

ATS115 Series

Mechanical Bearing, Ball-Screw Stage

Travels up to 600 mm

Speeds up to 300 mm/s

Side seal design with hard-cover

Low-cost; high performance

Long-life linear motion guide bearing system



The ATS115 is Aerotech's smallest hard cover, side-sealed stage design. Competitive pricing coupled with Aerotech's reputation for producing high-quality linear motion devices make the ATS115 an attractive stage for medium-performance applications.

Rugged Construction

The hard-cover design provides protection from debris. The robust aluminum cover is hard-coated to provide a scratch resistant surface.

The side seals keep dirt and particulates out of the stage and protect the bearing surfaces from contamination. The vertical orientation of the seals easily deflects debris away from the stage. Competitive top seal designs can collect debris, resulting in the eventual failure and replacement of the sealing mechanism.

NEMA 23 Flange-Mount

The ATS115 has a NEMA 23 flange-mounting interface for attachment of a wide variety of Aerotech and third-party motors. Aerotech can provide brush, brushless, and stepper motors preconfigured and mounted directly to the stage for integration with Aerotech controls. Or the stage can be purchased without the motor for the attachment of third-party motors.

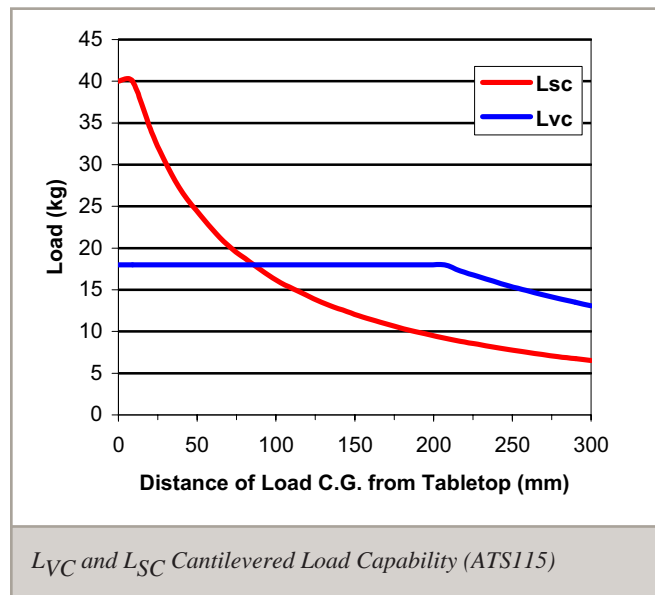
Easily Accessible Mounting

The mounting holes in the ATS115 base are accessible from the outside of the stage for ease of integration. The cover does not have to be removed when mounting the stage to a bread-board or when attaching multiple stages together in an X/Y/Z system. The tabletop is available with

both metric and English hole patterns and can be ordered with brush attachments to clear debris that may collect on the hard cover. Tabletops with hole patterns that allow the direct attachment of Aerotech's ADRS and ACS-LP series low profile direct-drive rotary stages are available.

Configuration Options

Aerotech's BMS series brushless, slotless servomotor with square-wave encoder output provides a net resolution of 0.5 micron. An optional analog output encoder can be coupled with external interpolation electronics to provide higher resolution. A holding brake can be added to the motor for vertical applications. A motor fold-back kit is available for space-constrained applications to reduce the overall stage length.



ATS115 Series SPECIFICATIONS

Basic Model		ATS115-50	ATS115-100	ATS115-150	ATS115-200	ATS115-250
Total Travel		50 mm	100 mm	150 mm	200 mm	250 mm
Drive System		Ball Screw/Brushless Servomotor (BMS60-A-D25-E2500H)				
Bus Voltage		Up to 160 VDC				
Continuous Current	A _{pk}	Up to 2.3 A				
	A _{rms}	Up to 1.6 A				
Feedback		Noncontact Rotary Encoder (2500 line)				
Resolution	5 mm/rev lead	0.5 µm with 2500 line Quadrature Encoder				
Maximum Travel Speed ⁽¹⁾		300 mm/s (12 in/s)				
Maximum Load ⁽²⁾	Horizontal	40.0 kg (88 lb)				
	Vertical	18.2 kg (40 lb)				
	Side	40 kg (88 lb)				
Accuracy		±6 µm	±6 µm	±8 µm	±8 µm	±10 µm
Bidirectional Repeatability		±1 µm				
Nominal Stage Weight	Less Motor	3.7 kg (8.1 lb)	4.1 kg (9.0 lb)	4.6 kg (10.1 lb)	5.0 kg (11.0 lb)	5.5 kg (12.1 lb)
	With Motor	4.8 kg (10.6 lb)	5.2 kg (11.4 lb)	5.7 kg (12.5 lb)	6.1 kg (13.4 lb)	6.6 kg (14.5 lb)
Construction		Black Anodized Aluminum Body with Hardcoated Tabletop				

Notes:

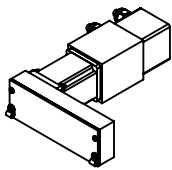
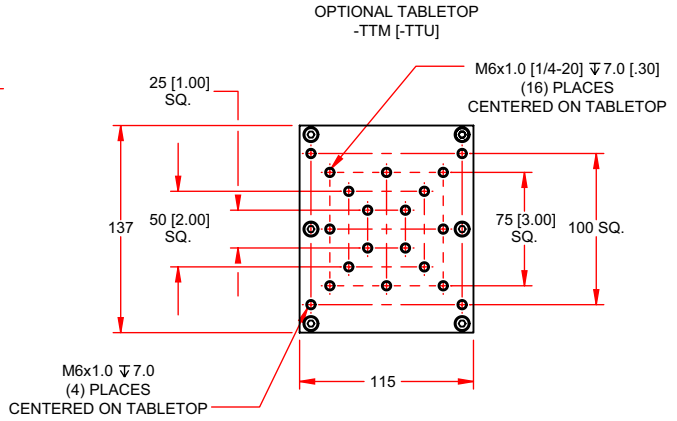
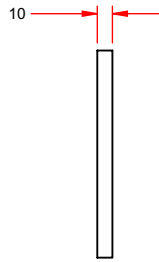
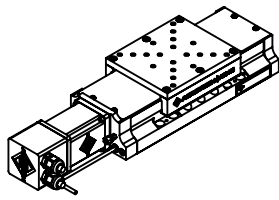
- Excessive duty cycle may impact stage accuracy.
- Payload specifications are for single-axis system and based on ball screw and bearing life of 2500 km (100 million inches) of travel.
- Specifications are for single-axis systems, measured 50 mm above the tabletop. Performance of multi-axis systems is payload and workpoint dependent. Consult factory for multi-axis or non-standard applications.

Basic Model		ATS115-300	ATS115-400	ATS115-500	ATS115-600
Total Travel		300 mm	400 mm	500 mm	600 mm
Drive System		Ball Screw/Brushless Servomotor (BMS60-A-D25-E2500H)			
Bus Voltage		Up to 160 VDC			
Continuous Current	A _{pk}	Up to 2.3 A			
	A _{rms}	Up to 1.6 A			
Feedback		Noncontact Rotary Encoder (2500 line)			
Resolution	5 mm/rev lead	0.5 µm with 2500 line Quadrature Encoder			
Maximum Travel Speed ⁽¹⁾		300 mm/s (12 in/s)		250 mm/s (10 in/s)	
Maximum Load ⁽²⁾	Horizontal	40.0 kg (88 lb)			
	Vertical	18.2 kg (40 lb)			
	Side	40 kg (88 lb)			
Accuracy		±10 µm	±12 µm	±14 µm	±16 µm
Bidirectional Repeatability		±1 µm			
Nominal Stage Weight	Less Motor	5.9 kg (13.0 lb)	6.8 kg (15.0 lb)	7.6 kg (16.7 lb)	8.5 kg (18.7 lb)
	With Motor	7.0 kg (15.4 lb)	7.9 kg (17.4 lb)	8.7 kg (19.1 lb)	9.6 kg (21.1 lb)
Construction		Black Anodized Aluminum Body with Hardcoated Tabletop			

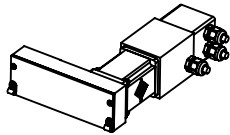
Notes:

- Excessive duty cycle may impact stage accuracy.
- Payload specifications are for single-axis system and based on ball screw and bearing life of 2500 km (100 million inches) of travel.
- Specifications are for single-axis systems, measured 50 mm above the tabletop. Performance of multi-axis systems is payload and workpoint dependent. Consult factory for multi-axis or non-standard applications.

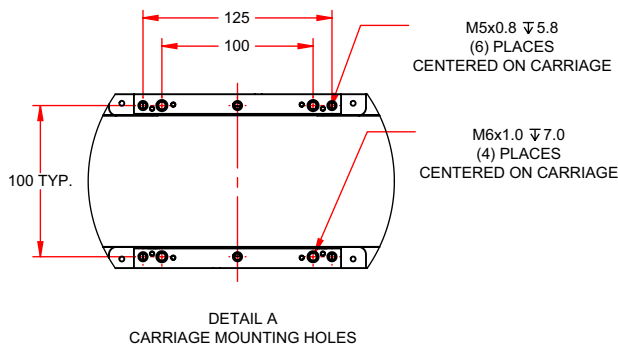
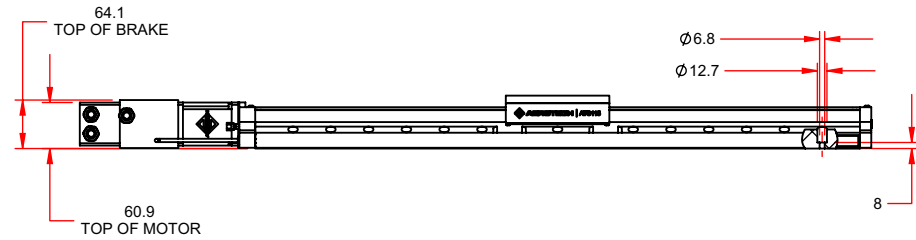
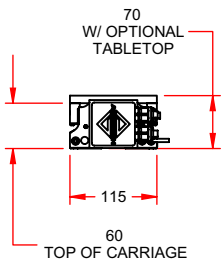
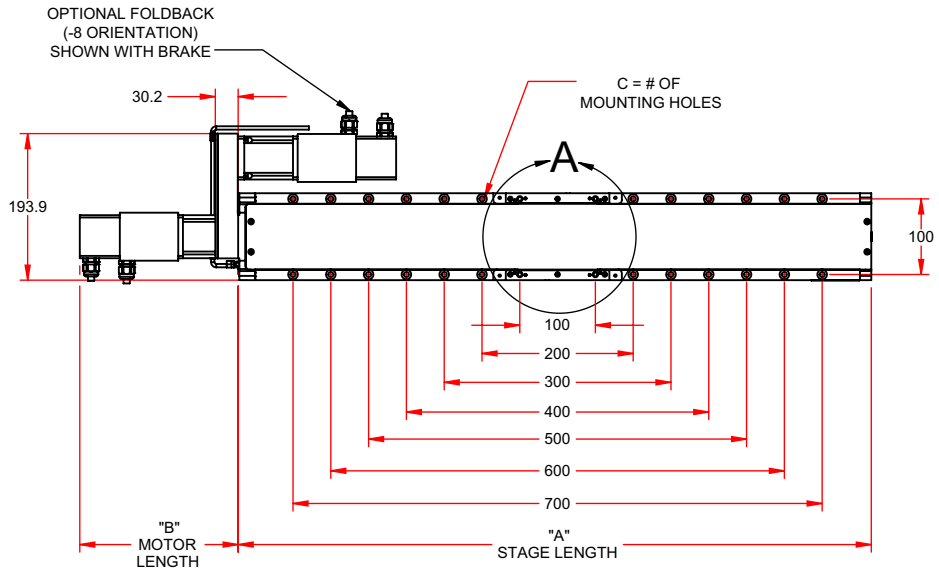
ATS115 Series DIMENSIONS



OPTIONAL FOLDBACK
-8 ORIENTATION

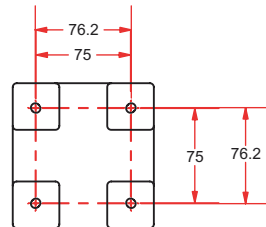
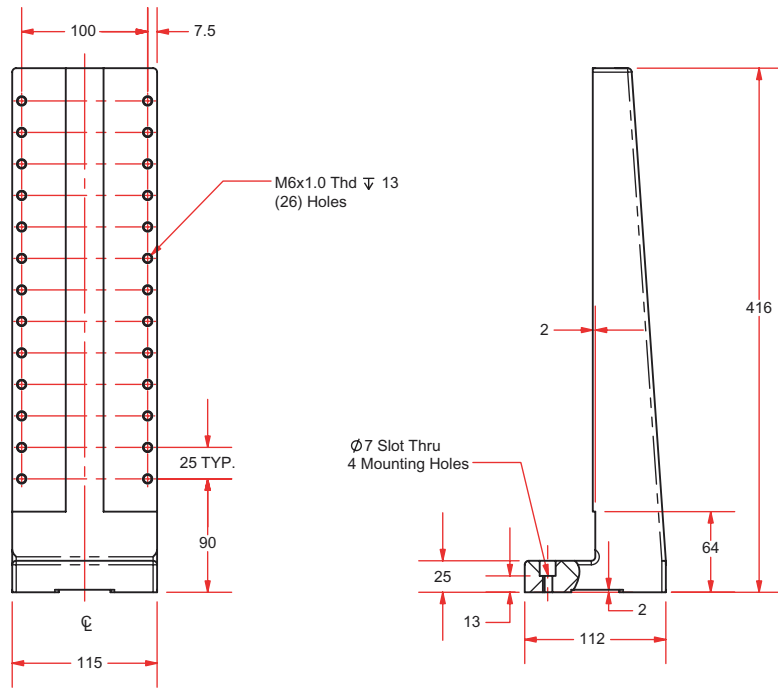
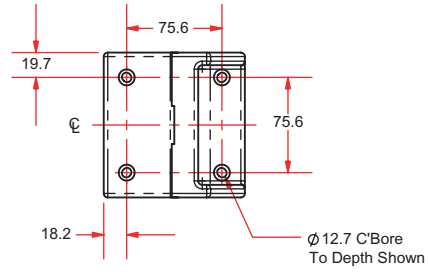


OPTIONAL FOLDBACK
-12 ORIENTATION



BASIC MODEL	DIMENSIONS - MM			
	A	B	B (BRAKE)	C
ATS115-050	287.6	132.3	209.5	4
ATS115-100	337.6	132.3	209.5	8
ATS115-150	387.6	132.3	209.5	8
ATS115-200	437.6	132.3	209.5	12
ATS115-250	487.6	132.3	209.5	12
ATS115-300	537.6	132.3	209.5	16
ATS115-400	637.6	132.3	209.5	20
ATS115-500	737.6	132.3	209.5	24
ATS115-600	837.6	132.3	209.5	28

HDZ115 Bracket



NOTES:

1. DIMENSIONS: MILLIMETERS
2. RECOMMENDED FOR ATS115-050 THRU ATS115-150

ATS115 Series ORDERING INFORMATION

Ordering Information

ATS115	-050	-TTM	-5MM	-NC	-BMS	-0	-FB	-NONE	-PLOTS
Series	Travel (mm)	Tabletop	Ball Screw	Limits	Motor	Cable Exit	Options	Coupling	Testing
ATS115	-050	-TTM	-5MM	-NC	-BMS	-0	-FB025	-NONE	-PLOTS
	-100	-TTU		-NO	-BMS-BRK	-2	-BASE WIPER	-C025	-NO PLOTS
	-150	-NO TT			-NM	-3			
	-200	-TT100				-4			
	-250	-TT150				-5			
	-300	/WIPER				-8			
	-400					-12			
	-500								
	-600								

ATS115 Series Linear Ball-Screw Stage

ATS115-050	50 mm (2 in) travel stage with ball screw and limits
ATS115-100	100 mm (4 in) travel stage with ball screw and limits
ATS115-150	150 mm (6 in) travel stage with ball screw and limits
ATS115-200	200 mm (8 in) travel stage with ball screw and limits
ATS115-250	250 mm (10 in) travel stage with ball screw and limits
ATS115-300	300 mm (12 in) travel stage with ball screw and limits
ATS115-400	400 mm (16 in) travel stage with ball screw and limits
ATS115-500	500 mm (20 in) travel stage with ball screw and limits
ATS115-600	600 mm (24 in) travel stage with ball screw and limits

Tabletop

-TTM	Metric pattern tabletop
-TTU	English pattern tabletop
-NO TT	No tabletop
-TT100	Bolt-hole pattern to attach ADRS100 or ACS-100LP rotary stage with vertical or horizontal axis of rotation
-TT150	Bolt-hole pattern to attach ADRS150 or ACS-150LP rotary stage with vertical or horizontal axis of rotation
/WIPER	Wiper option for English and metric tabletops

Ball Screw

-5MM	5 mm per revolution ball screw
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Limits

-NC	Normally-closed limits
-NO	Normally-open limits

Motor

-BMS	Brushless servomotor with 2500 line feedback encoder (BMS60-A-D25-E2500H)
-BMS-BRK	Brushless servomotor with 2500 line feedback encoder and motor-mounted brake (BMS60-A-D25-E2500H-BK1)
-NM	No motor

Motor Orientation

-0	No motor
-2	Bottom cable exit
-3	Left side cable exit
-4	Top cable exit
-5	Right side cable exit
-8	Right side fold-back
-12	Left side fold-back

ATS115 Series ORDERING INFORMATION

Options

-FB025	Motor fold back kit for 0.25" diameter motor shaft
-BASE WIPER	Wiper on base of top axis of X/Y pair to clear hardcover of the bottom axis

Coupling Option

-NONE	No motor coupling supplied
-C025	0.25" diameter motor shaft coupling

Testing

-PLOTS	Accuracy and repeatability plots
-NO PLOTS	No performance plots

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
ALIGNMENT-PA5	XY assembly; 5 arc sec orthogonal
ALIGNMENT-PA5Z	XZ or YZ assembly with L-bracket; 5 arc second orthogonal
HDZ115	Right angle L-bracket for ATS115-050, ATS115-100, and ATS115-150 only