

Z Axis Steel Extended Contact Translation Stages - Footprints

Z Axis Steel Extended Contact Translation Stages (Inverted)

TSD-3 Stage Size 25 × 25 mm / 40 × 40 mm / 60 × 60 mm / 65 × 65 mm

TSD-UD Stage Size 60 × 60 mm / 65 × 65 mm

RoHS

Horizontal (Flat) Z axis steel translation stages. In-line micrometer utilizes an internal pivot mechanism to enable vertical translation.

High stiffness due to steel extended contact bearing ways. Black chrome finish.

- The TSD-UD translation stages are intended for inverted use. As a result, the stage is operating under tension vs. compression.



Guide

- ▶ Vacuum-compatible stainless steel stages (TSDS) are also available.
Reference E210 **Catalog Code** W7043

Attention

- ▶ This translation stage type is not suitable for inverted use. In this condition, all load would be pulling against the spring.
- ▶ Regarding 25 × 25mm and 40 × 40mm size stages, please do not apply heavy load toward the rotating ('yawing') direction, as it may damage the stage.
- ▶ 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-253	TSD-403	TSD-603	TSD-653-M6	TSD-603UD	TSD-653UD-M6
	INCH	—	TSD-403UU	—	TSD-653UU	—	TSD-653UDUU
Stage 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, -0	+5, -0
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
Guide Method		Extended contact ball bearing 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 ¹	FP ¹	FP ² /DM/WP	FP ² /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 ¹ FPSA-62540 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	

* 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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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

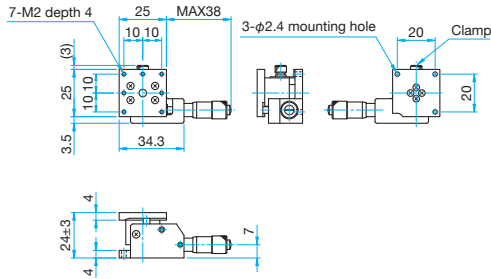
120 × 120 mm

Others

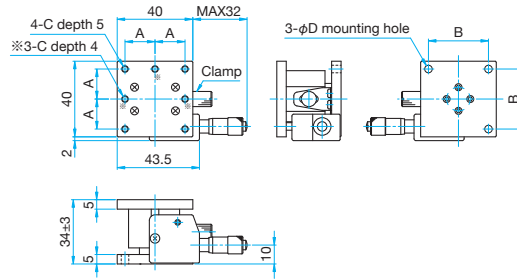


Outline Drawing

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

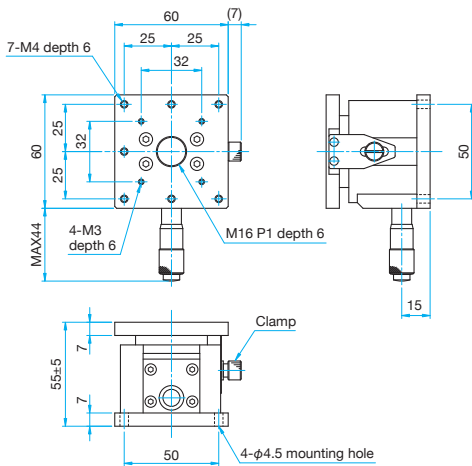


TSD-403/403UU
Hexagonal socket head cap screw M3×8...3screws
Hexagonal socket head cap screw 6-32UNC×5/16...3screws (UU)

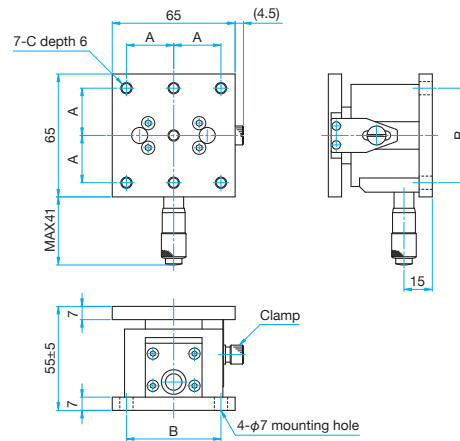


Part Number	A (mm)	B (mm)	C	D (mm)
TSD-403	16	32	M3	3.5
TSD-403UU	15.875	31.75	6-32UNC	4

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

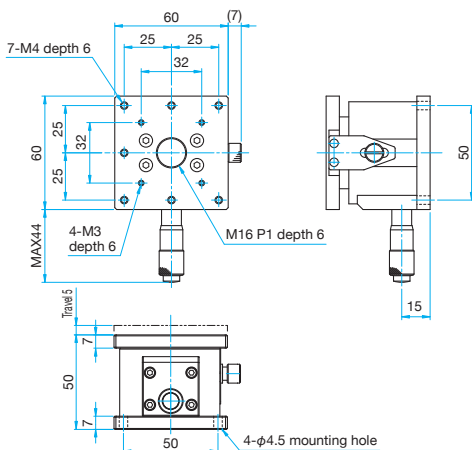


TSD-653-M6/653UU
Hexagonal socket head cap screw M6×12...4 screws (M6)
Hexagonal socket head cap screw 1/4-20UNC×1/2...4 screws (UU)

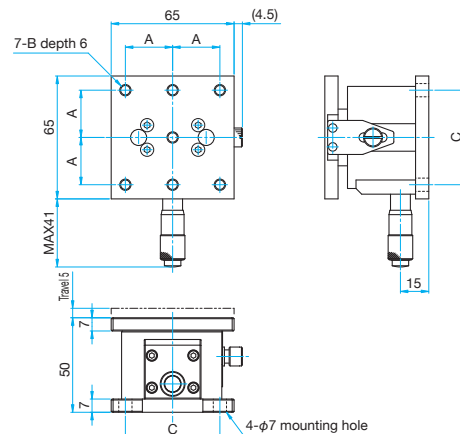


Part Number	A (mm)	B (mm)	C
TSD-653-M6	25	50	M6 P1
TSD-653UU	25.4	50.8	1/4-20UNC

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

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Crossed Roller

Dovetail

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

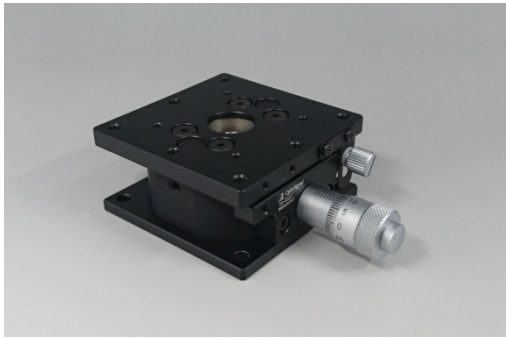
120 × 120 mm

Others

NEW

Low-Profile Z Axis Steel

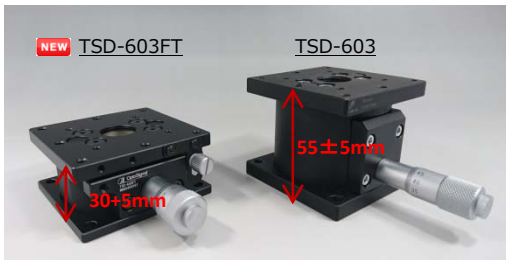
Extended Contact Translation Stages - Footprints Stage Size 60 × 60mm



Z-Axis Steel Extended Contact Translation Stages (TSD-603) series is now available for low-profile type.

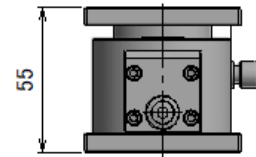
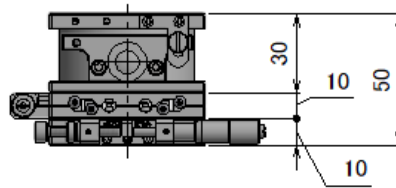
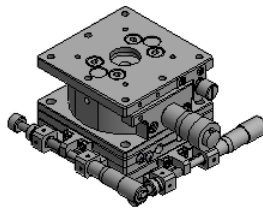
It became low-profile while maintaining the same load capacity as TSD-603, and usability was improved by locating micrometer head and locking clamp on the same side.

It is ideal for downsizing the positioning stage and for lowering the optical axis height of the optical system.



XYZ configuration can be realized lower than the height of the conventional Z-axis stage, TSD-603. (Low-Profile X Axis Steel Translation Stage TSDT-601S is used.)

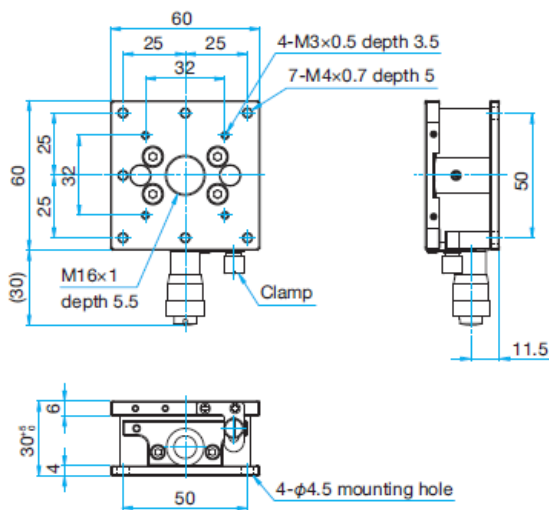
Axis	Part Number	Stage Thickness	Part Number	Stage Thickness
Z axis	TSD-603FT	30mm	TSD-603	55mm
Y axis	TSDT-601(S)	10mm		
X axis	TSDT-601(S)	10mm		
Total		50mm		55mm



Outline Drawing

TSD-603FT

Hexagonal socket thin head cap screw M4×8...4 screws



Specifications

Part Number	METRIC	TSD-603FT
	INCH	
Stage Size [mm]		60 × 60
Axes of Travel		Z axis
Travel [mm]		0~+5
Lead of Actuator [mm/rotation]		0.5
Micrometer Readable Resolution [mm]		0.01
Guide Method		Extended Contact Ball Bearing Guide
Primary Material		Steel (Upper and lower plate: Aluminum)
Finish		Black matte / Black anodized
Load Capacity [N]		147 (15.0kgf)
Travel Accuracy	Straightness [μm]	2.5
Max. Moment Capacity	Pitch[N · m]	3.9
	Yaw[N · m]	3.9
Moment Stiffness	Pitch["/N · cm]	1.2
	Yaw["/N · cm]	1.2
Parallelism [μm]		80
Running Parallelism[μm]		20
Options		-
Weight [kg]		0.4



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