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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 brushless servo or microstepping motor
- 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 brushless servomotor or 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.

The ATS50 series stage with integral microstepping motor features 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. The brushless servomotor model has a 500-line square-wave rotary encoder.

Options

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.

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.

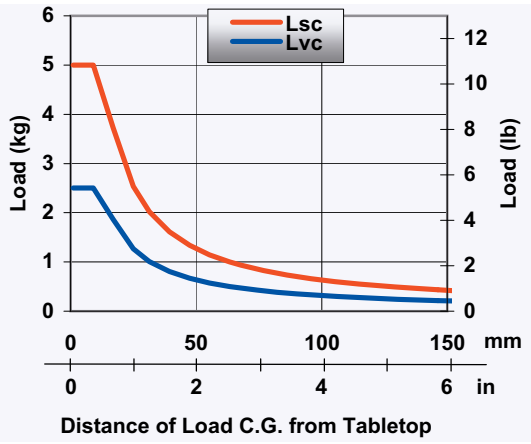
The Z5S L-bracket accessory permits mounting ATS50 and ART50 series stages in XZ and XYZ combinations. The Z5S has good rigidity, and precise, machined mounting surfaces. It is available with either English or metric dimensioned grid pattern and tapped holes. The Z5S is made of aluminum with a clear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

WORLD HEADQUARTERS: Aerotech, Inc., United States • Phone: +1-412-963-7470 • Email: sales@aerotech.com
Aerotech, Ltd., United Kingdom • Phone: +44-118-9409400 • Email: sales@aerotech.co.uk
Aerotech GmbH, Germany • Phone: +49-911-9679370 • Email: sales@aerotechgmbh.de
Aerotech KK, Japan • Phone: +81-47-489-1741 • Email: sales@aerotechkk.co.jp
Aerotech China • Phone: +86-21-5508-6630 • Email: sales@aerotech.com.cn

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ATS50 Series SPECIFICATIONS

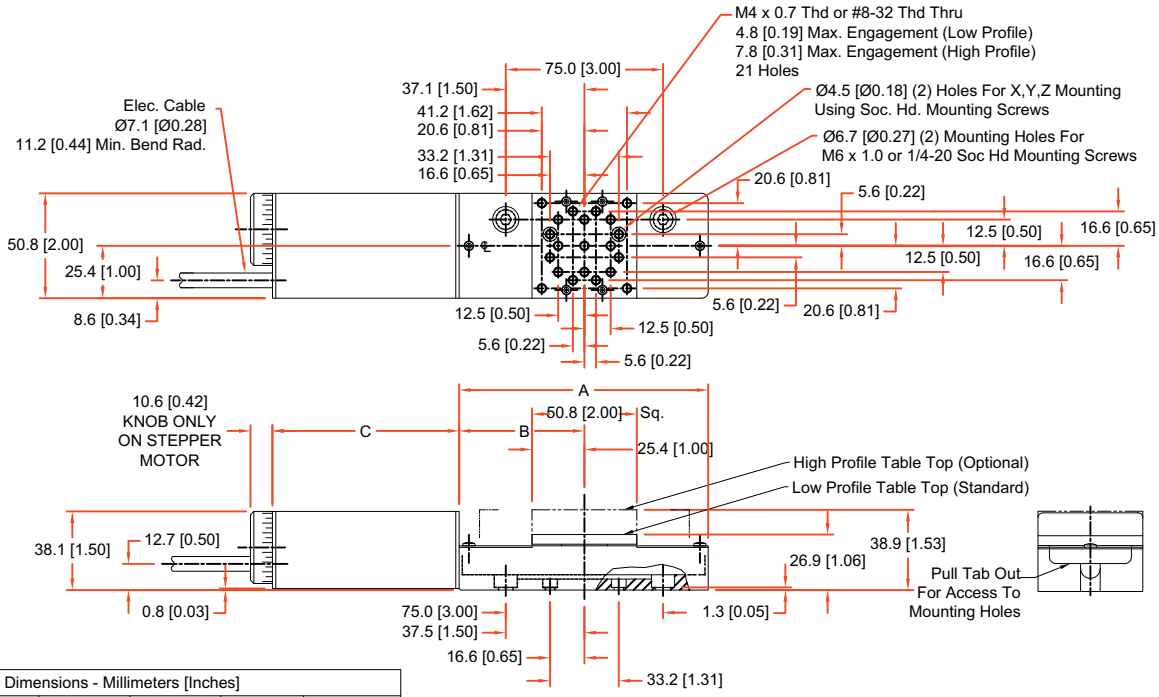
Basic Model		ATS50-25	ATS50-50
Total Travel		25 mm (1 in)	50 mm (2 in)
Drive System		Precision Ground Lead Screw	
Resolution (0.5 mm/rev lead)	Microstepping Motor	0.05 µm (2 µin) @ 4000 steps/rev Motor Resolution	
	Servomotor	0.1 µm (4 µin) @ 2000 steps/rev Motor Resolution	
Feedback (Servomotor Only)		Noncontact Rotary Encoder (500 Line)	
Bus Voltage	Microstepping Motor	40 VDC	
	Servomotor	Up to 48 VDC	
Continuous Current	A_{pk} (Microstepping Motor)	1.2 A	
	A_{rms} (Microstepping Motor)	0.85 A	
	A_{pk} (Servomotor)	0.5 A	
	A_{rms} (Servomotor)	0.35 A	
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)

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ATS50 Series DIMENSIONS



Dimensions - Millimeters [Inches]				
Basic Model	Total Travel	A	B	C
ATS50-25	25.0 [1.00]	95.2 [3.75]	47.7 [1.88]	90.4 [3.56]
ATS50-50	50.0 [2.00]	120.6 [4.75]	60.4 [2.38]	90.4 [3.56]
ATS50-25S	25.0 [1.00]	95.2 [3.75]	47.7 [1.88]	115.8 [4.56]
ATS50-50S	50.0 [2.00]	120.6 [4.75]	60.4 [2.38]	115.8 [4.56]

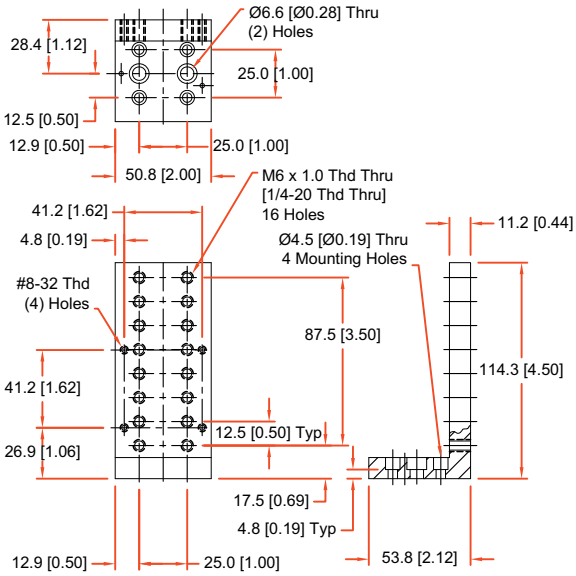
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ATS50 Series – Z5S Bracket DIMENSIONS

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	-2	-NC
Series	Travel (mm)	Stage Construction Options	Mounting and Grid Pattern	Motor	Limits (Servo motor only)
	-25 -50 -25S -50S	/VAC3 /VAC6 /STEEL	-M -U -M-HP50 -U-HP50	-2 -5	-NC -NO

ATS50 Series Linear Lead-Screw Stage

ATS50-25	25 mm (1 in) travel stage with stepping motor, normally open limits (-NO), and 0.1 micron accurate home marker
ATS50-50	50 mm (2 in) travel stage with stepping motor, normally open limits (-NO), and 0.1 micron accurate home marker
ATS50-25S	25 mm (1 in) travel stage with brushless servomotor and limits
ATS50-50S	50 mm (2 in) travel stage with brushless servomotor and limits

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 and ATS50-50S 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

-2	Stepping motor with 0.9 m (3 ft) integral cable and home marker (wired unipolar - F0.85); requires cable
-5	Brushless servomotor with 0.9 m (3 ft) integral cable, connector, and 500-line encoder; requires cable

Limits (Servo motor only)

-NC	Normally-closed end of travel limit switches
-NO	Normally-open end of travel limit switches

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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Aerotech KK, Japan • Phone: +81-47-489-1741 • Email: sales@aerotechkk.co.jp
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