

PRO225 Series

Mechanical Bearing, Ball-Screw Stage

Ten models with travels from 100 mm to 1000 mm

Speeds up to 220 mm/s

Side-seal design with hard-cover protects from debris better than top-seal design

Low-cost; high performance

Long-life linear motion guide bearing system

Additional load capability versus the PRO115/165



The PRO225-800 is one of ten models in the PRO225 series.

The PRO225 is a medium performance, entry-level linear stage from Aerotech. It is similar in design to the PRO165 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.

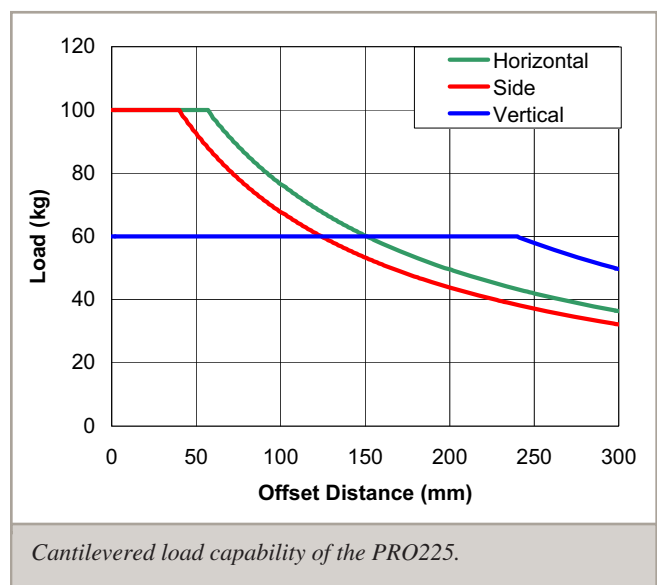
The side seals keep dirt and particulates out of the stage and protect the bearing surfaces from contamination. The vertical orientation of the seals easily deflects debris away from the stage. The tabletop can be outfitted with an optional brush assembly to remove any particles that collect on the hard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

NEMA 34 Motor Support

The PRO225 has a NEMA 34 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 5 mm/rev ball screw and can be outfitted with English or metric bolt-hole pattern tabletops. A motor-mounted brake option is available to prevent back driving the screw when power is removed from the servomotor with the stage in a vertical orientation. A fold-back kit is also available to effectively reduce the overall stage length for space-constrained applications.



Cantilevered load capability of the PRO225.

PRO225 Series SPECIFICATIONS

Basic Model		PRO225-100	PRO225-150	PRO225-200	PRO225-250	PRO-225-300
Total Travel		100 mm	150 mm	200 mm	250 mm	300 mm
Drive System		Precision Ball Screw/Brushless Servomotor				
Bus Voltage		Up to 320 VDC				
Continuous Current	A _{pk}	Up to 3.8 A				
	A _{rms}	Up to 2.7 A				
Feedback		Noncontact Rotary Encoder				
Resolution	5 mm/rev lead	0.5 μm with 2500-line Quadrature Encoder/0.1 μm with 1000-line AS Encoder				
Maximum Travel Speed ⁽¹⁾	5 mm/rev lead	220 mm/s	220 mm/s	220 mm/s	220 mm/s	220 mm/s
Maximum Acceleration		Function of Motor Selection and Sizing				
Maximum Load ⁽²⁾	Horizontal	100 kg				
	Vertical	60 kg				
	Side	100 kg				
Accuracy	5 mm/rev lead	±11 μm	±13 μm	±16 μm	±16.5 μm	±17.5 μm
Bidirectional Repeatability	5 mm/rev lead	±1 μm				
Straightness and Flatness		4 μm	5 μm	5 μm	6 μm	7 μm
Nominal Stage Weight	Less Motor	19.4 kg (42.7 lb)	20.6 kg (45.3 lb)	21.8 kg (48.0 lb)	23.0 kg (50.6 lb)	24.1 kg (53.0 lb)
	With Motor	23.0 kg (50.6 lb)	24.2 kg (53.2 lb)	25.4 kg (55.9 lb)	26.6 kg (58.5 lb)	27.7 kg (60.9 lb)
Construction		Black Anodized Aluminum Body with Hardcoated Tabletop				

Notes:

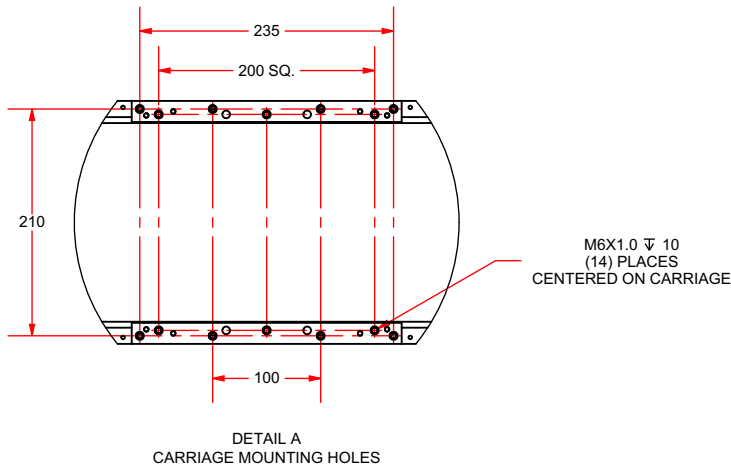
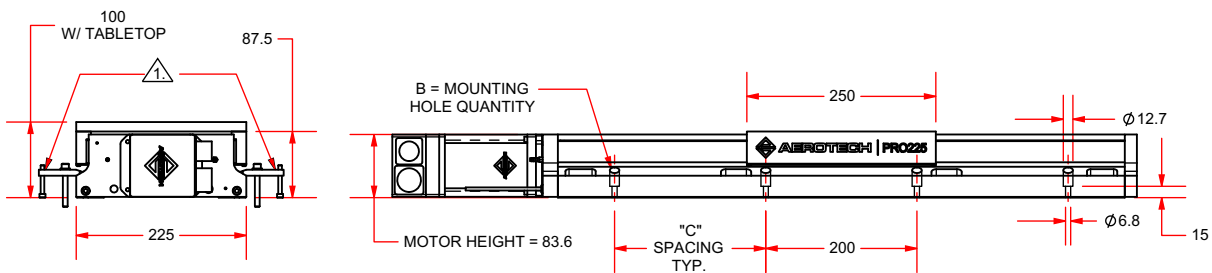
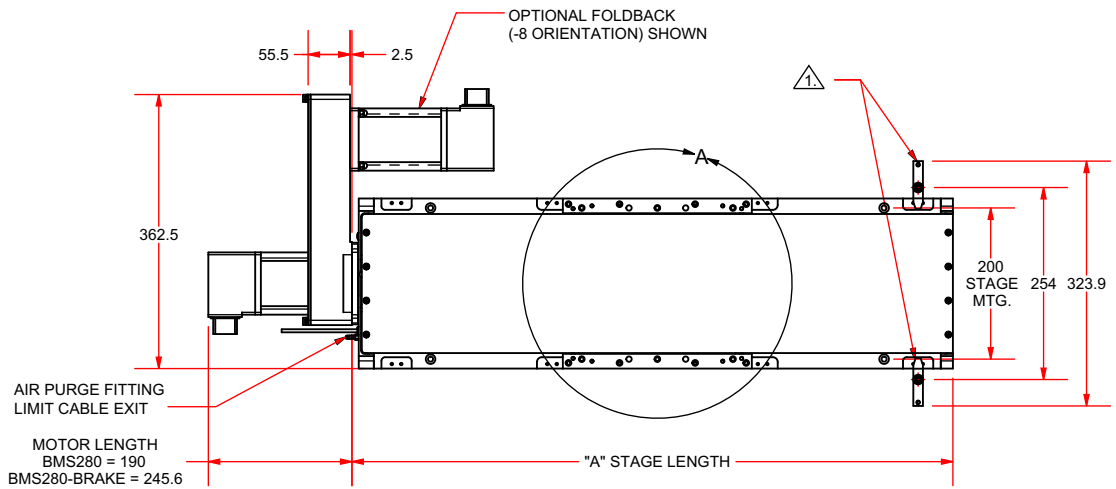
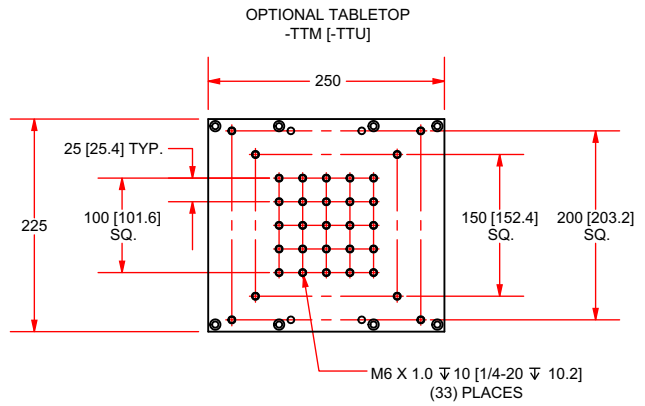
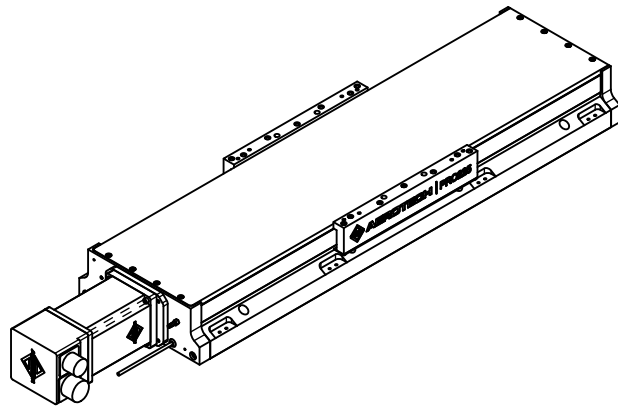
- Excessive duty cycle may impact stage accuracy.
- Payload specifications are for single-axis system and based on ball screw and bearing life of 2500 km (100 million inches) of travel.
- Specifications are for single-axis systems, measured 25 mm above the tabletop. Performance of multi-axis systems is payload and workpoint dependent. Consult factory for multi-axis or non-standard applications.

Basic Model		PRO225-400	PRO225-500	PRO225-600	PRO225-800	PRO-225-1000
Total Travel		400 mm	500 mm	600 mm	800 mm	1000 mm
Drive System		Precision Ball Screw/Brushless Servomotor				
Bus Voltage		Up to 320 VDC				
Continuous Current	A _{pk}	Up to 3.8 A				
	A _{rms}	Up to 2.7 A				
Feedback		Noncontact Rotary Encoder				
Resolution	5 mm/rev lead	0.5 μm with 2500-line Quadrature Encoder/0.1 μm with 1000-line AS Encoder				
Maximum Travel Speed ⁽¹⁾	5 mm/rev lead	220 mm/s	220 mm/s	220 mm/s	220 mm/s	140 mm/s
Maximum Acceleration		Function of Motor Selection and Sizing				
Maximum Load ⁽²⁾	Horizontal	100 kg				
	Vertical	60 kg				
	Side	100 kg				
Accuracy	5 mm/rev lead	±19 μm	±21 μm	±23 μm	±26 μm	±27.5 μm
Bidirectional Repeatability	5 mm/rev lead	±1 μm				
Straightness and Flatness		9 μm	11 μm	13 μm	16 μm	19 μm
Nominal Stage Weight	Less Motor	26.5 kg (58.3 lb)	28.8 kg (63.4 lb)	31.2 kg (68.6 lb)	35.9 kg (79.0 lb)	40.5 kg (89.1 lb)
	With Motor	30.1 kg (66.2 lb)	32.4 kg (71.3 lb)	34.8 kg (76.6 lb)	39.5 kg (86.9 lb)	44.1 kg (97.0 lb)
Construction		Black Anodized Aluminum Body with Hardcoated Tabletop				

Notes:

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PRO225 Series DIMENSIONS



BASIC MODEL	"A" STAGE LENGTH	"B"	"C"
PRO225-05MM-0100	495	8	100
PRO225-05MM-0150	545	8	100
PRO225-05MM-0200	595	8	100
PRO225-05MM-0250	645	8	100
PRO225-05MM-0300	695	8	200
PRO225-05MM-0400	795	8	200
PRO225-05MM-0500	895	8	200
PRO225-05MM-0600	995	8	200
PRO225-05MM-0800	1195	12	200
PRO225-05MM-1000	1395	12	200

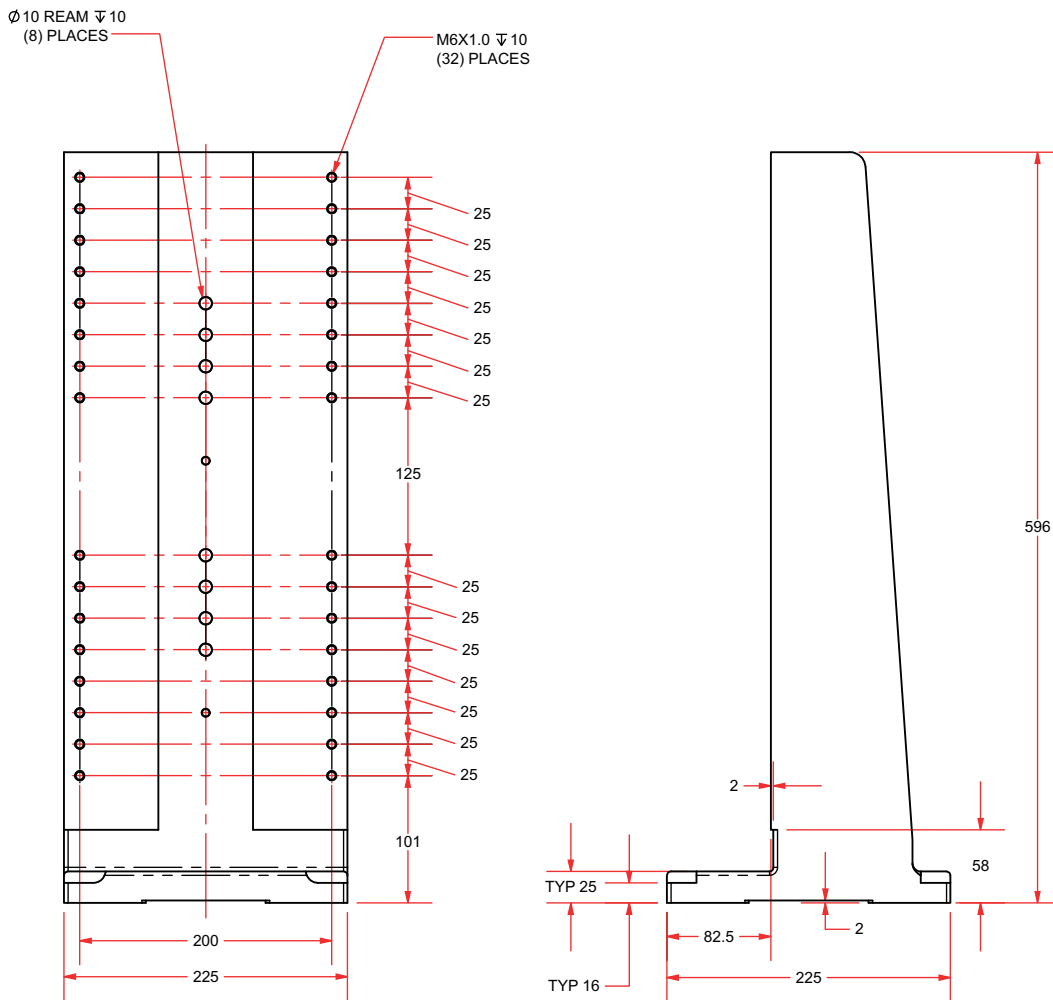
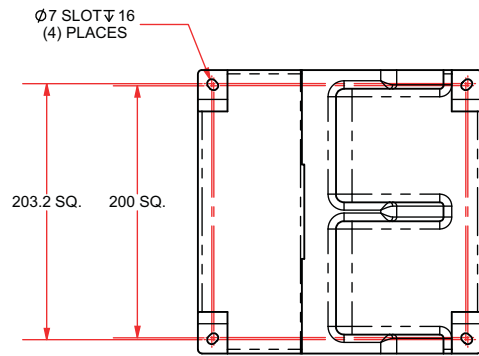
NOTES:

TOE CLAMPS TO BE USED FOR ENGLISH STAGE MOUNTING ONLY.

DIMENSIONS: MILLIMETERS

PRO225 Series – HDZ225 Bracket DIMENSIONS

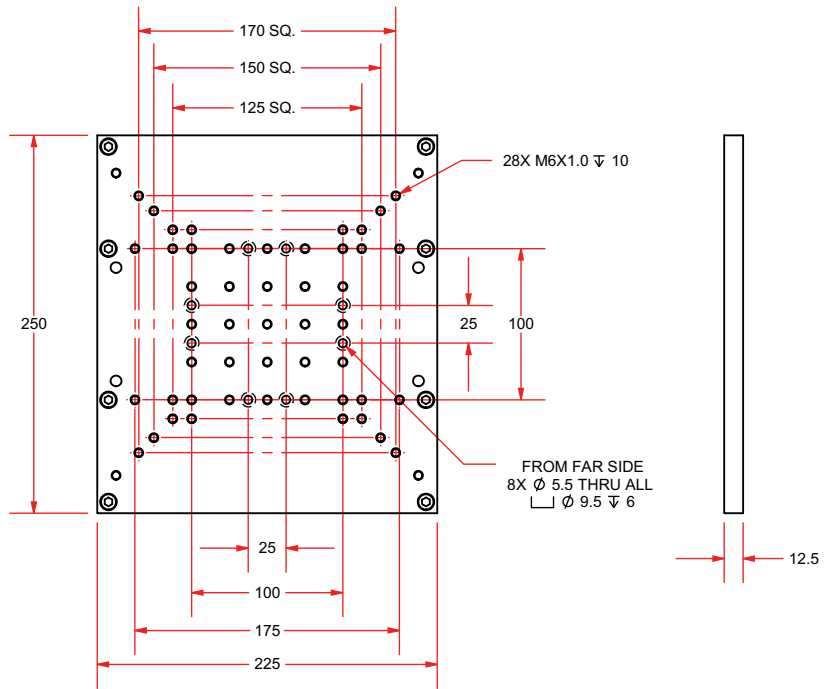
HDZ225 Bracket



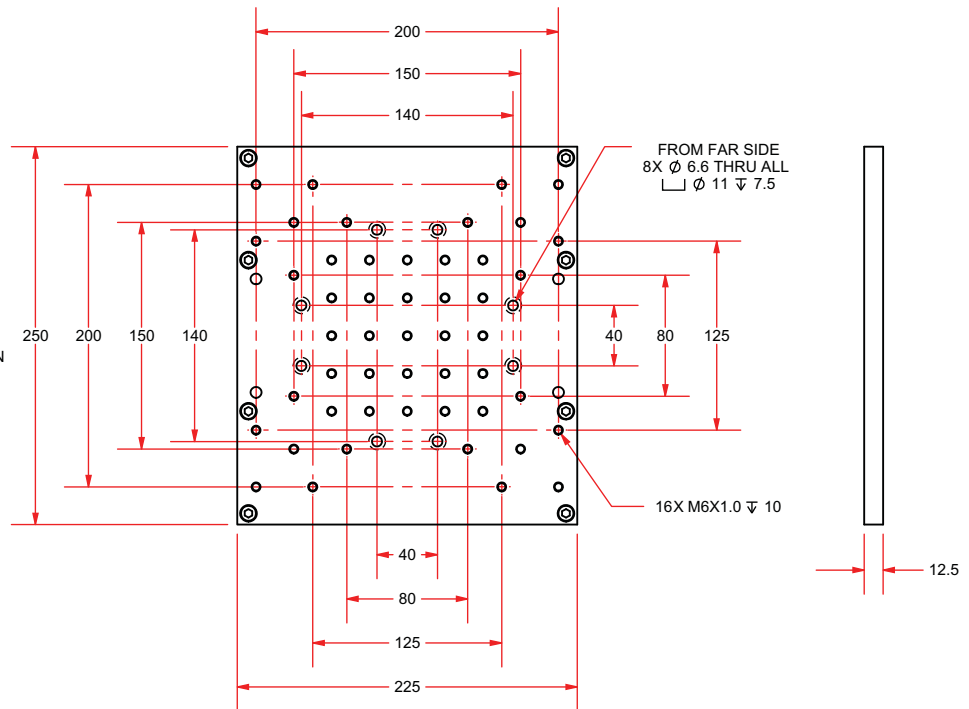
DIMENSIONS: MILLIMETERS

PRO225 Series – Tabletop DIMENSIONS

-TTADR
MOUNTS ADRS-200 / ADRT-200
AND CCS190DR-240/260
NOTE: ALL FEATURES ARE IN ADDITION
TO -TTM TABLETOP FEATURES



-TTAGR
MOUNTS AGR-100 / 150
NOTE: ALL FEATURES ARE IN ADDITION
TO -TTM TABLETOP FEATURES



DIMENSIONS: MILLIMETERS

PRO225 Series ORDERING INFORMATION

Ordering Information

PRO225	-05MM	-100	-TTM	-5V-NC	-BMS	-0	-FB05	-NONE	-PLOTS
Series	Ball Screw	Travel (mm)	Tabletop	Limits	Motor	Cable Exit	Options	Coupling	Testing
PRO225	-05MM	-100	-TTM	-5V-NC	-BMS	-0	-FB05	-NONE	-PLOTS
		-150	-TTU	-5V-NO	-BMS-BRK	-2	-BASE WIPER	-C05	-NO PLOTS
		-200	-NO TT	-24V-NC	-NM	-3	-LIFTING		
		-250	-TTADR		-BMS-AS	-4			
		-300	-TTAGR		-BMS-AS-BRK	-5			
		-400	/WIPER			-8			
		-500				-12			
		-600							
		-800							
		-1000							

Ball Screw

-05MM 5 mm per revolution ball screw

PRO225 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
-600	600 mm travel stage with ball screw and limits
-800	800 mm travel stage with ball screw and limits
-1000	1000 mm travel stage with ball screw and limits

Tabletop

-TTM	Metric pattern tabletop
-TTU	English pattern tabletop
-NO TT	No tabletop
-TTADR	Bolt-hole pattern to attach ADRS/ADRT150 or ADRS/ADRT200 rotary stages
-TTAGR	Bolt-hole pattern to attach AGR-100 or AGR-150 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

-BMS	Brushless servomotor with 2500 line feedback encoder (BMS280-AH-MS-E2500H)
-BMS-BRK	Brushless servomotor with 2500 line feedback encoder and motor-mounted brake (BMS280-AH-MS-E2500H-BK2)
-NM	No motor
-BMS-AS	Brushless slotless servomotor with 1000-line amplified sine encoder (BMS280-A-MS-E1000ASH)
-BMS-AS-BRK	Brushless slotless servomotor with 1000-line amplified sine encoder and brake (BMS280-A-MS-E1000ASH-BK2)

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

PRO225 Series ORDERING INFORMATION

Options

-FB05	Motor fold back kit for 0.5-inch diameter motor shaft (required for BMS280 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 PRO225 stages of 300 mm travel or greater

Coupling Option

-NONE	No motor coupling supplied
-C05	0.5-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-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
HDZ225	Right angle L-bracket for PRO225-100, -150, and -200
TC-PRO225	Toe clamps for mounting PRO stage to an English dimension breadboard or hole pattern; recommended number of toe clamps for each travel length: 100-200 mm travel = 4 clamps; 250-800 mm travel = 8 clamps; 1000 mm travel = 12 clamps