

XZ Axis Steel Extended Contact Translation Stages

TSD-254 Stage Size 25 x 25 mm

RoHS

TSD-404 Stage Size 40 x 40 mm

RoHS

This XZ assembly incorporates an (X) 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-254/404) are also available. [Reference](#) E212 [Catalog Code](#) W7064

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-254C	TSD-254S	TSD-404C	TSD-404S
Part Number	INCH	—	—	TSD-404CUU	TSD-404SUU
(Opposite Model)	METRIC	—	TSD-254SR	—	TSD-404SR
	INCH	—	—	—	TSD-404SRUU
Stage Size [mm]		25×25	25×25	40×40	40×40
Axes of Travel		XZ axis			
Micrometer Position		Center	Side	Center	Side
Travel [mm]		X axis ±3 Z axis ±3	X axis ±3 Z axis ±3	X axis ±6.5 Z axis ±3	X axis ±6.5 Z axis ±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
Guide Method		Extended contact ball bearing guide			
Primary Material		Steel			
Finish		Super black chrome + Black matte			
Load Capacity [N]		29.4 (3.0kgf)	29.4 (3.0kgf)	88.3 (9.0kgf)	88.3 (9.0kgf)
Travel Accuracy	Straightness [μm]	5	5	2.5	2.5
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]	8.95	8.95	2.14	2.14
	Roll [°/N·cm]	8.75	8.75	2.04	2.04
Parallelism [μm]		110	110	110	110
Options		FP	FP	FP	FP
Weight [kg]		0.17	0.17	0.45	0.45

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	X 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

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Others

15 × 15 mm

25 × 25 mm

40 × 40 mm

60 × 60 mm

65 × 65 mm

80 × 80 mm

100 × 100 mm

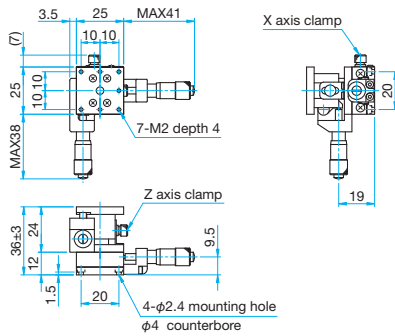
120 × 120 mm

Others

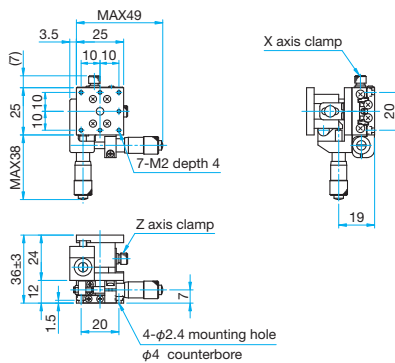


Outline Drawing

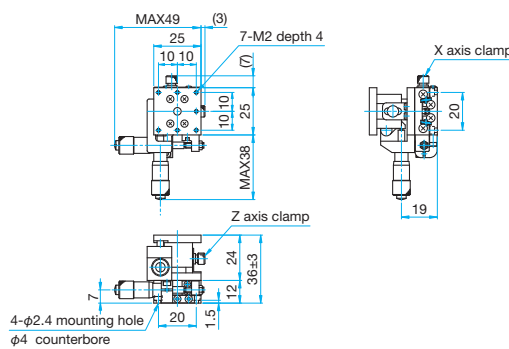
TSD-254C Hexagonal socket head cap screw M2x4...4 screws



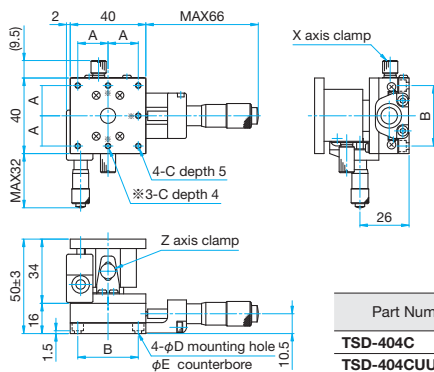
TSD-254S Hexagonal socket head cap screw M2x4...4 screws



TSD-254SR Hexagonal socket head cap screw M2x4...4 screws



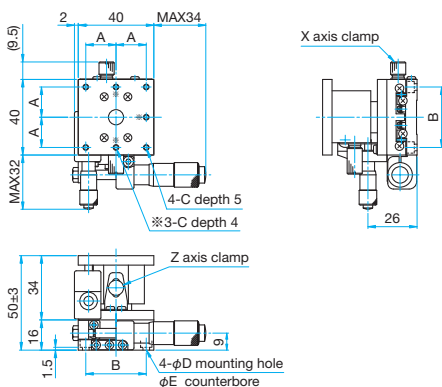
TSD-404C/404CUU Hexagonal socket head cap screw M3x6...4 screws, Spring washers
Hexagonal socket head cap screw 6-32UNCx3/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-404C	16	32	M3	3.5	6
TSD-404CUU	15.875	31.75	6-32UNC	4	6.5

TSD-404S/404SUU

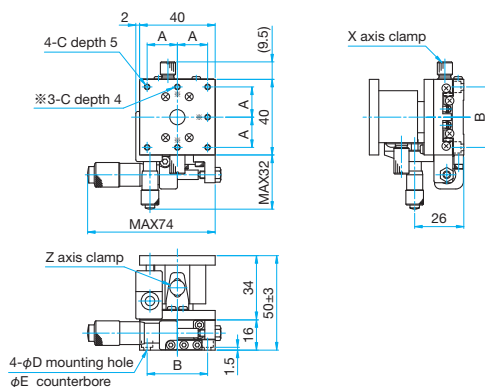
Hexagonal socket head cap screw M3x6...4 screws, Spring washers
Hexagonal socket head cap screw 6-32UNCx3/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-404S	16	32	M3	3.5	6
TSD-404SUU	15.875	31.75	6-32UNC	4	6.5

TSD-404SR/404SRUU

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-404SR	16	32	M3	3.5	6
TSD-404SRUU	15.875	31.75	6-32UNC	4	6.5

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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

XZ Axis Steel Extended Contact Translation Stages

TSD-604 Stage Size 60 × 60 mm

TSD-654 Stage Size 65 × 65 mm

RoHS
RoHS

This XZ assembly incorporates an (X) 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-604/654) are also available. [Reference](#) E212 [Catalog Code](#) W7064

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-604C	TSD-604S	TSD-654C-M6	TSD-654S-M6
	INCH	—	—	TSD-654CUU	TSD-654SUU
(Opposite Model)	METRIC	—	TSD-604SR	—	TSD-654SR-M6
	INCH	—	—	—	TSD-654SRUU
Stage Size [mm]		60×60	60×60	65×65	65×65
Axes of Travel		XZ axis			
Micrometer Position		Center	Side	Center	Side
Travel [mm]		X axis ±6.5 Z axis ±5	X axis ±6.5 Z axis ±5	X axis ±6.5 Z axis ±5	X 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]	0.73	0.73	0.73	0.73
Moment Stiffness	Roll [°/N·cm]	0.64	0.64	0.64	0.64
	Parallelism [μm]	110	110	110	110
Options		FP	FP	FP	FP
Weight [kg]		1.5	1.5	1.7	1.7

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

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Others

15 × 15 mm

25 × 25 mm

40 × 40 mm

60 × 60 mm

65 × 65 mm

80 × 80 mm

100 × 100 mm

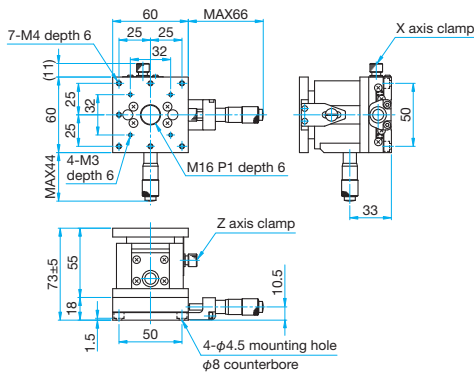
120 × 120 mm

Others

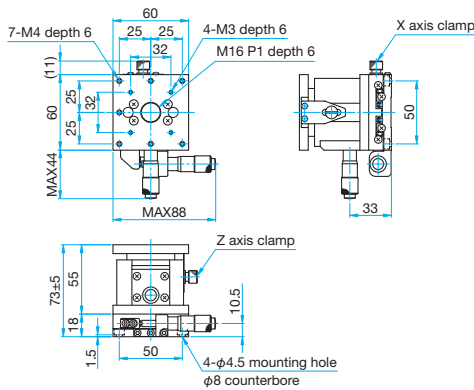


Outline Drawing

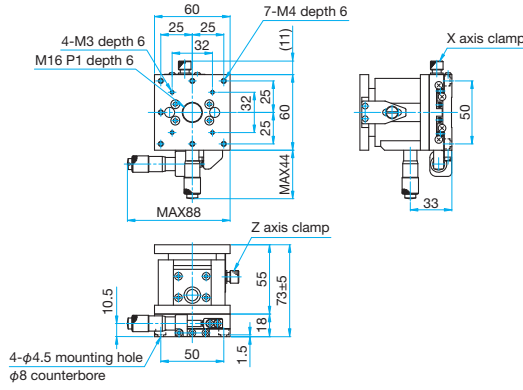
TSD-604C Hexagonal socket head cap screw M4x6...4 screws



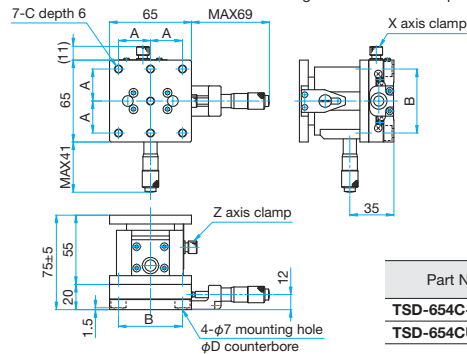
TSD-604S Hexagonal socket head cap screw M4x6...4 screws



TSD-604SR Hexagonal socket head cap screw M4x6...4 screws



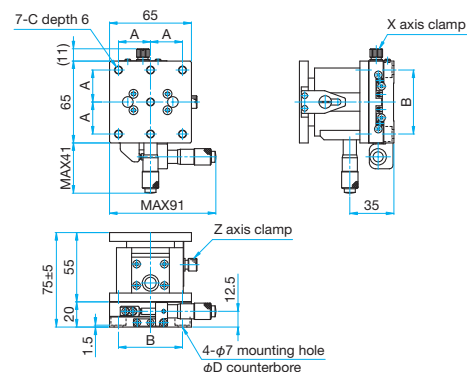
TSD-654C-M6/654CUU Hexagonal socket head cap screw M6x6...4 screws (M6)
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
TSD-654C-M6	25	50	M6 P1	11
TSD-654CUU	25.4	50.8	1/4-20UNC	12

TSD-654S-M6/654SUU

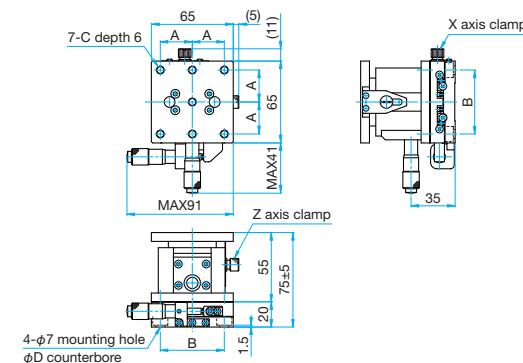
Hexagonal socket head cap screw M6x6...4 screws (M6)
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)
TSD-654S-M6	25	50	M6 P1	11
TSD-654SUU	25.4	50.8	1/4-20UNC	12

TSD-654SR-M6/654SRUU

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-654SR-M6	25	50	M6 P1	11
TSD-654SRUU	25.4	50.8	1/4-20UNC	12

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Ohters

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

XZ Axis Steel Extended Contact Translation Stages

TSD-804 Stage Size 80 x 80 mm
TSD-1004 Stage Size 100 x 100 mm



This XZ assembly incorporates an (X) 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-804C	TSD-804S	TSD-1004C	TSD-1004S
(Opposite Model)	METRIC	—	TSD-804SR	—	TSD-1004SR
Stage Size [mm]		80x80	80x80	100x100	100x100
Axes of Travel		XZ axis			
Micrometer Position		Center	Side	Center	Side
Travel [mm]		X axis ± 12.5 Z axis ± 5	X axis ± 12.5 Z axis ± 5	X axis ± 12.5 Z axis ± 10	X 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 [$\text{N}\cdot\text{m}$]	6.9	6.9	9.8	9.8
	Roll [$\text{N}\cdot\text{m}$]	6.9	6.9	9.8	9.8
Moment Stiffness	Pitch [$^{\circ}/\text{N}\cdot\text{cm}$]	0.61	0.61	0.42	0.42
	Roll [$^{\circ}/\text{N}\cdot\text{cm}$]	0.57	0.57	0.39	0.39
Parallelism [μm]		110	110	130	130
Options		FP	FP	FP	FP
Weight [kg]		2.1	2.1	5.0	5.0

Option for $\square 80\text{mm}$

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

Option for $\square 100\text{mm}$

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

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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

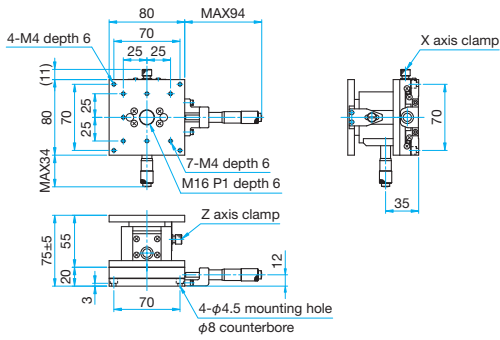
120 x 120 mm

Others

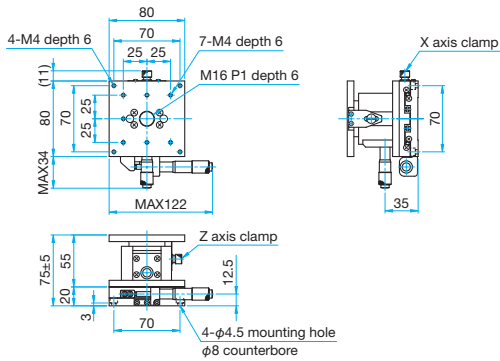


Outline Drawing

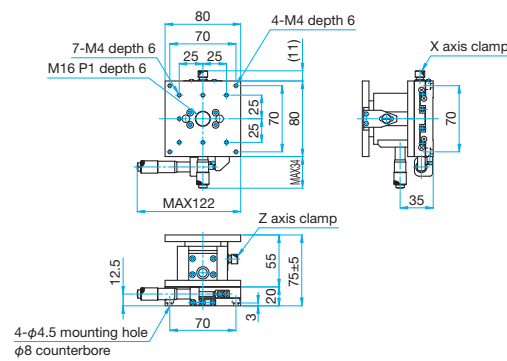
TSD-804C Hexagonal socket head cap screw M4x8...4 screws



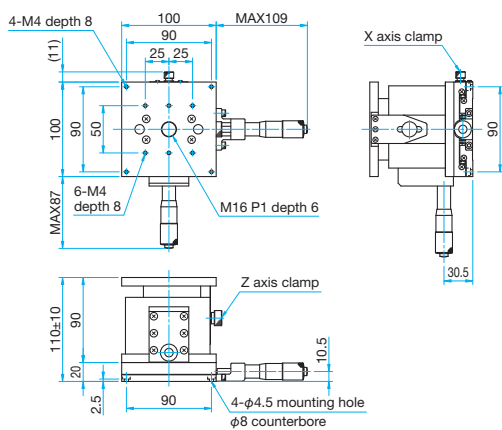
TSD-804S Hexagonal socket head cap screw M4x8...4 screws



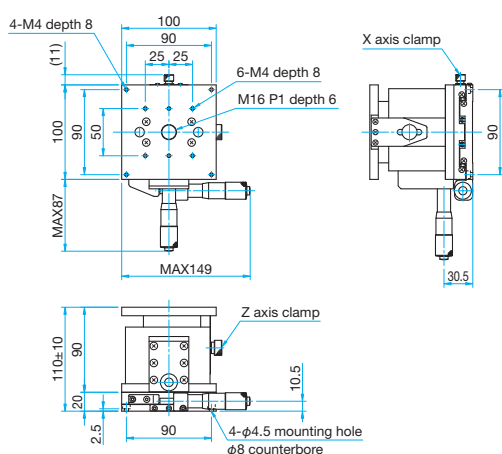
TSD-804SR Hexagonal socket head cap screw M4x8...4 screws



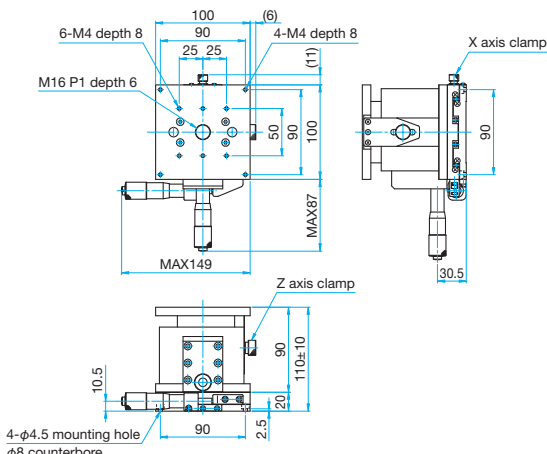
TSD-1004C Hexagonal socket head cap screw M4x8...4 screws



TSD-1004S Hexagonal socket head cap screw M4x8...4 screws



TSD-1004SR Hexagonal socket head cap screw M4x8...4 screws



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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

XZ Axis Steel Extended Contact Translation Stages

Stage Size 120 × 120 mm

TSD-1204

RoHS

This XZ assembly incorporates an (X) 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.

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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

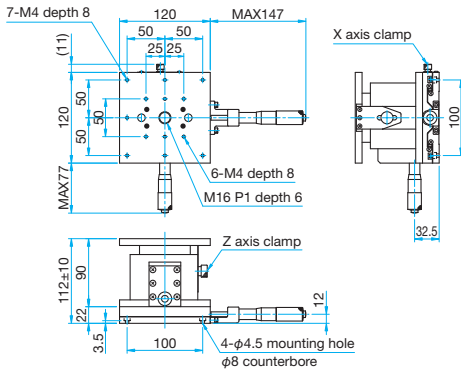
Others

Specifications					
Part Number	METRIC	TSD-1204C	TSD-1204S	TSD-1204C-M6	TSD-1204S-M6
	INCH	—	—	TSD-1204CUU	TSD-1204SUU
(Opposite Model)	METRIC	—	TSD-1204SR	—	TSD-1204SR-M6
	INCH	—	—	—	TSD-1204SRUU
Stage Size [mm]	120×120		120×120	120×120	120×120
Axes of Travel	XZ axis				
Micrometer Position	Center		Side	Center	
Travel [mm]	X axis ±20 Z axis ±10		X axis ±20 Z axis ±10	X axis ±20 Z axis ±10	
Lead of Actuator [mm/rotation]	0.5		0.5	0.5	
Micrometer Readable Resolution [mm]	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)	
Travel Accuracy	Straightness [μm]	2.5	2.5	2.5	
Max. Moment Capacity	Pitch [N·m]	9.8	9.8	9.8	
	Roll [N·m]	9.8	9.8	9.8	
Moment Stiffness	Pitch [°/N·cm]	0.4	0.4	0.4	
	Roll [°/N·cm]	0.38	0.38	0.38	
Parallelism [μm]	150		150	150	
Weight [kg]	6.2		6.2	6.2	

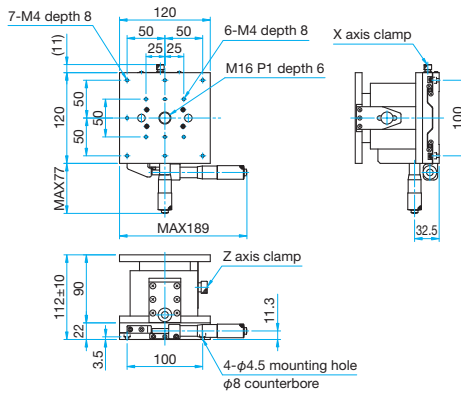


Outline Drawing

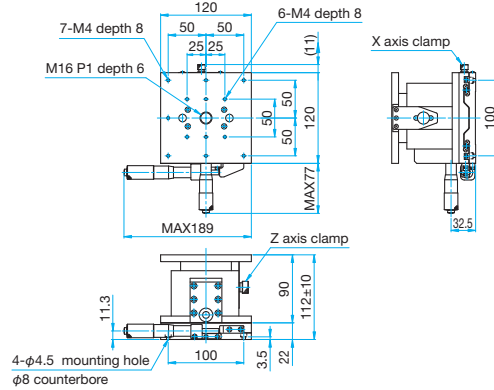
TSD-1204C Hexagonal socket head cap screw M4x8...4 screws



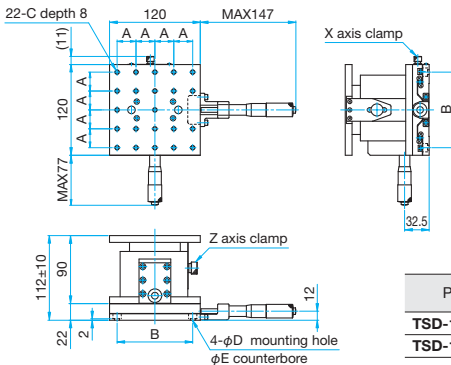
TSD-1204S Hexagonal socket head cap screw M4x8...4 screws



TSD-1204SR Hexagonal socket head cap screw M4x8...4 screws



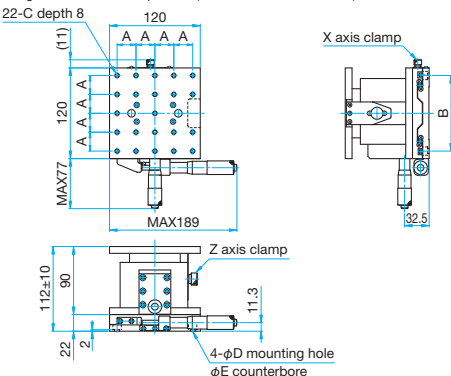
TSD-1204C-M6/1204CUU Hexagonal socket head cap screw M6x8...4 screws (M6)
Hexagonal socket head cap screw (stainless steel construction) 1/4-20UNCx5/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-1204C-M6	25	100	M6 P1	6.5	11
TSD-1204CUU	25.4	101.6	1/4-20UNC	7	12

TSD-1204S-M6/1204SUU

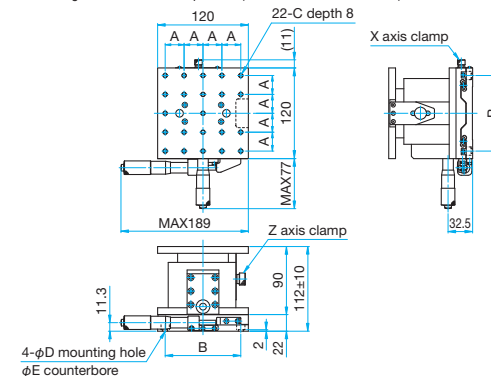
Hexagonal socket head cap screw M6x8...4 screws (M6)
Hexagonal socket head cap screw (stainless steel construction) 1/4-20UNCx5/16...4 screws (UU)



Part Number	A (mm)	B (mm)	C	D (mm)	E (mm)
TSD-1204S-M6	25	100	M6 P1	6.5	11
TSD-1204SUU	25.4	101.6	1/4-20UNC	7	12

TSD-1204SR-M6/1204SRUU

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-1204SR-M6	25	100	M6 P1	6.5	11
TSD-1204SRUU	25.4	101.6	1/4-20UNC	7	12

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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