

PRO115-HS (High Speed) Series

Mechanical Bearing, Ball-Screw Stage

Seven models with travels from 100 mm to 500 mm

4X speed capability of the regular PRO series – up to 1200 mm/s

Side-seal design with hard cover

Low-cost; high performance

Long-life linear motion guide bearing system



The PRO115-HS-200 is one of seven models in the PRO115-HS series.

The PRO115-HS is Aerotech's smallest hard cover, side-sealed stage design and comes with a 20 mm/rev ball screw for high-speed applications requiring up to 1200 mm/s. Competitive pricing coupled with Aerotech's reputation for producing high-quality linear motion devices make the PRO115-HS an attractive stage for medium-performance, high-speed 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 PRO115-HS 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.

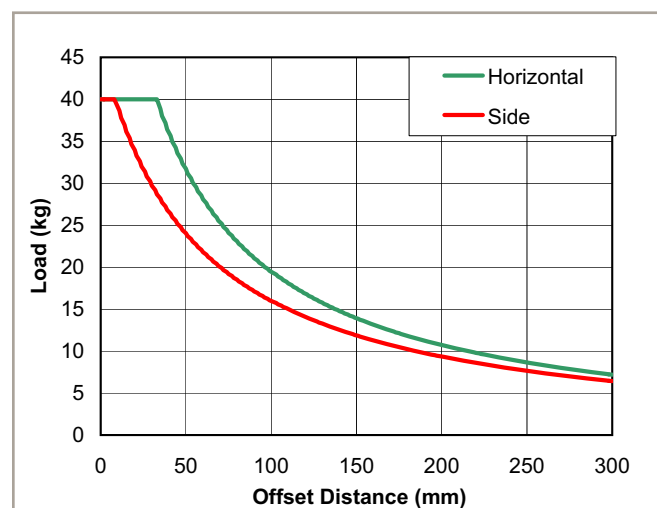
Easily Accessible Mounting

The mounting holes in the PRO115-HS 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, ACS-LP, and AGR series rotary stages are available.

Configuration Options

Aerotech's BM series brushless servomotor with square-wave encoder output provides a net resolution of 2 microns. A holding brake can be added to the motor to prevent back-driving, and a motor fold-back kit is available for space-constrained applications to reduce the overall stage length.



Cantilevered load capability of the PRO115-HS.

PRO115-HS Series SPECIFICATIONS

Basic Model		PRO115-HS-100	PRO115-HS-150	PRO115-HS-200	PRO115-HS-250
Total Travel		100 mm	150 mm	200 mm	250 mm
Drive System		Ball Screw/Brushless Servomotor (BM75-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	20 mm/rev lead	2 μm with 2500 line Quadrature Encoder			
Maximum Travel Speed ⁽¹⁾	20 mm/rev lead	1200 mm/s (47 in/s)			
Maximum Load ⁽²⁾	Horizontal	40.0 kg (88 lb)			
	Vertical	N/A			
	Side	40 kg (88 lb)			
Accuracy	20 mm/rev lead	±8 μm	±10 μm	±10 μm	±12 μm
Bidirectional Repeatability	20 mm/rev lead	±2 μm			
Straightness and Flatness		5 μm	6 μm	10 μm	10 μm
Nominal Stage Weight	Less Motor	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	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:

1. Excessive duty cycle may impact stage accuracy.

2. Payload specifications are for single-axis system and based on ball screw and bearing life of 2500 km (100 million inches) of travel.

3. 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		PRO115-HS-300	PRO115-HS-400	PRO115-HS-500
Total Travel		300 mm	400 mm	500 mm
Drive System		Ball Screw/Brushless Servomotor (BM75-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	20 mm/rev lead	2 μm with 2500 line Quadrature Encoder		
Maximum Travel Speed ⁽¹⁾	20 mm/rev lead	1200 mm/s (47 in/s)	1000 mm/s (39 in/s)	
Maximum Load ⁽²⁾	Horizontal	40.0 kg (88 lb)		
	Vertical	N/A		
	Side	40 kg (88 lb)		
Accuracy	20 mm/rev lead	±12 μm	±28 μm	±32 μm
Bidirectional Repeatability	20 mm/rev lead	±2 μm		
Straightness and Flatness		12 μm	16 μm	18 μm
Nominal Stage Weight	Less Motor	5.9 kg (13.0 lb)	6.8 kg (15.0 lb)	7.6 kg (16.7 lb)
	With Motor	7.0 kg (15.4 lb)	7.9 kg (17.4 lb)	8.7 kg (19.1 lb)
Construction		Black Anodized Aluminum Body with Hardcoated Tabletop		

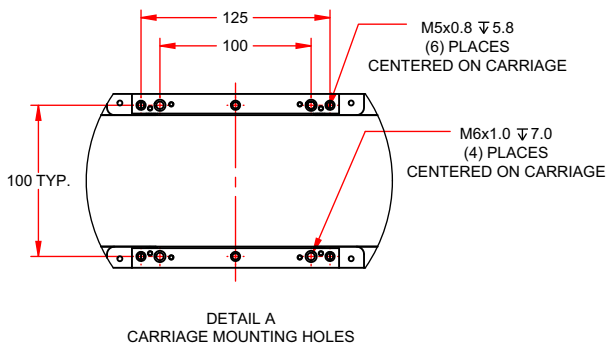
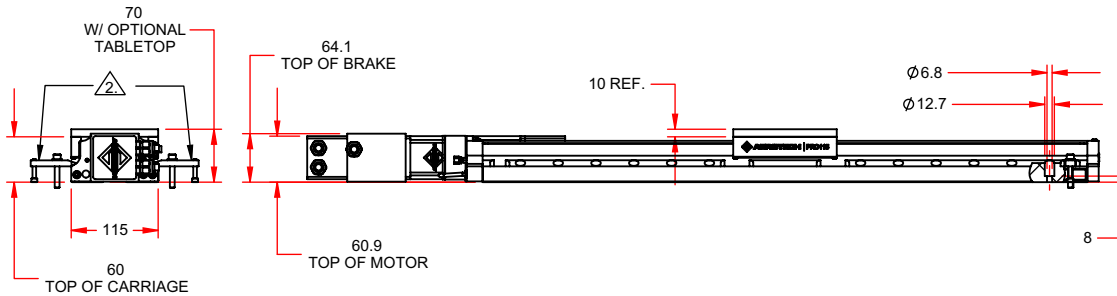
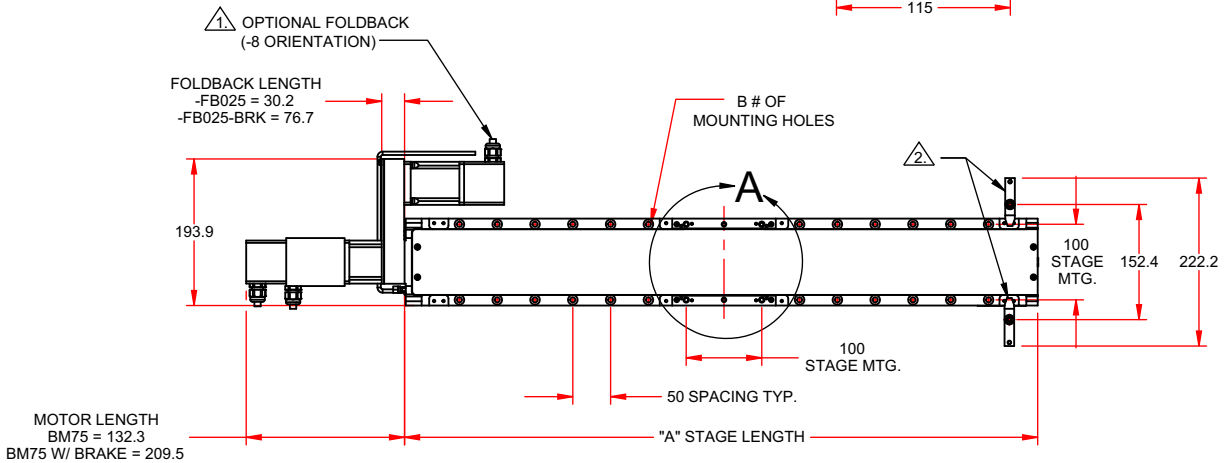
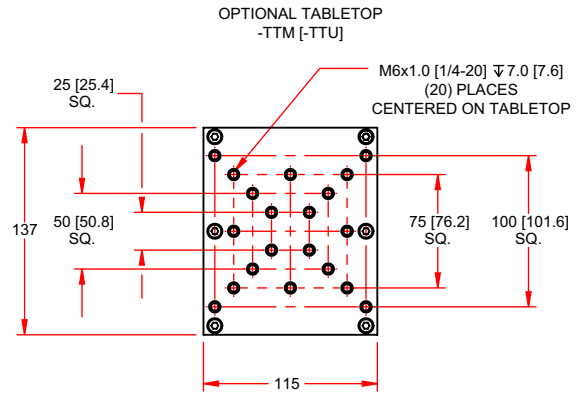
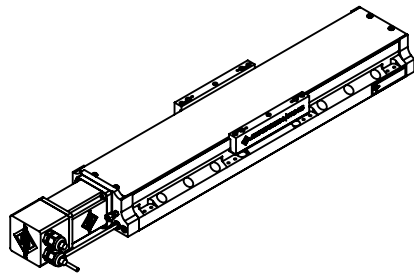
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PRO115-HS Series DIMENSIONS



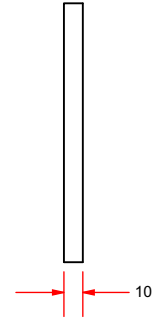
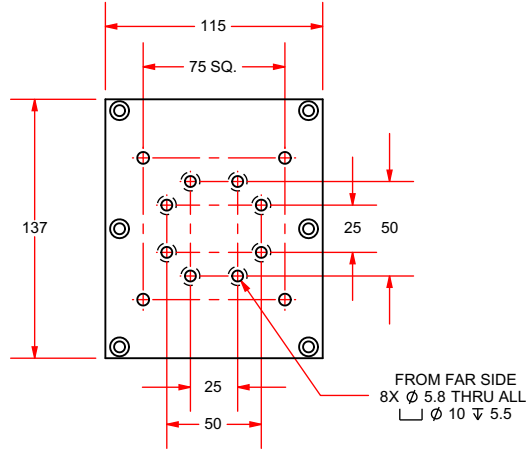
BASIC MODEL	A (MM)	B
PRO115-HS-20MM-100	437.6	12
PRO115-HS-20MM-150	487.6	12
PRO115-HS-20MM-200	537.6	16
PRO115-HS-20MM-250	587.6	20
PRO115-HS-20MM-300	637.6	20
PRO115-HS-20MM-400	737.6	24
PRO115-HS-20MM-500	837.6	28

NOTES:

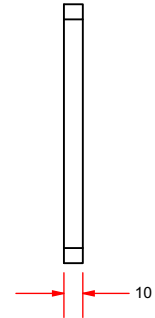
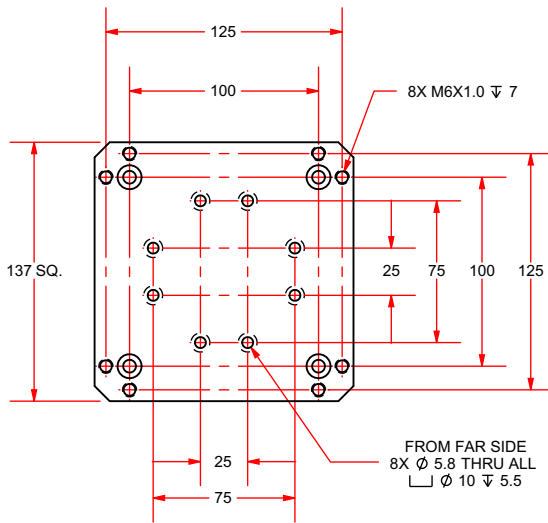
- 1. -TTM TABLETOP OPTION REQUIRED FOR LOWER AXIS OF XY ASSEMBLIES WHEN FOLDBACK OPTION IS CHOSEN.
- 2. TOE CLAMPS TO BE USED FOR ENGLISH STAGE MOUNTING ONLY.

PRO115-HS Series – Tabletop DIMENSIONS

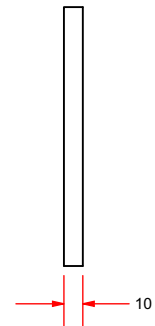
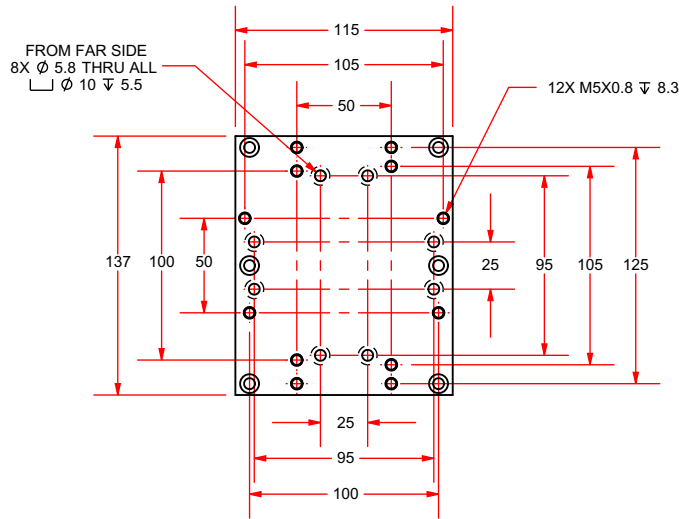
-TT100
MOUNTS ADRS-100



-TT150
MOUNTS ADRS-150



-TTAGR
MOUNTS AGR-50 & AGR-75



DIMENSIONS: MILLIMETERS

PRO115-HS Series ORDERING INFORMATION

Ordering Information

PRO115-HS	-20MM	-150	-TTM	-5V-NC	-BM	-0	-FB025	-NONE	-PLOTS
Series	Ball Screw	Travel (mm)	Tabletop	Limits	Motor	Cable Exit	Options	Coupling	Testing
PRO115-HS	-20MM	-100 -150 -200 -250 -300 -400 -500	-TTM -TTU -NO TT -TT100 -TT150 -TTAGR /WIPER	-5V-NC -5V-NO -24V-NC	-BM -BM-BRK -NM	-0 -2 -3 -4 -5 -8 -12	-FB025 -BASE WIPER	-NONE -C025	-PLOTS -NO PLOTS

Ball Screw

-20MM 20 mm per revolution ball screw

PRO115-HS Series Linear Ball-Screw Stage

-100 100 mm (4 in) travel stage with ball screw and limits
 -150 150 mm (6 in) travel stage with ball screw and limits
 -200 200 mm (8 in) travel stage with ball screw and limits
 -250 250 mm (10 in) travel stage with ball screw and limits
 -300 300 mm (12 in) travel stage with ball screw and limits
 -400 400 mm (16 in) travel stage with ball screw and limits
 -500 500 mm (20 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
 -TTAGR Bolt-hole pattern to attach AGR-50 or AGR-75 rotary stages
 /WIPER Wiper option for English and metric tabletops

Limits

-5V-NC 5 V normally-closed limits
 -5V-NO 5 V normally-open limits
 -24V-NC 24 V normally-closed limits

Motor

-BM Brushless servomotor with 2500 line feedback encoder (BM75-D25-E2500H)
 -BM-BRK Brushless servomotor with 2500 line feedback encoder and motor-mounted brake (BM75-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

PRO115-HS 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-PA10	XY assembly; 10 arc sec orthogonal
ALIGNMENT-PA5	XY assembly; 5 arc sec orthogonal
TC-PRO115	Toe clamps for mounting PRO stage to an English dimension breadboard or hole pattern; recommended number of toe clamps for each travel length: 100-150 mm travel = 4 clamps; 200-500 mm travel = 8 clamps