

X Axis Steel Extended Contact Translation Stages

XY Axis Steel Extended Contact Translation Stages

TSD-251

Stage Size 25 x 25 mm

RoHS

TSD-252

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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

Hardened steel linear stages with integrated bearing ways and a black chrome finish. Our “Extended Contact” technology yields superior stability, stiffness, accuracy, and durability. These XY stages are integrated and therefore have a lower profile vs. (2) single axis stages combined.

There are options for micrometer position and fine pitch screws.



Guide

- Vacuum-compatible stainless steel stages (TSDS-251/252) are also available.

TSDS-251 [Reference](#) E206 [Catalog Code](#) W7005

TSDS-252 [Reference](#) E208 [Catalog Code](#) W7031

Attention

- Micrometer brackets may extend above the top surface of some stages. Check drawings for detailed information.
- Note that based upon payload size, rated travel could be reduced.

Specifications

Part Number	METRIC	TSD-251C	TSD-251S	TSD-252C	TSD-252S
(Opposite Model)	METRIC	—	TSD-251SR	—	TSD-252SR
Stage Size [mm]		25x25	25x25	25x25	25x25
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
Guide Method		Extended contact ball bearing 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]	Reference
	Products Name	Part Number			
FP	Fine-pitch Screw Adjusters	FPSA-42525	0.25	—	E008
DL	Differential Micrometer Heads	MDC-6.5	0.5	0.01	

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

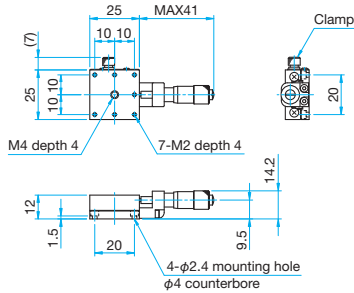
* Installation may not be possible depending on the direction of DL.

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

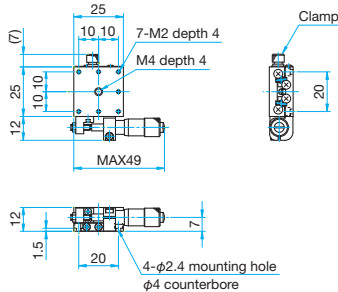


Outline Drawing

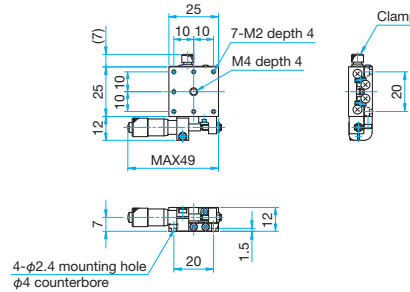
TSD-251C Hexagonal socket head cap screw M2x4...4 screws



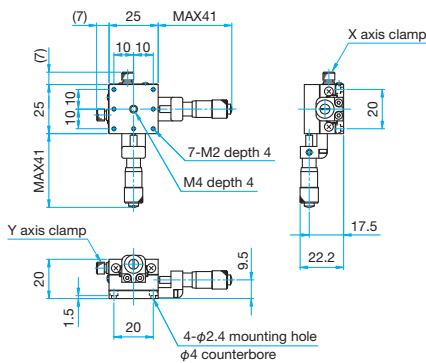
TSD-251S Hexagonal socket head cap screw M2x4...4 screws



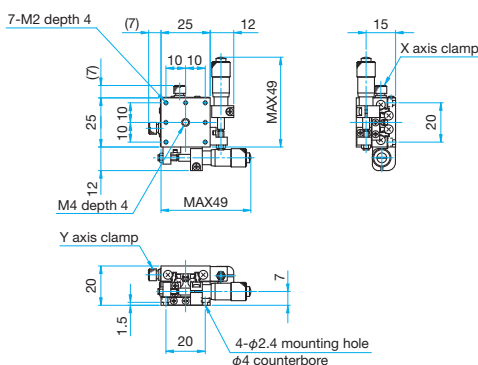
TSD-251SR Hexagonal socket head cap screw M2x4...4 screws



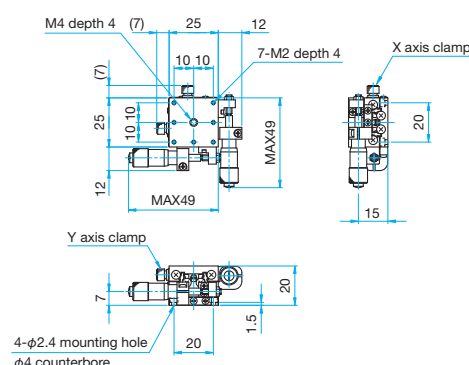
TSD-252C Hexagonal socket head cap screw M2x4...4 screws



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



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



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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

X Axis Steel Extended Contact Translation Stages

XY Axis Steel Extended Contact Translation Stages

TSD-401

Stage Size 40 x 40 mm

RoHS

TSD-402

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Hardened steel linear stages with integrated bearing ways and a black chrome finish. Our "Extended Contact" technology yields superior stability, stiffness, accuracy, and durability. These XY stages are integrated and therefore have a lower profile vs. (2) single axis stages combined.

There are options for micrometer position and fine pitch screws.



Guide

► Vacuum-compatible stainless steel stages (TSDS-401/402) are also available.

TSDS-401 [Reference](#) E206 [Catalog Code](#) W7005

TSDS-402 [Reference](#) E208 [Catalog Code](#) W7031

Attention

► Micrometer brackets may extend above the top surface of some stages. Check drawings for detailed information.

► Note that based upon payload size, rated travel could be reduced.

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
Stage Size [mm]		40x40	40x40	40x40	40x40
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
Guide Method		Extended contact ball bearing 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]	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: 0.005	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.

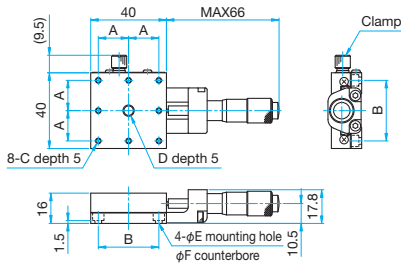
* Installation may not be possible depending on the direction of DL.

* C type is replacement work requires a special tool (MNS). [Reference](#) F006 [Catalog Code](#) W8004



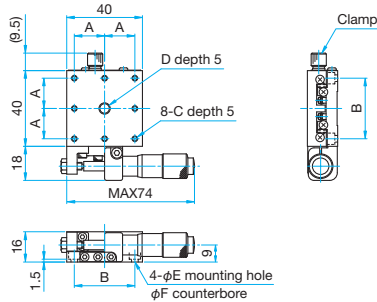
Outline Drawing

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



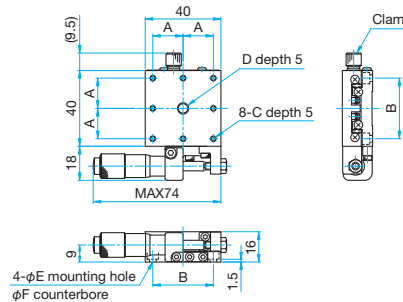
Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)
TSD-401C	16	32	M3	M6 P1	3.5	6
TSD-401CUU	15.875	31.75	6-32UNC	1/4-20UNC	4	6.5

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



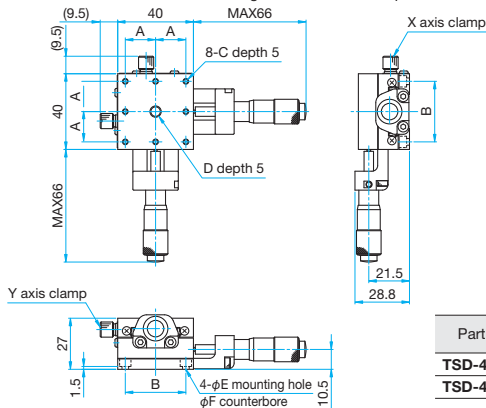
Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)
TSD-401S	16	32	M3	M6 P1	3.5	6
TSD-401SUU	15.875	31.75	6-32UNC	1/4-20UNC	4	6.5

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



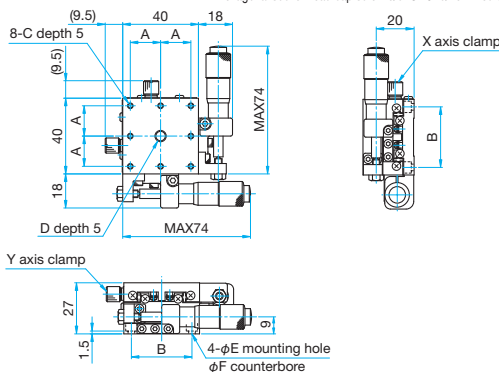
Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)
TSD-401SR	16	32	M3	M6 P1	3.5	6
TSD-401SRUU	15.875	31.75	6-32UNC	1/4-20UNC	4	6.5

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



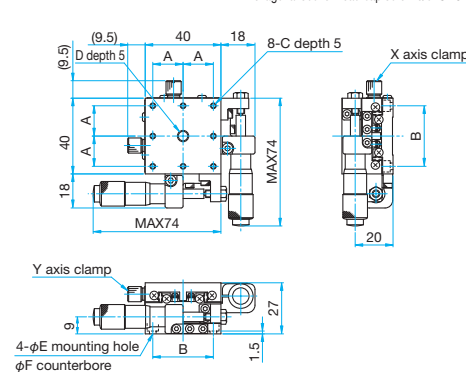
Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)
TSD-402C	16	32	M3	M6 P1	3.5	6
TSD-402CUU	15.875	31.75	6-32UNC	1/4-20UNC	4	6.5

TSD-402S/402SUU Hexagonal socket head cap screw M3x6...4 screws, Spring washers
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, Spring washers
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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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

X Axis Steel Extended Contact Translation Stages

XY Axis Steel Extended Contact Translation Stages

TSD-601

Stage Size 60 × 60 mm

RoHS

TSD-602

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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

Hardened steel linear stages with integrated bearing ways and a black chrome finish. Our “Extended Contact” technology yields superior stability, stiffness, accuracy, and durability. These XY stages are integrated and therefore have a lower profile vs. (2) single axis stages combined.

There are options for micrometer position and fine pitch screws.



Guide

- Vacuum-compatible stainless steel stages (TSDS-601/602) are also available.

TSDS-601 [Reference](#) E206 [Catalog Code](#) W7005

TSDS-602 [Reference](#) E208 [Catalog Code](#) W7031

Attention

- Micrometer brackets may extend above the top surface of some stages. Check drawings for detailed information.
- Note that based upon payload size, rated travel could be reduced.

Specifications

Part Number	METRIC	TSD-601C	TSD-601S	TSD-602C	TSD-602S
(Opposite Model)	METRIC	—	TSD-601SR	—	TSD-602SR
Stage 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
Guide Method		Extended contact ball bearing 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]	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: 0.005	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.

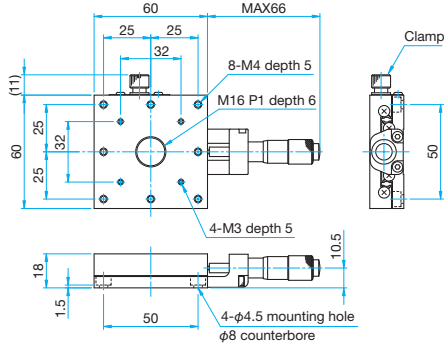
* Installation may not be possible depending on the direction of DL.

* Replacement work requires a special tool (MNS). [Reference](#) F006 [Catalog Code](#) W8004

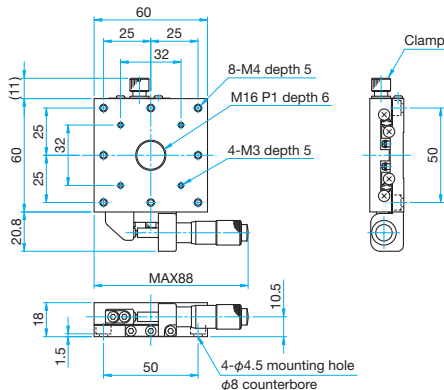


Outline Drawing

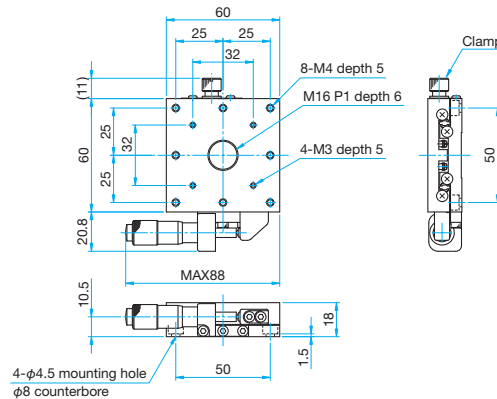
TSD-601C Hexagonal socket head cap screw M4x6...4 screws



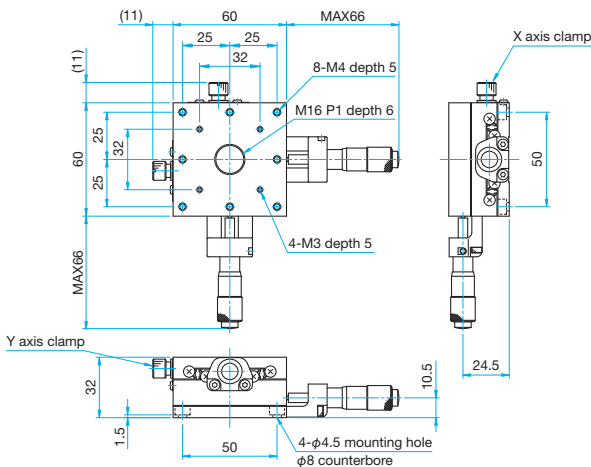
TSD-601S Hexagonal socket head cap screw M4x6...4 screws



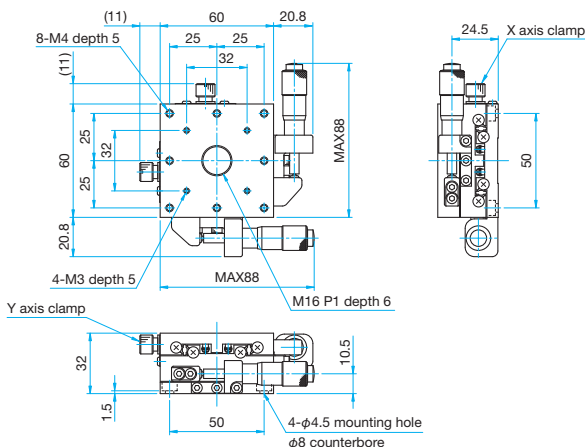
TSD-601SR Hexagonal socket head cap screw M4x6...4 screws



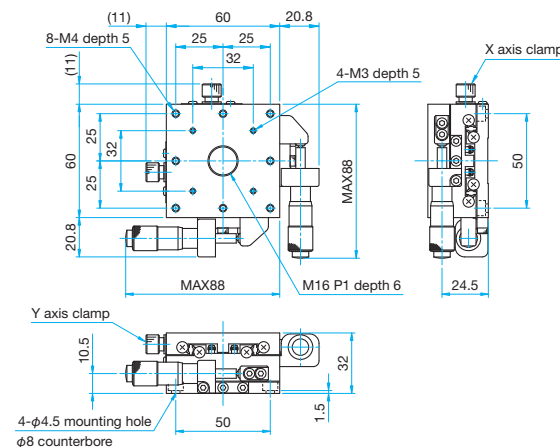
TSD-602C Hexagonal socket head cap screw M4x6...4 screws



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



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



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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

X Axis Steel Extended Contact Translation Stages -M6

Stage Size 65 × 65 mm

TSD-651

RoHS

Hardened steel linear translation stages with integrated bearing ways and a black chrome finish. Our "Extended Contact" technology yields superior stability, stiffness, accuracy, and durability.



Guide

- ▶ Vacuum-compatible stainless steel stages (TSDS-651) are also available. [Reference](#) E206 [Catalog Code](#) W7005
- ▶ Bottom counter bore clearance holes are sized and spaced to accept both M6 or 1/4 size screws for mounting these stages down to a table.
- ▶ Both M6 or 1/4-20 inch tapped hole versions available.
- ▶ Both left and right hand adjustment versions available.
- ▶ Multiple actuator options available. Standard micrometer, sub-micron micrometer, fine pitch screw.
- ▶ All stages are equipped with a robust knurled head locking screw.

Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.

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	—	—
	INCH	—	TSD-651SRUU	—	—
Stage 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
Guide Method		Extended contact ball bearing 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 ¹ /DM/WP/DL	FP ¹ /DM/WP/DL	FP ²	FP ²
Weight [kg]		0.6	0.6	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 ¹ FPSA-62550 ²	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: 0.005	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](#) F006z [Catalog Code](#) W8005

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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

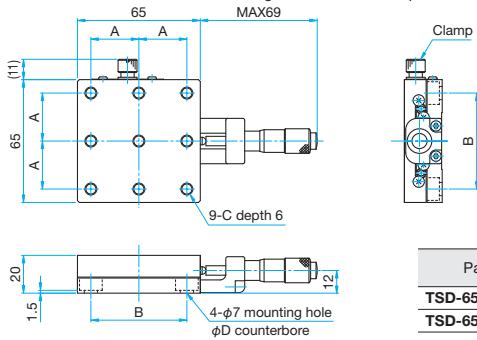
120 × 120 mm

Others



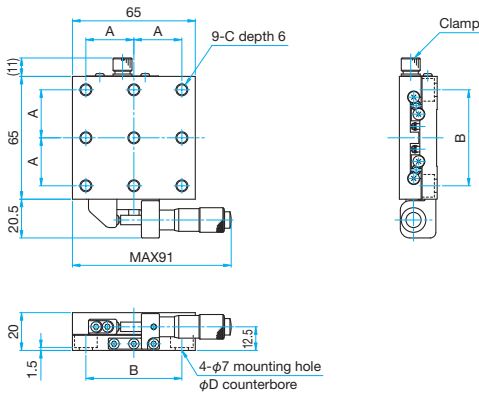
Outline Drawing

TSD-651C-M6/651CUU Hexagonal socket head cap screw M6x6...4 screws (M6)
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



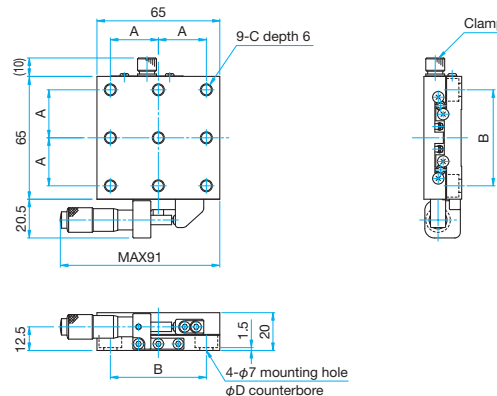
Part Number	A (mm)	B (mm)	C	D (mm)
TSD-651C-M6	25	50	M6 P1	11
TSD-651CUU	25.4	50.8	1/4-20UNC	12

TSD-651S-M6/651SUU Hexagonal socket head cap screw M6x6...4 screws (M6)
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



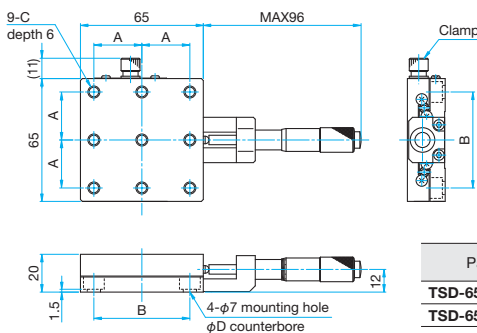
Part Number	A (mm)	B (mm)	C	D (mm)
TSD-651S-M6	25	50	M6 P1	11
TSD-651SUU	25.4	50.8	1/4-20UNC	12

TSD-651SR-M6/651SRUU Hexagonal socket head cap screw M6x6...4 screws (M6)
Hexagonal socket head cap screw 1/4-20UNCx1/4...4 screws (UU)



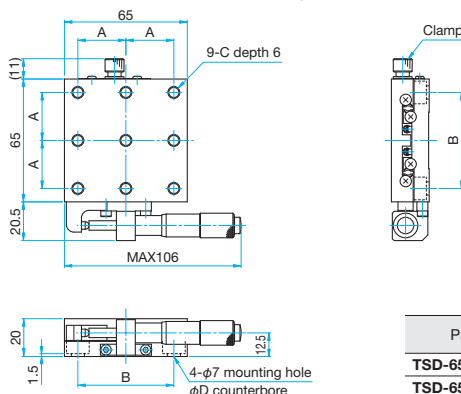
Part Number	A (mm)	B (mm)	C	D (mm)
TSD-651SR-M6	25	50	M6 P1	11
TSD-651SRUU	25.4	50.8	1/4-20UNC	12

TSD-651C25-M6/651C25UU 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-651C25-M6	25	50	M6 P1	11
TSD-651C25UU	25.4	50.8	1/4-20UNC	12

TSD-651S25-M6/651S25UU 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-651S25-M6	25	50	M6 P1	11
TSD-651S25UU	25.4	50.8	1/4-20UNC	12

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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

XY Axis Steel Extended Contact Translation Stages -M6

Stage Size 65 × 65 mm

TSD-652

RoHS

Hardened steel linear translation stages with integrated bearing ways and a black chrome finish. Our “Extended Contact” technology yields superior stability, stiffness, accuracy, and durability. These XY stages are integrated and therefore have a lower profile vs. (2) single axis stages combined.

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



Guide

- ▶ Vacuum-compatible stainless steel stages (TSDS-652) are also available. [Reference](#) E208 [Catalog Code](#) W7031
- ▶ Bottom counter bore clearance holes are sized and spaced to accept both M6 or 1/4 size screws for mounting these stages down to a table.
- ▶ Both M6 or 1/4-20 inch tapped hole versions available.
- ▶ Both left and right hand adjustment versions available.
- ▶ Multiple actuator options available. Standard micrometer, sub-micron micrometer, fine pitch screw.
- ▶ All stages are equipped with a robust knurled head locking screw.

Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.

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	—	—
Stage 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
Guide Method		Extended contact ball bearing 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 ¹ /DM/WP/DL	FP ¹ /DM/WP	FP ²	FP ²
Weight [kg]		0.9	0.9	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 ¹ FPSA-62550 ²	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: 0.005	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 [Catalog Code](#) W8005

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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

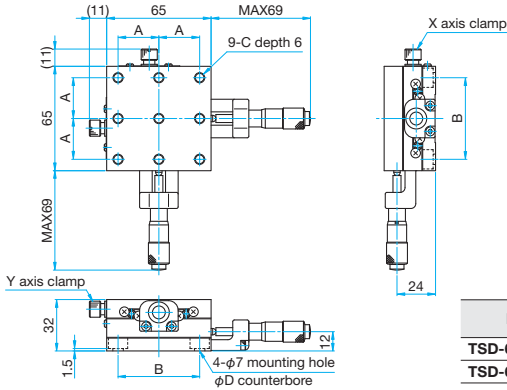
120 × 120 mm

Others



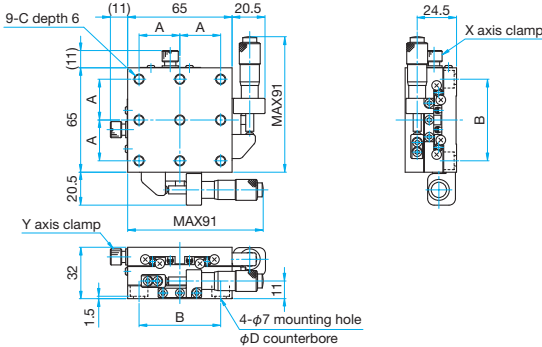
Outline Drawing

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



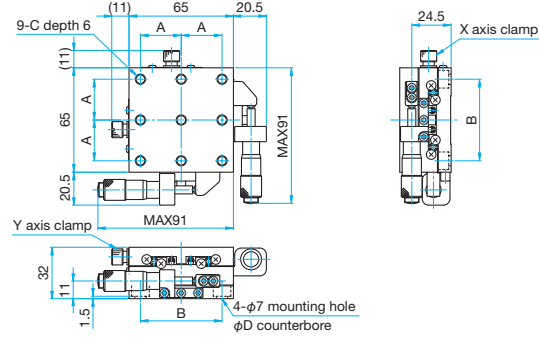
Part Number	A (mm)	B (mm)	C	D (mm)
TSD-652C-M6	25	50	M6 P1	11
TSD-652CUU	25.4	50.8	1/4-20UNC	12

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)



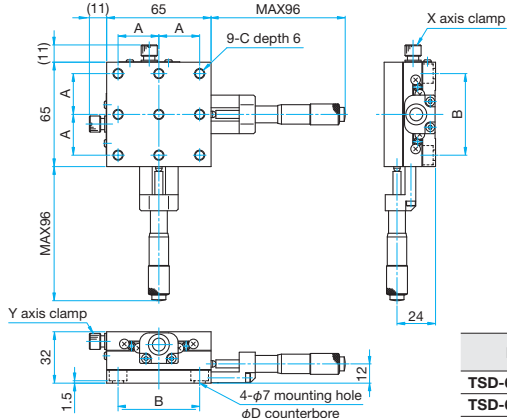
Part Number	A (mm)	B (mm)	C	D (mm)
TSD-652S-M6	25	50	M6 P1	11
TSD-652SUU	25.4	50.8	1/4-20UNC	12

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)



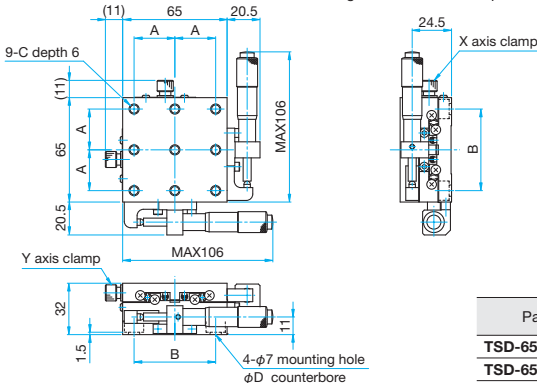
Part Number	A (mm)	B (mm)	C	D (mm)
TSD-652SR-M6	25	50	M6 P1	11
TSD-652SRUU	25.4	50.8	1/4-20UNC	12

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)
TSD-652C25-M6	25	50	M6 P1	11
TSD-652C25UU	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)
TSD-652S25-M6	25	50	M6 P1	11
TSD-652S25UU	25.4	50.8	1/4-20UNC	12

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Lapping

V Groove Screw

Ohters

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

X Axis Steel Extended Contact Translation Stages

XY Axis Steel Extended Contact Translation Stages

TSD-801 Stage Size 80 x 80 mm
TSD-802

RoHS

Hardened steel linear stages with integrated bearing ways and a black chrome finish. Our “Extended Contact” technology yields superior stability, stiffness, accuracy, and durability. These XY stages are integrated and therefore have a lower profile vs. (2) single axis stages combined.

There are options for micrometer position and fine pitch screws.



Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for detailed information.
- ▶ Note that based upon payload size, rated travel could be reduced.

Specifications

Part Number	METRIC	TSD-801C	TSD-801S	TSD-802C	TSD-802S
(Opposite Model)	METRIC	—	TSD-801SR	—	TSD-802SR
Stage Size [mm]		80x80	80x80	80x80	80x80
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
Guide Method		Extended contact ball bearing 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			
FP	Fine-pitch Screw Adjusters	FPSA-62550	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: 0.005	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 [Catalog Code](#) W8005

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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

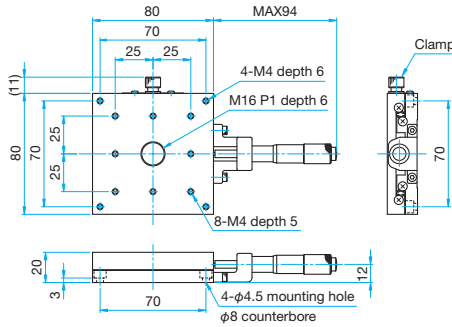
120 x 120 mm

Others

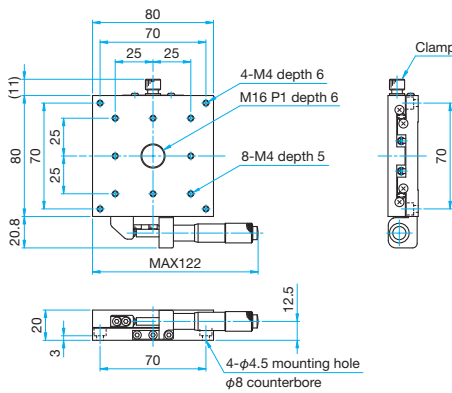


Outline Drawing

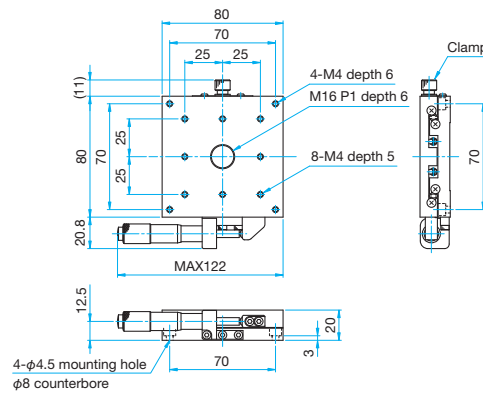
TSD-801C Hexagonal socket head cap screw M4x8...4 screws



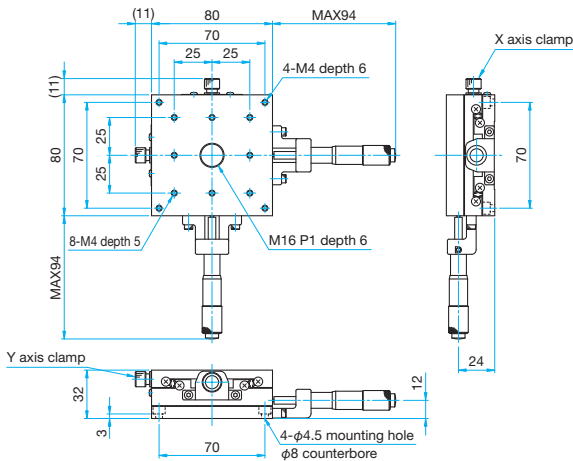
TSD-801S Hexagonal socket head cap screw M4x8...4 screws



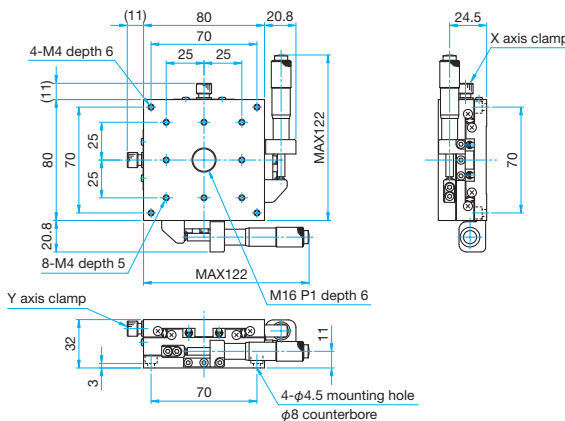
TSD-801SR Hexagonal socket head cap screw M4x8...4 screws



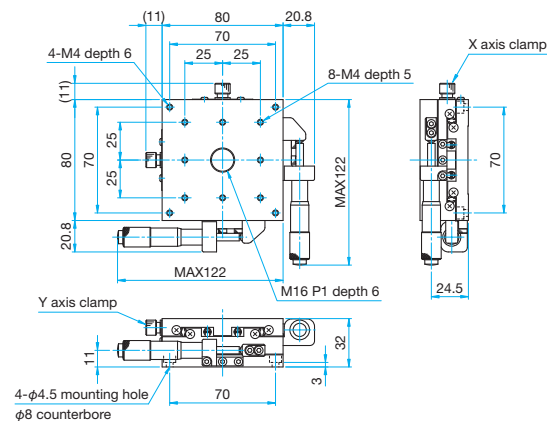
TSD-802C Hexagonal socket head cap screw M4x8...4 screws



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



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



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Ohters

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

X Axis Steel Extended Contact Translation Stages

XY Axis Steel Extended Contact Translation Stages

TSD-1001

Stage Size 100 x 100 mm

TSD-1002

RoHS

Hardened steel linear stages with integrated bearing ways and a black chrome finish. Our “Extended Contact” technology yields superior stability, stiffness, accuracy, and durability. These XY stages are integrated and therefore have a lower profile vs. (2) single axis stages combined.

There are options for micrometer position and fine pitch screws.



Attention

- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for detailed information.
- ▶ Note that based upon payload size, rated travel could be reduced.

Specifications

Part Number	METRIC	TSD-1001C	TSD-1001S	TSD-1002C	TSD-1002S
(Opposite Model)	METRIC	—	TSD-1001SR	—	TSD-1002SR
Stage 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
Guide Method		Extended contact ball bearing 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-62555	0.25	—	E008
DG	Micrometer Heads (Digital display)	MHN2-25M	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 Catalog Code W8002

* Replacement work requires a special tool (MNS). Reference: F006 Catalog Code W8005

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Others

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80 × 80 mm

100 × 100 mm

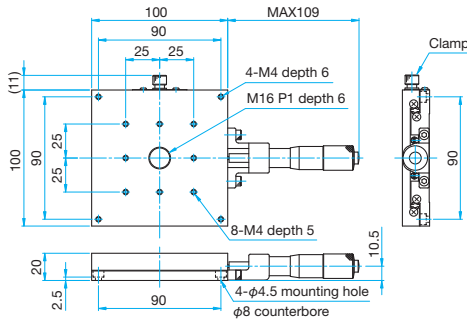
120 × 120 mm

Others

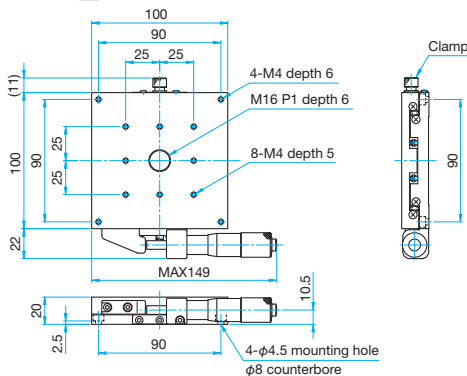


Outline Drawing

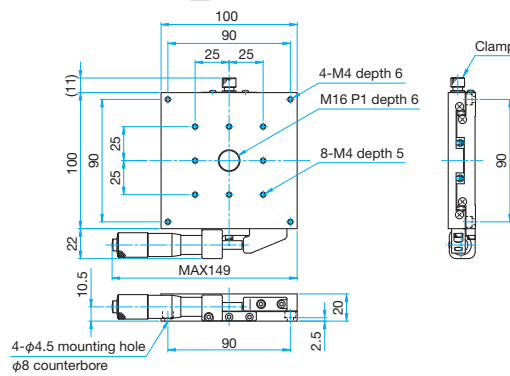
TSD-1001C Hexagonal socket head cap screw M4x8...4 screws



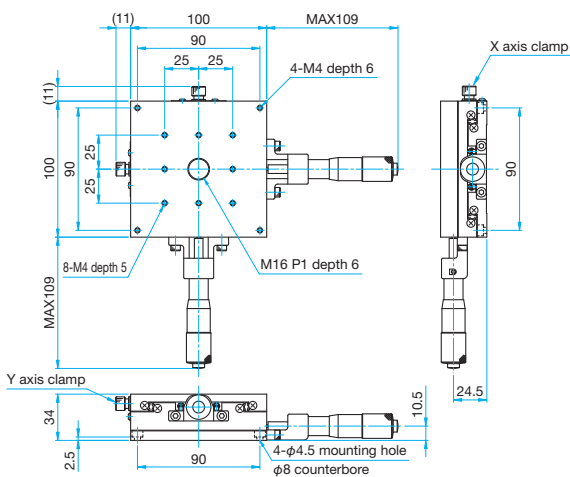
TSD-1001S Hexagonal socket head cap screw M4x8...4 screws



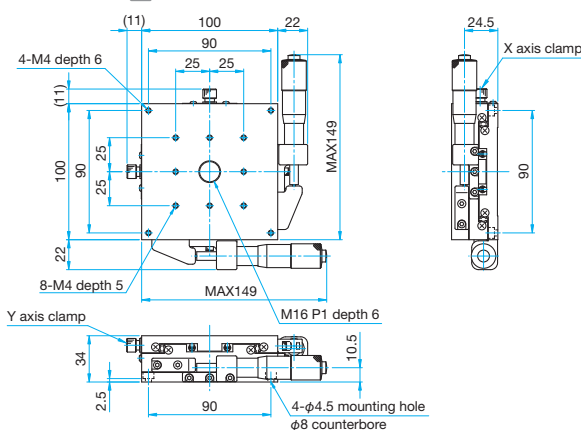
TSD-1001SR Hexagonal socket head cap screw M4x8...4 screws



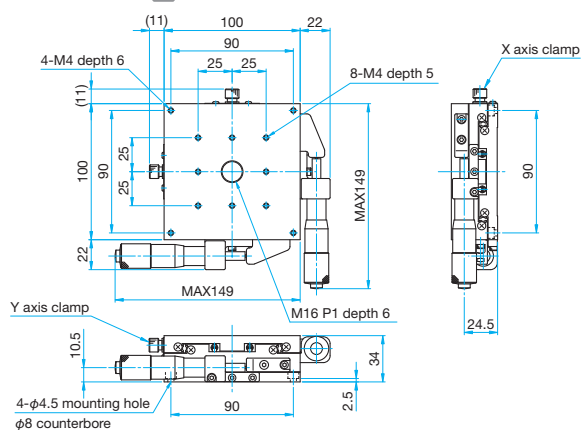
TSD-1002C Hexagonal socket head cap screw M4x8...4 screws



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



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



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V Groove Screw

Ohters

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