

XYZ Axis Steel Extended Contact Translation Stages

TSD-255 Stage Size 25 × 25 mm

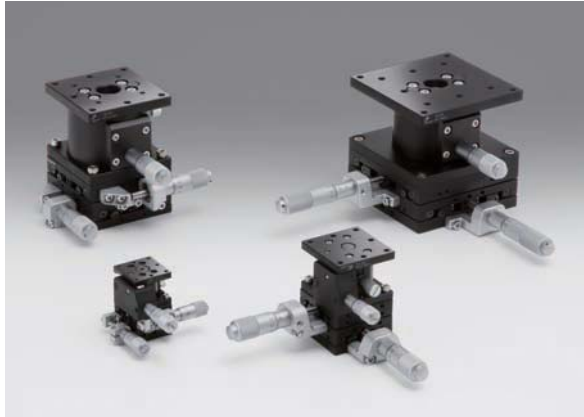
RoHS

TSD-405 Stage Size 40 × 40 mm

RoHS

This XYZ assembly incorporates an integrated (XY) axis steel linear stage and a (Z) vertical axis steel stage with a horizontal flat top plate.

There are options for micrometer position and fine pitch screws.



Guide

- ▶ Vacuum-compatible stainless steel stages (TSDS-255/405) are also available. [Reference](#) E216 [Catalog Code](#) W7076

Attention

- ▶ This translation stage type is not suitable for inverted use. In this condition, all load would be pulling against the spring.
- ▶ These stages use a pivot mechanism to transfer horizontal motion to vertical motion. This mechanism induces a small non-linearity between the distance the micrometer moves and the distance the stage platform moves. Contact our Sales Division for more information.

Specifications

Guide	METRIC	TSD-255C	TSD-255S	TSD-405C	TSD-405S	
	Part Number	INCH	—	—	TSD-405CUU	TSD-405SUU
X Axis Stages	(Opposite Model)	METRIC	—	TSD-255SR	—	
		INCH	—	—	—	TSD-405SRUU
XY Axis Stages	Stage Size [mm]	25×25	25×25	40×40	40×40	
Z Axis Stages	Axes of Travel	XYZ axis				
XZ Axis Stages	Micrometer Position	Center	Side	Center	Side	
XYZ Axis Stages	Travel [mm]	XY axis ±3 Z axis ±3	XY axis ±3 Z axis ±3	XY axis ±6.5 Z axis ±3	XY axis ±6.5 Z axis ±3	
	Lead of Actuator [mm/rotation]	0.5	0.5	0.5	0.5	
Rotation Stages	Micrometer Readable Resolution [mm]	0.01	0.01	0.01	0.01	
	Guide Method	Extended contact ball bearing guide				
Goniometer	Primary Material	Steel				
	Finish	Super black chrome + Black matte				
Tilt Stages	Load Capacity [N]	29.4 (3.0kgf)	29.4 (3.0kgf)	88.3 (9.0kgf)	88.3 (9.0kgf)	
	Vacuum	Travel Accuracy	Straightness [μm]	5	5	2.5
Ball Bearing Guide	Max. Moment Capacity	Pitch [N·m]	1.0	1.0	3.9	3.9
		Roll [N·m]	1.0	1.0	3.9	3.9
	Moment Stiffness	Pitch [°/N·cm]	10.55	10.55	2.34	2.34
		Roll [°/N·cm]	10.55	10.55	2.34	2.34
Crossed Roller	Parallelism [μm]	130	130	130	130	
	Dovetail	Options	FP	FP	FP	FP
Lapping		Weight [kg]	0.2	0.2	0.55	0.55

Option for □25mm

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	0.25	—	E008

Option for □40mm

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	XY axis: FPSA-62540 Z axis: FPSA-42525	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). (40 × 40mm)

* The FP type requires a hex wrench or the optional hex wrench with knob (KCL) for driving operation. [Reference](#) F010 [Catalog Code](#) W8008

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

Motorized Stages

Light Sources & Laser Safety

Index

Guide

X Axis Stages

XY Axis Stages

Z Axis Stages

XZ Axis Stages

XYZ Axis Stages

Rotation Stages

Goniometer

Tilt Stages

Vacuum

Ball Bearing Guide

Crossed Roller

Dovetail

Lapping

V Groove Screw

Others

15 × 15 mm

25 × 25 mm

40 × 40 mm

60 × 60 mm

65 × 65 mm

80 × 80 mm

100 × 100 mm

120 × 120 mm

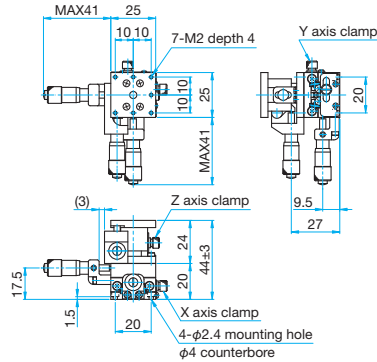
Others



Outline Drawing

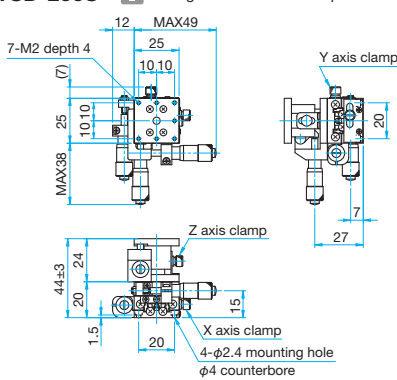
TSD-255C

Hexagonal socket head cap screw M2x4...4 screws



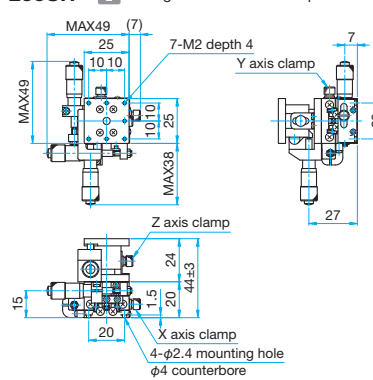
TSD-255S

Hexagonal socket head cap screw M2x4...4 screws



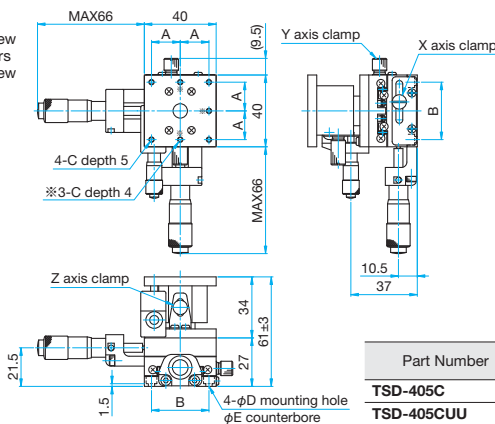
TSD-255SR

Hexagonal socket head cap screw M2x4...4 screws



TSD-405C/405CUU

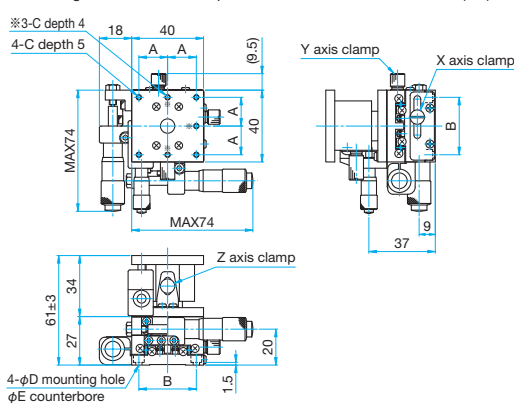
Hexagonal socket head cap screw M3x6...4 screws, Spring washers
Hexagonal socket head cap screw 6-32UNCx3/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-405C	16	32	M3	3.5	6
TSD-405CUU	15.875	31.75	6-32UNC	4	6.5

TSD-405S/405SUU

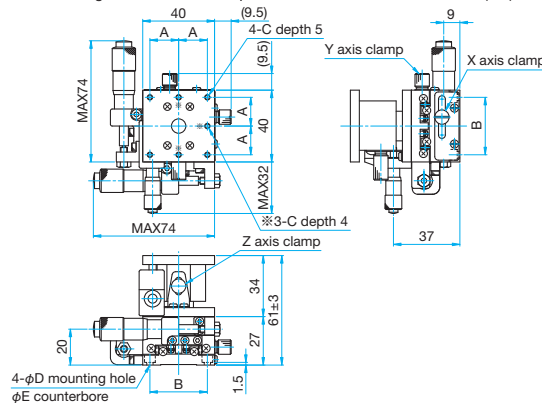
Hexagonal socket head cap screw M3x6...4 screws, Spring washers
Hexagonal socket head cap screw 6-32UNCx3/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-405S	16	32	M3	3.5	6
TSD-405SUU	15.875	31.75	6-32UNC	4	6.5

TSD-405SR/405SRUU

Hexagonal socket head cap screw M3x6...4 screws, Spring washers
Hexagonal socket head cap screw 6-32UNCx3/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-405SR	16	32	M3	3.5	6
TSD-405SRUU	15.875	31.75	6-32UNC	4	6.5

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

MotORIZED Stages

Light Sources & Laser Safety

Index

Guide

X Axis Stages

XY Axis Stages

Z Axis Stages

XZ Axis Stages

XYZ Axis Stages

Rotation Stages

Goniometer

Tilt Stages

Vacuum

Ball Bearing Guide

Crossed Roller

Dovetail

Lapping

V Groove Screw

Others

15 x 15 mm

25 x 25 mm

40 x 40 mm

60 x 60 mm

65 x 65 mm

80 x 80 mm

100 x 100 mm

120 x 120 mm

Others

XYZ Axis Steel Extended Contact Translation Stages

TSD-605 Stage Size 60 x 60 mm

RoHS

TSD-655 Stage Size 65 x 65 mm

RoHS

This XYZ assembly incorporates an integrated (XY) axis steel linear stage and a (Z) vertical axis steel stage with a horizontal flat top plate.

There are options for micrometer position and fine pitch screws.



Guide

► Vacuum-compatible stainless steel stages (TSDS-605/655) are also available. [Reference](#) E216 [Catalog Code](#) W7076

Attention

► This translation stage type is not suitable for inverted use. In this condition, all load would be pulling against the spring.
 ► These stages use a pivot mechanism to transfer horizontal motion to vertical motion. This mechanism induces a small non-linearity between the distance the micrometer moves and the distance the stage platform moves. Contact our Sales Division for more information.

Specifications

Part Number	METRIC	TSD-605C	TSD-605S	TSD-655C-M6	TSD-655S-M6
	INCH	—	—	TSD-655CUU	TSD-655SUU
(Opposite Model)	METRIC	—	TSD-605SR	—	TSD-655SR-M6
	INCH	—	—	—	TSD-655SRUU
Stage Size [mm]		60x60	60x60	65x65	65x65
Axes of Travel		XYZ axis			
Micrometer Position		Center	Side	Center	Side
Travel [mm]		XY axis ±6.5 Z axis ±5	XY axis ±6.5 Z axis ±5	XY axis ±6.5 Z axis ±5	XY axis ±6.5 Z axis ±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
Guide Method		Extended contact ball bearing guide			
Primary Material		Steel			
Finish		Super black chrome + Black matte			
Load Capacity [N]		147 (15.0kgf)	147 (15.0kgf)	147 (15.0kgf)	147 (15.0kgf)
Travel Accuracy	Straightness [μm]	2.5	2.5	2.5	2.5
	Pitch [N·m]	6.9	6.9	6.9	6.9
Max. Moment Capacity	Roll [N·m]	6.9	6.9	6.9	6.9
	Pitch [°/N·cm]	0.81	0.81	0.81	0.81
Moment Stiffness	Roll [°/N·cm]	0.81	0.81	0.81	0.81
	Parallelism [μm]	130	130	130	130
Options		FP	FP	FP	FP
Weight [kg]		1.9	1.9	2.0	2.0

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.

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

* The FP type requires a hex wrench or the optional hex wrench with knob (KCL) for driving operation. [Reference](#) F010 [Catalog Code](#) W8008

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

Motorized Stages

Light Sources & Laser Safety

Index

Guide

X Axis Stages

XY Axis Stages

Z Axis Stages

XZ Axis Stages

XYZ Axis Stages

Rotation Stages

Goniometer

Tilt Stages

Vacuum

Ball Bearing Guide

Crossed Roller

Dovetail

Lapping

V Groove Screw

Others

15 x 15 mm

25 x 25 mm

40 x 40 mm

60 x 60 mm

65 x 65 mm

80 x 80 mm

100 x 100 mm

120 x 120 mm

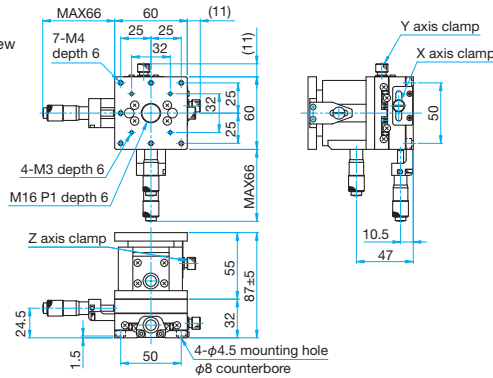
Others



Outline Drawing

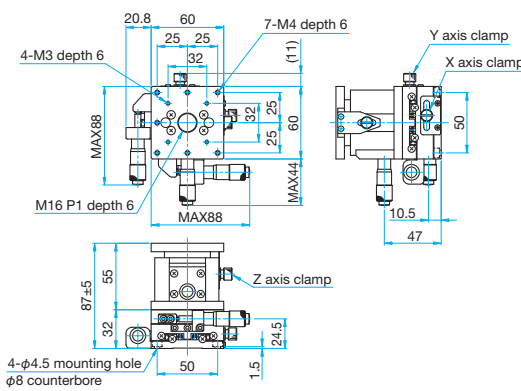
TSD-605C

Hexagonal socket head cap screw M4x6...4 screws



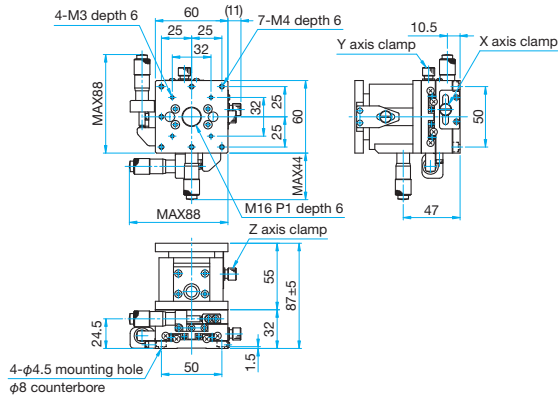
TSD-605S

Hexagonal socket head cap screw M4x6...4 screws



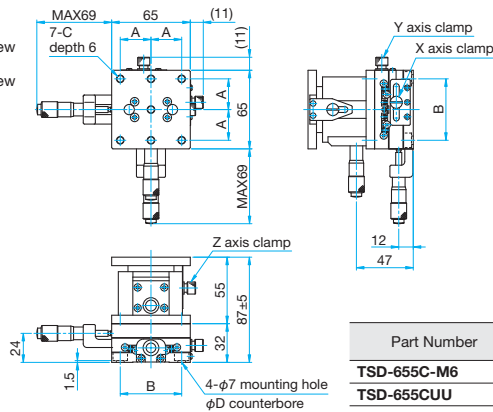
TSD-605SR

Hexagonal socket head cap screw M4x6...4 screws



TSD-655C-M6/655CUU

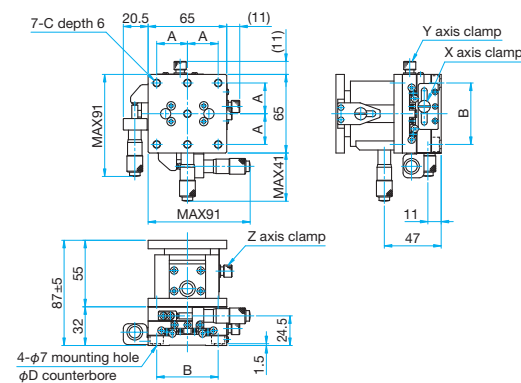
Hexagonal socket head cap screw M6x6...4 screws (M6)
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
TSD-655C-M6	25	50	M6 P1	11
TSD-655CUU	25.4	50.8	1/4-20UNC	12

TSD-655S-M6/655SUU

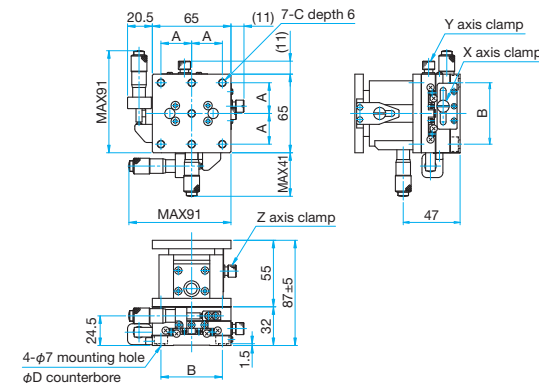
Hexagonal socket head cap screw M6x6...4 screws (M6)
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
TSD-655S-M6	25	50	M6 P1	11
TSD-655SUU	25.4	50.8	1/4-20UNC	12

TSD-655SR-M6/655SRUU

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)
TSD-655SR-M6	25	50	M6 P1	11
TSD-655SRUU	25.4	50.8	1/4-20UNC	12

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

MotORIZED Stages

Light Sources & Laser Safety

Index

Guide

X Axis Stages

XY Axis Stages

Z Axis Stages

XZ Axis Stages

XYZ Axis Stages

Rotation Stages

Goniometer

Tilt Stages

Vacuum

Ball Bearing Guide

Crossed Roller

Dovetail

Lapping

V Groove Screw

Others

15 x 15 mm

25 x 25 mm

40 x 40 mm

60 x 60 mm

65 x 65 mm

80 x 80 mm

100 x 100 mm

120 x 120 mm

Others

XYZ Axis Steel Extended Contact Translation Stages

TSD-805 Stage Size 80 x 80 mm

TSD-1005 Stage Size 100 x 100 mm

RoHS

RoHS

This XYZ assembly incorporates an integrated (XY) axis steel linear stage and a (Z) vertical axis steel stage with a horizontal flat top plate.

There are options for micrometer position and fine pitch screws.



Attention

- ▶ This translation stage type is not suitable for inverted use. In this condition, all load would be pulling against the spring.
- ▶ These stages use a pivot mechanism to transfer horizontal motion to vertical motion. This mechanism induces a small non-linearity between the distance the micrometer moves and the distance the stage platform moves. Contact our Sales Division for more information.

Specifications

Part Number	METRIC	TSD-805C	TSD-805S	TSD-1005C	TSD-1005S
(Opposite Model)	METRIC		TSD-805SR	—	TSD-1005SR
Stage Size [mm]		80×80	80×80	100×100	100×100
Axes of Travel		XYZ axis			
Micrometer Position		Center	Side	Center	Side
Travel [mm]		XY axis ±12.5 Z axis ±5	XY axis ±12.5 Z axis ±5	XY axis ± 12.5 Z axis ±10	XY axis ±12.5 Z axis ±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
Guide Method		Extended contact ball bearing guide			
Primary Material		Steel			
Finish		Super black chrome + Black matte			
Load Capacity [N]		147 (15.0kgf)	147 (15.0kgf)	245 (25.0kgf)	245 (25.0kgf)
Travel Accuracy	Straightness [μm]	2.5	2.5	2.5	2.5
Max. Moment Capacity	Pitch [N·m]	6.9	6.9	9.8	9.8
	Roll [N·m]	6.9	6.9	9.8	9.8
Moment Stiffness	Pitch [°/N·cm]	0.67	0.67	0.45	0.45
	Roll [°/N·cm]	0.67	0.67	0.45	0.45
Parallelism [μm]		130	130	150	150
Options		FP	FP	FP	FP
Weight [kg]		2.6	2.6	6.1	6.1

Option for □80mm

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	XY axis: FPSA-62550 X axis: FPSA-62540	0.25	—	E008

Option for □100mm

Option Code	Compatible product		Lead of Actuator [mm/rotation]	Micrometer Readable Resolution [mm]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-62555	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).

* The FP type requires a hex wrench or the optional hex wrench with knob (KCL) for driving operation. [Reference](#) F010 [Catalog Code](#) W8008

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

Motorized Stages

Light Sources & Laser Safety

Index

Guide

X Axis Stages

XY Axis Stages

Z Axis Stages

XZ Axis Stages

XYZ Axis Stages

Rotation Stages

Goniometer

Tilt Stages

Vacuum

Ball Bearing Guide

Crossed Roller

Dovetail

Lapping

V Groove Screw

Others

15 × 15 mm

25 × 25 mm

40 × 40 mm

60 × 60 mm

65 × 65 mm

80 × 80 mm

100 × 100 mm

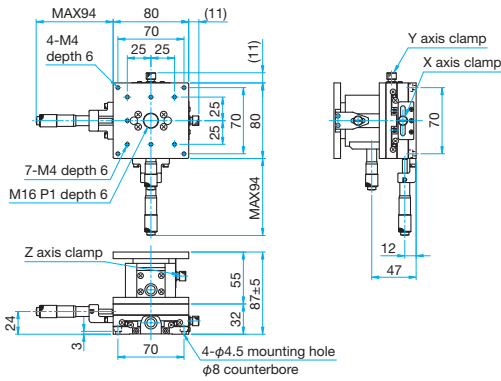
120 × 120 mm

Others

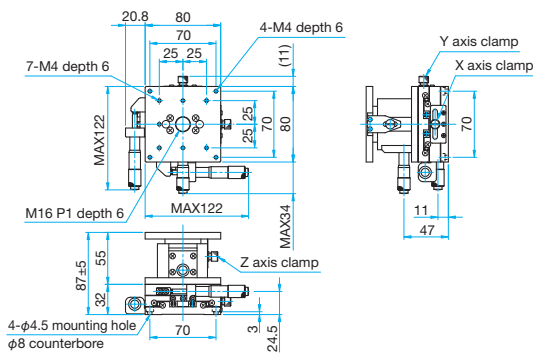


Outline Drawing

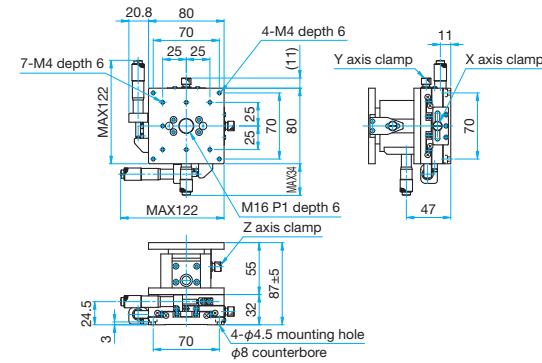
TSD-805C Hexagonal socket head cap screw M4x8...4 screws



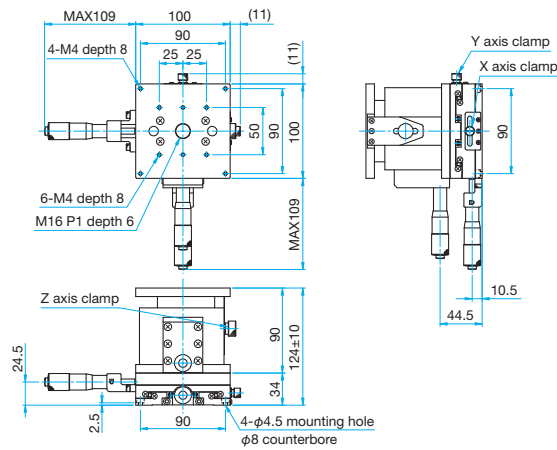
TSD-805S Hexagonal socket head cap screw M4x8...4 screws



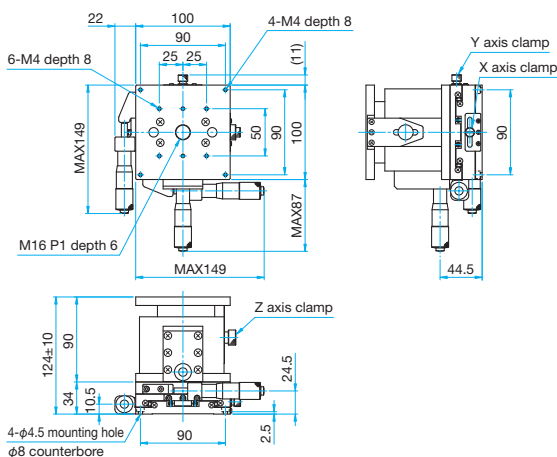
TSD-805SR Hexagonal socket head cap screw M4x8...4 screws



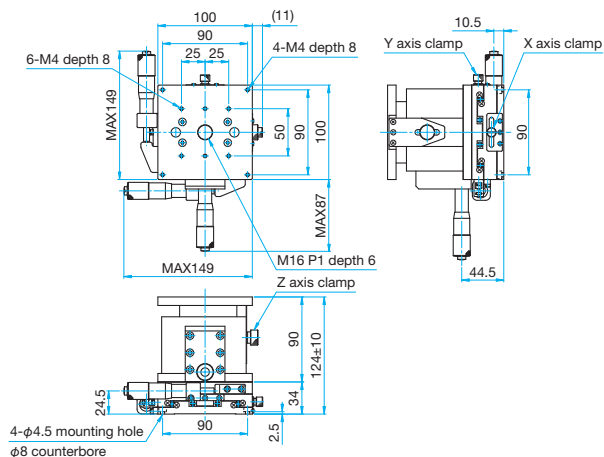
TSD-1005C Hexagonal socket head cap screw M4x8...4 screws



TSD-1005S Hexagonal socket head cap screw M4x8...4 screws



TSD-1005SR Hexagonal socket head cap screw M4x8...4 screws



Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

MotORIZED Stages

Light Sources & Laser Safety

Index

Guide

X Axis Stages

XY Axis Stages

Z Axis Stages

XZ Axis Stages

XYZ Axis Stages

Rotation Stages

Goniometer

Tilt Stages

Vacuum

Ball Bearing Guide

Crossed Roller

Dovetail

Lapping

V Groove Screw

Others

15 × 15 mm

25 × 25 mm

40 × 40 mm

60 × 60 mm

65 × 65 mm

80 × 80 mm

100 × 100 mm

120 × 120 mm

Others

XYZ Axis Steel Extended Contact Translation Stages

Stage Size 120 × 120 mm

TSD-1205

RoHS

This XYZ assembly incorporates an integrated (XY) axis steel linear stage and a (Z) vertical axis steel stage with a horizontal flat top plate.

There are options for metric/inch, micrometer position and fine pitch screws.



Attention

- ▶ This translation stage type is not suitable for inverted use. In this condition, all load would be pulling against the spring.
- ▶ These stages use a pivot mechanism to transfer horizontal motion to vertical motion. This mechanism induces a small non-linearity between the distance the micrometer moves and the distance the stage platform moves. Contact our Sales Division for more information.

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

Motorized Stages

Light Sources & Laser Safety

Index

Guide

X Axis Stages

XY Axis Stages

Z Axis Stages

XZ Axis Stages

XYZ Axis Stages

Rotation Stages

Goniometer

Tilt Stages

Vacuum

Ball Bearing Guide

Crossed Roller

Dovetail

Lapping

V Groove Screw

Others

15 × 15 mm

25 × 25 mm

40 × 40 mm

60 × 60 mm

65 × 65 mm

80 × 80 mm

100 × 100 mm

120 × 120 mm

Others

Specifications

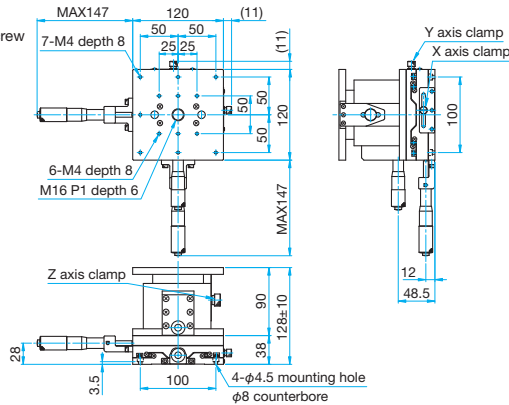
Part Number	METRIC	TSD-1205C	TSD-1205S	TSD-1205C-M6	TSD-1205S-M6
	INCH	—	—	TSD-1205CUU	TSD-1205SUU
(Opposite Model)	METRIC	—	TSD-1205SR	—	TSD-1205SR-M6
	INCH	—	—	—	TSD-1205SRUU
Stage Size [mm]		120×120	120×120	120×120	120×120
Axes of Travel		XYZ axis			
Micrometer Position		Center	Side	Center	Side
Travel [mm]		XY axis ±20 Z axis ±10	XY axis ±20 Z axis ±10	XY axis ±20 Z axis ±10	XY axis ±20 Z axis ±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
Guide Method		Extended contact ball bearing guide			
Primary Material		Steel			
Finish		Super black chrome + Black matte			
Load Capacity [N]		245 (25.0kgf)	245 (25.0kgf)	245 (25.0kgf)	245 (25.0kgf)
Travel Accuracy	Straightness [μm]	2.5	2.5	2.5	2.5
Max. Moment Capacity	Pitch [N·m]	9.8	9.8	9.8	9.8
	Roll [N·m]	9.8	9.8	9.8	9.8
Moment Stiffness	Pitch [°/N·cm]	0.41	0.41	0.41	0.41
	Roll [°/N·cm]	0.41	0.41	0.41	0.41
Parallelism [μm]		150	150	150	150
Weight [kg]		7.3	7.3	7.3	7.3



Outline Drawing

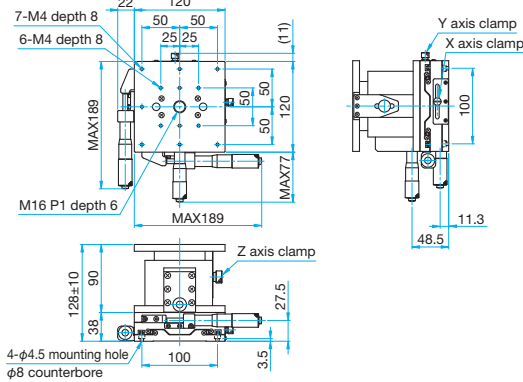
TSD-1205C

Hexagonal socket head cap screw M4x8...4 screws



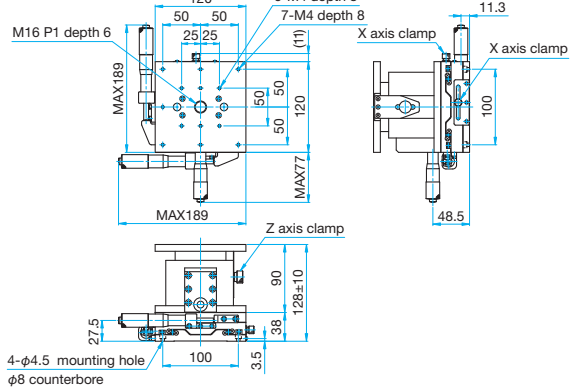
TSD-1205S

Hexagonal socket head cap screw M4x8...4 screws



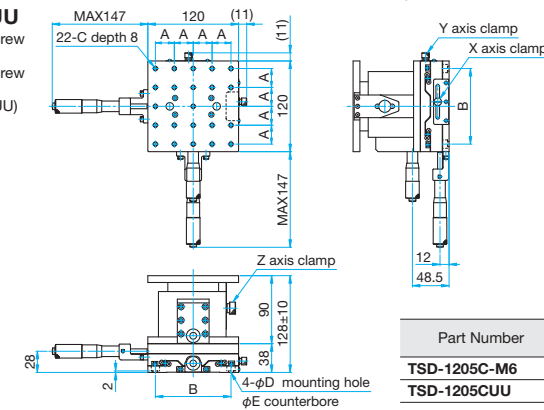
TSD-1205SR

Hexagonal socket head cap screw M4x8...4 screws



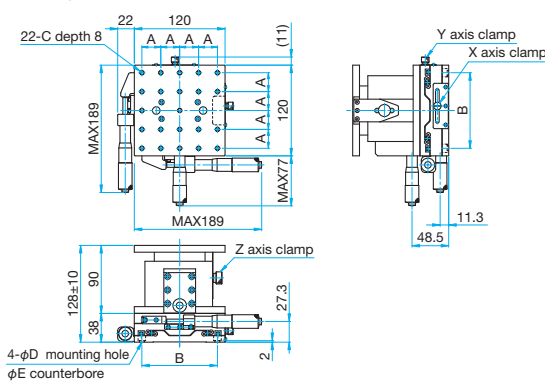
TSD-1205C-M6/1205CUU

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



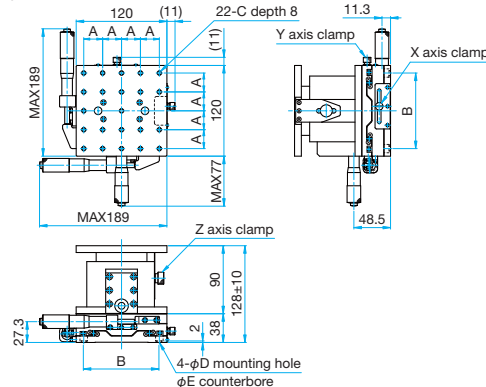
TSD-1205S-M6/1205SUU

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



TSD-1205SR-M6/1205SRUU

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



Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-1205S-M6	25	100	M6 P1	6.5	11
TSD-1205SUU	25.4	101.6	1/4-20UNC	7	12

Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-1205C-M6	25	100	M6 P1	6.5	11
TSD-1205CUU	25.4	101.6	1/4-20UNC	7	12

Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-1205SR-M6	25	100	M6 P1	6.5	11
TSD-1205SRUU	25.4	101.6	1/4-20UNC	7	12

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

MotORIZED Stages

Light Sources & Laser Safety

Index

Guide

X Axis Stages

XY Axis Stages

Z Axis Stages

XZ Axis Stages

XYZ Axis Stages

Rotation Stages

Goniometer

Tilt Stages

Vacuum

Ball Bearing Guide

Crossed Roller

Dovetail

Lapping

V Groove Screw

Others

15 × 15 mm

25 × 25 mm

40 × 40 mm

60 × 60 mm

65 × 65 mm

80 × 80 mm

100 × 100 mm

120 × 120 mm

Others