

X Axis General-Purpose Stainless Steel Translation Stages

XY Axis General-Purpose Stainless Steel Translation Stages

TSDH-251

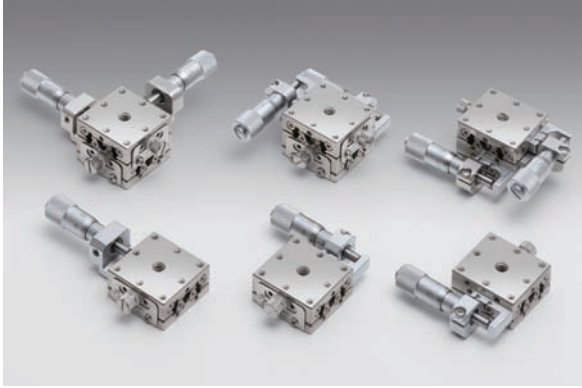
TSDH-252W

Stage Size 25 x 25 mm

RoHS

High precision stainless steel translation stages with “Extended Contact” bearing ways. High stiffness. Not intended for vacuum applications.

- Stage body consists of stainless steel (440C). To prevent rusting, the finish has been processed with electro less nickel plating.



Guide

- ▶ Also available with a super black chrome surface finish. Please contact sales for more information.

Attention

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

Specifications

Part Number	METRIC	TSDH-251C	TSDH-251S	TSDH-252WC	TSDH-252WS
(Opposite Model)	METRIC	—	TSDH-251SR	—	TSDH-252WSR
Stage Size [mm]		25×25	25×25	25×25	25×25
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		SUS440C quench hardened			
Finish		Electroless nickel			
Load Capacity [N]		59.8 (6.0kgf)	59.8 (6.0kgf)	59.8 (6.0kgf)	59.8 (6.0kgf)
Travel Accuracy	Straightness [μm]	1	1	1	1
	Pitch [″]	30	30	30	30
	Yaw [″]	25	25	25	25
Max. Moment Capacity	Pitch [N·m]	4.0	4.0	4.0	4.0
	Roll [N·m]	5.0	5.0	4.0	4.0
	Yaw [N·m]	2.0	2.0	2.0	2.0
Moment Stiffness	Pitch [″/N·cm]	1.8	1.8	3.4	3.4
	Roll [″/N·cm]	1.6	1.6	3.4	3.4
	Yaw [″/N·cm]	2.0	2.0	3.2	3.2
Parallelism [μm]		30	30	50	50
Running Parallelism [μm]		10	10	20	20
Orthogonality [μm]		—	—	10	10
Options		FP/DL	FP	FP/DL	FP
Weight [kg]		0.07	0.07	0.14	0.14

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.

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

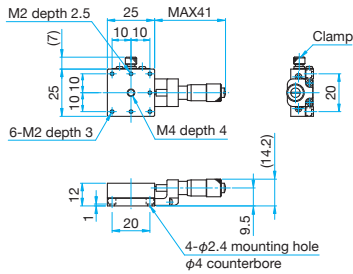
120 × 120 mm

Others

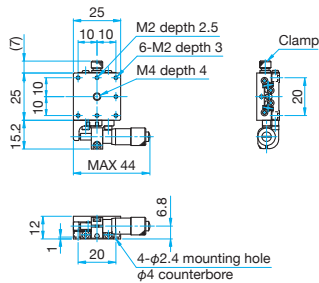


Outline Drawing

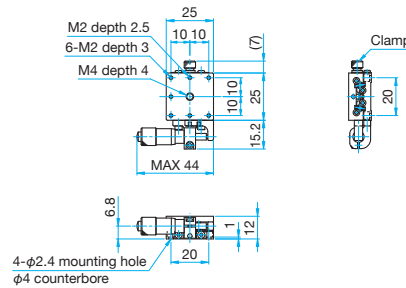
TSDH-251C Hexagonal socket head cap screw (stainless steel construction) M2×4...4 screws



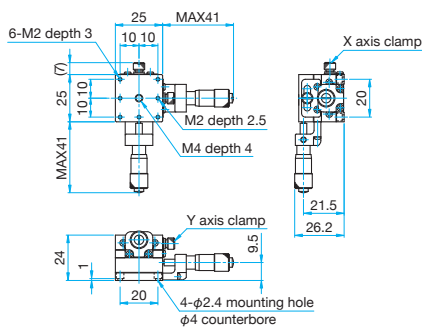
TSDH-251S Hexagonal socket head cap screw (stainless steel construction) M2×4...4 screws



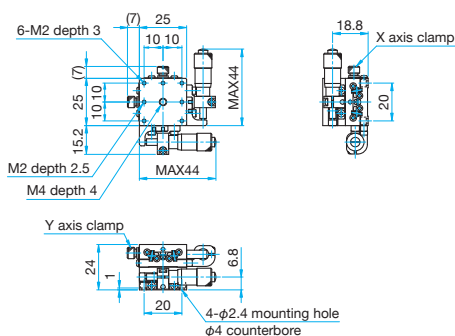
TSDH-251SR Hexagonal socket head cap screw (stainless steel construction) M2×4...4 screws



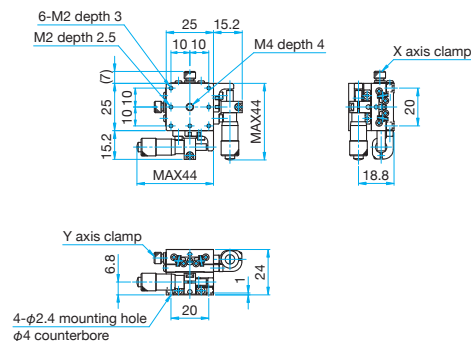
TSDH-252WC Hexagonal socket head cap screw (stainless steel construction) M2×4...4 screws



TSDH-252WS Hexagonal socket head cap screw (stainless steel construction) M2×4...4 screws



TSDH-252WSR Hexagonal socket head cap screw (stainless steel construction) M2×4...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

Ohters

15 × 15 mm

25 × 25 mm

40 × 40 mm

65 × 65 mm

80 × 80 mm

100 × 100 mm

120 × 120 mm

Others

X Axis General-Purpose Stainless Steel Translation Stages

XY Axis General-Purpose Stainless Steel Translation Stages

TSDH-401

Stage Size 40 x 40 mm

RoHS

TSDH-402W

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

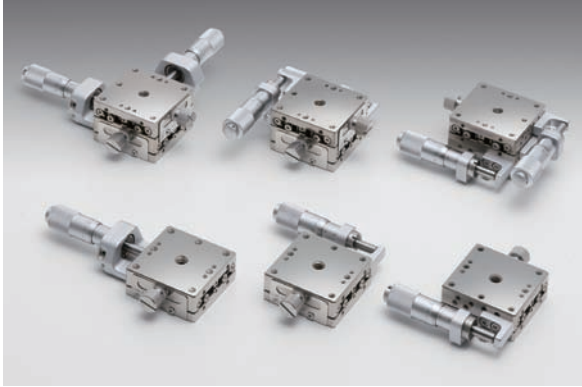
100 x 100 mm

120 x 120 mm

Others

High precision stainless steel translation stages with “Extended Contact” bearing ways. High stiffness. Not intended for vacuum applications.

- Stage body consists of stainless steel (440C). To prevent rusting, the finish has been processed with electro less nickel plating.



Guide

- ▶ Also available with a super black chrome surface finish. Please contact sales for more information.
- ▶ For the TSDH series, you can select opposite side locking by specifying the option code (suffix: OC).

Option Code	Products Name
OC	opposite clamp



Attention

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

Specifications

Part Number	METRIC	TSDH-401C	TSDH-401S	TSDH-402WC	TSDH-402WS
(Opposite Model)	METRIC	—	TSDH-401SR	—	TSDH-402WSR
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		SUS440C quench hardened			
Finish		Electroless nickel			
Load Capacity [N]		196 (20kgf)	196 (20kgf)	196 (20kgf)	196 (20kgf)
Travel Accuracy	Straightness [μm]	1	1	1	1
	Pitch [$''$]	30	30	30	30
	Yaw [$''$]	25	25	25	25
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	5	5	5
Moment Stiffness	Pitch [$''$ /N·cm]	0.3	0.3	0.66	0.66
	Roll [$''$ /N·cm]	0.2	0.2	0.66	0.66
	Yaw [$''$ /N·cm]	0.23	0.23	0.6	0.6
Parallelism [μm]		30	30	50	50
Running Parallelism [μm]		10	10	20	20
Orthogonality [μm]		—	—	10	10
Options		FP/DL	FP/DL	FP/DL	FP
Weight [kg]		0.2	0.2	0.4	0.4

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-62540	0.25	—	E008
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.

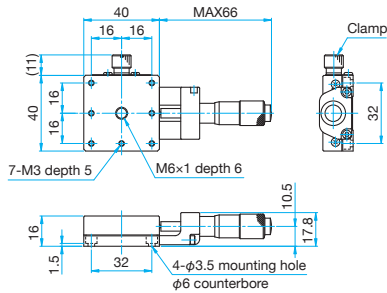
* Installation may not be possible depending on the direction of DL.

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

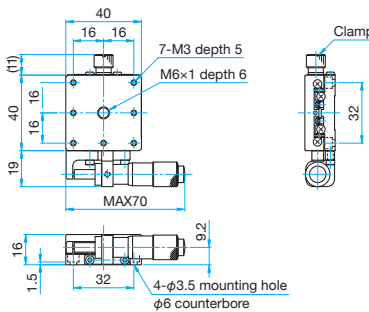


Outline Drawing

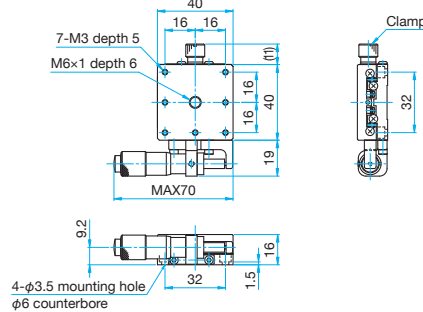
TSDH-401C Hexagonal socket head cap screw (stainless steel construction)
M3×6...4 screws, Spring washers



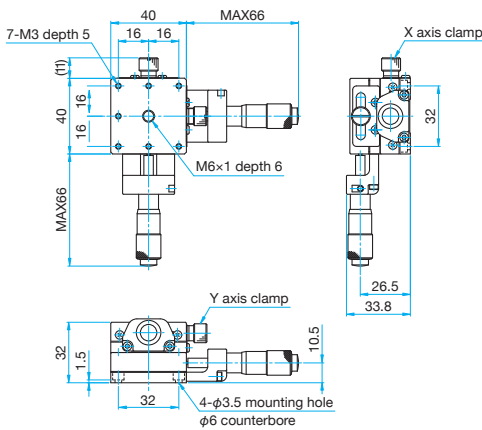
TSDH-401S Hexagonal socket head cap screw (stainless steel construction)
M3×6...4 screws, Spring washers



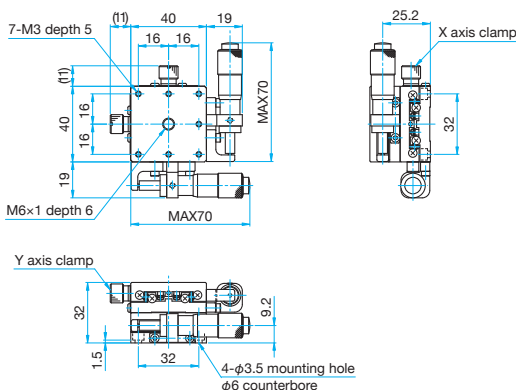
TSDH-401SR Hexagonal socket head cap screw (stainless steel construction)
M3×6...4 screws, Spring washers



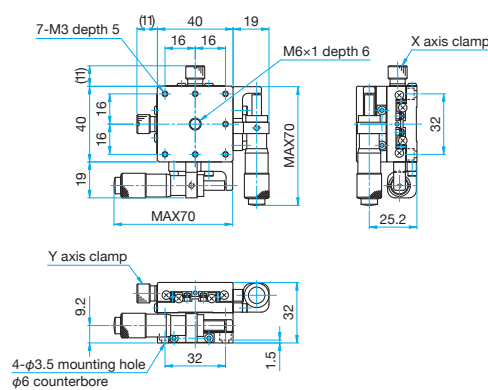
TSDH-402WC Hexagonal socket head cap screw (stainless steel construction)
M3×6...4 screws, Spring washers



TSDH-402WS Hexagonal socket head cap screw (stainless steel construction)
M3×6...4 screws, Spring washers



TSDH-402WSR Hexagonal socket head cap screw (stainless steel construction)
M3×6...4 screws, Spring washers



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

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 General-Purpose Stainless Steel Translation Stages

XY Axis General-Purpose Stainless Steel Translation Stages

TSDH-601

Stage Size 60 x 60 mm

RoHS

TSDH-602

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

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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

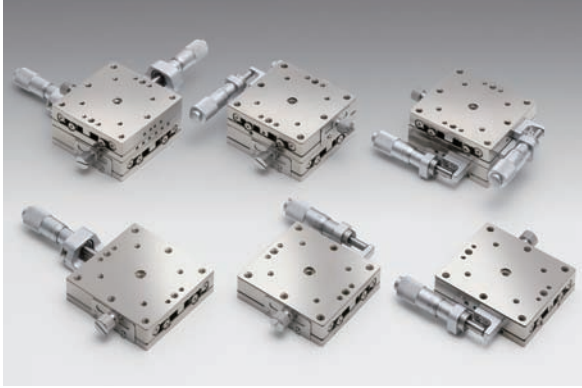
100 x 100 mm

120 x 120 mm

Others

High precision stainless steel translation stages with “Extended Contact” bearing ways. High stiffness. Not intended for vacuum applications.

- Stage body consists of stainless steel (440C). To prevent rusting, the finish has been processed with electro less nickel plating.



Guide

- ▶ Also available with a super black chrome surface finish. Please contact sales for more information.
- ▶ For the TSDH series, you can select opposite side locking by specifying the option code (suffix: OC).

Option Code	Products Name
OC	opposite clamp



Attention

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

Specifications

Part Number	METRIC	TSDH-601C	TSDH-601S	TSDH-602C	TSDH-602S
(Opposite Model)	METRIC	—	TSDH-601SR	—	TSDH-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		SUS440C quench hardened			
Finish		Electroless nickel			
Load Capacity [N]		343 (35kgf)	343 (35kgf)	343 (35kgf)	343 (35kgf)
Travel Accuracy	Straightness [μm]	1	1	1	1
	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]	9.8	9.8	9.8	9.8
Moment Stiffness	Pitch [″/N·cm]	0.2	0.2	0.38	0.38
	Roll [″/N·cm]	0.13	0.13	0.37	0.37
	Yaw [″/N·cm]	0.16	0.16	0.39	0.39
Parallelism [μm]		30	30	50	50
Running Parallelism [μm]		10	10	20	20
Orthogonality [μm]		—	—	10	10
Options		FP/DL	FP/DL	FP/DL	FP
Weight [kg]		0.45	0.45	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
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.

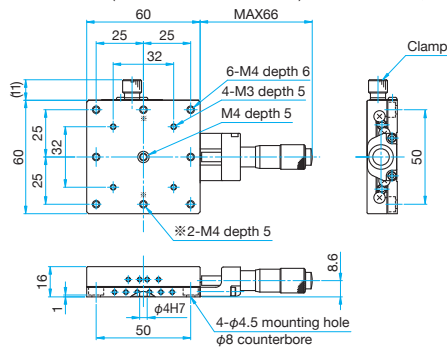
* Installation may not be possible depending on the direction of DL.

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

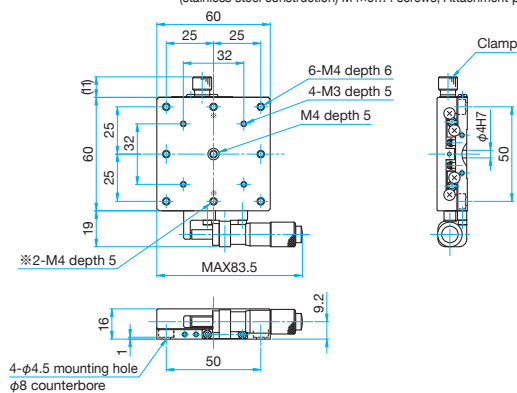


Outline Drawing

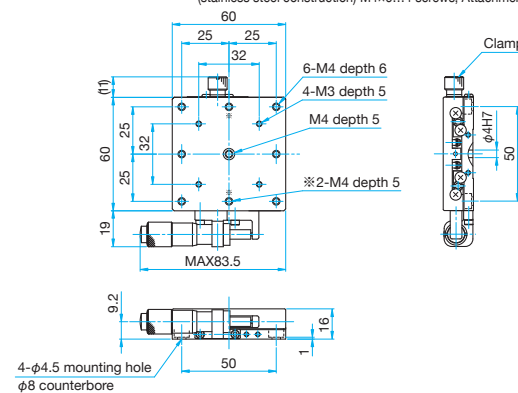
TSDH-601C Hexagonal socket head cap screw (stainless steel construction) M4x6...4 screws, Attachment pin for M4



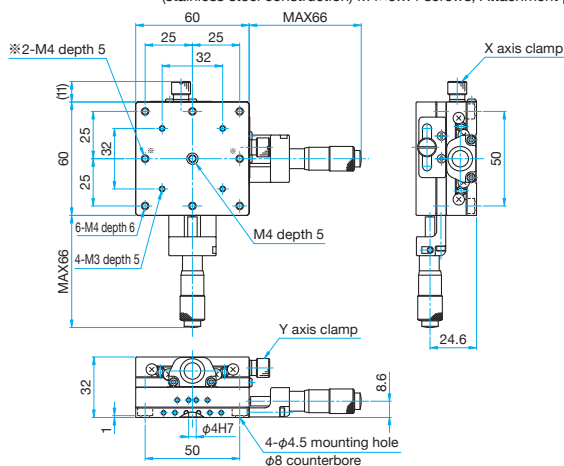
TSDH-601S Hexagonal socket head cap screw (stainless steel construction) M4x6...4 screws, Attachment pin for M4



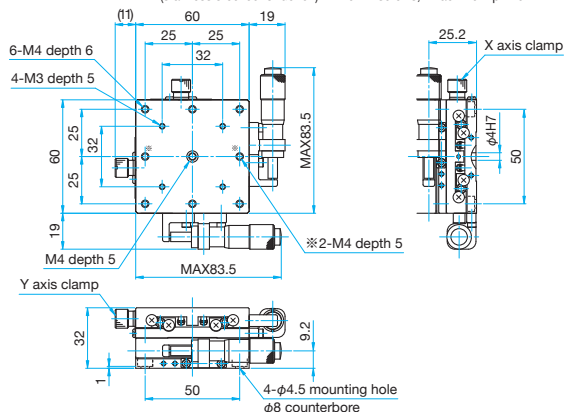
TSDH-601SR Hexagonal socket head cap screw (stainless steel construction) M4x6...4 screws, Attachment pin for M4



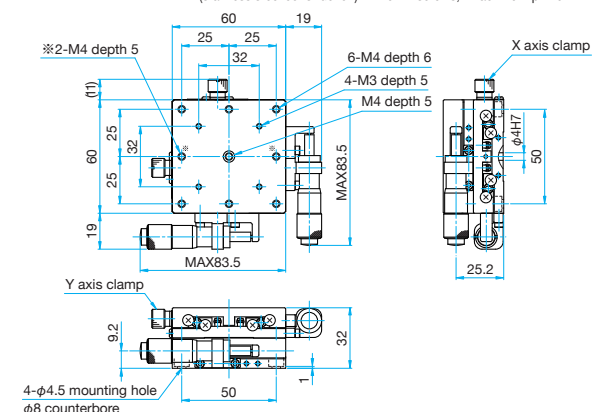
TSDH-602C Hexagonal socket head cap screw (stainless steel construction) M4x6...4 screws, Attachment pin for M4



TSDH-602S Hexagonal socket head cap screw (stainless steel construction) M4x6...4 screws, Attachment pin for M4



TSDH-602SR Hexagonal socket head cap screw (stainless steel construction) M4x6...4 screws, Attachment pin for M4



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

Z Axis General-Purpose Stainless Steel Translation Stages (Vertical Mounting)

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

TSDH-SZ

RoHS

Catalog Code

W7153

High precision crossed-roller linear translation stages with black anodized aluminum bodies.

- Stage body consists of stainless steel (440C). To prevent rusting, the finish has been processed with electroless nickel plating.



Guide

- Also available with a super black chrome surface finish. Please contact sales for more information.

Attention

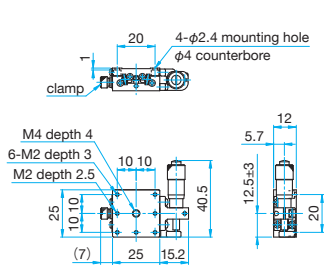
- Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.



Outline Drawing

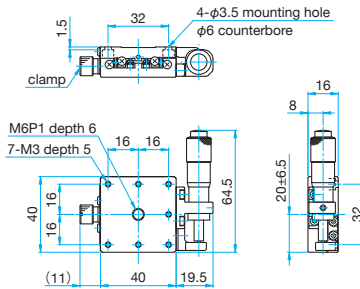
TSDH-251SZ

- Hexagonal socket head cap screw (stainless steel construction) M2×4...4 screws



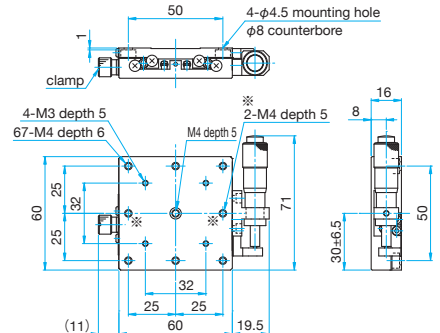
TSDH-401SZ

- Hexagonal socket head cap screw (stainless steel construction) M3×6...4 screws, Spring washers



TSDH-601SZ

- Hexagonal socket head cap screw (stainless steel construction) M4×6...4 screws



Specifications

Part Number	METRIC	TSDH-251SZ	TSDH-401SZ	TSDH-601SZ
Stage Size [mm]		25×25	40×40	60×60
Axes of Travel			Z axis	
Micrometer Position			Side	
Travel [mm]		±3	±6.5	±6.5
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		SUS440C quench hardened		
Finish		Electroless nickel		
Load Capacity [N]		14.7N (1.5kgf)	24.5N (2.5kgf)	29.4N (3.0kgf)
Travel Accuracy	Straightness [μm]	1	1	1
Max. Moment Capacity	Pitch [N·m]	1.7	4	6.4
	Roll [N·m]	1.8	4	6.4
Moment Stiffness	Pitch ["/N·cm]	1.9	0.4	0.25
Running Parallelism [μm]		20	20	20
Options		FP ¹	FP ²	FP ²
Weight [kg]		0.07	0.2	0.45

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

* 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

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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

Z Axis General-Purpose Stainless Steel Translation Stages

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

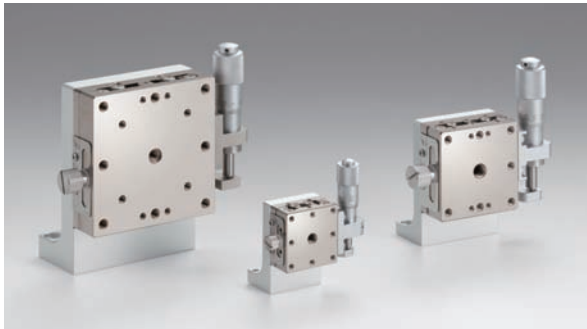
TSDH-L

RoHS

Catalog Code W7131

High precision crossed-roller linear translation stages with black anodized aluminum bodies.

- Stage body consists of stainless steel (440C). To prevent rusting, the finish has been processed with electroless nickel plating.



Guide

- ▶ Also available with a super black chrome surface finish. Please contact sales for more information.

Attention

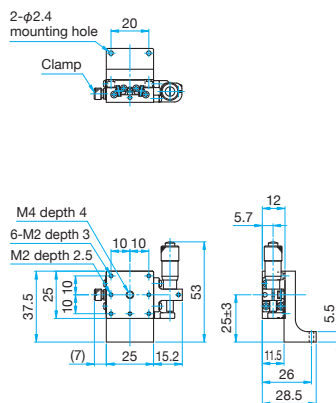
- ▶ Micrometer brackets may extend above the top surface of some stages. Check drawings for more information.
- ▶ Note that some samples might not be able to be fixed on the stage depending on their shapes, or required travel might not be ensured.



Outline Drawing

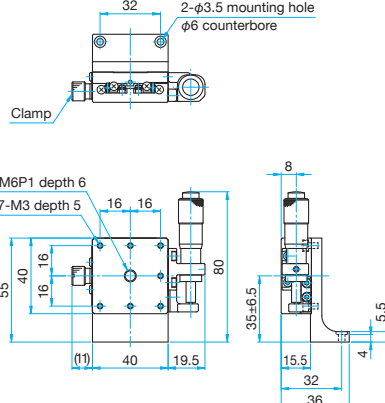
TSDH-253L

- Hexagon socket head cap screw (stainless steel construction) M2×8...2 screws



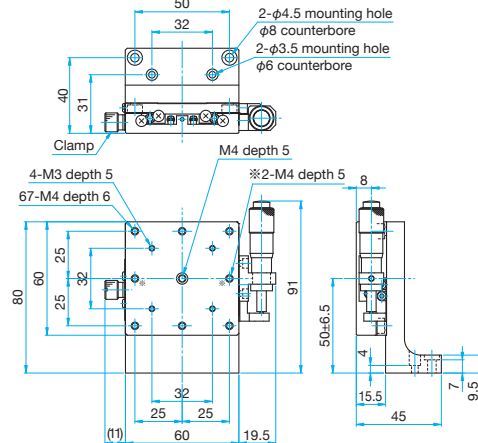
TSDH-403L

- Hexagon socket head cap screw (stainless steel construction) M3×8...2 screws



TSDH-603L

- Hexagon socket head cap screw (stainless steel construction) M3×8...2 screws, M4×12...2 screws



Specifications

Part Number	METRIC	TSDH-253L	TSDH-403L	TSDH-603L
Stage Size [mm]		25×25	40×40	60×60
Axes of Travel		Z axis		
Travel [mm]		±3	±6.5	±6.5
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		SUS440C quench hardened		
Finish		Electroless nickel		
Load Capacity [N]		9.8 (1.0kgf)	19.6 (2.0kgf)	49 (5.0kgf)
Travel Accuracy	Straightness [μm]	1	1	1
	Pitch [′]	30	30	25
	Yaw [′]	25	25	15
Max. Moment Capacity	Pitch [N·m]	0.7	1.0	1.0
	Roll [N·m]	0.5	1.0	1.0
	Yaw [N·m]	0.4	1.0	1.0
Moment Stiffness	Pitch [′/N·cm]	4.7	0.9	0.6
	Roll [′/N·cm]	3.2	0.8	0.6
	Yaw [′/N·cm]	3.0	0.6	0.4
Running Parallelism [μm]		20	20	20
Squareness [μm]		30	30	30
Options		FP ¹	FP ²	FP ²
Weight [kg]		0.1	0.25	0.65

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

* 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