

PRO165-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

NEMA 23 motor flange mount

Long-life linear motion guide bearing system



The PRO165-HS-200 is one of seven models in the PRO165-HS series.

The PRO165-HS is a medium performance, entry-level linear stage and comes with a 20 mm/rev ball screw for high-speed applications requiring up to 1200 mm/s. It is similar in design to the PRO115-HS series, providing additional load carrying capability with larger bearings and a wider cross-section.

Rugged Construction

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

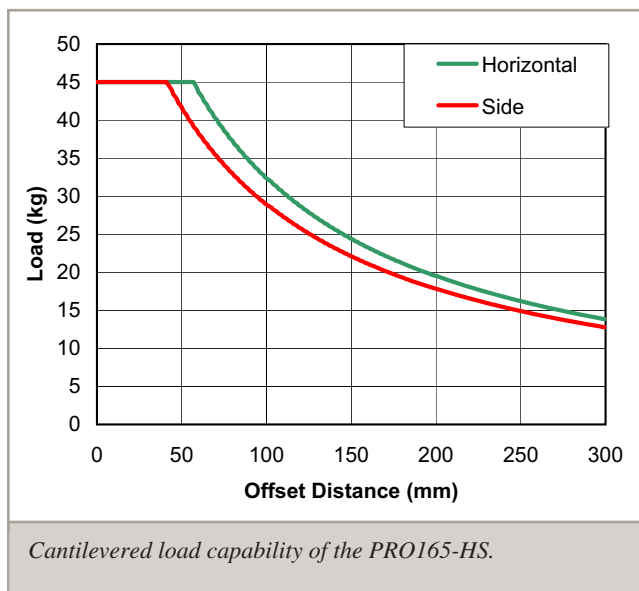
The side seals keep dirt and particulates out of the stage and protect the bearing surfaces from contamination. The vertical orientation of the seals easily deflects debris away from the stage. The tabletop can be outfitted with an optional brush assembly to remove any particles that collect on the hard cover. Competitive top-seal designs can ingest debris in the seal, resulting in the eventual failure and replacement of the sealing mechanism.

NEMA 23 Motor Support

The PRO165-HS has a NEMA 23 motor flange mounting interface and can be ordered with an Aerotech standard brushless rotary motor installed. Alternatively, the stage can be ordered without a motor for the attachment of third-party DC brush, brushless, or stepper motors.

Highly Configurable

The stage is equipped with a ground 20 mm/rev ball screw for high-speed applications, and can be outfitted with English or metric bolt-hole pattern tabletops. A stage mounted brake option is available to prevent back-driving the screw when power is removed from the servomotor. A fold-back kit is also available to effectively reduce the overall stage length for space-constrained applications.



PRO165-HS Series SPECIFICATIONS

Basic Model		PRO165-HS-100	PRO165-HS-150	PRO165-HS-200	PRO165-HS-250
Total Travel		100 mm	150 mm	200 mm	250 mm
Drive System		Precision Ball Screw/Brushless Servomotor			
Bus Voltage		Up to 320 VDC			
Continuous Current	A _{pk}	Up to 2.1 A			
	A _{rms}	Up to 1.5 A			
Feedback		Noncontact Rotary Encoder			
Resolution	20 mm/rev lead	2 μm with 2500-line Quadrature Encoder/0.1 μm with 1000-line AS Encoder			
Maximum Travel Speed ⁽¹⁾	20 mm/rev lead	625 mm/s	725 mm/s	900 mm/s	1000 mm/s
Maximum Acceleration		0.5 g			
Maximum Load ⁽²⁾	Horizontal	45 kg			
	Vertical	N/A			
	Side	45 kg			
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	7.2 kg (15.8 lb)	7.7 kg (16.9 lb)	8.3 kg (18.3 lb)	9.0 kg (19.8 lb)
	With Motor	8.7 kg (19.1 lb)	9.2 kg (20.2 lb)	9.8 kg (21.6 lb)	10.5 kg (23.1 lb)
Construction		Black Anodized Aluminum Body with Hardcoated Tabletop			

Notes:

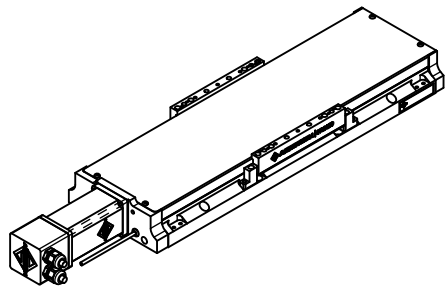
- Excessive duty cycle may impact stage accuracy.
- Payload specifications are for single-axis system and based on ball screw and bearing life of 2500 km (100 million inches) of travel.
- Specifications are for single-axis systems, measured 50 mm above the tabletop. Performance of multi-axis systems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

Basic Model		PRO165-HS-300	PRO165-HS-400	PRO165-HS-500
Total Travel		300 mm	400 mm	500 mm
Drive System		Precision Ball Screw/Brushless Servomotor		
Bus Voltage		Up to 320 VDC		
Continuous Current	A _{pk}	Up to 2.1 A		
	A _{rms}	Up to 1.5 A		
Feedback		Noncontact Rotary Encoder		
Resolution	20 mm/rev lead	2 μm with 2500-line Quadrature Encoder/0.1 μm with 1000-line AS Encoder		
Maximum Travel Speed ⁽¹⁾	20 mm/rev lead	1100 mm/s	1200 mm/s	900 mm/s
Maximum Acceleration		0.5 g		
Maximum Load ⁽²⁾	Horizontal	45 kg		
	Vertical	N/A		
	Side	45 kg		
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	With Motor	9.4 kg (20.7 lb)	10.5 kg (23.1 lb)	11.5 kg (25.3 lb)
	Less Motor	10.9 kg (24.0 lb)	12.0 kg (26.4 lb)	13.0 kg (28.6 lb)
Construction		Black Anodized Aluminum with Hardcoated Tabletop		

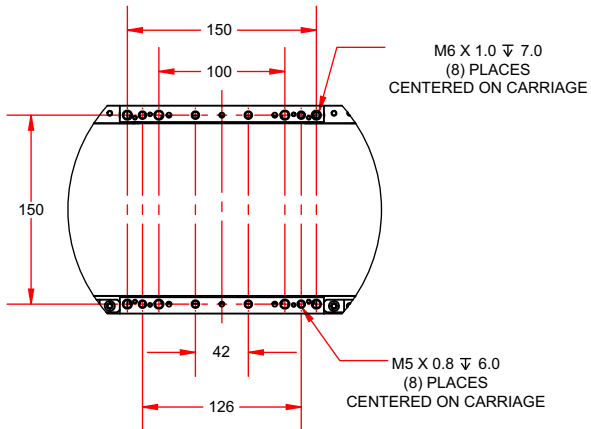
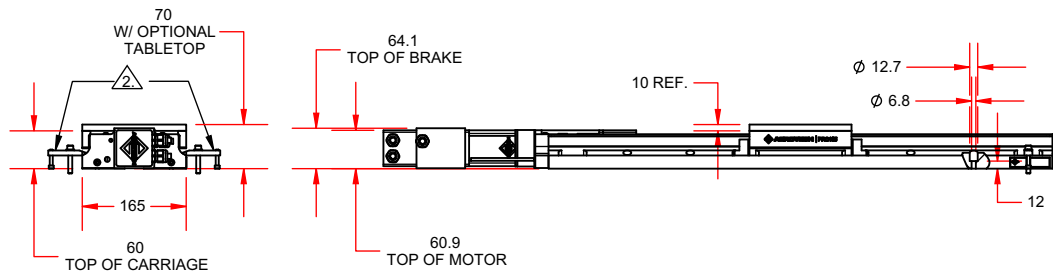
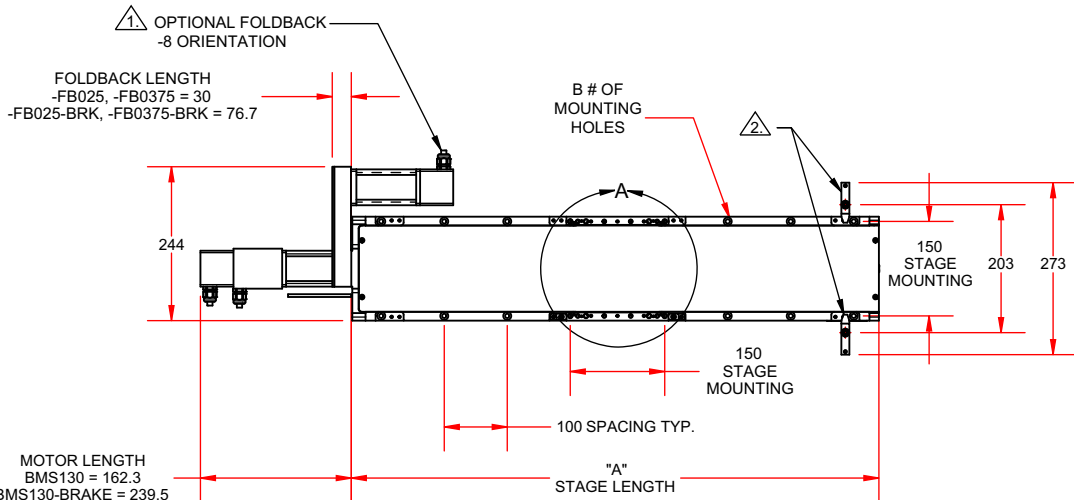
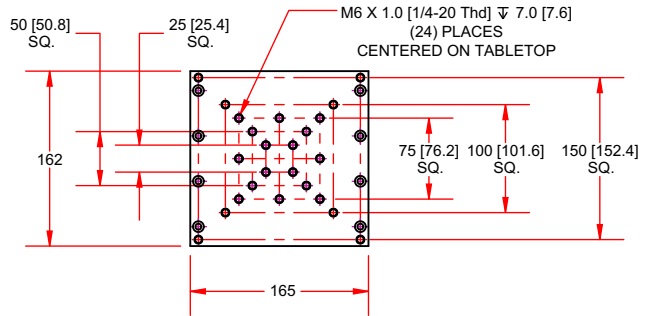
Notes:

- 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.

PRO165-HS Series DIMENSIONS



OPTIONAL TABLETOP
-TTM [-TTU]



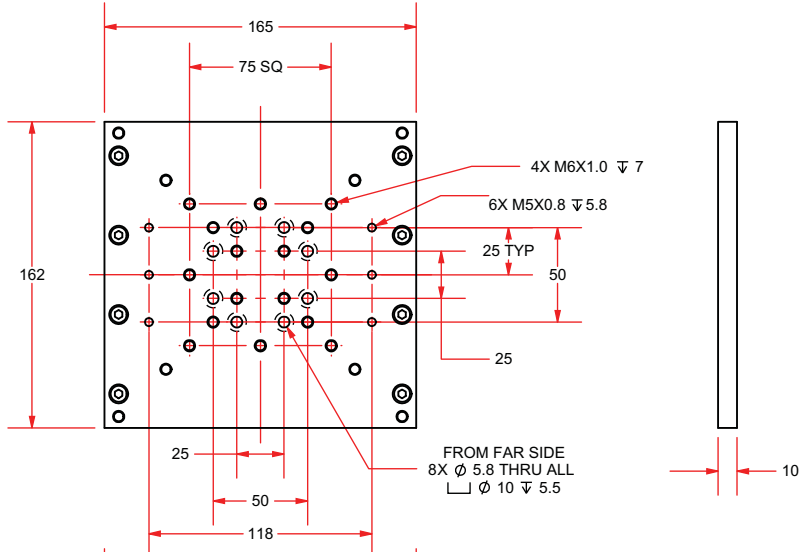
BASIC MODEL	A (MM)	B
PRO165-HS-20MM-100	437.6	8
PRO165-HS-20MM-150	487.6	8
PRO165-HS-20MM-200	537.6	8
PRO165-HS-20MM-250	587.6	8
PRO165-HS-20MM-300	637.6	12
PRO165-HS-20MM-400	737.6	12
PRO165-HS-20MM-500	837.6	16

NOTES:

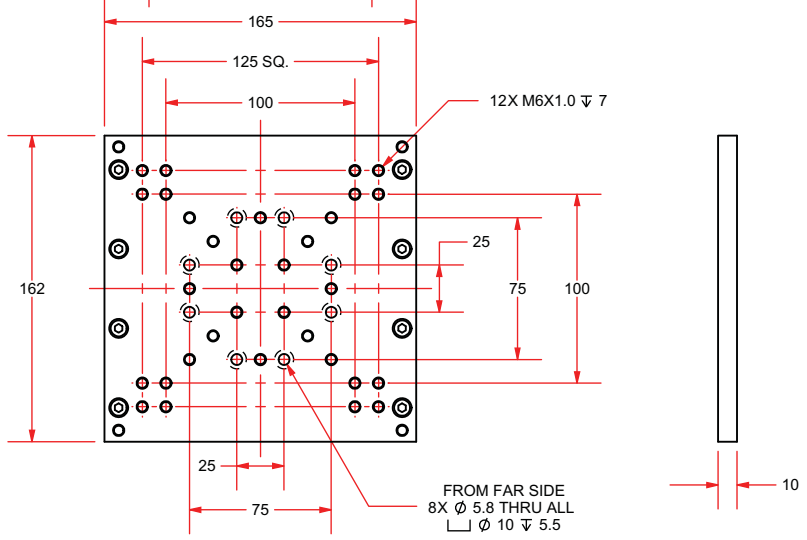
- 1 -TTM TABLETOP OPTION REQUIRED FOR LOWER AXIS OF XY ASSEMBLIES WHEN FOLDBACK OPTION IS CHOSEN.
- 2 TOE CLAMPS TO BE USED FOR ENGLISH STAGE MOUNTING ONLY.

PRO165-HS Series – Tabletop DIMENSIONS

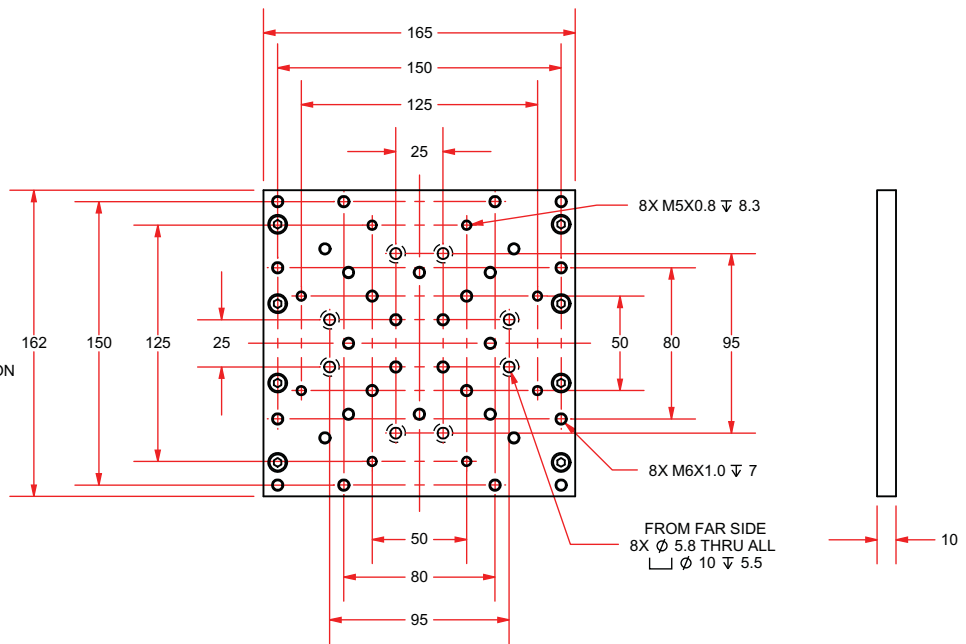
-TT100
MOUNTS ADRS-100
AND CCS130DR-160
NOTE: ALL FEATURES ARE IN ADDITION
TO -TTM TABLETOP FEATURES



-TT150
MOUNTS ADRS-150 & ADRT-150
NOTE: ALL FEATURES ARE IN ADDITION
TO -TTM TABLETOP FEATURES



-TTAGR
MOUNTS AGR-75 & AGR-100
NOTE: ALL FEATURES ARE IN ADDITION
TO -TTM TABLETOP FEATURES



DIMENSIONS: MILLIMETERS

PRO165-HS Series ORDERING INFORMATION

Ordering Information

PRO165-HS	-20MM	-150	-TTM	-5V-NC	-BM	-0	-FB025	-NONE	-PLOTS
Series	Ball Screw	Travel (mm)	Tabletop	Limits	Motor	Cable Exit	Options	Coupling	Testing
PRO165-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 -BM-AS -BM-AS-BRK	-0 -2 -3 -4 -5 -8 -12	-FB025 -FB0375 -BASE WIPER -LIFTING	-NONE -C025 -C0375	-PLOTS -NO PLOTS

Ball Screw

-20MM 20 mm per revolution ball screw

PRO165-HS Series Linear Ball-Screw Stage

-100 100 mm travel stage with ball screw and limits
 -150 150 mm travel stage with ball screw and limits
 -200 200 mm travel stage with ball screw and limits
 -250 250 mm travel stage with ball screw and limits
 -300 300 mm travel stage with ball screw and limits
 -400 400 mm travel stage with ball screw and limits
 -500 500 mm 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-75 or AGR-100 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 (BM130-A-D25-E2500H)
 -BM-BRK Brushless servomotor with 2500-line feedback encoder and motor-mounted brake (BM130-A-D25-E2500H-BK1)
 -NM No motor
 -BM-AS Brushless servomotor with 1000-line amplified sine encoder (BM130-D25-E1000ASH)
 -BM-AS-BRK Brushless servomotor with 1000-line amplified sine encoder and brake (BM130-D25-E1000ASH-BK1)

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

PRO165-HS Series ORDERING INFORMATION

Options

-FB025	Motor fold-back kit for 0.25-inch diameter motor shaft
-FB0375	Motor fold-back kit for 0.375-inch diameter motor shaft (required for BMS100 motor)
-BASE WIPER	Wiper on base of top axis of XY pair to clear hardcover of bottom axis
-LIFTING	Threaded inserts and lifting lugs; recommended for longer travel stages and XY assemblies; only available for PRO165-HS stages of 300 mm travel or greater

Coupling Option

-NONE	No motor coupling supplied
-C025	0.25-inch diameter motor shaft coupling
-C0375	0.375-inch diameter motor shaft coupling

Testing

-PLOTS	Accuracy, repeatability, straightness and flatness 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-PRO165	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