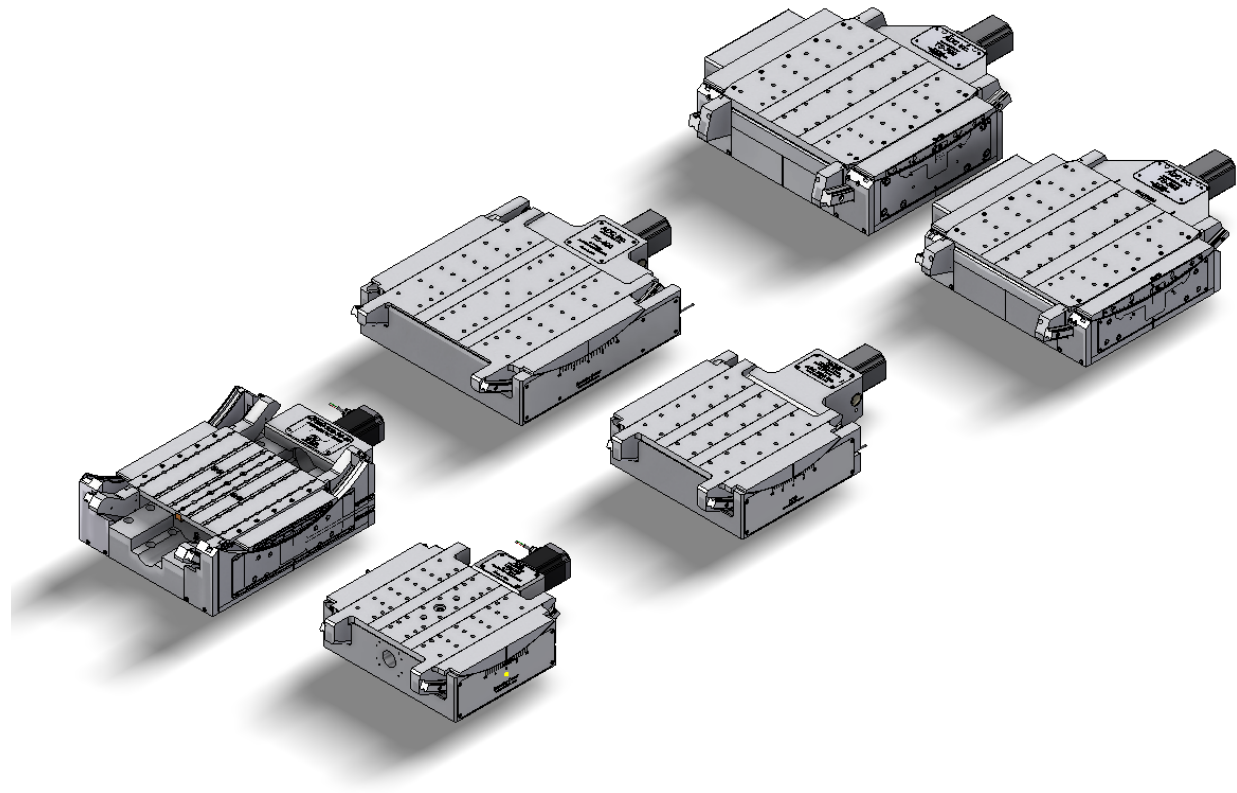




TS-HD SERIES

TSW-HD SERIES

-High Precision Heavy Load Tilt Stages-

SPECIFICATIONS

The TS-HD and TSW-HD series tilt stages provide a rigid, accurate motion for general goniometric use. Each stage is stepper motor driven and curved linear bearing guided stages with a rugged anodized aluminum body. The top and bottom mounting surfaces are precision ground to provide an optimal interface.

The TS-HD Series uses a tangent bar type mechanism, and the TSW-HD uses a worm drive mechanism. This interface results in a highly resolved, very rigid rotary motion. The stage is guided by preloaded ball type profiled linear rails. An optional optical encoder gives closed loop feedback for the device.

MECHANICAL

Specification	TS300	TS400	TS565	TS700	TSW300-16	TSW300-34
Travel Range (°)	+/- 8	+/- 7	+/- 4	+/- 4	+/- 8	+/- 17
Repeatability (μrad RMS)	17	17	80	40	45	45
Trajectory Straightness (μm/25mm)	20	20	5	5	TBD	TBD
Runout (μm)	15	15	3	3	TBD	TBD
Full Step Resolution (μrad) (approx.)	35.3	26.4	18.7	15.1	60.4	60.4
Torque (N*m)	270	360	508	630	270	270

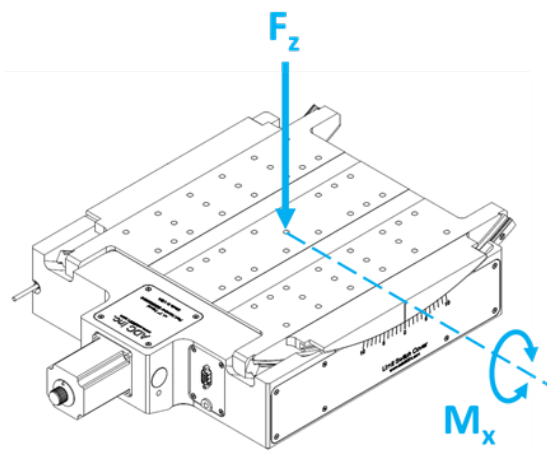
ELECTRICAL

Motor	Limit Switches	Optical Encoder
2-Phase; 5-Phase Stepper; DC	Mechanical, Normally Closed	Renishaw Incremental or Absolute (http://www.renishaw.com)

LOAD CHARACTERISTICS

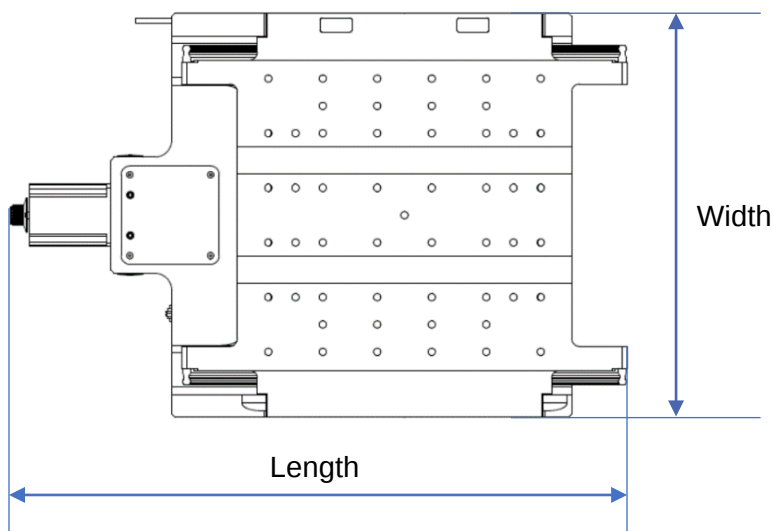
F _z (kN)*	M _x (Nm)
10	250

*For eccentric maximum load, contact ADC engineering.

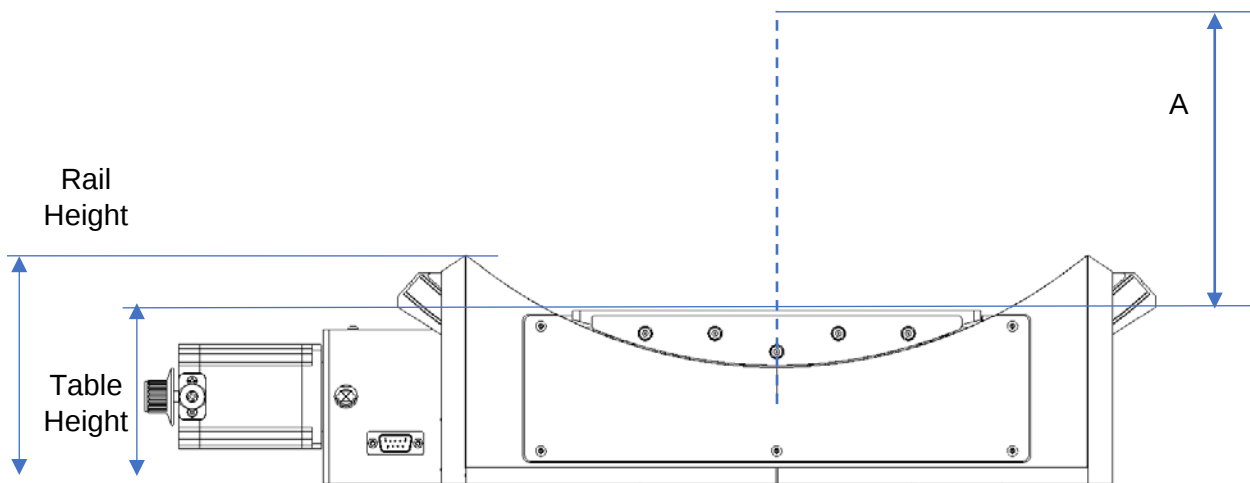


DIMENSIONS

Top View



Side View



(mm)	Length	Width	Table Height	Rail Height	A	Mounting Surface	Curvature of Rails
TS-300	518	347	95	95	237.3	270 x 218	300
TS-400	566	411	95	95	337	284 x 307	400
TS-565	567	338	95	95	501	300 x 300	565
TS-700	570	636	111	111	636	300 x 300	700
TSW-300-16	443	304	96	96	237.3	232 x 218	300
TSW-300-34	568	304	95.8	126	237.5	231 x 225	300

ORDERING INFORMATION

Tilt Stages can be ordered with different configurations. Please use the codes provided below when ordering. Please call or e-mail to ask about any other customization required.

TS-HD	TS-300	TS-400	TS-565	TS-700	TSW-300-16	TSW-300-32
Air / Vacuum Options	-A (Standard Air Stage) -V (Vacuum Stage; ask about options when placing order)					
Encoder Options	-R (With Incremental Optical Encoder) -A (With Absolute Optical Encoder) -N (Without Encoder)					
Brake Options	-B (With Brake, 24VDC) -N (Without Brake)					
Motor Options	-2PH (Standard 2 Phase Bi-Polar Stepper Motor) -5PH (5 Phase Stepper Motor) -DC (DC Motor)					
Gearbox Option	-G (customer to enter desired ratio; 3:1 to 100:1 available)					

Example Order #1:

TS300-A-E-N-2PH

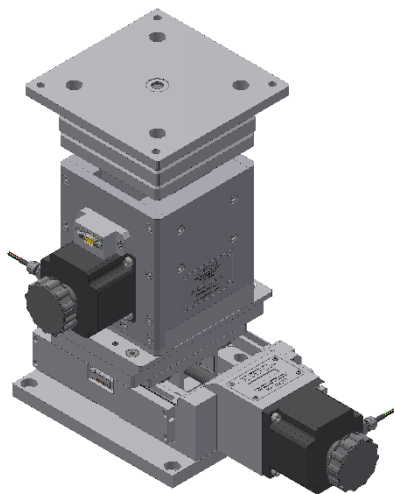
This is an order for a TS565 Precision Goniometer in air, with encoder, no brake, and a 2-phase motor, no gearbox is implied.

Example Order #2:

TSW300-16-A-E-N-2PH

This is an order for a TS300 Precision Goniometer with +/- 8 degrees of travel in air, with encoder, no brake, and a 2-phase motor, no gearbox is implied.

OTHER STAGES



Linear Stages	Lift Stages
DS210	DJ210
DS310	DJ310
DS410	DJ410
DS510	BJ10
	BJ25
Tilt Stages/ Goniometers	Rotation Stages
TS-50	RS-100
TS-90	RS-200
TS-160	RS-300
TS-300	RS-400
TS-400	RS-500
TS-565	
TS-700	

