

PRO225-HS (High Speed) Series

Mechanical Bearing, Ball-Screw Stage

Twelve models with travels from 100 mm to 1500 mm

More than 6X speed capability of the regular PRO series – up to 1400 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-HS-600 is one of twelve models in the PRO225-HS series.

The PRO225-HS is a medium performance linear stage from Aerotech that comes with a 25 mm/rev ball screw for high-speed applications requiring up to 1400 mm/s. 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.

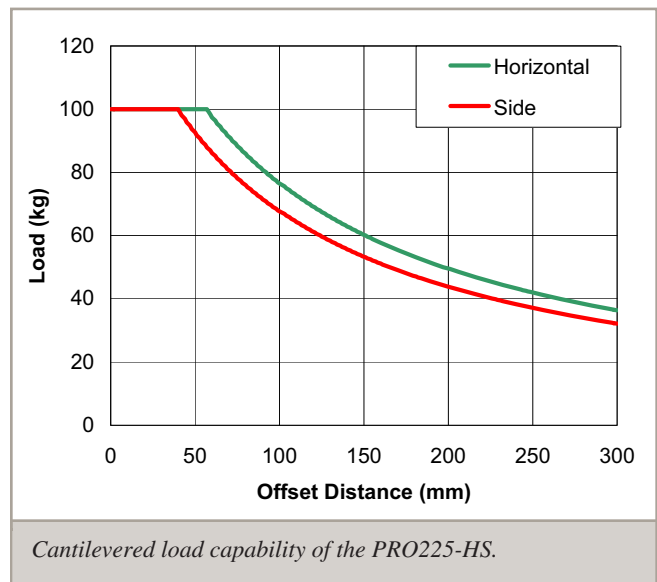
The side seals keep dirt and particulates out of the stage and protect the bearing surfaces from contamination. The vertical orientation of the seals easily deflects debris away from the stage. The tabletop can be outfitted with an optional brush assembly to remove any particles that collect on the hard 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 25 mm/rev ball screw for all your high-speed applications, 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, and a fold-back kit is also available to effectively reduce the overall stage length for space-constrained applications.



Cantilevered load capability of the PRO225-HS.

PRO225-HS Series SPECIFICATIONS

Basic Model		PRO225-HS-100	PRO225-HS-150	PRO225-HS-200	PRO225-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 10.5 A			
	A _{rms}	Up to 7.4 A			
Feedback		Noncontact Rotary Encoder			
Resolution	25 mm/rev lead	2.5 µm with 2500-line Quadrature Encoder/0.1 µm with 1000-line AS Encoder			
Maximum Travel Speed ⁽¹⁾	25 mm/rev lead	600 mm/s	750 mm/s	850 mm/s	950 mm/s
Maximum Acceleration		Function of Motor Selection and Sizing			
Maximum Load ⁽²⁾	Horizontal	100 kg			
	Vertical	N/A			
	Side	100 kg			
Accuracy	25 mm/rev lead	±11 µm	±13 µm	±16 µm	±16.5 µm
Bidirectional Repeatability	25 mm/rev lead	±2.5 µm			
Straightness and Flatness		4 µm	5 µm	5 µm	6 µm
Nominal Stage Weight	Less Motor	21.0 kg (46.2 lb)	23.2 kg (51.0 lb)	26.7 kg (58.7 lb)	27.9 kg (61.4 lb)
	With Motor	24.6 kg (54.1 lb)	26.8 kg (59.0 lb)	30.3 kg (66.7 lb)	31.5 kg (69.3 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-HS-300	PRO225-HS-400	PRO225-HS-500	PRO225-HS-600
Total Travel		300 mm	400 mm	500 mm	600 mm
Drive System		Precision Ball Screw/Brushless Servomotor			
Bus Voltage		Up to 320 VDC			
Continuous Current	A _{pk}	Up to 10.5 A			
	A _{rms}	Up to 7.4 A			
Feedback		Noncontact Rotary Encoder			
Resolution	25 mm/rev lead	2.5 µm with 2500-line Quadrature Encoder/0.1 µm with 1000-line AS Encoder			
Maximum Travel Speed ⁽¹⁾	25 mm/rev lead	1050 mm/s	1250 mm/s	1400 mm/s	1100 mm/s
Maximum Acceleration		Function of Motor Selection and Sizing			
Maximum Load ⁽²⁾	Horizontal	100 kg			
	Vertical	N/A			
	Side	100 kg			
Accuracy	25 mm/rev lead	±17.5 µm	±19 µm	±21 µm	±23 µm
Bidirectional Repeatability	25 mm/rev lead	±2.5 µm			
Straightness and Flatness		7 µm	9 µm	11 µm	13 µm
Nominal Stage Weight	Less Motor	29.0 kg (63.8 lb)	31.4 kg (69.1 lb)	33.7 kg (74.1 lb)	36.1 kg (79.4 lb)
	With Motor	32.6 kg (71.7 lb)	35.0 kg (77.0 lb)	37.3 kg (82.1 lb)	39.7 kg (87.3 lb)
Construction		Black Anodized Aluminum Body with Hardcoated Tabletop			

Notes:

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- 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.

PRO225 Series-HS SPECIFICATIONS

Basic Model		PRO225-HS-800	PRO225-HS-1000	PRO225-HS-1200	PRO225-HS-1500
Total Travel		800 mm	1000 mm	1200 mm	1500 mm
Drive System		Precision Ball Screw/Brushless Servomotor			
Bus Voltage		Up to 320 VDC			
Continuous Current	A _{pk}	Up to 10.5 A			
	A _{rms}	Up to 7.4 A			
Feedback		Noncontact Rotary Encoder			
Resolution	25 mm/rev lead	2.5 μm with 2500-line Quadrature Encoder/0.1 μm with 1000-line AS Encoder			
Maximum Travel Speed ⁽¹⁾	25 mm/rev lead	700 mm/s	600 mm/s	450 mm/s	300 mm/s
Maximum Acceleration		Function of Motor Selection and Sizing			
Maximum Load ⁽²⁾	Horizontal	100 kg			
	Vertical ⁽³⁾	N/A			
	Side	100 kg			
Accuracy	25 mm/rev lead	±26 μm	±27.5 μm	±31 μm	±35.5 μm
Bidirectional Repeatability	25 mm/rev lead	±2.5 μm			
Straightness and Flatness		16 μm	19 μm	22 μm	26 μm
Nominal Stage Weight	Less Motor	40.7 kg (89.5 lb)	43.2 kg (95.0 lb)	48.0 kg (105.6 lb)	53.6 kg (117.9 lb)
	With Motor	44.3 kg (97.5 lb)	46.8 kg (103.0 lb)	51.6 kg (113.5 lb)	57.2 kg (125.8 lb)
Construction		Black Anodized Aluminum Body with Hardcoated Tabletop			

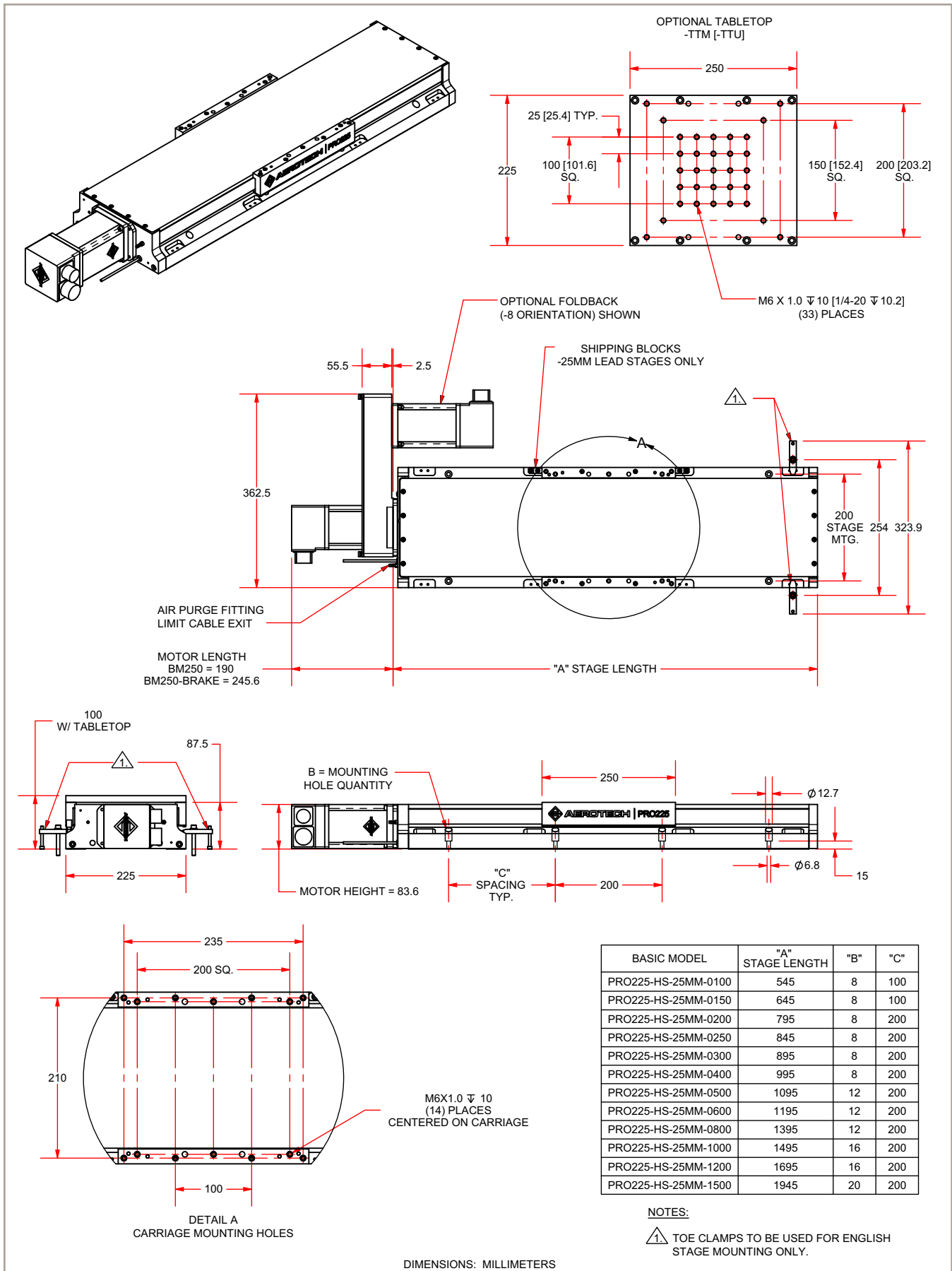
Notes:

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.

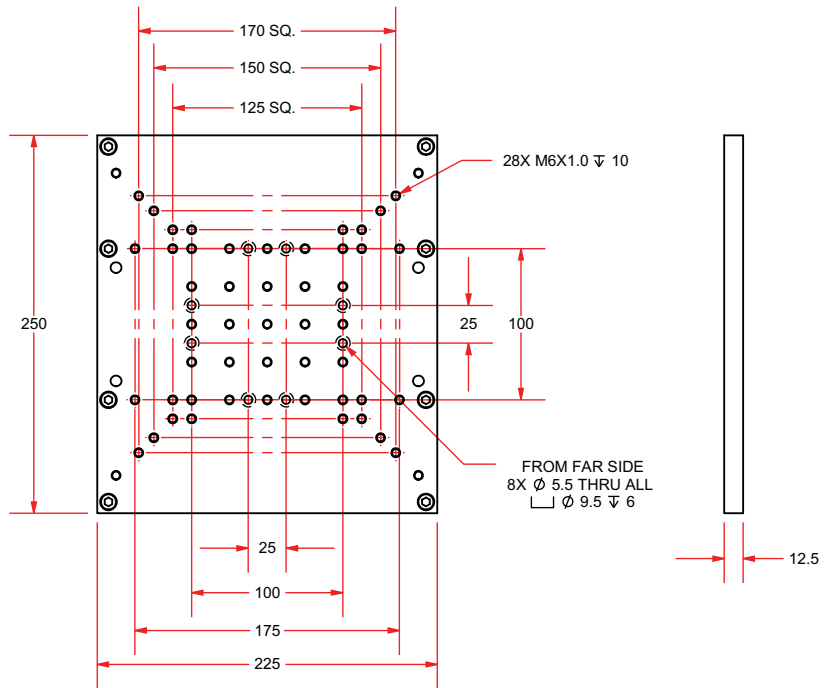
3. Specifications are for single-axis systems, measured 25 mm above the tabletop. Performance of multi-axis systems is payload and workpoint dependent. Consult factory for multi-axis or non-standard applications.

PRO225-HS Series DIMENSIONS

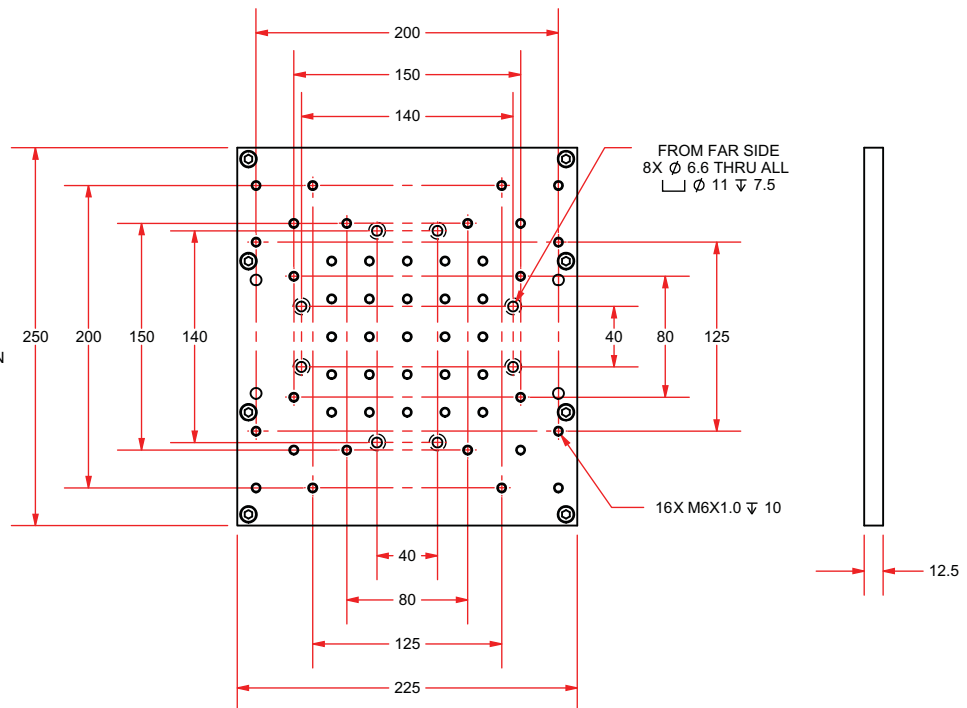


PRO225-HS Series – Tabletop DIMENSIONS

-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-HS Series ORDERING INFORMATION

Ordering Information

PRO225-HS	-25MM	-100	-TTM	-5V-NC	-BM	-0	-FB05	-NONE	-PLOTS
Series	Ball Screw	Travel (mm)	Tabletop	Limits	Motor	Cable Exit	Options	Coupling	Testing
PRO225-HS	-25MM	-100 -150 -200 -250 -300 -400 -500 -600 -800 -1000 -1200 -1500	-TTM -TTU -NO TT -TTADR -TTAGR /WIPER	-5V-NC -5V-NO -24V-NC	-BM -BM-BRK -NM -BM-AS -BM-AS-BRK	-0 -2 -3 -4 -5 -8 -12	-FB05 -BASE WIPER -LIFTING	-NONE -C05	-PLOTS -NO PLOTS

Ball Screw

-25MM 25 mm per revolution ball screw

PRO225-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
 -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
 -1200 1200 mm travel stage with ball screw and limits
 -1500 1500 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

-BM Brushless servomotor with 2500 line feedback encoder (BM250-AH-MS-E2500H)
 -BM-BRK Brushless servomotor with 2500 line feedback encoder and motor-mounted brake (BM250-AH-MS-E2500H-BK2)
 -NM No motor
 -BM-AS Brushless servomotor with 1000-line amplified sine encoder (BM250-MS-E1000ASH)
 -BM-AS-BRK Brushless servomotor with 1000-line amplified sine encoder and brake (BM250-MS-E1000ASH-BK2)

PRO225-HS Series ORDERING INFORMATION

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

Options

-FB05	Motor fold back kit for 0.5-inch diameter motor shaft (required for BM250 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-HS stages of 200 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-PA10	XY assembly; 10 arc sec orthogonal
ALIGNMENT-PA5	XY assembly; 5 arc sec orthogonal
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 mm travel = 4 clamps; 150-600 mm travel = 8 clamps; 800-1500 mm travel = 12 clamps