



PRODUCT OVERVIEW

Based on Pacific Bearing Company's proven Simplicity technology. Mini-Rail miniature linear guides provide smooth and quiet linear motion. The self-lubricating design requires no sealing, emits virtually no particulates, tolerates high temperature extremes and has no rolling elements that can cause catastrophic failure.

An economical alternative to conventional miniature linear guides, Mini-Rail requires no maintenance, is interchangeable with industry standard sizes.

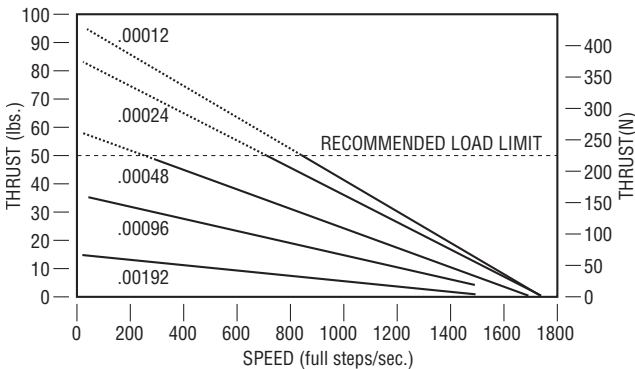
TECHNICAL DATA

Ceramic coated rails and carriages are corrosion resistant. FrelonGold™ self-lubricating liner delivers the best overall performance, the highest loads, the best wear life, and speeds.



MINI RAIL™ LS/MS SPECIFICATIONS

Bipolar • Chopper Drive • 100% Duty Cycle, 5.54mm (0.218") Lead Screw



Size 17 Stepper Motor with 5.54mm (0.218") Screw

LINEAR TRAVEL PER STEP
.001524 mm (.00006")
.003048 mm (.00012")
.006096 mm (.00024")
.012192 mm (.00048")
.024384 mm (.00096")
.048768 mm (.00192")

Notes: Rail ends are NOT coated. Fully coated rails are available upon request. CAD files can be downloaded from our website at www.pacific-bearing.com.

PERFORMANCE RATINGS FOR LINEAR MOTION

Plane bearings are rated by their limiting PV, which is a combination of load over a given surface area and the velocity.

BEARING MATERIAL	MAX. "PV"	MAX. "P"	MAX. "V" (NO LUBRICATION)
	20,000 (psi x ft/min.)	3000 psi	300 sfm
FrelonGold™	or	or	or
	430 (kgf/cm ² x m/min.)	210.9 kgf/cm ²	91.44 m/min.

PV = The performance measurement of plane bearings

PV = P x V where P = pressure (load) in psi (kgf/cm²)

V = velocity (speed) in sfm (m/min.)

Note: All three parameters must be met by an application for the bearing to perform properly.

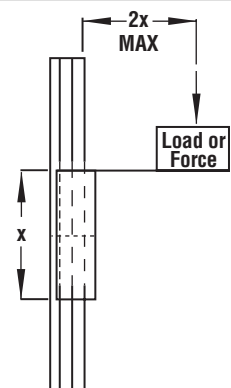
CANTILEVERED LOADS

Binding of the carriage will occur if the 2:1 ratio for cantilevered loads and drive forces is exceeded. This principle is not load or force dependent. It is a product of the coefficient of frictions associated with plane bearings. Contact factory or website for additional information.

LOAD/MOMENT CONVERSION

$$N = 4.45 \times (\text{lbs})$$

$$N\text{-m} = 0.113 \times (\text{in-lbs})$$

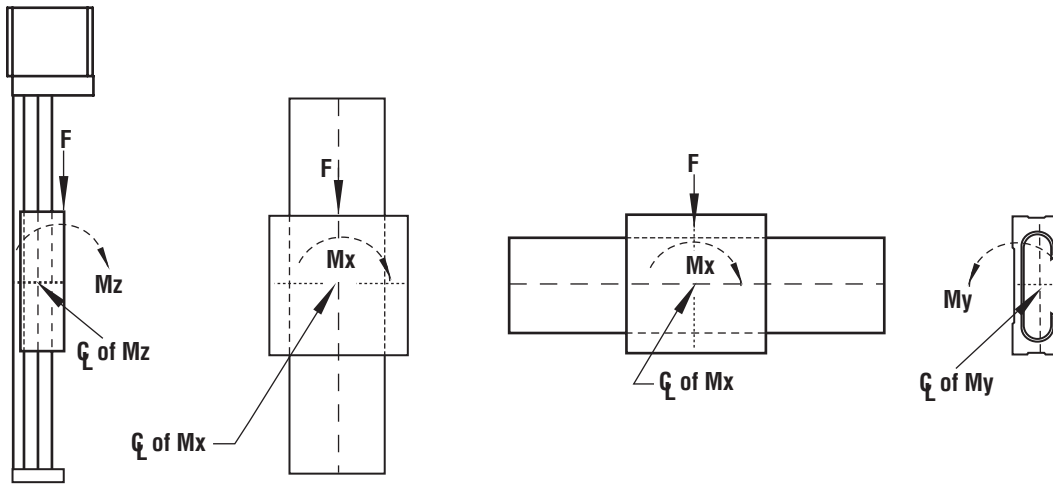
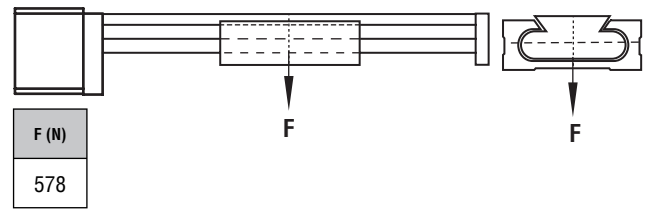
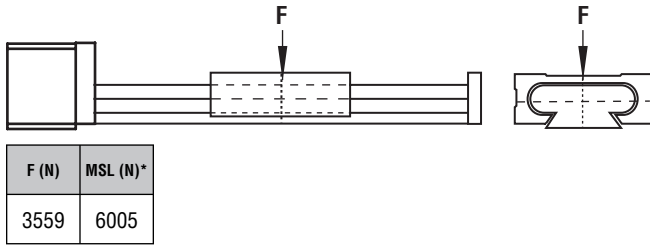


The data and specifications in this publication have been carefully compiled and are believed to be accurate and correct. However, it is the responsibility of the user to determine and ensure the suitability of Pacific Bearing™ products for a specific application. Pacific Bearing's only obligation will be to repair or replace without charge, any defective components if returned promptly. No liability is assumed beyond such replacement.



STATIC LOAD DATA FOR MINI RAIL™ LS/MS

The numbers below are for rails in a static condition. Refer to the calculations below to establish dynamic parameters.



F (N)	MX (N-m)	MY (N-m)	MZ (N-m)
1112	24.9	14.7	14.7

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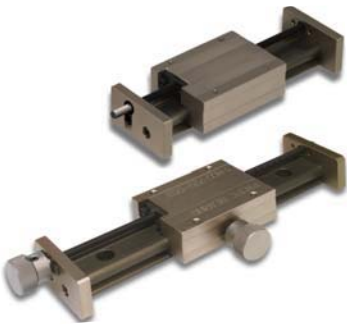
Mini Rail™ LS Series

Miniature Guide/Slide Motion Systems

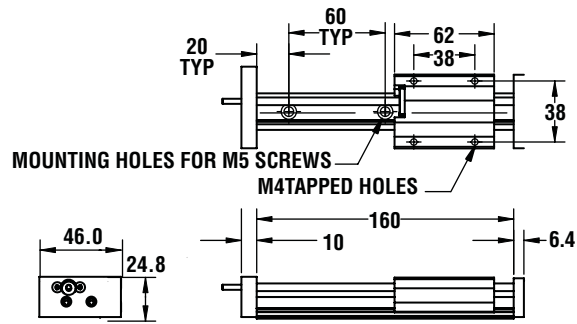
Pacific Bearing

LS SERIES

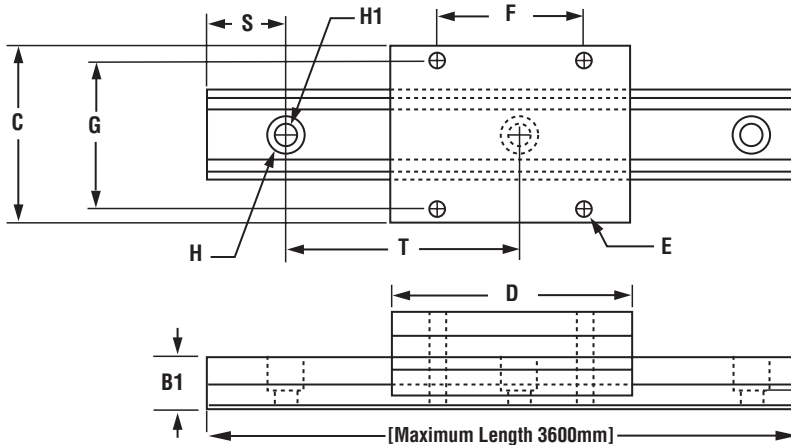
LS Series



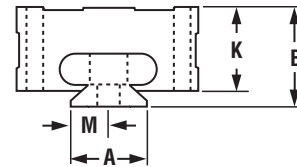
- Right hand rolled thread
- 303 stainless steel screw with TFE coating
- Self-lubricating Polyacetal, anti-backlash nut
- Lengths up to 640 mm
- Three (3) leads available
- Optional hand brake



NOTE: Unless otherwise specified, mounting holes will be centered.



NOTE: CAD files can be downloaded from our website at www.pacific-bearing.com.



MAXIMUM RAIL LENGTH 3600MM

PART NO.	RUNNING CLEARANCE	A (mm) BASE WIDTH	B OVERALL HEIGHT	B1 RAIL HEIGHT	C CARRIAGE WIDTH	D CARRIAGE LENGTH	E CARRIAGE HOLE SIZE	F CARRIAGE HOLE CTR. TO CTR.	G CARRIAGE HOLE CTR. TO CTR.	H RAIL HOLE SIZE	H1 CARRIAGE HOLE CTR. TO CTR.	H2 CARRIAGE HOLE CTR. TO CTR.	K CARRIAGE HEIGHT	M CTR. MTG. HOLE TO QUALIFY EDGE	S RAIL HOLE TO END	T RAIL HOLE CTR. TO CTR.	RAIL WT. gram/mm	CARRIAGE WT. gram/mm
MR20-XXX	.025-.051	20	25	13.4	46	62	M4 x 0.7	38	38	9.5	6	8.5	21.2	10	20	60	0.65	127.9

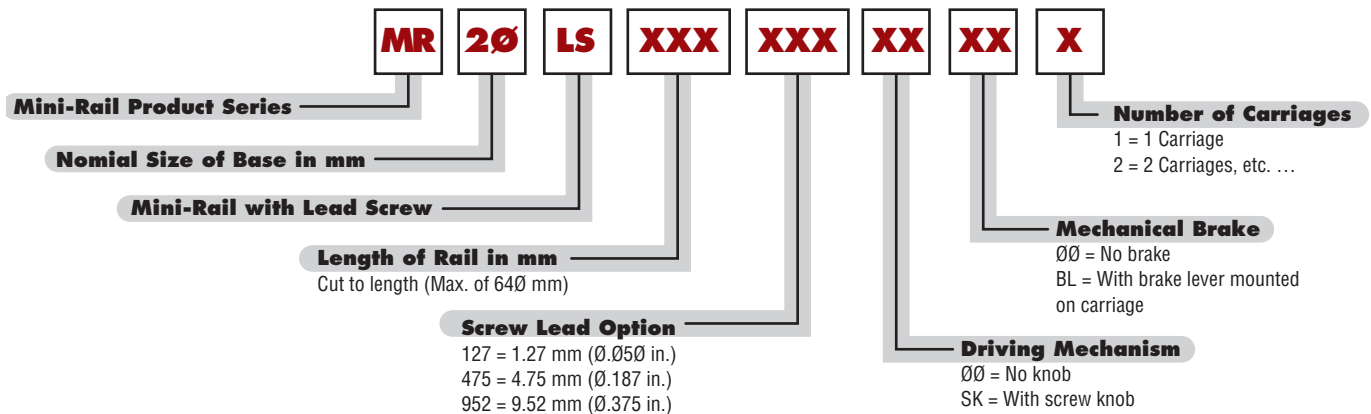
NOTES: Add the overall length of the rail to the part number, EXAMPLE "MR12-220" for a Precision Series assembly with a 220mm long rail.

Cut-to-length rails are available up to 3600mm.

The "S" dimension will remain constant at one end unless requested otherwise.

Standard and cut-to-length rail ends are NOT coated. Fully coated rails are available upon request

ORDERING INFORMATION



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Mini Rail™ MS Series

Miniature Guide/Slide Motion Systems

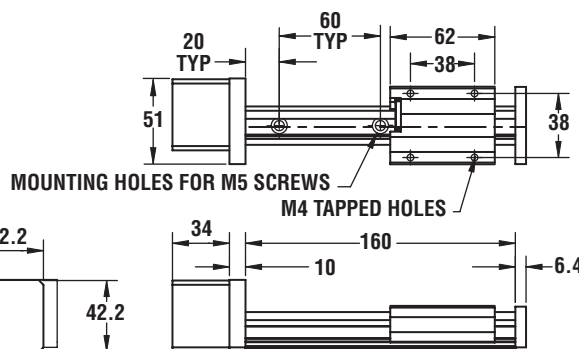
Pacific Bearing

MS SERIES

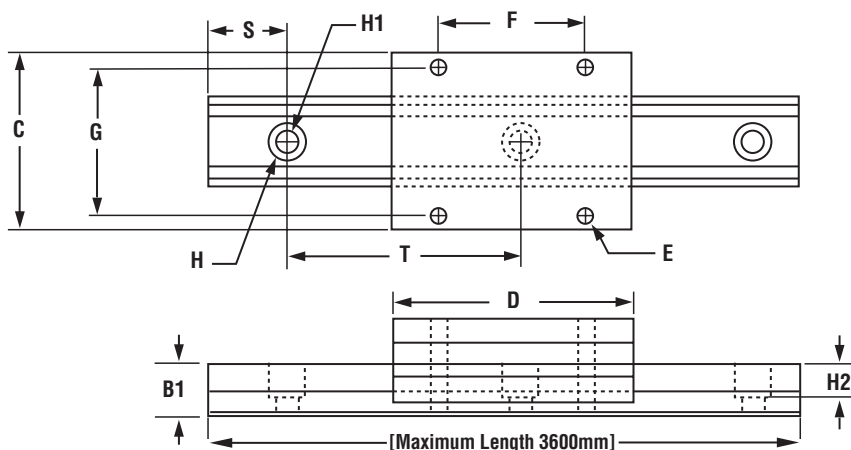


- Robust design - outstanding reliability
- Fewer parts - less maintenance
- Preloaded drive nut - eliminates backlash

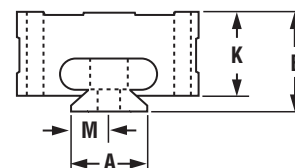
- Low cost
- High torque stepper motor (NEMA 17)
- Lengths up to 640 mm
- Ball bearing supports
- Optional hand brake
- Integral screw
- Three (3) leads available



NOTE: Unless otherwise specified, mounting holes will be centered.



NOTE: CAD files can be downloaded from our website at www.pacific-bearing.com.



MAXIMUM RAIL LENGTH 3600MM

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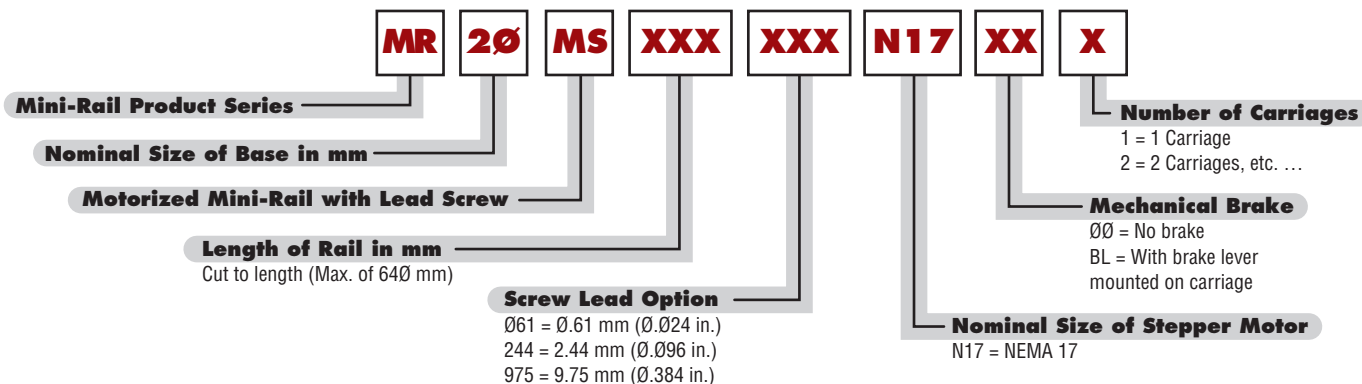
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