

Z Axis Steel Extended Contact Translation Stages (Vertical)

Stage Size 25 × 25mm / 40 × 40 mm / 60 × 60 mm / 65 × 65 mm

TSD-L

RoHS

Z axis translation stages with integrated stage and angle bracket.

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



Specifications					
Part Number	METRIC	TSD-253L	TSD-403L	TSD-603L	TSD-653L-M6
	INCH	—	TSD-403LUU	—	TSD-653LUU
(Opposite Model)	METRIC	TSD-253RL	TSD-403RL	TSD-603RL	TSD-653RL-M6
	INCH	—	TSD-403RLUU	—	TSD-653RLUU
Stage 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
Guide Method		Extended contact ball bearing 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 ¹	FP ² /DM/WP	FP ² /DM/WP	FP ² /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			
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: 0.025	Coars: 0.005 Fine: 0.0005	

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

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

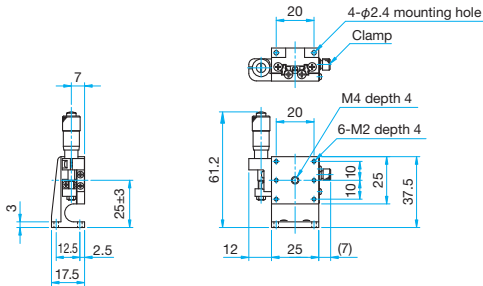
120 × 120 mm

Others

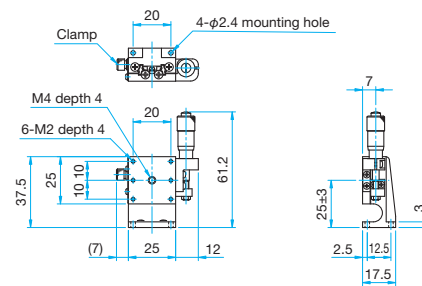


Outline Drawing

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

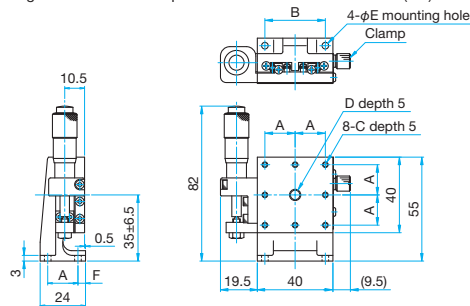


TSD-253RL Hexagonal socket head cap screw M2×6...4 screws



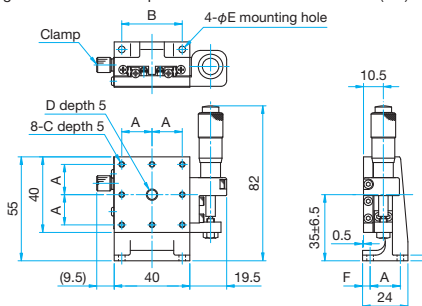
TSD-403L/403LUU

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



TSD-403RL/403RLUU

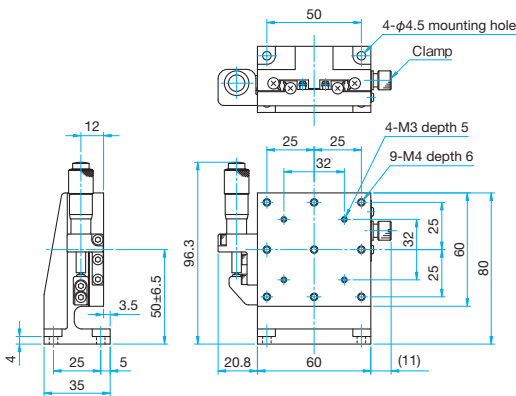
Hexagonal socket head cap screw M3×6...4 screws
Hexagonal socket head cap screw 6-32UNC×1/4...4 screws (UU)



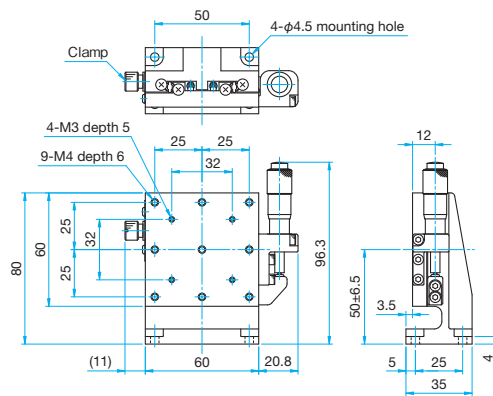
Part Number	A (mm)	B (mm)	C	D	E (mm)	F (mm)
TSD-403L	16	32	M3	M6 P1	3.5	4
TSD-403LUU	15.875	31.75	6-32UNC	1/4-20UNC	4	3.625

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

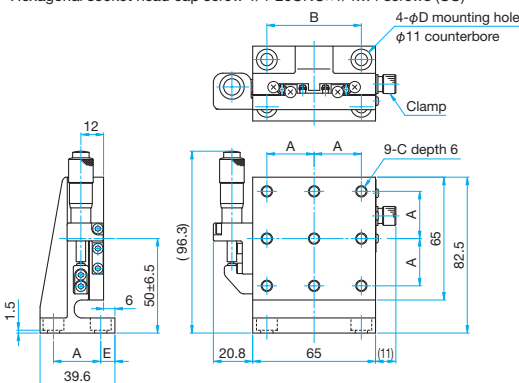


TSD-603RL Hexagonal socket head cap screw M4×8...4 screws



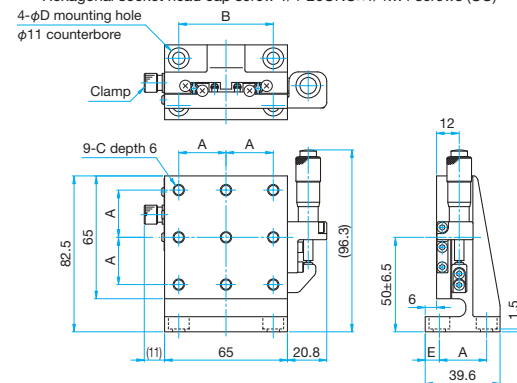
TSD-653L-M6/653LUU

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

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