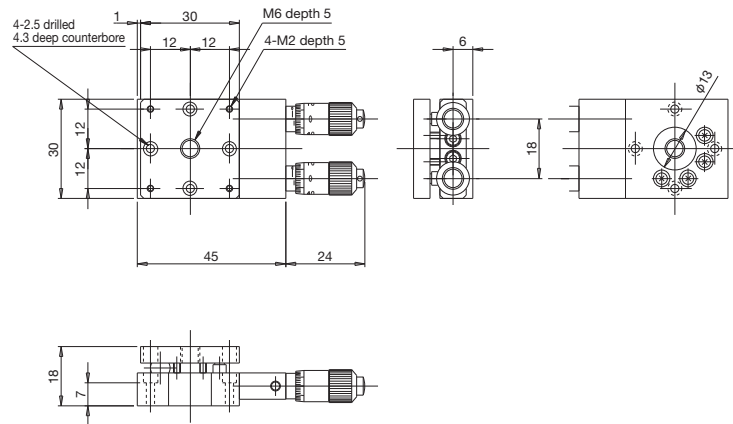
XZ, YZ Stages

XZ Stages

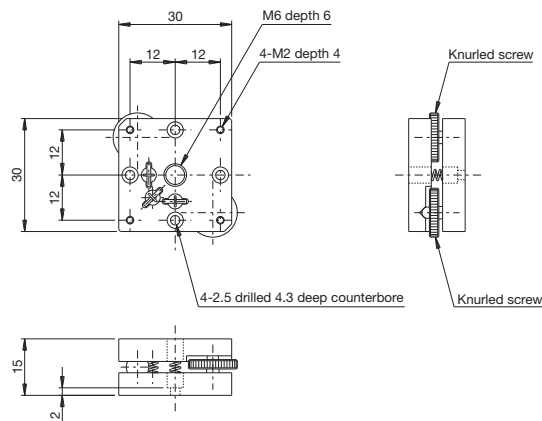


Tilt Stages ◀ Manual Stages ▶

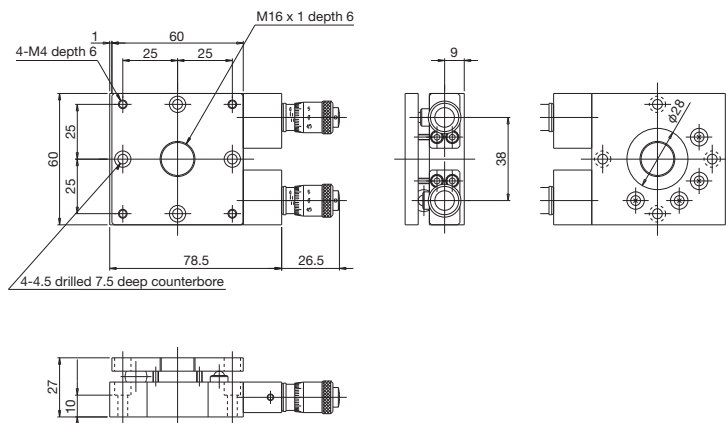
Product Appearance



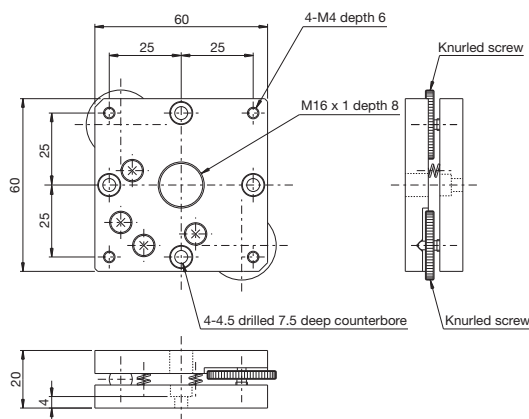
↑ TTD-302



↑ TTD-304



↑ TTD-602

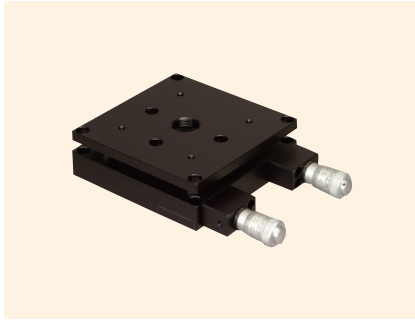


↑ TTD-604

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rack & Pinion Stages
High-Grade Stages	Swirl Stages, Cross Roller Stages, Z Stages	Rotary Stages
TTD Stages	TTD Stages	TTD Stages
TTD Stages	TTD Stages	TTD Stages
XZ Stages	YZ Stages	XZ Stages



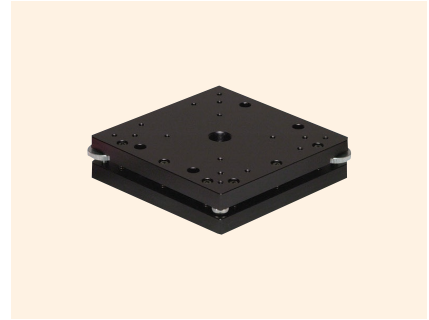
2-Axis Tilt Stage



↑ TTD-902



↑ TTD-904



↑ TTD-104

Features

- A 2-axis tilt stage with differing feed methods.
- The ball between the upper stage and the base forms the fulcrum for the tilting action.
- A low-cost manual screw type and a micrometer type that is capable of fine adjustments are available.
- Versatile use for positioning of cameras, sensors, etc.

Model number	TTD-902	TTD-904	TTD-104
Model name	Tilt Slim Stage 90 x 90	2-Axis Tilt Stage 90 x 90	2-Axis Tilt Stage 125 x 125
Travel direction	Tilt double direction		
Stage surface	90 mm x 90 mm		125 mm x 125 mm
Feed method	CMS-6.5F (standard micrometer)	Manual feed method	
Travel amount	±3°	±2°	
Travel amount/1 knob rotation	Approx. 0° 29'	Approx. 0° 24'	Approx. 0° 15'
Scale	Micrometer 0.01 mm (1 scale marking is approx. 35")		
Load capacity	39.2 N (4 kgf)	49 N (5 kgf)	
Mass	0.52 kg	0.4 kg	1 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

Motorized Stages

Automated Products for Microscopes

Manual Stages

Fx Stages

Thin Yθ Stages

Rack & Pinion Stages

High-Capacity Stages

Slim Stages, Cross Roller Stages

Z Lin Stages, Z Stages

Rotary Stages

Tilt Stages

Thin/Rotary Stages

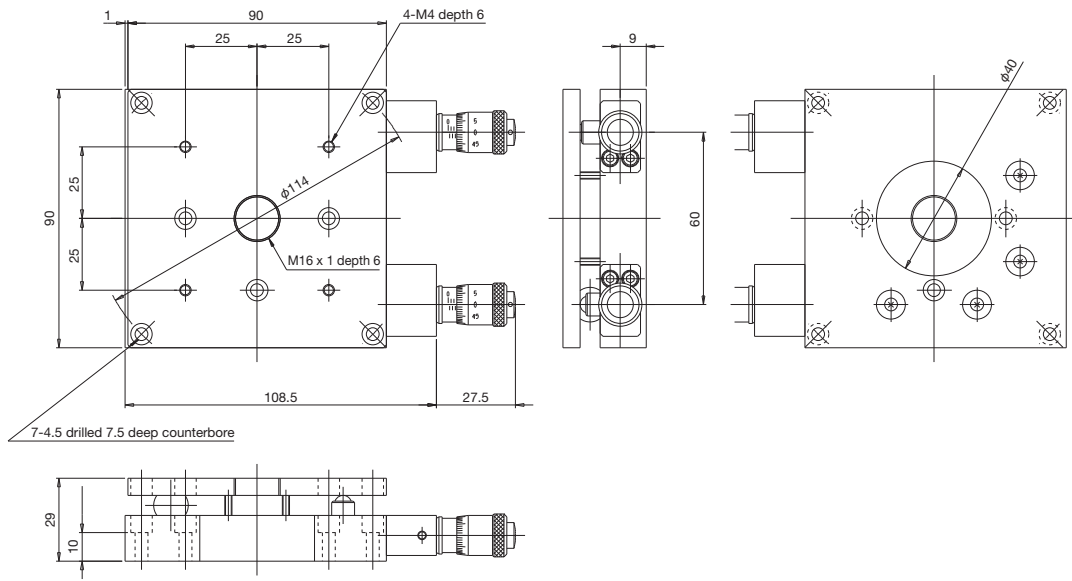
XZ, YZ Stages

XZ Stages

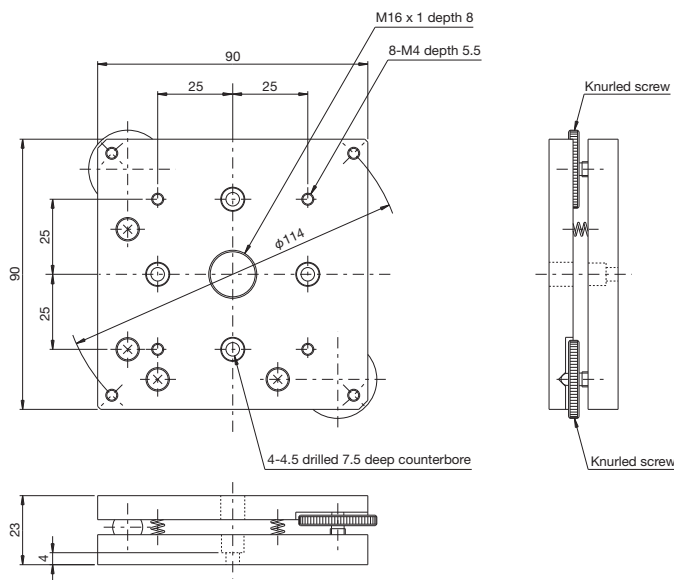


Tilt Stages ◀ Manual Stages ▶

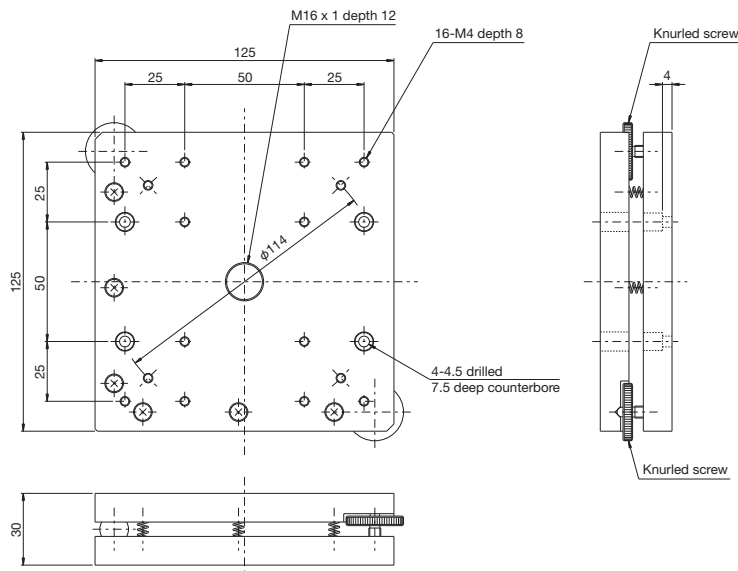
Product Appearance



↑ TTD-902



↑ TTD-904

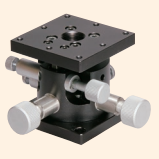
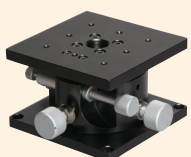


↑ TTD-104

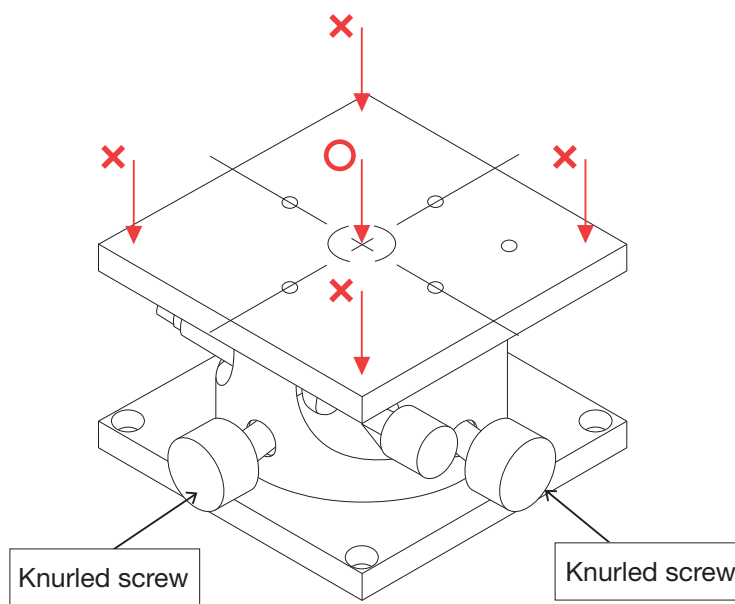
Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin V8 Stages	Rack & Pinion Stages
High-Grade Stages	Swim Stages, Cross Roller Stages	Z-Like Stages, Z Stages
Rotary Stages	Tilt Stages	Tilt/Rotary Stages
XZ Stages	YZ Stages	XZ Stages



- Motorized Stages
- Automated Products for Microscopes
- Manual Stages**
- Fx Stages
- Thin VB Stages
- Rack & Pinion Stages
- High-Grade Stages
- Spin Stages, Cross Roller Stages
- Z-Lin Stages
- Rotary Stages
- Tilt Stages
- Tilt/Rotary Stages**
- XZ, YZ Stages
- XZ Stages

Page	Example product photo	Type	Model number	Stage surface	Remarks
360		Tilt/Rotary Stage	TTD-605	60 mm x 60 mm	Tilt double direction, rotation single direction
			TTD-905	90 mm x 90 mm	Tilt double direction, rotation single direction

Tilt/Rotary Stages - Precautions for Use



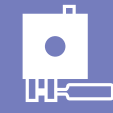
The center of gravity for samples loaded on the tilt/rotary stage should be positioned toward the stage surface center as per the figure above.



▶ Manual Stages ▶ XZ, YZ, XYZ Stages | Product List

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fx Stages
Thin Yθ Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z Lin Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
XZ, YZ Stages
XYZ Stages

Page	Example product photo	Type	Model number	Stage surface	Remarks
363		YZ Stage	TLM-213-1	60 mm x 60 mm	Double coarse movement knob
			TLM-213-2	60 mm x 60 mm	Double coarse/fine movement knob
365		XYZ Stage	TLT-313	30 mm x 30 mm	Separable knob type, block type
			TLT-413	40 mm x 40 mm	Separable knob type, block type
			TLT-613	60 mm x 60 mm	Separable knob type, block type
367		XYZ Stage	TLT-212-1CL	76 mm x 76 mm	Double coarse movement knob
			TLT-212-2CL	76 mm x 76 mm	Double coarse/fine movement knob
			TLT-214-1	76 mm x 76 mm	Double coarse movement knob
			TLT-214-2	76 mm x 76 mm	Double coarse/fine movement knob
369		XYZ Stage	TLT-211-1	25 mm x 25 mm	Without lens barrel holder for tool scopes
			TLT-211-1CL	25 mm x 25 mm	Without lens barrel holder for tool scopes, with clamp



■ **YZ stage**

◊ **Horizontal and vertical movement**

Stage with a low center of gravity combining 1 axis for horizontal linear travel and 1 axis for vertical travel.

◊ **Large Travel Amount**

A rack & pinion is used for the feed method, achieving large travel amounts.

◊ **Knobs**

Operating part has coarse movement knobs or coarse/fine movement knobs.

■ **XYZ stage**

◊ **3 travel directions**

XYZ stage enables horizontal linear travel along 2 axes and vertical travel along 1 axis.

◊ **Block type**

TLT-313, TLT-413, and TLT-613 are block types in which the operating part does not protrude.

◊ **Large Travel Amount**

Uses a rack & pinion for the feed method, achieving large travel amounts.

◊ **Knobs**

Operating part has coarse movement knobs or coarse/fine movement knobs.

*TLT-212-1CL, TLT-212-2CL, TLT-214-1, TLT-214-2 are the applicable products.

Motorized Stages
Automated Products for Microscopes
Manual Stages
Fx Stages
Thin VB Stages
Rack & Pinion Stages
High-Grade Stages
Spin Stages, Cross Roller Stages
Z-Like Stages, Z Stages
Rotary Stages
Tilt Stages
Tilt/Rotary Stages
YZ, YZ Stages
XYZ Stages

Compact YZ Mechanical Stands



↑ TLM-213-1



↑ TLM-213-2

Features

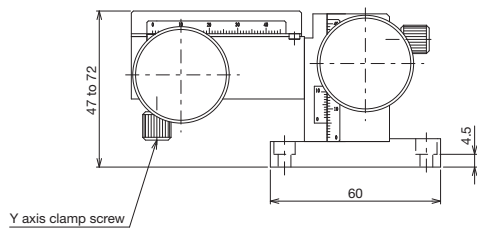
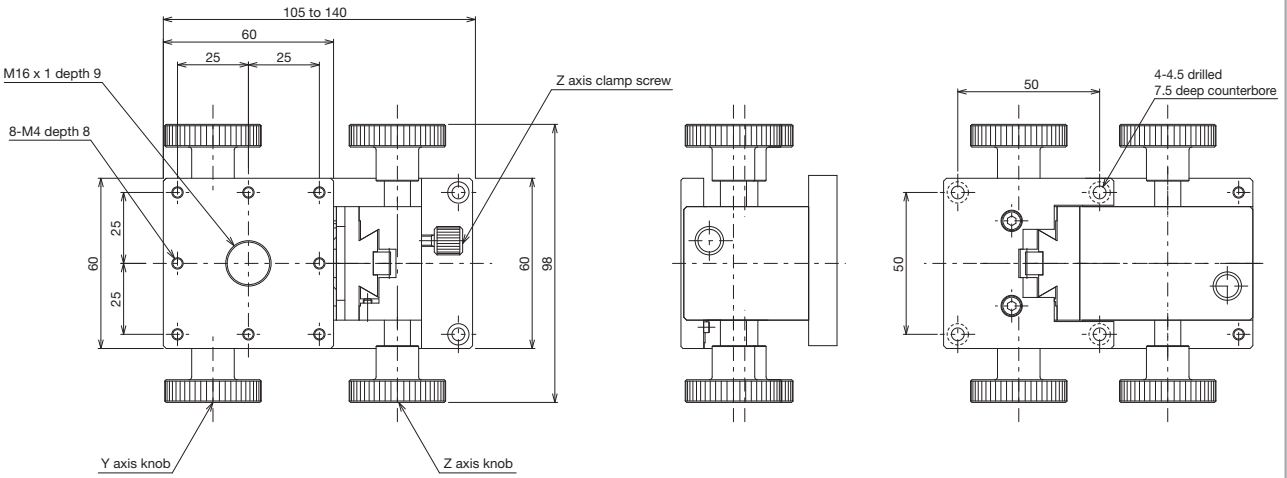
- The travel unit uses a dovetail (D-T Method) for the travel guide.
- Low-profile height manufactured for a low center of gravity.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A clamp enables fixing in a desired position with strong retention force.

Model number	TLM-213-1	TLM-213-2
Model name	Compact YZ Mechanical Stand 60 x 60 (Coarse Movement Knob)	Compact YZ Mechanical Stand 60 x 60 (Coarse/Fine Movement Knob)
Travel direction	YZ-axis double direction	
Stage surface	60 mm x 60 mm	
Clamp method	Knob screw method	
Operating part mounting position	Double coarse movement knob	Double coarse/fine movement knob
Feed method	Rack & pinion method	
Travel amount	Y axis 0 to 35 mm, Z axis 0 to 25 mm	
Travel amount/1 knob rotation	Approx. 18 mm	Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm
Scale	Vernier reading: 0.1 mm	
Sensitivity	0.1 mm	
Travel guide	Dovetail	
Travel accuracy	Straightness: 0.03 mm	
Load capacity	29.4 N (3 kgf)	
Mass	0.7 kg	0.8 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain	

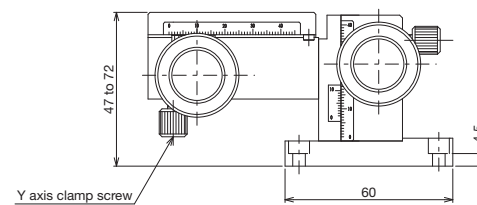
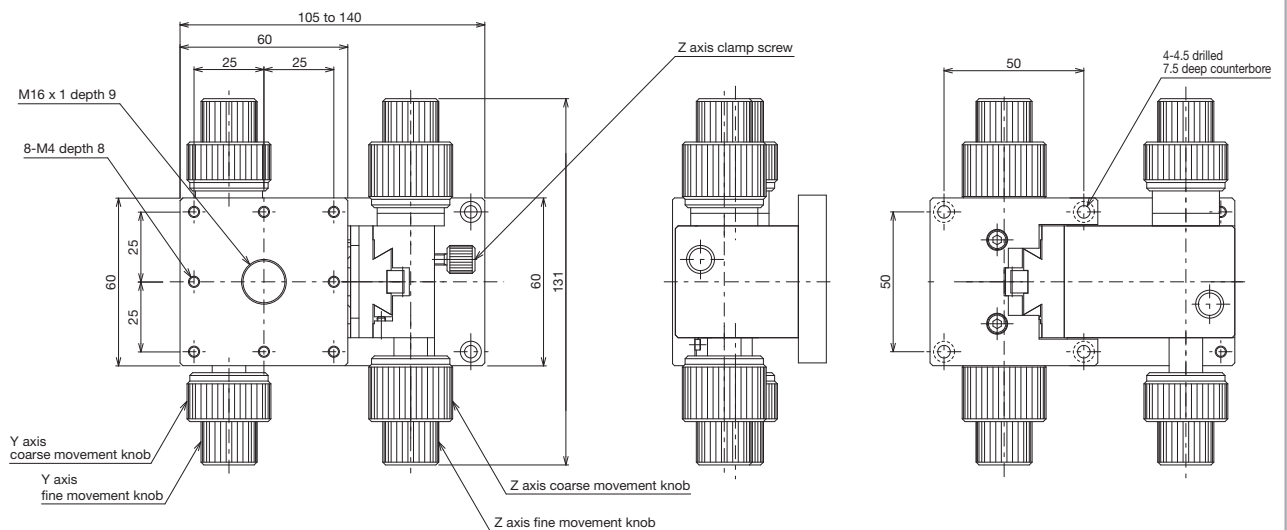


XZ, YZ Stages ◀ Manual Stages ▶

Product Appearance



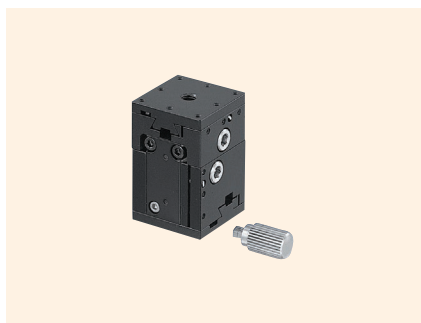
↑ TLM-213-1



↑ TLM-213-2

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rock & Pinion Stages
High-Grade Stages	Spin Stages, Cross Roller Stages	Z-Lift Stages, Z Stages
Rodary Stages	Tilt Stages	Tilt/Rotary Stages
XZ, YZ Stages	XZ Stages	

Compact XYZ Mechanical Stages



↑ TLT-313



↑ TLT-413



↑ TLT-613

Features

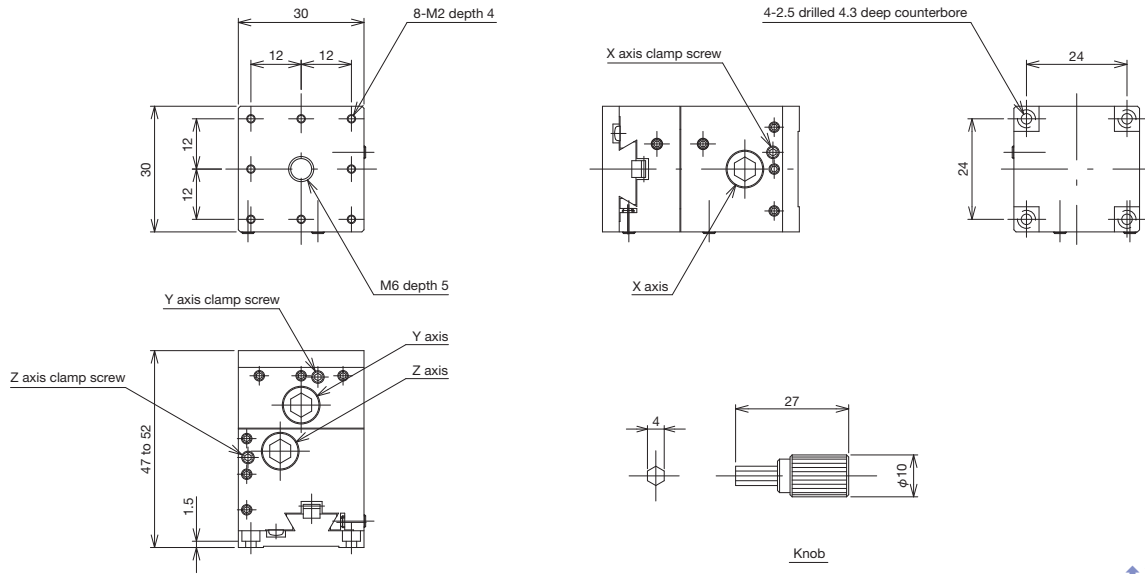
- Block type stage capable of XYZ axis 3-directional travel.
- Knob can be detached to eliminate protrusions from all surfaces. In addition to the supplied knob, commercially available hex wrenches can be used.
- Use a hex wrench to tighten the clamp screw. Ideal for applications where you do not want the stage to move after an adjustment.
- Versatile use for positioning of cameras, sensors, etc.

Model number	TLT-313	TLT-413	TLT-613
Model name	Compact XYZ Mechanical Stage 30 x 30	Compact XYZ Mechanical Stage 40 x 40	Compact XYZ Mechanical Stage 60 x 60
Travel direction	XYZ-axis triple direction		
Stage surface	30 mm x 30 mm	40 mm x 40 mm	60 mm x 60 mm
Clamp method	Hex wrench method		
Operating part mounting position	Separable knob method		
Feed method	Rack & pinion method		
Travel amount	XY axes ±5 mm, Z axis 0 to 5 mm	XY axes ±5 mm, Z axis 0 to 10 mm	XY axes ±10 mm, Z axis 0 to 20 mm
Travel amount/1 knob rotation	Approx. 19.5 mm	Approx. 16 mm	Approx. 19.5 mm
Scale	-		
Sensitivity	0.1 mm		
Travel guide	Dovetail		
Travel accuracy	Straightness: 0.02 mm		Straightness: 0.03 mm
Load capacity	4.9 N (0.5 kgf)		19.6 N (2 kgf)
Mass	0.14 kg	0.25 kg	0.8 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish		
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain		

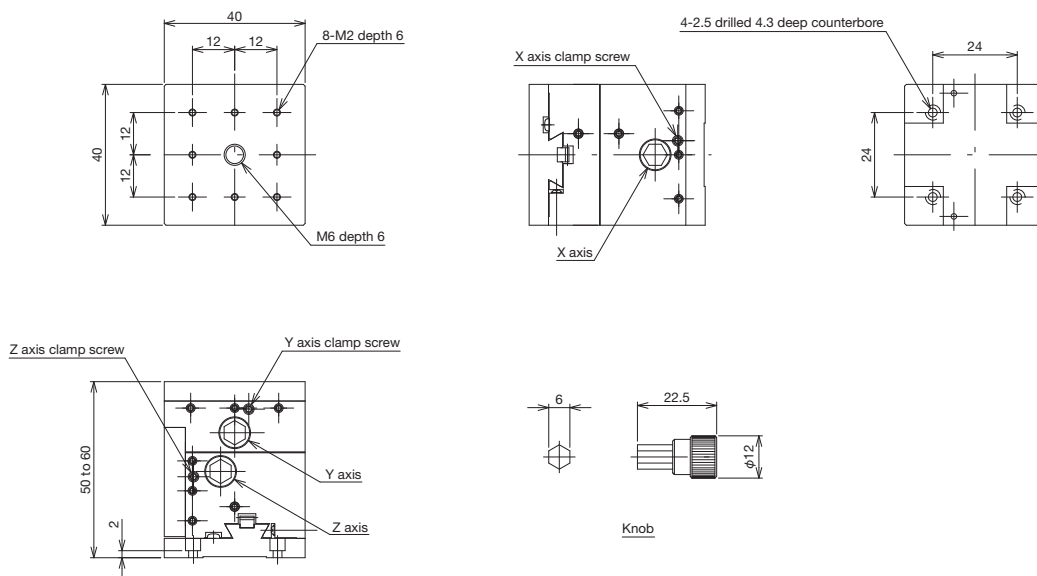


XYZ Stages ◀ Manual Stages ▶

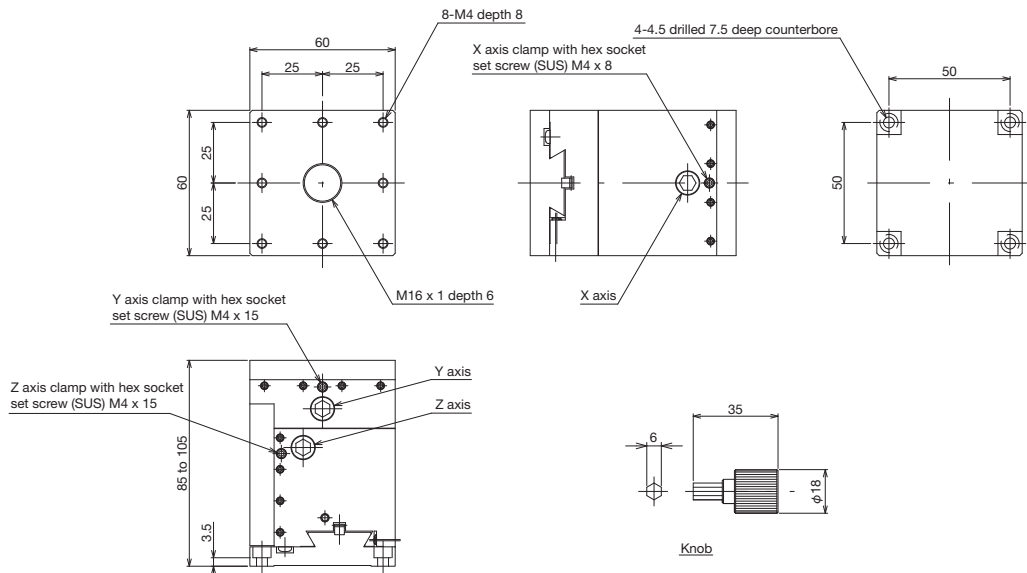
Product Appearance



TLT-313



TLT-413



TLT-613

Motorized Stages	Automated Products for Microscopes
FX Stages	Manual Stages
Thin VIB Stages	
Rack & Pinion Stages	
High-Grade Stages	
Stein Stages, Cross Roller Stages	
Z-Like Stages, Z Stages	
Rotary Stages	
Tilt Stages	
Tilt/Rotary Stages	
XZ, YZ Stages	
XYZ Stages	

XYZ Mechanical Stands



↑ TLT-212-1CL



↑ TLT-212-2CL



↑ TLT-214-1



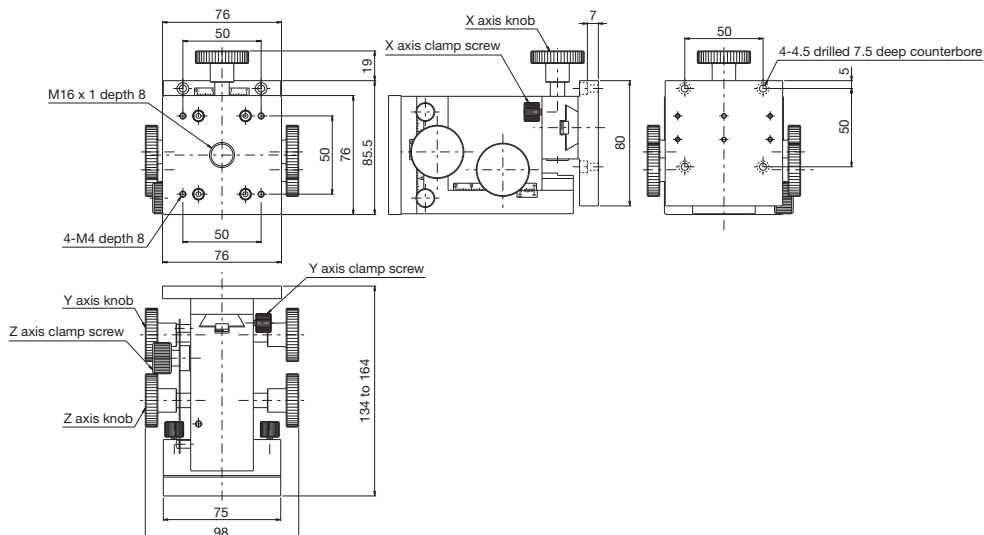
↑ TLT-214-2

Features

- The travel unit uses a dovetail (D-T Method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- A clamp enables fixing in a desired position with strong retention force.

Model number	TLT-212-1CL	TLT-212-2CL	TLT-214-1	TLT-214-2
Model name	XYZ Mechanical Stand 76 x 76 (With Clamp) (Coarse Movement Knob)	XYZ Mechanical Stand 76 x 76 (With Clamp) (Coarse/Fine Movement Knob)	XYZ Mechanical Stand 76 x 76 (With Clamp) (Coarse Movement Knob)	XYZ Mechanical Stand 76 x 76 (With Clamp) (Coarse/Fine Movement Knob)
Travel direction	XYZ-axis triple direction			
Stage surface	76 mm x 76 mm			
Clamp method	XY axis screw method knob, Z axis plate clamp for heavy loads			
Operating part mounting position	X axis coarse movement single knob, YZ axis coarse movement double knob	X axis coarse/fine movement single knob, YZ axis coarse/fine movement double knob	X axis coarse movement single knob, YZ axis coarse movement double knob	X axis coarse/fine movement single knob, YZ axis coarse/fine movement double knob
Feed method	Rack & pinion method			
Travel amount	XY axes ±25 mm, Z axis 0 to 30 mm		XY axes ±25 mm, Z axis 0 to 50 mm	
Travel amount/1 knob rotation	Approx. 18 mm	Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm	Approx. 18 mm	Coarse movement: approx. 25.5 mm, Fine movement: approx. 3.3 mm
Scale	Vernier reading: 0.1 mm			
Sensitivity	0.1 mm			
Travel guide	Dovetail			
Travel accuracy	Straightness: 0.03 mm			
Load capacity	49 N (5 kgf)			
Mass	1.6 kg	1.8 kg	2 kg	2.1 kg
Main materials/surface treatment	Aluminum alloy/black satin anodized finish			
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain			

Product Appearance

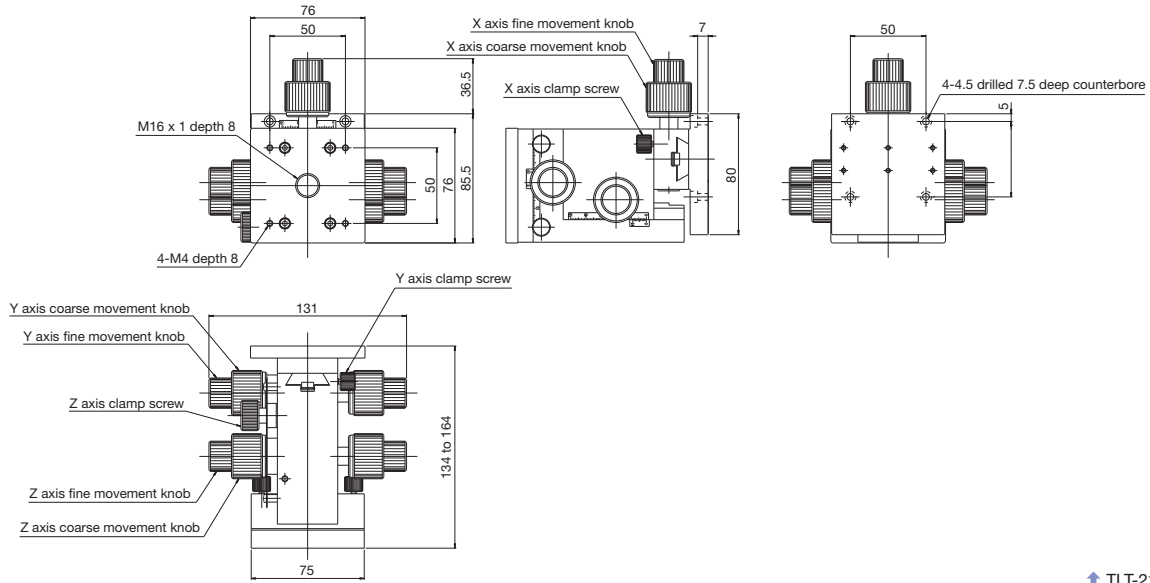


↑ TLT-212-1CL

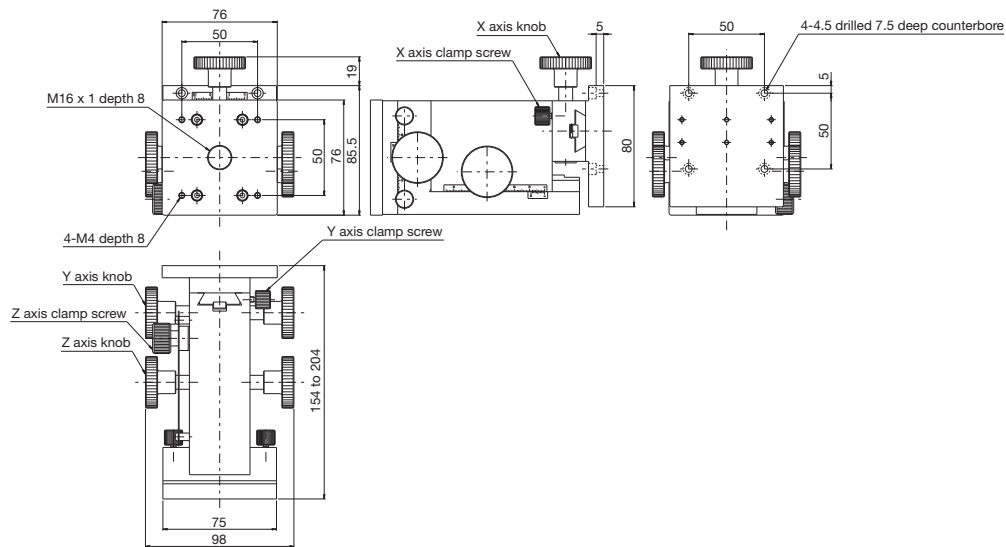


XYZ Stages ◀ Manual Stages ▶

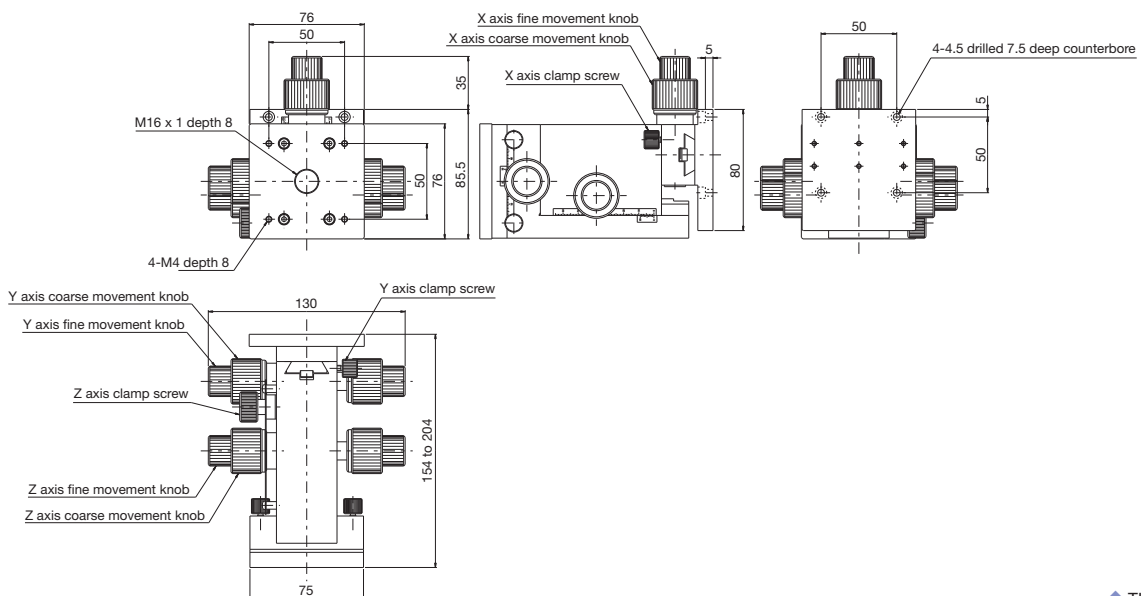
Product Appearance



↑ TLT-212-2CL



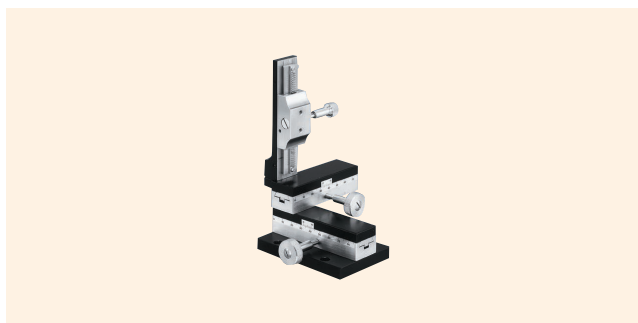
↑ TLT-214-1



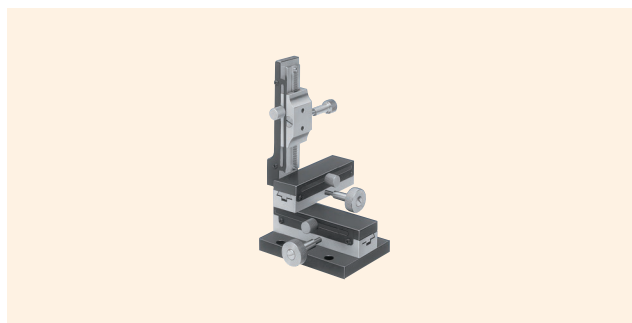
↑ TLT-214-2

Motorized Stages	Automated Products for Microscopes
Fix Stages	Manual Stages
Thin V8 Stages	
Rack & Pinion Stages	
High-Grade Stages	
Spin Stages, Cross Roller Stages	
Z-Like Stages	
Rotary Stages	
Tilt Stages	
Tilt/Rotary Stages	
XZ, YZ Stages	
XYZ Stages	

O Type Mechanical Stand (Without Lens Barrel Holder)



↑ TLT-211-1



↑ TLT-211-1CL

Features

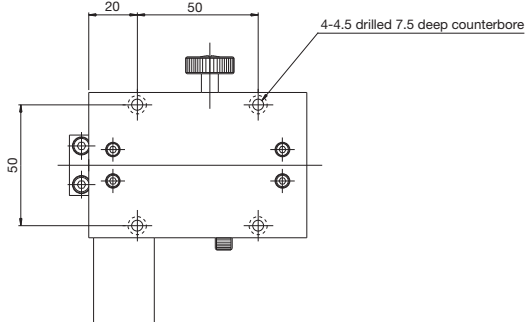
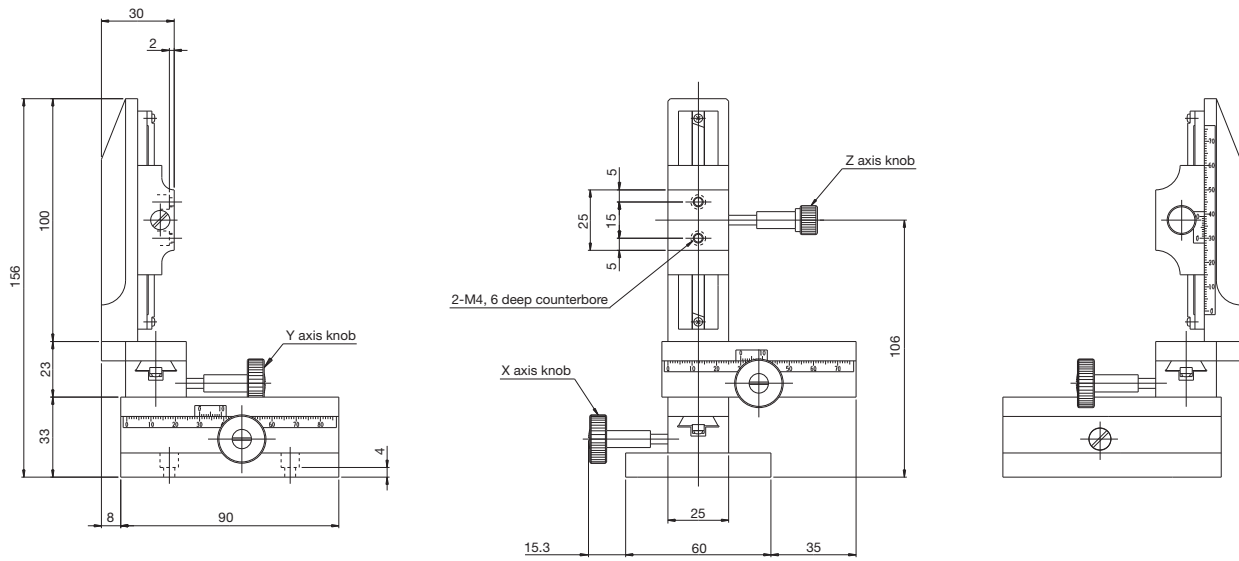
- The travel unit uses a dovetail (D-T Method) for the travel guide.
- A rack & pinion is used for the feed method, achieving large travel amounts.
- Versatile use for positioning of cameras, sensors, etc.
- Without clamp and with clamp types are available.

Model number	TLT-211-1	TLT-211-1CL
Model name	O Type Mechanical Stand (Without Lens Barrel Holder)	O Type Mechanical Stand (Without Lens Barrel Holder) (With Clamp)
Travel direction	XYZ-axis triple direction	
Stage surface	25 mm x 25 mm	
Clamp method	-	Plate clamp
Operating part mounting position	Single knob	
Feed method	Rack & pinion method	
Travel amount	±30 mm	
Travel amount/1 knob rotation	Approx. 18 mm	
Scale	Vernier reading: 0.1 mm	-
Sensitivity	0.1 mm	
Travel guide	Dovetail	
Travel accuracy	Straightness: 0.05 mm	
Load capacity	4.9 N (0.5 kgf)	9.8 N (1 kgf)
Mass	1.3 kg	
Main materials/surface treatment	Brass/chrome, painted	
RoHS directive compliance status	RoHS2 Regulation 10 substances do not contain	

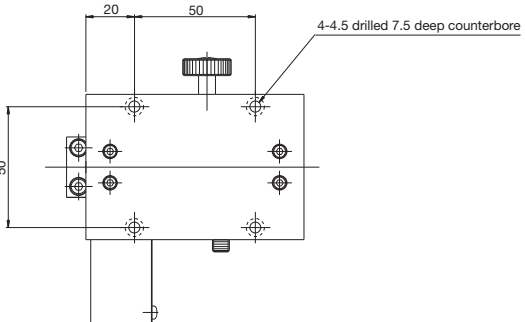
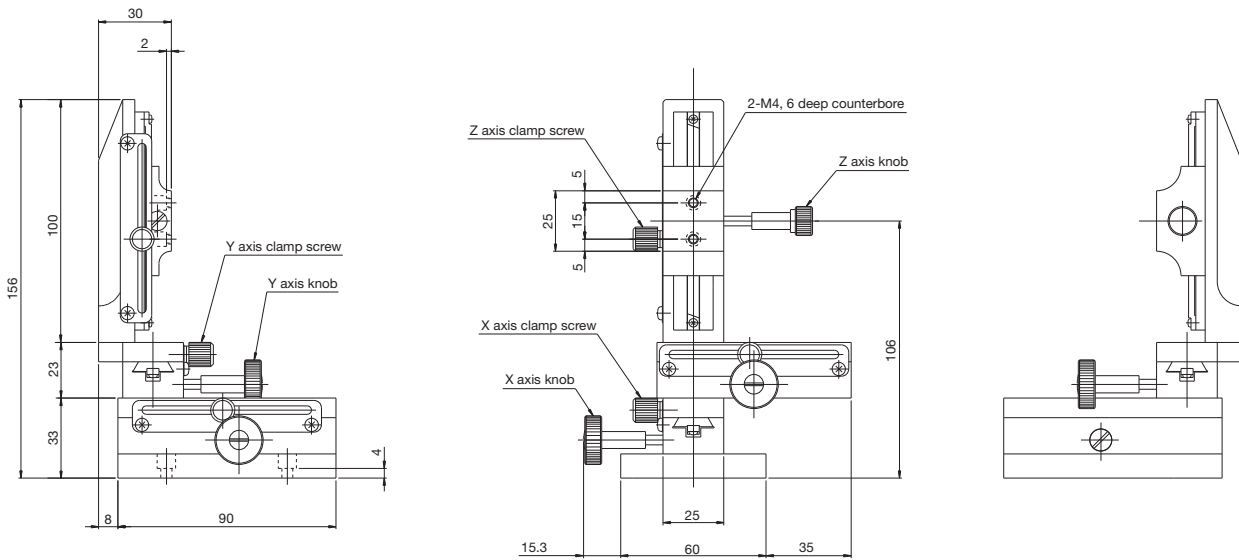


XYZ Stages ◀ Manual Stages ▶

Product Appearance



↑ TLT-211-1



↑ TLT-211-1CL

Motorized Stages	Automated Products for Microscopes	Manual Stages
Fix Stages	Thin VB Stages	Rack & Pinion Stages
High-Grade Stages	Spin Stages, Cross Roller Stages	Z-Lift Stages, Z Stages
Rotary Stages	Tilt Stages	Tilt/Rotary Stages
XYZ Stages		

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TACB-BTD-D3	85
TACB-BTM-D3	85
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TALD-106-H1PC	47
TALD-115-E1P	57
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TALD-510-H1P	47
TALD-510-H1S	65
TALD-604-E1P	57
TALD-903-H1S	65
TALD-904-H1PC	47
TALD-906-E1P	57
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TALD-4011-G0M-R	27
TALD-4011-G1M	27
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TALD-7013-G0M	29
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TALS-215-H1P	45
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TALS-510-H1P	45
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TALS-604-E1P	55
TALS-903-H1S	63
TALS-904-H1PC	45
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TALS-4011-G1M	23
TALS-4011-G1M-R	23
TALS-5012-G0M	23
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TALS-5012-G1M-R	23
TALS-6012-G0M	25
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TALS-6012-G1M-R	25
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TALV-901-HP	73
TALV-902-HP	73
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TALZ-106-H1P	49
TALZ-115-E1P	59
TALZ-215-H1P	49
TALZ-301-HM	39
TALZ-510-H1P	49
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TALZ-4011-G0M-R	31
TALZ-4011-G1M	31
TALZ-4011-G1M-R	31
TALZ-5012-G0M	31
TALZ-5012-G0M-R	31
TALZ-5012-G1M	31
TALZ-5012-G1M-R	31

Model number	Page
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TALZ-6012-G0M-R	33
TALZ-6012-G1M	33
TALZ-6012-G1M-R	33
TALZ-7013-G0M	33
TALZ-7013-G0M-R	33
TALZ-7013-G1M	33
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TAMC	
TAMC-4	91
TAMH	
TAMH-13	91
TAMH-15	91
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TAMS	
TAMS-15B	93
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TARC-BTD-D3	87
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*These contents are accurate as of 12/2019.

*The listed contents (model number, model name, appearance, specifications, etc.) are subject to change without notice.

*Although great care has been taken in the production of this catalog, we will not take any responsibility for damage resulting from typographical errors or omissions.

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