



Screw-Driven Linear Stages

ATS100



Robust Performance in a Compact Design

ATS100 stages provide excellent stiffness and long-term stability, thanks to a box-style design that features a precision-ground ballscrew and linear motion guide bearings. The compact design makes it easy to integrate ATS100 stages in confined spaces such as gantry bridges, machine enclosures and vacuum chambers. Driven by a selection of brushless rotary motors with integral feedback encoders, ATS100 stages will equip your process with smooth, ultra-precise motion performance. Plus, ATS100 stages contain features to protect against the effects of contamination, ensuring a long lifetime of highly reliable operation.

Key Applications

ATS100 stages are ideal for a variety of precision industrial and laboratory applications, including:

- ◆ Measurement, inspection & microscopy
- ◆ Semiconductor wafer testing & fabrication
- ◆ Laser microprocessing
- ◆ Precision dispensing
- ◆ Optics manipulation & processing
- ◆ Advanced manufacturing & precision micromachining
- ◆ Gantry Z-axis applications

KEY FEATURES:

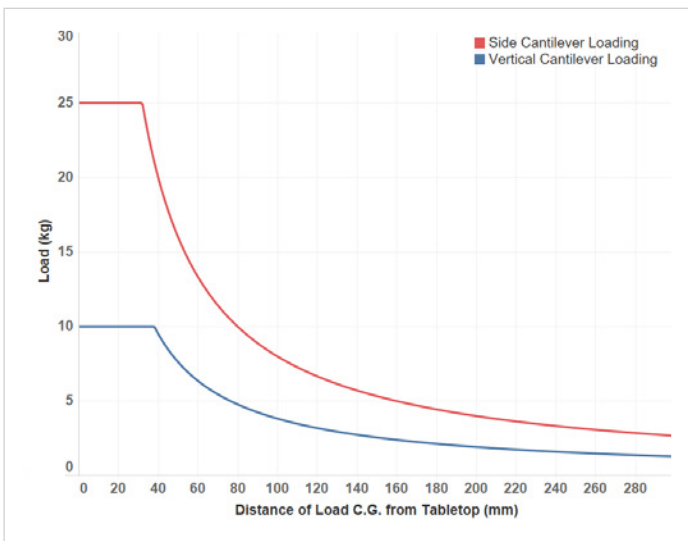
- ◆ Delivers submicron positioning accuracy & **BIDIRECTIONAL REPEATABILITY TO 0.3 μ m**
- ◆ Integrates easily thanks to **LOW-PROFILE, COMPACT FORM FACTOR**
- ◆ Provides **EXCEPTIONAL STIFFNESS & STABILITY**
- ◆ **PROTECTS AGAINST CONTAMINATION** with integral bellows waycover
- ◆ Supports **TRAVEL LENGTHS UP TO 200 mm**
- ◆ Available in **VACUUM-COMPATIBLE** configurations

ATS100 SPECIFICATIONS

Base Model		ATS100-050	ATS100-100	ATS100-150	ATS100-200
Total Travel		50 mm	100 mm	150 mm	200 mm
Maximum Travel Speed ⁽¹⁾		100 mm/s			
Maximum Load ⁽²⁾	Horizontal	25.0 kg			
	Vertical	10.0 kg			
	Side	10.0 kg			
Accuracy	Calibrated ⁽³⁾	±0.5 μm	±0.5 μm	±0.75 μm	±1.0 μm
	Standard	±8 μm	±9 μm	±9 μm	±10 μm
Repeatability (Bidirectional)	Calibrated ⁽³⁾	±0.3 μm			
	Standard	±0.7 μm			
Straightness and Flatness		±1.0 μm	±2.0 μm	±2.0 μm	±3.0 μm
Pitch and Yaw		5 arc sec	8 arc sec	10 arc sec	12 arc sec
Nominal Stage Weight	Less Motor	1.6 kg	1.8 kg	1.9 kg	2.1 kg
	With Motor	2.7 kg	2.9 kg	3.0 kg	3.2 kg
Construction		Aluminum Body/Stage and Table; Clear Anodize Finish			

Notes:

1. Excessive duty cycle may impact stage accuracy.
2. Payload specifications are for single axis systems and based on ball screw and bearing life of 2500 km of travel.
3. Available with Aerotech controllers.
4. Specifications are for single-axis systems, measured 25 mm above the tabletop. Performance of multi-axis systems is payload and workpoint dependent. Consult factory for multi-axis or non-standard applications.



ATS100 Cantilevered Load Capability



ATS100s shown in XY configuration. Precision alignment options are available.

ATS100 ORDERING OPTIONS

Travel (Required)

-050	50 mm
-100	100 mm
-150	150 mm
-200	200 mm

Vacuum Preparation (Optional)

-HV	High vacuum preparation to 10 ⁻⁶ Torr
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Tabletop (Required)

-TT1	Tabletop with metric dimension mounting pattern and holes
-TT2	Tabletop with English dimension mounting pattern and holes

Motor (Optional)

-M1	BMS60 servomotor w/2500-line TTL encoder
-M2	BMS60 servomotor w/2500-line TTL encoder and holding brake
-M3	BMS60 servomotor w/1000-line 1 Vpp encoder
-M4	BMS60 servomotor w/1000-line 1 Vpp encoder and holding brake
-M5	BM75 servomotor w/2500-line TTL encoder
-M6	BM75 servomotor w/2500-line TTL encoder and holding brake
-M7	BM75 servomotor w/1000-line 1 Vpp encoder
-M8	BM75 servomotor w/1000-line 1 Vpp encoder and holding brake
-M9	SM60 stepper motor, SM60-CN1-VT2
-M10	SM60 stepper motor w/holding brake, SM60-CN1-VT2-BK

Foldback (Optional)

-FB1	Foldback kit for .250 inch diameter shaft NEMA 23 motor
-FB2	Foldback kit w/brake for .250 inch diameter shaft NEMA 23 motor

Motor Orientation (Optional)

-2	Bottom cable exit, optional orientation
-3	Left-side cable exit, standard orientation
-4	Top cable exit, optional orientation
-5	Right-side cable exit, optional orientation
-8	Right-side foldback, standard orientation
-12	Left-side foldback, optional orientation

Limits (Required)

-LI1	Normally-closed limit switches, 9-pin D connector
-LI2	Normally-closed limit switches, flying leads
-LI3	Normally-open limit switches, 9-pin D connector
-LI4	Normally-open limit switches, flying leads

ATS100 ORDERING OPTIONS

Coupling (Optional)

- CP1 Coupling for 0.250 inch diameter shaft
- CP2 Coupling for 0.375 inch diameter shaft

Mounting Plate (Optional)

- MP1 Mounting plate, metric
- MP2 Mounting plate, English

Metrology (Optional)

- PL1 Metrology, uncalibrated with performance plots
- PL2 Metrology, calibrated (HALAR) with performance plots

Integration (Required)

Aerotech offers both standard and custom integration services to help you get your system fully operational as quickly as possible. The following standard integration options are available for this system. Please consult Aerotech if you are unsure what level of integration is required, or if you desire custom integration support with your system.

-TAS Integration - Test as system

Testing, integration, and documentation of a group of components as a complete system that will be used together (ex: drive, controller, and stage). This includes parameter file generation, system tuning, and documentation of the system configuration.

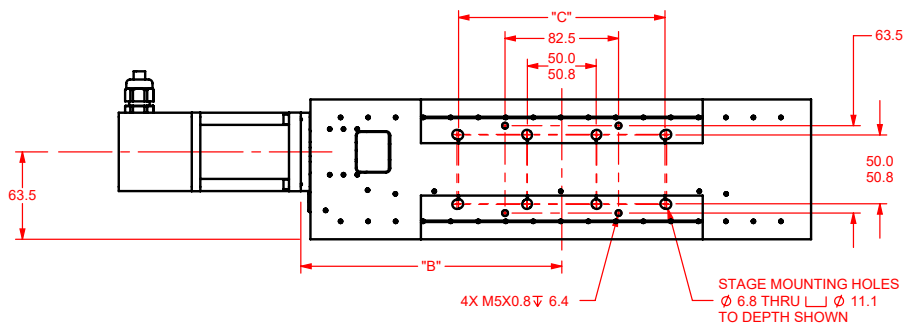
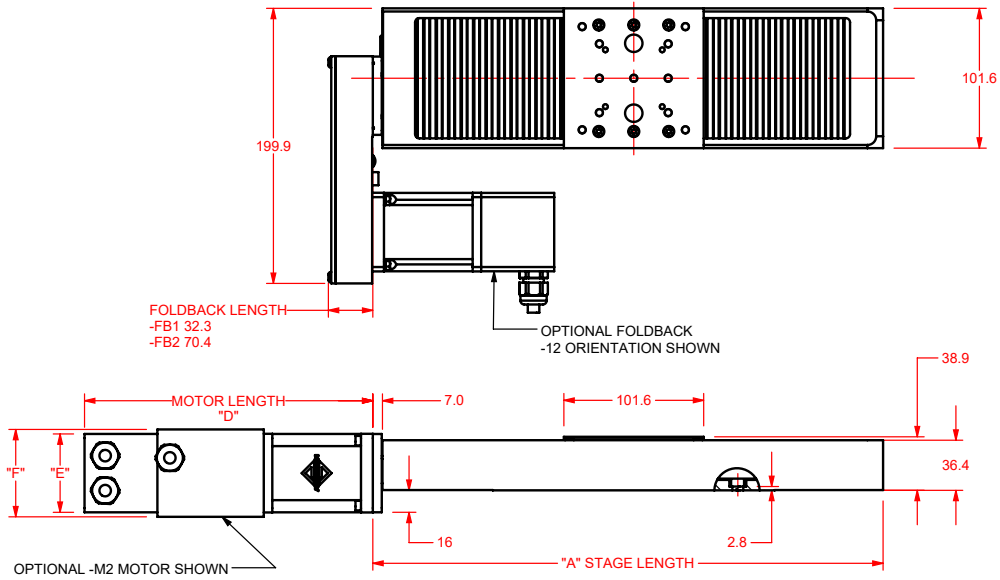
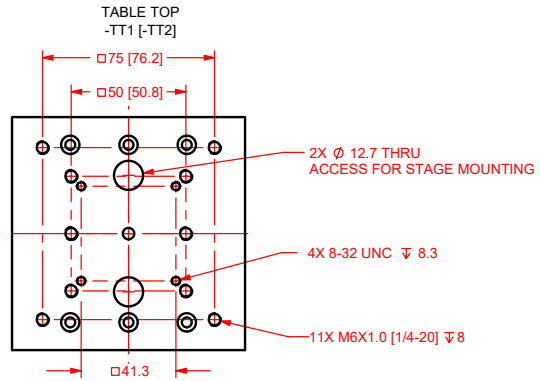
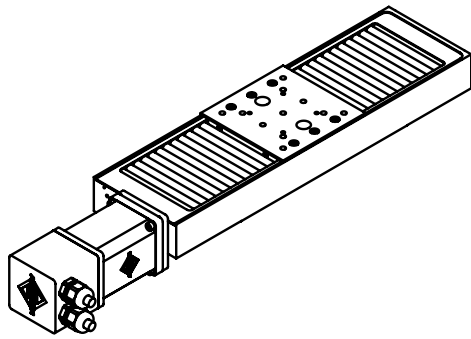
-TAC Integration - Test as components

Testing and integration of individual items as discrete components that ship together. This is typically used for spare parts, replacement parts, or items that will not be used together. These components may or may not be part of a larger system.

Accessories (to be ordered as a separate line item)

- ALIGN-NPA** Non-precision XY assembly
- ALIGN-NPAZ** Non-precision XZ or YZ assembly
- ALIGN-PA10** XY assembly; 10 arc sec orthogonality. Alignment to within 7 microns orthogonality for short travel stages.
- ALIGN-PA10Z** XZ or YZ assembly with L-bracket; 10 arc second orthogonality. Alignment to within 10 microns orthogonality for short travel stages.
- ALIGN-PA5** XY assembly; 5 arc sec orthogonality. Alignment to within 3 microns orthogonality for short travel stages.
- ALIGN-PA5Z** XZ or YZ assembly with L-bracket; 5 arc second orthogonality. Alignment to within 5 microns orthogonality for short travel stages.
- HDZ1** English right angle L-bracket; for ATS100-050 and ATS100-100 only
- HDZ1L** English right angle L-bracket; for ATS100-150 and ATS100-200 only
- HDZ1M** Metric right angle L-bracket; for ATS100-050 and ATS100-100 only
- HDZ1LM** Metric right angle L-bracket; for ATS100-150 and ATS100-200 only

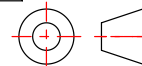
ATS100 SERIES DIMENSIONS



BASIC MODEL	NOMINAL TRAVEL	ELEC LIMIT TRAVEL	MECH LIMIT TRAVEL	A	B	C
ATS100-050	50	52.8	56.8	218.4	113.4	-
ATS100-100	100	103.6	107.6	269.2	138.8	-
ATS100-150	150	154.4	158.4	320.0	164.2	150, 152.4
ATS100-200	200	205.2	209.2	370.8	189.6	150, 152.4

MOTOR OPTION	D	E	F
-M1,-M3,-M5,-M7	132.1	57	-
-M2,-M4,-M6,-M8	209.4	57	63.5
-M9	110.9	64.1	-
-M10	111.9	67.8	-

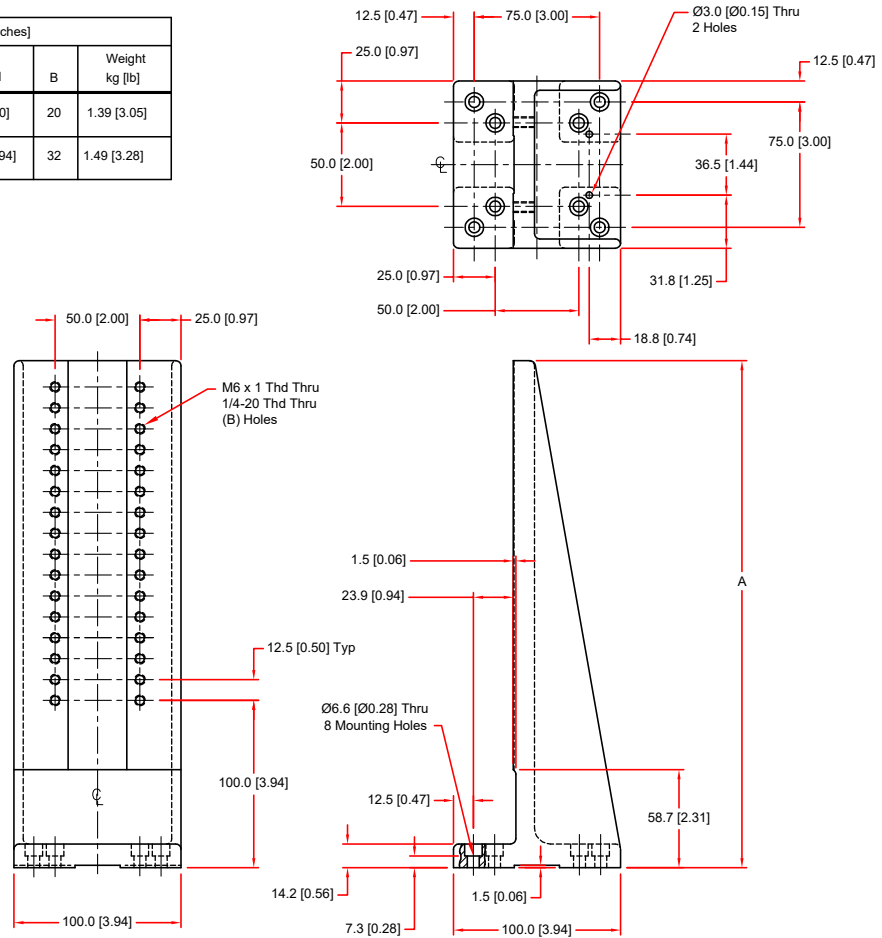
DIMENSIONS: MILLIMETERS.



ATS100 SERIES — HDZ1 BRACKET AND MP100 DIMENSIONS

HDZ1 BRACKET

Dimensions - Millimeters [Inches]				
Basic Model	Recommended For	A1	B	Weight kg [lb]
HDZ1	ATS100-50 thru ATS100-100	241.3 [9.50]	20	1.39 [3.05]
HDZ1L	ATS100-150 thru ATS100-200	303.3 [11.94]	32	1.49 [3.28]



ATS100 SERIES — HDZ1 BRACKET AND MP100 DIMENSIONS

MP100

