

## LRS™ – Linear Rail Systems

The LRS Linear Rail System in a variety of configurations, both motorized and non-motorized. These precision linear rail systems consist of a stationary base and a load bearing carriage that travels along a rigid extruded aluminum rail. The LRS Linear Rail System is available with several in-line motor options including a single stack or double stack size 17 stepper motor, a stepper motor with an integral chopper drive, or the IDEA™ programmable linear actuator, consisting of the stepper motor, drive, and controller programmed through a graphic user interface (GUI). The LRS is also available without a motor, easily allowing the designer flexibility to integrate with a variety of motor types and belt and pulley configurations.

The LRS carriage design is unique; it controls slide bearing play with a patent pending self-adjusting linear bearing. Integrated along the entire length of the rail system are “T” slots allowing the ability to mount limit switches and sensors. The lead screw is made from 303 stainless steel and can be configured with optional Black Ice TFE coating for durable and permanent lubrication. The LRS Linear Rail system comes standard with a general purpose lead screw nut, but for extreme control, the system can be configured with an optional Kerk CMP or WDG precision anti-backlash nut.



### Key Product Features

- “T” slots integrated into exterior rail bottom and sides that accommodate full length support and various mounting options.
- Loads easily attach to the compact, moving carriage with four or six M4 x 0.7 size screws.
- Load bearing carriage moves efficiently and smoothly within the internal rail geometry of this specially designed aluminum extrusion.
- Rail provides end-to-end axial stability and precise motion system accuracy.
- Automatic adjustments of slide bearing play with a patent pending “anti-backlash” linear bearing.
- Rated life equals that of the existing leadscrews of similar size.
- Leadscrew end configurations adapt to various rotary motion sources.
- Kerkote® or Black Ice™ TFE coatings on a 303 stainless steel leadscrew.
- Designed to Metric global engineering standards.
- For extreme control, LRS can be used with CMP or WDG high-precision anti-backlash nuts, as well as a freewheeling general purpose nut.

## Identifying the part number codes when ordering LRS Slides



<b>LR</b>	<b>W</b>	<b>04</b>	<b>B</b>	<b>R</b>	<b>M</b>	<b>43</b>	<b>0025</b>	<b>12</b>	<b>XXX</b>
<b>Prefix:</b> <b>LR</b> = Linear Rail System (LRS)	<b>Nut Style</b> <b>B</b> = BFW nut <b>W</b> = WDG nut <b>G</b> = Guide only	<b>Rail Frame Size: Load</b> <b>04</b> = 50 lbs (23 Kg)	<b>Coating</b> <b>S</b> = Uncoated <b>B</b> = Black Ice™ <b>N</b> = No screw	<b>Thread</b> <b>R</b> = Right hand <b>L</b> = Left hand <b>N</b> = No screw <b>X</b> = Custom	<b>Drive/Mounting</b> <b>A</b> = None <b>B</b> = No motor, in-line motor mount <b>M</b> = Motorized <b>G</b> = IDEA Drive	<b>Motor Frame</b> <b>00</b> = No motor <b>43</b> = Size 17 Stepper Motor <b>XX</b> = Custom	<b>Nominal Thread Lead Code (see Lead Code Chart below)</b> <b>0000</b> = No screw <b>Select from Lead Code Chart</b>	<b>Stroke (rounded up)</b> <b>07</b> = 7-in (177.8 mm) <b>08</b> = 8-in (203 mm) <b>12</b> = 12-in (304.8 mm) <i>Available up to 24-in (609.6 cm) max.</i>	<b>Unique Identifier</b> Number assigned by Haydon Kerk Motion Solutions (for added features such as custom configurations, etc.)

Lead (inch)	Lead (mm)	Thread Lead Code
0.025	0.635	<b>0025</b>
0.03125	0.794	<b>0031</b>
0.0394	1.0	<b>0039</b>
0.05	1.27	<b>0050</b>
0.0625	1.588	<b>0063</b>
0.0787	2.0	<b>0079</b>
0.1	2.54	<b>0100</b>
0.125	3.175	<b>0125</b>
0.1969	5.0	<b>0197</b>
0.25	6.35	<b>0250</b>
0.3937	10.0	<b>0394</b>
0.5	12.7	<b>0500</b>
0.75	19.05	<b>0750</b>
1.0	25.4	<b>1000</b>

### HOW TO ORDER EXAMPLES:

**LRG04NN-A00-0000-12-XXX** = Linear Rail System, guide only, standard linear rail, guide only (no screw), no motor, 12-in stroke, with no additional unique feature

**LRW04BR-M43-0025-12-XXX** = Linear Rail System, WDG anti-backlash nut, standard linear rail, Black Ice TFE coated screw, right hand thread, motorized, Size 17 stepper motor, 0.025-in lead, 12-in stroke, with no additional unique feature

For applications assistance or order entry, call the Haydon Kerk Motion Solutions Linear Rails technical advisors at 203.756.7441. Other systems may be available. Visit [www.HaydonKerk.com](http://www.HaydonKerk.com) for recent updates.

**Haydon™ LRS™ – Linear Rail Systems Motorized Slide Technology**

For optimum performance, the system can be fitted with the Haydon™ patented, Size 17 Hybrid Linear Actuators (43000 Series) available in a wide variety of resolutions - from 0.001524 mm (0.00006-in) per step to 0.048768 mm (0.00192-in) per step, and delivers thrust of up to 222 N (50 lbs.). For greater performance Size 17 Hybrid Double Stack Linear Actuators provide 0.0158 mm (0.000625-in) per step to 0.127 mm (0.005-in) per step and delivers thrust of up to 337 N (75 lbs.).



**Haydon™ LRS™ – Linear Rail Systems slide technology**

Haydon Linear Rail Systems (LRS) is also available without a motor. The lead-screw used in the system is provided with various leads and shaft end configurations that accommodate virtually any source of rotary power.

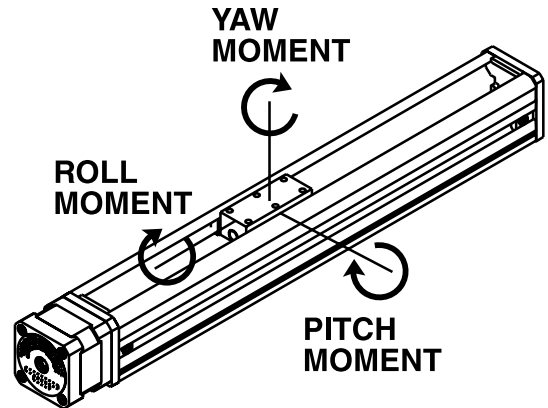


## Performance Specifications: LRS System

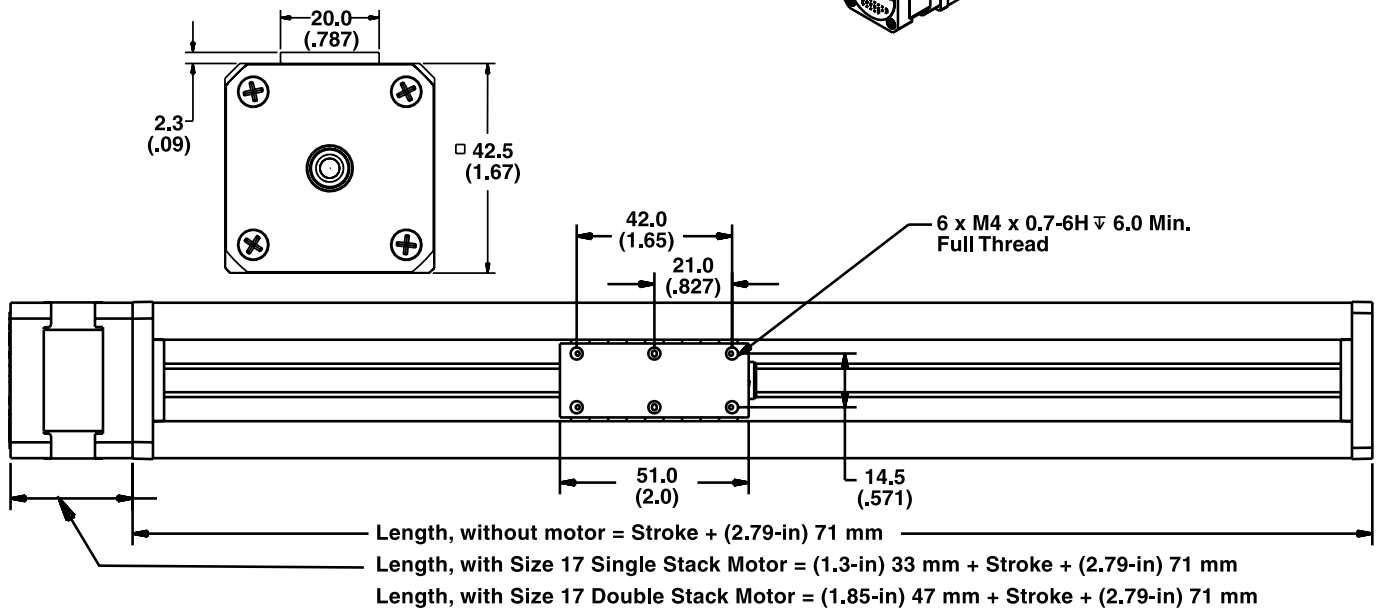
Width	Length of Stroke (max)	Speed (max)	Straight Line Accuracy	Twist
1-5/8-in square (4.3 cm square)	40-in (1000 mm)	20-in/sec (0.5 M/sec)	+/- 0.012-in/ft (+/- 1.0 mm/M)	+/- 0.25°/ft (+/- 0.75°/M)

### Load Ratings (max)

Top Load "Z" Direction	Hanging / Gantry	Max. Pitch Moment	Max. Moment Roll	Max. Moment Yaw
50 lbs (225 N)	50 lbs (225 N)	75-in - lbs (8.5 N - M)	75-in - lbs (8.5 N - M)	75-in - lbs (8.5 N - M)



## Dimensional Drawing: LRS System



For technical information about the Size 17 (43000 Series) Linear Actuator Stepper motor see page 87. For Double Stack see page 93.