

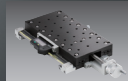

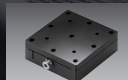



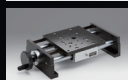
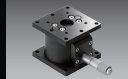









# Manual Positioners



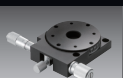







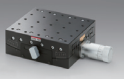
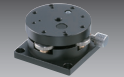

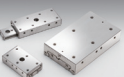
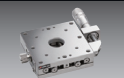
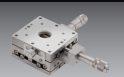






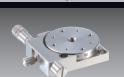
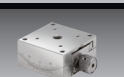


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	 X axis / XY axis Steel Extended Contact Slide Stages TSD-401/402	<b>E020</b>
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# Manual Positioners Guide

## Operating Environment of Manual Stages

Use manual positioning stages within the following environment temperature range.

Contact us for information regarding using the stages outside the given operational environment temperature range.

### \* Operating environment

Category	Operational environment temperature
Stainless steel manual stages	-20°C ~ +120°C
Stages with digital micrometer head	0°C ~ +40°C
Other manual stages	-20°C ~ +70°C

### \* Recommended environment

23±5°C, 60±10% (without condensation)

Operating environment temperature changes depending on various conditions such as the type of positioning stage, installation and operation conditions.

Avoid use of the stages in the following sites.

- Sites subject to water or oil
- Sites subject to direct sunlight or radiant heat
- Sites subject to dirt and dust
- Sites subject to vibration or impact
- Sites close to fire
- Sites subject to inflammable gas and corrosive gas

## Installation Direction (Mounting)

The values in the specifications of each product are based on installation on a horizontal surface.

Note that load capacity and other specifications will significantly change for upside down, lateral horizontal and other installation orientations.

Category	Positioning Slide	Part Number	Upside Down	Lateral Horizontal	Lateral Vertical
Linear	Extended contact ball guide method	TSD	○	○	○
	Extended contact ball guide method (flat Z)	TSD-**-3	×	×	×
	Extended contact ball guide method (flat Z)	TSD-**-UD	○	×	×
	Crossed roller method	TAM	○	○	○
	Dovetail slide method	TASB, TAR	○	○	○
Rotation	Extended contact ball guide method	KSPT	○	○	○
	Crossed roller method	KSPB	○	○	○
	Fitting method	KSP, KSPA, KSW, KSC	△	△	△
Gonio	Extended contact ball guide method	GOHT, GOHT-S	○	○	○
	Dovetail slide method	GOH, GOHB	○	○	○

○: Possible with limits on load and moment, etc.

△: May significantly deteriorate precision depending on installation orientation, but possible with limits on load and moment, etc.

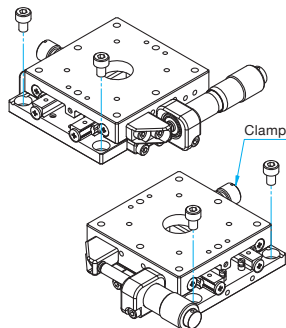
×: Not allowed

Note) When using stages in lateral vertical direction, refer to the actuator specifications. [Reference](#) Chapter F Actuators

## Mounting Methods of Stages

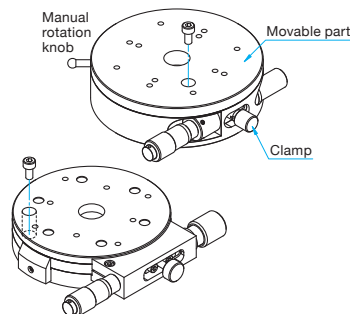
Mounting methods differ depending on the stage type; some stages require the table surface to be moved (by loosening the clamp), and some stages can be directly mounted.

### Linear Stage



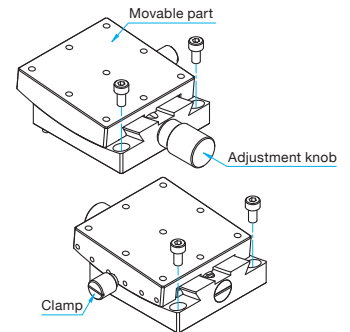
Loosen the clamp, turn the micrometer head, and then move the stage to mount.

### Rotation Stage



Loosen the clamp, turn the adjustment knob, and then move the stage to mount. Attach the accessory screws to the two mounting holes, and do the same thing on the other side.

### Gonio Stage



Loosen the clamp, turn the adjustment knob, and then move the stage to mount. Attach the accessory screws to the two mounting holes, and do the same thing on the other side.

## Accessory Screws

Mounting bolts described in the external dimensions in the catalog are included.

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

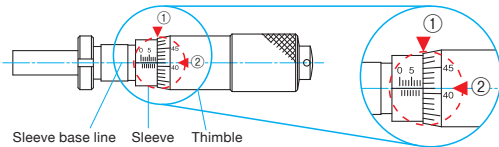
□120mm

Others

## How to Read Micrometer Head and Vernier Scale

Micrometer head and vernier scale are available for reading the stage position.

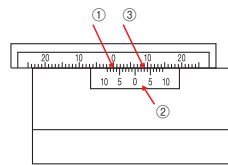
### How to Read a Micrometer Head



If the readable resolution is 0.01mm

1. Read the mark on the sleeve that lines up with the edge of thimble ① in units of 0.5mm. In this case, 8.5mm.
2. Read the value ② on the thimble that lines up with the sleeve base line in units of 0.01mm. In this case, 0.41mm.
3. Lastly, sum up 1. and 2. to confirm the current position of the manual stage.  $8.5\text{mm} + 0.41\text{mm} = 8.91\text{mm}$

### How to Read a Vernier Scale



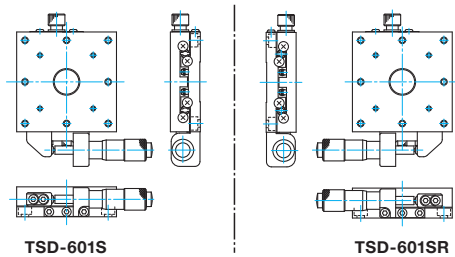
1. Read the mark on scale ① that is coincident with the 0-mark on vernier scale ② in units of 1mm. In this case, 7mm.
2. Read mark ① where the mark on vernier scale ② and that on scale ① line up in units of 0.1mm. In this case, 0.3mm.
3. Lastly, sum up 1. and 2. to confirm the current position of the stage.  $7\text{mm} + 0.3\text{mm} = 7.3\text{mm}$

## Opposite Models

When installation spaces have constraints or symmetrical systems are required, we offer opposite models without price difference. The configuration and orientation of opposite models are as follows.

### ■For single axis

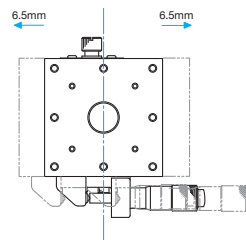
Opposite models will be axially symmetrical in the external dimensions.



## Travel

Travel is described with  $\pm$ .

(E.g.) In the case of  $\pm 6.5\text{mm}$ , with the outline drawing position as the center, move for (+)6.5mm in one direction, and move for (-)6.5mm in the opposite direction. In this case, the full travel is 13mm.



## Grease Used

We use an appropriate grease for each of our manual stages according to the respective characteristics.

Relevant Product	TSD TSDT	TAM	IPWS	GOH GOHT	KSP KSPT	TADC	TSDH	TSDS
Grease	High durability grease			Optical special grease			Low dust generation grease	Vacuum grease
Usable Temperature Range	-20°C ~ 70°C						-40°C ~ 200°C	-0°C ~ 290°C

### ■High Durability Grease

A high-grade versatile grease for industrial use. It is best suited for electric motor bearings or machine tool bearings which are particularly required for high quality and high performance.

In addition, it is excellent in noise reduction, and can be used for a wide range of applications.

### ■Low Dust Generation Grease (AFF Grease manufactured by THK Co., Ltd.)

Best suited for use in clean rooms because of its excellent low dust generation properties. Since its viscosity resistance is low, its rolling resistance is stable and excellent in following capability at low speed. Compared with other low dust generation greases, this grease can offer longer greasing intervals because of its excellent fretting resistance.

### ■Vacuum Grease (Fomblin Grease YVAC2)

This grease is widely used for various vacuum equipment and for clean rooms. The grease vapor pressure is  $5 \times 10^{-13}$  (power) Torr at 20°C.

### ■Optical Special Grease

This grease is used in many precision equipment fields because, in addition to lubricating properties, it has high cold resistance and heat resistance, low oozing properties, no influence on the coating surface, and is harmless to resins.

\* We can also replace the greases with ones not listed above. Contact our International Sales Division for more information.

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Dovetail

Lapping

V Groove Screw

Ohters

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# Contact Slide Stages Guide

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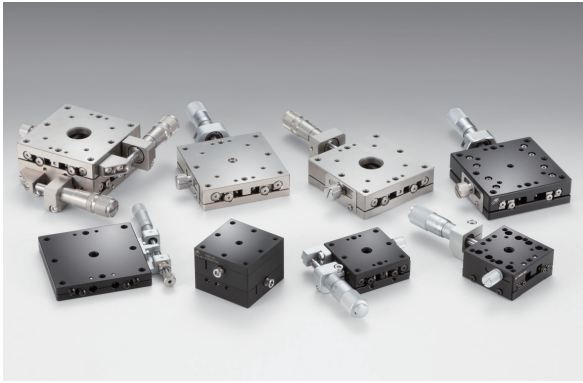
Dovetail

Lapping

V Groove Screw

Others

- 15mm
- 25mm
- 40mm
- 60mm
- 65mm
- 80mm
- 100mm
- 120mm
- Others



## Stages used for positioning in X, Y and Z directions (in 3-dimensional plane).

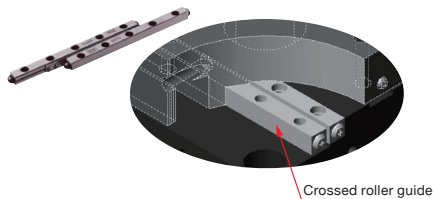
Suitable for various purposes including optical experiments for research and development and assembly in systems.

### Guide Structure

Stage Thickness	Extended Contact Ball Guide		Crossed Roller Guide	Dovetail Slide Method
Part Number	TSD/TSDH/TSDT/TSDS	TADC	TAM, TAMC	TASB/TAR
Primary Material	Steel / Stainless steel	Aluminum	Aluminum	Brass
Structure				
Shape				
Outline of Guide	A guide is directly processed on the lower and upper plates of the stage, quenched and ground. Steel balls are positioned between them.	Positioning slide having cylindrical rollers arranged orthogonally one after another in a V groove rail.	Positioning slide having quenched and ground guides screwed on the aluminum bottom and top plates, and balls between them.	Face-fitting positioning slide having trapezoidal male and female sections.
Stage Thickness	◎	○	○	△
Stiffness	◎	○	○	○
Travel Accuracy	◎	○	○	△
Resolution	◎	◎	◎	△
Weight	△	◎	◎	○

#### Crossed Roller Guide

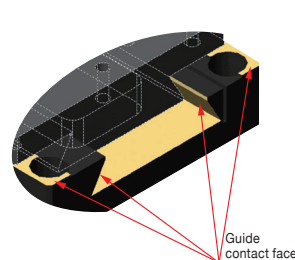
Line contact of rollers in a V groove rail offers high stiffness. In addition, low friction and almost no differential slip are suitable for minute feeding.



**■ Features ■**  
 Crossed roller guide enabled high precision and high stiffness.  
 Aluminum body offers light-weight.

#### Dovetail Slide Method

The dovetail groove method with face-fitting guide mechanism is used. Its high friction coefficient is not suitable for fine positioning, but very effective in simple positioning.



Face-fitting positioning slide having trapezoidal male and female sections

**■ Features ■**  
 The simple guide structure offers low price. Highly stable due to face-fitting guide. Compact design is ideal for assembly in systems or fixing in confined spaces.

## Ball Guide Method (TSD/TSDH/TSDT/TSDS Series)

These products are developed based on Sigma Koki's original processing technology.

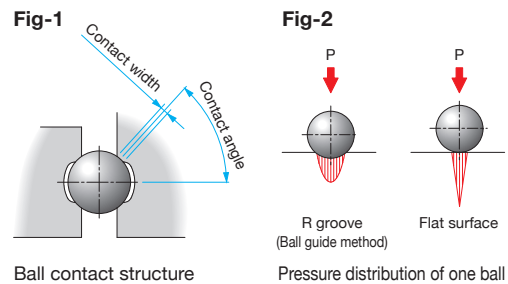
### Features

- ① High Precision ② High Load Capacity ③ High stiffness ④ High Durability ⑤ Low Profile

#### High Load Capacity and High Stiffness

- The four-array contact structure achieves high load capacity and high stiffness (13 times stiffer than the V groove)

As shown in Fig-1, ball guides are machined across the arcs so that they have R groove structure and good contact with a ball allowing stable load capacity against the load in the directions where contact with the ball occurs frequently.



#### High Durability

- Long life and free of maintenance

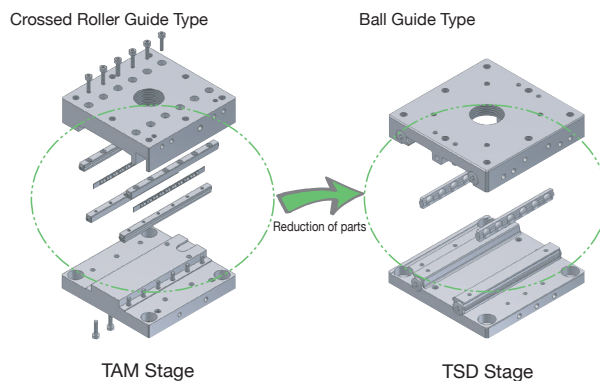
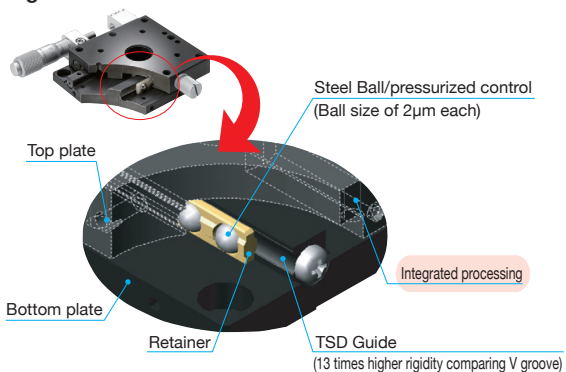
Fig-2 shows the pressure distribution of the R groove and the flat surface. As shown in the figure, pressure exerted on the R groove is dispersed and does not reach inside. Thus, metal fatigue and wear are reduced. [Reference](#) Data for durability is listed. E014

#### High Precision

- The integral (simultaneous) machining achieves high precision (straightness: 0.7 μm or lower)

As shown in Fig-3, the top and bottom plates are integrally and simultaneously machined using an originally devised machining jig to minimize respective machining errors. That is, to maintain high precision, these plates are machined in virtually the same state as when a ball is inside.

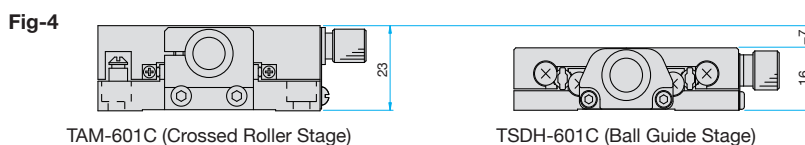
Fig-3



#### Low Profile

- Reduction in the number of parts enables low profiling

Fig-4 shows a comparison of thickness of a crossed roller stage and a ball guide stage. The integration of the guides into the top and bottom plates allows low profiling of the ball guide stage virtually the same state as when a ball is inside.



\* The TSDT series further reduces the stage thickness to 10mm.

[Reference](#) E016



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Others

□ 15mm

□ 25mm

□ 40mm

□ 60mm

□ 65mm

□ 80mm

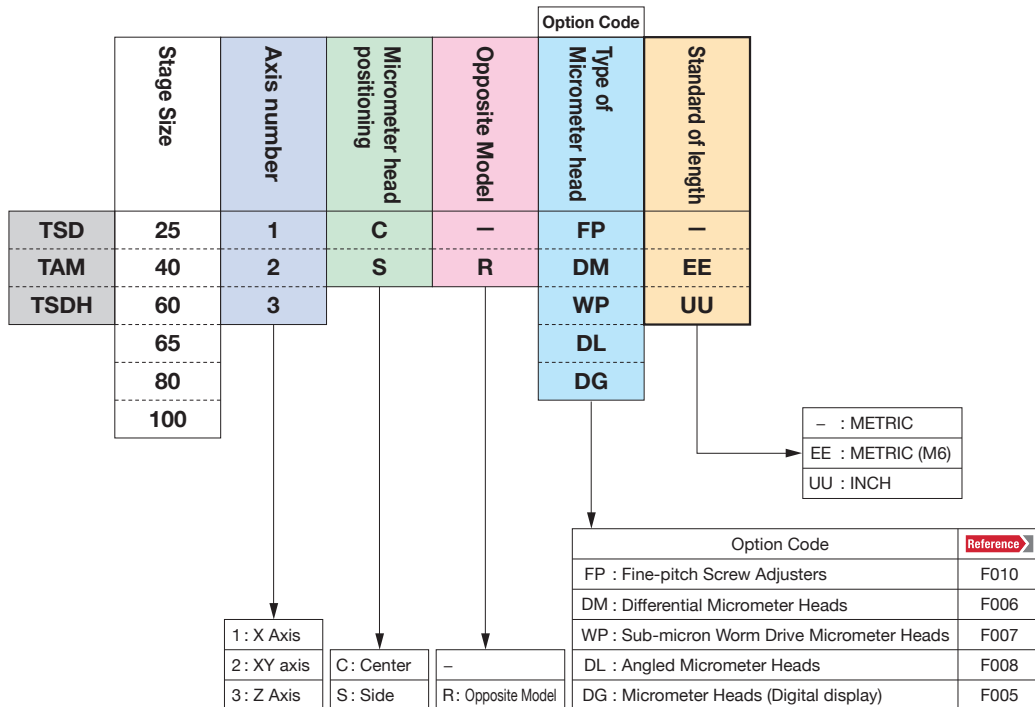
□ 100mm

□ 120mm

Others

# Contact Slide Stages Option

## Option Code



### Guide

▶ If you can not change the feed operation in the specification of the Option Code, please consult our sales.

## Micrometer control position / feed control

Change the micrometer control position or feed control to suit your purpose  
 .....Select according to your purpose such as for price reduction and space saving.

### Price Reduction

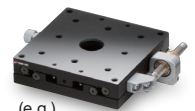
**Option code FP**  
**FPSA**  
 Fine-pitch Screw Adjusters  
 Reference ▶ F010



Price of manual stages can be reduced. Ideal for positioning that does not require measurement, and installation in confined spaces.



(e.g.) TSD-601CFP

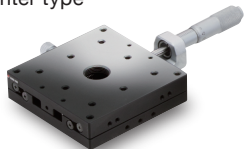


(e.g.) TSD-601SFP

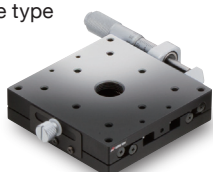
### Standard Micrometer Heads

Reference ▶ F004

Center type



Side type



### High Resolution

**Option code DM**  
**MHF2-13** Micrometer Heads  
 Reference ▶ F006



Fine positioning is possible by switching between coarse and fine adjustments.



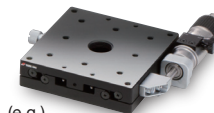
(e.g.) TSD-601SDM

### Space Saving

**Option code WP**  
**WGP** Sub-Micron Differential Micrometers  
 Reference ▶ F007



Offer low price and space saving coarse/fine adjustment micrometer heads. Coarse and fine drive control is possible throughout the full travel.



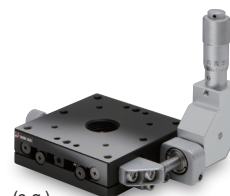
(e.g.) TSD-601SWP

### Improving Work Efficiency

**Option code DL**  
**MDC-\*\***  
 Angled Micrometer Heads  
 Reference ▶ F008



Unidirectional control units increases work efficiency.



(e.g.) TSD-601SDL

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Lapping

V Groove Screw

Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

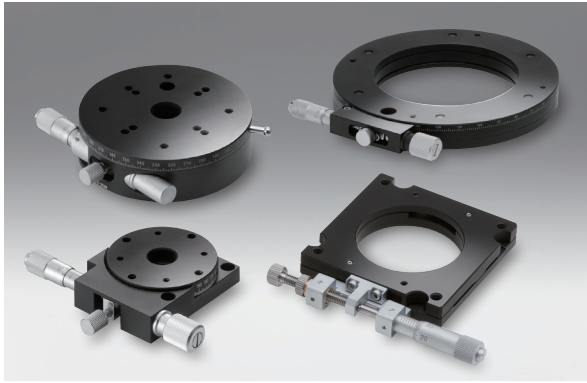
□100mm

□120mm

Others



# θ axis Stages Guide



## Stages used for adjustment by rotating samples.

Coarse/fine movement type, transmission hole type, low-profile square type and other types are available to suit your purpose.

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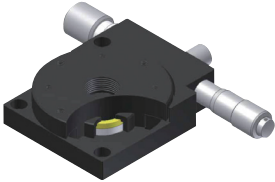
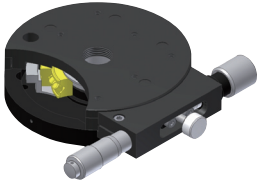
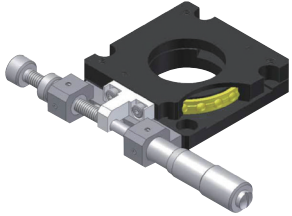
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## Structures and Features

Positioning Slide	Lapping	Crossed Roller	Extended Contact Ball Guide
Part Number	KSP/KSPA/KSPS	KSPB	KSPT
Primary Material	Brass / Stainless steel	Brass	Steel
Structure			
Features	High resolution, coarse movement of 360° and fine movement of ±5° are possible, and models with a transmission hole at the center of the stage can be used when a transmission hole is required	Transmission hole, high precision, high resolution, and high load capacity	Ultra thin, flexibly support any installation orientation
Stage Thickness	○	○	◎
Rigidity	○	◎	○
Travel Accuracy	○	◎	◎
Coarse Rotation Range	360°	360°	±10°
Resolution	○	◎	◎
Weight	◎	○	◎

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Others

□15mm

□25mm

□40mm

□60mm

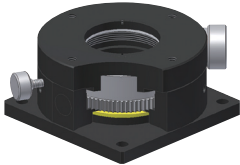
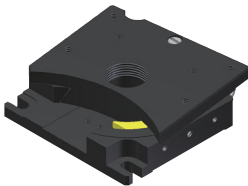
□65mm

□80mm

□100mm

□120mm

Others

Positioning Slide	Lapping (partly crossed roller)	Dovetail Slide Method
Part Number	KSW	KSSA
Primary Material	Brass (part Aluminum)	Brass
Structure		
Features	Since driven by worm gear, precision adjustment is possible for over 360°	Unique rotation stage having square table surface Rotation Stage
Stage Thickness	△	△
Rigidity	○ (Aluminum is △)	○
Travel Accuracy	○	◎
Coarse Rotation Range	360°	±3 – ±5° (depending on the stage)
Resolution	○	△
Weight	◎	○

# Goniometer Stages Guide

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

Others



Goniometers are rotation stages that rotate about an axis that is located at a distance above the surface of the stage.

Used for direction adjustment and correction, or tilting and rotation of samples. Products with different guide mechanisms or feed mechanisms are also available.

## Structures and Features

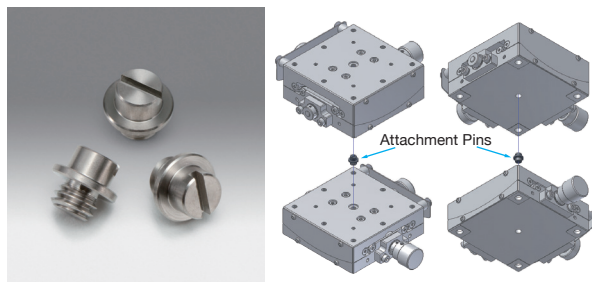
Positioning Slide		Extended Contact Ball Guide		Dovetail Slide Method	
Part Number		GOHT	GOHTA	GOH	GOHB
Primary Material		SUS440C quench hardened		Aluminum	Brass
Feeding mechanism		Gear Drive   Micrometer Head	Gear Drive	Gear Drive	Screw
Structure					
Stage Size [mm]	□15 METRIC	—	—	○	—
	□25 METRIC	—	—	○	—
	□40 METRIC	○	—	○	○
	INCH	○	—	○	—
	□60 METRIC	○	—	○	○
	□65 METRIC	○	—	○	—
	INCH	○	—	○	—
□120 METRIC	—	○	—	—	
Features		Unique product High precision Ideal for frequent operations	Precision and high stiffness High load capacity	Low price Cost effective	Cost effective Ideal for permanent fixation High durability
Load Capacity		◎	△	○	△
Rigidity		◎	◎	○	○
Travel Accuracy		◎	◎	○	○
Resolution		○	◎	○	◎
Weight		○	○	△	○



## Attachment Pins

Use of attachment pins to reduce assembly adjustment time.

Catalog Code W7112



- $\alpha\beta$  axis is easily assembled by attaching an attachment pin at the center of a GOHT series stage, and aligning the center of two goniometer stages.
- Ideal not only for assembly of single axis stages, but also for positioning when mounting on instruments or devices.

### Attention

▶ In case of single shipment, this product is delivered only by mail.

### Specifications

Part Number	GOHT-AP-10
Compatible Products	GOHT-40, 60
Primary Material	SUS303
Finish	None
Quantity [pieces]	10
Weight [kg]	0.0005

## Ball Guide Method (GOHT/GOHTA Series)

These products are developed based on Sigma Koki's original processing technology.

### ■ Features

- ① High Precision ② High Load Capacity ③ High Stiffness

### ■ High Load Capacity and High Stiffness

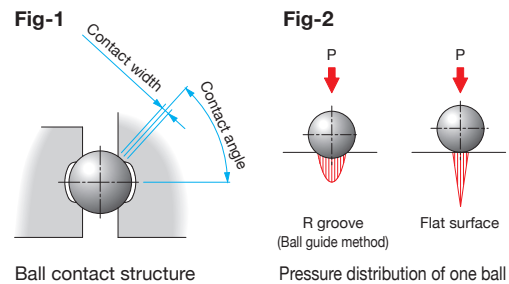
- The four-array contact structure achieves high load capacity and high stiffness (13 times stiffer than the V groove)

As shown in Fig-1, ball guides are machined across the arcs so that they have R groove structure and good contact with a ball allowing stable load capacity against the load in the directions where contact with the ball occurs frequently.

### ■ High Durability

- Long life and free of maintenance

Fig-2 shows the pressure distribution of the R groove and the flat surface. As shown in the figure, pressure exerted on the R groove is dispersed and does not reach inside. Thus, metal fatigue and wear are reduced. [Reference](#) Data for durability is listed. E015



### ■ High Precision

- Our original processing technology achieved an integral structure of the main body and the guides

As shown in Fig-3, because the crossed roller type goniometer stage, which has been the mainstream, has the guide separate from the main body, there are many parts. Assembling a large number of parts caused errors or variation, resulting in translation errors, that is, deviation in the most important rotation center when the stage moved. Our goniometer stage as shown in Fig-4, has the guide integrated into the main body in order to compensate for assembly errors or variation by machining accuracy. With the integral structure, the displacement of the rotation center is reduced.

Fig-3

Crossed Roller Guide Type

Ball Guide Type (GOHT)

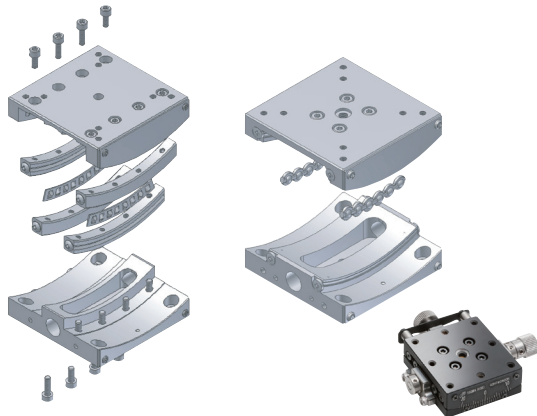
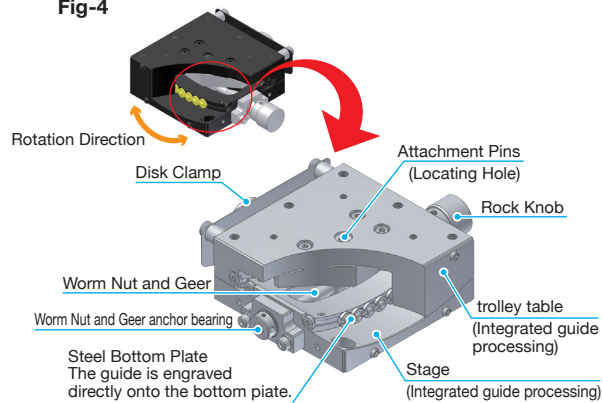


Fig-4

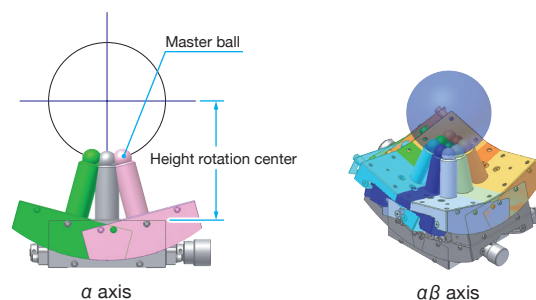


### <Rotation Center Displacement>

- Our ball guide goniometer stage  $\phi 0.007\text{mm}$  or less
- Crossed roller goniometer stage manufactured by another company  $\phi 0.01\text{mm}$  or less

### <Reference>

- Measuring method of the displacement of rotation center. Installing the "master ball" on the top of stage surface. Then sequentially positioning in a certain direction from the starting point to the travel end. Measuring by three-dimensional measuring device the position of the master ball in each position. From the coordinate data and obtains the fluctuation width of the circular orbit, determine the center of rotation displacement amount.



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15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# Definitions of Specifications and Terminology

## Interpretation of the Specification Table

Specifications				
1...	Part Number	***-***	1 Part Number	
2...	Opposite Model	***-***R	2 Opposite Model	
3...	Table Size	**x**mm	3 Table Size	
4...	Travel	±**mm	4 Travel	
5...	Positioning Slide		5 Positioning Slide	
6...	Primary Material		6 Primary Material Finish	
	Finish			
7...	Lead of Actuator	**mm	7 Lead of Actuator	
8...	Micrometer Position		8 Micrometer Position	
9...	Load capacity	**N (**kgf)	9 Load Capacity	
10...	Travel Accuracy	Straightness	*μm	10 Travel Accuracy: Straightness (units: μm)
		Pitch	**"	11 : Pitch
		Yaw	**"	12 : Yaw
13...	Max. Moment Capacity	Pitch	**N·m	12 : Yaw
		Roll	**N·m	13 Max. Moment Capacity (units: N·m)
		Yaw	**N·m	14 Moment Stiffness (units: "/N·m)
14...	Moment Stiffness	Pitch	**"/N·cm	14 Moment Stiffness (units: "/N·m)
		Roll	**"/N·cm	15 Paralleism
		Yaw	**"/N·cm	16 Running Paralleism
15...	Paralleism	*μm	15 Paralleism	
16...	Running Paralleism	*μm	16 Running Paralleism	
17...	Weight	**kg	17 Weight	

\* Indicated by plus and minus using the reference position of product (when the top and bottom plates are at the same position) as the reference position. (On the outline drawing in the catalog, travel in one direction is indicated by +mm and in the opposite direction is indicated by -mm with the outline drawing position as the reference position.)

\* It indicates the full travel range, if the reference position can not be determined.

\* Extended Contact Ball Guide

\* Crossed roller guide

\* Dovetail Slide method

\* Leadscrew driving method

\* Lapping method

\* V groove screw

\* Special guide methods other than the ones listed on the left are available. Refer to the specification table of each product.

Material used for the product and surface finishing.

Change in position when the feed control (micrometer head, fine-pitch screw or the like) is turned one time.

Position of the micrometer with respect to the stage surface is indicated as center or side.

Load capacity at the center of the stage (static load).

\* Please contact our International Sales Division if you require to use them above the rated load capacity.

Indicates a deviation from the straight line connecting the start and end points of the full travel of a linear stage.

Indicates the degree of tilt around the axis in the horizontal plane perpendicular to the direction of travel when moving the stage for full travel.

Indicates the degree of tilt around the axis in the vertical plane perpendicular to the direction of travel when moving the stage for full travel.

Indicates the degree of tilt around the axis in the horizontal plane parallel to the direction of travel when moving the stage for full travel.

Load capacity of the stage when a sample is placed away from the center of the stage.

Stage strength against a load exerted at a position away from the center of the table top (the table center and the center of gravity of a sample does not match). Indicates the degree of tilt of the table top (sec) when 1N load is exerted at the position 1cm away from the center of the stage surface.

Paralleism of the stage top surface against the stage bottom surface.

Paralleism of the stage top surface against the stage bottom surface when the stage is moved for full travel.

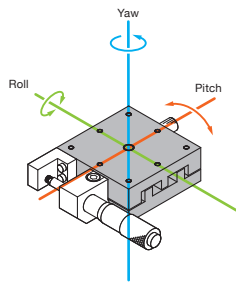
Self weight of the product.

**[Memo]**

The drawing shows the types of tilt when a linear stage travels.

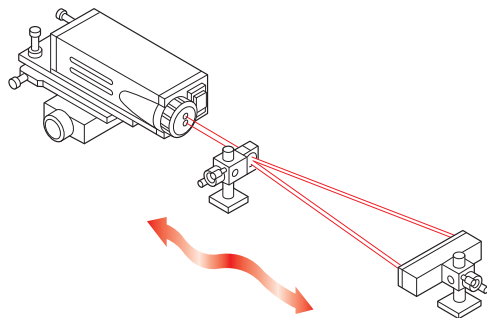
Towards the direction of travel...

- Pitch** Rotation around the axis in the horizontal plane perpendicular to the direction of travel
- Yaw** Rotation around the axis in the vertical plane perpendicular to the direction of travel
- Roll** Rotation around the axis in the horizontal plane parallel to the direction of travel

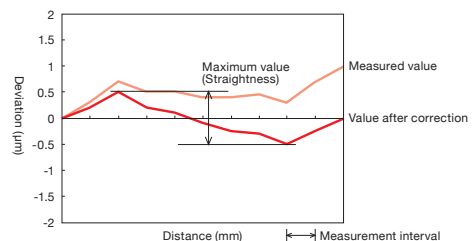


## Definition of Terms in the Specification Table

### ■ Straightness (horizontal direction) [Units: μm]



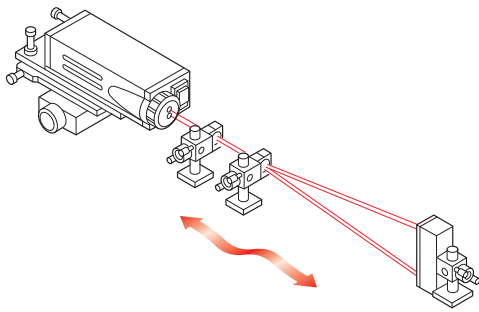
Move the stage and stop it at regular intervals throughout the full travel of the stage. At each point, measure the deviation from a reference position in the horizontal plane. The maximum deviation after correcting the deviation throughout the full travel to 0 is the straightness in the horizontal plane.



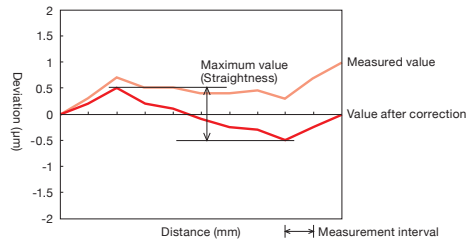
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- Others
- 15mm
- 25mm
- 40mm
- 60mm
- 65mm
- 80mm
- 100mm
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- Others



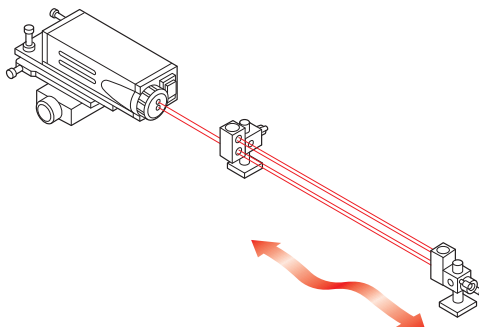
**■ Straightness (vertical direction)** [Units:  $\mu\text{m}$ ]



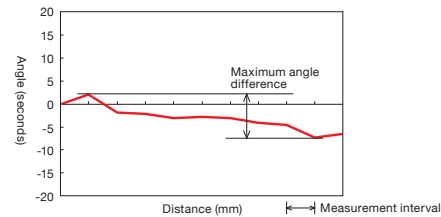
Move the stage and stop it at regular intervals throughout the full travel of the stage. At each point, measure the deviation from a reference position in the vertical plane. The maximum deviation after correcting the deviation throughout the full travel to 0 is the straightness in the vertical plane.



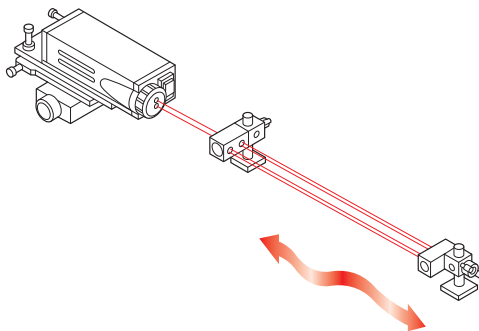
**■ Pitch** [Units:  $''$ ]



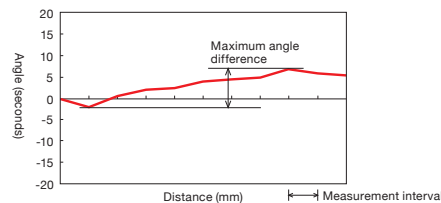
Move the stage and stop it at regular intervals throughout the full travel of the stage. At each point, measure the degree of tilt in the vertical plane. The maximum angular difference is the pitch.



**■ Yaw** [Units:  $''$ ]

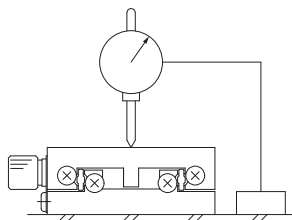


Move the stage and stop it at regular intervals throughout the full travel of the stage. At each point, measure the degree of tilt in the horizontal plane. The maximum angular difference is the yaw.



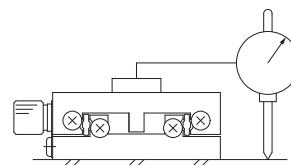
**■ Parallelism** [Units:  $\mu\text{m}$ ]

Fix a test indicator on an optical breadboard, bring it into contact with the top surface of the stage, and measure while moving it over the whole surface of the stage. The maximum difference of the displacement value of the test indicator is the parallelism.



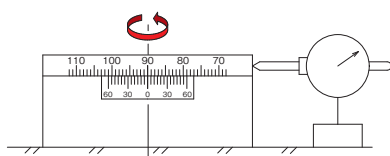
**■ Running Parallelism** [Units:  $\mu\text{m}$ ]

Fix a stage on an optical breadboard. Fix a test indicator on the top surface of the stage, bring it into contact with the top surface of the optical breadboard, and measure while moving the stage for the full travel. The maximum difference of the displacement value of the test indicator is the running parallelism.



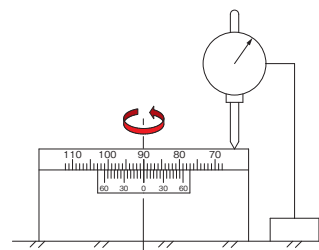
**■ Eccentricity** [Units:  $\mu\text{m}$ ]

Fix a rotation stage on an optical breadboard. Bring a test indicator into contact with the circumference of the rotation stage, and measure while turning the stage through one full rotation of  $360^\circ$ . Half of the maximum difference of the displacement value of the test indicator (misalignment) is the eccentricity.



**■ Wobble** [Units:  $\mu\text{m}$ ]

Fix a test indicator on an optical breadboard, bring it into contact with the edge of the top surface of a rotation stage, and measure while turning the stage for through one full rotation of  $360^\circ$ . The maximum difference of the displacement value of the test indicator is the wobble.



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15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# Durability Data of Manual Ball Guide Stages

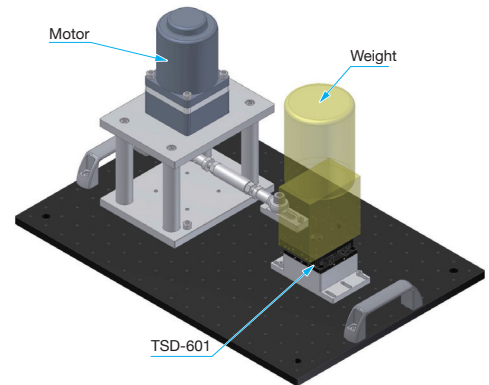
## Linear Stage

### [Test Procedure]

Reciprocate the stage with a load placed vertically on its upper surface, and measure the state change at that time.

### [Test Conditions]

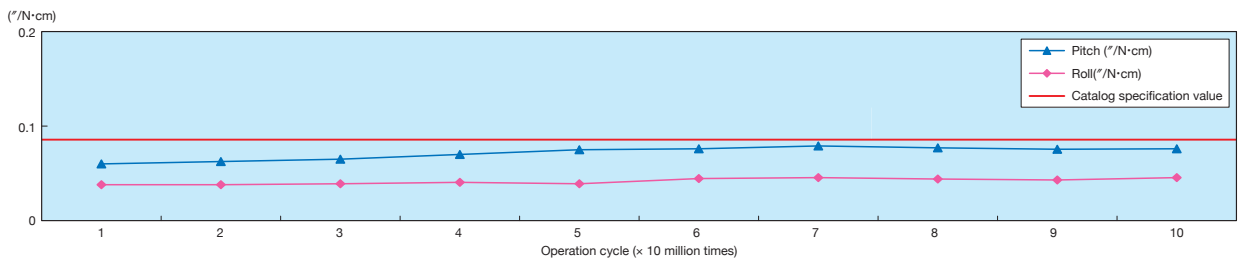
Measurement Sample	TSD-601
Load	100N
Procedure	13 mm × Both ways/sec (continuous operation)
Operation Cycles (Distance)	10 million times (260 km)



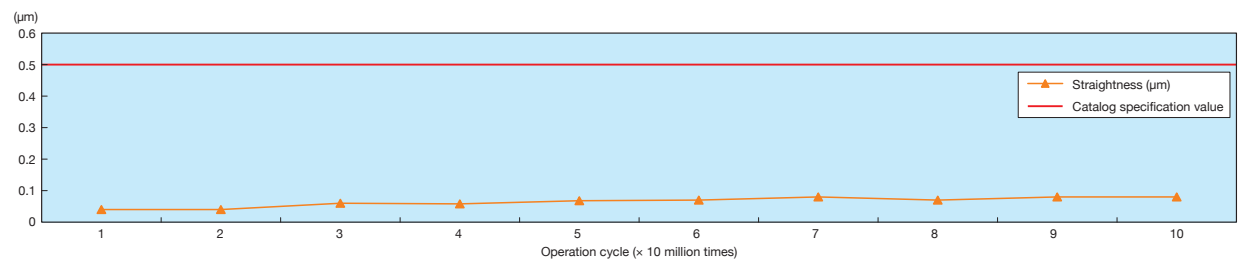
### ● TSD series

After 10 million cycles of operation, the guide performance is stable without significant change in the stiffness, straightness, pitching, yawing, and running parallelism of the stage guide.

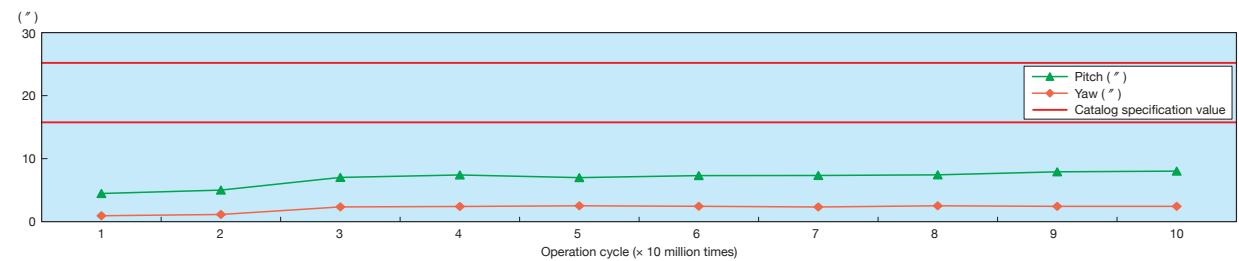
### Moment Stiffness



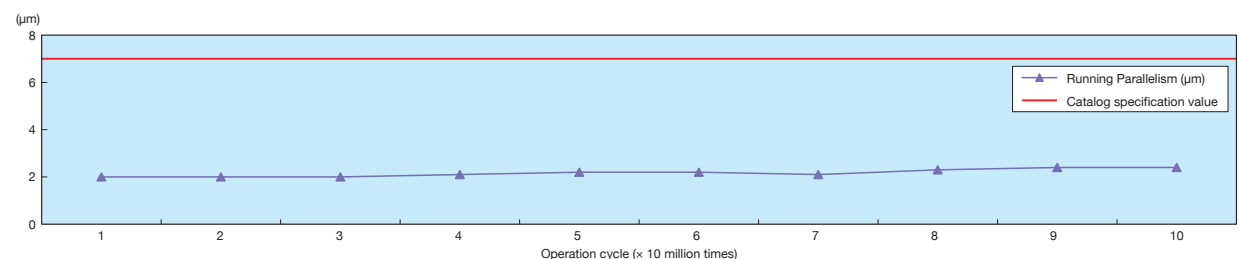
### Straightness



### Pitch / Yaw



### Running Parallelism



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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

Others

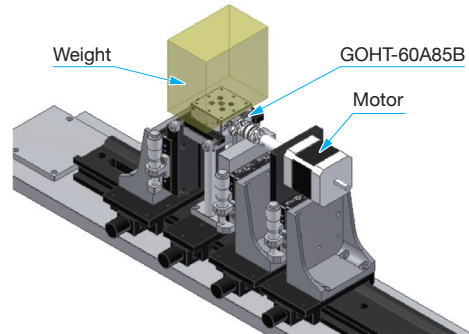
## Goniometer Stage

### [Test Procedure]

Reciprocate the stage with a load placed vertically on its upper surface, and measure the state change at that time.

### [Test Conditions]

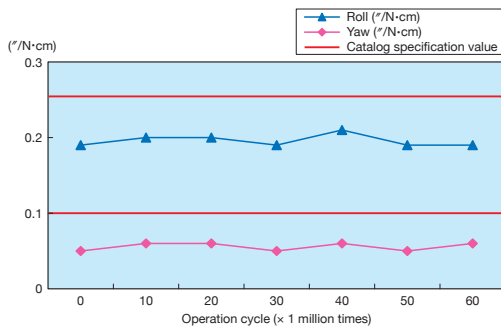
Measurement Sample	<b>GOHT-60A85B</b>
Load	50N
Procedure	$\pm 15^\circ \times$ One way/sec (continuous operation)
Operation Cycles (Distance)	600,000 times (30 km)



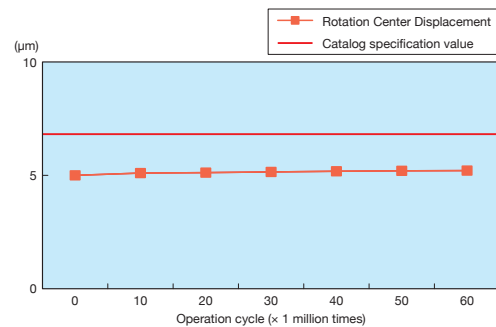
### ● GOHT series

After 600,000 cycles of operation, the guide performance is stable without significant change in the stiffness and rotation center displacement of the stage guide.

**Moment Stiffness**



**Rotation Center Displacement**



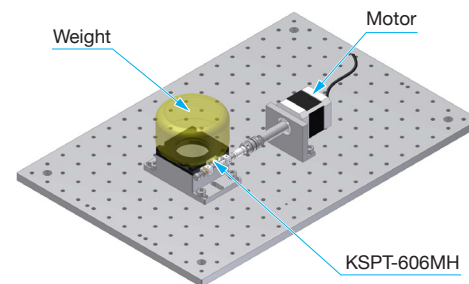
## Rotation Stage

### [Test Procedure]

Reciprocate the stage with a load placed vertically on its upper surface, and measure the state change at that time.

### [Test Conditions]

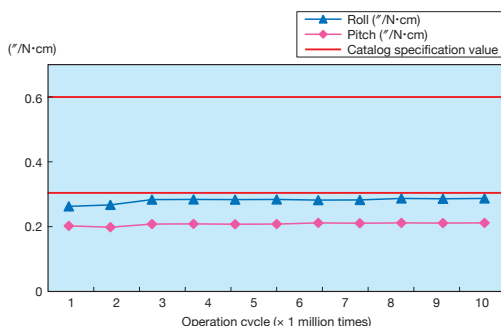
Measurement Sample	<b>KSPT-606MH</b>
Load	100N
Procedure	$\pm 10^\circ \times$ Both ways/sec (continuous operation)
Operation Cycles (Distance)	100,000 times (1km)



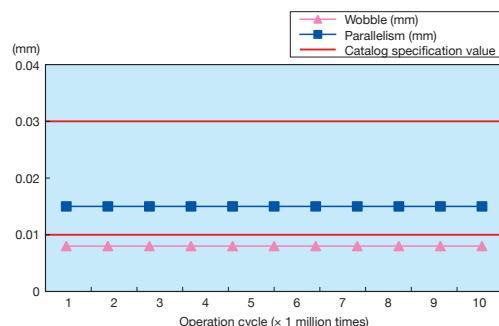
### ● KSPT series

After 100,000 cycles of operation, the guide performance is stable without significant change in the stiffness, wobble, and parallelism of the stage guide.

**Moment Stiffness**



**Wobble / Parallelism**



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Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

## Low-profile X axis Steel Stages

TSDT-401/601 Stage size □40/□60mm

RoHS

Ultra thin stages (10mm) provide high stiffness and load capacity in a very low profile packages that are 40% shorter and 35% lighter than standard TSD stages.

- Opposed locking clamp to maximize the holding power.
- Low-profile is ideal for assembling into systems with limited spaces or optical experiments that require low optical axis.



## Guide

- ▶ The part number suffix FP indicates products with fine-pitch screws instead of standard micrometers.
- ▶ Fine Pitch screws have a screw pitch of 0.25mm and require a hex wrench or the optional hex wrench with knob (KCL) for adjustment.

Reference F010



	TSD-601S		TSDT-601S
Stage Thickness	18mm	→	10mm
Stage weight	0.5kg	→	0.28kg

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

Others

## Specifications

Part Number	TSDT-401S	TSDT-401SFP	TSDT-601S	TSDT-601SFP
(Opposite Model)	TSDT-401SR	TSDT-401SRFP	TSDT-601SR	TSDT-601SRFP
Table Size [mm]	40×40	40×40	60×60	60×60
Axes of Travel	X axis			
Micrometer Position	Side	Side	Side	Side
Travel [mm]	±6.5	±6.5	±6.5	±6.5
Lead of Actuator [mm/rotation]	0.5	0.25	0.5	0.25
Micrometer Readable Resolution [mm]	0.01	—	0.01	—
Bearing type	Extended contact ball guide			
Primary Material	Steel			
Finish	Super black chrome			
Load Capacity [N]	147 (15.0kgf)	147 (15.0kgf)	343 (35.0kgf)	343 (35.0kgf)
Travel Accuracy	Straightness [μm]	1	1	1
	Pitch [ ″ ]	30	30	25
	Yaw [ ″ ]	25	25	15
Max. Moment Capacity	Pitch [N·m]	3.9	3.9	6.4
	Roll [N·m]	3.9	3.9	6.4
	Yaw [N·m]	2.9	2.9	4.9
Moment Stiffness	Pitch [°/N·cm]	0.36	0.36	0.2
	Roll [°/N·cm]	0.3	0.3	0.2
	Yaw [°/N·cm]	0.36	0.36	0.2
Parallelism [μm]	30	30	30	30
Running Parallelism [μm]	10	10	10	10
Weight [kg]	0.14	0.14	0.28	0.28

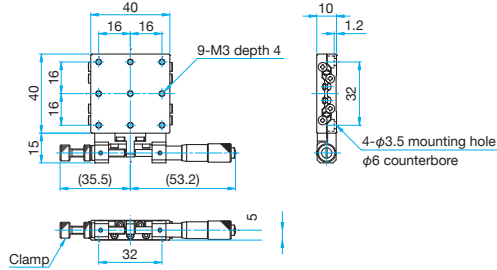




**Outline Drawing**

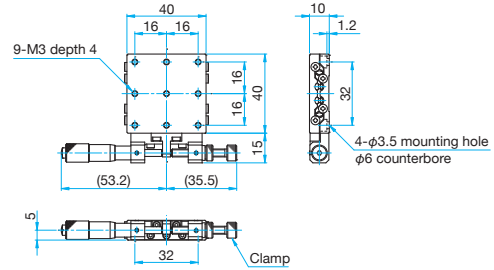
**TSDT-401S**

Low head hexagon socket head cap screw M3x5...4 screws



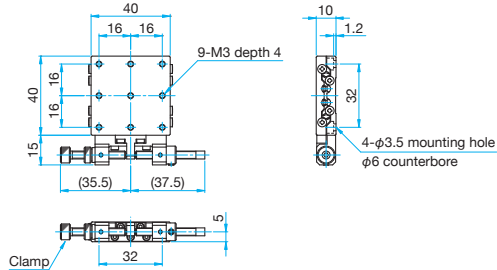
**TSDT-401SR**

Low head hexagon socket head cap screw M3x5...4 screws



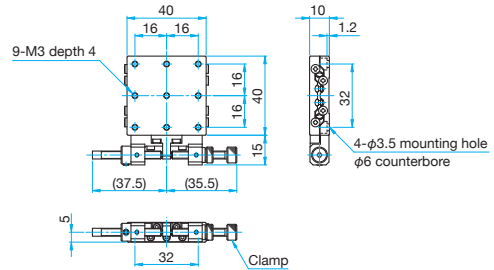
**TSDT-401SFP**

Low head hexagon socket head cap screw M3x5...4 screws 2mm



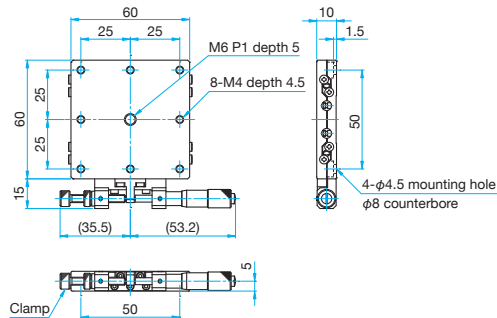
**TSDT-401SRFP**

Low head hexagon socket head cap screw M3x5...4 screws 2mm



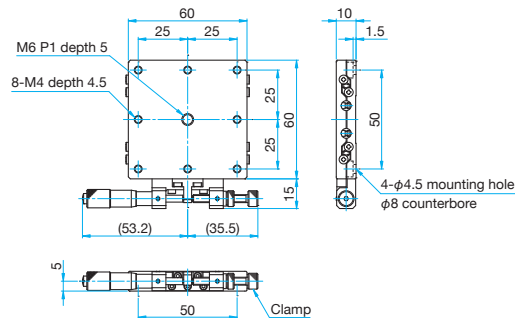
**TSDT-601S**

Low head hexagon socket head cap screw M4x6...4 screws



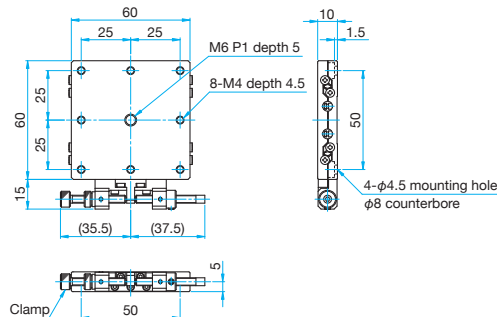
**TSDT-601SR**

Low head hexagon socket head cap screw M4x6...4 screws



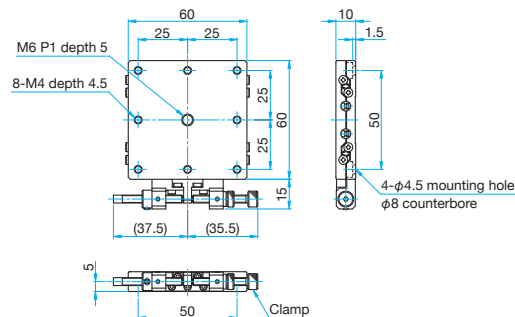
**TSDT-601SFP**

Low head hexagon socket head cap screw M4x6...4 screws 2mm



**TSDT-601SRFP**

Low head hexagon socket head cap screw M4x6...4 screws 2mm



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Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# X axis Steel Extended Contact Slide Stages

# XY axis Steel Extended Contact Slide Stages

TSD-251

Stage size □25mm

RoHS

TSD-252

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

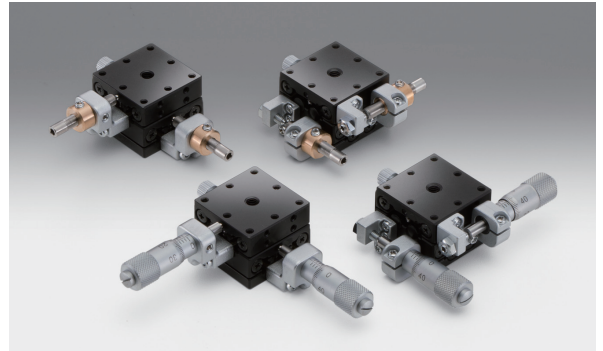
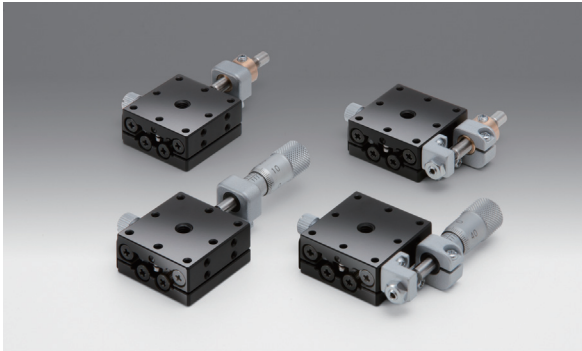
□80mm

□100mm

□120mm

Others

Hardened Steel linear stages with integrated bearing ways for superior stiffness, accuracy and durability.



## Guide

- ▶ Vacuum-compatible stainless steel stages (TSDS-251/252) are also available. [Reference](#) E200, 202

## Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

Specifications					
Part Number	METRIC	TSD-251C	TSD-251S	TSD-252C	TSD-252S
(Opposite Model)	METRIC	—	TSD-251SR	—	TSD-252SR
Table Size [mm]		25×25	25×25	25×25	25×25
Axes of Travel		X axis		XY axis	
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±3	±3	±3	±3
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		Steel			
Finish		Super black chrome			
Load Capacity [N]		49 (5.0kgf)	49 (5.0kgf)	49 (5.0kgf)	49 (5.0kgf)
Travel Accuracy	Straightness [μm]	0.5	0.5	0.5	0.5
	Pitch [ " ]	30	30	30	30
	Yaw [ " ]	25	25	25	25
Max. Moment Capacity	Pitch [N·m]	3.0	3.0	3.0	3.0
	Roll [N·m]	3.7	3.7	3.0	3.0
	Yaw [N·m]	3.5	3.5	3.5	3.5
Moment Stiffness	Pitch ["/N·cm]	1.8	1.8	3.0	3.0
	Roll ["/N·cm]	1.1	1.1	2.2	2.2
	Yaw ["/N·cm]	1.1	1.1	2.2	2.2
Parallelism [μm]		30	30	30	30
Running Parallelism [μm]		7	7	10	10
Orthogonality [μm]		—	—	10	10
Options		FP/DL	FP/DL	FP/DL	FP
Weight [kg]		0.07	0.07	0.1	0.1

Option					
Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	<a href="#">Reference</a>
	Products Name	Part Number			
<b>FP</b>	Fine-pitch Screw Adjusters	<b>FPSA-42525</b>	0.25	—	E008
<b>DL</b>	Differential Micrometer Heads	<b>MDC-6.5</b>	0.5	0.01	

\* Please add an option code as the part number suffix to specify various optional specifications.

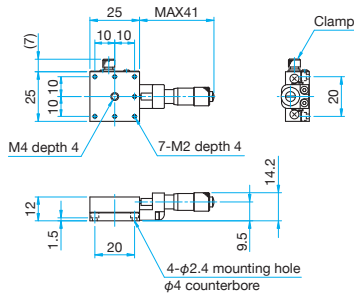
\* Installation may not be possible depending on the direction of DL.

\* The suffix "-C" type uses adhesive for fixing the micrometer. Please contact our International Sales Division for more information on replacement.

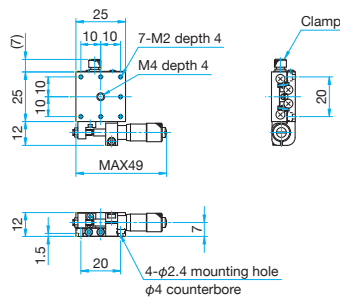


Outline Drawing

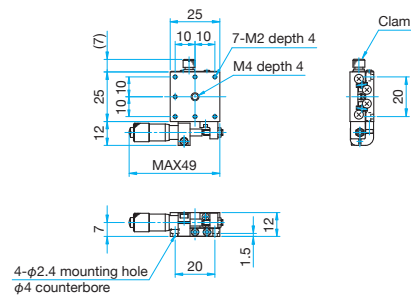
**TSD-251C** Hexagonal socket head cap screw M2x4...4 screws



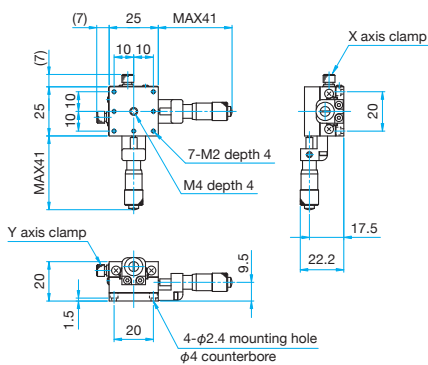
**TSD-251S** Hexagonal socket head cap screw M2x4...4 screws



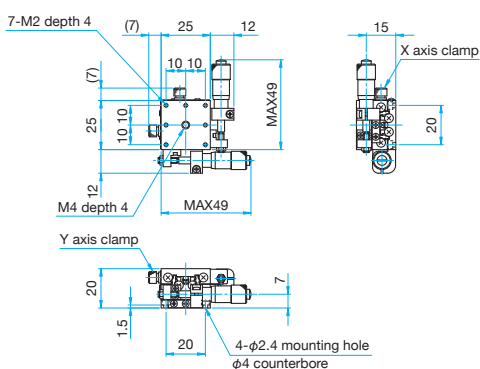
**TSD-251SR** Hexagonal socket head cap screw M2x4...4 screws



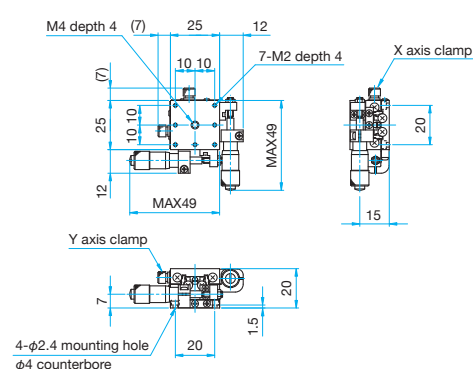
**TSD-252C** Hexagonal socket head cap screw M2x4...4 screws



**TSD-252S** Hexagonal socket head cap screw M2x4...4 screws



**TSD-252SR** Hexagonal socket head cap screw M2x4...4 screws



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V Groove Screw

Ohters

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# X axis Steel Extended Contact Slide Stages

# XY axis Steel Extended Contact Slide Stages

TSD-401

Stage size □40mm

RoHS

TSD-402

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

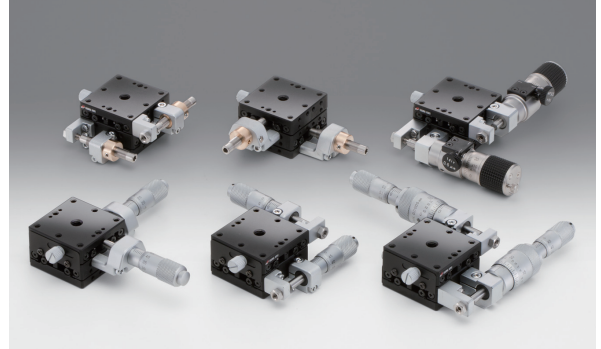
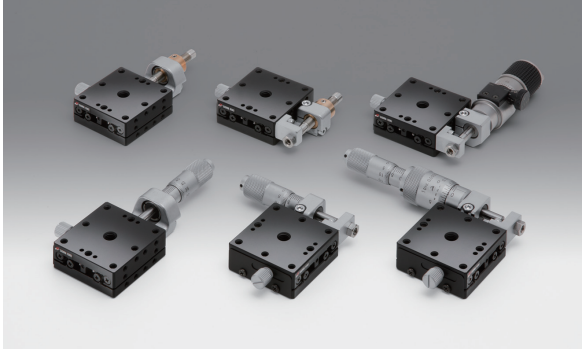
□80mm

□100mm

□120mm

Others

Hardened Steel linear stages with integrated bearing ways for superior stiffness, accuracy and durability.



## Guide

► Vacuum-compatible stainless steel stages (TSDS-401/402) are also available. [Reference](#) E200, 202

## Attention

► Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.  
► Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

Specifications					
Part Number	METRIC	TSD-401C	TSD-401S	TSD-402C	TSD-402S
	INCH	TSD-401CUU	TSD-401SUU	TSD-402CUU	TSD-402SUU
(Opposite Model)	METRIC	—	TSD-401SR	—	TSD-402SR
	INCH	—	TSD-401SRUU	—	TSD-402SRUU
Table Size [mm]		40×40	40×40	40×40	40×40
Axes of Travel		X axis		XY axis	
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±6.5	±6.5	±6.5	±6.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		Steel			
Finish		Super black chrome			
Load Capacity [N]		196 (20kgf)	196 (20kgf)	196 (20kgf)	196 (20kgf)
Travel Accuracy	Straightness [μm]	0.5	0.5	0.5	0.5
	Pitch [ ″ ]	25	25	25	25
	Yaw [ ″ ]	15	15	15	15
Max. Moment Capacity	Pitch [N·m]	7.8	7.8	7.8	7.8
	Roll [N·m]	7.8	7.8	7.8	7.8
	Yaw [N·m]	5.0	5.0	5.0	5.0
Moment Stiffness	Pitch [″/N·cm]	0.3	0.3	0.5	0.5
	Roll [″/N·cm]	0.2	0.2	0.5	0.5
	Yaw [″/N·cm]	0.23	0.23	0.46	0.46
Parallelism [μm]		15	15	30	30
Running Parallelism [μm]		7	7	12	12
Orthogonality [μm]		—	—	10	10
Options		FP/DM/WP/DL	FP/DM/WP/DL	FP/DM/WP/DL	FP/DM/WP
Weight [kg]		0.2	0.2	0.3	0.3

Option					
Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	<a href="#">Reference</a>
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-62540	0.25	—	E008
DM	Differential Micrometer Heads	MHF2-13F	Coars: 0.5 Fine: 0.025	Coars: 0.01 Fine: 0.0005	
WP	Sub-micron Worm Drive Micrometer Heads	WGP-13	Coars: 0.25 Fine: 0.025	Coars: 0.005 Fine: 0.0005	
DL	Differential Micrometer Heads	MDC-13	0.5	0.01	

\* Please add an option code as the part number suffix to specify various optional specifications.

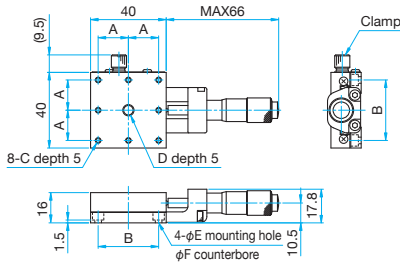
\* Installation may not be possible depending on the direction of DL.

\* C type is replacement work requires a special tool (MNS). [Reference](#) F006



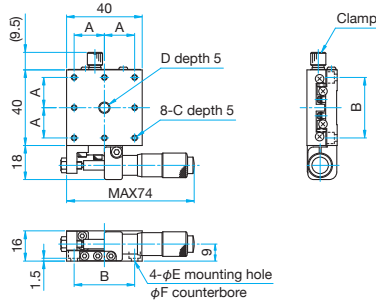
Outline Drawing

**TSD-401C/401CUU** Hexagonal socket head cap screw M3x6...4 screws  
Hexagonal socket head cap screw 6/32UNCx3/16...4 screws (UU)



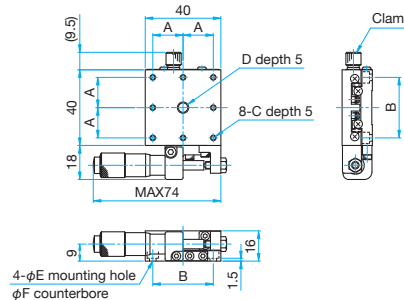
Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)
TSD-401C	16	32	M3	M6 P1	3.5	6
TSD-401CUU	15.875	31.75	6-32UNC	1/4-20UNC	4	6.5

**TSD-401S/401SUU** Hexagonal socket head cap screw M3x6...4 screws  
Hexagonal socket head cap screw 6/32UNCx3/16...4 screws (UU)



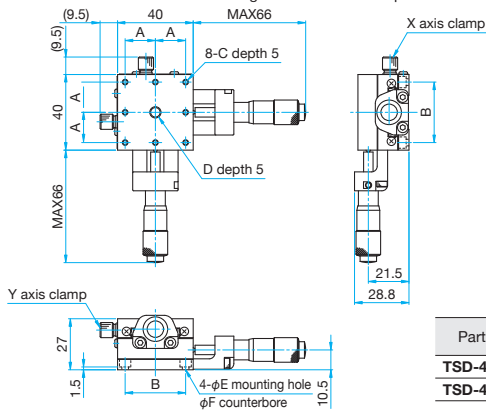
Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)
TSD-401S	16	32	M3	M6 P1	3.5	6
TSD-401SUU	15.875	31.75	6-32UNC	1/4-20UNC	4	6.5

**TSD-401SR/401SRUU** Hexagonal socket head cap screw M3x6...4 screws  
Hexagonal socket head cap screw 6/32UNCx3/16...4 screws (UU)



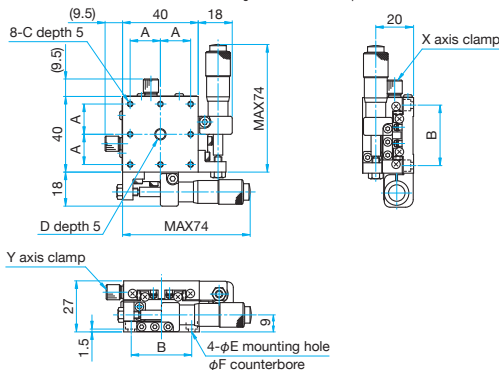
Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)
TSD-401SR	16	32	M3	M6 P1	3.5	6
TSD-401SRUU	15.875	31.75	6-32UNC	1/4-20UNC	4	6.5

**TSD-402C/402CUU** Hexagonal socket head cap screw M3x6...4 screws  
Hexagonal socket head cap screw 6/32UNCx3/16...4 screws (UU)



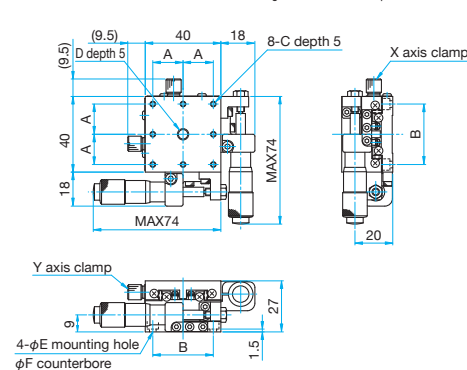
Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)
TSD-402C	16	32	M3	M6 P1	3.5	6
TSD-402CUU	15.875	31.75	6-32UNC	1/4-20UNC	4	6.5

**TSD-402S/402SUU** Hexagonal socket head cap screw M3x6...4 screws  
Hexagonal socket head cap screw 6/32UNCx3/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)
TSD-402S	16	32	M3	M6 P1	3.5	6
TSD-402SUU	15.875	31.75	6-32UNC	1/4-20UNC	4	6.5

**TSD-402SR/402SRUU** Hexagonal socket head cap screw M3x6...4 screws  
Hexagonal socket head cap screw 6/32UNCx3/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)
TSD-402SR	16	32	M3	M6 P1	3.5	6
TSD-402SRUU	15.875	31.75	6-32UNC	1/4-20UNC	4	6.5

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V Groove Screw

Ohters

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# X axis Steel Extended Contact Slide Stages

# XY axis Steel Extended Contact Slide Stages

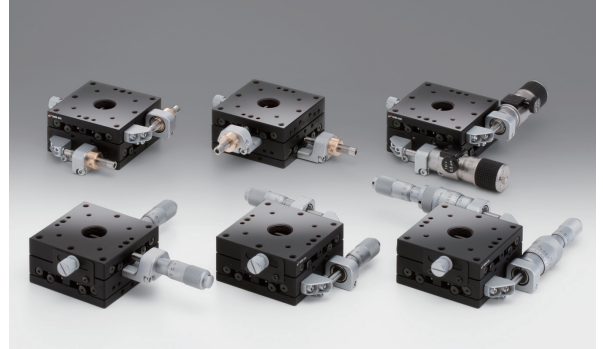
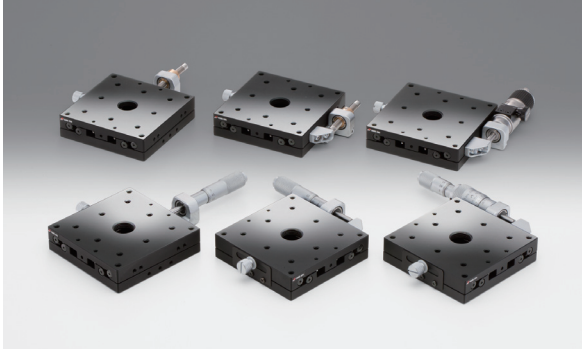
TSD-601

Stage size □60mm

RoHS

TSD-602

Hardened Steel linear stages with integrated bearing ways for superior stiffness, accuracy and durability.



## Guide

▶ Vacuum-compatible stainless steel stages (TSDS-601/602) are also available. [Reference](#) E200, 202

## Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

## Specifications

Part Number	METRIC	TSD-601C	TSD-601S	TSD-602C	TSD-602S
(Opposite Model)	METRIC	—	TSD-601SR	—	TSD-602SR
Table Size [mm]		60×60	60×60	60×60	60×60
Axes of Travel		X axis		XY axis	
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±6.5	±6.5	±6.5	±6.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		Steel			
Finish		Super black chrome			
Load Capacity [N]		343 (35.0kgf)	343 (35.0kgf)	343 (35.0kgf)	343 (35.0kgf)
Travel Accuracy	Straightness [μm]	0.5	0.5	0.5	0.5
	Pitch [ " ]	25	25	25	25
	Yaw [ " ]	15	15	15	15
Max. Moment Capacity	Pitch [N·m]	13.2	13.2	13.2	13.2
	Roll [N·m]	14.7	14.7	13.2	13.2
	Yaw [N·m]	10	10	10	10
Moment Stiffness	Pitch ["/N·cm]	0.08	0.08	0.13	0.13
	Roll ["/N·cm]	0.05	0.05	0.13	0.13
	Yaw ["/N·cm]	0.08	0.08	0.16	0.16
Parallelism [μm]		15	15	30	30
Running Parallelism [μm]		7	7	12	12
Orthogonality [μm]		—	—	10	10
Options		FP/DM/WP/DL	FP/DM/WP/DL	FP/DM/WP/DL	FP/DM/WP
Weight [kg]		0.5	0.5	0.9	0.9

## Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	<a href="#">Reference</a>
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-62540	0.25	—	E008
DM	Differential Micrometer Heads	MHF2-13F	Coars: 0.5 Fine: 0.025	Coars: 0.01 Fine: 0.0005	
WP	Sub-micron Worm Drive Micrometer Heads	WGP-13	Coars: 0.25 Fine: 0.025	Coars: 0.005 Fine: 0.0005	
DL	Differential Micrometer Heads	MDC-13	0.5	0.01	

\* Please add an option code as the part number suffix to specify various optional specifications.

\* Installation may not be possible depending on the direction of DL.

\* Replacement work requires a special tool (MNS). [Reference](#) F006

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

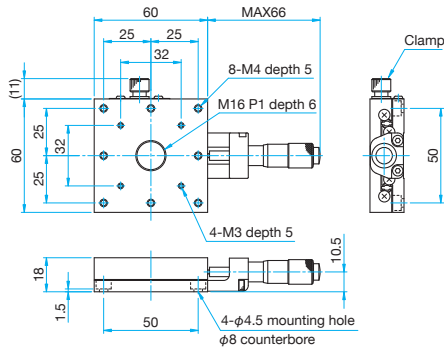
□120mm

Others

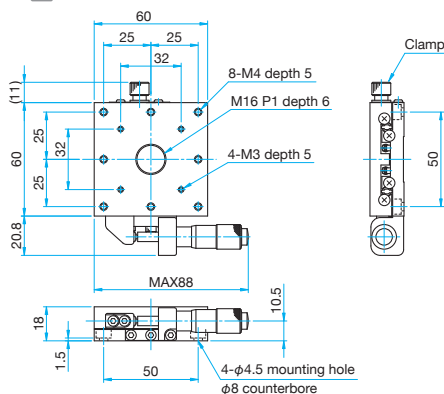


Outline Drawing

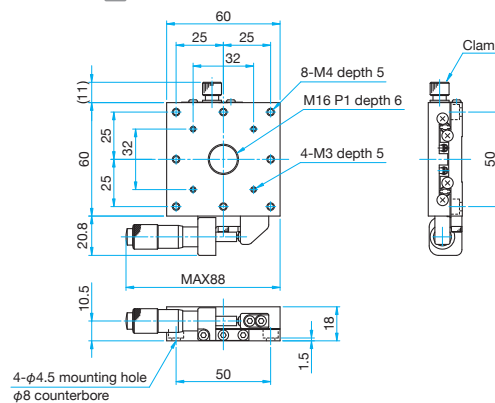
**TSD-601C** Hexagonal socket head cap screw M4x6...4 screws



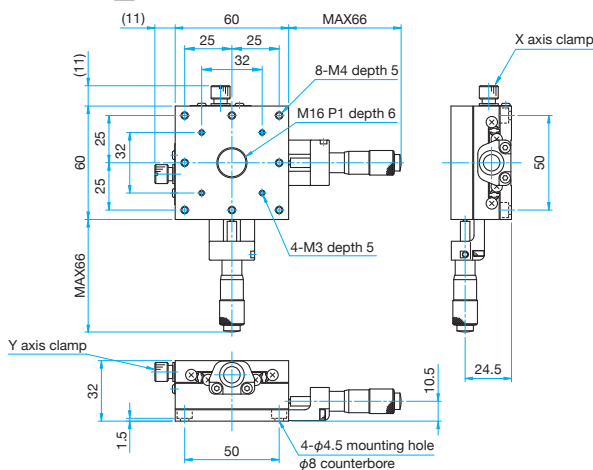
**TSD-601S** Hexagonal socket head cap screw M4x6...4 screws



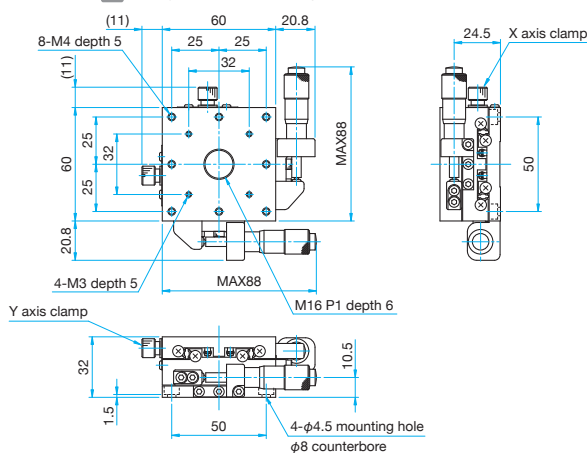
**TSD-601SR** Hexagonal socket head cap screw M4x6...4 screws



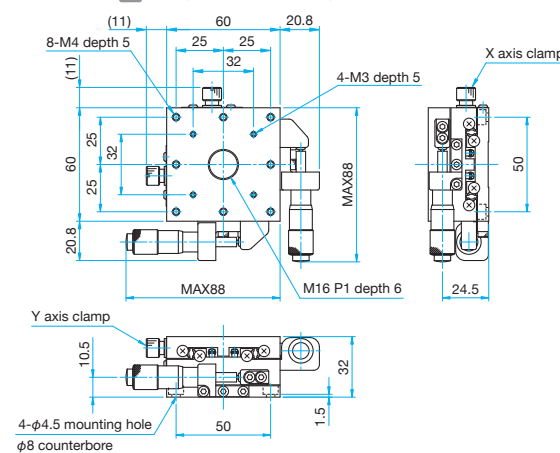
**TSD-602C** Hexagonal socket head cap screw M4x6...4 screws



**TSD-602S** Hexagonal socket head cap screw M4x6...4 screws



**TSD-602SR** Hexagonal socket head cap screw M4x6...4 screws



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Lapping

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Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

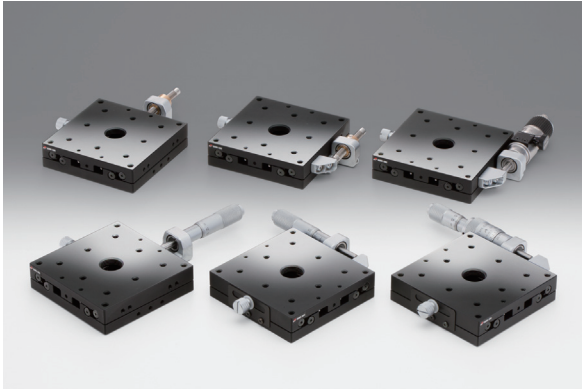
120mm

Others

# X axis Steel Extended Contact Slide Stages | TSD-651 Stage size □65mm

RoHS

Hardened Steel linear stages with integrated bearing ways for superior stiffness, accuracy and durability.



## Guide

- ▶ Vacuum-compatible stainless steel stages (TSDS-651) are also available. [Reference](#) E200
- ▶ It is used M6 size or 1/4 inch size screws for fixing this stage and on the top of the table with tapped holes.
- ▶ It is available to mount these stages directly on vibration isolation systems or laboratory benches by using holes for M6 screws or 1/4 inch screws.

## Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

## Specifications

Part Number	METRIC	TSD-651C-M6	TSD-651S-M6	TSD-651C25-M6	TSD-651S25-M6
	INCH	TSD-651CUU	TSD-651SUU	TSD-651C25UU	TSD-651S25UU
(Opposite Model)	METRIC	—	TSD-651SR-M6	—	—
Guide	INCH	—	TSD-651SRUU	—	—
Table Size [mm]		65×65	65×65	65×65	65×65
Axes of Travel		X axis			
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±6.5	±6.5	±12.5	±12.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		Steel			
Finish		Super black chrome			
Load Capacity [N]		294 (30.0kgf)	294 (30.0kgf)	294 (30.0kgf)	294 (30.0kgf)
Travel Accuracy	Straightness [μm]	0.5	0.5	0.5	0.5
	Pitch [ ″ ]	25	25	25	25
	Yaw [ ″ ]	15	15	15	15
Max. Moment Capacity	Pitch [N·m]	13.2	13.2	13.2	13.2
	Roll [N·m]	14.7	14.7	14.7	14.7
	Yaw [N·m]	10	10	10	10
Moment Stiffness	Pitch [°/N·cm]	0.08	0.08	0.08	0.08
	Roll [°/N·cm]	0.05	0.05	0.05	0.05
	Yaw [°/N·cm]	0.08	0.08	0.08	0.08
Parallelism [μm]		15	15	15	15
Running Parallelism [μm]		7	7	7	7
Options		FP <sup>1</sup> /DM/WP/DL	FP <sup>1</sup> /DM/WP/DL	FP <sup>2</sup>	FP <sup>2</sup>
Weight [kg]		0.6	0.6	0.6	0.6

## Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	<a href="#">Reference</a>
	Products Name	Part Number			
<b>FP</b>	Fine-pitch Screw Adjusters	FPSA-62540 <sup>1</sup> FPSA-62550 <sup>2</sup>	0.25	—	E008
<b>DM</b>	Differential Micrometer Heads	MHF2-13F	Coars: 0.5 Fine: 0.025	Coars: 0.01 Fine: 0.0005	
<b>WP</b>	Sub-micron Worm Drive Micrometer Heads	WGP-13	Coars: 0.25 Fine: 0.025	Coars: 0.005 Fine: 0.0005	
<b>DL</b>	Differential Micrometer Heads	MDC-13	0.5	0.01	

\* Please add an option code as the part number suffix to specify various optional specifications.

\* Installation may not be possible depending on the direction of DL.

\* Replacement work requires a special tool (MNS). [Reference](#) F006

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

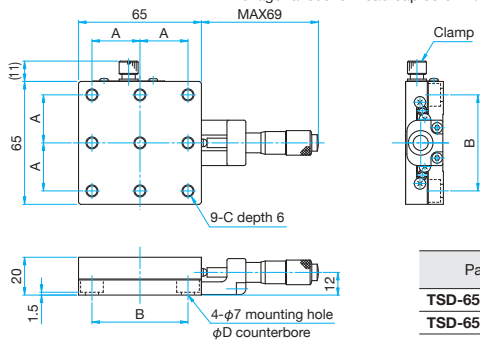
Others





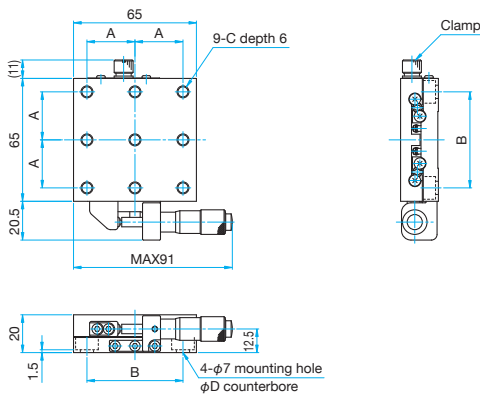
**Outline Drawing**

**TSD-651C-M6/651CUU** Hexagonal socket head cap screw M6×6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNC×1/4...4 screws (UU)



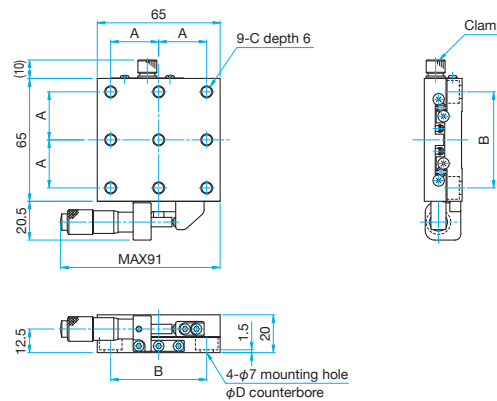
Part Number	A (mm)	B (mm)	C	D (mm)
<b>TSD-651C-M6</b>	25	50	M6 P1	11
<b>TSD-651CUU</b>	25.4	50.8	1/4-20UNC	12

**TSD-651S-M6/651SUU** Hexagonal socket head cap screw M6×6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNC×1/4...4 screws (UU)



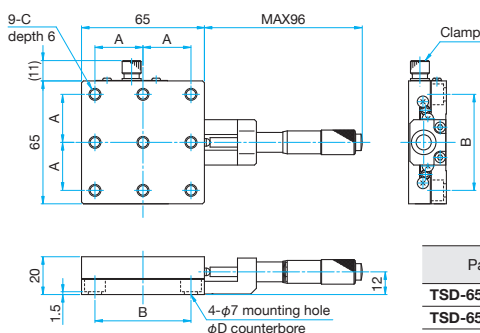
Part Number	A (mm)	B (mm)	C	D (mm)
<b>TSD-651S-M6</b>	25	50	M6 P1	11
<b>TSD-651SUU</b>	25.4	50.8	1/4-20UNC	12

**TSD-651SR-M6/651SRUU** Hexagonal socket head cap screw M6×6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNC×1/4...4 screws (UU)



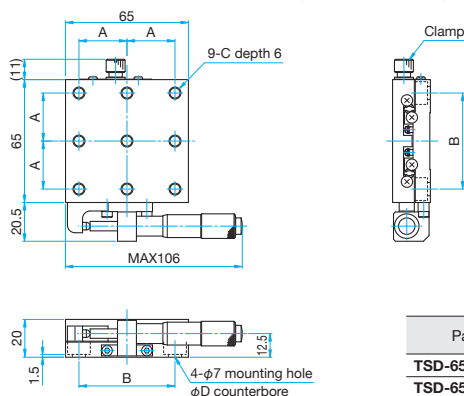
Part Number	A (mm)	B (mm)	C	D (mm)
<b>TSD-651SR-M6</b>	25	50	M6 P1	11
<b>TSD-651SRUU</b>	25.4	50.8	1/4-20UNC	12

**TSD-651C25-M6/651C25UU** Hexagonal socket head cap screw M6×6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNC×1/4...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
<b>TSD-651C25-M6</b>	25	50	M6 P1	11
<b>TSD-651C25UU</b>	25.4	50.8	1/4-20UNC	12

**TSD-651S25-M6/651S25UU** Hexagonal socket head cap screw M6×6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNC×1/4...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
<b>TSD-651S25-M6</b>	25	50	M6 P1	11
<b>TSD-651S25UU</b>	25.4	50.8	1/4-20UNC	12

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Lapping

V Groove Screw

Ohters

15mm

25mm

40mm

60mm

65mm

80mm

100mm

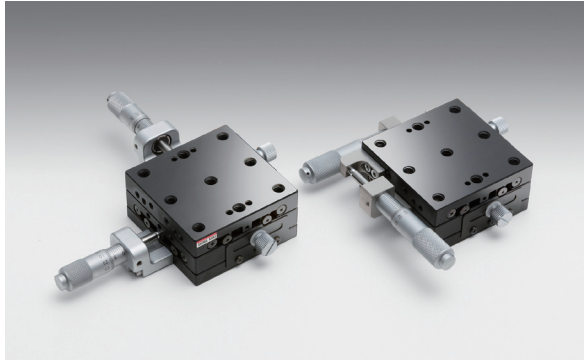
120mm

Others

## XY axis Steel Extended Contact Slide Stages | TSD-652 Stage size □65mm

RoHS

Hardened Steel linear stages with integrated bearing ways for superior stiffness, accuracy and durability.



## Guide

- ▶ Vacuum-compatible stainless steel stages (TSDS-652) are also available. [Reference](#) E202
- ▶ It is used M6 size or 1/4 inch size screws for fixing this stage and on the top of the table with tapped holes.
- ▶ It is available to mount these stages directly on vibration isolation systems or laboratory benches by using holes for M6 screws or 1/4 inch screws.

## Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

## Specifications

Part Number	METRIC	TSD-652C-M6	TSD-652S-M6	TSD-652C25-M6	TSD-652S25-M6
	INCH	TSD-652CUU	TSD-652SUU	TSD-652C25UU	TSD-652S25UU
(Opposite Model)	METRIC	—	TSD-652SR-M6	—	—
	INCH	—	TSD-652SRUU	—	—
Table Size [mm]		65×65	65×65	65×65	65×65
Axes of Travel		XY axis			
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±6.5	±6.5	±12.5	±12.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		Steel			
Finish		Super black chrome			
Load Capacity [N]		294 (30.0kgf)	294 (30.0kgf)	294 (30.0kgf)	294 (30.0kgf)
Travel Accuracy	Straightness [μm]	0.5	0.5	0.5	0.5
	Pitch [ ″ ]	25	25	25	25
	Yaw [ ″ ]	15	15	15	15
Max. Moment Capacity	Pitch [N·m]	13.2	13.2	13.2	13.2
	Roll [N·m]	13.2	13.2	13.2	13.2
	Yaw [N·m]	10	10	10	10
Moment Stiffness	Pitch [ ″/N·cm]	0.13	0.13	0.13	0.13
	Roll [ ″/N·cm]	0.13	0.13	0.13	0.13
	Yaw [ ″/N·cm]	0.16	0.16	0.16	0.16
Parallelism [μm]		30	30	30	30
Running Parallelism [μm]		12	12	12	12
Orthogonality [μm]		10	10	10	10
Options		FP <sup>1</sup> /DM/WP/DL	FP <sup>1</sup> /DM/WP	FP <sup>2</sup>	FP <sup>2</sup>
Weight [kg]		0.9	0.9	0.9	0.9

## Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	<a href="#">Reference</a>
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-62540 <sup>1</sup> FPSA-62550 <sup>2</sup>	0.25	—	E008
DM	Differential Micrometer Heads	MHF2-13F	Coars: 0.5 Fine: 0.025	Coars: 0.01 Fine: 0.0005	
WP	Sub-micron Worm Drive Micrometer Heads	WGP-13	Coars: 0.25 Fine: 0.025	Coars: 0.005 Fine: 0.0005	
DL	Differential Micrometer Heads	MDC-13	0.5	0.01	

\* Please add an option code as the part number suffix to specify various optional specifications.

\* Installation may not be possible depending on the direction of DL.

\* Replacement work requires a special tool (MNS). [Reference](#) F006

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

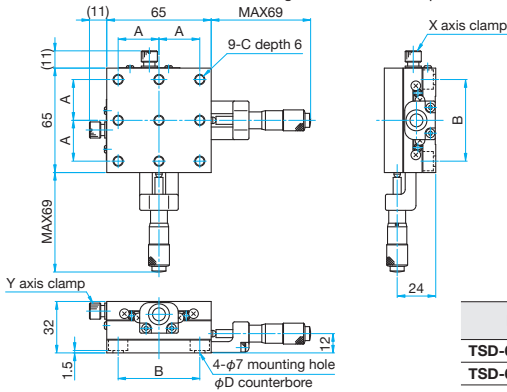
□120mm

Others



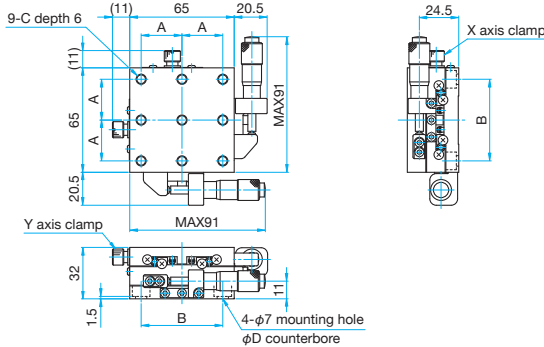
**Outline Drawing**

**TSD-652C-M6/652CUU** Hexagonal socket head cap screw M6x6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



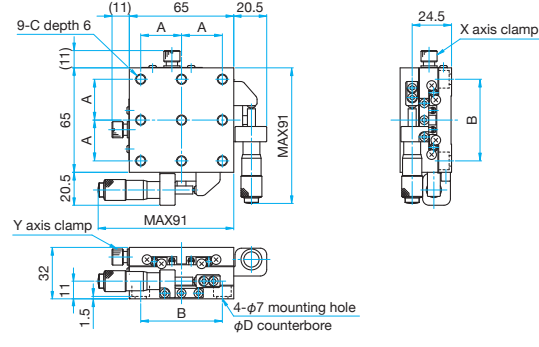
Part Number	A (mm)	B (mm)	C	D (mm)
<b>TSD-652C-M6</b>	25	50	M6 P1	11
<b>TSD-652CUU</b>	25.4	50.8	1/4-20UNC	12

**TSD-652S-M6/652SUU** Hexagonal socket head cap screw M6x6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



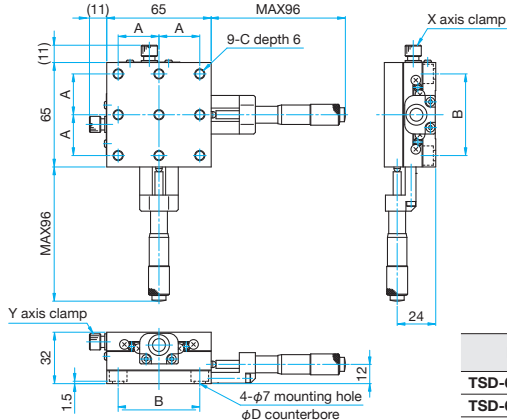
Part Number	A (mm)	B (mm)	C	D (mm)
<b>TSD-652S-M6</b>	25	50	M6 P1	11
<b>TSD-652SUU</b>	25.4	50.8	1/4-20UNC	12

**TSD-652SR-M6/652SRUU** Hexagonal socket head cap screw M6x6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



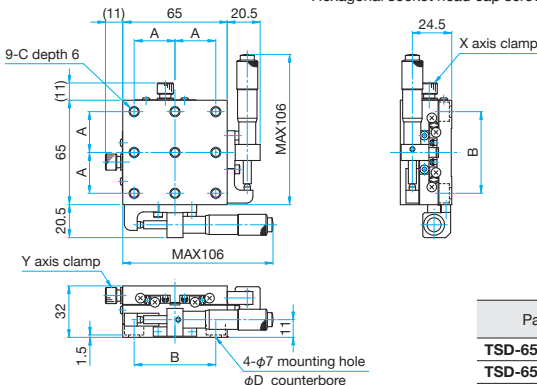
Part Number	A (mm)	B (mm)	C	D (mm)
<b>TSD-652SR-M6</b>	25	50	M6 P1	11
<b>TSD-652SRUU</b>	25.4	50.8	1/4-20UNC	12

**TSD-652C25-M6/652C25UU** Hexagonal socket head cap screw M6x6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
<b>TSD-652C25-M6</b>	25	50	M6 P1	11
<b>TSD-652C25UU</b>	25.4	50.8	1/4-20UNC	12

**TSD-652S25-M6/652S25UU** Hexagonal socket head cap screw M6x6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
<b>TSD-652S25-M6</b>	25	50	M6 P1	11
<b>TSD-652S25UU</b>	25.4	50.8	1/4-20UNC	12

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Ohters

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# X axis Steel Extended Contact Slide Stages

# XY axis Steel Extended Contact Slide Stages

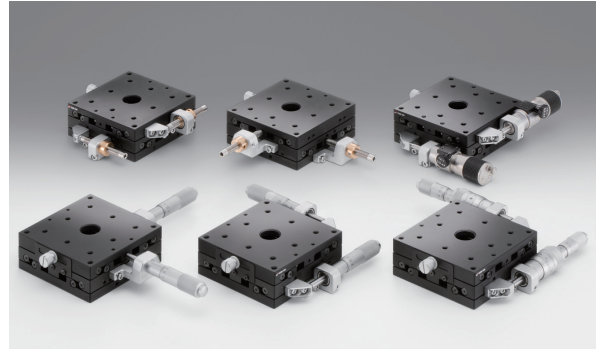
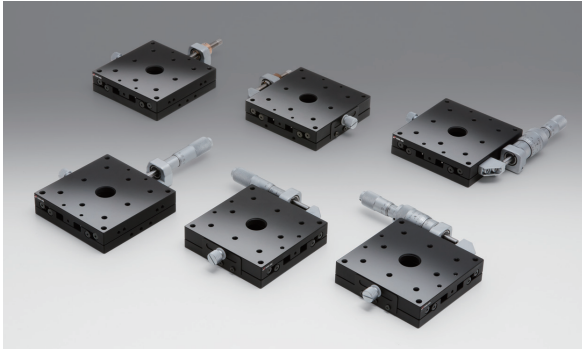
TSD-801

Stage size □80mm

RoHS

TSD-802

Hardened Steel linear stages with integrated bearing ways for superior stiffness, accuracy and durability.



### Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

### Specifications

Part Number	METRIC	TSD-801C	TSD-801S	TSD-802C	TSD-802S
(Opposite Model)	METRIC	—	TSD-801SR	—	TSD-802SR
Table Size [mm]		80×80	80×80	80×80	80×80
Axes of Travel		X axis		XY axis	
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±12.5	±12.5	±12.5	±12.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		Steel			
Finish		Super black chrome			
Load Capacity [N]		490 (50.0kgf)	490 (50.0kgf)	490 (50.0kgf)	490 (50.0kgf)
Travel Accuracy	Straightness [μm]	0.5	0.5	0.5	0.5
	Pitch [ ″ ]	25	25	25	25
	Yaw [ ″ ]	15	15	15	15
Max. Moment Capacity	Pitch [N·m]	19.4	19.4	19.4	19.4
	Roll [N·m]	21.5	21.5	19.4	19.4
	Yaw [N·m]	19.5	19.5	19.5	19.5
Moment Stiffness	Pitch [°/N·cm]	0.04	0.04	0.06	0.06
	Roll [°/N·cm]	0.02	0.02	0.06	0.06
	Yaw [°/N·cm]	0.04	0.04	0.08	0.08
Parallelism [μm]		20	20	40	40
Running Parallelism [μm]		7	7	15	15
Orthogonality [μm]		—	—	10	10
Options		FP/DM/WP	FP/DM/WP	FP/DM/WP	FP/DM/WP
Weight [kg]		0.9	0.9	1.4	1.4

### Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
<b>FP</b>	Fine-pitch Screw Adjusters	<b>FPSA-62550</b>	0.25	—	E008
<b>DM</b>	Differential Micrometer Heads	<b>MHF2-13F</b>	Coars: 0.5 Fine: 0.025	Coars: 0.01 Fine: 0.0005	
<b>WP</b>	Sub-micron Worm Drive Micrometer Heads	<b>WGP-13</b>	Coars: 0.25 Fine: 0.025	Coars: 0.005 Fine: 0.0005	

\* Please add an option code as the part number suffix to specify various optional specifications.

\* The travel of DM and WP is ±6.5 mm.

\* Replacement work requires a special tool (MNS). [Reference](#) F006

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Dovetail

Lapping

V Groove Screw

Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

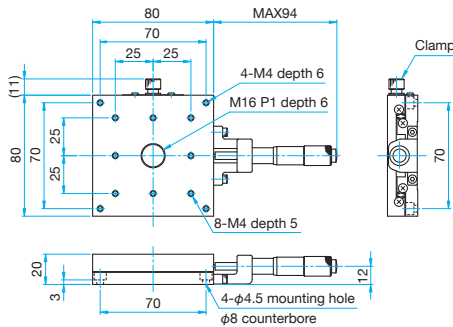
□120mm

Others

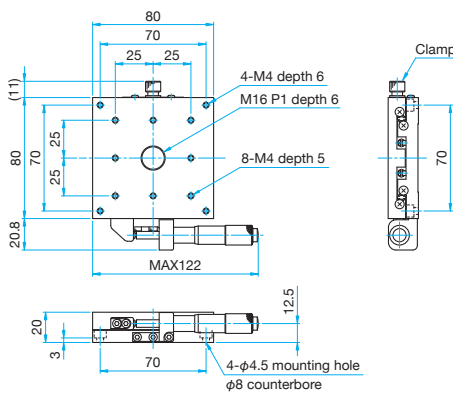


Outline Drawing

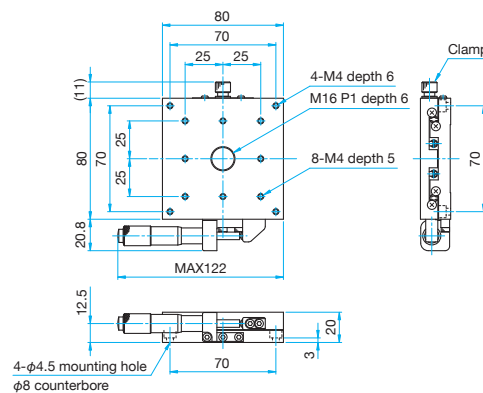
**TSD-801C** Hexagonal socket head cap screw M4x8...4 screws



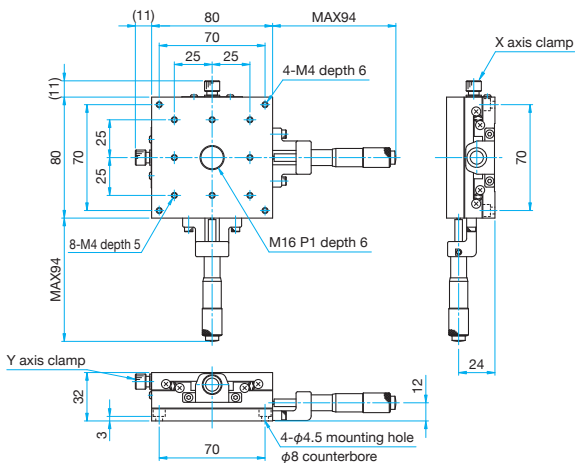
**TSD-801S** Hexagonal socket head cap screw M4x8...4 screws



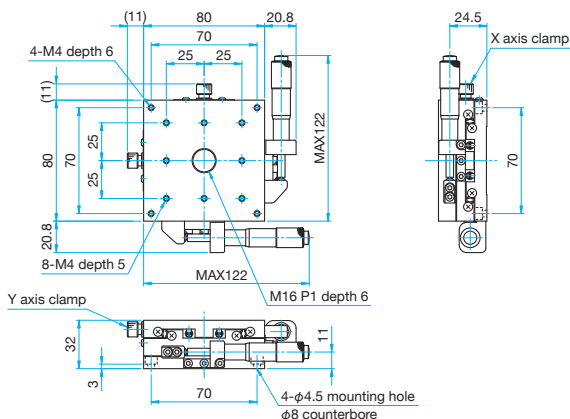
**TSD-801SR** Hexagonal socket head cap screw M4x8...4 screws



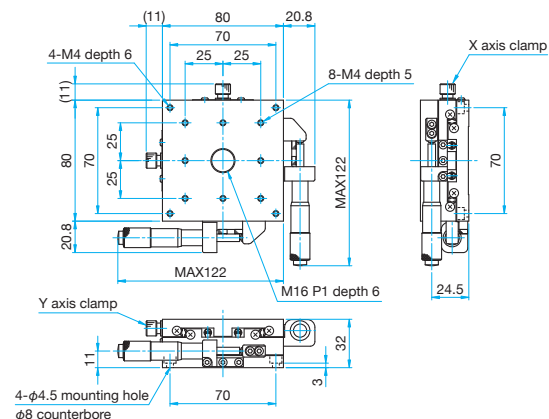
**TSD-802C** Hexagonal socket head cap screw M4x8...4 screws



**TSD-802S** Hexagonal socket head cap screw M4x8...4 screws



**TSD-802SR** Hexagonal socket head cap screw M4x8...4 screws



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Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

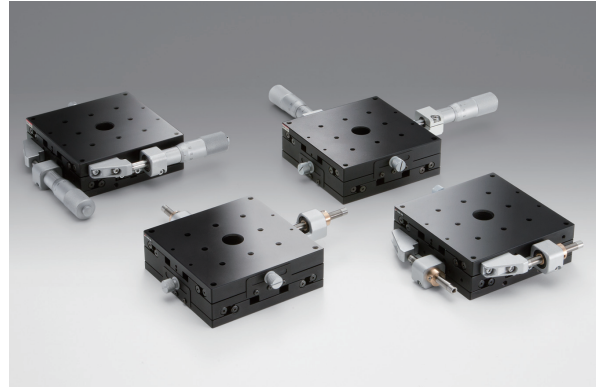
# X axis Steel Extended Contact Slide Stages

# XY axis Steel Extended Contact Slide Stages

TSD-1001 Stage size □100mm  
TSD-1002

RoHS

Hardened Steel linear stages with integrated bearing ways for superior stiffness, accuracy and durability.



### Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

### Specifications

Part Number	METRIC	TSD-1001C	TSD-1001S	TSD-1002C	TSD-1002S
(Opposite Model)	METRIC	—	TSD-1001SR	—	TSD-1002SR
Table Size [mm]		100×100	100×100	100×100	100×100
Axes of Travel		X axis		XY axis	
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±12.5	±12.5	±12.5	±12.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		Steel			
Finish		Super black chrome			
Load Capacity [N]		588 (60.0kgf)	588 (60.0kgf)	588 (60.0kgf)	588 (60.0kgf)
Travel Accuracy	Straightness [μm]	0.5	0.5	0.5	0.5
	Pitch [ ″ ]	25	25	25	25
	Yaw [ ″ ]	15	15	15	15
Max. Moment Capacity	Pitch [N·m]	35.0	35.0	35.0	35.0
	Roll [N·m]	41.7	41.7	35.0	35.0
	Yaw [N·m]	32.0	32.0	32.0	32.0
Moment Stiffness	Pitch [ ″/N·cm]	0.02	0.02	0.03	0.03
	Roll [ ″/N·cm]	0.01	0.01	0.03	0.03
	Yaw [ ″/N·cm]	0.02	0.02	0.04	0.04
Parallelism [μm]		20	20	40	40
Running Parallelism [μm]		8	8	15	15
Orthogonality [μm]		—	—	10	10
Options		FP/DG	FP	FP/DG	FP
Weight [kg]		1.5	1.5	2.6	2.6

### Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-62550	0.25	—	E008
DG	Micrometer Heads (Digital display)	MHN2-25DM	0.5	0.001	

- \* Please add an option code as the part number suffix to specify various optional specifications.
- \* DG is a digital display type. [Reference](#) F005
- \* Replacement work requires a special tool (MNS). [Reference](#) F006

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

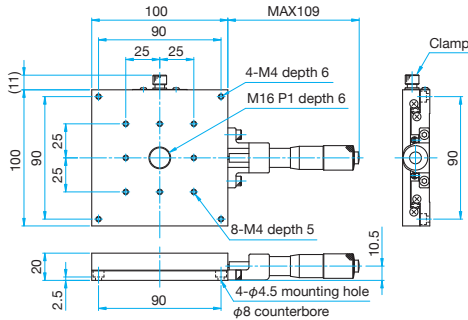
□120mm

Others

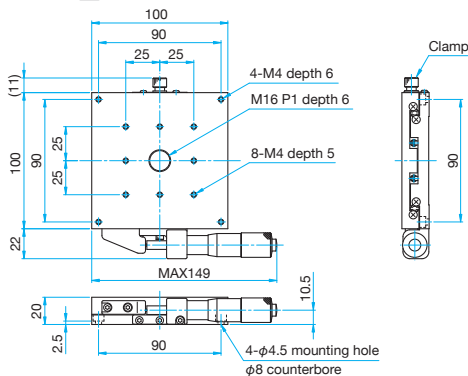


Outline Drawing

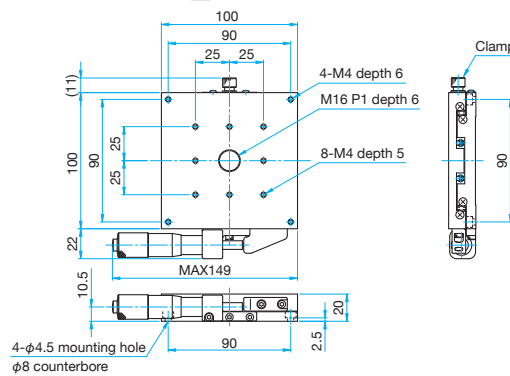
**TSD-1001C** Hexagonal socket head cap screw M4x8...4 screws



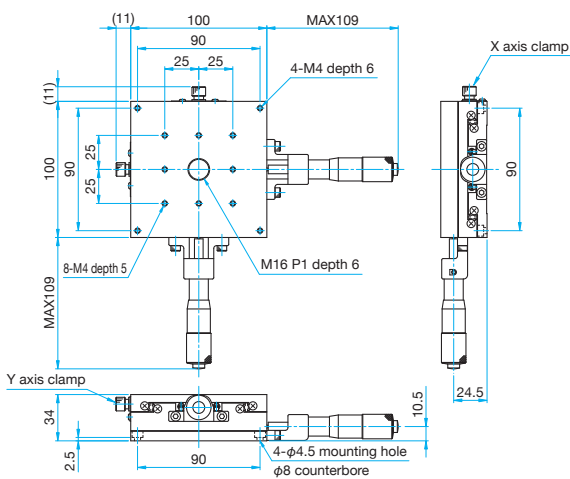
**TSD-1001S** Hexagonal socket head cap screw M4x8...4 screws



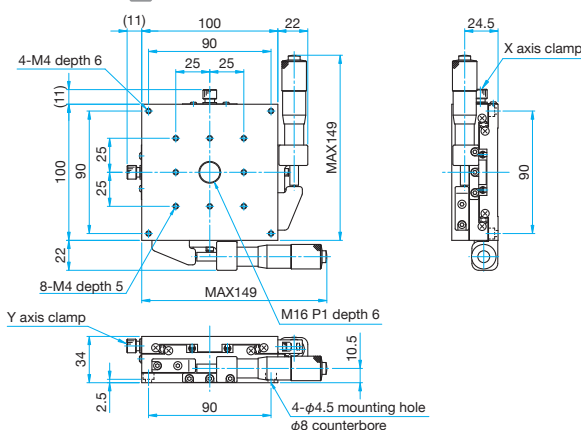
**TSD-1001SR** Hexagonal socket head cap screw M4x8...4 screws



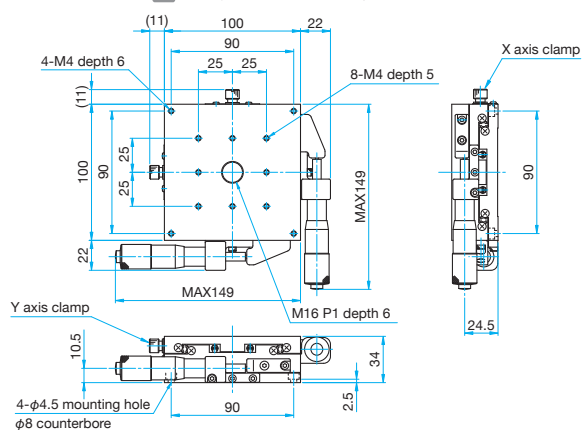
**TSD-1002C** Hexagonal socket head cap screw M4x8...4 screws



**TSD-1002S** Hexagonal socket head cap screw M4x8...4 screws



**TSD-1002SR** Hexagonal socket head cap screw M4x8...4 screws



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Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

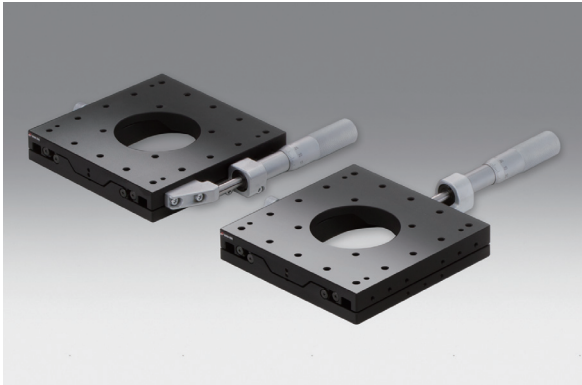
Others

## X axis Steel Extended Contact Slide Stages (Filtered) | TSD-1201 Stage size □120mm

RoHS

**Hardened Steel linear stages with integrated bearing ways for superior stiffness, accuracy and durability.**

- The clearance hole ( $\phi 56$ ) retains it full aperture over the full travel range.



#### Guide

- ▶ It is used M6 size or 1/4 inch size screws for fixing this stage and on the top of the table with tapped holes.
- ▶ The M6 type can mount directly on M6 specification vibration isolation systems and laboratory benches.
- ▶ The suffix "UU" type is able to mount directly on vibration isolation systems or laboratory benches by using holes for M6 screws or 1/4 inch screws.

#### Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

Others

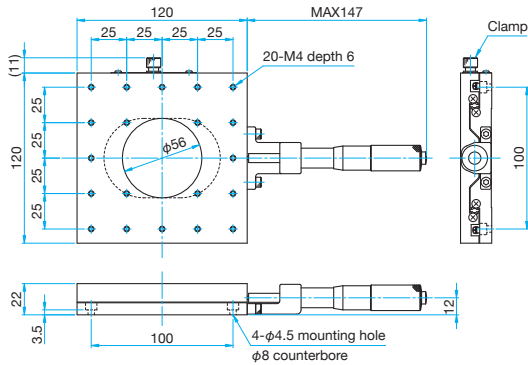
Specifications					
Part Number	METRIC	TSD-1201CH	TSD-1201SH	TSD-1201CH-M6	TSD-1201SH-M6
	INCH	—	—	TSD-1201CHUU	TSD-1201SHUU
(Opposite Model)	METRIC	—	TSD-1201SRH	—	TSD-1201SRH-M6
	INCH	—	—	—	TSD-1201SRHUU
Table Size [mm]		120×120	120×120	120×120	120×120
Axes of Travel		X axis			
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±20	±20	±20	±20
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		Steel			
Finish		Super black chrome			
Load Capacity [N]		686 (70.0kgf)	686 (70.0kgf)	686 (70.0kgf)	686 (70.0kgf)
Travel Accuracy	Straightness [ $\mu\text{m}$ ]	0.5	0.5	0.5	0.5
	Pitch [ $''$ ]	25	25	25	25
	Yaw [ $''$ ]	15	15	15	15
Max. Moment Capacity	Pitch [N·m]	53.9	53.9	53.9	53.9
	Roll [N·m]	49.0	49.0	49.0	49.0
	Yaw [N·m]	27.0	27.0	27.0	27.0
Moment Stiffness	Pitch [ $''$ /N·cm]	0.03	0.03	0.03	0.03
	Roll [ $''$ /N·cm]	0.02	0.02	0.02	0.02
	Yaw [ $''$ /N·cm]	0.03	0.03	0.03	0.03
Parallelism [ $\mu\text{m}$ ]		50	50	50	50
Running Parallelism [ $\mu\text{m}$ ]		12	12	12	12
Weight [kg]		2.0	2.0	2.0	2.0



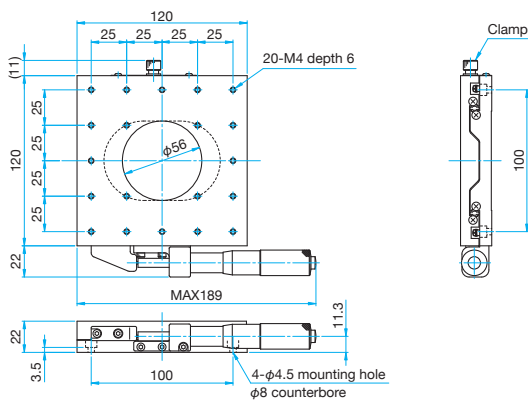


Outline Drawing

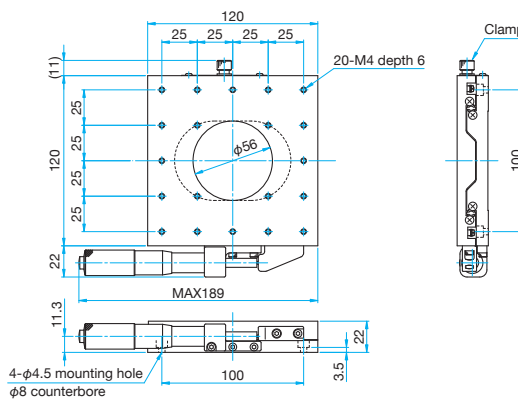
**TSD-1201CH** Hexagonal socket head cap screw M4x8...4 screws



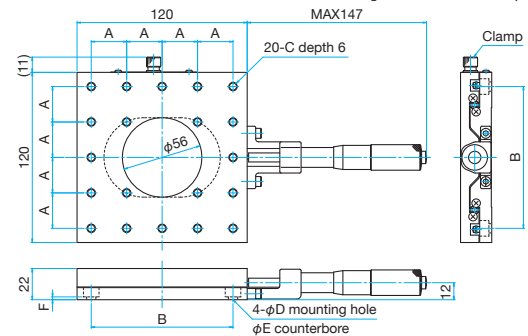
**TSD-1201SH** Hexagonal socket head cap screw M4x8...4 screws



**TSD-1201SRH** Hexagonal socket head cap screw M4x8...4 screws

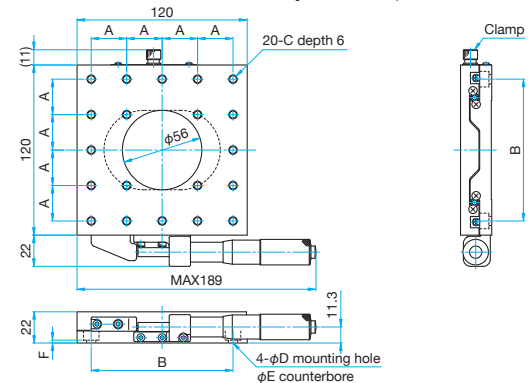


**TSD-1201CH-M6/1201CHUU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx5/16...4 screws (UU)



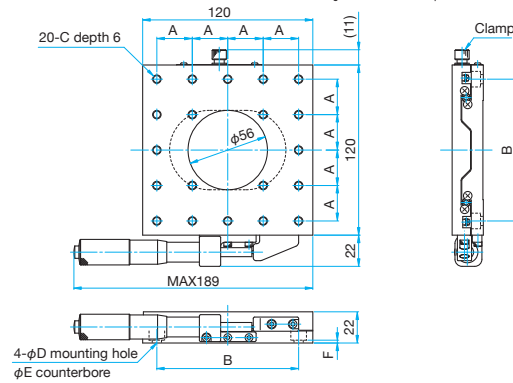
Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-1201CH-M6	25	100	M6 P1	6.5	11
TSD-1201CHUU	25.4	101.6	1/4-20UNC	7	12

**TSD-1201SH-M6/1201SHUU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx5/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-1201SH-M6	25	100	M6 P1	6.5	11
TSD-1201SHUU	25.4	101.6	1/4-20UNC	7	12

**TSD-1201SRH-M6/1201SRHUU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx5/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-1201SRH-M6	25	100	M6 P1	6.5	11
TSD-1201SRHUU	25.4	101.6	1/4-20UNC	7	12

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Dovetail

Lapping

V Groove Screw

Ohters

15mm

25mm

40mm

60mm

65mm

80mm

100mm

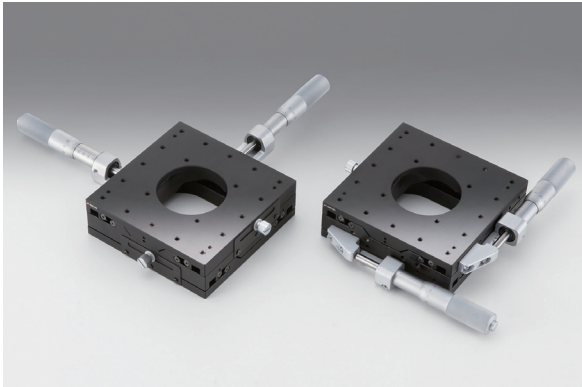
Others

## XY axis Steel Extended Contact Slide Stages (Filtered) | TSD-1202 Stage size □120mm

RoHS

**Hardened Steel linear stages with integrated bearing ways for superior stiffness, accuracy and durability.**

- The clearance hole ( $\phi 56$ ) retains its full aperture over the full travel range.



#### Guide

- ▶ It is used with M6 size or 1/4 inch size screws for fixing this stage and on the top of the table with tapped holes.
- ▶ The M6 type can mount directly on M6 specification vibration isolation systems and laboratory benches.
- ▶ The suffix "UU" type is able to mount directly on vibration isolation systems or laboratory benches by using holes for M6 screws or 1/4 inch screws.

#### Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

### Specifications

Part Number	METRIC	TSD-1202CH	TSD-1202SH	TSD-1202CH-M6	TSD-1202SH-M6
	INCH	—	—	TSD-1202CHUU	TSD-1202SHUU
(Opposite Model)	METRIC	—	TSD-1202SRH	—	TSD-1202SRH-M6
	INCH	—	—	—	TSD-1201SRHUU
Table Size [mm]		120×120	120×120	120×120	120×120
Axes of Travel		XY axis			
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±20	±20	±20	±20
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		Steel			
Finish		Super black chrome			
Load Capacity [N]		686 (70.0kgf)	686 (70.0kgf)	686 (70.0kgf)	686 (70.0kgf)
Travel Accuracy	Straightness [ $\mu\text{m}$ ]	0.5	0.5	0.5	0.5
	Pitch [ $''$ ]	25	25	25	25
	Yaw [ $''$ ]	15	15	15	15
Max. Moment Capacity	Pitch [N·m]	49.0	49.0	49.0	49.0
	Roll [N·m]	49.0	49.0	49.0	49.0
	Yaw [N·m]	27.0	27.0	27.0	27.0
Moment Stiffness	Pitch [ $''$ /N·cm ]	0.05	0.05	0.05	0.05
	Roll [ $''$ /N·cm ]	0.05	0.05	0.05	0.05
	Yaw [ $''$ /N·cm ]	0.06	0.06	0.06	0.06
Parallelism [ $\mu\text{m}$ ]		50	50	50	50
Running Parallelism [ $\mu\text{m}$ ]		25	25	25	25
Orthogonality [ $\mu\text{m}$ ]		10	10	10	10
Weight [kg]		3.1	3.1	3.1	3.1

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

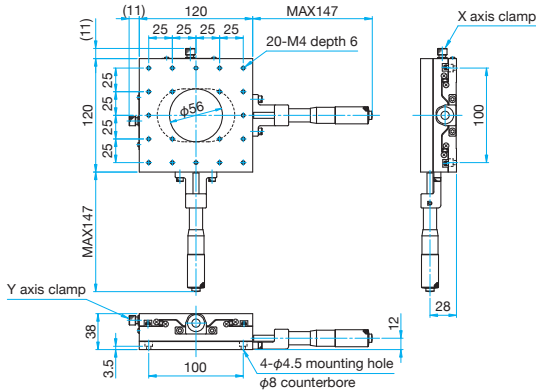
□120mm

Others

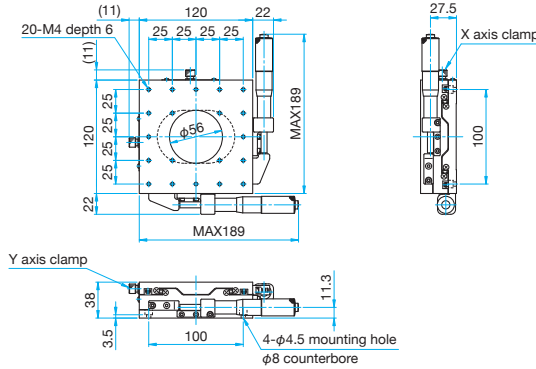


Outline Drawing

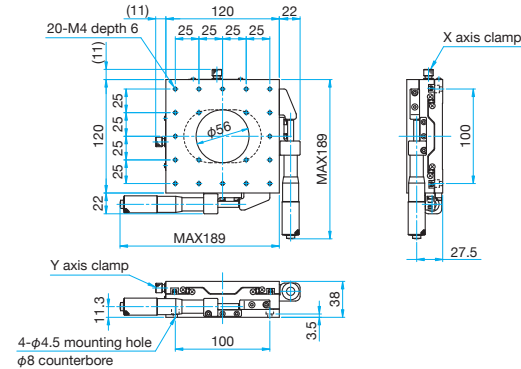
**TSD-1202CH** Hexagonal socket head cap screw M4x8...4 screws



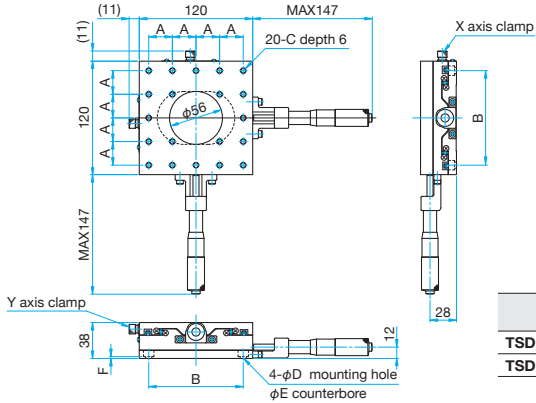
**TSD-1202SH** Hexagonal socket head cap screw M4x8...4 screws



**TSD-1202SRH** Hexagonal socket head cap screw M4x8...4 screws

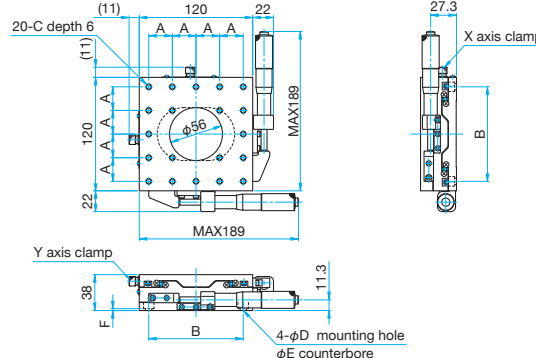


**TSD-1202CH-M6/1202CHUU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx5/16...4 screws (UU)



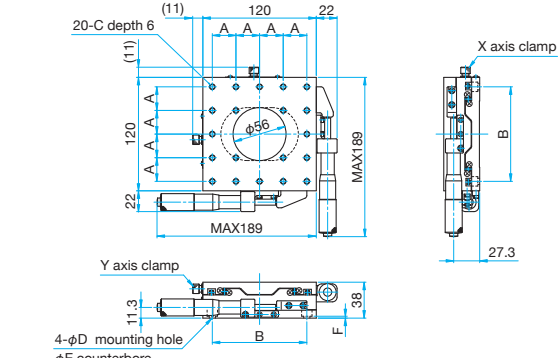
Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-1202CH-M6	25	100	M6 P1	6.5	11
TSD-1202CHUU	25.4	101.6	1/4-20UNC	7	12

**TSD-1202SH-M6/1202SHUU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx5/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-1202SH-M6	25	100	M6 P1	6.5	11
TSD-1202SHUU	25.4	101.6	1/4-20UNC	7	12

**TSD-1202SRH-M6/1202SRHUU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx5/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-1202SRH-M6	25	100	M6 P1	6.5	11
TSD-1202SRHUU	25.4	101.6	1/4-20UNC	7	12

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Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# X axis Steel Extended Contact Slide Stages

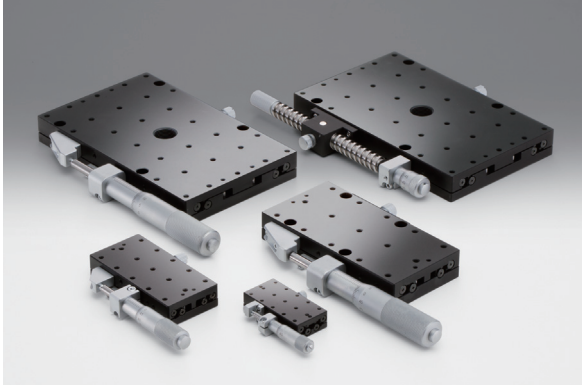
## X axis Steel Extended Contact Slide Stages (Coarse/Fine Movement)

TSD  
TSD-SDM

RoHS

**Hardened Steel linear stages with integrated bearing ways for superior stiffness, accuracy and durability.**

- The rectangular shape minimizes the footprint while providing longer travel.
- The coarse/fine movement type uses a 5mm lead screw, enabling fast coarse adjustments. Fine adjustments can then be made using the opposing micrometer.



### Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

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V Groove Screw

Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

Others

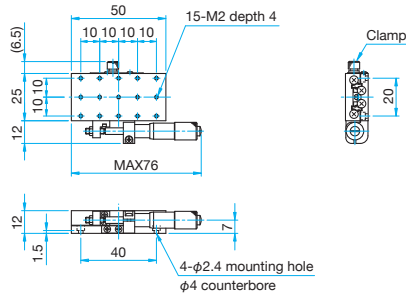
### Specifications

Part Number	METRIC	TSD-25501S	TSD-40801S	TSD-60121S	TSD-60161SDM
	INCH	—	TSD-40801SUU	—	—
(Opposite Model)	METRIC	TSD-25501SR	TSD-40801SR	TSD-60121SR	—
Table Size [mm]		25×50	40×80	60×120	60×160
Axes of Travel		X axis			
Micrometer Position		Side	Side	Side	Side
Travel [mm]		±6.5	±12.5	±20	Coars: ±35 Fine: ±3
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	Coars: 5 Fine: 0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	Coars: — Fine: 0.01
Bearing type		Extended contact ball guide			
Primary Material		Steel			
Finish		Super black chrome			
Load Capacity [N]		49 (5.0kgf)	196 (20.0kgf)	392 (40.0kgf)	490 (50.0kgf)
Travel Accuracy	Straightness [μm]	1	1	1	1
	Pitch [ ′ ]	30	30	25	25
	Yaw [ ′ ]	25	30	15	15
Max. Moment Capacity	Pitch [N·m]	3.9	7.9	19.6	29.4
	Roll [N·m]	2.5	3.9	9.8	9.8
	Yaw [N·m]	2.0	4.9	9.8	14.7
Moment Stiffness	Pitch [ ′/N·cm]	1.2	0.2	0.1	0.07
	Roll [ ′/N·cm]	1.6	0.3	0.2	0.2
	Yaw [ ′/N·cm]	1.2	0.2	0.1	0.09
Parallelism [μm]		30	30	50	50
Running Parallelism [μm]		10	10	12	15
Weight [kg]		0.1	0.4	1.0	1.3

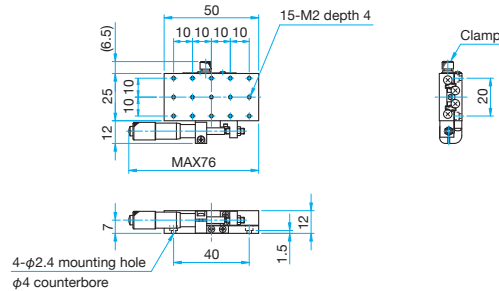


Outline Drawing

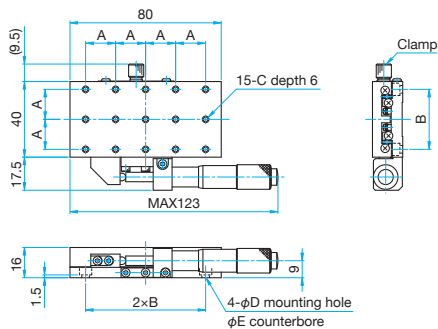
**TSD-25501S** Hexagonal socket head cap screw M2x4...4 screws



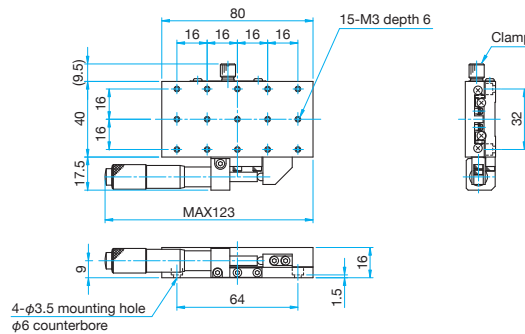
**TSD-25501SR** Hexagonal socket head cap screw M2x4...4 screws



**TSD-40801S/40801SUU** Hexagonal socket head cap screw M3x6...4 screws, Spring washers

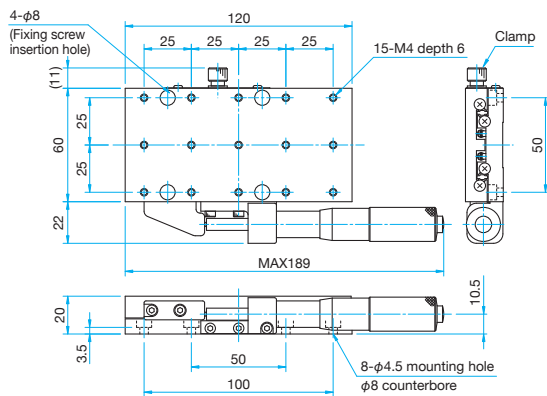


**TSD-40801SR** Hexagonal socket head cap screw M3x6...4 screws, Spring washers

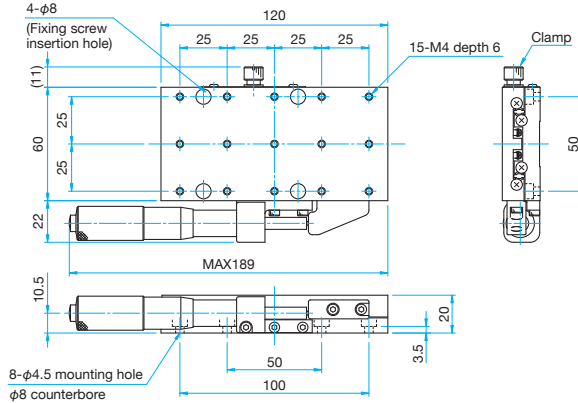


Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-40801S	16	32	M3	3.5	6
TSD-40801SUU	15.875	31.75	6-32UNC	4	6.5

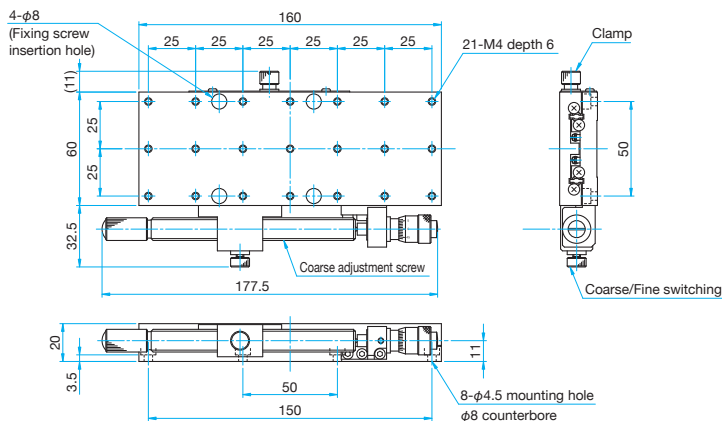
**TSD-60121S** Hexagonal socket head cap screw M4x8...4 screws



**TSD-60121SR** Hexagonal socket head cap screw M4x8...4 screws



**TSD-60161SDM** Hexagonal socket head cap screw M4x8...4 screws



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Lapping

V Groove Screw

Others

- 15mm
- 25mm
- 40mm
- 60mm
- 65mm
- 80mm
- 100mm
- 120mm
- Others

# X axis Steel Extended Contact Slide Stages

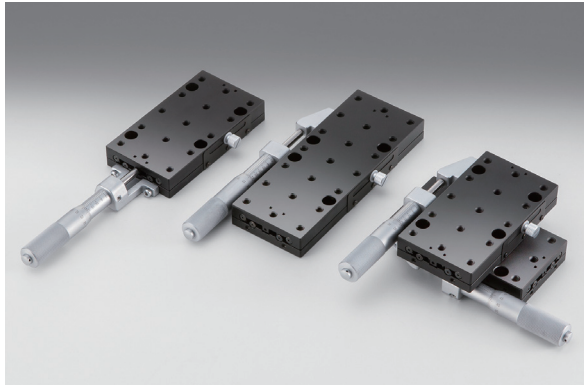
# XY axis Steel Extended Contact Slide Stages

TSD-651-M6/UU  
TSD-652-M6/UU

RoHS

**Hardened Steel linear stages with integrated bearing ways for superior stiffness, accuracy and durability.**

- It is used M6 size or 1/4 inch size screws for fixing this stage and on the top of the table with tapped holes.
- The M6 type can mount directly on M6 specification vibration isolation systems and laboratory benches.
- The suffix "UU" type is able to mount directly on vibration isolation systems or laboratory benches by using holes for M6 screws or 1/4 inch screws.



### Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

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Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

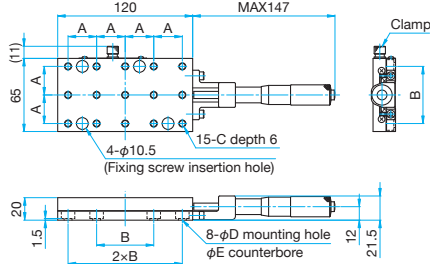
Others

Specifications							
Part Number	METRIC	TSD-65121C-M6	TSD-65121S-M6	TSD-65171S-M6	TSD-65122C-M6	TSD-65122S-M6	TSD-65172S-M6
	INCH	TSD-65121CUU	TSD-65121SUU	TSD-65171SUU	TSD-65122CUU	TSD-65122SUU	TSD-65172SUU
Table Size [mm]		65×120	65×120	65×170	65×120	65×120	65×170
Axes of Travel		X axis			XY axis		
Micrometer Position		Center	Side	Side	Center	Side	Side
Travel [mm]		±20	±20	±25	±20	±20	±25
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide					
Primary Material		Steel					
Finish		Super black chrome					
Load Capacity [N]		392 (40kgf)	392 (40kgf)	490 (50kgf)	392 (40kgf)	392 (40kgf)	490 (50kgf)
Travel Accuracy	Straightness [μm]	3	3	5	3	3	5
	Pitch [ " ]	25	25	25	25	25	25
	Yaw [ " ]	15	15	15	15	15	15
Max. Moment Capacity	Pitch [N·m]	19.6	19.6	29.4	9.8	9.8	9.8
	Roll [N·m]	9.8	9.8	9.8	9.8	9.8	9.8
	Yaw [N·m]	9.8	9.8	14.7	9.8	9.8	10
Moment Stiffness	Pitch [°/N·cm]	0.1	0.1	0.07	0.3	0.3	0.27
	Roll [°/N·cm]	0.2	0.2	0.2	0.3	0.3	0.27
	Yaw [°/N·cm]	0.2	0.2	0.2	0.3	0.3	0.27
Parallelism [μm]		50	50	50	100	100	100
Running Parallelism [μm]		12	12	15	25	25	30
Weight [kg]		1.0	1.0	1.7	2.4	2.4	3.4



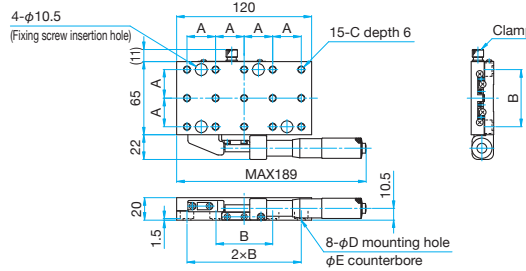
Outline Drawing

**TSD-65121C-M6/65121CUU** Hexagonal socket head cap screw M6x6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



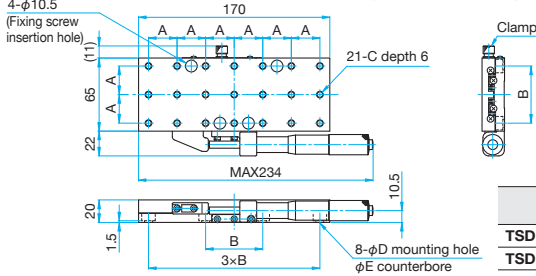
Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-65121C-M6	25	50	M6 P1	6.5	11
TSD-65121CUU	25.4	50.8	1/4-20UNC	7	12

**TSD-65121S-M6/65121SUU** Hexagonal socket head cap screw M6x6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



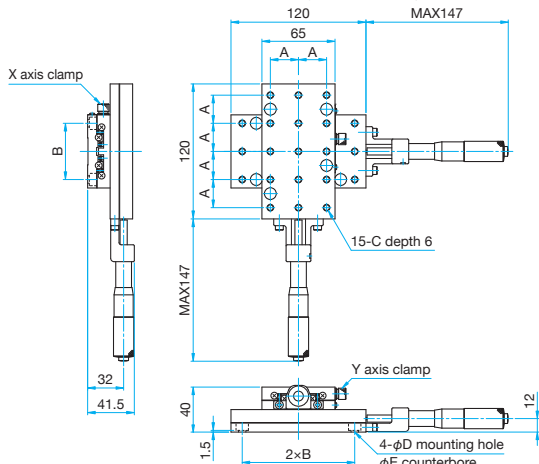
Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-65121S-M6	25	50	M6 P1	6.5	11
TSD-65121SUU	25.4	50.8	1/4-20UNC	7	12

**TSD-65171S-M6/65171SUU** Hexagonal socket head cap screw M6x6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



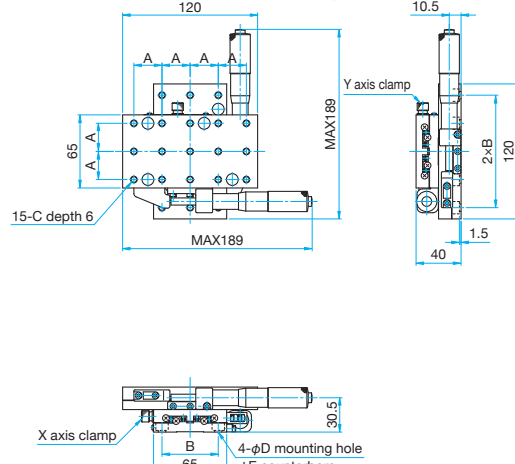
Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-65171S-M6	25	50	M6 P1	6.5	11
TSD-65171SUU	25.4	50.8	1/4-20UNC	7	12

**TSD-65122C-M6/65122CUU** Hexagonal socket head cap screw M6x6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



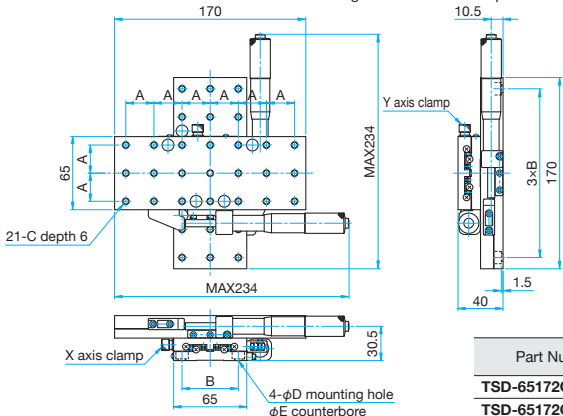
Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-65122C-M6	25	50	M6 P1	6.5	11
TSD-65122CUU	25.4	50.8	1/4-20UNC	7	12

**TSD-65122S-M6/65122SUU** Hexagonal socket head cap screw M6x6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-65122S-M6	25	50	M6 P1	6.5	11
TSD-65122SUU	25.4	50.8	1/4-20UNC	7	12

**TSD-65172C-M6/65172CUU** Hexagonal socket head cap screw M6x6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-65172C-M6	25	50	M6 P1	6.5	11
TSD-65172CUU	25.4	50.8	1/4-20UNC	7	12

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V Groove Screw

Others

- 15mm
- 25mm
- 40mm
- 60mm
- 65mm
- 80mm
- 100mm
- 120mm

Others

# X axis General-purpose type Stainless Stages

# XY axis General-purpose type Stainless Stages

TSDH-251

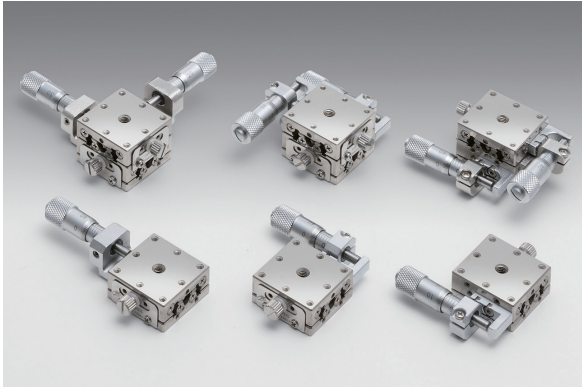
TSDH-252W

Stage size □25mm

RoHS

High precision and high stiffness stainless steel stages that have guide grooves on both the quenched stainless steel stage main body and movable table.

- SUS440C as main material for this product. To prevent rusting, the finish has been processed with electroless nickel plating.



### Guide

- ▶ It is also available the type of black coating of super black chrome for the surface finishing. Please contact our International Sales Division for more information.

### Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

### Specifications

Part Number	METRIC	TSDH-251C	TSDH-251S	TSDH-252WC	TSDH-252WS
(Opposite Model)	METRIC	—	TSDH-251SR	—	TSDH-252WSR
Table Size [mm]		25×25	25×25	25×25	25×25
Axes of Travel		X axis		XY axis	
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±3	±3	±3	±3
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		SUS440C quench hardened			
Finish		Electroless nickel			
Load Capacity [N]		59.8 (6.0kgf)	59.8 (6.0kgf)	59.8 (6.0kgf)	59.8 (6.0kgf)
Travel Accuracy	Straightness [μm]	1	1	1	1
	Pitch [ ′ ]	30	30	30	30
	Yaw [ ′ ]	25	25	25	25
Max. Moment Capacity	Pitch [N·m]	4.0	4.0	4.0	4.0
	Roll [N·m]	5.0	5.0	4.0	4.0
	Yaw [N·m]	2.0	2.0	2.0	2.0
Moment Stiffness	Pitch [ ′/N·cm]	1.8	1.8	3.4	3.4
	Roll [ ′/N·cm]	1.6	1.6	3.4	3.4
	Yaw [ ′/N·cm]	2.0	2.0	3.2	3.2
Parallelism [μm]		30	30	50	50
Running Parallelism [μm]		10	10	20	20
Orthogonality [μm]		—	—	10	10
Options		FP/DL	FP	FP/DL	FP
Weight [kg]		0.07	0.07	0.14	0.14

### Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
<b>FP</b>	Fine-pitch Screw Adjusters	<b>FPSA-42525</b>	0.25	—	E008
<b>DL</b>	Differential Micrometer Heads	<b>MDC-6.5</b>	0.5	0.01	

\* Please add an option code as the part number suffix to specify various optional specifications.

\* Installation may not be possible depending on the direction of DL.

\* The suffix "C" type uses adhesive for fixing the micrometer. Please contact our International Sales Division for more information on replacement.

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Lapping

V Groove Screw

Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

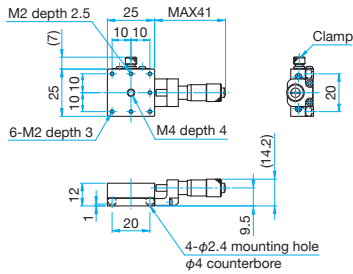
Others



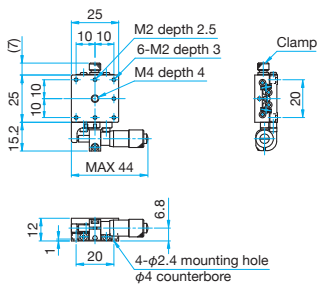


Outline Drawing

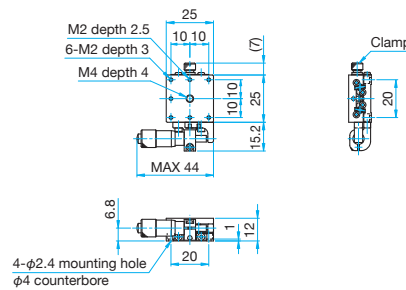
**TSDH-251C** Hexagonal socket head cap screw (stainless steel construction) M2×4...4 screws



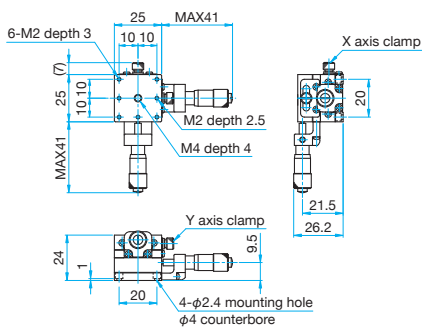
**TSDH-251S** Hexagonal socket head cap screw (stainless steel construction) M2×4...4 screws



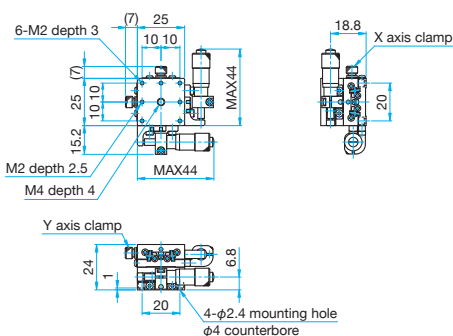
**TSDH-251SR** Hexagonal socket head cap screw (stainless steel construction) M2×4...4 screws



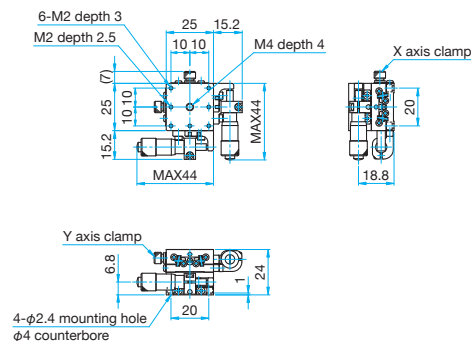
**TSDH-252WC** Hexagonal socket head cap screw (stainless steel construction) M2×4...4 screws



**TSDH-252WS** Hexagonal socket head cap screw (stainless steel construction) M2×4...4 screws



**TSDH-252WSR** Hexagonal socket head cap screw (stainless steel construction) M2×4...4 screws



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Lapping

V Groove Screw

Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# X axis General-purpose type Stainless Stages

## XY axis General-purpose type Stainless Stages

TSDH-401

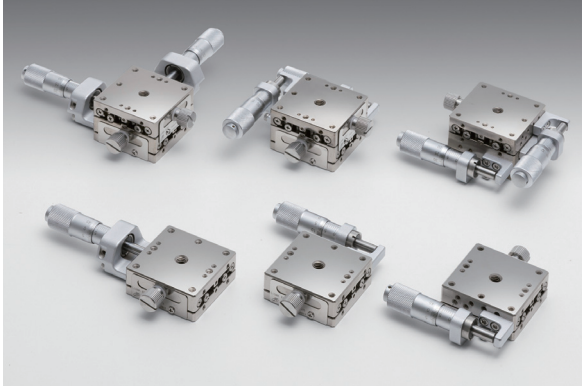
TSDH-402W

Stage size □40mm

RoHS

High precision and high stiffness stainless steel stages that have guide grooves on both the quenched stainless steel stage main body and movable table.

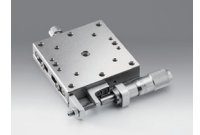
- SUS440C as main material for this product. To prevent rusting, the finish has been processed with electroless nickel plating.



### Guide

- ▶ It is also available the type of black coating of super black chrome for the surface finishing. Please contact our International Sales Division for more information.
- ▶ For the TSDH series, you can select the opposite clamping by specifying the option code (suffix: OC).

Option Code	Products Name
OC	opposite clamp



### Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

### Specifications

Part Number	METRIC	TSDH-401C	TSDH-401S	TSDH-402WC	TSDH-402WS
(Opposite Model)	METRIC	—	TSDH-401SR	—	TSDH-402WSR
Table Size [mm]		40×40	40×40	40×40	40×40
Axes of Travel		X axis		XY axis	
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±6.5	±6.5	±6.5	±6.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		SUS440C quench hardened			
Finish		Electroless nickel			
Load Capacity [N]		196 (20kgf)	196 (20kgf)	196 (20kgf)	196 (20kgf)
Travel Accuracy	Straightness [μm]	1	1	1	1
	Pitch [ ′ ]	30	30	30	30
	Yaw [ ′ ]	25	25	25	25
Max. Moment Capacity	Pitch [N·m]	7.8	7.8	7.8	7.8
	Roll [N·m]	7.8	7.8	7.8	7.8
	Yaw [N·m]	5	5	5	5
Moment Stiffness	Pitch [ ′/N·cm]	0.3	0.3	0.66	0.66
	Roll [ ′/N·cm]	0.2	0.2	0.66	0.66
	Yaw [ ′/N·cm]	0.23	0.23	0.6	0.6
Parallelism [μm]		30	30	50	50
Running Parallelism [μm]		10	10	20	20
Orthogonality [μm]		—	—	10	10
Options		FP/DL	FP/DL	FP/DL	FP
Weight [kg]		0.2	0.2	0.4	0.4

### Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-62540	0.25	—	E008
DL	Differential Micrometer Heads	MDC-13	0.5	0.01	

- \* Please add an option code as the part number suffix to specify various optional specifications.
- \* Installation may not be possible depending on the direction of DL.
- \* Replacement work requires a special tool (MNS). [Reference](#) F006

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Lapping

V Groove Screw

Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

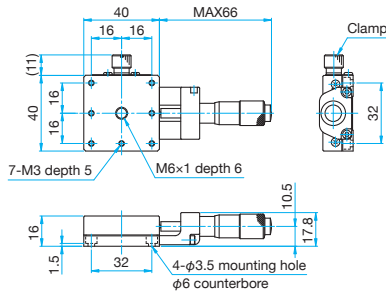
□120mm

Others

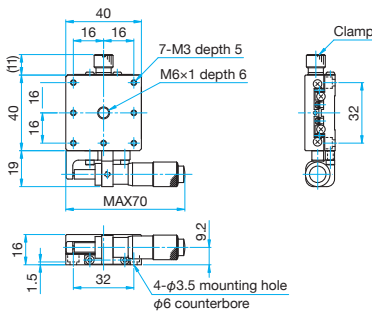


Outline Drawing

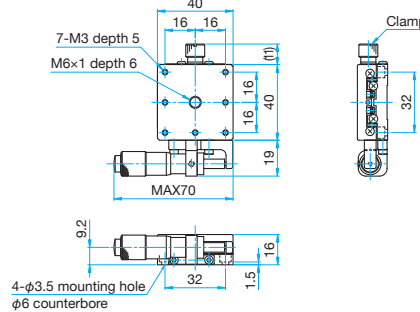
**TSDH-401C** Hexagonal socket head cap screw (stainless steel construction)  
M3×6...4 screws, Spring washers



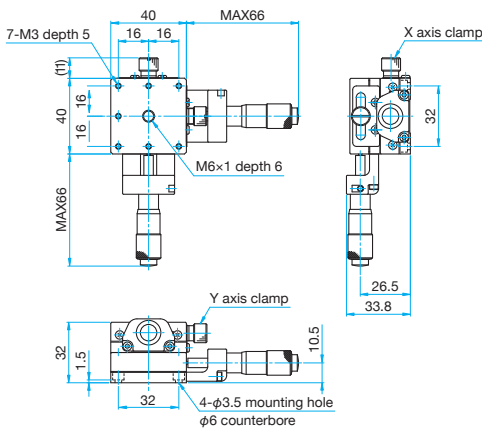
**TSDH-401S** Hexagonal socket head cap screw (stainless steel construction)  
M3×6...4 screws, Spring washers



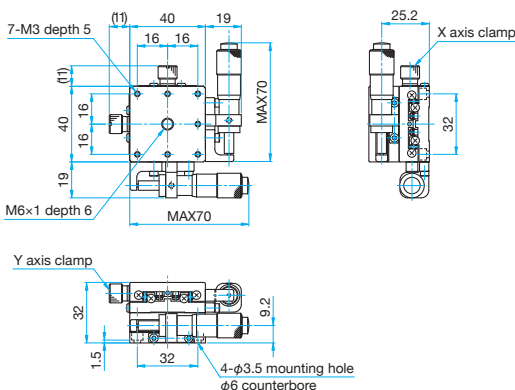
**TSDH-401SR** Hexagonal socket head cap screw (stainless steel construction)  
M3×6...4 screws, Spring washers



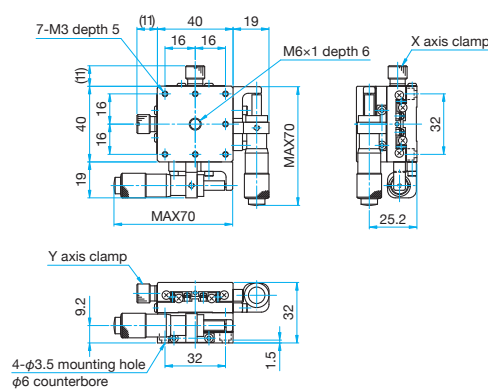
**TSDH-402WC** Hexagonal socket head cap screw (stainless steel construction)  
M3×6...4 screws, Spring washers



**TSDH-402WS** Hexagonal socket head cap screw (stainless steel construction)  
M3×6...4 screws, Spring washers



**TSDH-402WSR** Hexagonal socket head cap screw (stainless steel construction)  
M3×6...4 screws, Spring washers



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Ohters

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# X axis General-purpose type Stainless Stages

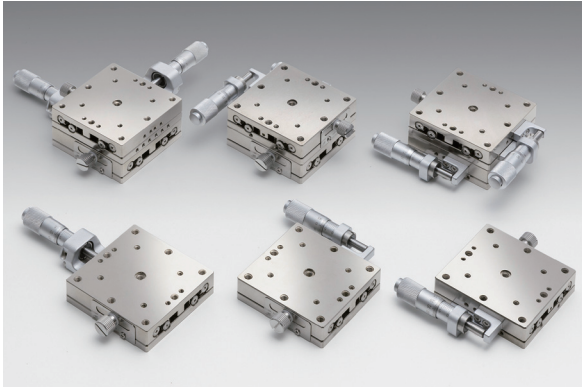
# XY axis General-purpose type Stainless Stages

TSDH-601 Stage size □60mm  
TSDH-602

RoHS

High precision and high stiffness stainless steel stages that have guide grooves on both the quenched stainless steel stage main body and movable table.

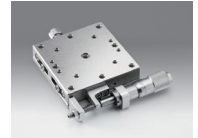
- SUS440C as main material for this product. To prevent rusting, the finish has been processed with electroless nickel plating.



## Guide

- ▶ It is also available the type of black coating of super black chrome for the surface finishing. Please contact our International Sales Division for more information.
- ▶ For the TSDH series, you can select the opposite clamping by specifying the option code (suffix: OC).

Option Code	Products Name
OC	opposite clamp



## Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

## Specifications

Part Number	METRIC	TSDH-601C	TSDH-601S	TSDH-602C	TSDH-602S
(Opposite Model)	METRIC	—	TSDH-601SR	—	TSDH-602SR
Table Size [mm]		60×60	60×60	60×60	60×60
Axes of Travel		X axis		XY axis	
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±6.5	±6.5	±6.5	±6.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		SUS440C quench hardened			
Finish		Electroless nickel			
Load Capacity [N]		392 (30kgf)	392 (30kgf)	392 (30kgf)	392 (30kgf)
Travel Accuracy	Straightness [μm]	1	1	1	1
	Pitch [°]	25	25	25	25
	Yaw [°]	15	15	15	15
Max. Moment Capacity	Pitch [N·m]	13.2	13.2	13.2	13.2
	Roll [N·m]	14.7	14.7	13.2	13.2
	Yaw [N·m]	9.8	9.8	9.8	9.8
Moment Stiffness	Pitch [°/N·cm]	0.2	0.2	0.38	0.38
	Roll [°/N·cm]	0.13	0.13	0.37	0.37
	Yaw [°/N·cm]	0.16	0.16	0.39	0.39
Parallelism [μm]		30	30	50	50
Running Parallelism [μm]		10	10	20	20
Orthogonality [μm]		—	—	10	10
Options		FP/DL	FP/DL	FP/DL	FP
Weight [kg]		0.45	0.45	0.9	0.9

## Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-62540	0.25	—	E008
DL	Differential Micrometer Heads	MDC-13	0.5	0.01	

- \* Please add an option code as the part number suffix to specify various optional specifications.
- \* Installation may not be possible depending on the direction of DL.
- \* Replacement work requires a special tool (MNS). [Reference](#) F006

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

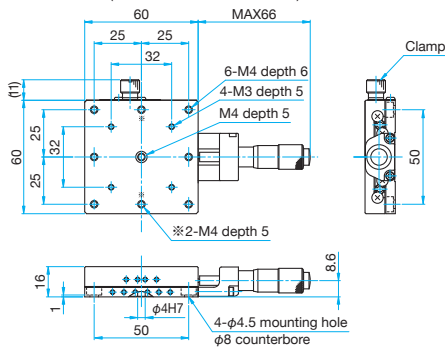
□120mm

Others

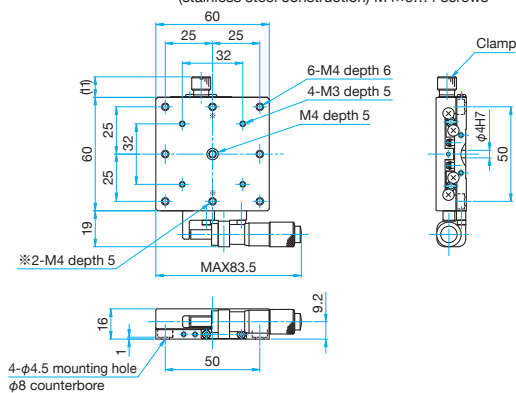


Outline Drawing

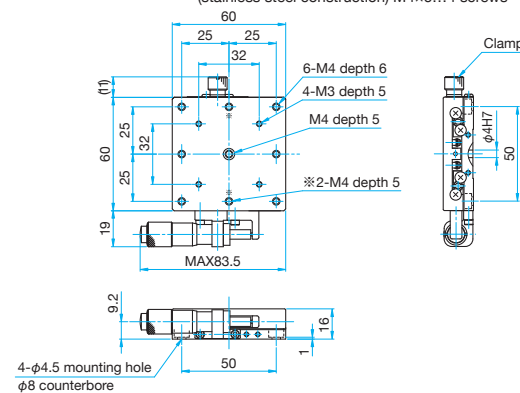
**TSDH-601C** Hexagonal socket head cap screw (stainless steel construction) M4x6...4 screws



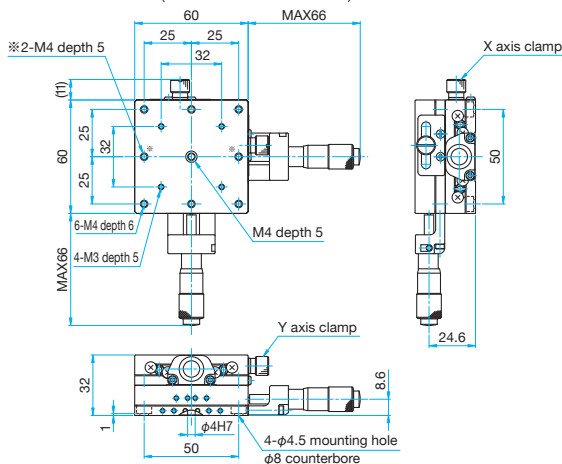
**TSDH-601S** Hexagonal socket head cap screw (stainless steel construction) M4x6...4 screws



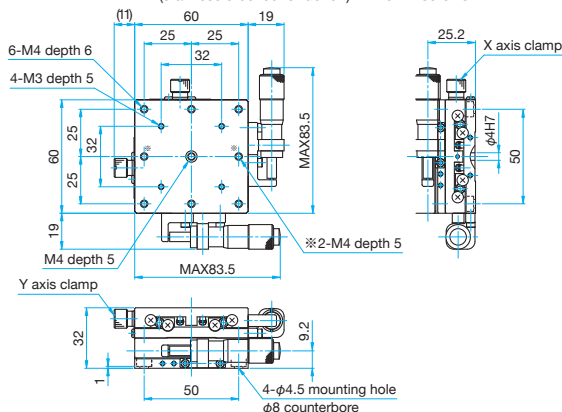
**TSDH-601SR** Hexagonal socket head cap screw (stainless steel construction) M4x6...4 screws



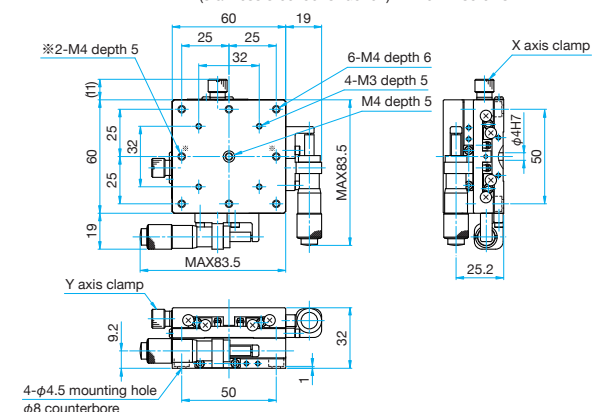
**TSDH-602C** Hexagonal socket head cap screw (stainless steel construction) M4x6...4 screws



**TSDH-602S** Hexagonal socket head cap screw (stainless steel construction) M4x6...4 screws



**TSDH-602SR** Hexagonal socket head cap screw (stainless steel construction) M4x6...4 screws



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Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

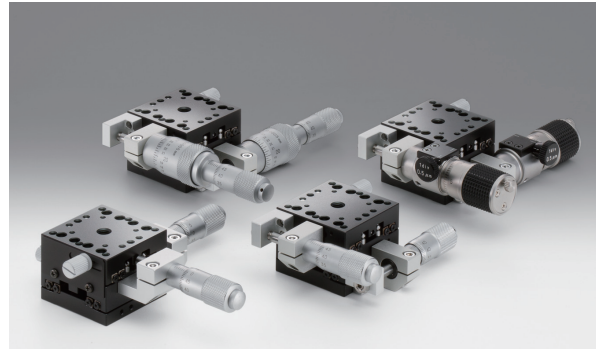
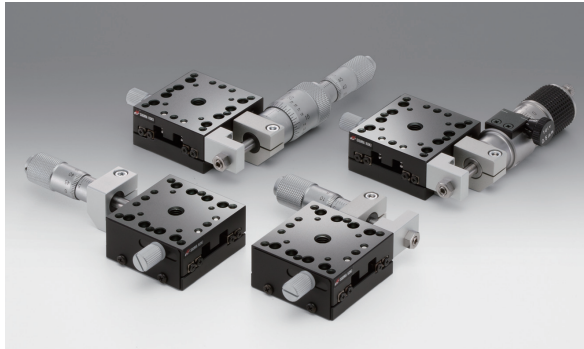
# X axis Aluminum Crossed Roller Slide Stages

# XY axis Aluminum Crossed Roller Slide Stages

TAM-401 Stage size □40mm  
TAM-402

RoHS

Light-weight and high precision linear stages have black anodized aluminum bodies fitted with crossed roller bearings.



### Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

Specifications					
Part Number	METRIC	TAM-401C	TAM-401S	TAM-402C	TAM-402S
	INCH	TAM-401CUU	TAM-401SUU	TAM-402CUU	TAM-402SUU
(Opposite Model)	METRIC	—	TAM-401SR	—	TAM-402SR
	INCH	—	TAM-401SRUU	—	TAM-402SRUU
Table Size [mm]		40×40	40×40	40×40	40×40
Axes of Travel		X axis		XY axis	
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±6.5	±6.5	±6.5	±6.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Crossed roller			
Primary Material		Aluminum			
Finish		Black anodized			
Load Capacity [N]		49 (5.0kgf)	49 (5.0kgf)	49 (5.0kgf)	49 (5.0kgf)
Travel Accuracy	Straightness [μm]	2	2	2	2
	Pitch [ ″ ]	40	40	40	40
	Yaw [ ″ ]	25	25	25	25
Max. Moment Capacity	Pitch [N·m]	2.75	2.75	2.75	2.75
	Roll [N·m]	3.0	3.0	2.75	2.75
	Yaw [N·m]	2.5	2.5	2.5	2.5
Moment Stiffness	Pitch [ ″/N·cm]	0.66	0.66	1.22	1.22
	Roll [ ″/N·cm]	0.36	0.36	1.22	1.22
Parallelism [μm]		30	30	50	50
Running Parallelism [μm]		10	10	20	20
Orthogonality [μm]		—	—	10	10
Options		FP/DM/WP/DL	FP/DM/WP/DL	FP/DM/WP/DL	FP/DM/WP
Weight [kg]		0.13	0.13	0.25	0.25

Option					
Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
<b>FP</b>	Fine-pitch Screw Adjusters	<b>FPSA-62540</b>	0.25	—	E008
<b>DM</b>	Differential Micrometer Heads	<b>MHF2-13F</b>	Coars: 0.5 Fine: 0.025	Coars: 0.01 Fine: 0.0005	
<b>WP</b>	Sub-micron Worm Drive Micrometer Heads	<b>WGP-13</b>	Coars: 0.25 Fine: 0.025	Coars: 0.005 Fine: 0.0005	
<b>DL</b>	Differential Micrometer Heads	<b>MDC-13</b>	0.5	0.01	

\* Please add an option code as the part number suffix to specify various optional specifications.  
\* Installation may not be possible depending on the direction of DL.

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□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

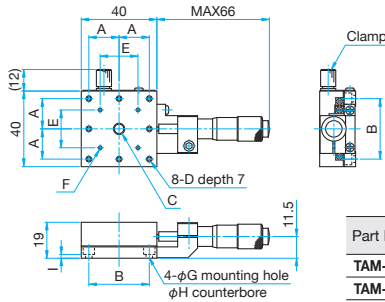
□120mm

Others



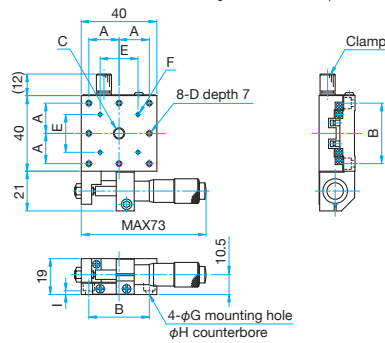
Outline Drawing

**TAM-401C/401CUU** Pan head screw M3x6...4 screws, Spring washers  
Hexagonal socket head cap screw 6-32UNCx1/4...4 screws (UU)



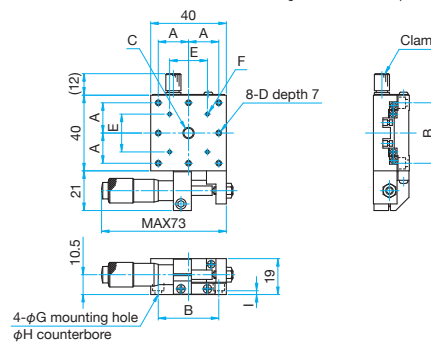
Part Number	A (mm)	B (mm)	C	D	E (mm)	F	G (mm)	H (mm)	I (mm)
TAM-401C	16	32	M6 P1 depth 8	M3	20	4-M2 depth 5	3.5	6	2
TAM-401CUU	15.875	31.75	1/4-20UNC depth 5	6-32UNC			4	6.5	1.5

**TAM-401S/401SUU** Pan head screw M3x6...4 screws, Spring washers  
Hexagonal socket head cap screw 6-32UNCx1/4...4 screws (UU)



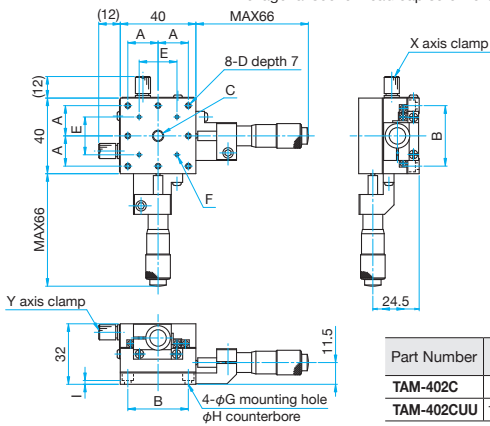
Part Number	A (mm)	B (mm)	C	D	E (mm)	F	G (mm)	H (mm)	I (mm)
TAM-401S	16	32	M6 P1 depth 8	M3	20	4-M2 depth 5	3.5	6	2
TAM-401SUU	15.875	31.75	1/4-20UNC depth 5	6-32UNC			4	6.5	1.5

**TAM-401SR/401SRUU** Pan head screw M3x6...4 screws, Spring washers  
Hexagonal socket head cap screw 6-32UNCx1/4...4 screws (UU)



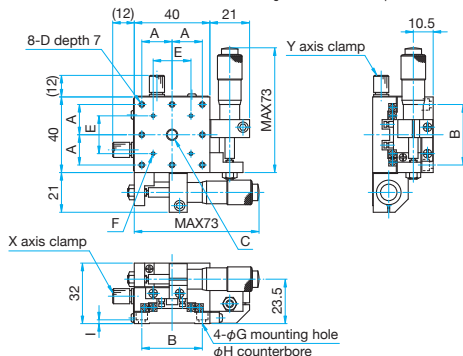
Part Number	A (mm)	B (mm)	C	D	E (mm)	F	G (mm)	H (mm)	I (mm)
TAM-401SR	16	32	M6 P1 depth 8	M3	20	4-M2 depth 5	3.5	6	2
TAM-401SRUU	15.875	31.75	1/4-20UNC depth 5	6-32UNC			4	6.5	1.5

**TAM-402C/402CUU** Pan head screw M3x6...4 screws, Spring washers  
Hexagonal socket head cap screw 6-32UNCx1/4...4 screws (UU)



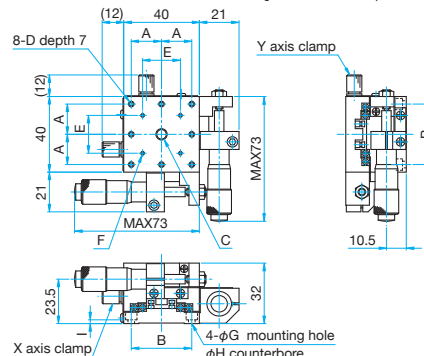
Part Number	A (mm)	B (mm)	C	D	E (mm)	F	G (mm)	H (mm)	I (mm)
TAM-402C	16	32	M6 P1 depth 8	M3	20	4-M2 depth 5	3.5	6	2
TAM-402CUU	15.875	31.75	1/4-20UNC depth 5	6-32UNC			4	6.5	1.5

**TAM-402S/402SUU** Pan head screw M3x6...4 screws, Spring washers  
Hexagonal socket head cap screw 6-32UNCx1/4...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D	E (mm)	F	G (mm)	H (mm)	I (mm)
TAM-402S	16	32	M6 P1 depth 8	M3	20	4-M2 depth 5	3.5	6	2
TAM-402SUU	15.875	31.75	1/4-20UNC depth 5	6-32UNC			4	6.5	1.5

**TAM-402SR/402SRUU** Pan head screw M3x6...4 screws, Spring washers  
Hexagonal socket head cap screw 6-32UNCx1/4...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D	E (mm)	F	G (mm)	H (mm)	I (mm)
TAM-402SR	16	32	M6 P1 depth 8	M3	20	4-M2 depth 5	3.5	6	2
TAM-402SRUU	15.875	31.75	1/4-20UNC depth 5	6-32UNC			4	6.5	1.5

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Ohters

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

Others

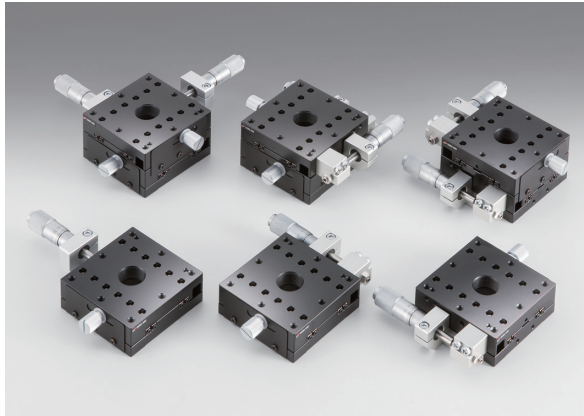
# X axis Aluminum Crossed Roller Slide Stages

# XY axis Aluminum Crossed Roller Slide Stages

TAM-601 Stage size □60mm  
TAM-602

RoHS

Light-weight and high precision linear stages have black anodized aluminum bodies fitted with crossed roller bearings.



### Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

### Specifications

Part Number	METRIC	TAM-601C	TAM-601S	TAM-602C	TAM-602S
(Opposite Model)	METRIC	—	TAM-601SR	—	TAM-602SR
Table Size [mm]		60×60	60×60	60×60	60×60
Axes of Travel		X axis		XY axis	
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±6.5	±6.5	±6.5	±6.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Crossed roller			
Primary Material		Aluminum			
Finish		Black anodized			
Load Capacity [N]		196 (20.0kgf)	196 (20.0kgf)	196 (20.0kgf)	196 (20.0kgf)
Travel Accuracy	Straightness [μm]	2	2	2	2
	Pitch [ ″ ]	25	25	25	25
	Yaw [ ″ ]	15	15	15	15
Max. Moment Capacity	Pitch [N·m]	5.8	5.8	5.8	5.8
	Roll [N·m]	5.8	5.8	5.8	5.8
	Yaw [N·m]	5.8	5.8	5.8	5.8
Moment Stiffness	Pitch [ ″/N·cm]	0.3	0.3	0.6	0.6
	Roll [ ″/N·cm]	0.25	0.25	0.6	0.6
Parallelism [μm]		30	30	50	50
Running Parallelism [μm]		10	10	20	20
Orthogonality [μm]		—	—	10	10
Options		FP/DM/WP/DL	FP/DM/WP/DL	FP/DM/WP/DL	FP/DM/WP
Weight [kg]		0.3	0.3	0.6	0.6

### Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-62540	0.25	—	E008
DM	Differential Micrometer Heads	MHF2-13F	Coars: 0.5 Fine: 0.025	Coars: 0.01 Fine: 0.0005	
WP	Sub-micron Worm Drive Micrometer Heads	WGP-13	Coars: 0.25 Fine: 0.025	Coars: 0.005 Fine: 0.0005	
DL	Differential Micrometer Heads	MDC-13	0.5	0.01	

- \* Please add an option code as the part number suffix to specify various optional specifications.  
\* Installation may not be possible depending on the direction of DL.

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Others

□15mm

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□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

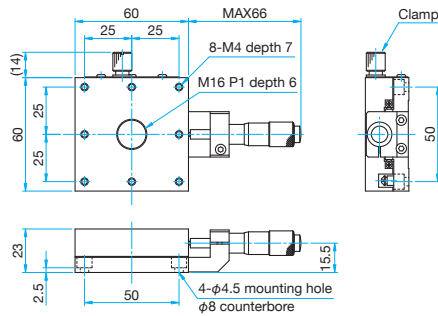
Others



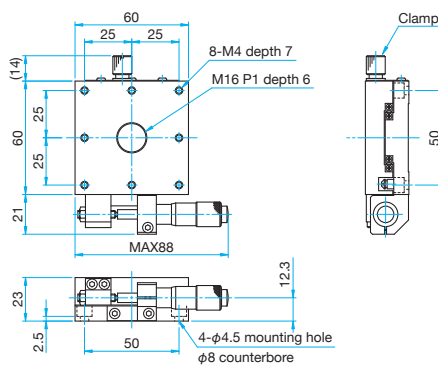


Outline Drawing

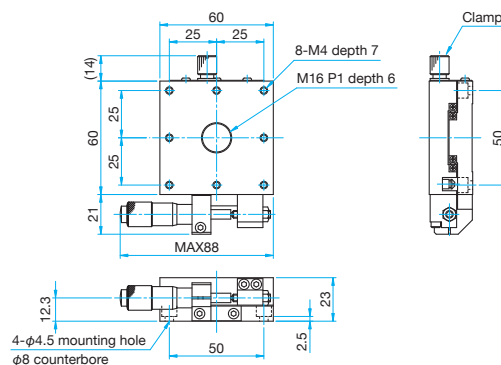
**TAM-601C** Hexagonal socket head cap screw M4x8...4 screws



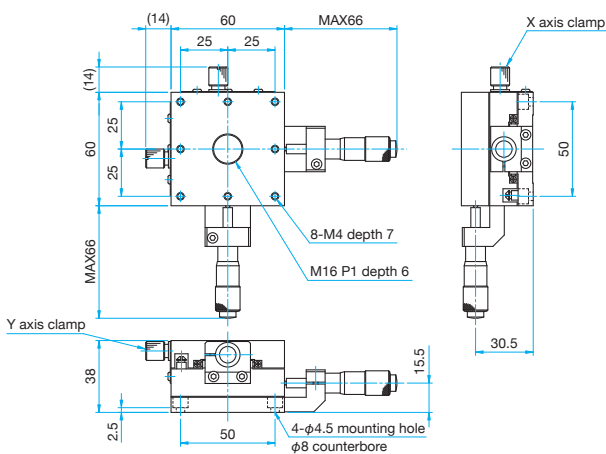
**TAM-601S** Hexagonal socket head cap screw M4x8...4 screws



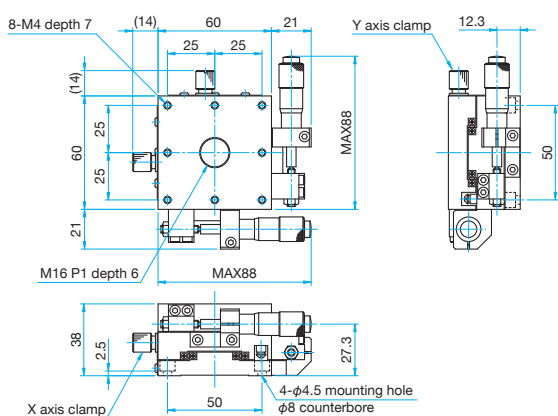
**TAM-601SR** Hexagonal socket head cap screw M4x8...4 screws



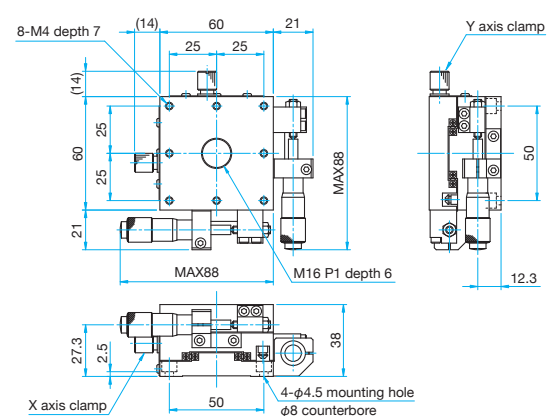
**TAM-602C** Hexagonal socket head cap screw M4x8...4 screws



**TAM-602S** Hexagonal socket head cap screw M4x8...4 screws



**TAM-602SR** Hexagonal socket head cap screw M4x8...4 screws



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Lapping

V Groove Screw

Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

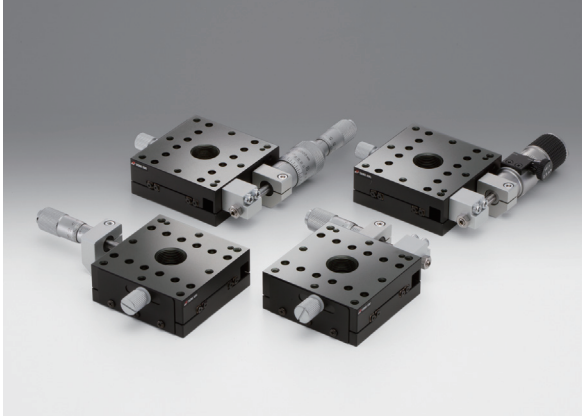
Others

## X axis Aluminum Crossed Roller Slide Stages | TAM-651 Stage size □65mm

RoHS

Light-weight and high precision linear stages have black anodized aluminum bodies fitted with crossed roller bearings.

- It is used M6 size or 1/4 inch size screws for fixing this stage and on the top of the table with tapped holes.
- It is available to mount these stages directly on vibration isolation systems or laboratory benches by using holes for M6 screws or 1/4 inch screws.



## Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

Specifications					
Part Number	METRIC	TAM-651C-M6	TAM-651S-M6	TAM-651C25-M6	TAM-651S25-M6
	INCH	TAM-651CUU	TAM-651SUU	TAM-651C25UU	TAM-651S25UU
(Opposite Model)	METRIC	—	TAM-651SR-M6	—	—
	INCH	—	TAM-651SRUU	—	—
Table Size [mm]		65×65	65×65	65×65	65×65
Axes of Travel		X axis			
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±6.5	±6.5	±12.5	±12.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Crossed roller			
Primary Material		Aluminum			
Finish		Black anodized			
Load Capacity [N]		196 (20kgf)	196 (20kgf)	196 (20kgf)	196 (20kgf)
Travel Accuracy	Straightness [μm]	2	2	2	2
	Pitch [ ″ ]	25	25	35	35
	Yaw [ ″ ]	15	15	25	25
Max. Moment Capacity	Pitch [N·m]	4.9	4.9	4.9	4.9
	Roll [N·m]	4.9	4.9	4.9	4.9
	Yaw [N·m]	4.9	4.9	4.9	4.9
Moment Stiffness	Pitch [°/N·cm]	0.3	0.3	0.3	0.3
	Roll [°/N·cm]	0.25	0.25	0.25	0.25
Parallelism [μm]		30	30	30	30
Running Parallelism [μm]		10	10	10	10
Options		FP <sup>1</sup> /DM/WP/DL	FP <sup>1</sup> /DM/WP/DL	FP <sup>2</sup>	FP <sup>2</sup>
Weight [kg]		0.3	0.3	0.3	0.3

Option					
Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-62540 <sup>1</sup> FPSA-62550 <sup>2</sup>	0.25	—	E008
DM	Differential Micrometer Heads	MHF2-13F	Coars: 0.5 Fine: 0.025	Coars: 0.01 Fine: 0.0005	
WP	Sub-micron Worm Drive Micrometer Heads	WGP-13	Coars: 0.25 Fine: 0.025	Coars: 0.005 Fine: 0.0005	
DL	Differential Micrometer Heads	MDC-13	0.5	0.01	

- \* Please add an option code as the part number suffix to specify various optional specifications.  
\* Installation may not be possible depending on the direction of DL.

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V Groove Screw

Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

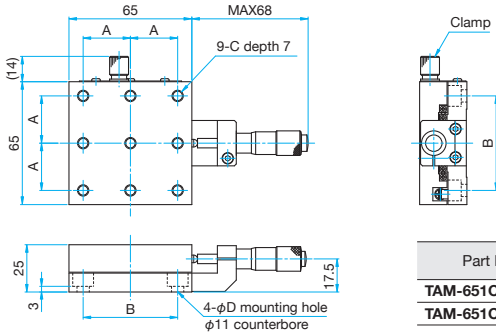
□120mm

Others



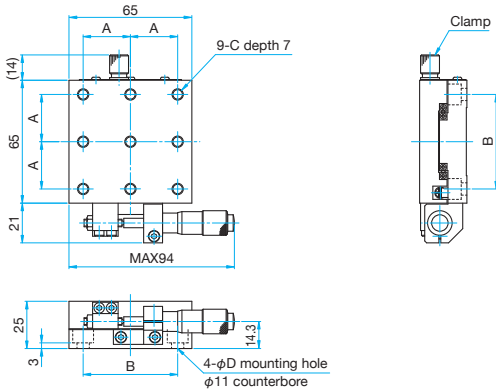
Outline Drawing

**TAM-651C-M6/651CUU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
 Hexagonal socket head cap screw 1/4-20UNCx3/8...4 screws (UU)



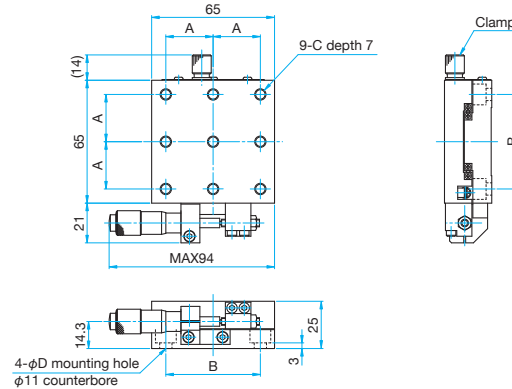
Part Number	A (mm)	B (mm)	C	D (mm)
TAM-651C-M6	25	50	M6 P1	6.5
TAM-651CUU	25.4	50.8	1/4-20UNC	7

**TAM-651S-M6/651SUU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
 Hexagonal socket head cap screw 1/4-20UNCx3/8...4 screws (UU)



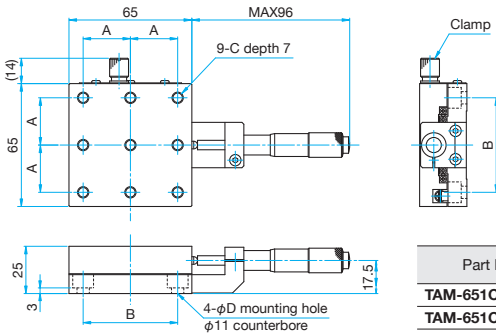
Part Number	A (mm)	B (mm)	C	D (mm)
TAM-651S-M6	25	50	M6 P1	6.5
TAM-651SUU	25.4	50.8	1/4-20UNC	7

**TAM-651SR-M6/651SRUU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
 Hexagonal socket head cap screw 1/4-20UNCx3/8...4 screws (UU)



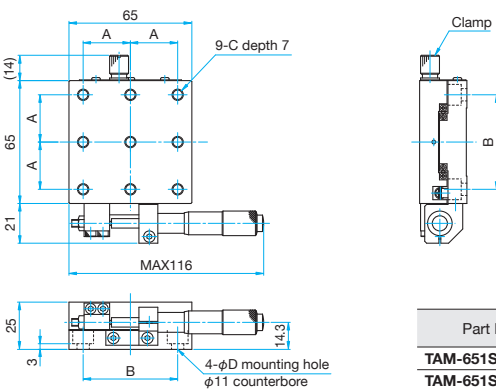
Part Number	A (mm)	B (mm)	C	D (mm)
TAM-651SR-M6	25	50	M6 P1	6.5
TAM-651SRUU	25.4	50.8	1/4-20UNC	7

**TAM-651C25-M6/651C25UU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
 Hexagonal socket head cap screw 1/4-20UNCx3/8...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
TAM-651C25-M6	25	50	M6 P1	6.5
TAM-651C25UU	25.4	50.8	1/4-20UNC	7

**TAM-651S25-M6/651S25UU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
 Hexagonal socket head cap screw 1/4-20UNCx3/8...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
TAM-651S25-M6	25	50	M6 P1	6.5
TAM-651S25UU	25.4	50.8	1/4-20UNC	7

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Lapping

V Groove Screw

Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

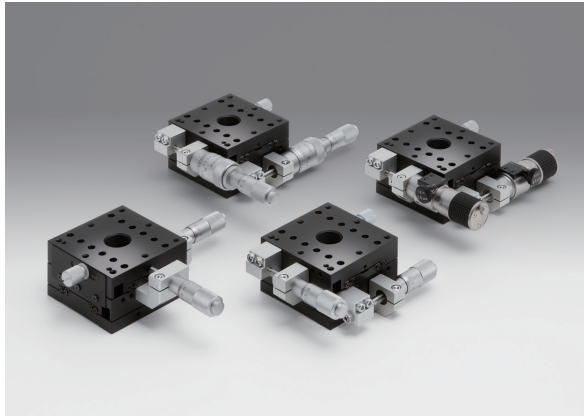
Others

## XY axis Aluminum Crossed Roller Slide Stages | TAM-652 Stage size □65mm

RoHS

Light-weight and high precision linear stages have black anodized aluminum bodies fitted with crossed roller bearings.

- It is used M6 size or 1/4 inch size screws for fixing this stage and on the top of the table with tapped holes.
- It is available to mount these stages directly on vibration isolation systems or laboratory benches by using holes for M6 screws or 1/4 inch screws.



## Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

## Specifications

Part Number	METRIC	TAM-652C-M6	TAM-652S-M6	TAM-652C25-M6	TAM-652S25-M6
	INCH	TAM-652CUU	TAM-652SUU	TAM-651C25UU	TAM-651S25UU
(Opposite Model)	METRIC	—	TAM-652SR-M6	—	—
	INCH	—	TAM-652SRUU	—	—
Table Size [mm]		65×65	65×65	65×65	65×65
Axes of Travel		XY axis			
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±6.5	±6.5	±12.5	±12.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Crossed roller			
Primary Material		Aluminum			
Finish		Black anodized			
Load Capacity [N]		196 (20kgf)	196 (20kgf)	196 (20kgf)	196 (20kgf)
Travel Accuracy	Straightness [μm]	2	2	2	2
	Pitch [ ′ ]	25	25	35	35
	Yaw [ ′ ]	15	15	25	25
Max. Moment Capacity	Pitch [N·m]	4.9	4.9	4.9	4.9
	Roll [N·m]	4.9	4.9	4.9	4.9
	Yaw [N·m]	4.9	4.9	4.9	4.9
Moment Stiffness	Pitch [°/N·cm]	0.6	0.6	0.6	0.6
	Roll [°/N·cm]	0.6	0.6	0.6	0.6
Parallelism [μm]		50	50	50	50
Running Parallelism [μm]		20	20	20	20
Orthogonality [μm]		10	10	10	10
Options		FP <sup>1</sup> /DM/WP/DL	FP <sup>1</sup> /DM/WP	FP <sup>2</sup>	FP <sup>2</sup>
Weight [kg]		0.75	0.75	0.75	0.75

## Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-62540 <sup>1</sup> FPSA-62550 <sup>2</sup>	0.25	—	E008
DM	Differential Micrometer Heads	MHF2-13F	Coars: 0.5 Fine: 0.025	Coars: 0.01 Fine: 0.0005	
WP	Sub-micron Worm Drive Micrometer Heads	WGP-13	Coars: 0.25 Fine: 0.025	Coars: 0.005 Fine: 0.0005	
DL	Differential Micrometer Heads	MDC-13	0.5	0.01	

- \* Please add an option code as the part number suffix to specify various optional specifications.  
\* Installation may not be possible depending on the direction of DL.

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V Groove Screw

Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

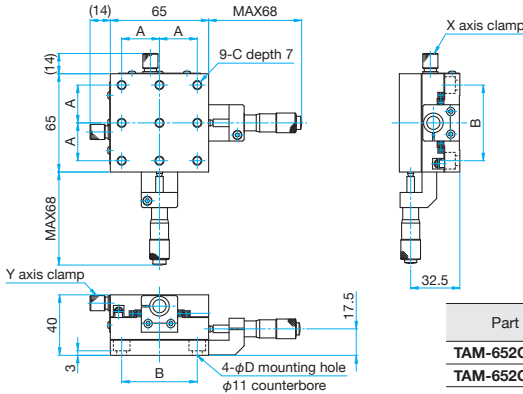
□120mm

Others



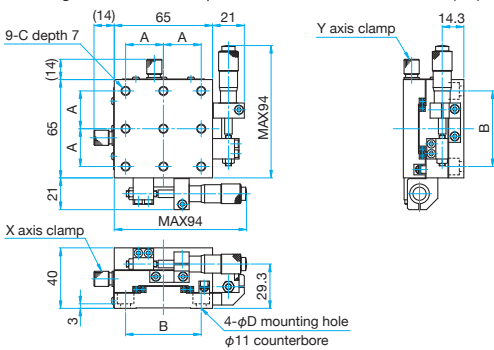
**Outline Drawing**

**TAM-652C-M6/652CUU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
 Hexagonal socket head cap screw 1/4-20UNCx3/8...4 screws (UU)



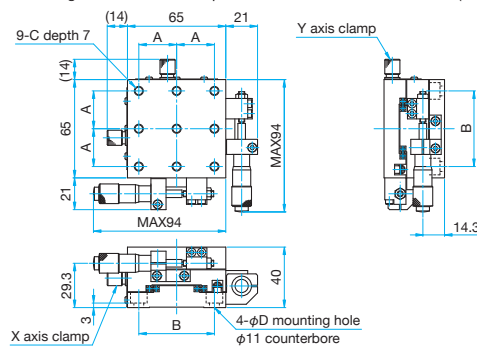
Part Number	A (mm)	B (mm)	C	D (mm)
<b>TAM-652C-M6</b>	25	50	M6 P1	6.5
<b>TAM-652CUU</b>	25.4	50.8	1/4-20UNC	7

**TAM-652S-M6/652SUU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
 Hexagonal socket head cap screw 1/4-20UNCx3/8...4 screws (UU)



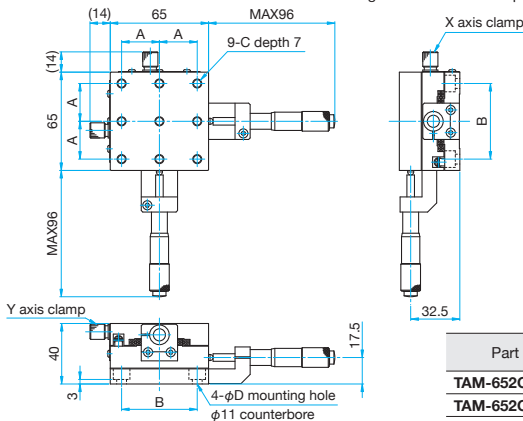
Part Number	A (mm)	B (mm)	C	D (mm)
<b>TAM-652S-M6</b>	25	50	M6 P1	6.5
<b>TAM-652SUU</b>	25.4	50.8	1/4-20UNC	7

**TAM-652SR-M6/652SRUU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
 Hexagonal socket head cap screw 1/4-20UNCx3/8...4 screws (UU)



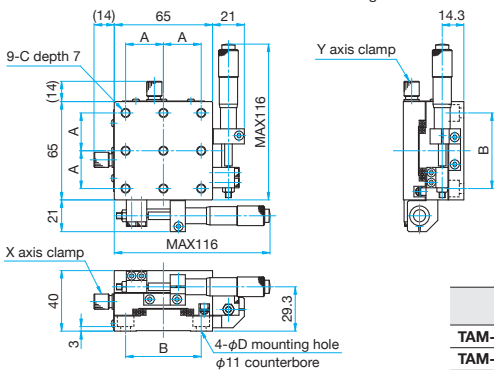
Part Number	A (mm)	B (mm)	C	D (mm)
<b>TAM-652SR-M6</b>	25	50	M6 P1	6.5
<b>TAM-652SRUU</b>	25.4	50.8	1/4-20UNC	7

**TAM-652C25-M6/652C25UU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
 Hexagonal socket head cap screw 1/4-20UNCx3/8...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
<b>TAM-652C25-M6</b>	25	50	M6 P1	6.5
<b>TAM-652C25UU</b>	25.4	50.8	1/4-20UNC	7

**TAM-652S25-M6/652S25UU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
 Hexagonal socket head cap screw 1/4-20UNCx3/8...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
<b>TAM-652S25-M6</b>	25	50	M6 P1	6.5
<b>TAM-652S25UU</b>	25.4	50.8	1/4-20UNC	7

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Dovetail

Lapping

V Groove Screw

Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# X axis Aluminum Crossed Roller Slide Stages

# XY axis Aluminum Crossed Roller Slide Stages

TAM-801 Stage size □80mm  
TAM-802

RoHS

Light-weight and high precision linear stages have black anodized aluminum bodies fitted with crossed roller bearings.



### Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

Specifications					
Part Number	METRIC	TAM-801C	TAM-801S	TAM-802C	TAM-802S
(Opposite Model)	METRIC	—	TAM-801SR	—	TAM-802SR
Table Size [mm]		80×80	80×80	80×80	80×80
Axes of Travel		X axis		XY axis	
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±7.5	±7.5	±7.5	±7.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Crossed roller			
Primary Material		Aluminum			
Finish		Black anodized			
Load Capacity [N]		392 (40.0kgf)	392 (40.0kgf)	392 (40.0kgf)	392 (40.0kgf)
Travel Accuracy	Straightness [μm]	2	2	2	2
	Pitch [ ″ ]	25	25	25	25
	Yaw [ ″ ]	15	15	15	15
Max. Moment Capacity	Pitch [N·m]	12.3	12.3	12.3	12.3
	Roll [N·m]	15.7	15.7	12.3	12.3
	Yaw [N·m]	14.7	14.7	14.7	14.7
Moment Stiffness	Pitch [ ″/N·cm]	0.12	0.12	0.23	0.23
	Roll [ ″/N·cm]	0.1	0.1	0.23	0.23
Parallelism [μm]		30	30	50	50
Running Parallelism [μm]		10	10	20	20
Orthogonality [μm]		—	—	10	10
Options		FP/DM/WP	FP/DM/WP	FP/DM/WP	FP/DM/WP
Weight [kg]		0.6	0.6	0.9	0.9

Option					
Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
<b>FP</b>	Fine-pitch Screw Adjusters	<b>FPSA-62550</b>	0.25	—	E008
<b>DM</b>	Differential Micrometer Heads	<b>MHF2-13F</b>	Coars: 0.5 Fine: 0.025	Coars: 0.01 Fine: 0.0005	
<b>WP</b>	Sub-micron Worm Drive Micrometer Heads	<b>WGP-13</b>	Coars: 0.25 Fine: 0.025	Coars: 0.005 Fine: 0.0005	

- \* Please add an option code as the part number suffix to specify various optional specifications.  
\* The travel of DM and WP is ±6.5 mm.

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

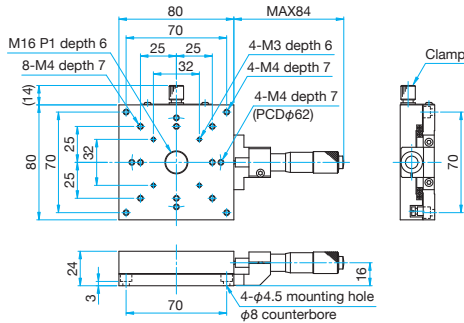
□120mm

Others

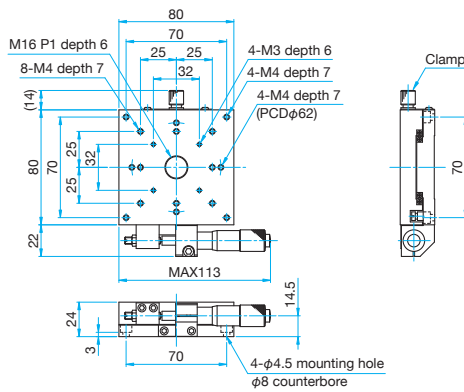


Outline Drawing

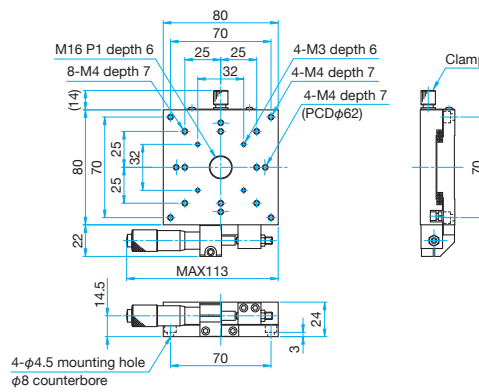
**TAM-801C** Hexagonal socket head cap screw M4x8...4 screws



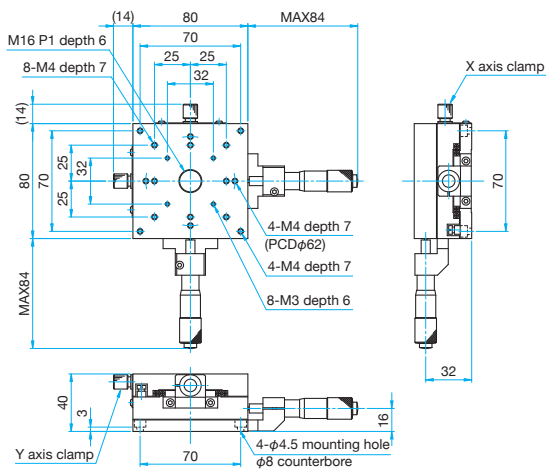
**TAM-801S** Hexagonal socket head cap screw M4x8...4 screws



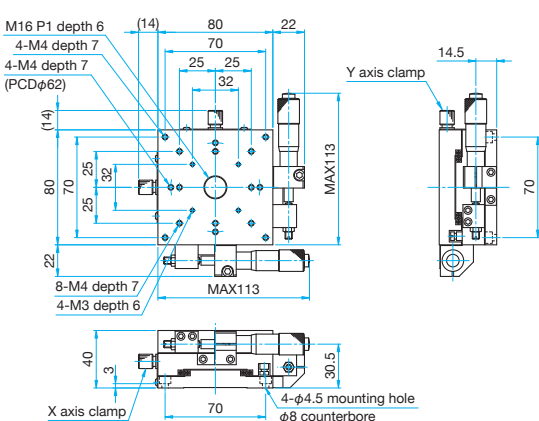
**TAM-801SR** Hexagonal socket head cap screw M4x8...4 screws



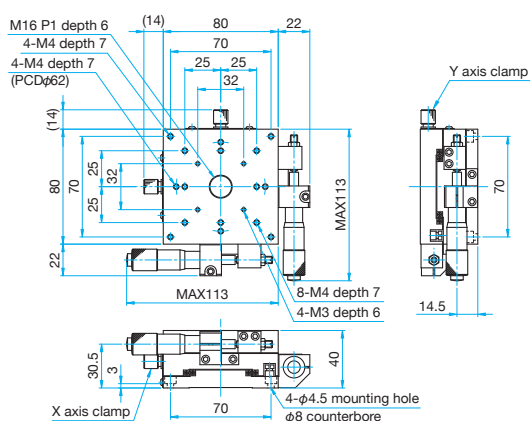
**TAM-802C** Hexagonal socket head cap screw M4x8...4 screws



**TAM-802S** Hexagonal socket head cap screw M4x8...4 screws



**TAM-802SR** Hexagonal socket head cap screw M4x8...4 screws



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V Groove Screw

Ohters

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# X axis Aluminum Crossed Roller Slide Stages

## XY axis Aluminum Crossed Roller Slide Stages

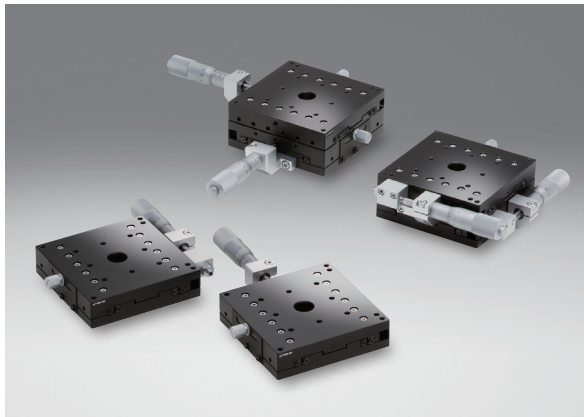
TAM-1001

Stage size □ 100mm

TAM-1002

RoHS

Light-weight and high precision linear stages have black anodized aluminum bodies fitted with crossed roller bearings.



### Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

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Others

□ 15mm

□ 25mm

□ 40mm

□ 60mm

□ 65mm

□ 80mm

□ 100mm

□ 120mm

Others

### Specifications

Part Number	METRIC	TAM-1001C	TAM-1001S	TAM-1002C	TAM-1002S
(Opposite Model)	METRIC	—	TAM-1001SR	—	TAM-1002SR
Table Size [mm]		100×100	100×100	100×100	100×100
Axes of Travel		X axis		XY axis	
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±12.5	±12.5	±12.5	±12.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Crossed roller			
Primary Material		Aluminum			
Finish		Black anodized			
Load Capacity [N]		490 (50.0kgf)	490 (50.0kgf)	490 (50.0kgf)	490 (50.0kgf)
Travel Accuracy	Straightness [μm]	2	2	2	2
	Pitch [ ″ ]	25	25	25	25
	Yaw [ ″ ]	15	15	15	15
Max. Moment Capacity	Pitch [N·m]	27.5	27.5	27.5	27.5
	Roll [N·m]	40.7	40.7	27.5	27.5
	Yaw [N·m]	30.9	30.9	30.9	30.9
Moment Stiffness	Pitch [ ″/N·cm]	0.09	0.09	0.17	0.17
	Roll [ ″/N·cm]	0.07	0.07	0.17	0.17
Parallelism [μm]		50	50	50	50
Running Parallelism [μm]		15	15	25	25
Orthogonality [μm]		—	—	10	10
Options		FP/DG	FP	FP/DG	FP
Weight [kg]		0.9	0.9	1.5	1.5

### Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-62550	0.25	—	E008
DG	Micrometer Heads (Digital display)	MHN2-25DM	0.5	0.001	

\* Please add an option code as the part number suffix to specify various optional specifications.

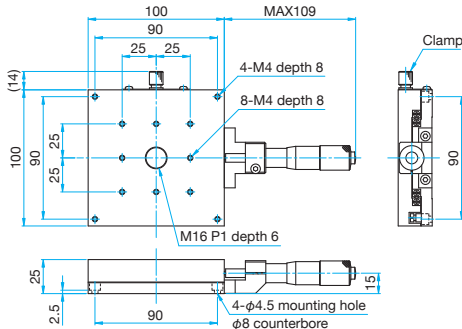
\* DG is a digital display type. [Reference](#) F005



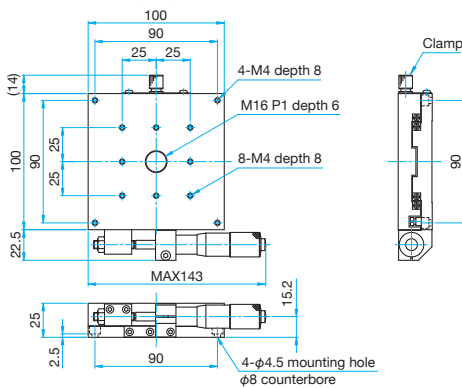


Outline Drawing

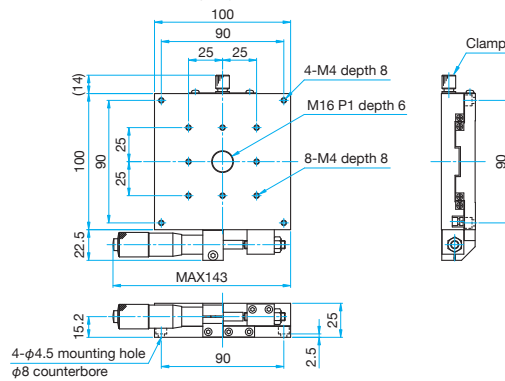
**TAM-1001S** Hexagonal socket head cap screw M4x8...4 screws, Spring washers



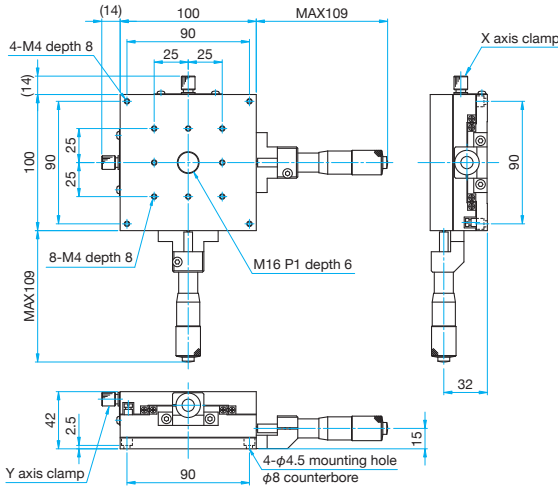
**TAM-1001S** Hexagonal socket head cap screw M4x8...4 screws, Spring washers



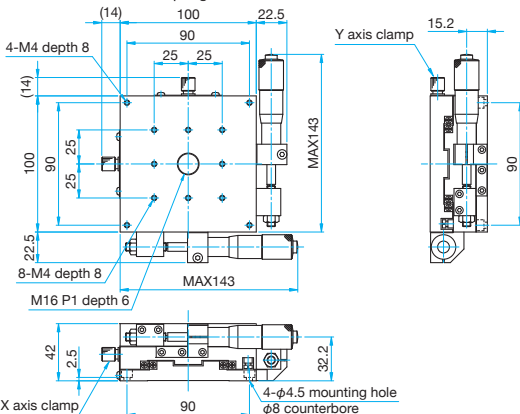
**TAM-1001SR** Hexagonal socket head cap screw M4x8...4 screws, Spring washers



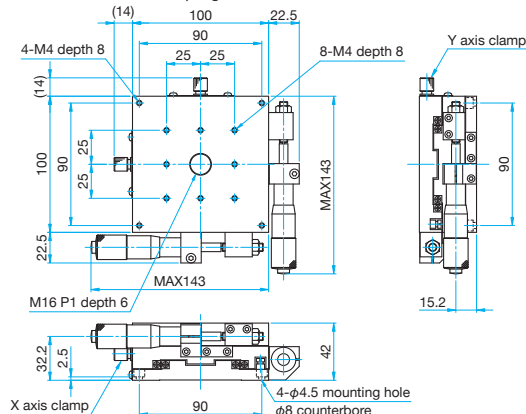
**TAM-1002S** Hexagonal socket head cap screw M4x8...4 screws, Spring washers



**TAM-1002S** Hexagonal socket head cap screw M4x8...4 screws, Spring washers



**TAM-1002SR** Hexagonal socket head cap screw M4x8...4 screws, Spring washers



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V Groove Screw

Ohters

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# X axis Aluminum Crossed Roller Slide Stages | TAM-1201 Stage size □120mm

RoHS

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V Groove Screw

Others

 15mm

 25mm

 40mm

 60mm

 65mm

 80mm

 100mm

 120mm

Others

Light-weight and high precision linear stages have black anodized aluminum bodies fitted with crossed roller bearings.

- There is a lineup of three types of stages which has M4, M6, and 1/4 inch screw holes on each top of the stages.
- The stage type of part number suffix M6 are using M6 size screws both for fixing its body and for mounting on the top of the table with tapped holes.
- The M6 type can mount directly on M6 specification vibration isolation systems and laboratory benches.
- The stage type of part number suffix "UU" are using 1/4 inch size screws both for fixing its body and for mounting on the top of the table with tapped holes.
- These stages can be mounted directly on the vibration isolation tables or laboratory benches by using holes for 1/4 inch screw size.



### Attention

- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

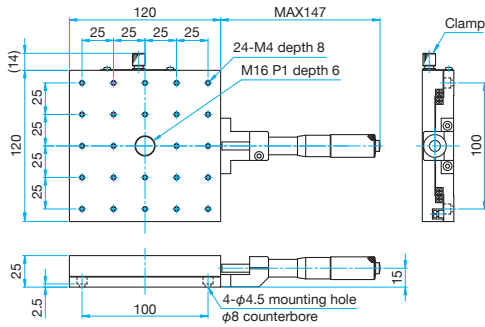
### Specifications

Part Number	METRIC	TAM-1201C	TAM-1201S	TAM-1201C-M6	TAM-1201S-M6
	INCH	—	—	TAM-1201CUU	TAM-1201SUU
(Opposite Model)	METRIC	—	TAM-1201SR	—	TAM-1201SR-M6
	INCH	—	—	—	TAM-1201SRUU
Table Size [mm]		120×120	120×120	120×120	120×120
Axes of Travel		X axis			
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±20	±20	±20	±20
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Crossed roller			
Primary Material		Aluminum			
Finish		Black anodized			
Load Capacity [N]		588 (60.0kgf)	588 (60.0kgf)	588 (60.0kgf)	588 (60.0kgf)
Travel Accuracy	Straightness [μm]	2	2	2	2
	Pitch [ ″ ]	40	40	40	40
	Yaw [ ″ ]	25	25	25	25
Max. Moment Capacity	Pitch [N·m]	40.7	40.7	40.7	40.7
	Roll [N·m]	60.3	60.3	60.3	60.3
	Yaw [N·m]	52.0	52.0	52.0	52.0
Moment Stiffness	Pitch [ ″/N·cm]	0.07	0.07	0.07	0.07
	Roll [ ″/N·cm]	0.05	0.05	0.05	0.05
Parallelism [μm]		50	50	50	50
Running Parallelism [μm]		15	15	15	15
Weight [kg]		1.3	1.3	1.3	1.3

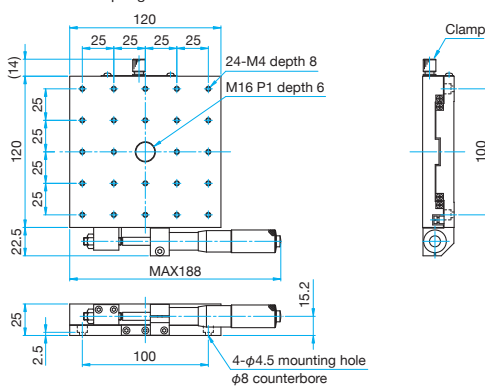


**Outline Drawing**

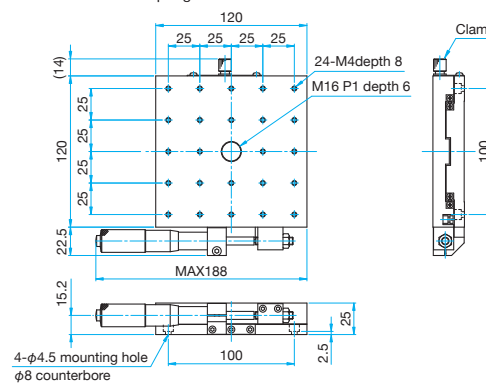
**TAM-1201C** Hexagonal socket head cap screw M4x8...4 screws, Spring washers



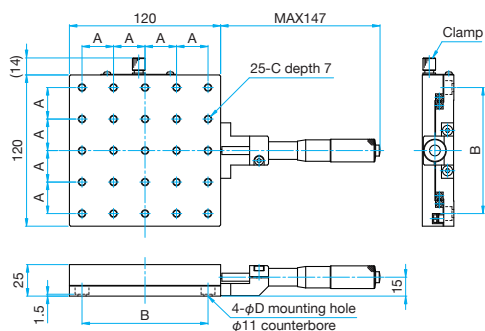
**TAM-1201S** Hexagonal socket head cap screw M4x8...4 screws, Spring washers



**TAM-1201SR** Hexagonal socket head cap screw M4x8...4 screws, Spring washers

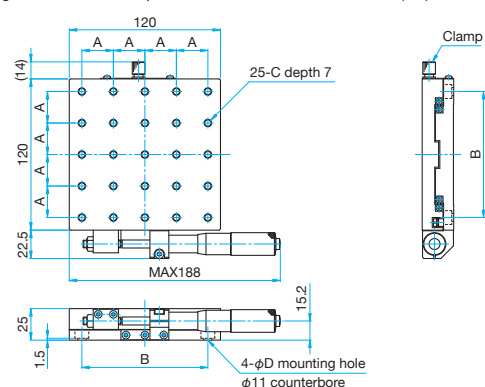


**TAM-1201C-M6/1201CUU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx5/16...4 screws (UU)



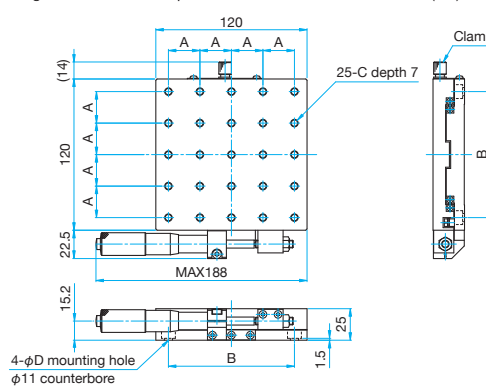
Part Number	A (mm)	B (mm)	C	D (mm)
TAM-1201C-M6	25	100	M6 P1	6.5
TAM-1201CUU	25.4	101.6	1/4-20UNC	7

**TAM-1201S-M6/1201SUU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx5/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
TAM-1201S-M6	25	100	M6 P1	6.5
TAM-1201SUU	25.4	101.6	1/4-20UNC	7

**TAM-1201SR-M6/1201SRUU** Hexagonal socket head cap screw M6x8...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx5/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
TAM-1201S-M6	25	100	M6 P1	6.5
TAM-1201SUU	25.4	101.6	1/4-20UNC	7

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Dovetail

Lapping

V Groove Screw

Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

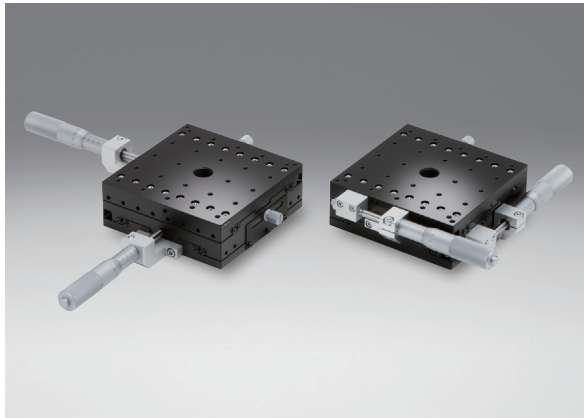
Others

# X axis Aluminum Crossed Roller Slide Stages | TAM-1202 Stage size □120mm

RoHS

Light-weight and high precision linear stages have black anodized aluminum bodies fitted with crossed roller bearings.

- There is a lineup of three types of stages which has M4, M6, and 1/4 inch screw holes on each top of the stages.
- The stage type of part number suffix M6 are using M6 size screws both for fixing its body and for mounting on the top of the table with tapped holes.
- The M6 type can mount directly on M6 specification vibration isolation systems and laboratory benches.
- The stage type of part number suffix "UU" are using 1/4 inch size screws both for fixing its body and for mounting on the top of the table with tapped holes.
- These stages can be mounted directly on the vibration isolation tables or laboratory benches by using holes for 1/4 inch screw size.



### Attention

- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

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Dovetail

Lapping

V Groove Screw

Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

Others

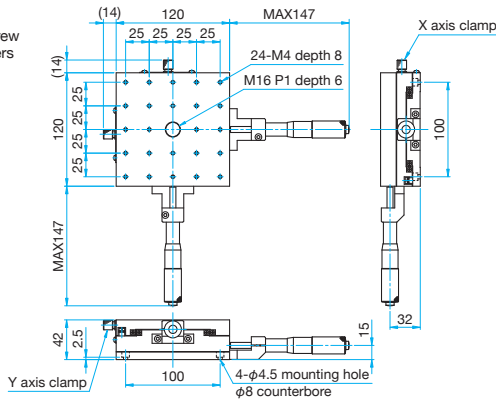
Specifications					
Part Number	METRIC	TAM-1202C	TAM-1202S	TAM-1202C-M6	TAM-1202S-M6
	INCH	—	—	TAM-1202CUU	TAM-1202SUU
(Opposite Model)	METRIC	—	TAM-1202SR	—	TAM-1202SR-M6
	INCH	—	—	—	TAM-1202SRUU
Table Size [mm]		120×120	120×120	120×120	120×120
Axes of Travel		XY axis			
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±20	±20	±20	±20
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Crossed roller			
Primary Material		Aluminum			
Finish		Black anodized			
Load Capacity [N]		588 (60.0kgf)	588 (60.0kgf)	588 (60.0kgf)	588 (60.0kgf)
Travel Accuracy	Straightness [μm]	2	2	2	2
	Pitch [ " ]	40	40	40	40
	Yaw [ " ]	25	25	25	25
Max. Moment Capacity	Pitch [N·m]	40.7	40.7	40.7	40.7
	Roll [N·m]	40.7	40.7	40.7	40.7
	Yaw [N·m]	52	52	52	52
Moment Stiffness	Pitch [ " /N·cm]	0.13	0.13	0.13	0.13
	Roll [ " /N·cm]	0.13	0.13	0.13	0.13
Parallelism [μm]		50	50	50	50
Running Parallelism [μm]		30	30	30	30
Orthogonality [μm]		10	10	10	10
Weight [kg]		2.5	2.5	2.5	2.5



**Outline Drawing**

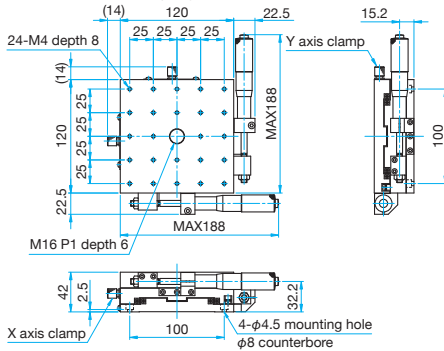
**TAM-1202C**

Hexagonal socket head cap screw M4x8...4 screws, Spring washers



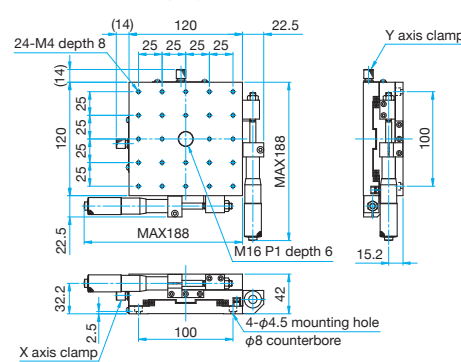
**TAM-1202S**

Hexagonal socket head cap screw M4x8...4 screws, Spring washers



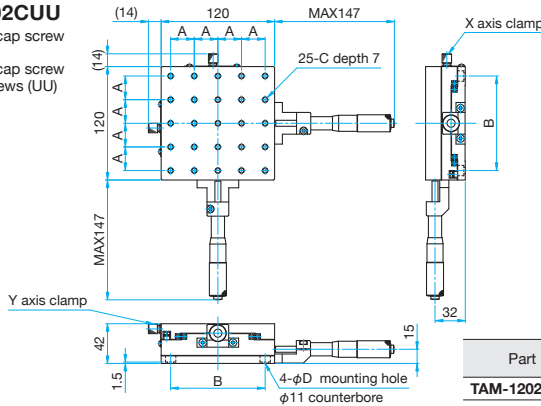
**TAM-1202SR**

Hexagonal socket head cap screw M4x8...4 screws, Spring washers



**TAM-1202C-M6/1202CUU**

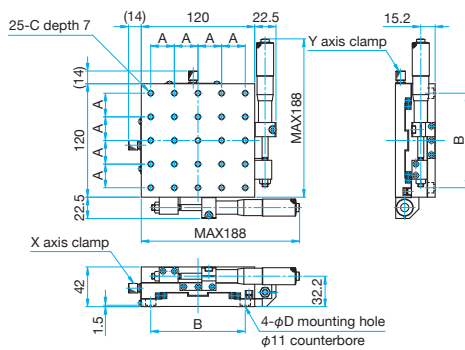
Hexagonal socket head cap screw M6x8...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx5/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
TAM-1202C-M6	25	100	M6 P1	6.5
TAM-1202CUU	25.4	101.6	1/4-20UNC	7

**TAM-1202S-M6/1202SUU**

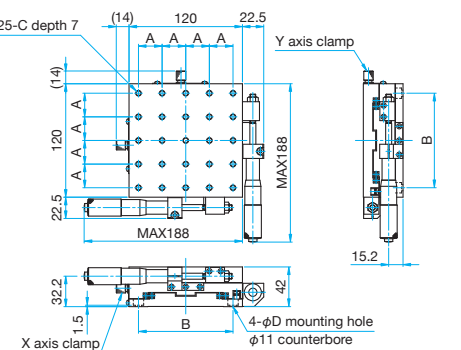
Hexagonal socket head cap screw M6x8...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx5/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
TAM-1202S-M6	25	100	M6 P1	6.5
TAM-1202SUU	25.4	101.6	1/4-20UNC	7

**TAM-1202SR-M6/1202SRUU**

Hexagonal socket head cap screw M6x8...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx5/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
TAM-1202SR-M6	25	100	M6 P1	6.5
TAM-1202SRUU	25.4	101.6	1/4-20UNC	7

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V Groove Screw

Ohters

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# X axis Long Travel Aluminum Crossed Roller Slide Stages

## XY axis Long Travel Aluminum Crossed Roller Slide Stages

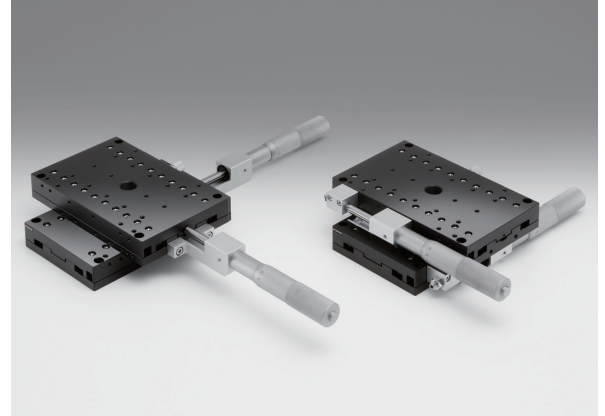
TAM-10161

RoHS

TAM-10162

Light-weight and high precision linear stages have black anodized aluminum bodies fitted with crossed roller bearings.

- The rectangular stage is effective for ensuring long travel.
- The coarse/fine movement type uses 5mm lead screw, enabling long travel in a short time. Minute adjustment is also possible with the micrometer head for fine adjustment.



### Attention

- Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

Specifications						
Part Number	METRIC	TAM-10161C	TAM-10161SDM	TAM-10161S	TAM-10162C	TAM-10162S
(Opposite Model)	METRIC	—	—	TAM-10161SR	—	TAM-10162SR
Table Size [mm]		100×160	100×160	100×160	100×160	100×160
Axes of Travel		X axis			XY axis	
Micrometer Position		Center	Side	Side	Center	Side
Travel [mm]		±25	Coars: ±35 Fine: ±3	±25	±25	±25
Lead of Actuator [mm/rotation]		0.5	Coars: 5 Fine: 0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01	0.01
Bearing type		Crossed roller				
Primary Material		Aluminum				
Finish		Black anodized				
Load Capacity [N]		588 (60.0kgf)	588 (60.0kgf)	588 (60.0kgf)	588 (60.0kgf)	588 (60.0kgf)
Travel Accuracy	Straightness [μm]	2	2	2	2	2
	Pitch [ ″ ]	40	40	40	40	40
	Yaw [ ″ ]	25	25	25	25	25
Max. Moment Capacity	Pitch [N·m]	62.8	62.8	62.8	60.8	60.8
	Roll [N·m]	60.8	60.8	60.8	60.8	60.8
	Yaw [N·m]	58.9	58.8	58.9	58.9	58.9
Moment Stiffness	Pitch [°/N·cm]	0.046	0.046	0.046	0.087	0.087
	Roll [°/N·cm]	0.04	0.04	0.04	0.087	0.087
Parallelism [μm]		100	100	100	200	200
Running Parallelism [μm]		15	20	15	30	30
Weight [kg]		1.3	1.4	1.4	2.5	2.7

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Lapping

V Groove Screw

Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

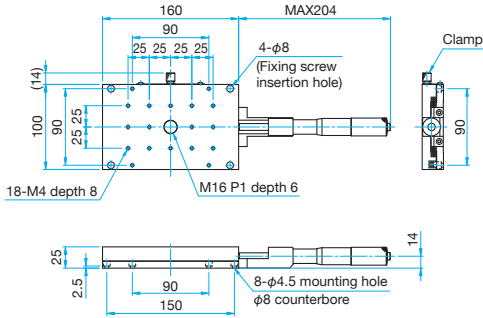
□120mm

Others

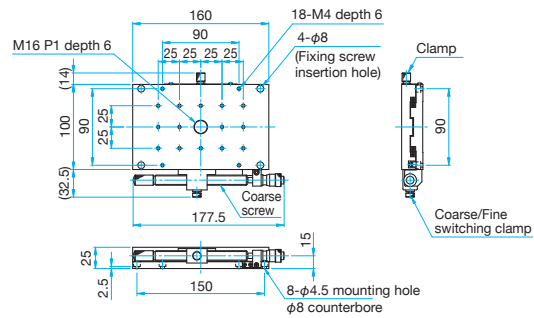


Outline Drawing

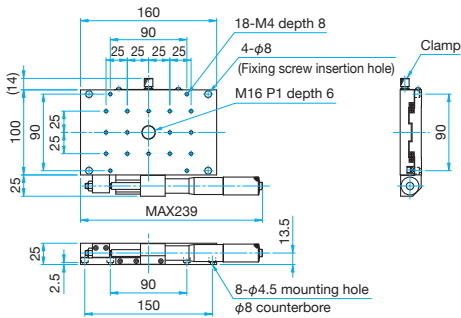
**TAM-10161C** Hexagonal socket head cap screw M4x8...4 screws, Spring washers



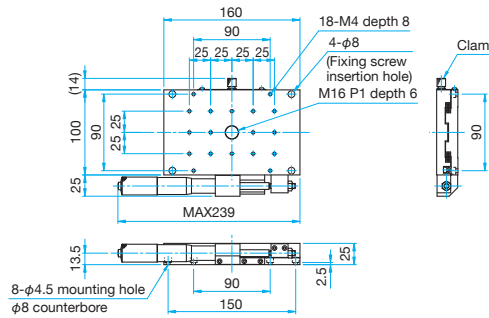
**TAM-10161SDM** Hexagonal socket head cap screw M4x6...4 screws



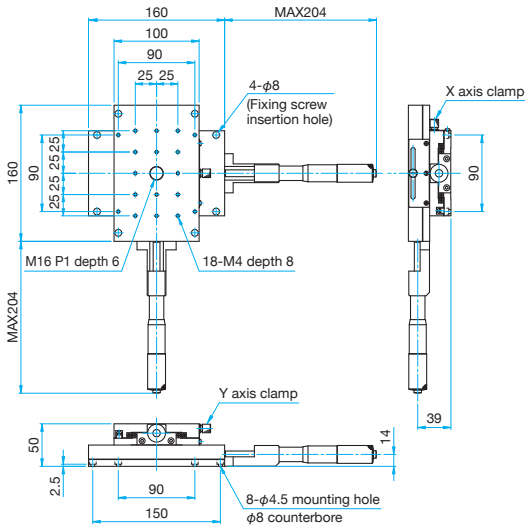
**TAM-10161S** Hexagonal socket head cap screw M4x8...4 screws, Spring washers



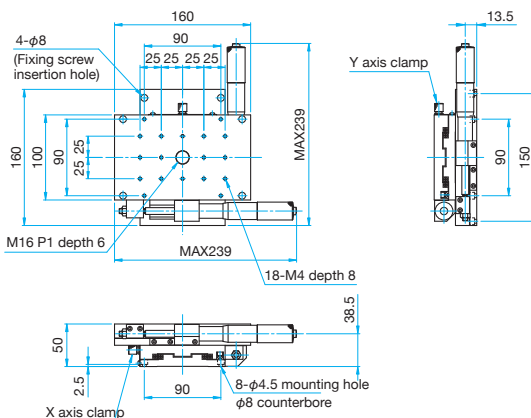
**TAM-10161SR** Hexagonal socket head cap screw M4x8...4 screws, Spring washers



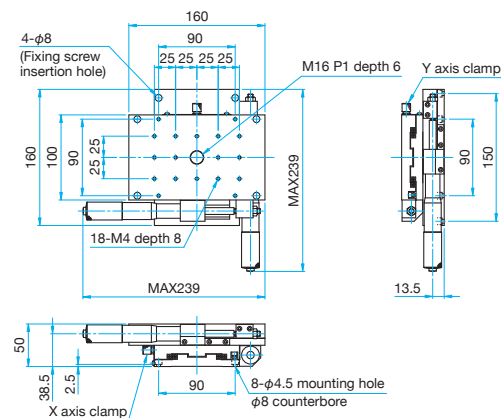
**TAM-10162C** Hexagonal socket head cap screw M4x8...4 screws, Spring washers



**TAM-10162S** Hexagonal socket head cap screw M4x8...4 screws, Spring washers



**TAM-10162SR** Hexagonal socket head cap screw M4x8...4 screws, Spring washers



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Lapping

V Groove Screw

Others

□ 15mm

□ 25mm

□ 40mm

□ 60mm

□ 65mm

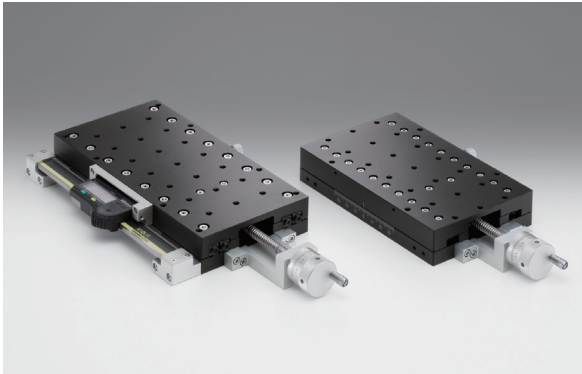
□ 80mm

□ 100mm

□ 120mm

Others

Light-weight and high precision rectangle linear stages have black anodized aluminum bodies fitted with crossed roller bearings.



- A leadscrew drive system (2mm pitch) with crank style handle enables smooth, fast travel.
- The standard type is fitted with a scale of readable resolution 1mm on the stage and a scale of 100 steps per rotation on the handle (readable resolution 20 $\mu$ m).

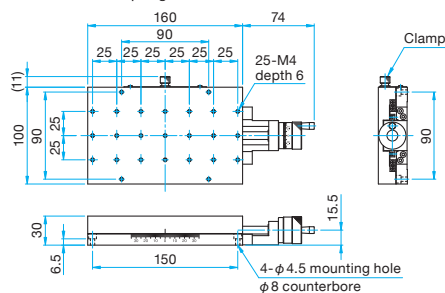
#### Guide

- ▶ The TAMC-20201(LS) supports hole patterns of both  $\square$ 180mm and  $\square$ 175mm, and can be directly mounted on a 25mm pitch optical breadboard.
- ▶ The models with the part number suffix LS are fitted with a digital display scale with a readable resolution of 10 $\mu$ m.
- ▶ The digital display scale has a reset function and a memory function to retain the value at the time the power is turned off (redisplay the value being displayed when the power is turned off).

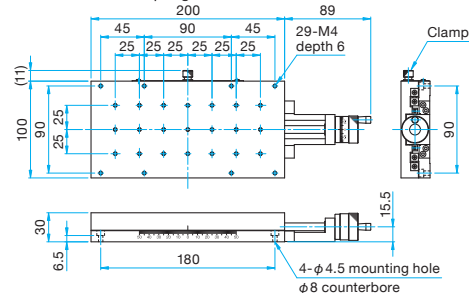


#### Outline Drawing

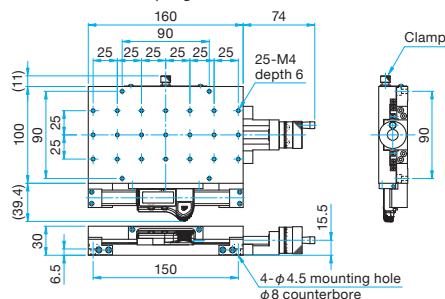
**TAMC-10161** Hexagonal socket head cap screw M4x12...4 screws  
Spring washers



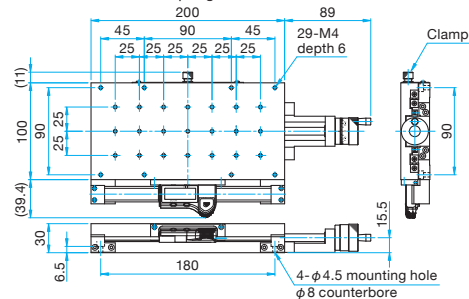
**TAMC-10201** Hexagonal socket head cap screw M4x12...4 screws  
Spring washers



**TAMC-10161LS** Hexagonal socket head cap screw M4x12...4 screws  
Spring washers



**TAMC-10201LS** Hexagonal socket head cap screw M4x12...4 screws  
Spring washers



#### Specifications

Part Number	TAMC-10161	TAMC-10161LS	TAMC-10201	TAMC-10201LS
Table Size [mm]	100x160	100x160	100x200	100x200
Axes of Travel	X axis			
Handle Position	Center	Center	Center	Center
Travel [mm]	±35	±35	±50	±50
Lead of Actuator [mm/rotation]	2.0	2.0	2.0	2.0
Readable Resolution [mm]	0.02	0.01	0.02	0.01
Bearing type	Crossed roller			
Primary Material	Aluminum			
Finish	Black anodized			
Load Capacity [N]	588 (60.0kgf)	588 (60.0kgf)	980 (100.0kgf)	980 (100.0kgf)
Travel Accuracy	Straightness [ $\mu$ m]	2	2	3
	Pitch [ $^{\circ}$ ]	40	40	60
	Yaw [ $^{\circ}$ ]	25	25	25
Max. Moment Capacity	Pitch [N·m]	62.8	62.8	100.0
	Roll [N·m]	60.8	60.8	99.1
	Yaw [N·m]	58.8	58.8	98.1
Moment Stiffness	Pitch [ $^{\circ}$ /N·cm]	0.046	0.046	0.036
	Roll [ $^{\circ}$ /N·cm]	0.04	0.04	0.03
Parallelism [ $\mu$ m]	100	100	100	100
Running Parallelism [ $\mu$ m]	15	15	25	25
Weight [kg]	1.6	1.7	1.9	2.1

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V Groove Screw

Others

 15mm 25mm 40mm 60mm 65mm 80mm 100mm 120mm

Others

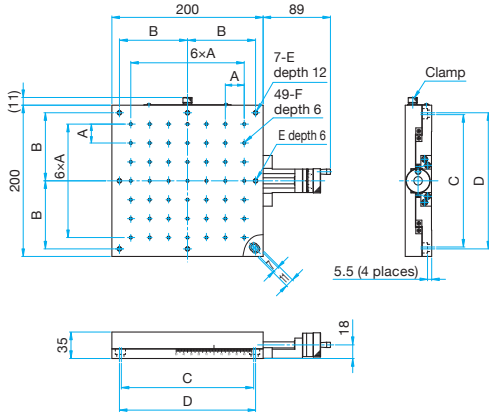




**Outline Drawing**

**TAMC-20201/20201-M6/20201UU**

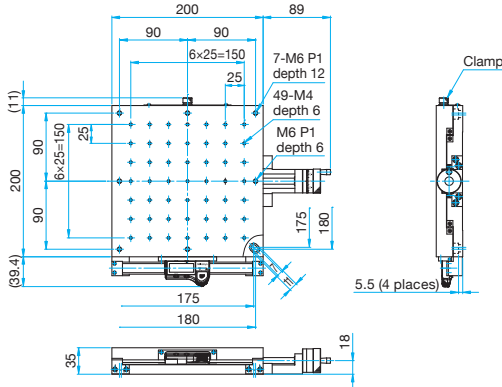
- Hexagon socket head cap screw M6x10...4 screws
- Hexagon socket head cap screw M6x10...4 screws (M6)
- Hexagon socket head cap screw 1/4-20UNCx1/2...4 screws (UU)



Part Number	A (mm)	B (mm)	C (mm)	D (mm)	E	F
TAMC-20201	25	90	175	180	M6 P1	M4
TAMC-20201-M6	25	87.5	175		M6 P1	M6 P1
TAMC-20201UU	25.4	88.9	177.8		1/4-20UNC	1/4-20UNC

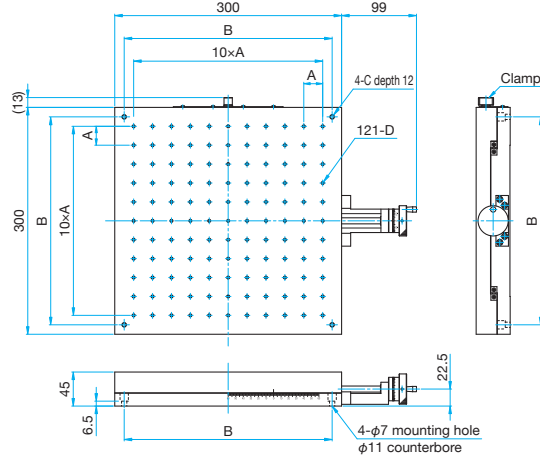
**TAMC-20201LS**

- Hexagon socket head cap screw M6x10...4 screws



**TAMC-30301/30301-M6/30301UU**

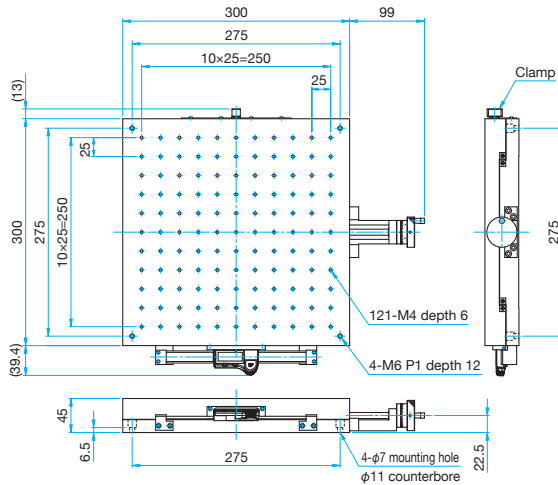
- Hexagon socket head cap screw M6x12...4 screws
- Hexagon socket head cap screw M6x12...4 screws (M6)
- Hexagon socket head cap screw 1/4-20UNCx1/2...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D
TAMC-30301	25	275	M6 P1	M4 depth 8
TAMC-30301-M6	25	275	M6 P1	M6 P1 depth 10
TAMC-30301UU	25.4	279.4	1/4-20UNC	1/4-20UNC depth 10

**TAMC-30301LS**

- Hexagon socket head cap screw M6x12...4 screws



**Specifications**

Part Number	METRIC	TAMC-20201	TAMC-20201-M6	TAMC-20201LS	TAMC-30301	TAMC-30301-M6	TAMC-30301LS
	INCH	—	TAMC-20201UU	—	—	TAMC-30301UU	—
Table Size [mm]		200x200	200x200	200x200	300x300	300x300	300x300
Axes of Travel		X axis					
Micrometer Position		Center	Center	Center	Center	Center	Center
Travel [mm]		±50	±50	±50	±60	±60	±60
Lead of Actuator [mm/rotation]		2.0	2.0	2.0	2.0	2.0	2.0
Micrometer Readable Resolution [mm]		0.02	0.02	0.01	0.02	0.02	0.01
Bearing type		Crossed roller					
Primary Material		Aluminum					
Finish		Black anodized					
Load Capacity [N]		1176 (120.0kgf)	1176 (120.0kgf)	1176 (120.0kgf)	1274 (130.0kgf)	1274 (130.0kgf)	1274 (130.0kgf)
Travel Accuracy	Straightness [μm]	4	4	4	5	5	5
	Pitch [°]	60	60	60	60	60	60
	Yaw [°]	25	25	25	25	25	25
Max. Moment Capacity	Pitch [N·m]	112.0	112.0	112.0	117.0	117.0	117.0
	Roll [N·m]	119.0	119.0	119.0	122.0	122.0	122.0
	Yaw [N·m]	113.0	113.0	113.0	116.0	116.0	116.0
Moment Stiffness	Pitch [°/N·cm]	0.036	0.036	0.036	0.03	0.03	0.03
	Roll [°/N·cm]	0.026	0.026	0.026	0.024	0.024	0.024
Parallelism [μm]		100	100	100	100	100	100
Running Parallelism [μm]		25	25	25	40	40	40
Weight [kg]		3.5	3.5	3.7	10.7	10.7	10.9

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Lapping

V Groove Screw

Ohters

- 15mm
- 25mm
- 40mm
- 60mm
- 65mm
- 80mm
- 100mm
- 120mm
- Others

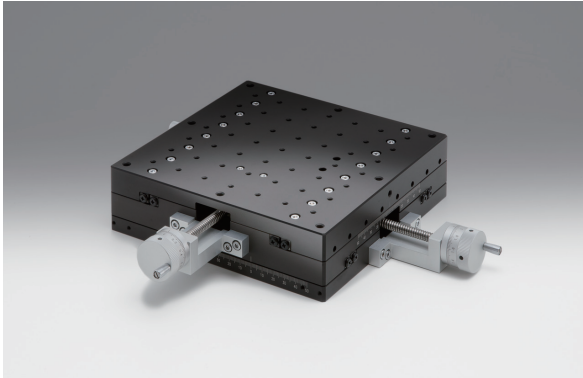
## XY axis Aluminum Crossed Roller Slide Stages

TAMC-2

RoHS

Leadscrew type large linear stages have black anodized aluminum bodies fitted with crossed roller bearings.

- Drive of this stage will be able by using adjustment handle with screw feed system in (2mm pitch), and the stage is moved smoothly with a small load.



## Guide

- ▶ The TAMC-20202 supports the hole patterns of both □180mm and □175mm, possible to be directly mounted on a 25mm pitch optical breadboard.

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

Others

## Specifications

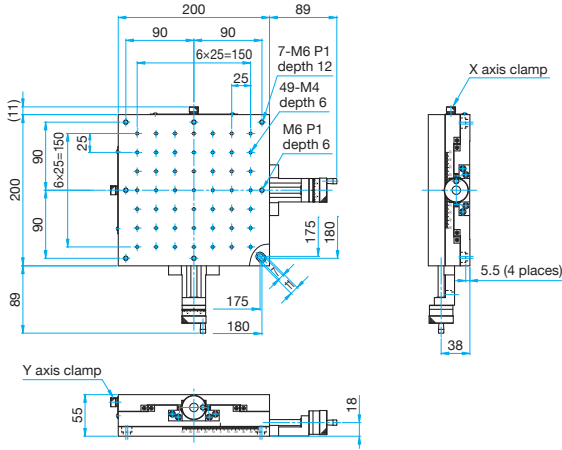
Part Number	METRIC	TAMC-20202	TAMC-20202-M6	TAMC-30302	TAMC-30302-M6
	INCH	—	TAMC-20202UU	—	TAMC-30302UU
Table Size [mm]		200×200	200×200	300×300	300×300
Axes of Travel		XY axis			
Micrometer Position		Center	Center	Center	Center
Travel [mm]		±50	±50	±60	±60
Lead of Actuator [mm/rotation]		2	2	2	2
Micrometer Readable Resolution [mm]		0.02	0.02	0.02	0.02
Bearing type		Crossed roller			
Primary Material		Aluminum			
Finish		Black anodized			
Load Capacity [N]		1176 (120.0kgf)	1176 (120.0kgf)	1274 (130.0kgf)	1274 (130.0kgf)
Travel Accuracy	Straightness [μm]	4	4	5	5
	Pitch [ ″ ]	60	60	60	60
	Yaw [ ″ ]	25	25	25	25
Max. Moment Capacity	Pitch [N·m]	112.0	112.0	117.0	117.0
	Roll [N·m]	112.0	112.0	117.0	117.0
	Yaw [N·m]	113.0	113.0	116.0	116.0
Moment Stiffness	Pitch [°/N·cm]	0.06	0.06	0.06	0.06
	Roll [°/N·cm]	0.06	0.06	0.06	0.06
Parallelism [μm]		200	200	200	200
Running Parallelism [μm]		50	50	80	80
Weight [kg]		6.0	6.0	16.5	16.5



**Outline Drawing**

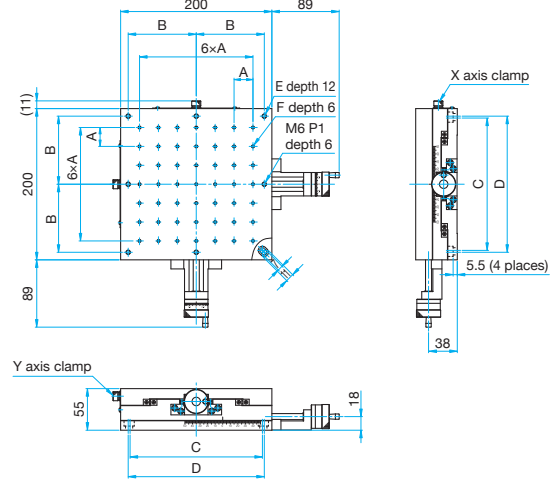
**TAMC-20202**

Hexagonal socket head cap screw M6x10...4 screws



**TAMC-20202-M6/20202UU**

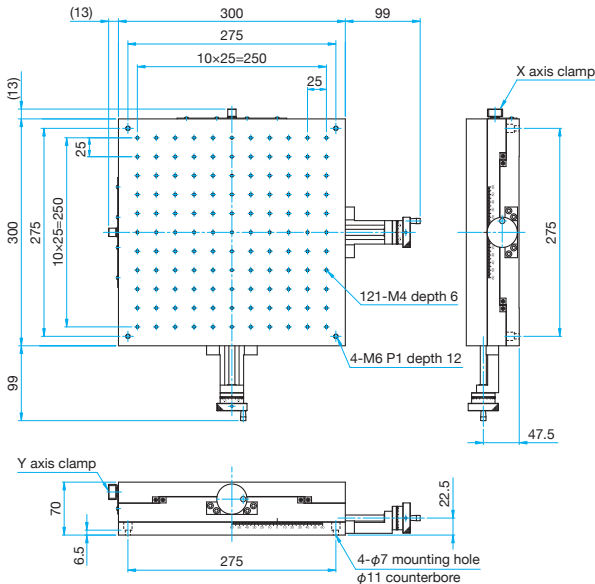
Hexagonal socket head cap screw M6x10...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx1/2...4 screws (UU)



Part Number	A (mm)	B (mm)	C (mm)	E	F
TAMC-20202-M6	25	87.5	175	M6 P1	M6 P1
TAMC-20202UU	25.4	88.9	177.8	1/4-20UNC	1/4-20UNC

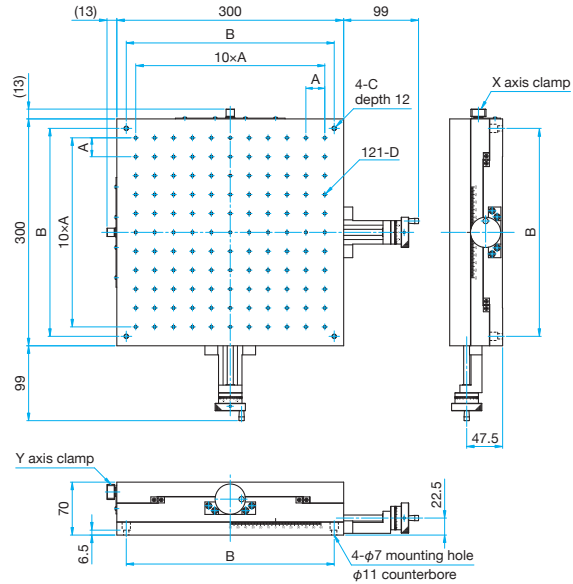
**TAMC-30302**

Hexagonal socket head cap screw M6x12...4 screws



**TAMC-30302-M6/30302UU**

Hexagonal socket head cap screw M6x12...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx1/2...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D
TAMC-30302-M6	25	275	M6 P1	M6 P1 depth 10
TAMC-30302UU	25.4	279.4	1/4-20UNC	1/4-20UNC depth 10

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Others

- 15mm
- 25mm
- 40mm
- 60mm
- 65mm
- 80mm
- 100mm
- 120mm

Others

# X axis Aluminium Stages

# XY axis Aluminium Stages

TADC-401

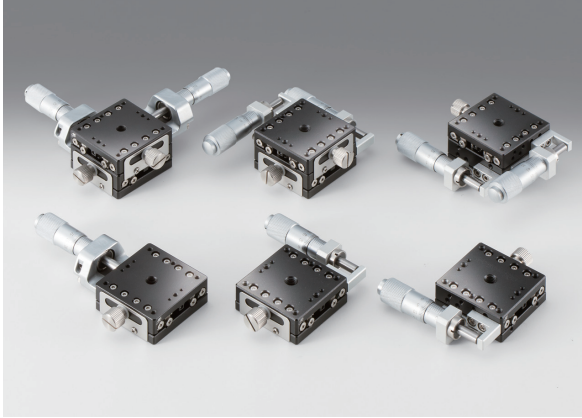
TADC-402W

Stage size  40mm

RoHS

The high stiffness integral guide evolved into a separate type offering low price, high stiffness and lightweight.

- High quality translation stage with smooth travel. Optimal for positioning and alignment.
- Because a steel ball travels in contact with the R groove at four points, these stages have stable load capacity in all directions.
- Long life but free of maintenance.



### Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

Specifications					
Part Number	METRIC	TADC-401C	TADC-401S	TADC-402WC	TADC-402WS
	INCH	TADC-401CUU	TADC-401SUU	TADC-402WCUU	TADC-402WSUU
(Opposite Model)	METRIC	—	TADC-401SR	—	TADC-402WSR
	INCH	—	TADC-401SRUU	—	TADC-402WSRUU
Table Size [mm]		40×40	40×40	40×40	40×40
Axes of Travel		X axis		XY axis	
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±6.5	±6.5	±6.5	±6.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		Aluminum			
Finish		Black anodized			
Load Capacity [N]		49 (5.0kgf)	49 (5.0kgf)	49 (5.0kgf)	49 (5.0kgf)
Travel Accuracy	Straightness [μm]	3	3	3	3
	Max. Moment Capacity	Pitch [N·m]	2.5	2.5	2.5
Roll [N·m]		3	3	2.5	2.5
Yaw [N·m]		2.5	2.5	2.5	2.5
Moment Stiffness	Pitch [°/N·cm]	0.66	0.66	1.22	1.22
	Roll [°/N·cm]	0.36	0.36	1.22	1.22
Parallelism [μm]		30	30	50	50
Running Parallelism [μm]		10	10	20	20
Orthogonality [μm]		—	—	10	10
Options		FP/DL	FP/DL	FP/DL	FP
Weight [kg]		0.15	0.15	0.3	0.3

Option					
Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-62540	0.25	—	E008
DL	Differential Micrometer Heads	MDC-13	0.5	0.01	

- \* Please add an option code as the part number suffix to specify various optional specifications.
- \* Installation may not be possible depending on the direction of DL.
- \* Replacement work requires a special tool (MNS). [Reference](#) F006

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Dovetail

Lapping

V Groove Screw

Others

 15mm 25mm 40mm 60mm 65mm 80mm 100mm 120mm

Others



# X axis Aluminium Stages

# XY axis Aluminium Stages

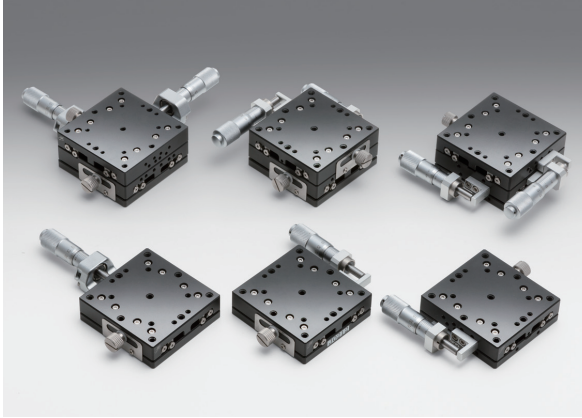
TADC-601  
TADC-602W

Stage size  60mm

RoHS

The high stiffness integral guide evolved into a separate type offering low price, high stiffness and lightweight.

- High quality translation stage with smooth travel. Optimal for positioning and alignment.
- Because a steel ball travels in contact with the R groove at four points, these stages have stable load capacity in all directions.
- Long life but free of maintenance.



### Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

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V Groove Screw

Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

### Specifications

Part Number	METRIC	TADC-601C	TADC-601S	TADC-602WC	TADC-602WS
(Opposite Model)	METRIC	—	TADC-601SR	—	TADC-602WSR
Table Size [mm]		60×60	60×60	60×60	60×60
Axes of Travel		X axis		XY axis	
Micrometer Position		Center	Side	Center	Side
Travel [mm]		±6.5	±6.5	±6.5	±6.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		Aluminum			
Finish		Black anodized			
Load Capacity [N]		196 (20.0kgf)	196 (20.0kgf)	196 (20.0kgf)	196 (20.0kgf)
Travel Accuracy	Straightness [μm]	3	3	3	3
Max. Moment Capacity	Pitch [N·m]	4.9	4.9	4.9	4.9
	Roll [N·m]	4.9	4.9	4.9	4.9
	Yaw [N·m]	4.9	4.9	4.9	4.9
Moment Stiffness	Pitch [°/N·cm]	0.3	0.3	0.6	0.6
	Roll [°/N·cm]	0.25	0.25	0.6	0.6
Parallelism [μm]		30	30	50	50
Running Parallelism [μm]		10	10	20	20
Orthogonality [μm]		—	—	10	10
Options		FP/DL	FP/DL	FP/DL	FP
Weight [kg]		0.2	0.2	0.4	0.4

### Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-62540	0.25	—	E008
DL	Differential Micrometer Heads	MDC-13	0.5	0.01	

\* Please add an option code as the part number suffix to specify various optional specifications.

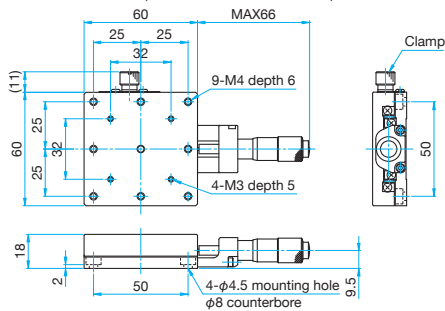
\* Installation may not be possible depending on the direction of DL.

\* Replacement work requires a special tool (MNS). [Reference](#) F006

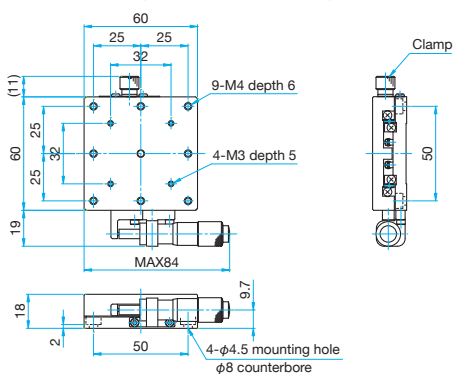


Outline Drawing

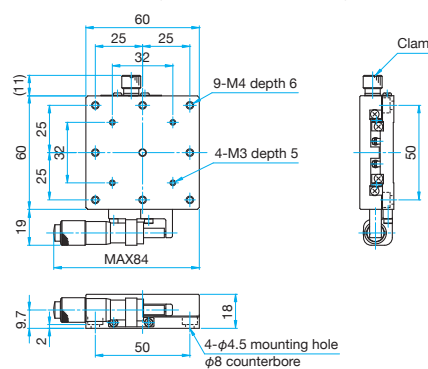
**TADC-601C** Hexagon socket head cap screw (stainless steel construction) M4x6...4 screws



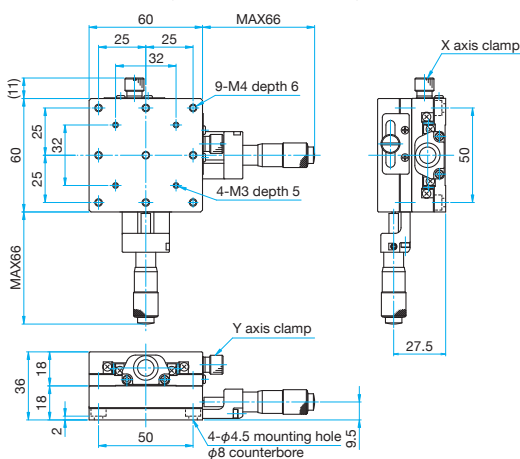
**TADC-601S** Hexagon socket head cap screw (stainless steel construction) M4x6...4 screws



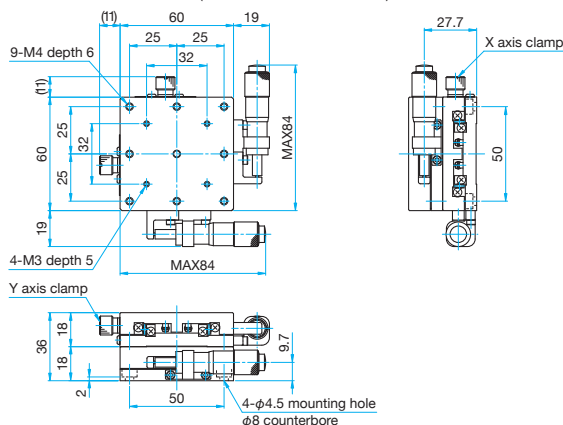
**TADC-601SR** Hexagon socket head cap screw (stainless steel construction) M4x6...4 screws



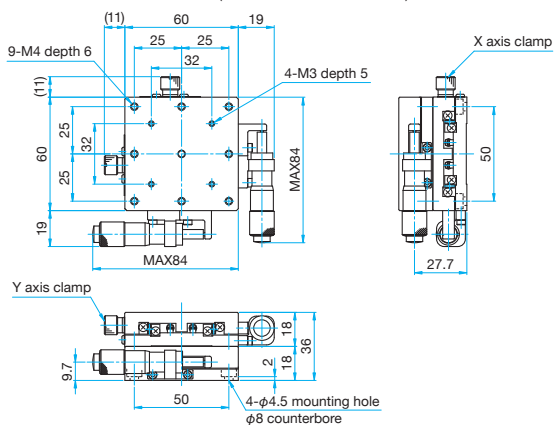
**TADC-602WC** Hexagon socket head cap screw (stainless steel construction) M4x6...4 screws



**TADC-602WS** Hexagon socket head cap screw (stainless steel construction) M4x6...4 screws



**TADC-602WSR** Hexagon socket head cap screw (stainless steel construction) M4x6...4 screws



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Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

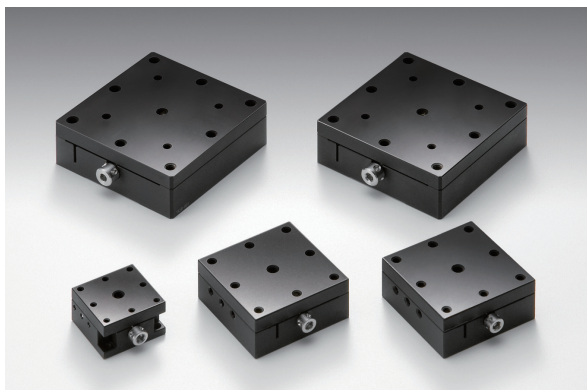
Others

# X axis Preset Stages | TASB-1 Stage size 15/25/40/60/65mm

RoHS

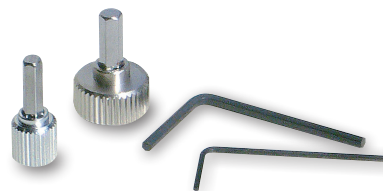
Preset stages with dovetail slide guide and leadscrew adjustment system, suitable for assembly in systems.

- Ideal for less frequent operations, fine adjustment or permanent fixation.
- These stages have a block shape with minimal protrusions including the adjustment knob, in order to minimizing the installation space.

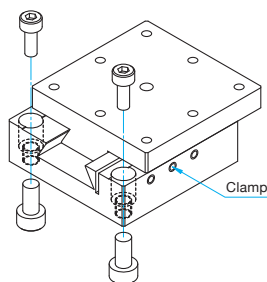


## Guide

- ▶ A hex wrench with knob and clamping wrench are included.

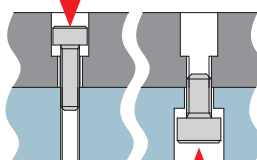


## Mounting Method



## Detailed Illustration

Clamp with a screw from the top



### Top mounting

Tapped holes are used as counterbores because screws are smaller than tapped holes and will go in without any interference.

### Bottom mounting

Clamp with screws that match the specification of tapped holes.

Clamp with a screw from the bottom

## About Mounting Holes

The bottom mounting holes of preset stages are tapped holes. These stages allow mounting from the top or the bottom, convenient for securing on optical breadboards or other instruments as well as assembling in systems. Use the screws of the sizes listed in the table on the right for mounting.

Part Number	Secure from the top	Secure from the bottom
TASB-151	M2	M2.6
TASB-251	M2	M3
TASB-401	M3	M4
TASB-401UU	6-32UNC	—
TASB-601	M4	M5
TASB-651-M6	M6	M8
TASB-651UU	1/4-20UNC	5/16-18UNC

\* When mounting from the top surface, slide the top surface to insert screws in mounting holes.

## Specifications

Part Number	METRIC	TASB-151	TASB-251	TASB-401	TASB-601	TASB-651-M6
	INCH	—	—	TASB-401UU	—	TASB-651UU
Table Size [mm]		15×15	25×25	40×40	60×60	65×65
Axes of Travel		X axis				
Travel [mm]		±2	±3	±7	±10	±12.5
Screw Pitch [mm]		0.4	0.5	0.5	0.5	0.5
Bearing type		Dovetail method				
Primary Material		Brass				
Finish		Black matte				
Load Capacity [N]		9.8 (1.0kgf)	49 (5.0kgf)	98.1 (10.0kgf)	147 (15.0kgf)	147 (15.0kgf)
Travel Accuracy	Straightness [μm]	10	10	10	10	10
	Pitch [N·m]	0.5	2.0	4.0	5.1	5.1
	Roll [N·m]	0.5	2.0	3.75	5.1	5.1
Max. Moment Capacity	Yaw [N·m]	0.2	1.0	3.0	4.0	4.0
	Pitch [°/N·cm]	8.0	2.0	0.61	0.4	0.35
Moment Stiffness	Roll [°/N·cm]	7.0	1.5	0.51	0.3	0.35
	Parallelism [μm]		50	50	50	50
Weight [kg]		0.02	0.06	0.2	0.5	0.7

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Others

15mm25mm40mm60mm65mm80mm100mm120mm

Others

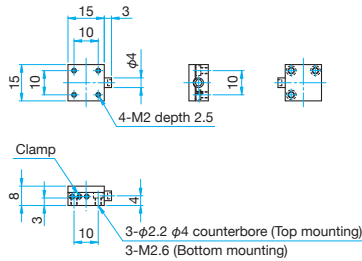




**Outline Drawing**

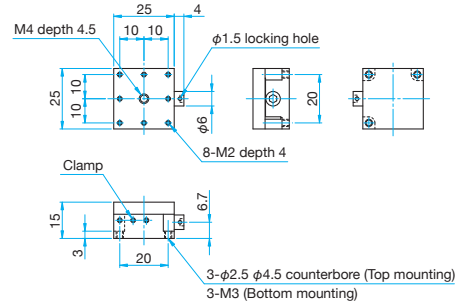
**TASB-151**

- Pan head screw M2x5...3 screws, One 2.5mm hex wrench with knob, One 0.89mm hex wrench
- hex wrench with knob size 2.5mm, hex wrench size for clamp 0.89mm



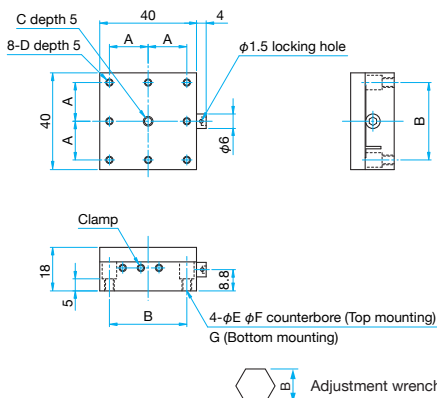
**TASB-251**

- Pan head screw M2x6...3 screws, One 3mm hex wrench with knob, One 0.89mm hex wrench
- hex wrench with knob size 3mm, hex wrench size for clamp 0.89mm



**TASB-401/401UU**

- Pan head screw M3x8...4 screws, One 3mm hex wrench with knob, One 1.5mm hex wrench
- Hexagonal socket head cap screw 6-32UNCx3/8...4 screws, One 3mm hex wrench with knob, One 1.5mm hex wrench (UU)
- hex wrench with knob size 3mm, hex wrench size for clamp 1.5mm

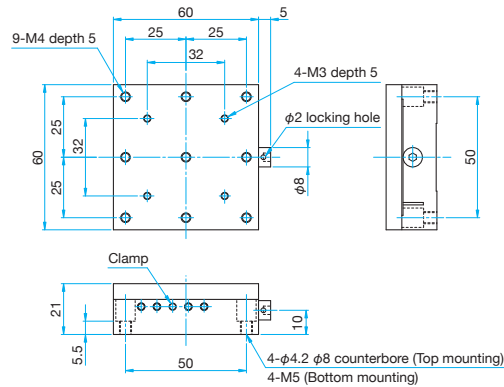


Adjustment wrench size B=3

Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)	G
TASB-401	16	32	M4	M3	3.3	6	4-M4
TASB-401UU	15.875	31.75	8-32UNC	6-32UNC	4	6.5	

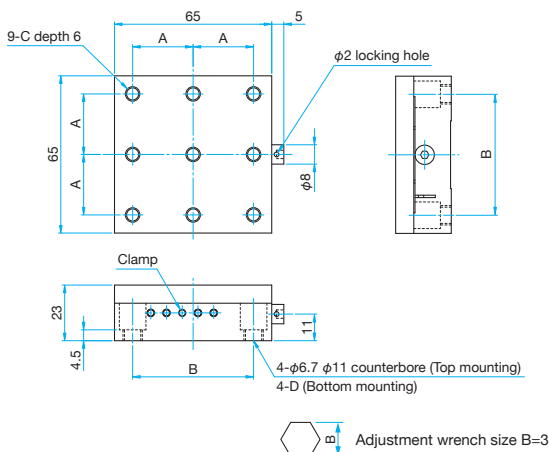
**TASB-601**

- Hexagonal socket head cap screw M4x10...4 screws, One 3mm hex wrench with knob, One 1.5mm hex wrench
- hex wrench with knob size 3mm, hex wrench size for clamp 1.5mm



**TASB-651-M6/651UU**

- Hexagonal socket head cap screw M6x12...4 screws, One 3mm hex wrench with knob, One 1.5mm hex wrench (M6)
- Hexagonal socket head cap screw 1/4-20UNCx1/2...4 screws, One 3mm hex wrench with knob, One 1.5mm hex wrench (UU)
- hex wrench with knob size 3mm, hex wrench size for clamp 1.5mm



Adjustment wrench size B=3

Part Number	A (mm)	B (mm)	C	D
TASB-651-M6	25	50	M6	M8
TASB-651UU	25.4	50.8	1/4-20UNC	5/16-18UNC

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Ohters

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

## XY axis Preset Stages

TASB-2 Stage size □15/□25/□40/□60/□65mm

RoHS

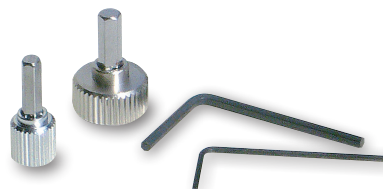
Preset stages with dovetail slide guide and leadscrew adjustment system, suitable for assembly in systems.

- Ideal for less frequent operations, fine adjustment or permanent fixation.
- These stages have a block shape with minimal protrusions including the adjustment knob, in order to minimizing the installation space.

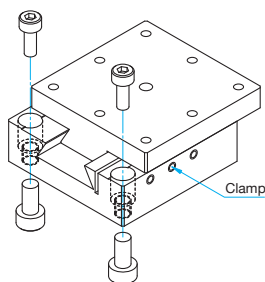


## Guide

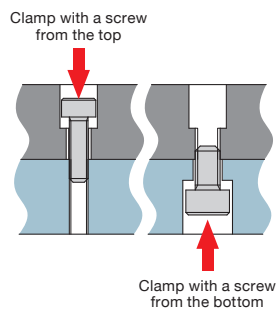
- ▶ A hex wrench with knob and clamping wrench are included.



## Mounting Method



## Detailed Illustration



## Top mounting

Tapped holes are used as counterbores because screws are smaller than tapped holes and will go in without any interference.

## Bottom mounting

Clamp with screws that match the specification of tapped holes.

## About Mounting Holes

The bottom mounting holes of preset stages are tapped holes. These stages allow mounting from the top or the bottom, convenient for securing on optical breadboards or other instruments as well as assembling in systems. Use the screws of the sizes listed in the table on the right for mounting.

Part Number	Secure from the top	Secure from the bottom
TASB-152	M2	M2.6
TASB-252	M2	M3
TASB-402	M3	M4
TASB-402UU	6-32UNC	—
TASB-602	M4	M5
TASB-652-M6	M6	M8
TASB-652UU	1/4-20UNC	5/16-18UNC

\* When mounting from the top surface, slide the top surface to insert screws in mounting holes.

## Specifications

Part Number	METRIC	TASB-152	TASB-252	TASB-402	TASB-602	TASB-652-M6
	INCH	—	—	TASB-402UU	—	TASB-652UU
Table Size [mm]		15×15	25×25	40×40	60×60	65×65
Axes of Travel		XY axis				
Travel [mm]		±2	±3	±7	±10	±12.5
Screw Pitch [mm]		0.4	0.5	0.5	0.5	0.5
Bearing type		Dovetail method				
Primary Material		Brass				
Finish		Black matte				
Load Capacity [N]		9.8 (1.0kgf)	49 (5.0kgf)	98.1 (10.0kgf)	147 (15.0kgf)	147 (15.0kgf)
Travel Accuracy	Straightness [μm]	10	10	10	10	10
	Pitch [N·m]	0.5	2.0	3.75	5.1	5.1
	Roll [N·m]	0.5	2.0	3.75	5.1	5.1
Max. Moment Capacity	Yaw [N·m]	0.2	1.0	3.0	4.0	4.0
	Pitch [°/N·cm]	15	3.57	1.12	0.7	0.7
Moment Stiffness	Roll [°/N·cm]	15	3.57	1.12	0.7	0.7
	Parallelism [μm]		100	100	100	100
Weight [kg]		0.03	0.11	0.3	0.83	1.12

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

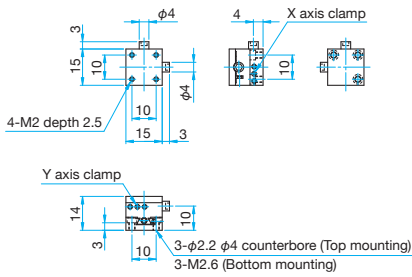
Others



**Outline Drawing**

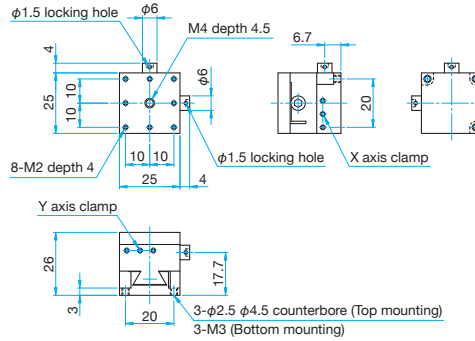
**TASB-152**

- Pan head screw M2x5...3 screws, One 2.5mm hex wrench with knob, One 0.89mm hex wrench
- hex wrench with knob size 2.5mm, hex wrench size for clamp 0.89mm



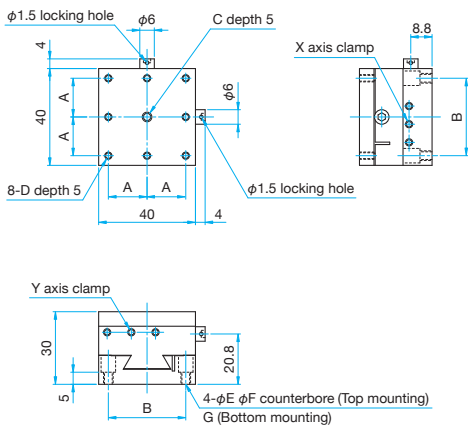
**TASB-252**

- Pan head screw M2x6...3 screws, One 3mm hex wrench with knob, One 0.89mm hex wrench
- hex wrench with knob size 3mm, hex wrench size for clamp 0.89mm



**TASB-402/402UU**

- Pan head screw M3x8...4 screws, One 3mm hex wrench with knob, One 1.5mm hex wrench
- Hexagonal socket head cap screw 6-32UNCx3/8...4 screws, One 3mm hex wrench with knob, One 1.5mm hex wrench (UU)
- hex wrench with knob size 3mm, hex wrench size for clamp 1.5mm

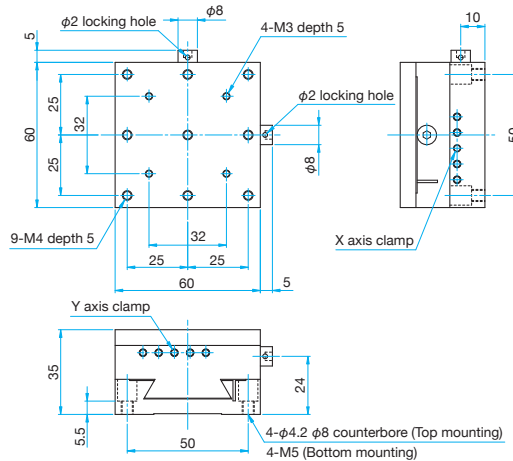


Adjustment wrench size B=3

Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)	G
TASB-402	16	32	M4	M3	3.3	6	4-M4
TASB-402UU	15.875	31.75	8-32UNC	6-32UNC	4	6.5	

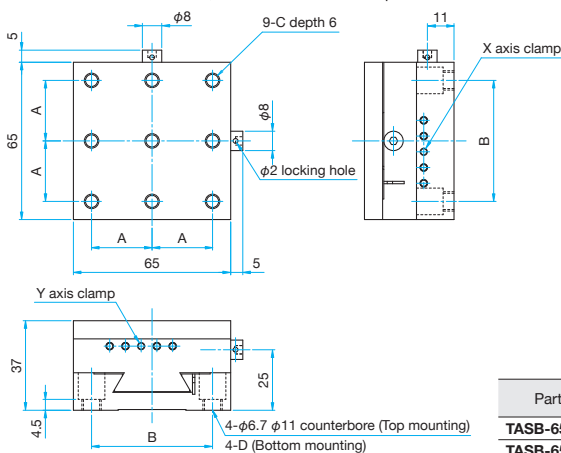
**TASB-602**

- Hexagonal socket head cap screw M4x10...4 screws, One 3mm hex wrench with knob, One 1.5mm hex wrench
- hex wrench with knob size 3mm, hex wrench size for clamp 1.5mm



**TASB-652-M6/652UU**

- Hexagonal socket head cap screw M6x12...4 screws, One 3mm hex wrench with knob, One 1.5mm hex wrench (M6)
- Hexagonal socket head cap screw 1/4-20UNCx1/2...4 screws, One 3mm hex wrench with knob, One 1.5mm hex wrench (UU)
- hex wrench with knob size 3mm, hex wrench size for clamp 1.5mm



Adjustment wrench size B=3

Part Number	A (mm)	B (mm)	C	D
TASB-652-M6	25	50	M6	M8
TASB-652UU	25.4	50.8	1/4-20UNC	5/16-18UNC

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Ohters

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# X axis Leadscrew Stages

# XY axis Leadscrew Stages

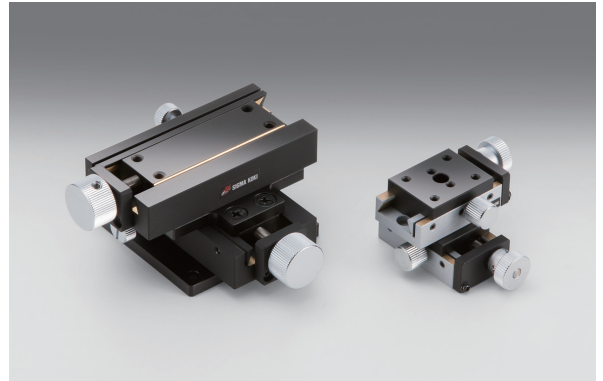
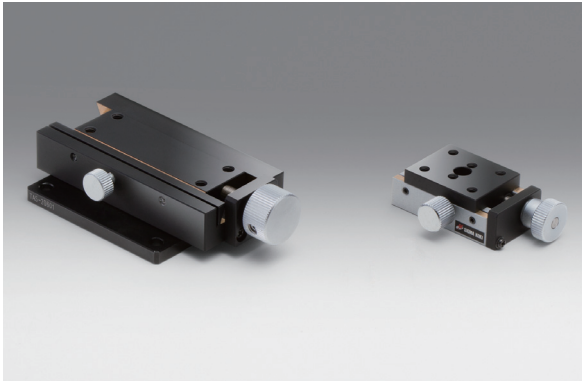
TAS-1

TAS-2

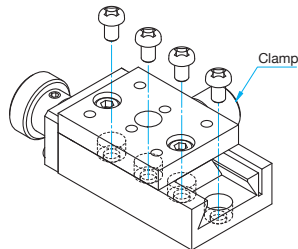
RoHS

Leadscrew stages with dovetail slide guide and leadscrew adjustment system, suitable for fine adjustment.

- A large adjustment knob provides good sensitivity and ease of use



## Mounting Method



Stage must be translated to provide access to all of the mounting holes.

## Guide

- ▶ Using the top plate spacer for TAS-2060 (SP-127-1 and SP-134) to convert mounting holes, post holders and various stages can be mounted. [Reference](#) D059, D061

## Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

## Specifications

Part Number	METRIC	TAS-24301	TAS-20601	TAS-24302	TAS-20602
(Opposite Model)	METRIC	TAS-24301R	TAS-20601R	TAS-24302R	TAS-20602R
Table Size [mm]		24×30	18×60	24×30	18×60
Axes of Travel		X axis		XY axis	
Travel [mm]		±4	±7.5	±4	±7.5
Screw Pitch [mm]		0.5	0.5	0.5	0.5
Bearing type		Dovetail method			
Primary Material		Brass			
Finish		Super black chrome			
Load Capacity [N]		68.7 (7.0kgf)	147 (15.0kgf)	68.7 (7.0kgf)	147 (15.0kgf)
Travel Accuracy	Straightness [μm]	20	20	20	20
	Pitch [N·m]	0.5	0.5	0.5	0.5
	Roll [N·m]	0.5	0.5	0.5	0.5
Max. Moment Capacity	Yaw [N·m]	0.5	0.7	0.5	0.7
	Pitch [°/N·cm]	0.51	0.25	1.5	1.27
	Roll [°/N·cm]	1.0	1.0	1.5	1.27
Parallelism [μm]		50	50	100	100
Weight [kg]		0.2	0.5	0.4	0.9

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Others

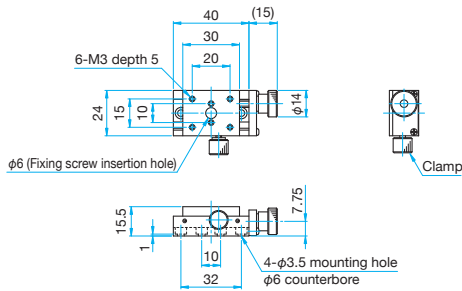
 15mm 25mm 40mm 60mm 65mm 80mm 100mm 120mm

Others

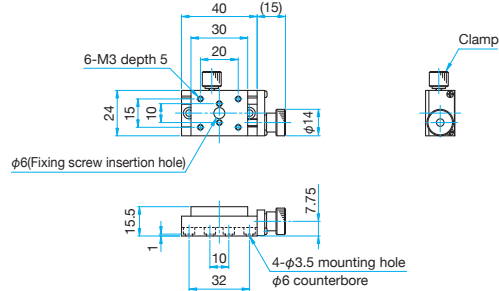


Outline Drawing

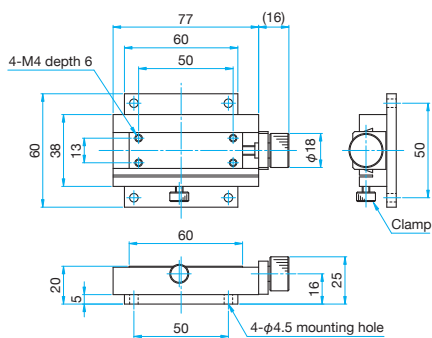
TAS-24301 Pan head screw M3x5...4 screws



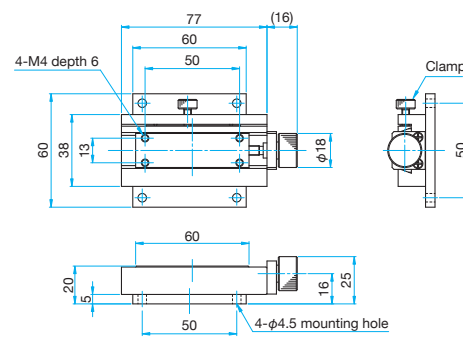
TAS-24301R Pan head screw M3x5...4 screws



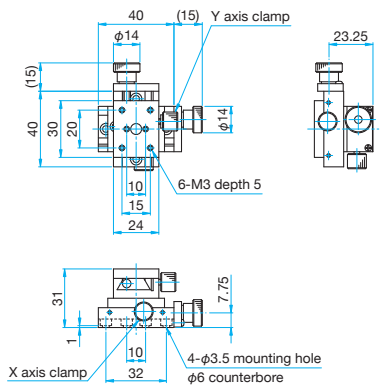
TAS-20601 Hexagonal socket head cap screw M4x10...4 screws



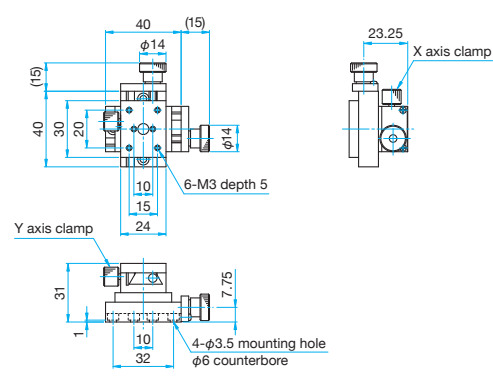
TAS-20601R Hexagonal socket head cap screw M4x10...4 screws



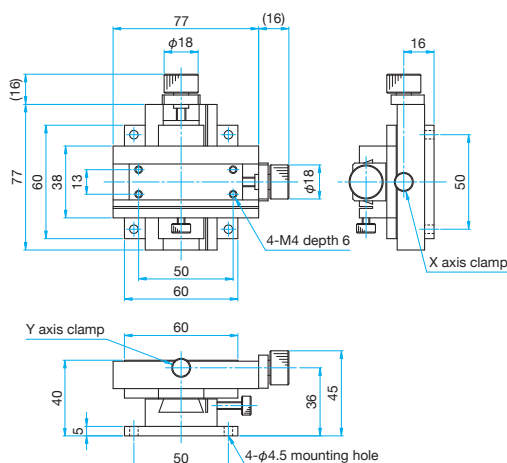
TAS-24302 Pan head screw M3x5...4 screws



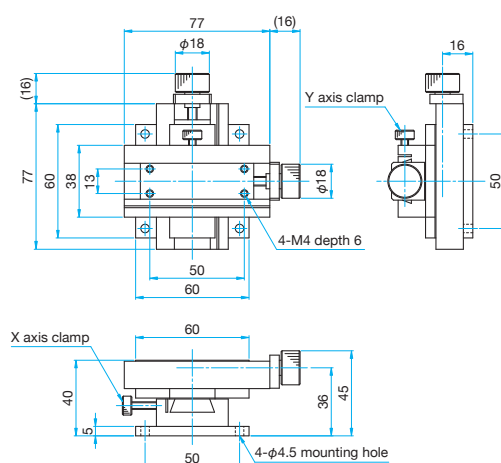
TAS-24302R Pan head screw M3x5...4 screws



TAS-20602 Hexagonal socket head cap screw M4x10...4 screws



TAS-20602R Hexagonal socket head cap screw M4x10...4 screws



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Others

□ 15mm

□ 25mm

□ 40mm

□ 60mm

□ 65mm

□ 80mm

□ 100mm

□ 120mm

Others

## X axis Rack and Pinion Dovetail Stages

TARW/TAR Stage size 25×30mm

RoHS

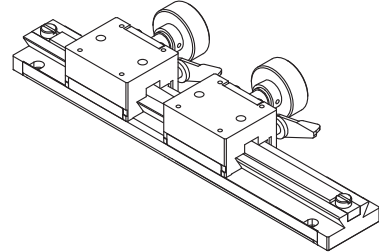
Rack and pinion stages with dovetail slides, suitable for frequent operations that require quick motion and long travel.

- Long travel type dovetail stage with table size of 25×30mm.
- The feed handle and adjustment knob improved operability.



## Guide

- The TAR-25 series can be delivered with more than one movable table. Contact our International Sales Division for more information.

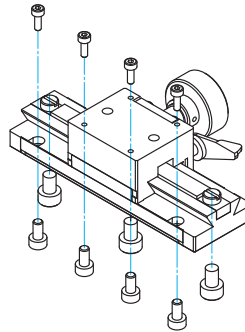


## Attention

- Since the feed handle of TARW-25501 protrudes from the bottom surface of the stage, it cannot be directly secured on a flat surface. A recess is required using a spacer or the like

## Mounting Method

Tapped holes are used for mounting holes (clamping holes) so that compact rack and pinion dovetail stages can be assembled in optical breadboards and systems as well as secured on other instruments from both top and bottom.



Part Number	From the top	From the bottom
TARW-25501	M3	M4
TAR-25801	M2	M3, (M4)
TAR-25121	M2	M3, (M4)
TAR-25161	M2	M3, (M4)

## Specifications

Part Number	METRIC	TARW-25501	TAR-25801	TAR-25121	TAR-25161
Table Size [mm]		25×50	25×30	25×30	25×30
Axes of Travel		X axis			
Travel [mm]		±10	±25	±45	±65
Lead of Actuator [mm/rotation]		about 20	about 20	about 20	about 20
Vernier Scale [mm]		0.1	0.1	0.1	0.1
Bearing type		Dovetail method			
Primary Material		Brass			
Finish		Super black chrome			
Load Capacity [N]		78.5 (8.0kgf)	49 (5.0kgf)	49 (5.0kgf)	49 (5.0kgf)
Travel Accuracy	Straightness [μm]	20	30	40	50
	Pitch [N·m]	1.2	0.5	0.5	0.5
	Roll [N·m]	0.6	0.5	0.5	0.5
	Yaw [N·m]	1.0	0.5	0.5	0.5
Moment Stiffness	Pitch [°/N·cm]	1.22	2.03	2.03	2.03
	Roll [°/N·cm]	2.45	1.53	1.53	1.53
Parallelism [μm]		50	50	80	80
Weight [kg]		0.22	0.22	0.3	0.36

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Lapping

V Groove Screw

Others

 15mm 25mm 40mm 60mm 65mm 80mm 100mm 120mm

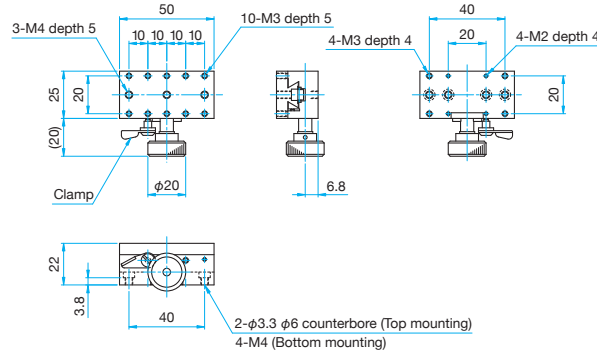
Others



Outline Drawing

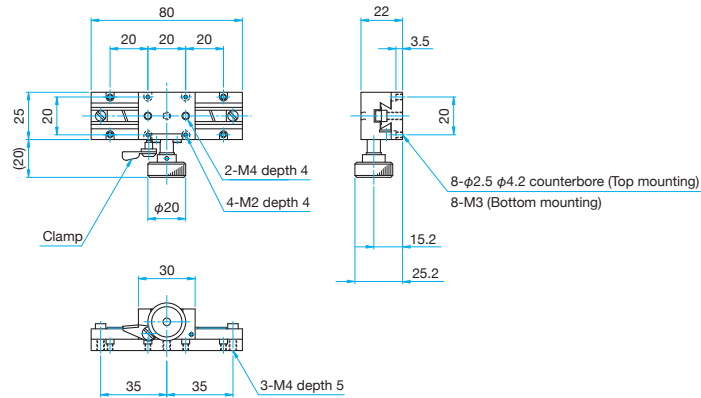
**TARW-25501**

Pan head screw  
M3x8...4 screws



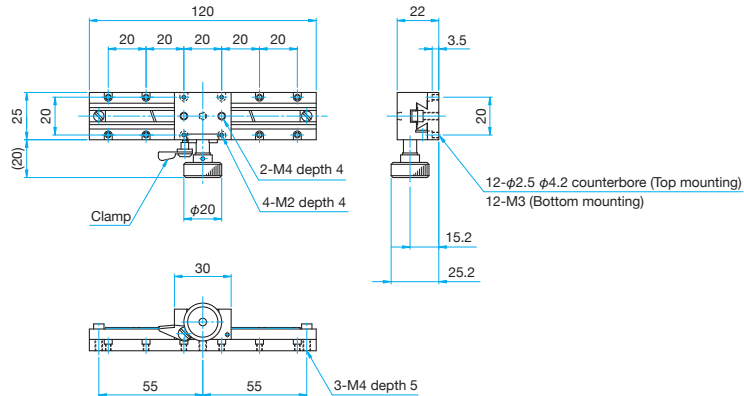
**TAR-25801**

Pan head screw  
M2x6...4 screws



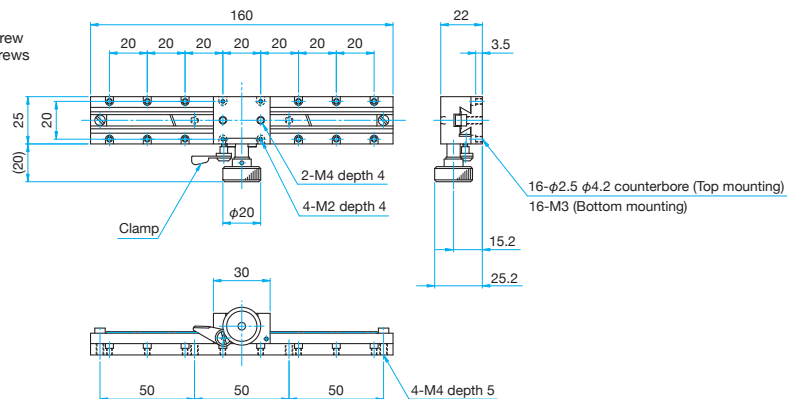
**TAR-25121**

Pan head screw  
M2x6...6 screws



**TAR-25161**

Pan head screw  
M2x6...8 screws



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Crossed Roller

Dovetail

Lapping

V Groove Screw

Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# X axis Rack and Pinion Dovetail Stages

## X axis Dual Drive Rack and Pinion Dovetail Stages

TAR-1  
TAR-D

RoHS  
RoHS

Rack and pinion stages with dovetail slides, suitable for frequent operations that require quick motion and long travel.

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Dovetail

Lapping

V Groove Screw

Others

15mm

25mm

40mm

60mm

65mm

80mm

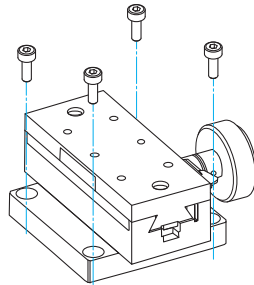
100mm

120mm

Others



### Mounting Method



### Guide

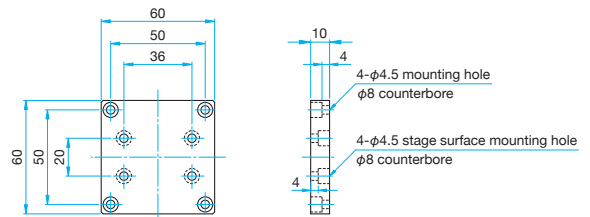
► Using the top plate spacer for TAR (SP-109 and SP-131) to convert mounting holes, post holders and various stages can be mounted.

Reference ▶ D057, D060

### Bottom Plate

Primary material: Aluminum  
Finish: Black Anodized

TAR 34601/34801/34141 include a base plate that allows mounting on instruments or bases fitted with M4 tapped holes on  $\square 50$ mm, preventing the handle from contacting the mounting surface.



### Specifications

Part Number	METRIC	TAR-34601	TAR-34801	TAR-34141	TAR-38651-M6	TAR-381201-M6	TAR-38601D	TAR-38801D	TAR-38141D
	INCH	—	—	—	TAR-38651UU	TAR-381201UU	—	—	—
Table Size [mm]		34×60	34×80	34×140	38×65	38×120	38×60	38×80	38×140
Axes of Travel		X axis							
Travel [mm]		±15	±25	±50	±15	±40	Coars: ±15 Fine: ±15	Coars: ±25 Fine: ±25	Coars: ±50 Fine: ±50
Lead of Actuator [mm/rotation]		about 20	about 20	about 20	about 20	about 20	Coars: about 20 Fine: 2.5	Coars: about 20 Fine: 2.5	Coars: about 20 Fine: 2.5
Vernier Scale [mm]		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bearing type		Dovetail method							
Primary Material		Brass							
Finish		Super black chrome							
Load Capacity [N]		147 (15.0kgf)	196 (20.0kgf)	245 (25.0kgf)	147 (15.0kgf)	245 (25.0kgf)	147 (15.0kgf)	196 (20.0kgf)	245 (25.0kgf)
Travel Accuracy	Straightness [ $\mu$ m]	20	30	30	20	30	20	30	30
	Pitch [N·m]	2.9	3.8	6.9	2.9	6	2.9	3.8	6.9
	Roll [N·m]	1.5	1.5	2.0	1.5	1.5	1.5	1.5	2.0
Max. Moment Capacity	Yaw [N·m]	2.0	2.6	3.9	2.0	3.0	2.00	2.6	3.9
	Pitch ["/N·cm]	0.36	0.26	0.05	0.36	0.7	0.51	0.36	0.05
Moment Stiffness	Roll ["/N·cm]	0.82	0.82	0.82	0.82	0.2	0.92	0.92	0.92
	Parallelism [ $\mu$ m]	60	60	80	60	80	60	60	80
Weight [kg]		0.5	0.8	1.0	0.6	1.0	0.5	0.8	1.0

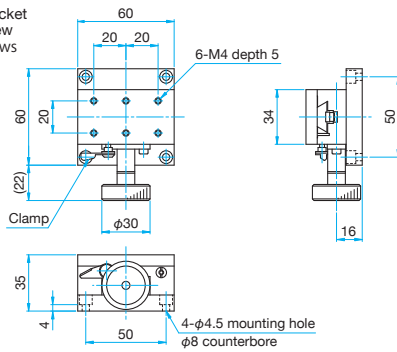




Outline Drawing

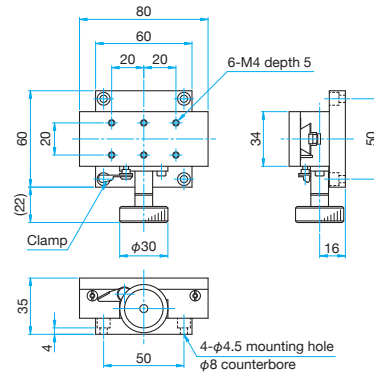
TAR-34601

Hexagonal socket head cap screw M4x8...4 screws



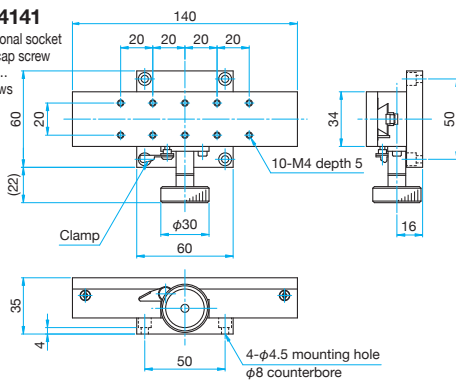
TAR-34801

Hexagonal socket head cap screw M4x8...4 screws



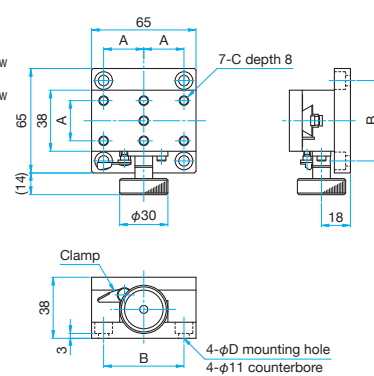
TAR-34141

Hexagonal socket head cap screw M4x8...4 screws



TAR-38651-M6  
TAR-38651UU

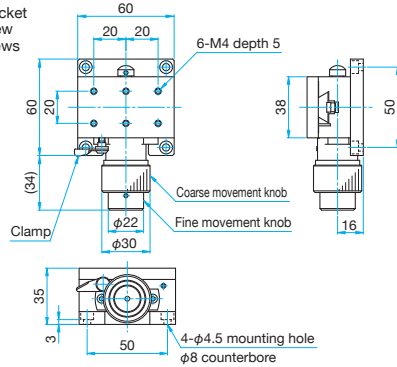
Hexagonal socket head cap screw M6x10...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx3/8...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
TAR-38651-M6	25	50	M6 P1	6.5
TAM-38651UU	25.4	50.8	1/4-20UNC	7

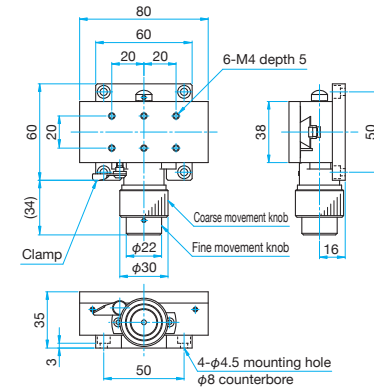
TAR-38601D

Hexagonal socket head cap screw M4x8...4 screws



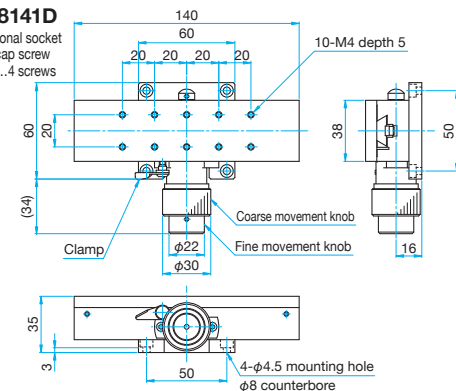
TAR-38801D

Hexagonal socket head cap screw M4x8...4 screws



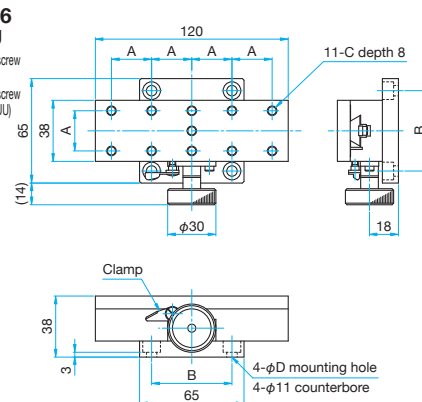
TAR-38141D

Hexagonal socket head cap screw M4x8...4 screws



TAR-381201-M6  
TAR-381201UU

Hexagonal socket head cap screw M6x10...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx3/8...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
TAM-381201-M6	25	50	M6 P1	6.5
TAM-381201UU	25.4	50.8	1/4-20UNC	7

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

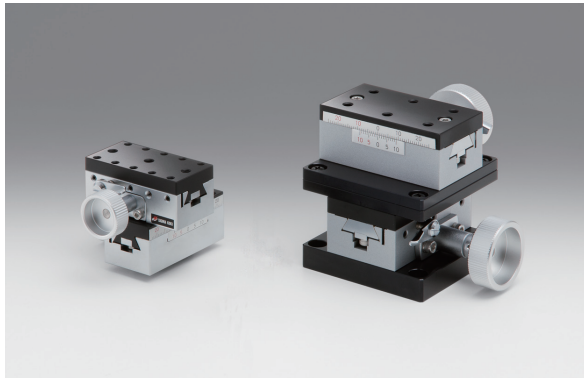
□80mm

□100mm

□120mm

Others

Leadscrew stages with dovetail slide guide and leadscrew adjustment system, suitable for fine adjustment.



#### Guide

- ▶ Using the top plate spacer for TAR (SP-109) and that for TAS-2060 (SP-127-1), post holders and various stages can be mounted.

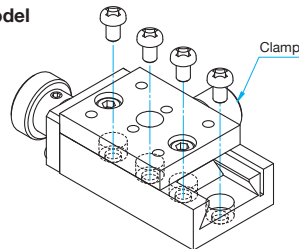
Reference ▶ D057, D059

#### Attention

- ▶ Since the feed handle of TARW-25502 protrudes from the stage main body, it cannot be directly secured on a flat surface.

#### Mounting Method

TAS model

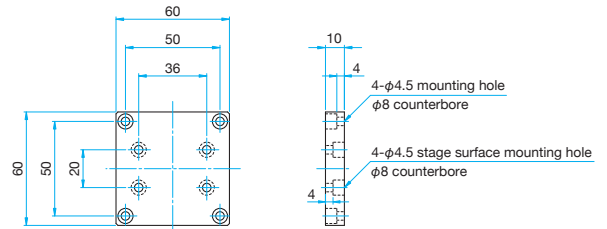


Stage must be translated to provide access to all of the mounting holes.

#### Bottom Plate

Primary material: Aluminum  
Finish: Black Anodized

TAR-34602/34802 include a base plate that allows mounting on instruments or bases fitted with M4 tapped holes on  $\square$ 50mm, preventing the handle from contacting the mounting surface.



#### Specifications

Part Number	METRIC	TARW-25502	TAR-34602	TAR-34802	TAR-38652-M6	TAR-381202-M6
	INCH	—	—	—	TAR-38652UU	TAR-381202UU
Table Size [mm]		25×50	34×60	34×80	38×65	38×120
Axes of Travel		XY axis				
Travel [mm]		±10	±15	±25	±15	±40
Lead of Actuator [mm/rotation]		about 20	about 20	about 20	about 20	about 20
Vernier Scale [mm]		0.1	0.1	0.1	0.1	0.1
Bearing type		Dovetail method				
Primary Material		Brass				
Finish		Super black chrome				
Load Capacity [N]		78.5 (8.0kgf)	147 (15.0kgf)	196 (20.0kgf)	147 (15.0kgf)	245 (25.0kgf)
Travel Accuracy	Straightness [ $\mu$ m]	20	20	30	20	30
	Pitch [N·m]	0.6	1.5	1.5	2.9	3.0
	Roll [N·m]	0.6	1.5	1.5	1.5	1.5
Max. Moment Capacity	Yaw [N·m]	1.0	2.0	2.6	2.0	2.5
	Pitch [°/N·cm]	3.67	1.2	1.1	0.15	0.3
Moment Stiffness	Roll [°/N·cm]	3.67	1.2	1.1	0.15	0.15
	Parallelism [ $\mu$ m]	100	140	160	140	160
Weight [kg]		0.44	1.0	1.6	1.2	1.9

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V Groove Screw

Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others



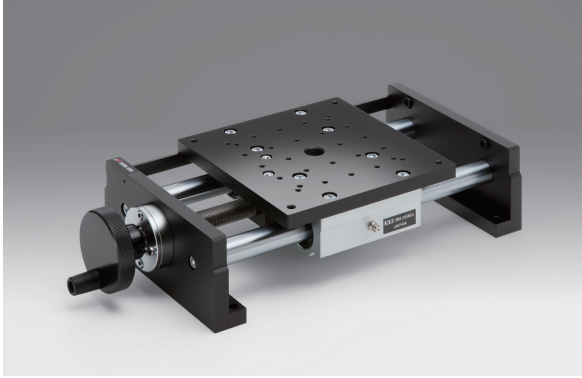
## X axis Long Travel Leadscrew Stages

LST Stage size  160mm

RoHS

## Long travel type leadscrew stages for X-axis adjustment.

- Linear bearings are used for the positioning slide, and the leadscrew is either 2mm pitch (LST-16100/16200) or 5mm pitch (LST-16400), suitable for relatively less frequent operations that require long travel.
- Convenient crank style handle for adjustment.
- Tapped holes on the table top allow use in combination with other fine drive stages



## Guide

- To use the LST series in combination with XY axis stages, contact our International Sales Division.

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Others

 15mm 25mm 40mm 60mm 65mm 80mm 100mm 120mm

Others

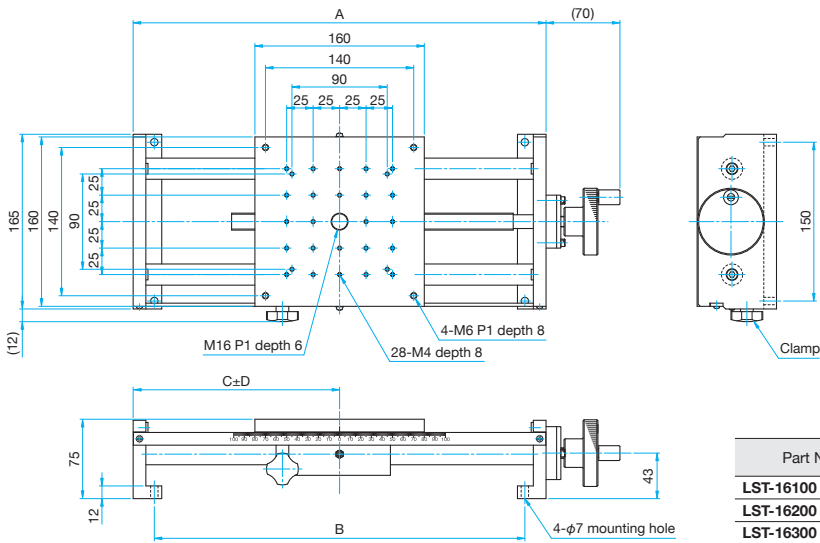
## Specifications

Part Number	METRIC	LST-16100	LST-16100-M6	LST-16200	LST-16200-M6	LST-16400	LST-16400-M6
	INCH	—	LST-16100UU	—	LST-16200UU	—	LST-16400UU
Table Size [mm]		160×160	160×160	160×160	160×160	160×160	160×160
Axes of Travel		X axis					
Travel [mm]		±50	±50	±100	±100	±200	±200
Screw Pitch [mm]		2	2	2	2	5	5
Bearing type		Linear bearing					
Primary Material		Aluminum					
Finish		Black anodized					
Load Capacity [N]		98 (10.0kgf)	98 (10.0kgf)	98 (10.0kgf)	98 (10.0kgf)	98 (10.0kgf)	98 (10.0kgf)
Travel Accuracy	Straightness [μm]	10	10	10	10	20	20
	Pitch [N·m]	7.8	7.8	7.8	7.8	7.8	7.8
Max. Moment Capacity	Roll [N·m]	5.8	5.8	5.8	5.8	5.8	5.8
	Pitch ["/N·cm]	0.25	0.25	0.25	0.25	0.25	0.25
Moment Stiffness	Roll ["/N·cm]	0.5	0.5	0.5	0.5	0.5	0.5
	Parallelism [μm]	100	100	150	150	200	200
Weight [kg]		4.8	4.8	5.5	5.5	7.0	7.0



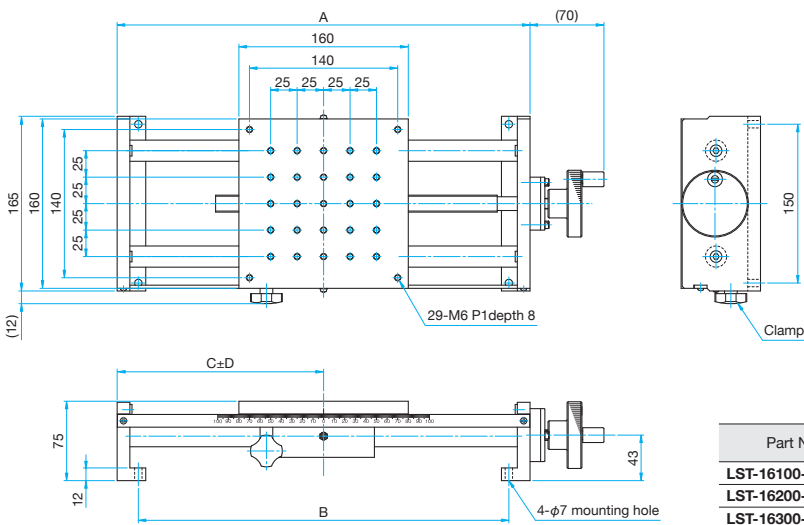
**Outline Drawing**

**LST-16100/16200/16400** Hexagonal socket head cap screw M6x22...4 screws, Spring washers, Flat washers



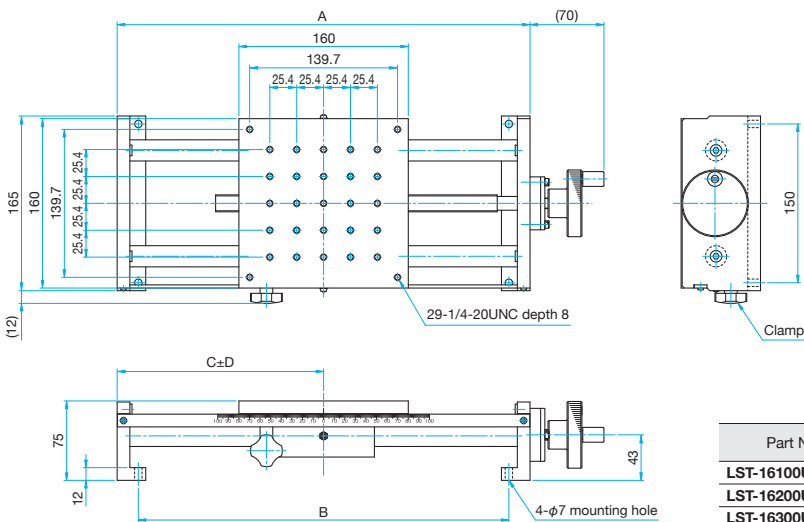
Part Number	A (mm)	B (mm)	C (mm)	D (mm)
<b>LST-16100</b>	290	250	145	50
<b>LST-16200</b>	390	350	195	100
<b>LST-16300</b>	590	550	295	200

**LST-16100-M6/16200-M6/16400-M6** Hexagonal socket head cap screw M6x22...4 screws, Spring washers, Flat washers



Part Number	A (mm)	B (mm)	C (mm)	D (mm)
<b>LST-16100-M6</b>	290	250	145	50
<b>LST-16200-M6</b>	390	350	195	100
<b>LST-16300-M6</b>	590	550	295	200

**LST-16100UU/16200UU/16400UU** Hexagonal socket head cap screw 1/4-20UNCx7/8...4 screws, Spring washers, Flat washers



Part Number	A (mm)	B (mm)	C (mm)	D (mm)
<b>LST-16100UU</b>	290	250	145	50
<b>LST-16200UU</b>	390	350	195	100
<b>LST-16300UU</b>	590	550	295	200

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Lapping

V Groove Screw

Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

## Z axis Steel Extended Contact Slide Stages

### Z axis Steel Extended Contact Slide Stages (Inverted)

TSD-3 Stage size □25/□40/□60/□65mm

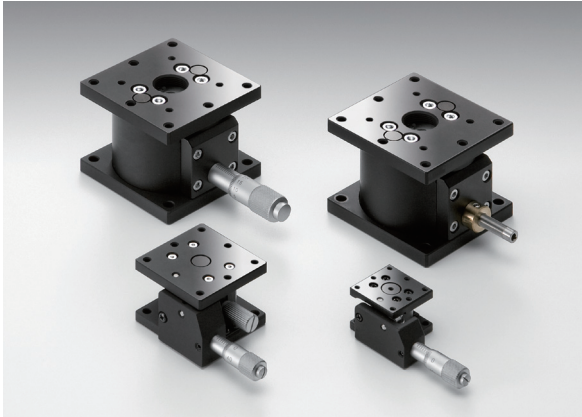
TSD-UD Stage size □60/□65mm

RoHS

Flat Z axis stages transmit the micrometer motion from a horizontal direction to a vertical direction using a pivot mechanism.

Stable in every direction and allowing precise height adjustment due to the steel balls contacting the R groove of the guide at four points during travel.

- The TSD-UD stages are hanging type stages which the Z axis steel extended contact slide stages in the TSD series could not offer. These stages enable configuration of optical systems or camera alignment on walls or ceilings which has been impossible so far.



#### Guide

- ▶ Vacuum-compatible stainless steel stages (TSDS) are also available.  
Reference ▶ E204

#### Attention

- ▶ Since the structure uses the principle of leverage, the feed rate fluctuates against the scale depending on the travel (about ±0.02mm for micrometer head 0.5mm/rotation).

#### Specifications

Part Number	METRIC	TSD-253	TSD-403	TSD-603	TSD-653-M6	TSD-603UD	TSD-653UD-M6
	INCH	—	TSD-403UU	—	TSD-653UU	—	TSD-653UDUU
Table Size [mm]		25×25	40×40	60×60	65×65	60×60	65×65
Axes of Travel		Z axis					
Travel [mm]		±3	±3	±5	±5	±5	±5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide					
Primary Material		Steel				Steel (Upper and lower plate: Aluminum)	
Finish		Black matte				Black matte / Black anodized	
Load Capacity [N]		29.4 (3.0kgf)	88.3 (9.0kgf)	147 (15.0kgf)	147 (15.0kgf)	98 (10.0kgf)	98 (10.0kgf)
Travel Accuracy	Straightness [μm]	2.5	2.5	2.5	2.5	2.5	2.5
Max. Moment Capacity	Pitch [N·m]	1.0	3.9	6.9	6.9	6.9	6.9
	Roll [N·m]	1.0	3.9	6.9	6.9	6.9	6.9
Moment Stiffness	Pitch [°/N·cm]	5.0	1.2	0.41	0.41	0.41	0.41
	Roll [°/N·cm]	5.0	1.2	0.41	0.41	0.41	0.41
Parallelism [μm]		80	80	80	80	80	80
Running Parallelism [μm]		15	20	20	20	20	20
Options		FP <sup>1</sup>	FP <sup>1</sup>	FP <sup>2</sup> /DM/WP	FP <sup>2</sup> /DM/WP	—	—
Weight [kg]		0.1	0.25	1.0	1.1	1.0	1.1

#### Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference ▶
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-42525 <sup>1</sup> FPSA-62540 <sup>2</sup>	0.25	—	E008
DM	Differential Micrometer Heads	MHF2-13F	Coars: 0.5 Fine: 0.025	Coars: 0.01 Fine: 0.0005	
WP	Sub-micron Worm Drive Micrometer Heads	WGP-13	Coars: 0.25 Fine: 0.025	Coars: 0.005 Fine: 0.0005	

- \* Please add an option code as the part number suffix to specify various optional specifications.
- \* The load capacity of the FP type is 39.2N (4.0kgf).

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

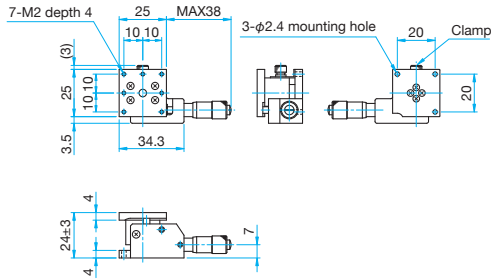
□120mm

Others

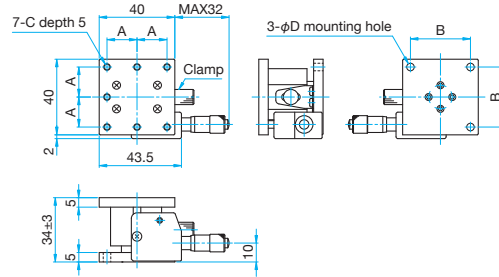


Outline Drawing

**TSD-253** Hexagonal socket head cap screw M2×6...3screws

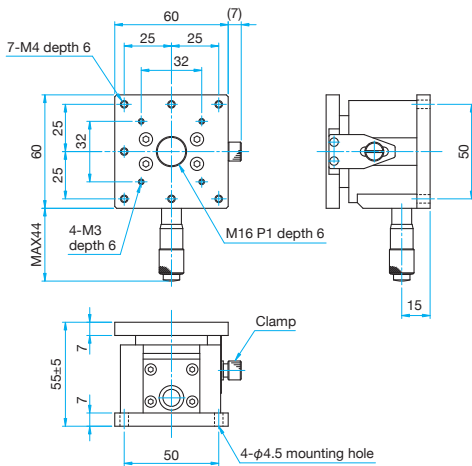


**TSD-403/403UU**  
Hexagonal socket head cap screw M3×8...3screws  
Hexagonal socket head cap screw 6-32UNC×5/16...3screws (UU)

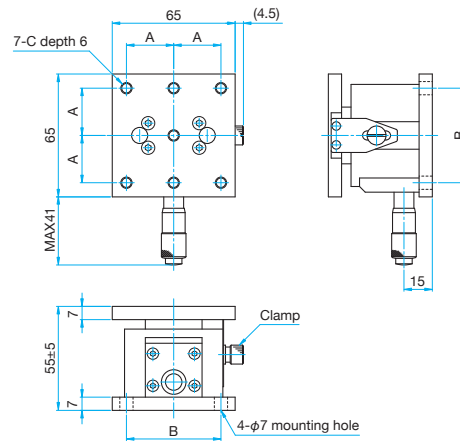


Part Number	A (mm)	B (mm)	C	D (mm)
TSD-403	16	32	M3	3.5
TSD-403UU	15.875	31.75	6-32UNC	4

**TSD-603** Hexagonal socket head cap screw M4×12...4 screws

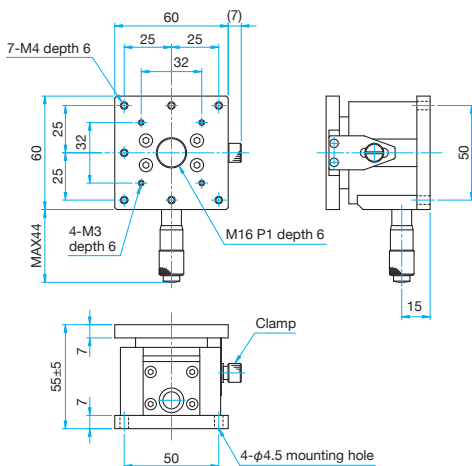


**TSD-653-M6/653UU**  
Hexagonal socket head cap screw M6×12...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNC×1/2...4 screws (UU)

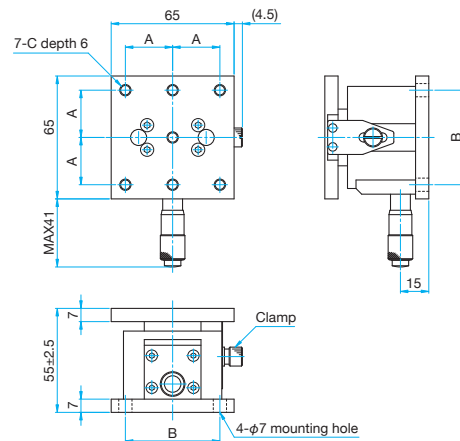


Part Number	A (mm)	B (mm)	C
TSD-653-M6	25	50	M6 P1
TSD-653UU	25.4	50.8	1/4-20UNC

**TSD-603UD** Hexagonal socket head cap screw M4×12...4 screws



**TSD-653UD-M6/653UDUU**  
Hexagonal socket head cap screw M6×12...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNC×1/2...4 screws (UU)



Part Number	A (mm)	B (mm)	C
TSD-653UD-M6	25	50	M6 P1
TSD-653UDUU	25.4	50.8	1/4-20UNC

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Ohters

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

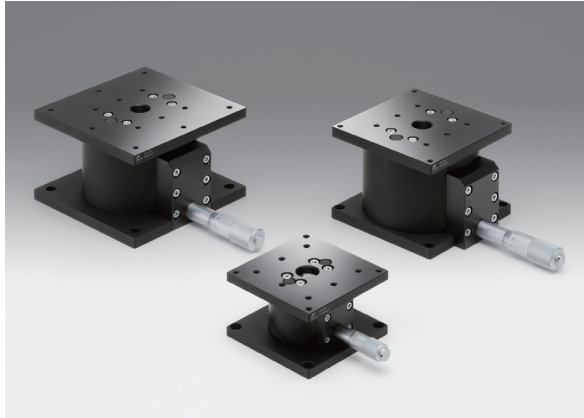
## Z axis Steel Extended Contact Slide Stages

TSD-3 Stage size □80/□100/□120mm

RoHS

Flat Z axis stages transmit the micrometer motion from a horizontal direction to a vertical direction using a pivot mechanism.

Stable in every direction and allowing precise height adjustment due to the steel balls contacting the R groove of the guide at four points during travel.



## Attention

- ▶ The structure does not allow upside down installation since the spring inside the stage might not be able to withstand the load and may stretch.
- ▶ Since the structure uses the principle of leverage, the feed rate fluctuates against the scale depending on the travel (about  $\pm 0.02\text{mm}$  for micrometer head  $0.5\text{mm/rotation}$ ).

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

Others

## Specifications

Part Number	METRIC	TSD-803	TSD-1003	TSD-1203	TSD-1203-M6
	INCH	—	—	—	TSD-1203UU
Table Size [mm]		80×80	100×100	120×120	120×120
Axes of Travel		Z axis			
Travel [mm]		±5	±10	±10	±10
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		Steel			
Finish		Black matte			
Load Capacity [N]		147 (15.0kgf)	245 (25.0kgf)	245 (25.0kgf)	245 (25.0kgf)
Travel Accuracy	Straightness [ $\mu\text{m}$ ]	2.5	2.5	2.5	2.5
Max. Moment Capacity	Pitch [ $\text{N}\cdot\text{m}$ ]	6.9	9.8	9.8	9.8
	Roll [ $\text{N}\cdot\text{m}$ ]	6.9	9.8	9.8	9.8
Moment Stiffness	Pitch [ $^{\circ}/\text{N}\cdot\text{cm}$ ]	0.41	0.36	0.36	0.36
	Roll [ $^{\circ}/\text{N}\cdot\text{cm}$ ]	0.41	0.36	0.36	0.36
Parallelism [ $\mu\text{m}$ ]		80	100	100	100
Running Parallelism [ $\mu\text{m}$ ]		20	20	20	20
Options		FP <sup>1</sup>	FP <sup>2</sup>	FP <sup>2</sup>	FP <sup>2</sup>
Weight [kg]		1.2	3.5	4.2	4.2

## Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-62540 <sup>1</sup> FPSA-62555 <sup>2</sup>	0.25	—	E008

\* Please add an option code as the part number suffix to specify various optional specifications.

\* The load capacity of the FP type is 39.2N (4.0kgf).

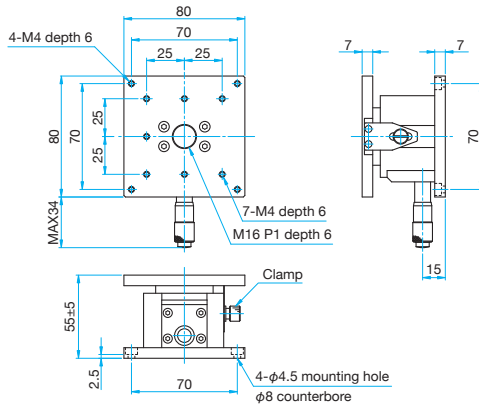




**Outline Drawing**

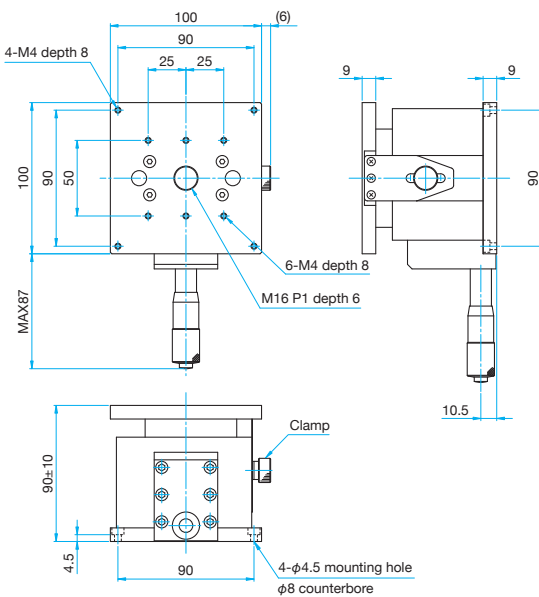
**TSD-803**

Hexagonal socket head cap screw M4x8...4 screws



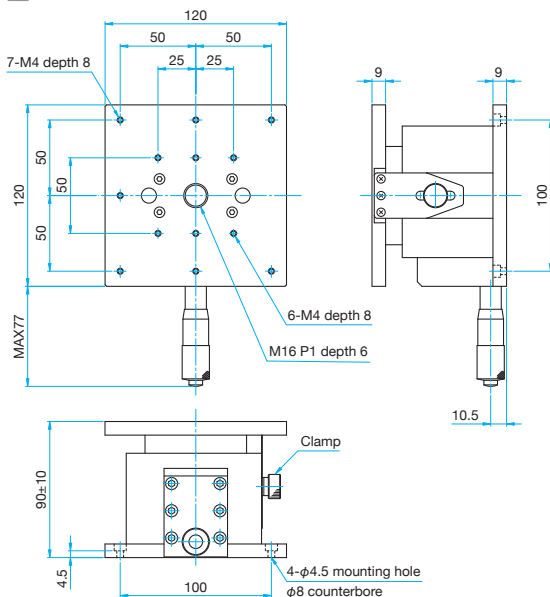
**TSD-1003**

Hexagonal socket head cap screw M4x10...4 screws, Spring washers



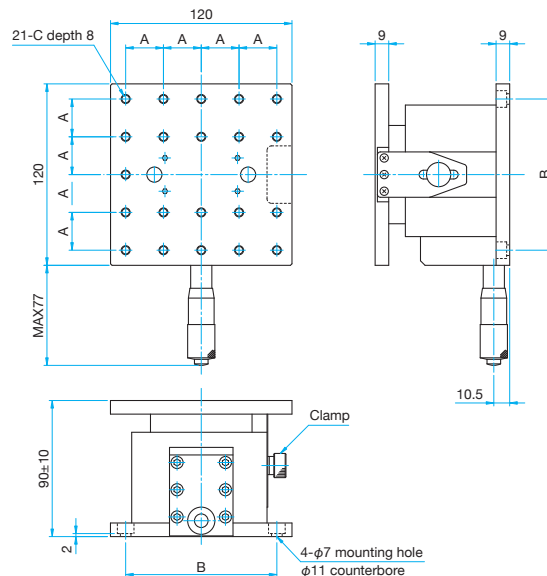
**TSD-1203**

Hexagonal socket head cap screw M4x10...4 screws, Spring washers



**TSD-1203-M6/1203UU**

Hexagonal socket head cap screw M6x8...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx3/8...4 screws (UU)



Part Number	A (mm)	B (mm)	C
TSD-1203-M6	25	100	M6 P1
TSD-1203UU	25.4	101.6	1/4-20UNC

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Lapping

V Groove Screw

Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

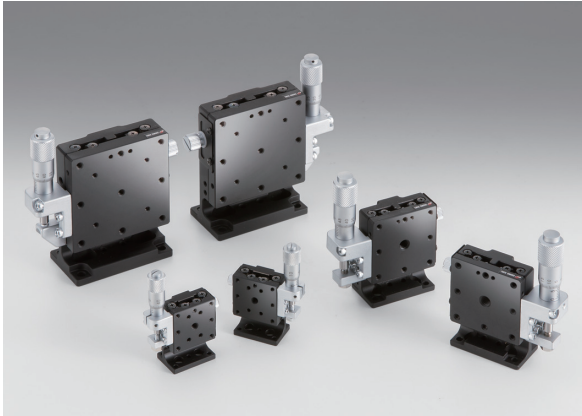
## Z axis Steel Extended Contact Slide Stages (Vertical)

TSD-L Stage size □25/□40/□60/□65mm

RoHS

## Z axis stages integrating a stage and Z bracket.

- Hardened Steel linear stages with integrated bearing ways for superior stiffness, accuracy and durability



Specifications					
Part Number	METRIC	<b>TSD-253L</b>	<b>TSD-403L</b>	<b>TSD-603L</b>	<b>TSD-653L-M6</b>
	INCH	—	<b>TSD-403LUU</b>	—	<b>TSD-653LUU</b>
(Opposite Model)	METRIC	<b>TSD-253RL</b>	<b>TSD-403RL</b>	<b>TSD-603RL</b>	<b>TSD-653RL-M6</b>
	INCH	—	<b>TSD-403RLUU</b>	—	<b>TSD-653RLUU</b>
Table Size [mm]		25×25	40×40	60×60	65×65
Axes of Travel		Z axis			
Travel [mm]		±3	±6.5	±6.5	±6.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		Steel			
Finish		Super black chrome			
Load Capacity [N]		14.7 (1.5kgf)	49 (5.0kgf)	49 (5.0kgf)	49 (5.0kgf)
Travel Accuracy	Straightness [μm]	1	1	1	1
	Pitch [ ″ ]	30	25	25	25
	Yaw [ ″ ]	25	15	15	15
Max. Moment Capacity	Pitch [N·m]	2.2	5.0	10.0	10.0
	Roll [N·m]	3.5	5.0	9.0	9.0
	Yaw [N·m]	2.0	5.0	10.0	10.0
Moment Stiffness	Pitch [″/N·cm]	1.8	0.3	0.08	0.08
	Roll [″/N·cm]	1.1	0.2	0.05	0.05
	Yaw [″/N·cm]	1.1	0.23	0.08	0.08
Running Parallelism [μm]		15	20	20	20
Squareness [μm]		30	30	30	30
Options		FP <sup>1</sup>	FP <sup>2</sup> /DM/WP	FP <sup>2</sup> /DM/WP	FP <sup>2</sup> /DM/WP
Weight [kg]		0.1	0.3	0.8	1.0

Option					
Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
<b>FP</b>	Fine-pitch Screw Adjusters	<b>FPSA-42525</b> <sup>1</sup> <b>FPSA-62540</b> <sup>2</sup>	0.25	—	E008
<b>DM</b>	Differential Micrometer Heads	<b>MHF2-13F</b>	Coars: 0.5 Fine: 0.025	Coars: 0.01 Fine: 0.0005	
<b>WP</b>	Sub-micron Worm Drive Micrometer Heads	<b>WGP-13</b>	Coars: 0.25 Fine: 0.025	Coars: 0.005 Fine: 0.0005	

\* Please add an option code as the part number suffix to specify various optional specifications.

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

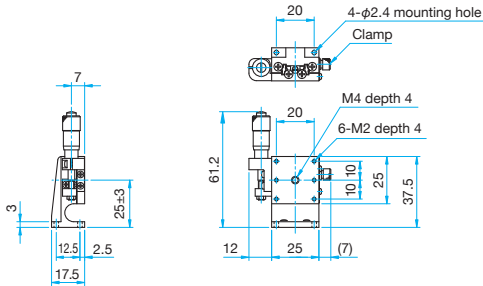
□120mm

Others

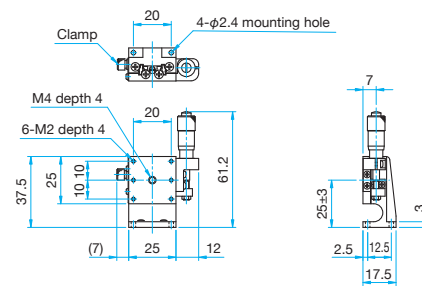


**Outline Drawing**

**TSD-253L** Hexagonal socket head cap screw M2×6...4 screws

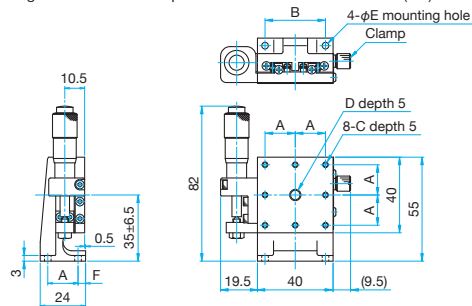


**TSD-253RL** Hexagonal socket head cap screw M2×6...4 screws



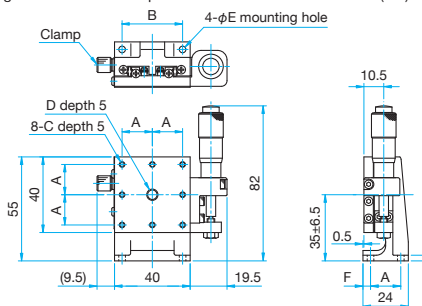
**TSD-403L/403LUU**

Hexagonal socket head cap screw M3×6...4 screws  
Hexagonal socket head cap screw 6-32UNC×1/4...4 screws (UU)



**TSD-403RL/403RLUU**

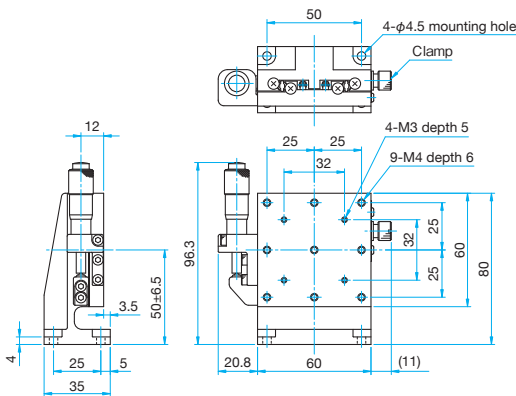
Hexagonal socket head cap screw M3×6...4 screws  
Hexagonal socket head cap screw 6-32UNC×1/4...4 screws (UU)



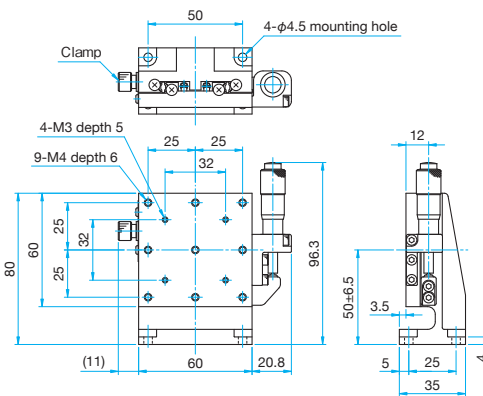
Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)
TSD-403L	16	32	M3	M6 P1	3.5	4
TSD-403LUU	15.875	31.75	6-32UNC	1/4-20UNC	4	3.625

Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)
TSD-403RL	16	32	M3	M6 P1	3.5	4
TSD-403RLUU	15.875	31.75	6-32UNC	1/4-20UNC	4	3.625

**TSD-603L** Hexagonal socket head cap screw M4×8...4 screws

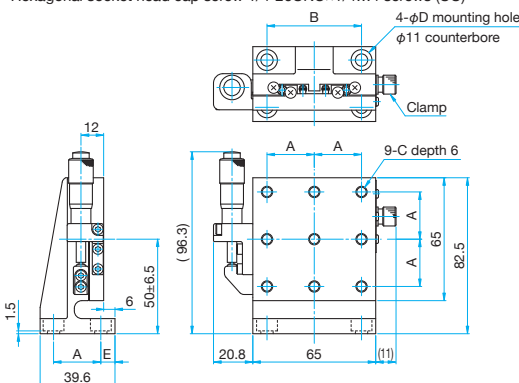


**TSD-603RL** Hexagonal socket head cap screw M4×8...4 screws



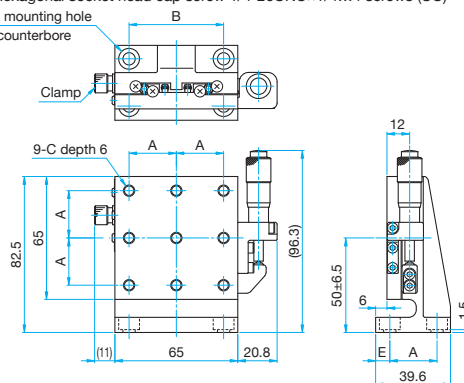
**TSD-653L-M6/653LUU**

Hexagonal socket head cap screw M6×6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNC×1/4...4 screws (UU)



**TSD-653RL-M6/653RLUU**

Hexagonal socket head cap screw M6×6...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNC×1/4...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-653L-M6	25	50	M6 P1	6.5	7.5
TSD-653LUU	25.4	50.8	1/4-20UNC	7	7.1

Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-653RL-M6	25	50	M6 P1	6.5	7.5
TSD-653RLUU	25.4	50.8	1/4-20UNC	7	7.1

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V Groove Screw

Ohters

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

Others

# L Angle Brackets | TSD-LB



Catalog Code **W7133**

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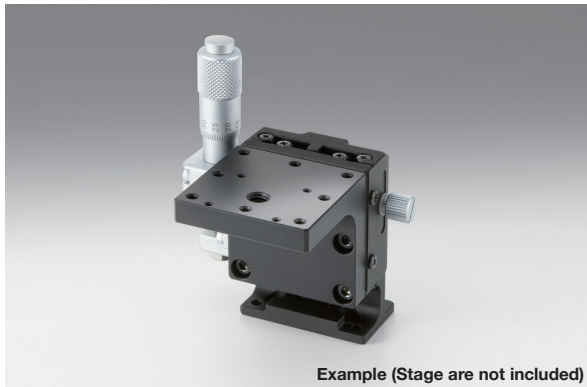
Lapping

V Groove Screw

Others

- 15mm
- 25mm
- 40mm
- 60mm
- 65mm
- 80mm
- 100mm
- 120mm

Others



Example (Stage are not included)

## L angle brackets for the TSD-L series.

### Attention

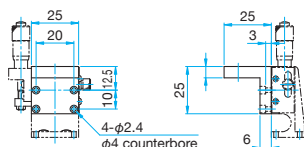
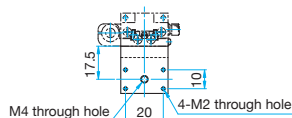
► There are limit on load capacity. Please contact our International Sales Division for more information.



### Outline Drawing

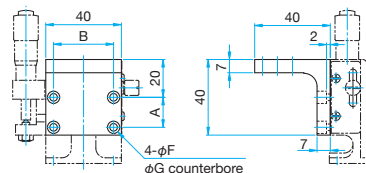
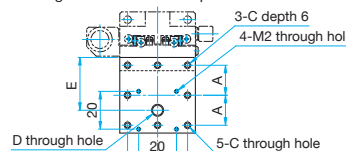
#### TSD-253LB

Hexagon socket head cap screw (stainless steel construction) M2x6...4 screws



#### TSD-403LB-M3/403LBUU

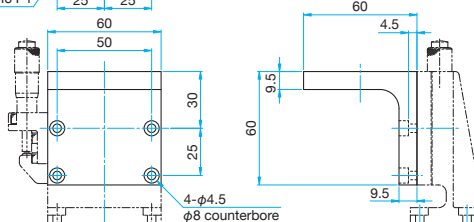
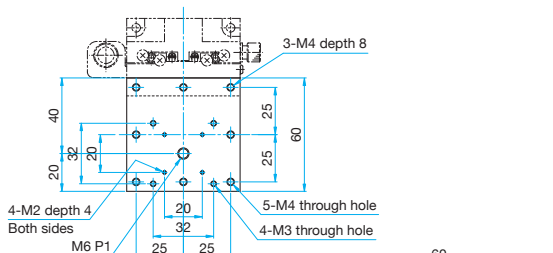
Hexagonal socket head cap screw M3x6...4 screws (M3)  
Hexagonal socket head cap screw 6-32UNCx1/4...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)	G (mm)
TSD-403LB-M3	16	32	M3	M6 P1	28	3.5	6
TSD-403LBUU	15.88	31.75	6-32UNC	1/4-20UNC	27.98	4	6.5

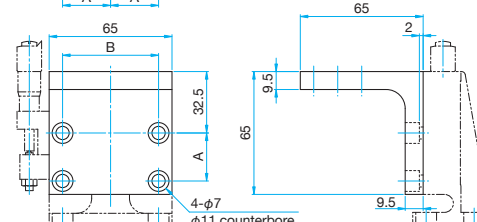
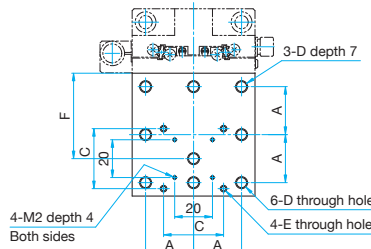
#### TSD-603LB

Hexagonal socket head cap screw M4x10...4 screws



#### TSD-653LB-M6/653LBUU

Hexagonal socket head cap screw M6x8...4 screws (M6)  
Hexagonal socket head cap screw 1/4-20UNCx5/16...4 screws (UU)



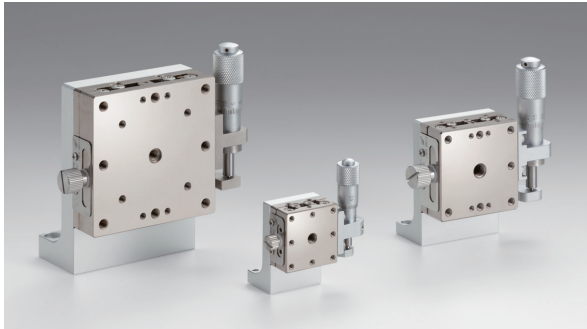
Part Number	A (mm)	B (mm)	C (mm)	D	E (mm)	F (mm)
TSD-653LB-M6	25	50	28	M6 P1	M3	45
TSD-653LBUU	25.4	50.8	27.98	1/4-20UNC	6-32UNC	45.2

### Specifications

Part Number	METRIC	TSD-253LB	TSD-403LB-M3	TSD-603LB	TSD-653LB-M6
	INCH	—	TSD-403LBUU	—	TSD-653LBUU
Primary Material	Aluminum				
Finish	Black anodized				
Weight [kg]		0.03	0.05	0.07	0.08

High precision and high stiffness stainless steel stages that have guide grooves on both the quenched stainless steel stage main body and movable table.

- SUS440C as main material for this product. To prevent rusting, the finish has been processed with electroless nickel plating.



### Attention

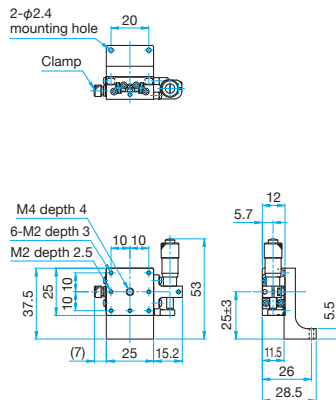
- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.



### Outline Drawing

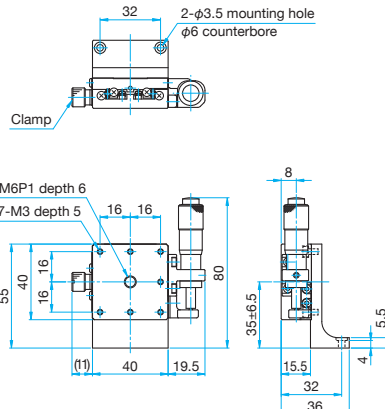
#### TSDH-253L

Hexagon socket head cap screw (stainless steel construction) M2×8...2 screws



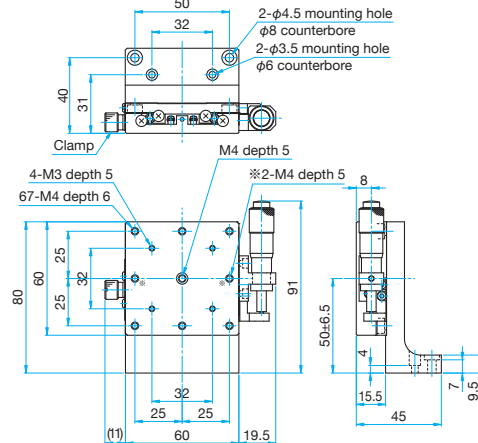
#### TSDH-403L

Hexagon socket head cap screw (stainless steel construction) M3×8...2 screws



#### TSDH-603L

Hexagon socket head cap screw (stainless steel construction) M3×8...2 screws, M4×12...2 screws



### Specifications

Part Number	METRIC	TSDH-253L	TSDH-403L	TSDH-603L
Table Size [mm]		25×25	40×40	60×60
Axes of Travel		Z axis		
Travel [mm]		±3	±6.5	±6.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01
Bearing type		Extended contact ball guide		
Primary Material		SUS440C quench hardened		
Finish		Electroless nickel		
Load Capacity [N]		9.8 (1.0kgf)	19.6 (2.0kgf)	49 (5.0kgf)
Travel Accuracy	Straightness [μm]	1	1	1
	Pitch [ ′ ]	30	30	25
	Yaw [ ′ ]	25	25	15
Max. Moment Capacity	Pitch [N·m]	0.7	1.0	1.0
	Roll [N·m]	0.5	1.0	1.0
	Yaw [N·m]	0.4	1.0	1.0
Moment Stiffness	Pitch [ ′/N·cm]	4.7	0.9	0.6
	Roll [ ′/N·cm]	3.2	0.8	0.6
	Yaw [ ′/N·cm]	3.0	0.6	0.4
Running Parallelism [μm]		20	20	20
Squareness [μm]		30	30	30
Options		FP <sup>1</sup>	FP <sup>2</sup>	FP <sup>2</sup>
Weight [kg]		0.1	0.25	0.65

### Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-42525 <sup>1</sup> FPSA-62540 <sup>2</sup>	0.25	—	E008

\* Please add an option code as the part number suffix to specify various optional specifications.

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V Groove Screw

Ohters

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

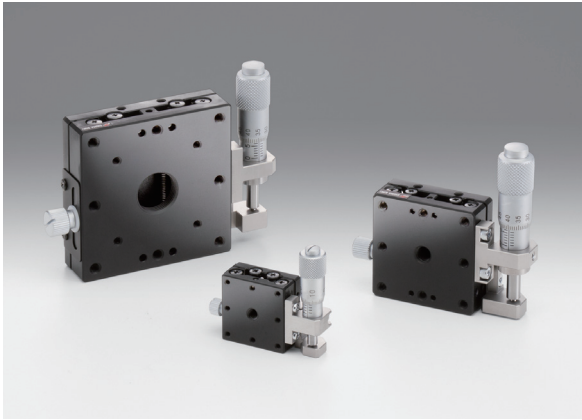
□100mm

□120mm

Others

Z axis stages designed for mounting on a vertical surface with the micrometer head on the movable stage side and the micrometer stop on the bottom side of the stage.

- Hardened Steel linear stages with integrated bearing ways for superior stiffness, accuracy and durability.



#### Guide

- Products fitted with a long table are also available. [Reference](#) E096

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Lapping

V Groove Screw

Others

15mm25mm40mm60mm65mm80mm100mm120mm

Others

#### Specifications

Part Number	METRIC	TSD-251SZ	TSD-401SZ	TSD-601SZ	TSD-651SZ25-M6
	INCH	—	TSD-401SZUU	—	TSD-651SZ25UU
(Opposite Model)	METRIC	TSD-251SRZ	TSD-401SRZ	TSD-601SRZ	—
	INCH	—	TSD-401SRZUU	—	—
Table Size [mm]		25×25	40×40	60×60	65×65
Axes of Travel		Z axis			
Travel [mm]		±3	±6.5	±6.5	±12.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		Steel			
Finish		Super black chrome			
Load Capacity [N]		14.7 (1.5kgf)	49 (5.0kgf)	49 (5.0kgf)	49 (5.0kgf)
Travel Accuracy	Straightness [μm]	1	1	1	1
	Pitch [N·m]	2.2	5.0	8.0	8.0
Max. Moment Capacity	Roll [N·m]	2.1	5.0	8.0	8.0
	Moment Stiffness	Pitch ["/N·cm]	1.63	0.31	0.2
Running Parallelism [μm]		10	10	10	10
Options		FP <sup>1</sup>	FP <sup>2</sup>	FP <sup>2</sup>	FP <sup>3</sup>
Weight [kg]		0.07	0.2	0.5	0.6

#### Option

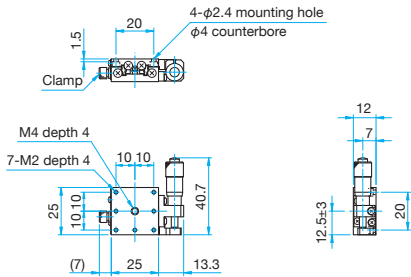
Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-42525 <sup>1</sup> FPSA-62540 <sup>2</sup> FPSA-62550 <sup>3</sup>	0.25	—	E008

\* Please add an option code as the part number suffix to specify various optional specifications.

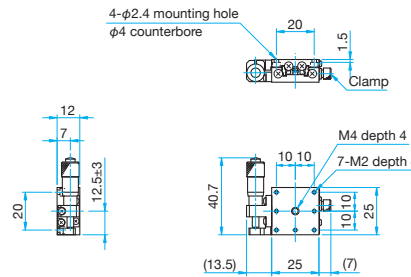


**Outline Drawing**

**TSD-251SZ** Hexagonal socket head cap screw M2×4...4 screws

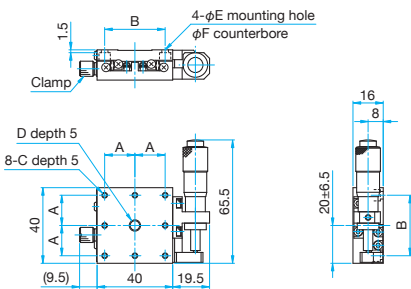


**TSD-251SRZ** Hexagonal socket head cap screw M2×4...4 screws



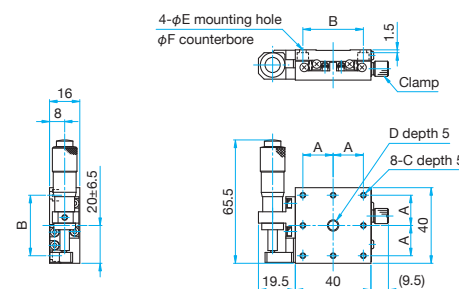
**TSD-401SZ/401SZUU**

- Hexagonal socket head cap screw M3×6...4 screws
- Hexagonal socket head cap screw 6-32UNC×1/4...4 screws (UU)



**TSD-401SRZ/401SRZUU**

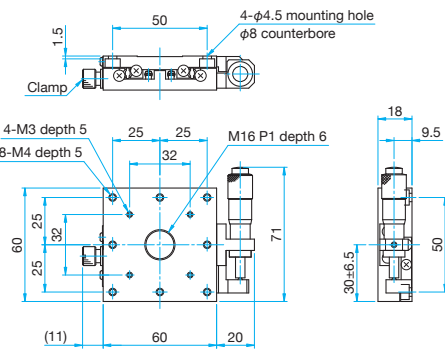
- Hexagonal socket head cap screw M3×6...4 screws
- Hexagonal socket head cap screw 6-32UNC×1/4...4 screws (UU)



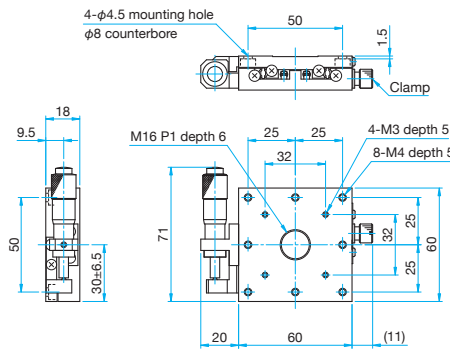
Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)
TSD-401SZ	16	32	M3	M6 P1	3.5	6
TSD-401SZUU	15.875	31.75	6-32UNC	1/4-20UNC	4	6.5

Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)
TSD-401SRZ	16	32	M3	M6 P1	3.5	6
TSD-401SRZUU	15.875	31.75	6-32UNC	1/4-20UNC	4	6.5

**TSD-601SZ** Hexagonal socket head cap screw M4×6...4 screws

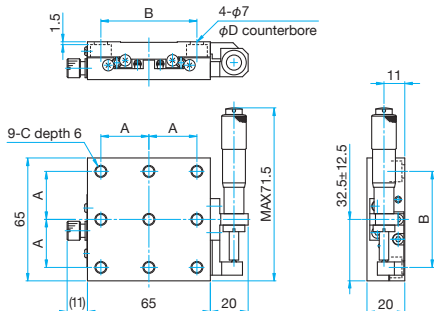


**TSD-601SRZ** Hexagonal socket head cap screw M4×6...4 screws



**TSD-651SZ25-M6/651SZ25UU**

- Hexagonal socket head cap screw M6×6...4 screws (M6)
- Hexagonal socket head cap screw 1/4-20UNC×1/4...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
TSD-651SZ25-M6	25	50	M6 P1	11
TSD-651SZ25UU	25.4	50.8	1/4-20UNC	12

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V Groove Screw

Ohters

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

## Z axis Steel Extended Contact Slide Stages (Vertical Mounting)

TSD-SZ

RoHS

Z axis stages designed for mounting on a vertical surface with the micrometer head on the movable stage side and the micrometer stop on the bottom side of the stage. The rectangular shape minimizes the footprint while providing longer travel.

- Hardened Steel linear stages with integrated bearing ways for superior stiffness, accuracy and durability.



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Lapping

V Groove Screw

Others

 15mm 25mm 40mm 60mm 65mm 80mm 100mm 120mm

Others

## Specifications

Part Number	METRIC	TSD-25501SZ	TSD-40801SZ	TSD-60121SZ	TSD-65121SZ-M6
	INCH	—	TSD-40801SZUU	—	TSD-65121SZUU
Table Size [mm]		25×50	40×80	60×120	65×120
Axes of Travel		Z axis			
Travel [mm]		±6.5	±12.5	±20	±20
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Extended contact ball guide			
Primary Material		Steel			
Finish		Super black chrome			
Load Capacity [N]		9.8 (1.0kgf)	19.6 (2.0kgf)	29.4 (3.0kgf)	29.4 (3.0kgf)
Travel Accuracy	Straightness [ $\mu\text{m}$ ]	2	2	2	3
	Pitch [ $\text{N}\cdot\text{m}$ ]	2.0	2.6	3	3
Max. Moment Capacity	Roll [ $\text{N}\cdot\text{m}$ ]	1.4	2.6	3	3
	Pitch [ $^\circ/\text{N}\cdot\text{cm}$ ]	1.12	0.15	0.1	0.1
Running Parallelism [ $\mu\text{m}$ ]		10	10	10	10
Weight [kg]		0.1	0.4	1.0	1.2





## Z axis Aluminum Crossed Roller Slide Stages (Vertical)

TAM-3L Stage size □40/□60/□65/□80mm

RoHS

Light-weight Z axis aluminum stages integrating a stage and Z bracket.  
Crossed roller guide enables smooth travel.



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Lapping

V Groove Screw

Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

Others

## Specifications

Part Number	METRIC	TAM-403L	TAM-603L	TAM-653L-M6	TAM-803L
	INCH	TAM-403LUU	—	TAM-653LUU	—
(Opposite Model)	METRIC	TAM-403RL	—	TAM-653RL-M6	—
	INCH	TAM-403RLUU	—	TAM-653RLUU	—
Table Size [mm]		40×40	60×60	65×65	80×80
Axes of Travel		Z axis			
Travel [mm]		±6.5	±6.5	±6.5	±7.5
Lead of Actuator [mm/rotation]		0.5	0.5	0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01	0.01	0.01
Bearing type		Crossed roller			
Primary Material		Aluminum			
Finish		Black anodized			
Load Capacity [N]		49 (5.0kgf)	49 (5.0kgf)	49 (5.0kgf)	49 (5.0kgf)
Travel Accuracy	Straightness [μm]	2	2	2	2
Max. Moment Capacity	Pitch [N·m]	3.0	5.0	5.0	7.0
	Roll [N·m]	3.0	5.0	5.0	7.0
Moment Stiffness	Pitch [°/N·cm]	0.66	0.3	0.3	0.12
Running Parallelism [μm]		20	20	20	20
Squareness [μm]		30	30	30	30
Options		FP <sup>1</sup> /DM/WP	FP <sup>1</sup> /DM/WP	FP <sup>1</sup> /DM/WP	FP <sup>2</sup>
Weight [kg]		0.15	0.3	0.4	0.6

## Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-62540 <sup>1</sup> FPSA-62550 <sup>2</sup>	0.25	—	E008
DM	Differential Micrometer Heads	MHF2-13F	Coars: 0.5 Fine: 0.025	Coars: 0.01 Fine: 0.0005	
WP	Sub-micron Worm Drive Micrometer Heads	WGP-13	Coars: 0.25 Fine: 0.025	Coars: 0.005 Fine: 0.0005	

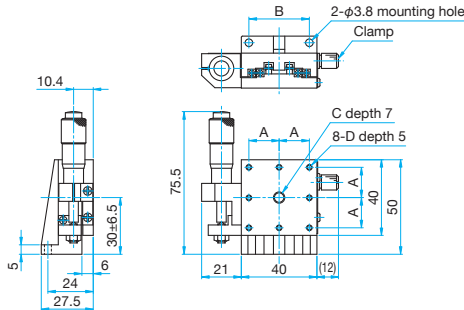
\* Please add an option code as the part number suffix to specify various optional specifications.



**Outline Drawing**

**TAM-403L/403LUU**

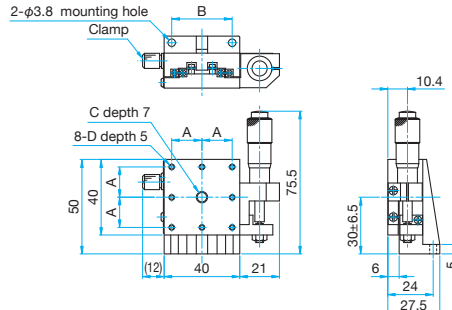
- Hexagonal socket head cap screw M3×10...2 screws
- Hexagonal socket head cap screw 6-32UNC×3/8...2 screws (UU)



Part Number	A (mm)	B (mm)	C	D
TAM-403L	16	32	M6 P1	M3
TAM-403LUU	15.875	31.75	1/4-20UNC	6-32UNC

**TAM-403RL/403RLUU**

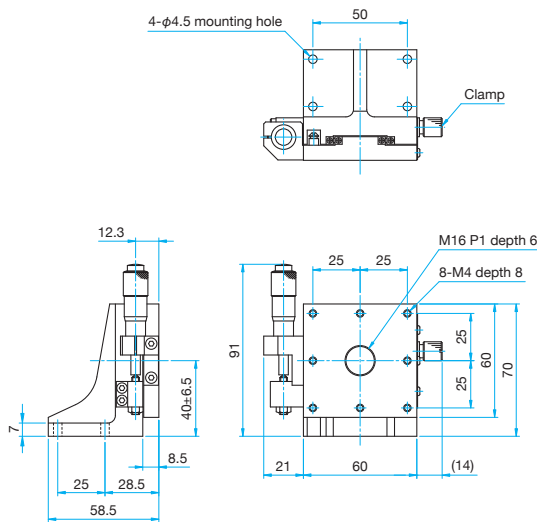
- Hexagonal socket head cap screw M3×10...2 screws
- Hexagonal socket head cap screw 6-32UNC×3/8...2 screws (UU)



Part Number	A (mm)	B (mm)	C	D
TAM-403RL	16	32	M6 P1	M3
TAM-403RLUU	15.875	31.75	1/4-20UNC	6-32UNC

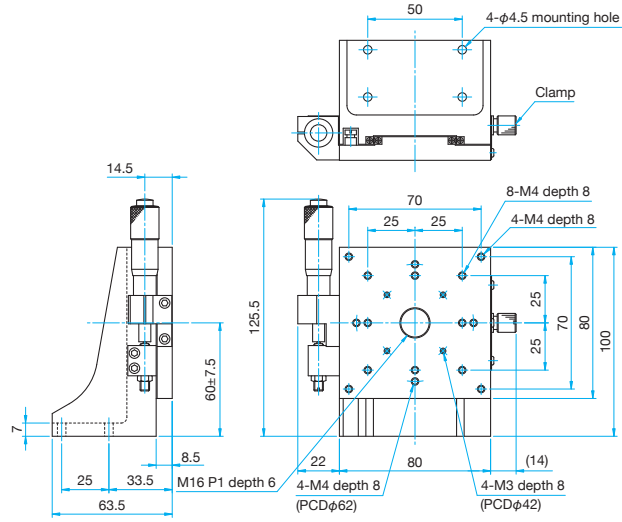
**TAM-603L**

- Hexagonal socket head cap screw M4×12...4 screws



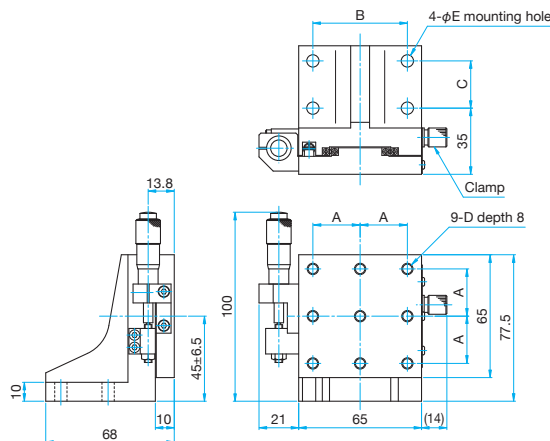
**TAM-803L**

- Hexagonal socket head cap screw M4×12...4 screws



**TAM-653L-M6/653LUU**

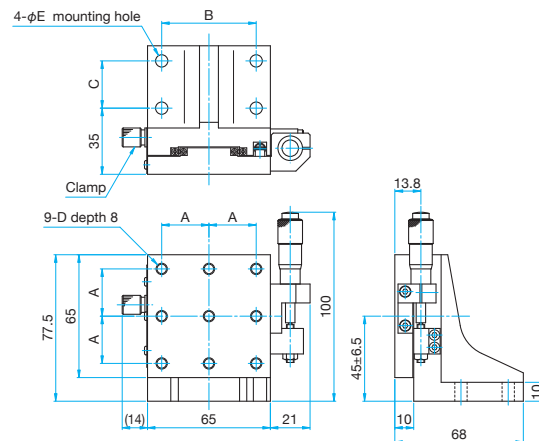
- Hexagonal socket head cap screw M6×15...4 screws (M6)
- Hexagonal socket head cap screw 1/4-20UNC×5/8...4 screws (UU)



Part Number	A (mm)	B (mm)	C (mm)	D	E (mm)
TAM-653L-M6	25	50	25	M6 P1	6.5
TAM-653LUU	25.4	50.8	25.4	1/4-20UNC	7

**TAM-653RL-M6/653RLUU**

- Hexagonal socket head cap screw M6×15...4 screws (M6)
- Hexagonal socket head cap screw 1/4-20UNC×5/8...4 screws (UU)



Part Number	A (mm)	B (mm)	C (mm)	D	E (mm)
TAM-653RL-M6	25	50	25	M6 P1	6.5
TAM-653RLUU	25.4	50.8	25.4	1/4-20UNC	7

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Ohters

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

Others

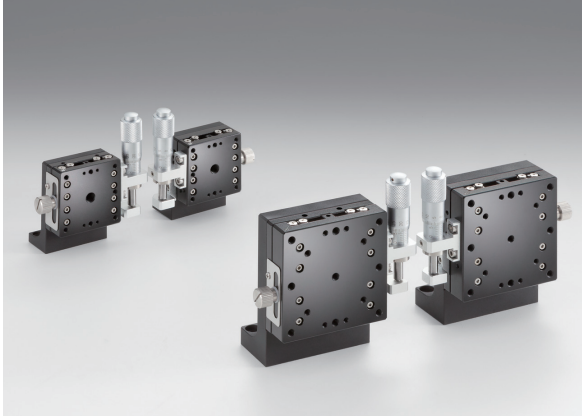
## Z axis Aluminium Stages (Vertical Mounting)

TADC-L Stage size 40/60mm

RoHS

The high stiffness integral guide evolved into a separate type offering low price, high stiffness and lightweight.

- High quality translation stage with smooth travel. Optimal for positioning and alignment.
- Because a steel ball travels in contact with the R groove at four points, these stages have stable load capacity in all directions.
- Special L angle brackets are attached to the TADC-SZ series.



## Guide

- ▶ Vertical mounting type stages without a L angle bracket are also available. [WEB Reference](#) [Catalog Code](#) W7514

## Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.

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Lapping

V Groove Screw

Others

15mm25mm40mm60mm65mm80mm100mm120mm

Others

## Specifications

Part Number	METRIC	TADC-403L	TADC-603L
	INCH	TADC-403LUU	—
(Opposite Model)	METRIC	TADC-403RL	TADC-603RL
	INCH	TADC-403RLUU	—
Table Size [mm]		40×40	60×60
Axes of Travel		Z axis	
Micrometer Position		Side	
Travel [mm]		±6.5	±6.5
Lead of Actuator [mm/rotation]		0.5	0.5
Micrometer Readable Resolution [mm]		0.01	0.01
Bearing type		Extended contact ball guide	
Primary Material		Aluminum	
Finish		Black anodized	
Load Capacity [N]		24.5 (2.5kgf)	29.4 (3kgf)
Travel Accuracy	Straightness [μm]	3	3
Max. Moment Capacity	Pitch [N·m]	2.5	4.9
	Roll [N·m]	2.5	4.9
Moment Stiffness	Pitch ["/N·cm]	0.66	0.3
Running Parallelism [μm]		10	10
Options		FP	FP
Weight [kg]		0.2	0.36

## Option

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-62540	0.25	—	E008

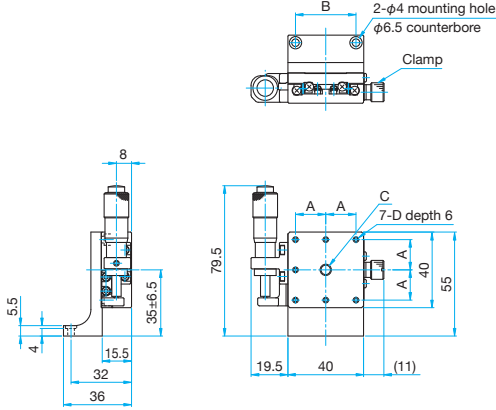
\* Please add an option code as the part number suffix to specify various optional specifications.



**Outline Drawing**

**TADC-403L/403LUU**

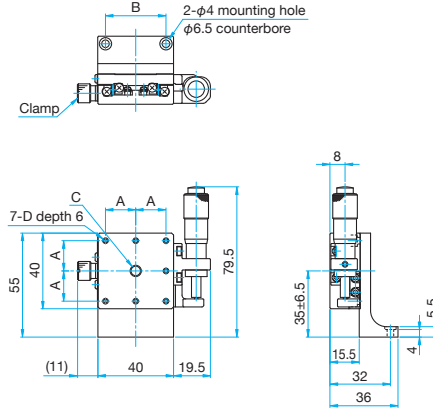
Hexagon socket head cap screw (stainless steel construction) M3×8...2 screws  
Hexagon socket head cap screw (stainless steel construction) 6-32UNC×5/16...2 screws (UU)



Part Number	A (mm)	B (mm)	C	D
TADC-403L	16	32	M6 P1 depth 5	M3
TADC-403LUU	15.875	31.75	1/4-20UNC depth 5	6-32UNC

**TADC-403RL/403RLUU**

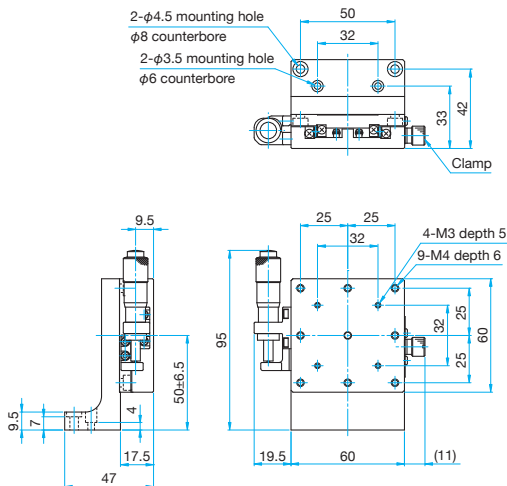
Hexagon socket head cap screw (stainless steel construction) M3×8...2 screws  
Hexagon socket head cap screw (stainless steel construction) 6-32UNC×5/16...2 screws (UU)



Part Number	A (mm)	B (mm)	C	D
TADC-403RL	16	32	M6 P1 depth 5	M3
TADC-403RLUU	15.875	31.75	1/4-20UNC depth 5	6-32UNC

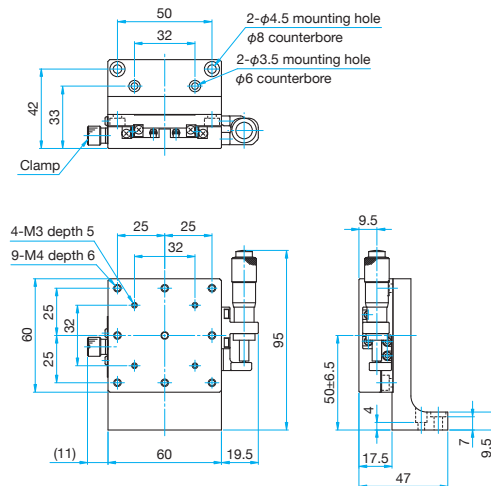
**TADC-603L**

Hexagonal socket head cap screw (stainless steel construction) M3×8...2 screws



**TADC-603RL**

Hexagonal socket head cap screw (stainless steel construction) M3×8...2 screws



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Others

- 15mm
- 25mm
- 40mm
- 60mm
- 65mm
- 80mm
- 100mm
- 120mm
- Others

## Z axis Preset Stages

TASB-3 Stage size □15/□25/□40/□60/□65mm

RoHS

Space-saving, compact Z axis stages with horizontal table top, suitable for less frequent operations that require fine adjustment.

- Ideal for less frequent operations, fine adjustment or permanent fixation.
- These stages have a block shape with minimal protrusions including the adjustment knob, in order to minimizing the installation space.

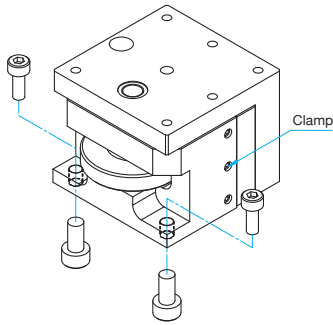


## Guide

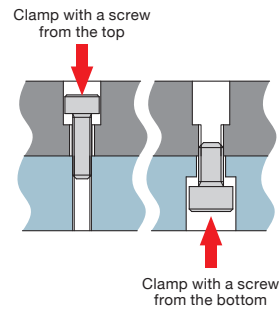
- ▶ A hex wrench with knob and clamping wrench are included.



## Mounting Method



## Detailed Illustration



## Top mounting

Tapped holes are used as counterbores because screws are smaller than tapped holes and will go in without any interference.

## Bottom mounting

Clamp with screws that match the specification of tapped holes.

## About Mounting Holes

The bottom mounting holes of preset stages are tapped holes. These stages allow mounting from the top or the bottom, convenient for securing on optical breadboards or other instruments as well as assembling in systems. Use the screws of the sizes listed in the table on the right for mounting.

Part Number	Secure from the top	Secure from the bottom
TASB-153	M2	M2.6
TASB-253	M2	M3
TASB-403	M3	M4
TASB-403UU	6-32UNC	—
TASB-603	M4	M5
TASB-653-M6	M6	M8
TASB-653UU	1/4-20UNC	5/16-18UNC

## Specifications

Part Number	METRIC	TASB-153	TASB-253	TASB-403	TASB-603	TASB-653-M6
	INCH	—	—	TASB-403UU	—	TASB-653UU
Table Size [mm]		15×15	25×25	40×40	60×60	65×65
Axes of Travel		Z axis				
Travel [mm]		+2 / -0	+3 / -0	+5 / -0	+7 / -0	+7 / -0
Screw Pitch [mm]		0.4	0.5	0.5	0.5	0.5
Bearing type		Dovetail slide method				
Primary Material		Brass				
Finish		Black matte				
Load Capacity [N]		4.9 (0.5kgf)	6.9 (0.7kgf)	29.4 (3kgf)	98.1 (10kgf)	98.1 (10kgf)
Travel Accuracy	Straightness [μm]	30	30	30	30	30
	Pitch [N·m]	—	0.3	0.5	1.0	1.0
Max. Moment Capacity	Roll [N·m]	—	0.3	0.5	1.0	1.0
	Pitch [°/N·cm]	—	6.1	4.59	0.7	0.7
Moment Stiffness	Roll [°/N·cm]	—	4.1	2.55	1.7	1.7
	Parallelism [μm]	100	100	100	100	100
Weight [kg]		0.012	0.05	0.2	0.9	1.1

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

Others



# Z axis Rack and Pinion Dovetail Stages (Vertical)

## Z axis Rack and Pinion Dovetail Stages (Vertical)

TARW-L

TAR-L

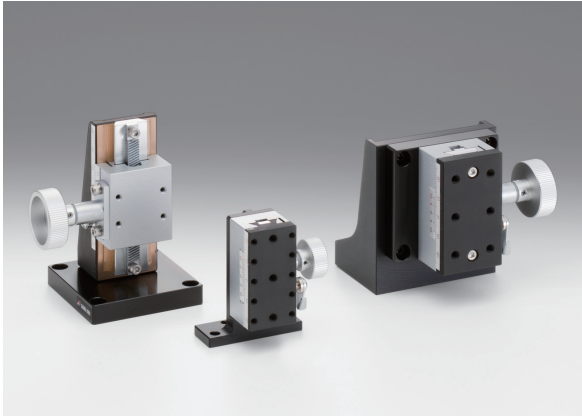
RoHS

Catalog Code W7052

RoHS

Catalog Code W7053

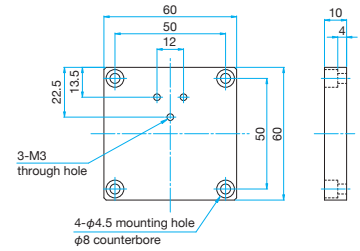
Z axis rack and pinion stages, ideal for frequent operations that require quick motion and long travel.



### TAR-34403L Bottom Plate

\*Primary material: Aluminum  
Finish: Black Anodized\*

TAR-34403L include a base plate that allows mounting on instruments or bases fitted with M4 tapped holes on  $\square 50\text{mm}$ , preventing the handle from contacting the mounting surface.



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Others

 15mm 25mm 40mm 60mm 65mm 80mm 100mm 120mm

Others

### Specifications

Part Number	METRIC	TARW-25503L	TAR-34403L	TAR-34603L	TAR-34803L	TAR-38403L-M6	TAR-60553D	TAR-60703D
	INCH	—	—	—	—	TAR-38403LUU	—	—
Table Size [mm]		25×50	34×40	34×60	34×80	38×40	60×60	60×60
Axes of Travel		Z axis						
Travel [mm]		±10	+25 / -20	±15	+20 / -10	+45 / -0	Coars: +18 / -0 Fine: +18 / -0	Coars: +33 / -0 Fine: +33 / -0
Lead of Actuator [mm/rotation]		about 20	about 20	about 20	about 20	about 20	Coars: about 20 Fine: about 2.5	Coars: about 20 Fine: about 2.5
Vernier Readable Resolution [mm]		0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bearing type		Dovetail slide method						
Primary Material		Brass / Aluminum						
Finish		Super black chrome / Black anodized						
Load Capacity [N]		9.8 (1.0kgf)	14.7 (1.5kgf)	14.7 (1.5kgf)	14.7 (1.5kgf)	14.7 (1.5kgf)	14.7 (1.5kgf)	14.7 (1.5kgf)
Travel Accuracy	Straightness [ $\mu\text{m}$ ]	30	20	20	30	30	20	20
Max. Moment Capacity	Pitch [ $\text{N}\cdot\text{m}$ ]	0.6	1.5	1.4	1.9	1.5	1.5	1.5
	Roll [ $\text{N}\cdot\text{m}$ ]	0.5	1.0	1.2	1.5	1.0	1.0	1.0
Moment Stiffness	Pitch [ $^{\circ}/\text{N}\cdot\text{cm}$ ]	1.53	0.51	0.41	0.41	0.51	0.61	0.61
Parallelism [ $\mu\text{m}$ ]		—	—	—	—	—	80	80
Squareness [ $\mu\text{m}$ ]		50	50	100	100	50	—	—
Weight [kg]		0.3	0.5	0.8	1.1	0.6	0.55	0.6





## Z axis Long Travel Leadscrew Stages

LSV Stage size □160mm

RoHS

Long-type leadscrew stages for Z axis adjustment, enabling long height adjustment.



- Suitable for less frequent operations and adjustment that requires large up and down travel.
- Convenient crank style handle for adjustment.
- Tapped holes on the table top allow use in combination with other fine drive stages.

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

Others

## Specifications

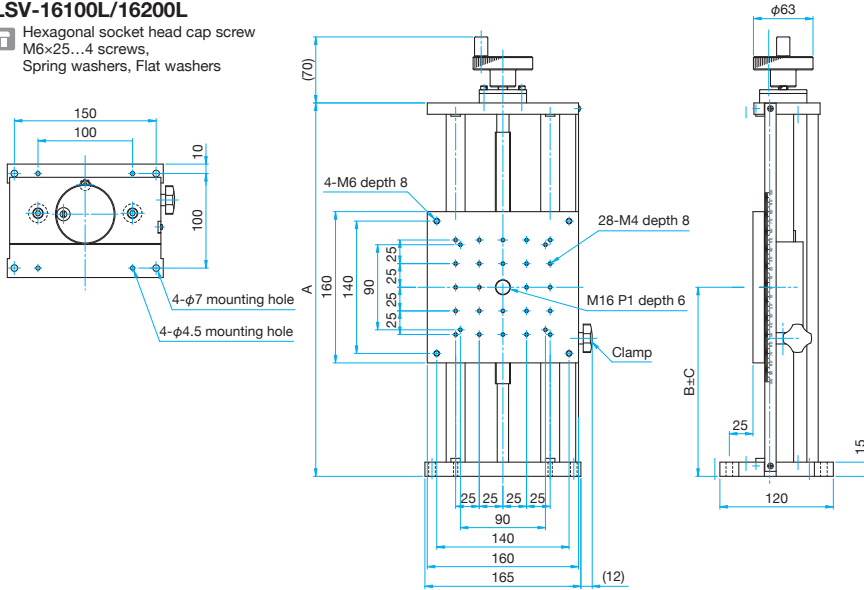
Part Number	METRIC	LSV-16100L	LSV-16100L-M6	LSV-16200L	LSV-16200L-M6
	INCH	—	LSV-16100LUU	—	LSV-16200LUU
Table Size [mm]	160×160				
Axes of Travel	Z axis				
Screw Pitch [mm]		2	2	2	2
Readable Resolution [mm]		1	1	1	1
Travel [mm]		±50	±50	±100	±100
Bearing type	Linear bearing				
Primary Material	Aluminum				
Finish	Black anodized				
Load Capacity [N]		78.4 (8.0kgf)	78.4 (8.0kgf)	78.4 (8.0kgf)	78.4 (8.0kgf)
Travel Accuracy	Straightness [μm]	10	10	10	10
Max. Moment Capacity	Pitch [N·m]	4.9	4.9	4.9	4.9
Moment Stiffness	Pitch ["/N·cm]	0.36	0.36	0.71	0.71
Weight [kg]		4.7	4.7	5.3	5.3



**Outline Drawing**

**LSV-16100L/16200L**

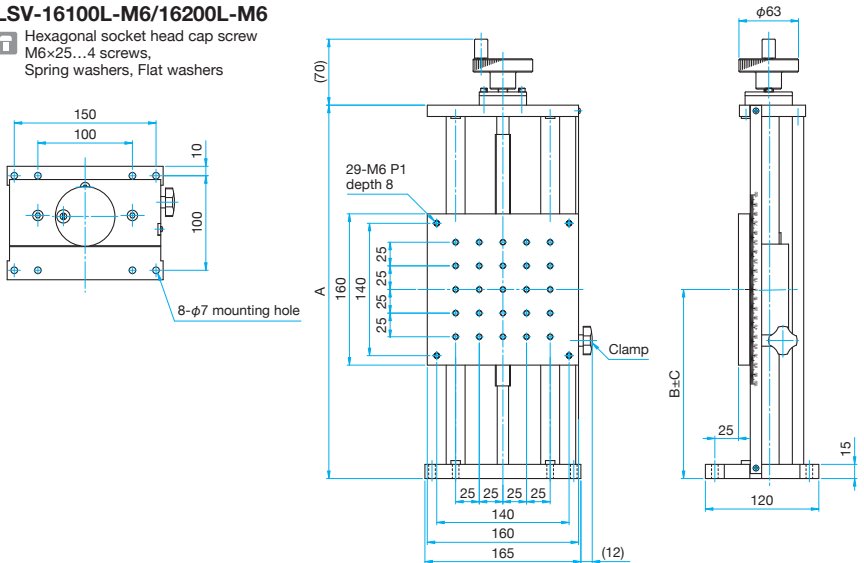
Hexagonal socket head cap screw  
M6x25...4 screws,  
Spring washers, Flat washers



Part Number	A (mm)	B (mm)	D (mm)
LSV-16100L	295	150	50
LSV-16200L	395	200	100

**LSV-16100L-M6/16200L-M6**

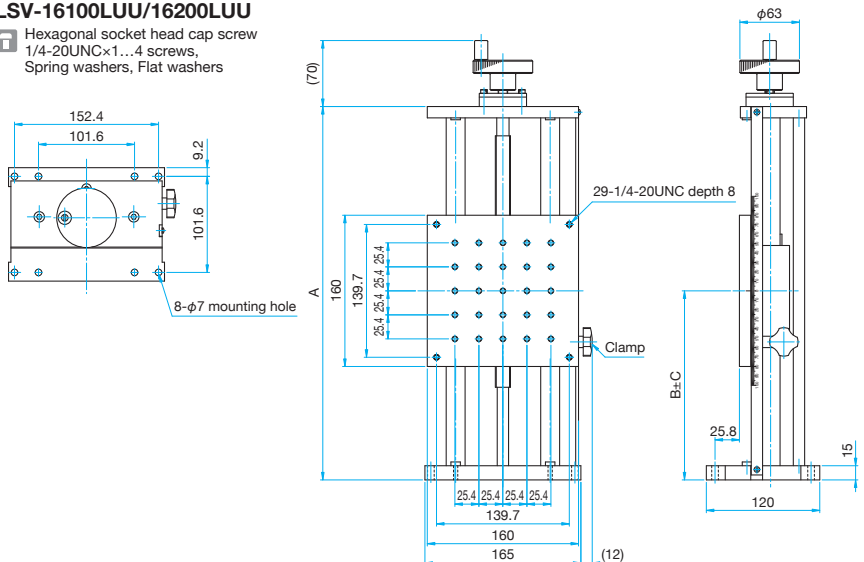
Hexagonal socket head cap screw  
M6x25...4 screws,  
Spring washers, Flat washers



Part Number	A (mm)	B (mm)	D (mm)
LSV-16100L-M6	295	150	50
LSV-16200L-M6	395	200	100

**LSV-16100LUU/16200LUU**

Hexagonal socket head cap screw  
1/4-20UNCx1...4 screws,  
Spring washers, Flat washers



Part Number	A (mm)	B (mm)	D (mm)
LSV-16100LUU	295	150	50
LSV-16200LUU	395	200	100

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V Groove Screw

Others

- 15mm
- 25mm
- 40mm
- 60mm
- 65mm
- 80mm
- 100mm
- 120mm

Others

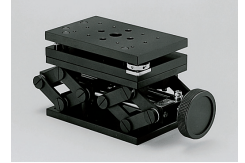
## Z axis precision stages that achieve extremely high parallelism using Sigma Koki's unique adjustment technology.

- The top and bottom plates of the LJ model are made of steel (magnet bases can be attached and detached), and those of the LJA are made of aluminum (light-weight).
- Pantograph mechanism provides a large adjustment range and high load capacity.
- Rotate the adjustment handle to adjust the height while keeping the table surface level.
- Firm clamping is achieved with split clamp system.



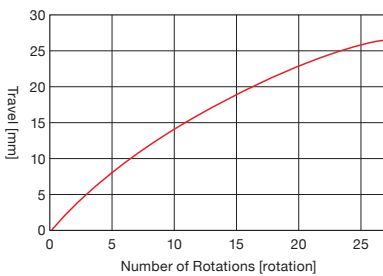
### Guide

- ▶ Height is adjustable using the special spacer kits (LJS).  
[Reference](#) E114
- ▶ Use the special platform (LJP) to mount larger samples.  
[Reference](#) E112
- ▶  $\alpha(\beta)$  axis tilt stage (AIS) in the same size as the stage area of labjack can be mounted. [Reference](#) E194

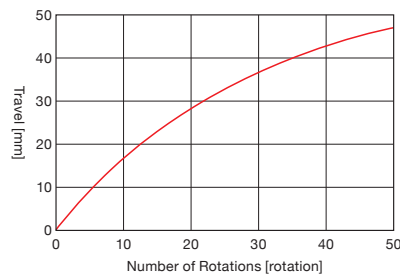


### Travel Variation Per Adjustment Handle Rotation

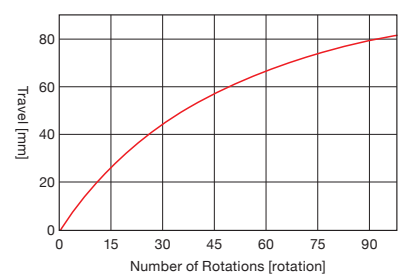
LJ/LJA-80133



LJ/LJA-10163



LJ/LJA-16223



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Others

 15mm 25mm 40mm 60mm 65mm 80mm 100mm 120mm

Others

### Specifications

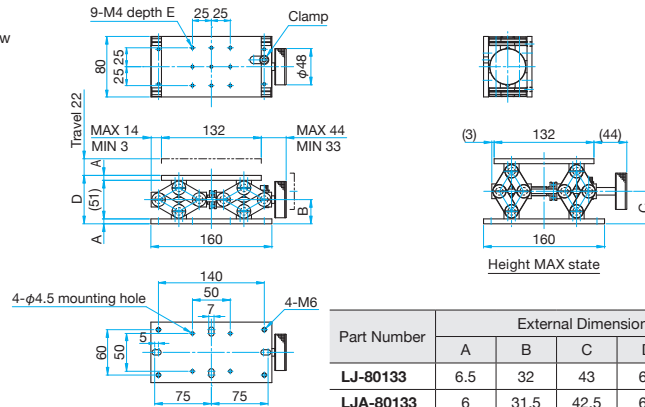
Part Number	LJ-80133	LJA-80133	LJ-10163	LJA-10163	LJ-16223	LJA-16223	
Table Size [mm]	80×132	80×132	100×160	100×160	160×220	160×220	
Axes of Travel	Z axis						
Travel [mm]	22	22	40	40	70	70	
Primary Material	Steel	Aluminum	Steel	Aluminum	Steel	Aluminum	
Finish	Super black chrome	Black anodized	Super black chrome	Black anodized	Super black chrome	Black anodized	
Load Capacity [N]	196 (20.0kgf)	196 (20.0kgf)	245 (25.0kgf)	245 (25.0kgf)	294 (30.0kgf)	294 (30.0kgf)	
Max. Moment Capacity	Pitch [N·m]	29.4	29.4	38	38	49	49
	Roll [N·m]	2.9	2.9	4	4	6	6
Parallelism [ $\mu$ m]	100	100	100	100	100	100	
Weight [kg]	3.1	2.3	5.3	3.4	9.9	5.9	



**Outline Drawing**

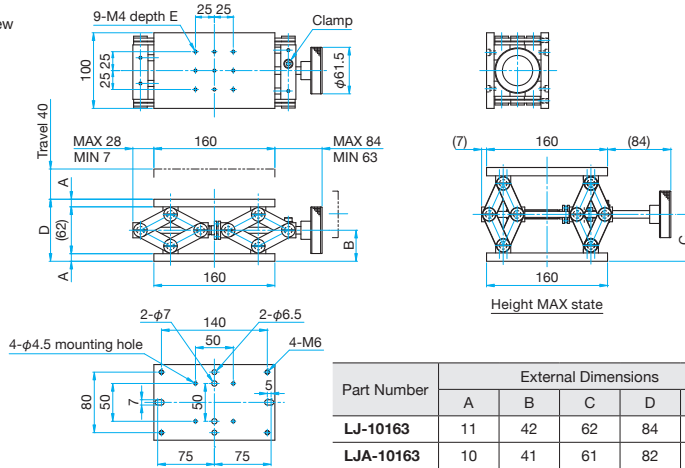
**LJ/LJA-80133**

Hexagonal socket head cap screw  
M6x12...4 screws,  
One 5mm hex wrench



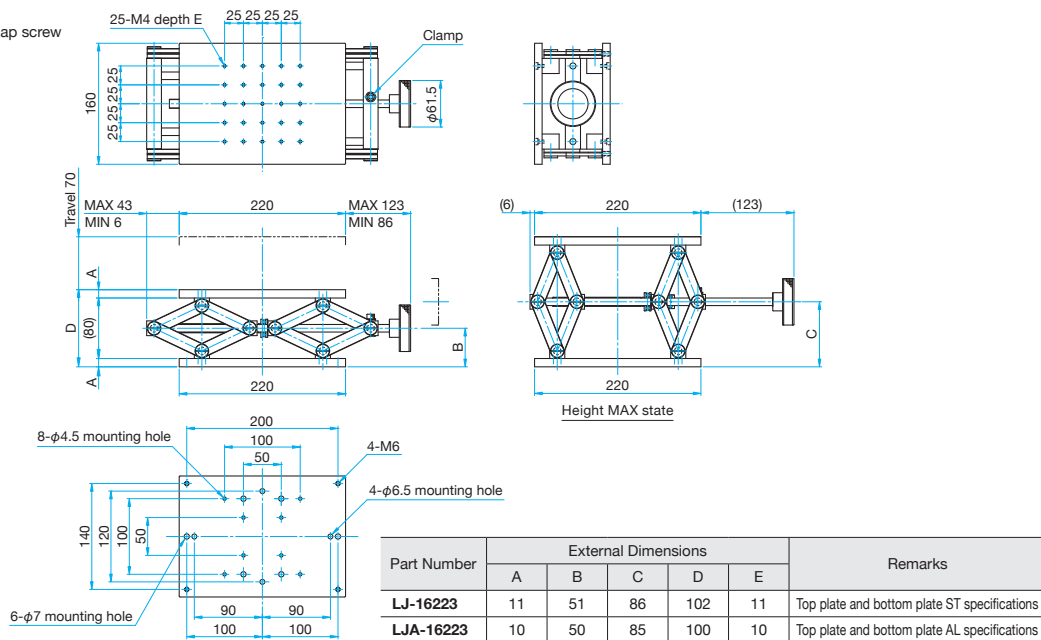
**LJ/LJA-10163**

Hexagonal socket head cap screw  
M6x16...4 screws,  
One 5mm hex wrench



**LJ/LJA-16223**

Hexagonal socket head cap screw  
M6x16...4 screws,  
One 5mm hex wrench



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Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

# Precision Labjacks | LJA-M6/LJA-UU

RoHS

## Z axis precision stages that achieve extremely high parallelism using Sigma Koki's unique adjustment technology.

- The top and bottom plates of the LJ model are made of steel (magnet bases can be attached and detached), and those of the LJA are made of aluminum (light-weight).
- Pantograph mechanism provides a large adjustment range and high load capacity.
- Rotate the adjustment handle to adjust the height while keeping the table surface level.
- Firm clamping is achieved with split clamp system.



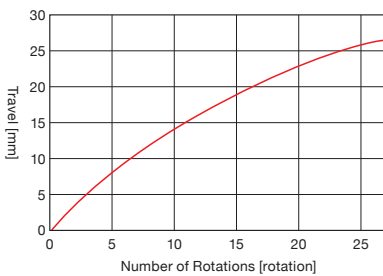
### Guide

- ▶ Use the special platform (LJP) to mount larger samples.

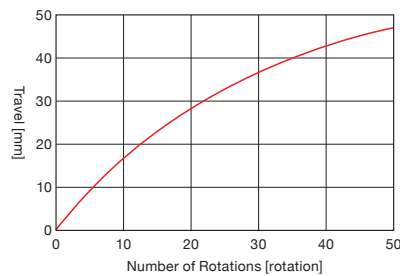
[Reference](#) E112

### Travel Variation Per Adjustment Handle Rotation

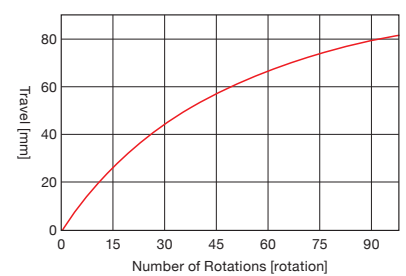
LJA-80133-M6/UU



LJA-10163-M6/UU



LJA-16223-M6/UU



### Specifications

Part Number	METRIC	LJA-80133-M6	LJA-10163-M6	LJA-16223-M6
	INCH	LJA-80133UU	LJA-10163UU	LJA-16223UU
Table Size [mm]		80×132	100×160	160×220
Axes of Travel			Z axis	
Travel [mm]		22	40	70
Primary Material			Aluminum	
Finish			Black anodized	
Load Capacity [N]		196 (20Kgf)	245 (25Kgf)	294 (30Kgf)
Max. Moment Capacity	Pitch [N·m]	29.4	38	49
	Roll [N·m]	2.9	4	6
Parallelism [μm]		100	100	100
Weight [kg]		2.3	3.4	5.9

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Others

 15mm 25mm 40mm 60mm 65mm 80mm 100mm 120mm

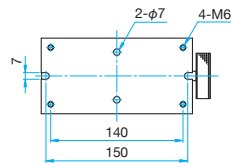
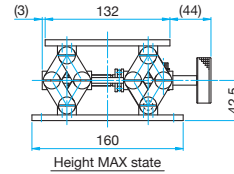
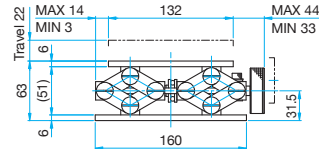
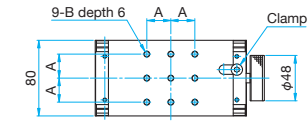
Others



**Outline Drawing**

**LJA-80133-M6/80133UU**

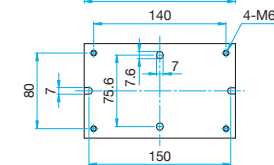
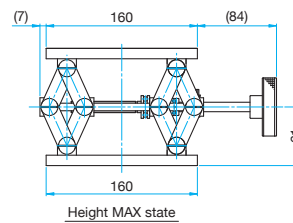
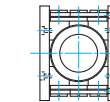
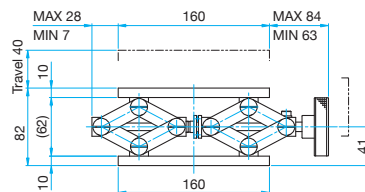
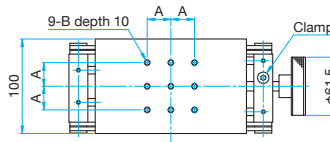
- Hexagonal socket head cap screw M6×12...4 screws, One 5mm hex wrench (M6)
- Hexagonal socket head cap screw 1/4-20UNC×1/2...4 screws, One 5mm hex wrench (UU)



Part Number	A (mm)	B
LJA-80133-M6	25	M6 P1
LJA-80133UU	25.4	1/4-20UNC

**LJA-10163-M6/10163UU**

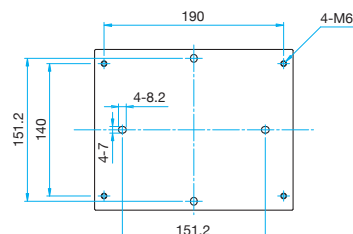
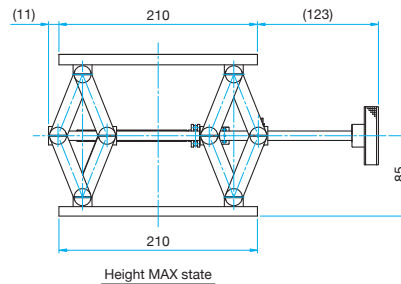
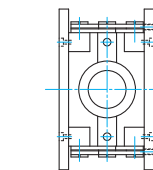
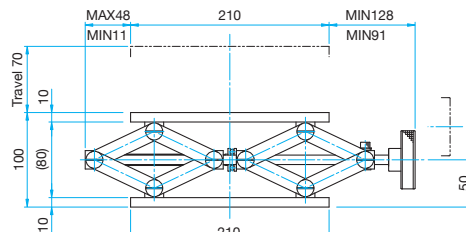
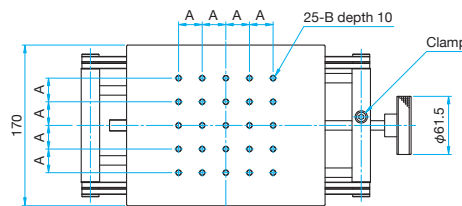
- Hexagonal socket head cap screw M6×12...4 screws, One 5mm hex wrench (M6)
- Hexagonal socket head cap screw 1/4-20UNC×1/2...4 screws, One 5mm hex wrench (UU)



Part Number	A (mm)	B
LJA-10163-M6	25	M6 P1
LJA-10163UU	25.4	1/4-20UNC

**LJA-16223-M6/16223UU**

- Hexagonal socket head cap screw M6×12...4 screws, One 5mm hex wrench (M6)
- Hexagonal socket head cap screw 1/4-20UNC×1/2...4 screws, One 5mm hex wrench (UU)



Part Number	A (mm)	B
LJA-16223-M6	25	M6 P1
LJA-16223UU	25.4	1/4-20UNC

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□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

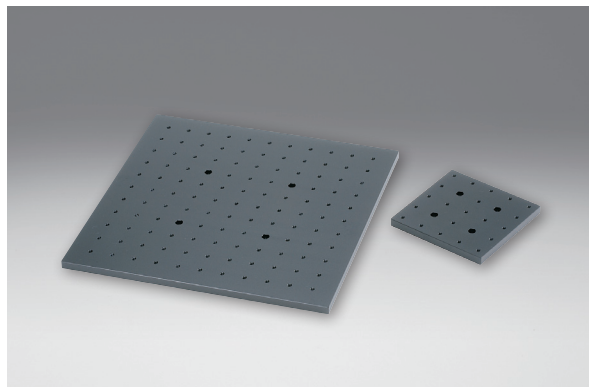
Others

## Platform for Labjacks | LJP

RoHS

## Platform for precision labjacks (LJ/LJA).

Larger samples can be mounted by changing the platform.



## Guide

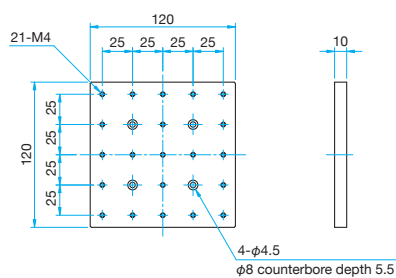
- ▶ We will accept production of sizes not listed in the catalog. Contact our International Sales Division for more information.
- ▶ Usable as a simplified optical baseplate for configuring a small optical system.
- ▶ Platforms with grips (OBC) that have M4 or M6 tapped holes (25mm matrix) are also available. [Reference](#) D032



## Outline Drawing

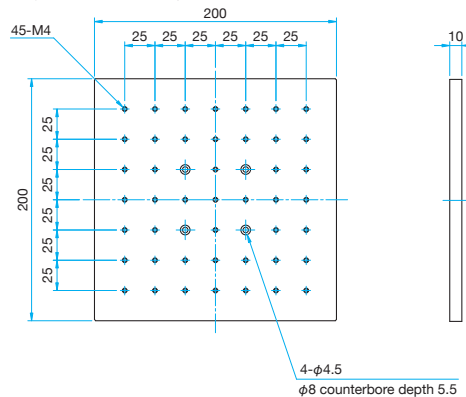
## LJP-120

Hexagonal socket head cap screw M4×12...4 screws



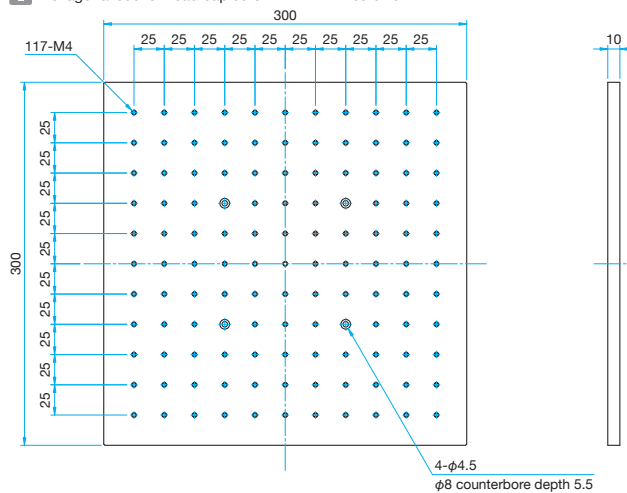
## LJP-200

Hexagonal socket head cap screw M4×12...4 screws



## LJP-300

Hexagonal socket head cap screw M4×12...4 screws



## Specifications

Part Number	LJP-120	LJP-200	LJP-300
Size [mm]	120×120	200×200	300×300
Primary Material	Aluminum		
Finish	Black anodized		
Weight [kg]	0.4	1.1	2.4

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Others

 15mm 25mm 40mm 60mm 65mm 80mm 100mm 120mm

Others

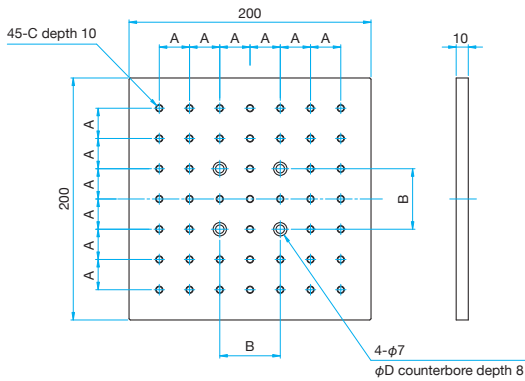




**Outline Drawing**

**LJP-200-M6/200UU**

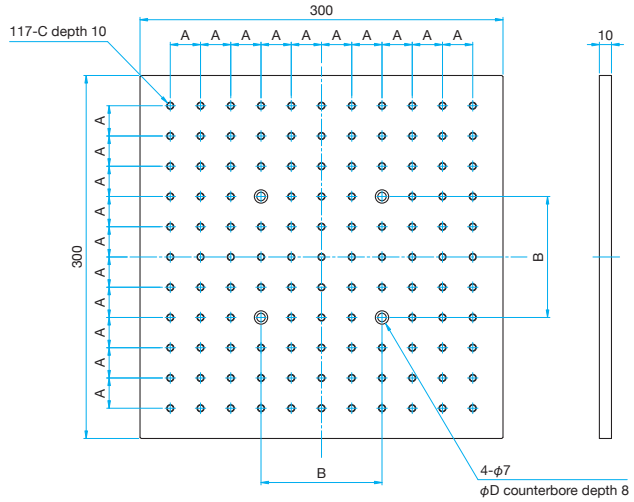
- Hexagonal socket head cap screw M6×10...4 screws (M6)
- Hexagonal socket head cap screw 1/4-20UNC×3/8...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
LJP-200-M6	25	50	M6 P1	11
LJP-200UU	25.4	50.8	1/4-20UNC	12

**LJP-300-M6/300UU**

- Hexagonal socket head cap screw M6×10...4 screws (M6)
- Hexagonal socket head cap screw 1/4-20UNC×3/8...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
LJP-300-M6	25	50	M6 P1	11
LJP-300UU	25.4	50.8	1/4-20UNC	12

**Specifications**

Part Number	METRIC	LJP-200-M6	LJP-300-M6
	INCH	LJP-200UU	LJP-300UU
Size [mm]		200×200	300×300
Primary Material		Aluminum	
Finish		Black anodized	
Weight [kg]		1.1	2.4

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Others

15mm

25mm

40mm

60mm

65mm

80mm

100mm

120mm

Others

## Spacer kits for precision labjacks (LJ/LJA).

- A kit contains one plate (made of steel) and three different lengths of posts, 20, 40 and 80mm (four posts for each). Height can be adjusted by combining these posts (height can be added to 20, 40, 60, 80, 100, 120 and 140mm).
- Refer to the outline drawing regarding the connection diagram to the precision labjacks.



## Guide

- We will accept production of sizes not listed in the catalog. Contact our International Sales Division for more information.

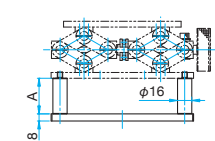
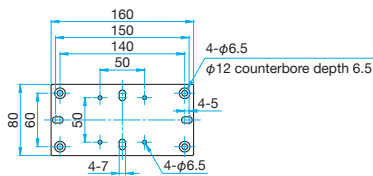
## Connection Example



## Outline Drawing

## LJS-8016

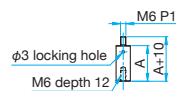
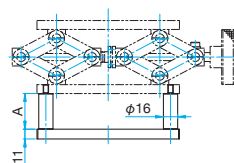
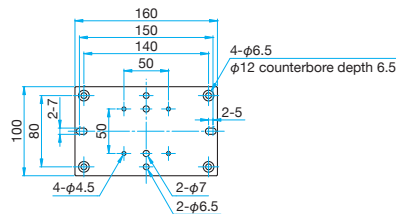
- Hexagonal socket head cap screw M6×12...4screws, One 5mm hex wrench



A [mm]
20
40
80

## LJS-1016

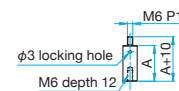
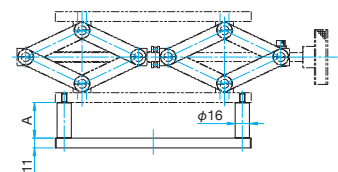
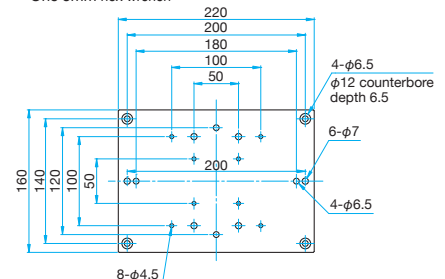
- Hexagonal socket head cap screw M6×12...4screws, One 5mm hex wrench



A [mm]
20
40
80

## LJS-1622

- Hexagonal socket head cap screw M6×12...4screws, One 5mm hex wrench



A [mm]
20
40
80

## Specifications

Part Number	LJS-8016	LJS-1016	LJS-1622
Compatible Labjack Part Number	LJ-80133 LJA-80133	LJ-10163 LJA-10163	LJ-16223 LJA-16223
Primary Material	Steel	Steel	Steel
Finish	Super black chrome	Super black chrome	Super black chrome
Weight [kg]	1.7	2.2	3.9

\* There are mounting holes of 4-φ4.5 also □100mm on LJS-1622.

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

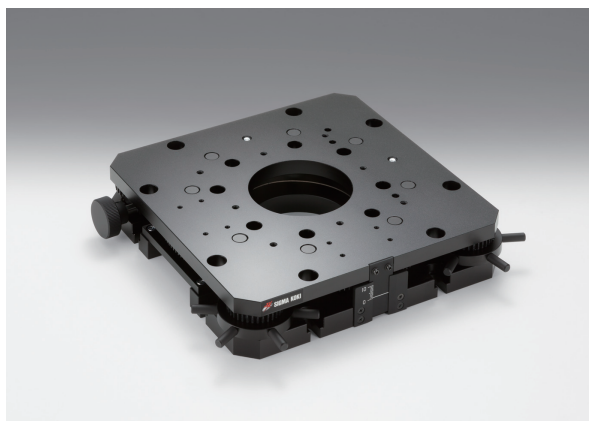
□80mm

□100mm

□120mm

Others

Using the jack screw method, this is a large scale Z-axis stage.



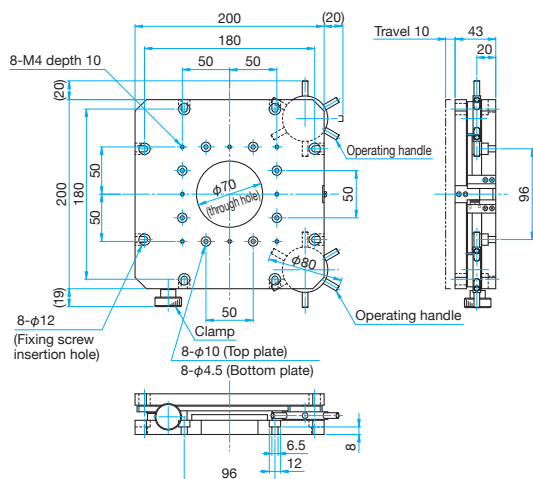
- By turning the handle on the side, the top surface of the stage will move up and down. Since the handle is interlocked, the stage surface will move when operating either one.
- The transmitted hole in the center of the stage remains always the through hole diameter unchanged even if the table is moved.



## Outline Drawing

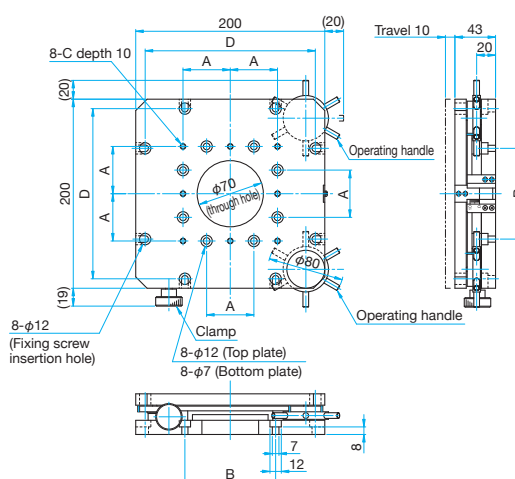
### TSM-2003

Hexagonal socket head cap screw M6×15...8 screws, Flat washers



### TSM-2003-M6/2003UU

Hexagonal socket head cap screw M6×15...8 screws, Flat washers (M6)  
Hexagonal socket head cap screw 1/4-20UNC×5/8...8 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
TSM-2003-M6	50	96	M6 P1	180
TSM-2003UU	50.8	96.04	1/4-20UNC	177.8

## Specifications

Part Number	METRIC	TSM-2003	TSM-2003-M6
	INCH	—	TSM-2003UU
Table Size [mm]		200×200	200×200
Axes of Travel		Z axis	
Travel [mm]		10	10
Lead of Actuator [mm/rotation]		1.0	1.0
Readable Resolution [mm]		1	1
Bearing type		Jack screw method	
Primary Material		Aluminum	
Finish		Black anodized	
Load Capacity [N]		490 (50.0kgf)	490 (50.0kgf)
Travel Accuracy	Straightness [μm]	200	200
Max. Moment Capacity	Pitch [N·m]	4.9	4.9
	Roll [N·m]	4.9	4.9
Moment Stiffness	Pitch [°/N·cm]	0.05	0.05
	Roll [°/N·cm]	0.05	0.05
Parallelism [μm]		150	150
Weight [kg]		5.0	5.0

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Others

□15mm

□25mm

□40mm

□60mm

□65mm

□80mm

□100mm

□120mm

Others