

## Precision Linear Motion Platform

### FEATURES

- High capacity
- 600mm Travel
- High torque brushless servo motor drive
- Optical limit switches with home
- High resolution rotary encoder
- Zero backlash, precision ground 2mm lead ball screw
- Recirculating ball linear ways
- Side seals
- Power-off brake



The LM7-BS series stages are designed for high loading capacities and long travels to suit a variety of applications. This ball screw stage is built for high duty cycles and long life and can attain high velocities for factory automation and semiconductor processing equipment. Recirculating ball linear ways paired with a high torque brushless motor and precision ground ball screw drive offer extremely smooth operation and velocity control. This stage has exceptional levels of accuracy, repeatability, flatness and straightness. Side seals and a hard cover make it an excellent choice for dirty environments. The LM7 Series stages can be stacked to create X, Y and Z motion. This LM7 model includes power-off brake.

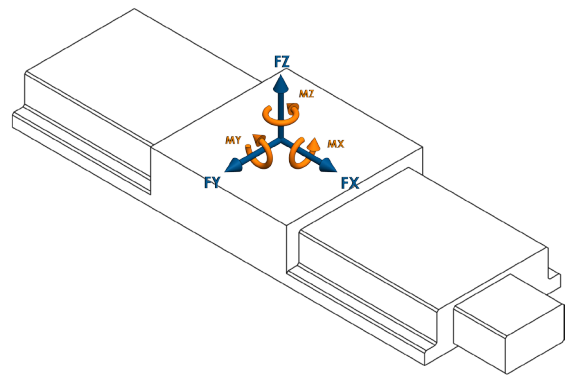


LM7-600-BS-D-W-S-G-00

**Motion Specifications**

**Product Specifications**

Encoder Output	A quad B, index
Force X (N)	800
Force Y (N)	1000
Force Z (N)	1500
Flatness (µm)	14
Height (mm)	86.5
Length (mm)	1098.0
Limit Switches	Yes
Linear Accuracy (µm)	54
Linear Encoder Resolution (µm)	0.125
Linear Repeatability (µm)	2
Linear Velocity (mm/s)	100
Moment X (N-m)	400
Moment Y (N-m)	600
Moment Z (N-m)	200
Moving Mass X (kg)	6.20
Pitch +/- (arc-sec)	20
Screw Lead (mm)	2
Stage Mass (kg)	27.0
Straightness (µm)	14
Width (mm)	200.0
Yaw +/- (arc-sec)	15



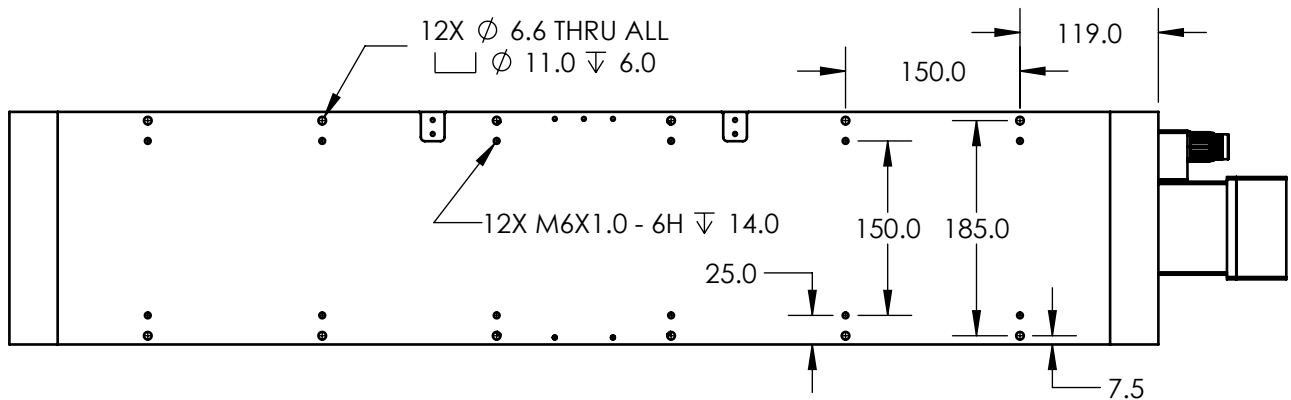
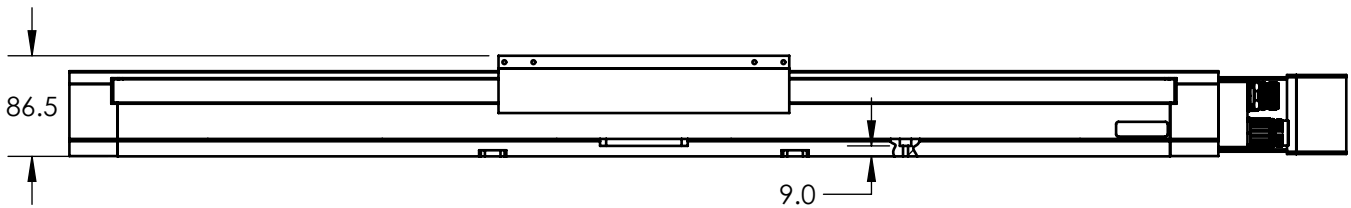
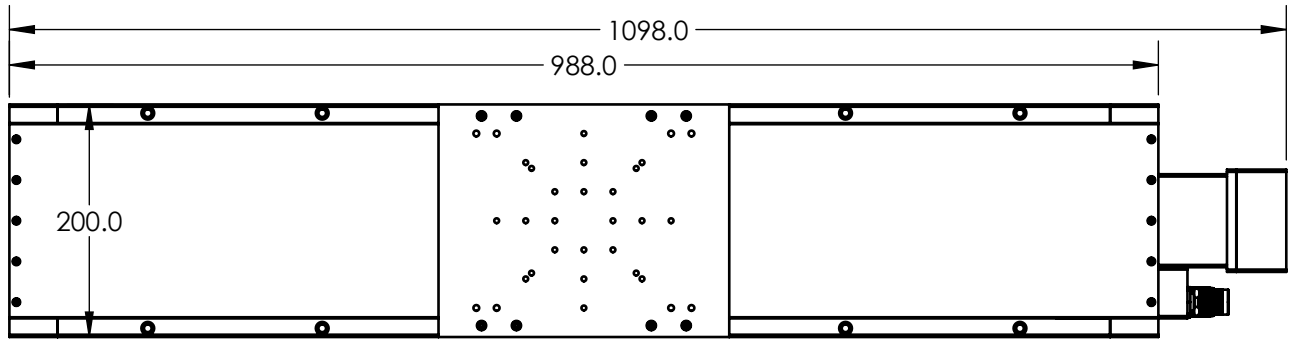
**LOAD DIRECTIONS**

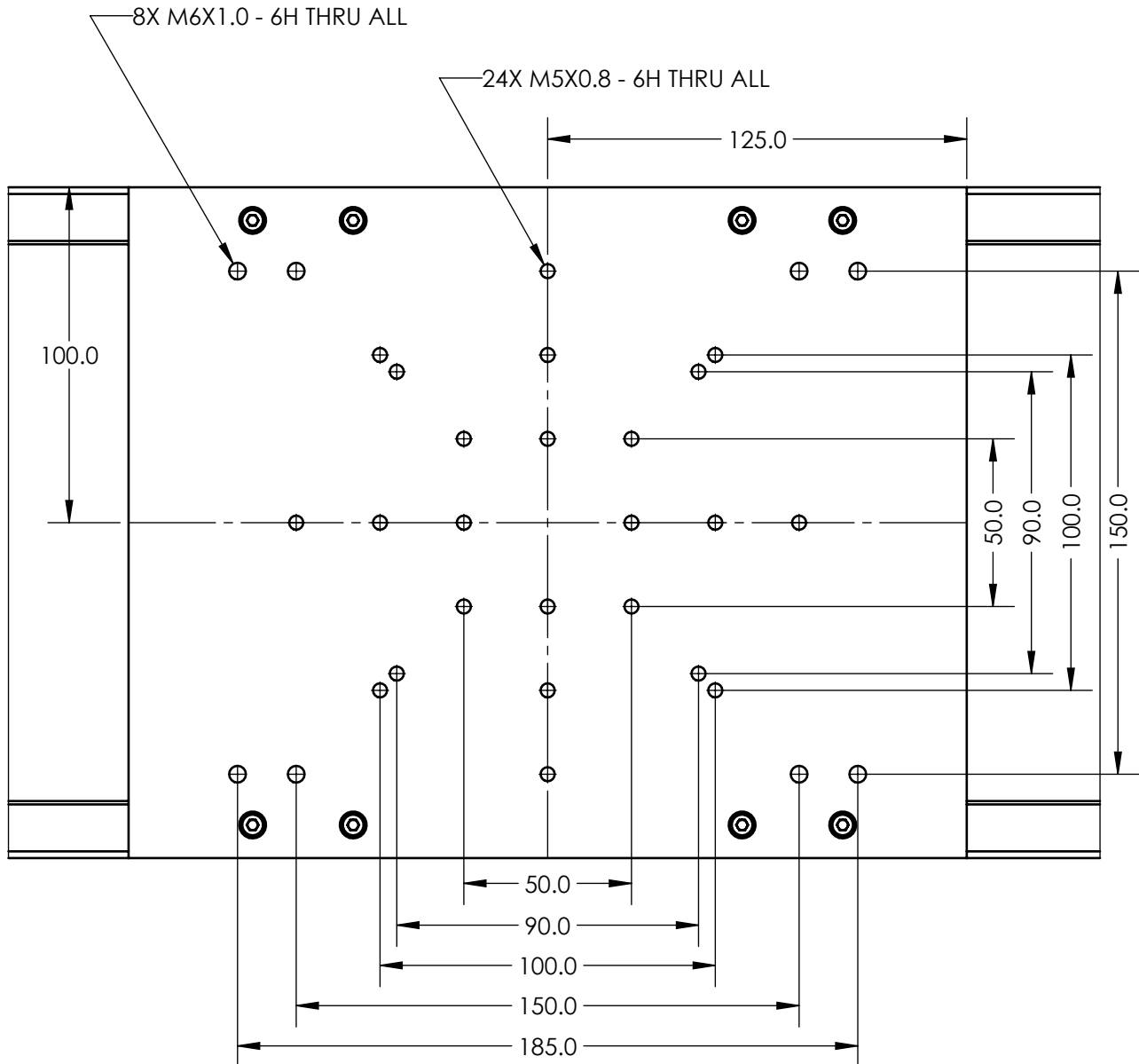
**Part Number Description**

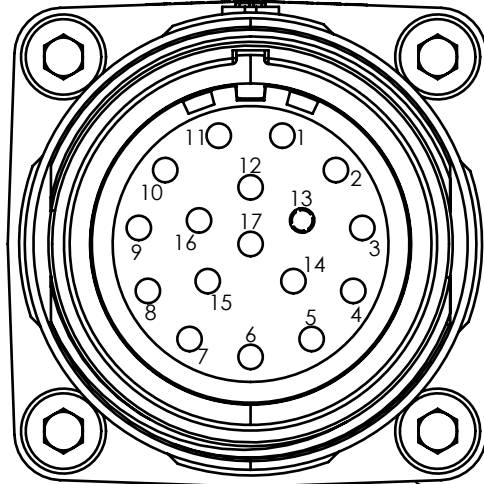
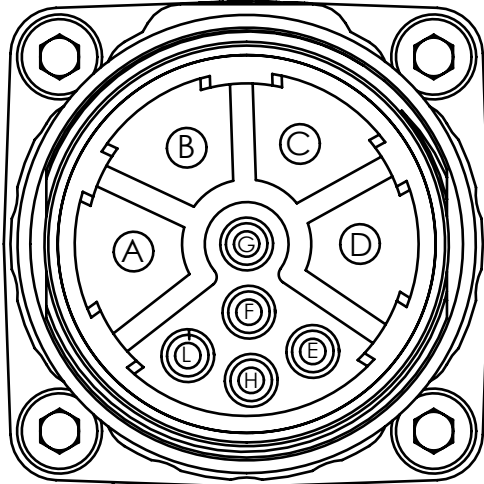
LM7	LM7 Series
600	600mm Travel
BS	2mm Lead Ball Screw Drive
D	High Torque Brushless Servo Motor
W	0.125µm Rotary
S	Standard Precision
G	Side Seals and Brake
00	Standar Product (Call for custom)

LM7-600-BS-D-W-S-G-00

### Mechanical Specifications







View of stage connectors from outside of stage

POWER CONNECTOR  
(MOTOR/BRAKE)

FEEDBACK CONNECTOR  
(ENCODER, LS, HALLS)

POWER CONNECTOR	
PIN	NAME
A	PHASE A (U)
B	PHASE B (V)
C	PHASE C (W)
D	GROUND
E	*
F	MBRK+
G	MBRK-
H	*
L	*
*	Reserved

FEEDBACK CONNECTOR	
PIN	NAME
1	A +
2	A -
3	B +
4	B -
5	Z +
6	Z -
7	LIM +
8	LIM -
9	+5VDC
10	GND
11	HOME
12	*
13	*
14	*
15	HALL A
16	HALL B
17	HALL C
*	Reserved

Connectors on Stage		
Manufacturer	Part No.	Description
Amphenol	MA1LAE1700	Connector, REC, 17POS
Amphenol	MB1LLN0900	Connector, REC, 9POS
Amphenol	SC000035	Connector Pin, Male, 1mm
Amphenol	SC000036	Connector Pin, Male, 2mm



**LM7-600-BS-D-W-S-G-00**

**Electrical Specifications**

<b>Motor Specifications</b>	
Motor Type	3 $\Phi$ Brushless DC
BEMF Constant (V/KRPM)	5.0
Electrical Time Constant (ms)	0.94
Max Bus Voltage (VDC)	120
Max Continuous Current (A)	7.5
Motor Torque Constant (Nm/A)	0.048
Peak Current (A)	15.0
Pin to Pin Inductance (mH)	0.38
Pin to Pin Resistance (ohm)	0.40
Poles per Revolution	6

<b>Brake Specifications</b>	
Brake Type	Power Off Engaged
Winding Voltage (VDC)	24.0
Winding Current (A)	0.247
Winding Resistance (Ohm)	97.3

<b>Feedback Specifications</b>	
Supply Voltage (V)	5.0 $\pm$ 10%
Supply Current (mA)	250
Encoder Feedback	Yes
Encoder Type	Incremental
Encoder Output	Square Wave Quadrature, RS-422 compatible, A,B,Z, Differential Pairs
Encoder Resolution	8000 cts/mm
Hall Switch Output	CMOS
Hall Switch max current (mA)	$\pm$ 20.0
Limit Switches	Yes
Limit Switch Output Type	CMOS
Limit Switch Output current (mA)	$\pm$ 20.0
Home Switch	Yes
Home Switch Output Type	CMOS
Home Switch Output current (mA)	$\pm$ 20.0

LM7-600-BS-D-W-S-G-00

Rev 1

LM7-600-BS-D-W-S-G-00

**End of Travel Locations**

