

ATS1500 Series

Mechanical Bearing, Screw-Driven Linear Stage

Low cost, high performance

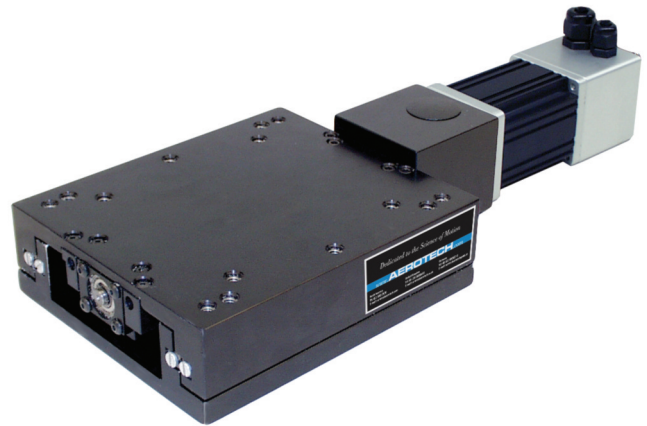
Travel to 300 mm (12 in)

Crossed-roller bearings

Two drive-screw choices and accuracy levels

Low height profile

Large tabletop mounting area with both metric and English mounting hole spacing and threads



The ATS1500 series provides a flexible platform that makes it an outstanding selection for use as a general purpose positioner.

Flexible Options

With a range of drive-screw options, the ATS1500 can be configured to meet the needs of any application. Two levels of drive-screw accuracy grades are available with screw pitches of 4 mm/rev or 0.2 in/rev.

Standard brackets simplify configuring the ATS1500 for use in multi-axis configurations.

Construction Features

The ATS1500 features a large moving carriage that provides the user with a large area to mount fixturing. All table mounting holes are fitted with Helicoil™ stainless steel inserts to permit multiple screw insertions without thread wear. Both metric and English bolt-hole and mounting patterns are available.

Accurate optical limit switches and cushioned end stops protect the stage and motor from overrun.

Motors and Drives

Aerotech's BMS series brushless rotary motors are included with all ATS1500 series stages. This motor has all of the advantages of a brushless motor – high acceleration and no wear – at the price of a stepper motor. Stepping motors are available.

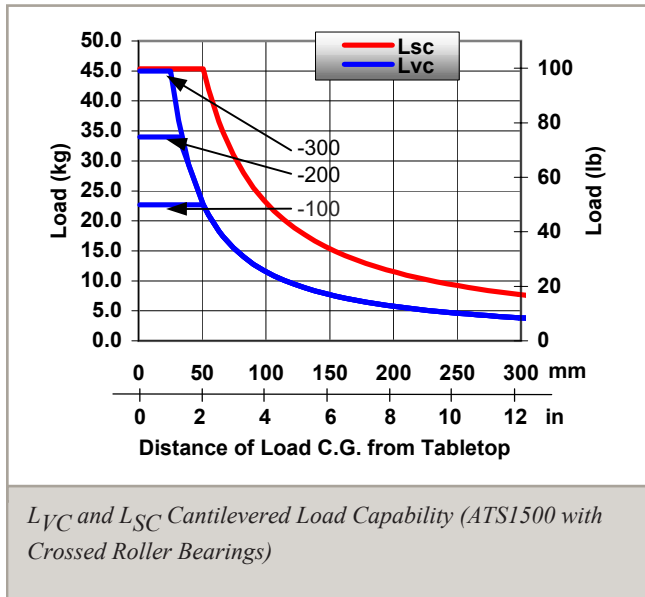
Aerotech manufactures a wide range of amplifiers and controllers to provide a fully integrated and optimized motion solution.

ATS1500 Series SPECIFICATIONS

Basic Model		ATS1500-100	ATS1500-200	ATS1500-300
Total Travel		100 mm (4 in)	200 mm (8 in)	300 mm (12 in)
Bus Voltage		Up to 160 VDC		
Maximum Travel Speed ⁽¹⁾	4 mm/rev Lead	140 mm/s (5.5 in/s)		
	0.2 in/rev Lead	180 mm/s (7 in/s)		
Maximum Load ⁽²⁾	Horizontal	70.0 kg (154.3 lb)	115.0 kg (253.5 lb)	135.0 kg (297.6 lb)
	Vertical	25.0 kg (55.1 lb)	35.0 kg (77.2 lb)	45.0 kg (99.2 lb)
	Side	45.0 kg (99.2 lb)		
Accuracy	Super Precision Ball Screw	±4 μm	±8 μm	±12 μm
	Precision Ball Screw	±8 μm	±16 μm	±24 μm
Repeatability (Bidirectional)	Super Precision Ball Screw	±1.0 μm (40 μin/in)		
	Precision Ball Screw	±2.0 μm (80 μin/in)		
Straightness and Flatness		±4 μm	±8 μm	±12 μm
Nominal Stage Weight	Less Motor	3.1 kg (6.8 lb)	5.0 kg (11.0 lb)	7.0 kg (15.4 lb)
	With Motor	4.2 kg (9.3 lb)	6.1 kg (13.4 lb)	8.1 kg (17.9 lb)
Construction		Aluminum Body; Black Anodize Finish		

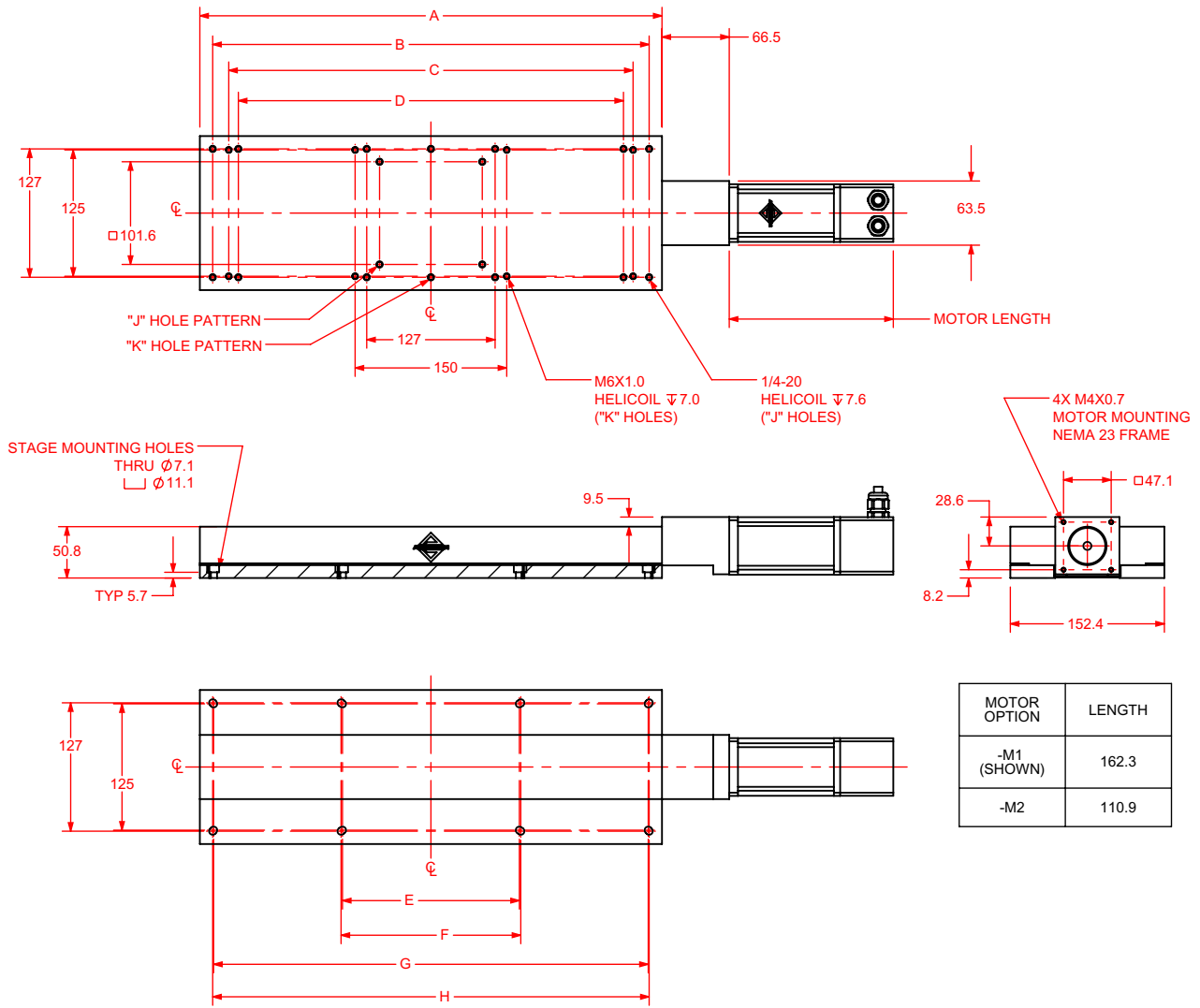
Notes:

1. Payload specifications are for single-axis system and based on ball screw and bearing life of 250 km (10 million inches) of travel.
2. 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.



L_{VC} and L_{SC} Cantilevered Load Capability (ATS1500 with Crossed Roller Bearings)

ATS1500 Series DIMENSIONS



MOTOR OPTION	LENGTH
-M1 (SHOWN)	162.3
-M2	110.9

BASIC MODEL	NOMINAL TRAVEL	ELECTRICAL LIMIT TRAVEL	MECHANICAL LIMIT TRAVEL	A	B	C	D	E	F	G	H	J (HOLE QTY)	K (HOLE QTY)	STAGE MOUNTING HOLES (QTY)
ATS1500-100	100	102.4	107	177.8	-	-	-	125	127	-	-	10	4	4
ATS1500-200	200	206	220	304.8	-	275	254	125	127	279.4	280	14	8	8
ATS1500-300	300	308	330	457.2	431.7	400	381	175	177.8	430	431.8	18	8	8

NOTES:

1. CUSTOMER MOUNTING HOLES EQUAL DISTANCED FROM CENTER LINES

ATS1500 Series ORDERING INFORMATION

Travel (Required)

-100	100 mm
-200	200 mm
-300	300 mm

Drive Screw (Required)

-BS1	0.2 inch/rev precision ball screw
-BS2	4 mm/rev super-precision ball screw

Motor (Optional)

-M1	BMS60 brushless servomotor with 1000-line TTL encoder
-M2	SM60 high voltage stepper motor

Motor Orientation (Optional)

-3	Left-side cable exit, standard orientation
-4	Top cable exit, optional orientation
-5	Right-side cable exit, optional orientation

Limits (Required)

-LI1	Normally-closed limit switches, 5 VDC with 9-pin D connector
-LI2	Normally-open limit switches, 5 VDC with 9-pin D connector
-LI3	Normally-open limit switches, 9-pin D connector
-LI4	Normally-open limit switches, flying leads

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	<p>Integration - Test as system</p> <p>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.</p>
-TAC	<p>Integration - Test as components</p> <p>Testing and integration of individual items as discrete components. This is typically used for spare parts, replacement parts, or items that will not be used or shipped together (ex: stage only). These components may or may not be part of a larger system.</p>

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.
HDZ2-AP1500	English right angle L-bracket - for ATS1500-100 and ATS1500-200 only
HDZ2M-AP1500	Metric right angle L-bracket - for ATS1500-100 and ATS1500-200 only