1040 CLASSIC ROAD | APEX, NC 27539
P: 866.906.2709 | F: 919.882.1430
www.griffinmotion.com

Precision Linear Motion Platform

FEATURES

- High capacity
- 500mm Travel
- High torque brushless servo motor drive
- Optical limit switches with home
- High resolution rotary encoder
- Zero backlash, precision ground 5mm lead ball screw
- Recirculating ball linear ways
- Side seals

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.

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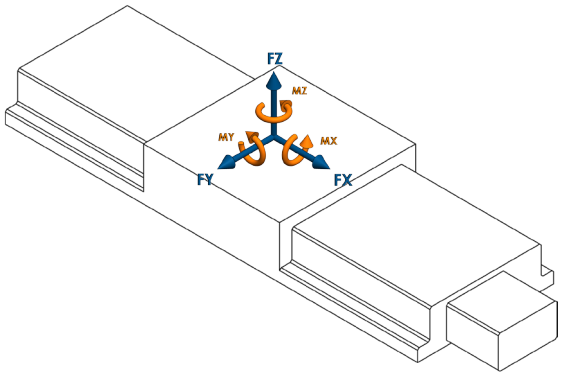
Product Specifications

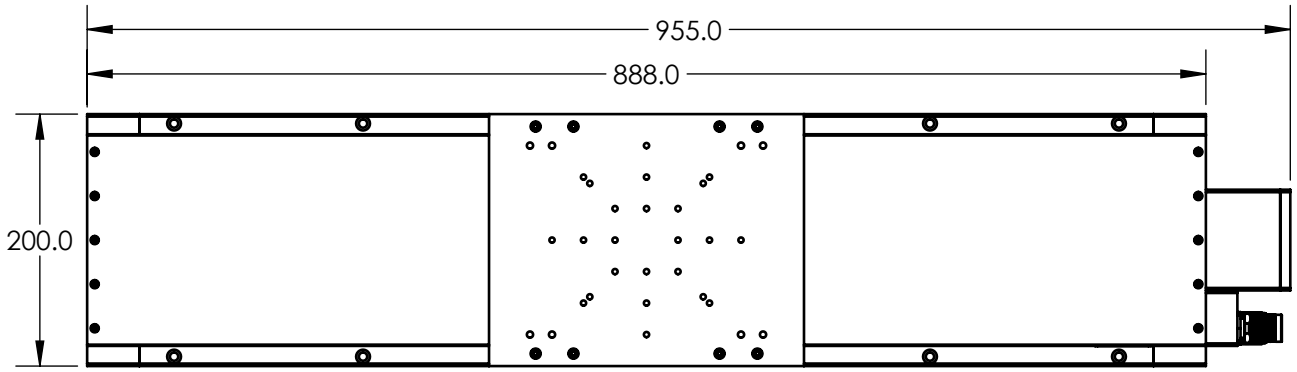
Encoder Output	A quad B, index
Force X (N)	400
Force Y (N)	1000
Force Z (N)	1500
Flatness (µm)	12
Height (mm)	86.5
Length (mm)	955.0
Limit Switches	Yes
Linear Accuracy (µm)	50
Encoder Resolution (µm)	0.3125
Linear Repeatability (µm)	2
Linear Velocity (mm/s)	200
Moment X (N·m)	400
Moment Y (N·m)	600
Moment Z (N·m)	200
Moving Mass X (kg)	6.20
Pitch +/- (arc-sec)	15
Screw Lead (mm)	5
Stage Mass (kg)	24.3
Straigtness (µm)	12
Width (mm)	200.0
Yaw +/- (arc-sec)	10

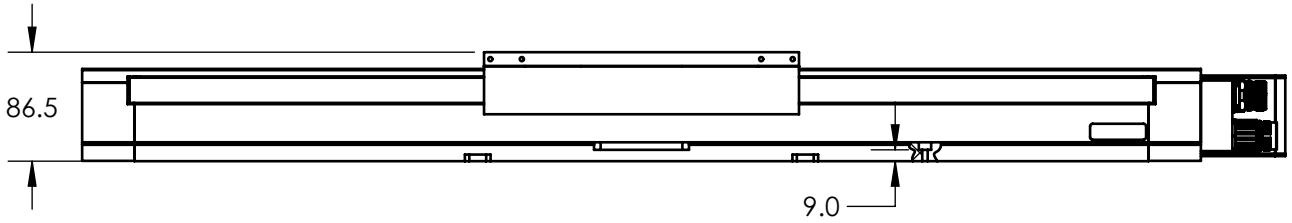


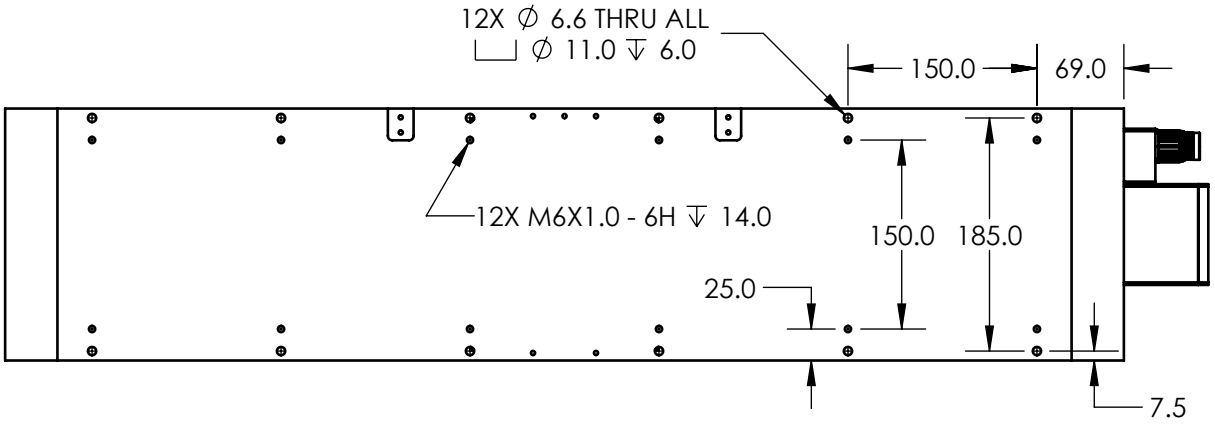
LOAD DIRECTIONS

Part Number Description

LM7	LM7 Series
500	500mm Travel
BF	5mm Lead Ball Screw Drive
D	High Torque Brushless Servo Motor
W	0.125µm Rotary
S	Standard Precision
F	Side Seals
00	Standard Product (Call for custom)


955.0
888.0
200.0


86.5
9.0


12X ⌀ 6.6 THRU ALL
⌴ ⌀ 11.0 ↧ 6.0
150.0
69.0
12X M6X1.0 - 6H ↧ 14.0
150.0
185.0
25.0
7.5

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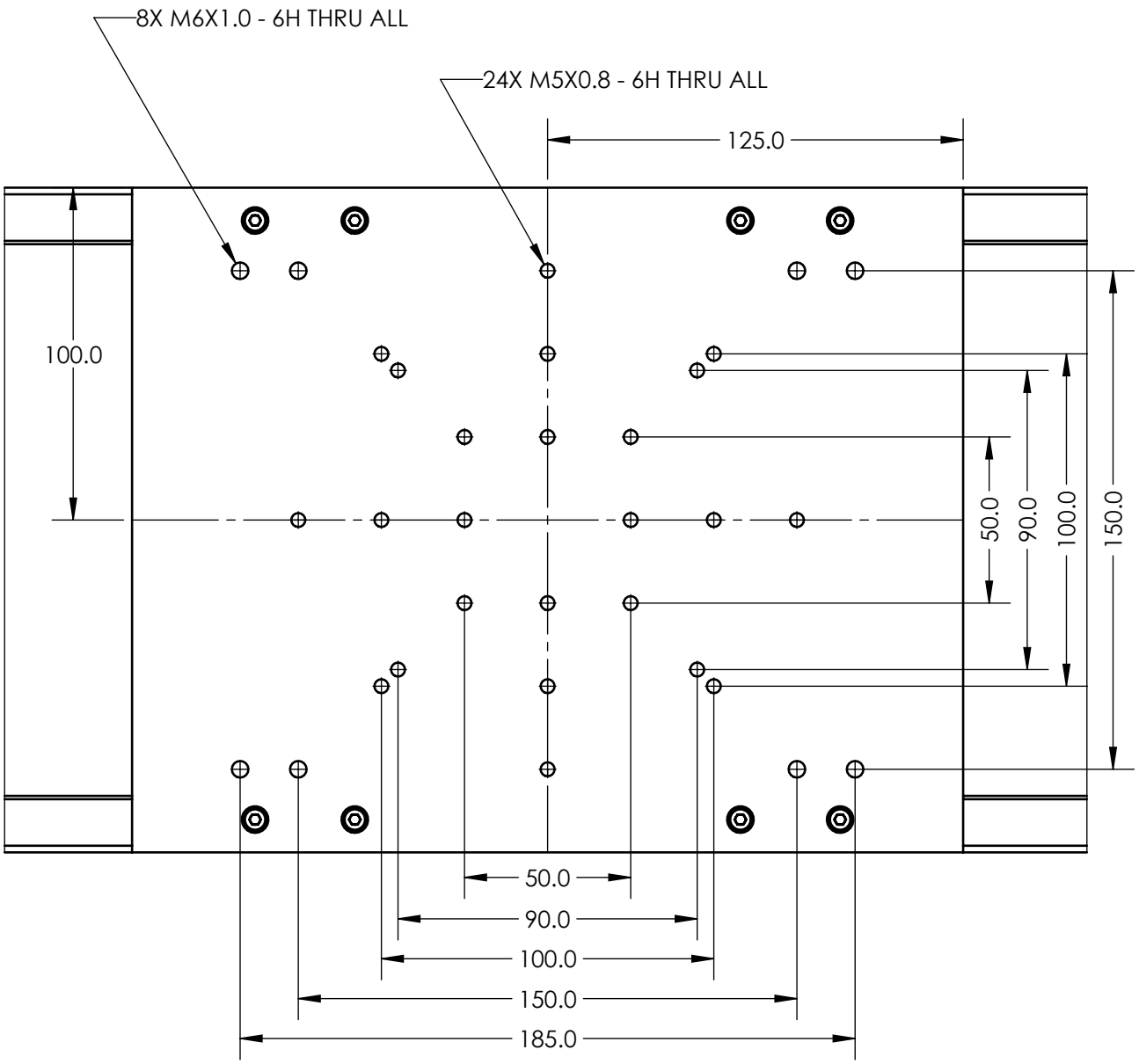
Mounting Pattern



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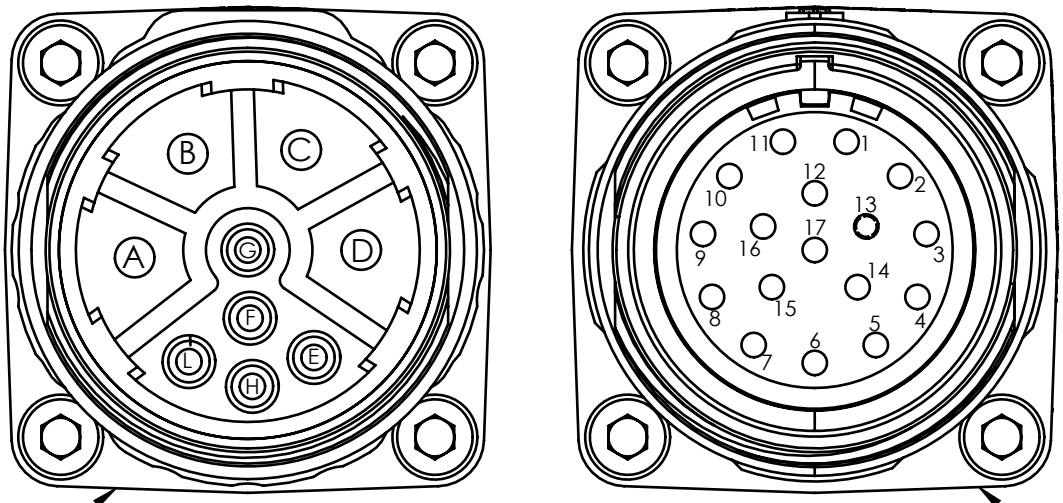

View of stage connectors from outside of stage

POWER CONNECTOR
(MOTOR)

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	*
G	*
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

Motor Specifications	
Motor Type	3 Φ 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

Feedback Specifications	
Supply Voltage (V)	5.0±10%
Supply Current (mA)	250
Encoder Feedback	Yes
Encoder Type	Incremental
Encoder Ouput	Square Wave Quadrature, RS-422 compatible, A,B,Z, Differential Pairs
Encoder Resolution	3200 cts/mm
Hall Switch Output	CMOS
Hall Switch max current (mA)	±20.0
Limit Switches	Yes
Limit Switch Output Type	CMOS
Limit Switch Output current (mA)	±20.0
Home Switch	Yes
Home Switch Output Type	CMOS
Home Switch Output current (mA)	±20.0

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End of Travel Locations