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Find the *Aerotech ATS50-25-8/4* at our website: ***Click HERE***

ATS50 Series

Mechanical Bearing, Lead-Screw Stage

- Low profile, small footprint
- Ultra-fine resolution
- Integral motor
- Manual adjust knob with graduated dial
- Available with vacuum preparation
- Precision ground micrometer lead-screw drive



The ATS50 series linear positioning stage offers superior positioning performance in a very compact, low profile unit. They are companion stages to the ART50 and ART100 series rotary stages and are ideal for space-critical applications such as optical trains and vacuum operation.

Construction Features

The base of the ATS50 series is a box structure machined from a special lightweight aluminum alloy to provide high stiffness and long-term stability. Crossed-roller linear bearings are employed for high payload capability, low friction, and superior smoothness.

The precision ground and hardened micrometer lead screw provides exceptional accuracy, repeatability, and ultra-fine positioning resolution capability to 0.1 micron. High quality, pre-loaded duplex rotary bearings at the drive end provide superior screw axial play and runout.

The integral microstepping motor is coupled to the screw through precision anti-backlash gearing. A unique two-piece metal waycover assembly provides protection for screw and bearings, and access to mounting holes.

Options and Accessories

The ATS50 is available with optional vacuum preparation to 10^{-6} torr. All stages are available with both metric (standard) and English bolt hole and mounting patterns.

Additional ATS50 series features include a 0.1 micron accurate home reference capability, optical overtravel limit switches, and a knob with reference dial (1 micron increments) for convenient manual positioning.

Easily Configure XY, XZ, and XYZ Combinations

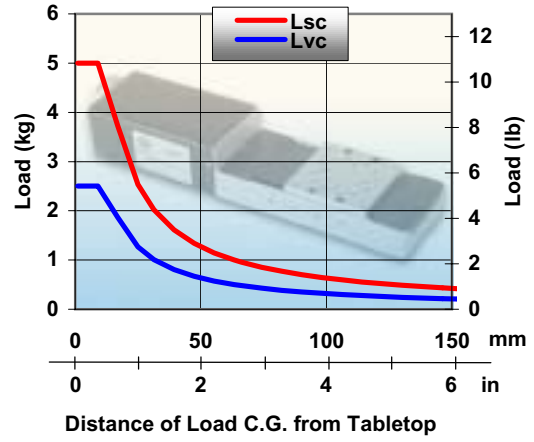
The ATS50 stages have standardized mounting hole patterns, so you can easily configure them in XY and XYZ arrangements.

The Z5S L-bracket accessory permits mounting ATS50 and ART50 series stages in XZ and XYZ combinations. The Z5S has good rigidity, and precise, machined mounting surfaces. It is available with either English or metric dimensioned grid pattern and tapped holes. The Z5S is made of aluminum with a clear anodized protective finish.

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ATS50 Series SPECIFICATIONS and DIMENSIONS

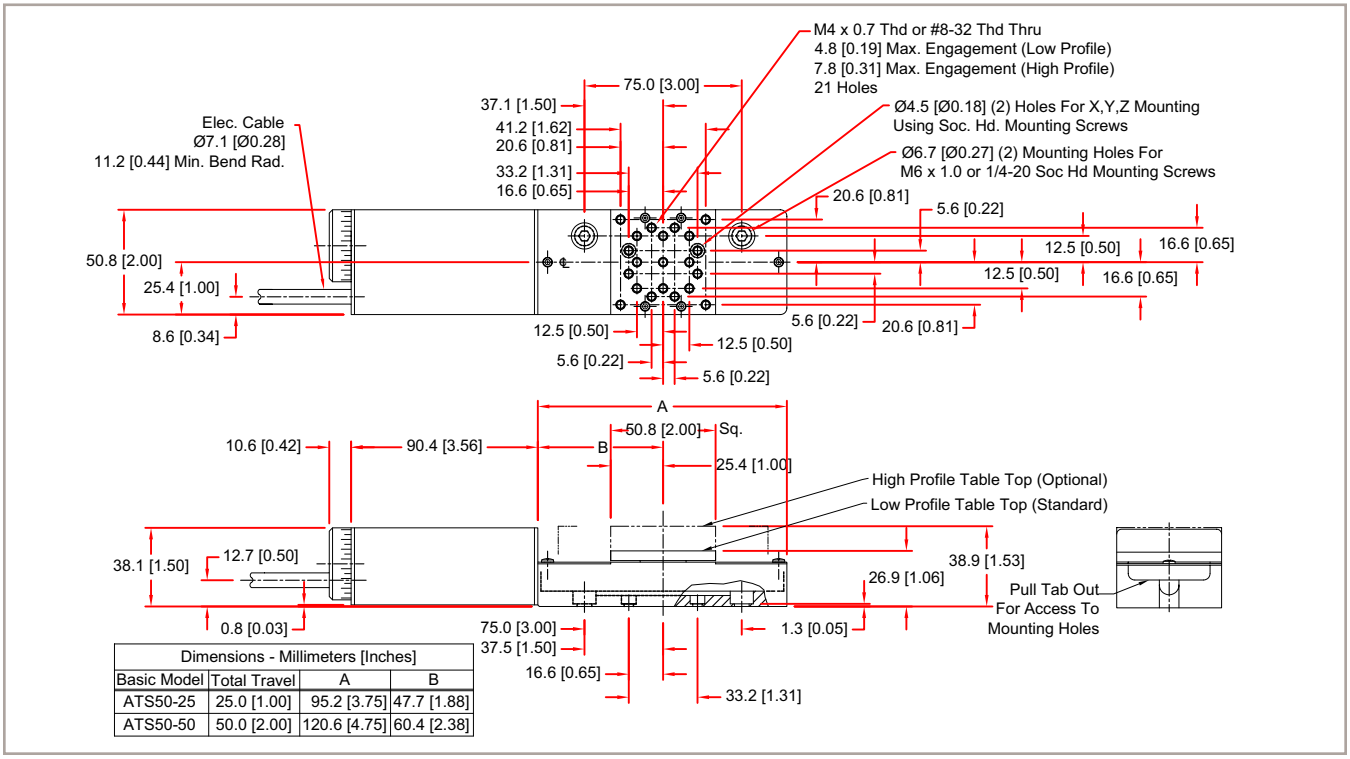
Basic Model		ATS50-25	ATS50-50
Total Travel		25 mm (1 in)	50 mm (2 in)
Drive System		Precision Ground Lead Screw	
Resolution	0.5 mm/rev lead	0.05 µm (2 µin) @ 4000 steps/rev Motor Resolution	
Maximum Travel Speed		3 mm/s (0.12 in/s)	
Accuracy		2.5 µm/25 mm (100 µin/in)	
Repeatability (Unidirectional)		0.3 µm (12 µin)	
Straightness and Flatness		2.5 µm/25 mm (100 µin/in)	
Maximum Load	Horizontal	5.0 kg (11.0 lb)	
	Vertical	2.5 kg (5.5 lb)	
	Side	2.5 kg (5.5 lb)	
Home Position Repeatability		0.1 µm	
Weight (including motor)		0.8 kg (1.8 lb)	
Material		Aluminum	
Finish		Clear Anodize; Black Anodize Motor Cover	



L_{VC} and L_{SC} Cantilevered Load Capability (ATS50)

Standard Motor Information

Code	Type	Bus	Amps	Cable	Driver
-1	Unipolar Microstepping	40 VDC	0.85 A	Integral	U511 / DR500
				Integral (-W100)	U100M
-2	Unipolar Microstepping	40 VDC	0.85 A	SMS-O	U511 / DR500
				SMC	U100M
-3	Series Microstepping	40 VDC	0.5 A	Integral	U511 / DR500
				Integral (-W100)	U100M
-4	Series Microstepping	40 VDC	0.5 A	SMS-O	U511 / DR500
				SMC	U100M



Dimensions - Millimeters [Inches]			
Basic Model	Total Travel	A	B
ATS50-25	25.0 [1.00]	95.2 [3.75]	47.7 [1.88]
ATS50-50	50.0 [2.00]	120.6 [4.75]	60.4 [2.38]

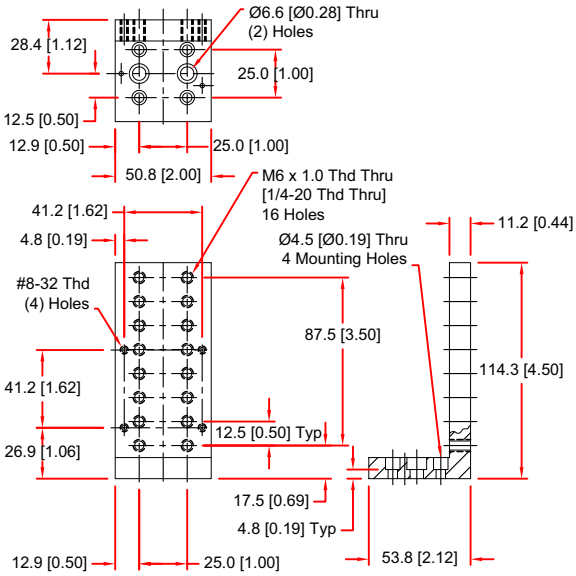
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ATS50 Series – Z5S Bracket DIMENSIONS

Z5S Bracket





Dimensions - Millimeters [Inches]			
Basic Model	Recommended For Series	Finish	Weight kg [lb]
Z5S	ATS50-25 & ATS50-50 (Linear) & ART50 (Rotary) Stages	Clear Anodize	0.22 [0.5]



The Z5S bracket simplifies XZ configurations.

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ATS50 Series ORDERING INFORMATION

Ordering Example

ATS50	-50		-M	-1
Series	Travel (mm)	Stage Construction Options	Mounting and Grid Pattern	Motor
	-25 -50	/VAC3 /VAC6 /STEEL	-M -U -M-HP50 -U-HP50	-1 -1-W100 -2 -3 -3-W100 -4

ATS50 Series Linear Lead-Screw Stage

ATS50-25	25 mm (1 in) travel stage with stepping motor, limits, and 0.1 micron accurate home marker
ATS50-50	50 mm (2 in) travel stage with stepping motor, limits, and 0.1 micron accurate home marker

Stage Construction Options

/VAC3	Vacuum preparation of stage and stepping motor to 10^{-3} torr
/VAC6	Vacuum preparation of stage and stepping motor to 10^{-6} torr
/STEEL	All steel construction — ATS50-50 only

Mounting and Grid Pattern

-M	Metric dimension mounting pattern and holes
-U	English dimension mounting pattern and holes
-M-HP50	High profile metric dimension mounting pattern and holes
-U-HP50	High profile English dimension mounting pattern and holes

Motor

-1	Stepping motor with 4.6 m (15 ft) integral cable and home marker (wired unipolar - F0.85)
-1-W100	Stepping motor with 4.6 m (15 ft) integral cable and home marker (wired unipolar - F0.85); for use with U100 controller
-2	Stepping motor with 0.9 m (3 ft) integral cable and home marker (wired unipolar - F0.85); requires cable
-3	Stepping motor with 4.6 m (15 ft) integral cable and home marker (series wired - F0.50)
-3-W100	Stepping motor with 4.6 m (15 ft) integral cable and home marker (series wired - F0.50); for use with U100 controller
-4	Stepping motor with 0.9 m (3 ft) integral cable and home marker (series wired - F0.50); requires cable

Accessories (to be ordered as separate line item)

ALIGNMENT-NPA	Non-precision XY assembly
ALIGNMENT-NPAZ	Non-precision XZ or YZ assembly
ALIGNMENT-PA10	XY assembly; 10 arc sec orthogonal
ALIGNMENT-PA10Z	XZ or YZ assembly with L-bracket; 10 arc second orthogonal
Z5S	Right angle L-bracket with English-dimensioned grid pattern and tapped holes
Z5SM	Right angle L-bracket with metric-dimensioned grid pattern and tapped holes

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