Haydon Kerk Motion Solutions is an innovative technology company that offers a global network of people, facilities and services dedicated to engineering and manufacturing the world's most advanced motion control solutions.

- Systems design
- Engineering
- Manufacturing
- On-site mold making
- Precision machining
- Finishing
- Assembly
- Wiring
- Testing
- World-wide technical assistance

A standard selection of products is now available 24 hours a day at www.HaydonKerkExpress.com

A virtual 2D/3D simulation of your customized options available at www.haydonkerkpittman.com
**How to Use This Guide**

_Haydon Kerk Motion Solutions, Inc._ specializes in customized designs to solve complex engineering problems requiring precision linear motion.

Before using this guide, take a few minutes to review the table of contents and scan through the entire catalog.

---

<table>
<thead>
<tr>
<th><strong>Lead-screws and Nut Assemblies</strong> (Page 11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The lead-screw product line offers an extensive array of non-ball lead-screws, anti-backlash nuts, and free-wheeling nuts for use as components in a motion system. Our precision lead-screws and nuts that easily interface to many types of rotary power sources including stepper motors, servos, brushless DC, brush-type DC, and AC synchronous motors. Lead-screws and nuts are also versatile components in systems requiring combination mechanics such as “belt, pulley, lead-screw” systems, and “folded-over” linear actuator designs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Lead-Screws</strong> (charts on pages 20 to 24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal screw diameter: 2 mm to 24 mm (5/64-in to 15/16-in)</td>
</tr>
<tr>
<td>Leads (travel/revolution): 0.3 mm to 76 mm (0.012-in to 3-in)/revolution</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Nut Styles</strong> (product summary and charts on pages 25 to 27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 designs of anti-backlash and freewheeling nuts as a function of load and maximum allowable drag torque.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th><strong>Linear Actuator Stepper Motors</strong> (Page 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The stepper linear actuator product line offers an effective solution that simplifies the conventional way of translating rotary into linear motion. The rotary-to-linear conversion is unique; it takes place within the motor itself therefore eliminating the use of belts and pulleys, rack and pinion and other mechanical components.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Hybrid Linear Actuators</strong> (Overview on page 69)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Footprint: 21 mm to 87 mm (0.8-in to 3.4-in) square</td>
</tr>
<tr>
<td>Force Output: 2 N to 2200 N (0.5 lb to 500 lb)</td>
</tr>
<tr>
<td>Linear Travel/step: 1.5 to 127 microns/step (0.00006-in to 0.005-in)/step</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Can-Stack Linear Actuators</strong> (Overview on page 127)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Footprint: 15 mm to 46 mm (0.59-in to 1.8-in) diameter</td>
</tr>
<tr>
<td>Force Output: 7 N to 260 N (1.6 lb to 58 lb)</td>
</tr>
<tr>
<td>Linear Travel/step: 20 to 400 microns/step (0.0008-in to 0.016-in)/step</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th><strong>Rotary Stepper Motors</strong> (Page 171)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haydon Kerk rotary motors are built to provide exceptionally high torque to size ratios. Utilizing a patented enlarged rotor with low inductance coils, the motors provide superior torque and continuous, reliable high performance. Optional rare earth magnets may be specified for even higher torque. Bronze sleeve bearings are standard, ball bearings are also available.</td>
</tr>
</tbody>
</table>

| Footprint: 20 mm to 46 mm (0.79-in to 1.8-in) diameter |
| Holding Torque: 0.46 N-cm to 11.3 N-cm (0.65 oz-in to 16 oz-in) |

---

<table>
<thead>
<tr>
<th><strong>Electronic Controller Drives</strong> (Page 194)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The <em>IDEA™</em> family of programmable Stepper Motor Controllers uses an intuitive patent-pending Graphic User Interface (GUI) which greatly simplifies set up and use. Units are available in either USB or RS-485 communication. Haydon Kerk also offers a range of Stepper Motor Non-Programmable Drives controlled with Step, Direction &amp; Enable Commands. These microstepping chopper drives provide a simple solution for production volumes.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th><strong>Motorized and Non-Motorized Linear Rails and Slides</strong> (Page 202)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The linear rails and slides product line should be considered when a more extensive linear motion solution is desired to minimize overall system material cost, engineering time, and assembly cost. The linear rails and slides are complete mechanical systems that can be powered and motorized to include a linear bearing, rotary bearings, mechanical frame, precision screw and nut, and an electronic drive unit. We can also design, engineer and manufacture a multiple-axis configuration specific to your application requirements.</td>
</tr>
</tbody>
</table>

| Travel distances (stroke lengths): Up to 90-in (229 cm) |

---

<table>
<thead>
<tr>
<th><strong>ScrewRails®, Spline Shafts and Guide Rails</strong> (Page 247)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerkm® ScrewRail® combines both functions in a single, coaxial component. The design saves as much as 80% of the space used by a two-rail system. Kerkm Spline Shafts provide anti-rotation for one axis motion or a drive mechanism with rotation for two axes of motion.</td>
</tr>
</tbody>
</table>
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Who We Are

Recognized as a leader in motor miniaturization, Haydon® Products Division has been building electric motors and stepper motor based linear actuators for almost half a century. The company’s manufacturing facility, located on ten acres in the heart of Connecticut, supports today’s most efficient technology and manufacturing methods and is ISO 9001 certified. Kerk® Products Division was established in 1976 and has grown to be one of the world’s largest exclusive manufacturers of non-ball lead-screws, linear rails, and actuator systems. Our internationally acclaimed anti-backlash designs and materials provide high accuracy, unsurpassed repeatability, and long life in a full range of motion control applications.

Haydon Kerk Motion Solutions is headquartered in Waterbury, CT, with additional manufacturing operations in Milford, NH, and Changzhou, China. Haydon Kerk also has facilities in Germany and a technical center in Coueron, France.

Haydon Kerk Motion Solutions linear motion products are used in much of today’s sophisticated medical equipment, laboratory instrumentation, machinery automation, aerospace, analytical equipment, computer peripherals, semiconductor industries, and other applications that require precision motion.

AMETEK® is a global leader in electronic instruments and electromechanical devices with colleagues at numerous manufacturing, sales and service locations in the US and in many other countries around the world.

AMETEK consists of 2 operating groups: Electronic Instruments and Electromechanical.

Electronic Instruments is a leader in advanced instruments for the process, aerospace, power, and industrial markets.

Electromechanical is a differentiated supplier of electrical interconnects, specialty metals, and technical motors and associated systems, as well as a leader in floor care and specialty motors.

We take pride in our expertise in customizing products for specific application needs.
We offer high precision motion systems at any level of sophistication and integration, providing all necessary mechanical, electrical and software supply and support. Single-axis and multiple-axis systems are our expertise, either using our own components or custom designed to our clients’ specifications.

We are able to configure motion systems utilizing our own component level supply. Clients realize single-source supplier efficiency and fully tested solutions through our extensive in-house resources...

- Mechanical, electrical and software engineering teams
- Full inspection and testing capabilities (includes interferometry, vision inspection, environmental, vibration and noise testing). All operations are ISO Certified and RoHS Compliant.
- Proprietary and patented products and processes that include low friction coatings, in-house developed polymers.
- Extensive manufacturing capabilities
  - including **in-house tool design and fabrication, injection molding, EDM, 3D printing, coating and cabling.**
  - **Custom motor designs** such as axial flux motors.
  - **Linear Mechanics** with virtually unlimited assembly options. We have single and multi-axis solutions as well as Z-theta.
  - **Drives & Electronics**, integrated or stand-alone stepper drives, as well as software and servo drives.

**Development And Design Engineers**

Our experience starts with the design of the basic components and expands into the integration of these components for the right solution to your motion needs.

- Experts in medical device and surgical tool applications
- Meeting requirements of FDA, Qualification, Documentation
- Complete range of lab test OEM options
- Specialized industrial application capability

**Manufacturing Professionals**

Because we manufacture at the component level it allows us to responsibly fully evaluate all aspects of a tested system.

- Designed for manufacturability, repeatability and reproducibility
- Custom testing to mimic application
- Ongoing technical support after development cycle

**OEM Purchasing and Business Managers**

A single source for a complete system to simplify your vendor base and reduce inventory costs. We can help decrease unnecessary labor and materials that can bring production cost savings.

**Engineering / Development Managers**

Ever increasing efficiency demands can make new projects difficult to finish on budget and on time. If your team is lacking expertise in a certain area of motion control, we have the experienced engineers to help fill the voids.

Receive individual attention from the single point contact of a small, focused and strategically aligned group, backed by the resources and support of a global corporation.
Motorized and Non-motorized BGS, RGS®, WGS™, and LRS™
Linear Rails and Linear Slides
Motorized and Non-Motorized Linear Rails from Haydon Kerk Motion Solutions... Integrated technologies that provide high precision and accuracy in motion control

The motorized and non-motorized linear rails combine many technologies into a single integrated, linear motion control system. Haydon Kerk Motion Solutions linear rails feature standard wear-compensating, anti-backlash driven carriages to insure repeatable and accurate positioning. All moving surfaces include engineered polymers that provide a strong, stable platform for a variety of linear motion applications. When integrated with an IDEA Drive, the system combines Haydon hybrid linear actuator technology with a fully programmable, integrated stepper motor drive. By combining technologies into a single preassembled unit, Haydon Kerk Motion Solutions is able to improve system integration for the equipment OEM or end user. The overall cost for the customer is also lowered by offering a complete solution as it eliminates the need for rotary-to-linear conversion, as well as simplifies product development with fewer components required.

**BGS™** products are designed to position heavy loads and maintain repeatability and accuracy while withstanding significant cantilevered loading. A Black Ice® TFE coated lead-screw drives a precision nut embedded in a machined aluminum carriage mounted to a stainless-steel ball rail. The result is a smooth operating, yet rigid linear motion system. Maximum stroke lengths: BGS04 – 18 in. (460 mm); BGS06 – 24 in. (610 mm); BGS08 – 30 in. (760 mm).

The **RGS®** Linear Rail is a screw driven rail system that offers exceptional linear speed, torsional stiffness and stability, accurate positioning, and long life in a compact, value-priced assembly. The integral mounting base allows support over the entire length if desired. The length and speed of the RGS is not limited by critical screw speed, allowing high RPM and linear speeds, even over long spans. Lengths up to 8 feet (2.4 meters) can readily be built, and longer lengths are possible on a special order basis.

RGS linear rails come standard with a wear-compensating, anti-backlash driven carriage. Additional driven or passive carriages can be added, along with application specific customization. Linear guides, without the drive screw, are also available.

**WGS™** Linear Rails feature a more compact profile and improved torsional stiffness and stability. Made of the same quality components used in the RGS® series. The integral mounting base can provide support over the entire length that can extend up to 8 feet (2.4 meters). Longer lengths are possible on a special order basis.

The **WGS** utilizes sliding plane bearings on a low-profile aluminum guide rail that keeps the motion smooth throughout the travel distance. The lead-screw is precision made of high-quality stainless steel rolled on-site at a Haydon Kerk manufacturing facility.

**LRS™** Linear Rail Systems use a precision lead-screw assembly mechanism to provide controlled positioning along the axis of a robust aluminum linear slide. The carriage is a small platform with sliding element linear bearings that glide within this specially configured extrusion. The lead-screw used in the system is provided with various leads and shaft end configurations that accommodate virtually any source of rotary power.

*When integrated with Haydon Kerk Stepper Motors and electronic drives the various linear rail systems offer virtually limitless linear motion control possibilities – from high-efficiency industrial automation systems to extremely precise analytical and diagnostic equipment systems used by the medical industry.*

*More importantly, every Haydon Kerk linear rail product is supported by an experienced technical team recognized for innovation, customization, and dedicated customer service.*
Information needed to properly size a linear rail system

Haydon Kerk® Linear Rail Systems are designed to be precision motion devices. Many variables must be considered before applying a particular rail system in an application. The following is a basic checklist of information needed that will make it easier for the Haydon Kerk engineering team to assist you in choosing the proper linear rail. See order form on last page of this catalog.

Linear Rail Application Checklist

1) ☐ Maximum Load? _______________ (N or lbs.)

2) ☐ Load Center of Gravity (cg) Distance and Height (mm or inches)? See illustrations (A) (B) (C) below.
   Dimensions (☐ mm / ☐ inch):
   ☐ (A) _______ ... OR... ☐ (B) _______ AND... ☐ (C) _______

3) ☐ Rail Mount Orientation? The force needed to move the load is dependent on the orientation of the load relative to the force of gravity. For example, total required force in the horizontal plane (D) is a function of friction and the force needed for load acceleration (Ff + Fa). Total force in the vertical plane is a function of friction, load acceleration, and gravity (Ff + Fa + Fg).

   Orientation:
   ☐ (D)
   ☐ (E) ______°
   ☐ (F)
   ☐ (G)
   ☐ (H) ______°

---

* Degree Angle
Linear Rail Application Checklist (Continued)

4) Stroke Length to Move Load? __________ (mm or inches)
Overall rail size will be a function of stroke length needed to move the load, the rail frame size (load capability), the motor size, and whether or not an integrated stepper motor programmable drive system is added.

5) Move Profile?
A trapezoidal move profile divided into 3 equal segments (J) is a common move profile and easy to work with. Another common move profile is a triangular profile divided into 2 equal segments (K).

If using a trapezoidal (J) or triangular (K) move profile, the following is needed...

- Point to point move distance __________ (mm or inches)
- Move time __________ (seconds) including time of acceleration and deceleration
- Dwell time between moves __________ (seconds)

The trapezoidal move profile (J) is a good starting point in helping to size a system for prototype work.

A complex move profile (L) requires more information.

- Time (in seconds) including: \( T_1, T_2, T_3, T_4, T_5 \ldots T_n \) and \( T_{dwell} \)
- Acceleration / Deceleration (mm/sec.\(^2\) or inches/sec.\(^2\)) including: \( A_1, A_2, A_3 \ldots A_n \)

For more information call Haydon Kerk Motion Solutions Engineering at 203 756 7441.
Linear Rail Application Checklist (Continued)

6) Position Accuracy Required? __________ (mm or inches)
Accuracy is defined as the difference between the theoretical position and actual position capability of the system. Due to manufacturing tolerances in components, actual travel will be slightly different than theoretical "commanded" position. See figure (M) below.

7) Position Repeatability Required? __________ (mm or inches)
Repeatability is defined as the range of positions attained when the rail is commanded to approach the same position multiple times under identical conditions. See figure (M) below.

8) Positioning Resolution Required? __________ (mm/step or inches/step)
Positioning resolution is the smallest move command that the system can generate. The resolution is a function of many factors including the drive electronics, lead-screw pitch, and encoder (if required). The terms "resolution" and "accuracy" should never be used interchangeably.

9) Closed-Loop Position Correction Required? YES NO
In stepper motor-based linear rail systems, position correction is typically accomplished using a rotary incremental encoder (either optical or magnetic).

10) Life Requirement? (select the most important application parameter)
   a) Total mm or inches __________
   ... or ...
   b) Number of Full Strokes __________
   ... or ...
   c) Number of Cycles __________

11) Operating Temperature Range __________ (°C or °F)
   a) Will the system operate in an environment in which the worst case temperature is above room temperature?
   b) Will the system be mounted in an enclosure with other equipment generating heat?

12) Controller / Drive Information?
   a) Haydon Kerk IDEA™ Drive (with Size 17 Stepper Motors only)
   b) Customer Supplied Drive... Type? Chopper Drive L / R Drive
      Model / Style of Drive: __________________________________________________________

13) Power Supply Voltage? __________ (VDC)

14)* Step Resolution? a) Full Step b) Half-Step c) Micro-Step

15)* Drive Current? __________ (A rms / Phase) and __________ (A peak / Phase)

16)* Current Boost Capability? __________ (%)

* If the Haydon Kerk IDEA™ Drive is used disregard items 14, 15, and 16.
BGS™ Linear Rails with Recirculating Ball Slide

The BGS™ Linear Rail combines many technologies into a single integrated linear motion platform. The system provides excellent load capability and is engineered for both normal and overhanging loads. High roll, pitch, and yaw moment loading capability allows the system to maintain tight accuracy and repeatability, even in applications requiring significant cantilevered loading.

At the heart of the BGS Linear Rail system is a Haydon® hybrid linear actuator with a precision 303 stainless steel lead-screw. The lead-screw drives a machined aluminum carriage mounted to a precision stainless steel ball slide resulting in a rigid, smooth-operating motion system. The screw is coated with Black Ice® TFE coating providing a permanent wear-resistant dry lubrication.

Motorized BGS™ Product Selector Chart

<table>
<thead>
<tr>
<th>Hybrid Linear Actuator Motor...</th>
<th>BGS04</th>
<th>BGS06</th>
<th>BGS08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Stroke Length</td>
<td>18-in (460 mm)</td>
<td>24-in (610 mm)</td>
<td>30-in (760 mm)</td>
</tr>
<tr>
<td>Max. Load (Horizontal)**</td>
<td>22 lbs (100 N)</td>
<td>135 lbs (600N)</td>
<td>225 lbs (1,000 N)</td>
</tr>
<tr>
<td>Roll Moment</td>
<td>5.72 lbs-ft (7.75 N-m)</td>
<td>11.62 lbs-ft (15.75 N-m)</td>
<td>22.50 lbs-ft (30.5 N-m)</td>
</tr>
<tr>
<td>Pitch Moment</td>
<td>4.88 lbs-ft (6.60 N-m)</td>
<td>7.93 lbs-ft (10.75 N-m)</td>
<td>19.36 lbs-ft (26.25 N-m)</td>
</tr>
<tr>
<td>Yaw Moment</td>
<td>5.68 lbs-ft (7.70 N-m)</td>
<td>9.15 lbs-ft (12.40 N-m)</td>
<td>22.27 lbs-ft (30.20 N-m)</td>
</tr>
</tbody>
</table>

Motorized BGS™ Product Selector Chart

<table>
<thead>
<tr>
<th>Nominal Thread Lead</th>
<th>Lead Code</th>
<th>BGS04</th>
<th>BGS06</th>
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<tbody>
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<td>inches (mm)</td>
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<td></td>
</tr>
<tr>
<td>0.472 12.00</td>
<td>0472</td>
<td>•</td>
<td></td>
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</tr>
<tr>
<td>0.500 12.70</td>
<td>0500</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>0.630 16.00</td>
<td>0630</td>
<td>•</td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>0.750 19.05</td>
<td>0750</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>0.984 25.00</td>
<td>0984</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>1.000 25.40</td>
<td>1000</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>1.200 30.48</td>
<td>1200</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

Size 11 = 28000 Series
Size 17 = 43000 Series
Size 23 = 57000 Series

* Size 17 (43000 Series) Single and Double Stack Hybrid Linear Actuator Stepper Motors (BGS06) are available with an optional programmable IDEA™ Drive. Integrated IDEA™ Drives are not available with the BGS08 style linear rail.

** For vertical load information see specifications for Size 11 (28000 Series, page 84), Size 17 (43000 Series, page 95), and Size 23 (57000 Series, page 106).
BGS04™ Linear Rail with Hybrid 28000 Series Size 11 Double Stacks or 43000 Series Size 17 Linear Actuator Stepper Motors

The BGS™ Linear Rail combines many technologies into a single integrated linear motion platform. The system provides excellent load capability and is engineered for both normal and overhanging loads.

Hybrid Motor Specifications:
- 28000 Series Size 11 Double Stack
  - See page 84
- 43000 Series Size 17 Single Stack
  - See page 95
- 43000 Series Size 17 IDEA Drive
  - See page 100
- Programmable IDEA Drive
  - See page 194
- Integrated Connector Option
  - See page 117

BGS04 Specifications

<table>
<thead>
<tr>
<th>BGS04 with Hybrid Linear Actuator Motor...</th>
<th>Size 11 Double Stack</th>
<th>Size 17 Single Stack*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Stroke Length</td>
<td>18-in (460 mm)</td>
<td></td>
</tr>
<tr>
<td>Max. Load (Horizontal)**</td>
<td>22 lbs (100 N)</td>
<td></td>
</tr>
<tr>
<td>Roll Moment</td>
<td>5.72 lbs-ft (7.75 N-m)</td>
<td></td>
</tr>
<tr>
<td>Pitch Moment</td>
<td>4.88 lbs-ft (6.60 N-m)</td>
<td></td>
</tr>
<tr>
<td>Yaw Moment</td>
<td>5.68 lbs-ft (7.70 N-m)</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Nominal Thread Lead Code</th>
<th>Lead Code</th>
<th>Nominal Thread Lead Code</th>
<th>Lead Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>inches</td>
<td>mm</td>
<td>inches</td>
<td>mm</td>
</tr>
<tr>
<td>0.025</td>
<td>0.635</td>
<td>0.250</td>
<td>6.35</td>
</tr>
<tr>
<td>0.039</td>
<td>1.00</td>
<td>0.394</td>
<td>10.00</td>
</tr>
<tr>
<td>0.050</td>
<td>1.27</td>
<td>0.500</td>
<td>12.70</td>
</tr>
<tr>
<td>0.0625</td>
<td>1.59</td>
<td>0.750</td>
<td>19.05</td>
</tr>
<tr>
<td>0.079</td>
<td>2.00</td>
<td>1.000</td>
<td>25.40</td>
</tr>
<tr>
<td>0.100</td>
<td>2.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.118</td>
<td>3.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.200</td>
<td>5.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.025</td>
<td>0.635</td>
<td>0.250</td>
<td>6.35</td>
</tr>
<tr>
<td>0.039</td>
<td>1.00</td>
<td>0.394</td>
<td>10.00</td>
</tr>
<tr>
<td>0.050</td>
<td>1.27</td>
<td>0.500</td>
<td>12.70</td>
</tr>
<tr>
<td>0.0625</td>
<td>1.59</td>
<td>0.750</td>
<td>19.05</td>
</tr>
<tr>
<td>0.079</td>
<td>2.00</td>
<td>1.000</td>
<td>25.40</td>
</tr>
<tr>
<td>0.100</td>
<td>2.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.118</td>
<td>3.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.200</td>
<td>5.08</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Size 17 is available with an optional programmable IDEA™ Drive.

** To determine what is best for your application see the Linear Rail Applications Checklist on page 203.

Identifying the Motorized BGS04 part number codes when ordering

Prefix

BG = Ball Guide System

Frame Style

S = Standard

Frame Size Load*

04 = Max. static load 22 lbs (100 N)

Coating

B = TFE wear resist, dry lubricant Black Ice®

Drive / Mounting

M = Motorized

Nominal Thread Lead Code

0025 = .025-in (.635) (see Lead Code charts above)

Unique Identifier

Suffix used to identify Size 11 or Size 17 motor

– or a proprietary suffix assigned to a specific customer application. The identifier can apply to either a standard or custom part.

Carriage holes available in Metric sizes

- M3
- M4
- M5
- M6

NOTE: Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 603 213 6290.
BGS04™ Linear Rail with 28000 Series Size 11 Double Stack linear motors
Recommended for horizontal loads up to 22 lbs (100 N)

Dimensions = (inches) mm

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>Z1</th>
<th>Z2</th>
<th>Z3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.40</td>
<td>1.00</td>
<td>0.50</td>
<td>0.75</td>
<td>0.69</td>
<td>0.60</td>
<td>1.00</td>
<td>0.75</td>
<td>*</td>
<td>1.22</td>
<td>0.87</td>
<td>0.75</td>
<td>0.11</td>
<td>0.20</td>
<td>0.09</td>
</tr>
<tr>
<td>33.56</td>
<td>25.40</td>
<td>12.70</td>
<td>19.05</td>
<td>17.53</td>
<td>15.24</td>
<td>25.40</td>
<td>19.05</td>
<td>*</td>
<td>30.86</td>
<td>22.10</td>
<td>19.05</td>
<td>2.8</td>
<td>5.1</td>
<td>2.3</td>
</tr>
</tbody>
</table>

* Dimension “I” is a function of required travel distance.

BGS04™ Linear Rail with 43000 Series Size 17 Single Stack linear motors
Recommended for horizontal loads up to 22 lbs (100 N)

Dimensions = (inches) mm

...with IDEA™ Drive

Dimensions = (inches) mm
BGS06™ Linear Rail with Hybrid 43000 Series
Size 17 Single and Double Stacks

The BGS™ Linear Rail combines many technologies into a single integrated linear motion platform. The system provides excellent load capability and is engineered for both normal and overhanging loads.

Hybrid Motor Specifications:
- **43000 Series Size 17 Single Stack**
  - See page 95
- **43000 Series Size 17 Double Stack**
  - See page 102
- **43000 Series Size 17 IDEA™ Drive**
  - See page 100
- **Programmable IDEA™ Drive**
  - See page 194
- **Integrated Connector Option**
  - See page 117

### BGS06 Specifications

<table>
<thead>
<tr>
<th>BGS06 with Hybrid Linear Actuator Motor...</th>
<th>Size 17 Single Stack*</th>
<th>Size 17 Double Stack*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Max. Stroke Length</strong></td>
<td>24-in (610 mm)</td>
<td></td>
</tr>
<tr>
<td><strong>Max. Load (Horizontal)</strong></td>
<td>135 lbs (600 N)</td>
<td></td>
</tr>
<tr>
<td><strong>Roll Moment</strong></td>
<td>11.62 lbs-ft (15.75 N-m)</td>
<td></td>
</tr>
<tr>
<td><strong>Pitch Moment</strong></td>
<td>7.93 lbs-ft (10.75 N-m)</td>
<td></td>
</tr>
<tr>
<td><strong>Yaw Moment</strong></td>
<td>9.15 lbs-ft (12.40 N-m)</td>
<td></td>
</tr>
</tbody>
</table>

### Nominal Thread Lead

<table>
<thead>
<tr>
<th>Nominal Thread Lead</th>
<th>Lead Code</th>
</tr>
</thead>
<tbody>
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<td>inches</td>
<td>mm</td>
</tr>
<tr>
<td>0.050</td>
<td>1.27</td>
</tr>
<tr>
<td>0.079</td>
<td>2.00</td>
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<td>0.100</td>
<td>2.54</td>
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<td>0.157</td>
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<tr>
<td>0.197</td>
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<td>0.200</td>
<td>5.08</td>
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<td>0.250</td>
<td>6.35</td>
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<tr>
<td>0.375</td>
<td>9.53</td>
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</table>

### Lead Code

<table>
<thead>
<tr>
<th>Nominal Thread Lead</th>
<th>Lead Code</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>0.400</td>
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<td>12.00</td>
</tr>
<tr>
<td>0.500</td>
<td>12.70</td>
</tr>
<tr>
<td>0.750</td>
<td>19.05</td>
</tr>
<tr>
<td>0.984</td>
<td>25.00</td>
</tr>
<tr>
<td>1.000</td>
<td>25.40</td>
</tr>
<tr>
<td>1.200</td>
<td>30.48</td>
</tr>
<tr>
<td>1.200</td>
<td>12.00</td>
</tr>
</tbody>
</table>

* Available with an optional programmable IDEA™ Drive.

** To determine what is best for your application see the Linear Rail Applications Checklist on page 203.

### Identifying the Motorized BGS part number codes when ordering

- **BG**
  - Prefix
  - Ball Guide System
- **S**
  - Frame Style
  - Standard
- **06**
  - Frame Size Load*
  - 06 = Max. static load 135 lbs (600 N)
- **B**
  - Coating
  - B = TFE wear resist, dry lubricant Black Ice®
- **G**
  - Drive / Mounting
  - G = IDEA™ integrated programmable drive - USB communications
- **0079**
  - Nominal Thread Lead Code
  - 0079 = .079-in (2.0) (see Lead Code charts above)
- **XXX**
  - Unique Identifier
  - Proprietary suffix assigned to a specific customer application. The identifier can apply to either a standard or custom part.

**NOTE:** Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 603 213 6290.
BGS06™ Linear Rail with Hybrid 43000 Size 17 linear motors are recommended for horizontal loads up to 135 lbs (600 N)

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>Z1</th>
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<th>Z3</th>
</tr>
</thead>
<tbody>
<tr>
<td>inch</td>
<td>(2.00)</td>
<td>(1.50)</td>
<td>(0.75)</td>
<td>(1.13)</td>
<td>(0.81)</td>
<td>(0.90)</td>
<td>(1.50)</td>
<td>(1.25)</td>
<td>*</td>
<td>(1.50)</td>
<td>(1.05)</td>
<td>(1.13)</td>
<td>(0.14)</td>
<td>(0.25)</td>
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<tr>
<td>mm</td>
<td>50.80</td>
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<td>19.05</td>
<td>28.58</td>
<td>20.57</td>
<td>22.86</td>
<td>38.10</td>
<td>31.75</td>
<td>*</td>
<td>38.15</td>
<td>26.77</td>
<td>28.58</td>
<td>3.6</td>
<td>6.4</td>
</tr>
</tbody>
</table>

* Dimension "I" is a function of required travel distance.

Dimensions = (inches) mm

BGS06™ Motorized Linear Rails
BGS06 Dimensional Drawings

BGS06™ Linear Rail with Hybrid 43000 Size 17 linear motors with programmable IDEA™ Drive

Dimensions = (inches) mm
BGS08™ Linear Rail with Hybrid 57000 Series
Size 23 Single and Double Stacks

This BGS™ heavy-duty linear rail combines many technologies into a single integrated linear motion platform. The lead-screw drives a machined aluminum carriage mounted to a precision stainless steel ball slide resulting in a rigid, smooth-operating motion system.

Hybrid Motor Specifications:
57000 Series Size 23 Single Stack
• See page 106
57000 Series Size 23 Double Stack
• See page 111

BGS08 Specifications

<table>
<thead>
<tr>
<th>BGS08 with Hybrid Linear Actuator Motor...</th>
<th>Size 23 Single Stack</th>
<th>Size 23 Double Stack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Stroke Length</td>
<td>30-in (760 mm)</td>
<td></td>
</tr>
<tr>
<td>Max. Load (Horizontal)**</td>
<td>225 lbs (1,000 N)</td>
<td></td>
</tr>
<tr>
<td>Roll Moment</td>
<td>22.50 lbs-ft (30.5 N-m)</td>
<td></td>
</tr>
<tr>
<td>Pitch Moment</td>
<td>19.36 lbs-ft (26.25 N-m)</td>
<td></td>
</tr>
<tr>
<td>Yaw Moment</td>
<td>22.27 lbs-ft (30.20 N-m)</td>
<td></td>
</tr>
</tbody>
</table>

** To determine what is best for your application see the Linear Rail Applications Checklist on page 203.

Identifying the Motorized BGS part number codes when ordering

BG S 08 B M 0197 XXX

Prefix Frame Style Frame Size Load* Coating Drive / Mounting Nominal Thread Lead Code Unique Identifier

BG = Ball Guide System
S = Standard 08 = Max. static load 225 lbs (1,000 N)

B = TFE wear resist, dry lubricant Black Ice®
M = Motorized

0197 = .197-in (5.0)
(see Lead Code charts above)

NOTE: Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 603 213 6290.

Carriage holes available in Metric sizes
M3 M4 M5 M6

Proprietary suffix assigned to a specific customer application. The identifier can apply to either a standard or custom part.
**BGS08™ Linear Rail with Hybrid 57000 Size 23 linear motors are recommended for horizontal loads up to 225 lbs (1,000 N)**

<table>
<thead>
<tr>
<th>Unit of Measure</th>
<th>A</th>
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<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>Z1</th>
<th>Z2</th>
<th>Z3</th>
</tr>
</thead>
<tbody>
<tr>
<td>(inch)</td>
<td>(2.70)</td>
<td>(1.75)</td>
<td>(1.00)</td>
<td>(1.60)</td>
<td>(0.98)</td>
<td>(1.25)</td>
<td>(1.50)</td>
<td>(1.25)</td>
<td>*</td>
<td>(1.79)</td>
<td>(1.29)</td>
<td>(1.60)</td>
<td>(0.20)</td>
<td>(0.33)</td>
<td>(0.19)</td>
</tr>
<tr>
<td>mm</td>
<td>68.58</td>
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<td>40.64</td>
<td>24.89</td>
<td>31.75</td>
<td>38.10</td>
<td>31.75</td>
<td>45.39</td>
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<td>40.64</td>
<td>5.1</td>
<td>8.4</td>
<td>4.8</td>
<td></td>
</tr>
</tbody>
</table>

* Dimension “I” is a function of required travel distance.

Dimensions = (inches) mm
Motorized RGS® Rapid Guide Screw Linear Rails

The Motorized RGS® Rapid Guide Screw is a screw-driven rail that offers exceptional linear speed, accurate positioning, and long life in a compact, value-priced assembly. The length and speed of the RGS is not limited by critical screw speed, allowing high RPM and linear speeds, even over long spans. Lengths up to 8 feet (2.4 meters) can readily be built, and longer lengths are possible on a special order basis.

This system combines many Haydon Kerk Motion Solutions patented motion technologies into a single integrated, linear motion control system. The Motorized RGS linear rails feature standard wear-compensating, anti-backlash driven carriages to insure repeatable and accurate positioning. All moving surfaces include Kerlite® engineered polymers running on Kerkote® TFE coating, providing a strong, stable platform for a variety of linear motion applications. When integrated with an IDEA™ Drive, the system combines Haydon® hybrid linear actuator technology with a fully programmable, integrated stepper motor drive. By combining technologies into a single preassembled unit, Haydon Kerk Motion Solutions is able to improve system integration for the equipment OEM or end user. The overall cost for the customer is also lowered by offering a complete solution as it eliminates the need for rotary-to-linear conversion, as well as simplifies product development with fewer components required.

<table>
<thead>
<tr>
<th>Motorized RGS Selector Chart</th>
<th>RGS04</th>
<th>RGS06</th>
<th>RGW06</th>
<th>RGS08</th>
<th>RGS10</th>
<th>RGW10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Thread Lead Code</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>inches mm</td>
<td>0.025</td>
<td>0.039</td>
<td>0.050</td>
<td>0.0625</td>
<td>0.079</td>
<td>0.098</td>
</tr>
<tr>
<td>0.100 0.118</td>
<td>0.125</td>
<td>0.157</td>
<td>0.197</td>
<td>0.200</td>
<td>0.250</td>
<td>0.315</td>
</tr>
<tr>
<td>0.375 0.394</td>
<td>0.400</td>
<td>0.472</td>
<td>0.500</td>
<td>0.630</td>
<td>0.750</td>
<td>0.984</td>
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<td>1.000 1.200</td>
<td>1.500</td>
<td>2.000</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Please consult factory for other available leads

The RGS and RGW style numbers 04, 06, 08 and 10 indicate the recommended load capacity of the system. For motor specifications: Size 11 DS (28000 Series), see page 84; Size 17 SS (43000 Series), see page 95; Size 17 DS (43000 Series), see page 102; Size 23 SS (57000 Series), see page 106; Size 23 DS (57000 Series), see page 111.
## Non-Motorized RGS Linear Rails

### Product Selector Chart

<table>
<thead>
<tr>
<th>Rapid Guide Screw</th>
<th>Inch Lead</th>
<th>Thread Lead Code</th>
<th>Nominal Rail Diam.</th>
<th>Nominal Screw Diam.</th>
<th>Typical Drag Torque</th>
<th>Life @ 1/4 Design Load*</th>
<th>Torque-to-Move Load*</th>
<th>Design Load*</th>
<th>Screw Inertia</th>
</tr>
</thead>
<tbody>
<tr>
<td>RGS 04</td>
<td>.100</td>
<td>0100</td>
<td>0.4</td>
<td>1/4</td>
<td>3.0</td>
<td>100,000,000 (254,000,000)</td>
<td>1.0 (0.016)</td>
<td>15 (67)</td>
<td>3 x 10⁻⁸</td>
</tr>
<tr>
<td>RGS 04</td>
<td>.200</td>
<td>0200</td>
<td>0.4</td>
<td>1/4</td>
<td>4.0</td>
<td>100,000,000 (254,000,000)</td>
<td>1.5 (0.023)</td>
<td>15 (67)</td>
<td>3 x 10⁻⁸</td>
</tr>
<tr>
<td>RGS 04</td>
<td>.500</td>
<td>0500</td>
<td>0.4</td>
<td>1/4</td>
<td>5.0</td>
<td>100,000,000 (254,000,000)</td>
<td>2.5 (0.039)</td>
<td>15 (67)</td>
<td>3 x 10⁻⁸</td>
</tr>
<tr>
<td>RGS 04</td>
<td>1.000</td>
<td>1000</td>
<td>0.4</td>
<td>1/4</td>
<td>6.0</td>
<td>100,000,000 (254,000,000)</td>
<td>4.5 (0.070)</td>
<td>15 (67)</td>
<td>3 x 10⁻⁸</td>
</tr>
<tr>
<td>RGS 06</td>
<td>.100</td>
<td>0100</td>
<td>0.6</td>
<td>3/8</td>
<td>4.0</td>
<td>100,000,000 (254,000,000)</td>
<td>1.0 (0.016)</td>
<td>35 (156)</td>
<td>1.5 x 10⁻⁸</td>
</tr>
<tr>
<td>RGS 06</td>
<td>.200</td>
<td>0200</td>
<td>0.6</td>
<td>3/8</td>
<td>5.0</td>
<td>100,000,000 (254,000,000)</td>
<td>1.5 (0.023)</td>
<td>35 (156)</td>
<td>1.5 x 10⁻⁸</td>
</tr>
<tr>
<td>RGS 06</td>
<td>.500</td>
<td>0500</td>
<td>0.6</td>
<td>3/8</td>
<td>6.0</td>
<td>100,000,000 (254,000,000)</td>
<td>2.5 (0.039)</td>
<td>35 (156)</td>
<td>1.5 x 10⁻⁸</td>
</tr>
<tr>
<td>RGS 06</td>
<td>1.000</td>
<td>1000</td>
<td>0.6</td>
<td>3/8</td>
<td>7.0</td>
<td>100,000,000 (254,000,000)</td>
<td>4.5 (0.070)</td>
<td>35 (156)</td>
<td>1.5 x 10⁻⁸</td>
</tr>
<tr>
<td>RGS 08</td>
<td>.100</td>
<td>0100</td>
<td>0.8</td>
<td>1/2</td>
<td>5.0</td>
<td>100,000,000 (254,000,000)</td>
<td>1.1 (0.018)</td>
<td>50 (222)</td>
<td>5.2 x 10⁻⁸</td>
</tr>
<tr>
<td>RGS 08</td>
<td>.200</td>
<td>0200</td>
<td>0.8</td>
<td>1/2</td>
<td>6.0</td>
<td>100,000,000 (254,000,000)</td>
<td>1.7 (0.027)</td>
<td>50 (222)</td>
<td>5.2 x 10⁻⁸</td>
</tr>
<tr>
<td>RGS 08</td>
<td>.500</td>
<td>0500</td>
<td>0.8</td>
<td>1/2</td>
<td>7.0</td>
<td>100,000,000 (254,000,000)</td>
<td>3.0 (0.047)</td>
<td>50 (222)</td>
<td>5.2 x 10⁻⁸</td>
</tr>
<tr>
<td>RGS 08</td>
<td>1.000</td>
<td>1000</td>
<td>0.8</td>
<td>1/2</td>
<td>8.0</td>
<td>100,000,000 (254,000,000)</td>
<td>6.0 (0.096)</td>
<td>50 (222)</td>
<td>5.2 x 10⁻⁸</td>
</tr>
<tr>
<td>RGS 10</td>
<td>.100</td>
<td>0100</td>
<td>1.0</td>
<td>5/8</td>
<td>5.0</td>
<td>100,000,000 (254,000,000)</td>
<td>1.3 (0.020)</td>
<td>100 (445)</td>
<td>14.2 x 10⁻⁸</td>
</tr>
<tr>
<td>RGS 10</td>
<td>.200</td>
<td>0200</td>
<td>1.0</td>
<td>5/8</td>
<td>6.5</td>
<td>100,000,000 (254,000,000)</td>
<td>2.0 (0.031)</td>
<td>100 (445)</td>
<td>14.2 x 10⁻⁸</td>
</tr>
<tr>
<td>RGS 10</td>
<td>.500</td>
<td>0500</td>
<td>1.0</td>
<td>5/8</td>
<td>7.0</td>
<td>100,000,000 (254,000,000)</td>
<td>3.0 (0.047)</td>
<td>100 (445)</td>
<td>14.2 x 10⁻⁸</td>
</tr>
<tr>
<td>RGS 10</td>
<td>1.000</td>
<td>1000</td>
<td>1.0</td>
<td>5/8</td>
<td>8.5</td>
<td>100,000,000 (254,000,000)</td>
<td>6.5 (0.101)</td>
<td>100 (445)</td>
<td>14.2 x 10⁻⁸</td>
</tr>
</tbody>
</table>

**NOTE:** RGS® assemblies with lengths over 36-in. (914.4 mm) and/or leads higher than .5-in (12.7 mm) will likely have higher drag torque than listed values.

* Determined with load in a horizontal position
RGS04 Linear Rail with a 28000 Series Size 11 Double Stack

The RGS04 is a screw-driven rail that offers exceptional linear speed, accurate positioning, and long life in a compact, value-priced assembly. The RGS04 28000 Series is smallest available screw-driven slide. It offers a compact profile, reliable linear speed, accurate positioning, and long life in a high quality assembly. The length and speed of the RGS is not limited by critical screw speed, allowing high RPM and linear speeds, even over long spans.

Hybrid Motor Specifications:
28000 Series Size 11 Double Stack
• See page 84
Integrated Connector Option
• See page 117

RGS04 Linear Rail with Hybrid 28000 Series Size 11 Double Stack linear motors
Recommended for horizontal loads up to 15 lbs (67 N)

Identifying the Motorized RGS part number codes when ordering

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Frame Style</th>
<th>Frame Size Load*</th>
<th>Coating</th>
<th>Drive / Mounting</th>
<th>Nominal Thread Lead Code</th>
<th>Unique Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG</td>
<td>S</td>
<td>04</td>
<td>K</td>
<td>M</td>
<td>0100</td>
<td>XXX</td>
</tr>
</tbody>
</table>

Carriage holes available in Metric sizes
M3
M4

NOTE: Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 603 213 6290.

www.HaydonKerkExpress.com
Standard products available 24-hrs.
RGS04 Linear Rail with 43000 Series Size 17 Single Stack or Double Stack Linear Actuator Stepper Motors

The RGS04 is a screw-driven rail that offers exceptional linear speed, accurate positioning, and long life in a compact, value-priced assembly. It offers a compact profile, reliable linear speed, accurate positioning, and long life in a high quality assembly. The length and speed of the RGS is not limited by critical screw speed, allowing high RPM and linear speeds, even over long spans.

Hybrid Motor Specifications:
- 43000 Series Size 17 Single Stack  
  • See page 95
- 43000 Series Size 17 Double Stack  
  • See page 102
- 43000 Series Size 17 IDEA™ Drive  
  • See page 100

Programmable IDEA Drive  
• See page 194
Integrated Connector Option  
• See page 117

To determine what is best for your application see the Linear Rail Applications Checklist on page 203.

Identifying the Motorized RGS part number codes when ordering

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Frame Style</th>
<th>Frame Size Load*</th>
<th>Coating</th>
<th>Drive / Mounting</th>
<th>Nominal Thread Lead Code</th>
<th>Unique Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG</td>
<td>S</td>
<td>04</td>
<td>K</td>
<td>M</td>
<td>0100</td>
<td>XXX</td>
</tr>
</tbody>
</table>

- **RG** = Rapid Guide Screw
- **S** = Standard
- **K** = TFE Kerkote® Special (example: Kerkote with grease)
- **M** = Motorized
- **0100** = .025-in (.635)
- **0025** = .025-in (.635)
- **0039** = .039-in (1.00)
- **0050** = .050-in (1.27)
- **0063** = .0625-in (1.59)
- **0079** = .079-in (2.00)
- **0100** = .100-in (2.54)
- **0118** = .118-in (3.00)
- **0200** = .200-in (5.08)
- **0250** = .250-in (6.35)
- **0394** = .394-in (10.00)
- **0500** = .500-in (12.70)
- **0750** = .750-in (19.05)

**Carriage holes available in Metric sizes**
- M3
- M4
- M5
- M6

**NOTE:** Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 603 213 6290.
RGS04 with 43000 Series Size 17 Single Stack and Double Stack linear actuator stepper motors
Recommended for horizontal loads up to 15 lbs (67 N)

<table>
<thead>
<tr>
<th>(inch) mm</th>
<th>A</th>
<th>D</th>
<th>D1</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I*</th>
<th>L1</th>
<th>N</th>
<th>N1</th>
<th>P</th>
<th>Q</th>
<th>S</th>
<th>T</th>
<th>U</th>
<th>V</th>
<th>Z1</th>
<th>Z2</th>
<th>Z3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(0.4)</td>
<td>(0.75)</td>
<td>(0.75)</td>
<td>(0.53)</td>
<td>(1.4)</td>
<td>(1.0)</td>
<td>(0.5)</td>
<td>4-40 UNC</td>
<td>(0.5)</td>
<td>(1.0)</td>
<td>(1.0)</td>
<td>(0.6)</td>
<td>(0.5)</td>
<td>(0.37)</td>
<td>(0.15)</td>
<td>(0.23)</td>
<td>(0.73)</td>
<td>(0.11)</td>
<td>(0.2)</td>
<td>(0.09)</td>
</tr>
<tr>
<td>10.2</td>
<td>19.0</td>
<td>19.0</td>
<td>13.5</td>
<td>35.6</td>
<td>25.4</td>
<td>12.7</td>
<td>9.52</td>
<td>25.4</td>
<td>15.2</td>
<td>12.7</td>
<td>9.4</td>
<td>3.8</td>
<td>5.8</td>
<td>18.5</td>
<td>2.8</td>
<td>5.1</td>
<td>2.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Metric threads also available for carriage.

Dimensions = (inches) mm

RGS04 with 43000 Series Size 17 Single Stack and Double Stack linear actuator stepper motors with an integrated programmable IDEA™ Drive
Recommended for horizontal loads up to 15 lbs (67 N)

<table>
<thead>
<tr>
<th>(inch) mm</th>
<th>A</th>
<th>D</th>
<th>D1</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I*</th>
<th>L1</th>
<th>N</th>
<th>N1</th>
<th>P</th>
<th>Q</th>
<th>S</th>
<th>T</th>
<th>U</th>
<th>V</th>
<th>Z1</th>
<th>Z2</th>
<th>Z3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(0.4)</td>
<td>(0.75)</td>
<td>(0.75)</td>
<td>(0.53)</td>
<td>(1.4)</td>
<td>(1.0)</td>
<td>(0.5)</td>
<td>4-40 UNC</td>
<td>(0.5)</td>
<td>(1.0)</td>
<td>(1.0)</td>
<td>(0.6)</td>
<td>(0.5)</td>
<td>(0.37)</td>
<td>(0.15)</td>
<td>(0.23)</td>
<td>(0.73)</td>
<td>(0.11)</td>
<td>(0.2)</td>
<td>(0.09)</td>
</tr>
<tr>
<td>10.2</td>
<td>19.0</td>
<td>19.0</td>
<td>13.5</td>
<td>35.6</td>
<td>25.4</td>
<td>12.7</td>
<td>9.52</td>
<td>25.4</td>
<td>15.2</td>
<td>12.7</td>
<td>9.4</td>
<td>3.8</td>
<td>5.8</td>
<td>18.5</td>
<td>2.8</td>
<td>5.1</td>
<td>2.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Metric threads also available for carriage.

Dimensions = (inches) mm
RGS04 Non-Motorized Linear Rails

The Non-motorized RG Series linear rails feature standard wear-compensating, anti-backlash driven carriages to insure repeatable and accurate positioning. All moving surfaces include Kerkite® engineered polymers running on Kerkote® TFE coating, providing a strong, stable platform for a variety of linear motion applications.

To determine what is best for your application see the Linear Rail Applications Checklist on page 203.

Identifying the Non-Motorized RGS part number codes when ordering

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Frame Style</th>
<th>Frame Size Load</th>
<th>Coating</th>
<th>Drive / Mounting</th>
<th>Nominal Thread Lead Code</th>
<th>Unique Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG</td>
<td>S</td>
<td>04</td>
<td>K</td>
<td>A</td>
<td>0000</td>
<td>XXX</td>
</tr>
<tr>
<td>= Rapid Guide Screw</td>
<td>= Standard</td>
<td>= 15 lbs (67 N) (Maximum static load)</td>
<td>TFE Kerkote®</td>
<td>= None</td>
<td>= No screw</td>
<td>Suffix used to identify specific features</td>
</tr>
<tr>
<td>= a proprietary suffix assigned to a specific customer application.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Carriage holes available in Metric sizes M3 M4

NOTE: Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 603 213 6290.

RGS04® Screw-Driven linear rail WITHOUT MOTOR

Standard Series

Specifications

<table>
<thead>
<tr>
<th>Inch Lead</th>
<th>Thread Lead Code</th>
<th>Nominal Rail Diam.</th>
<th>Nominal Screw Diam.</th>
<th>Typical Drag Torque oz - in (N-m)</th>
<th>Life @ 1/4 Design Load*</th>
<th>Torque-to-Move Load*</th>
<th>Design Load*</th>
<th>Screw Inertia</th>
</tr>
</thead>
<tbody>
<tr>
<td>inch (mm)</td>
<td>inch (mm)</td>
<td>inch (mm)</td>
<td>inch (mm)</td>
<td>(oz-in)(N-m)</td>
<td>lbs (N)</td>
<td>oz-in sec^2/in (KgM^2/M)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.100 (2.54)</td>
<td>0100</td>
<td>.4 (10.2)</td>
<td>1/4 (6.4)</td>
<td>.02</td>
<td>100,000,000 (254,000,000)</td>
<td>.016</td>
<td>15 (67)</td>
<td>.3 x 10^6 (6.5 x 10^6)</td>
</tr>
<tr>
<td>.200 (5.08)</td>
<td>0200</td>
<td>.4 (10.2)</td>
<td>1/4 (6.4)</td>
<td>.03</td>
<td>100,000,000 (254,000,000)</td>
<td>.023</td>
<td>15 (67)</td>
<td>.3 x 10^6 (6.5 x 10^6)</td>
</tr>
<tr>
<td>.500 (12.70)</td>
<td>0500</td>
<td>.4 (10.2)</td>
<td>1/4 (6.4)</td>
<td>.04</td>
<td>100,000,000 (254,000,000)</td>
<td>.039</td>
<td>15 (67)</td>
<td>.3 x 10^6 (6.5 x 10^6)</td>
</tr>
<tr>
<td>1.000 (25.40)</td>
<td>1000</td>
<td>.4 (10.2)</td>
<td>1/4 (6.4)</td>
<td>.04</td>
<td>100,000,000 (254,000,000)</td>
<td>.070</td>
<td>15 (67)</td>
<td>.3 x 10^6 (6.5 x 10^6)</td>
</tr>
</tbody>
</table>

NOTE: RGS® assemblies with lengths over 36-in. (914.4 mm) and/or leads higher than .5-in. (12.7 mm) will likely have higher drag torque than listed values.

* Determined with load in a horizontal position
* Metric carriage hole sizes available: M3 and M4

* Metric carriage hole sizes available: M3 and M4

* Metric carriage hole sizes available: M3 and M4

**Dimensional Drawings:**

**RGS04 Screw-Driven linear rail WITHOUT MOTOR**

Recommended for horizontal loads up to 15 lbs (67 N)

Dimensions = inches (mm)

### Dimensions: RGS04

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RGS04</td>
<td>.40</td>
<td>.83</td>
<td>.1250</td>
<td>.75</td>
<td>.75</td>
<td>.53</td>
<td>1.38</td>
<td>1.000</td>
<td>.500</td>
<td>4-40 UNC</td>
<td>.6</td>
<td>.53</td>
<td>.47</td>
<td>.375</td>
</tr>
</tbody>
</table>

### Dimensions: RGS04 Standard, non-motorized with guide screw

<table>
<thead>
<tr>
<th></th>
<th>P (inch)</th>
<th>Q (inch)</th>
<th>R (inch)</th>
<th>S (inch)</th>
<th>T (inch)</th>
<th>U (inch)</th>
<th>V (inch)</th>
<th>X (inch)</th>
<th>Y (inch)</th>
<th>Z1 (inch)</th>
<th>Z2 (inch)</th>
<th>Z3 (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RGS04</td>
<td>.800</td>
<td>.50</td>
<td>.52</td>
<td>.37</td>
<td>.15</td>
<td>.23</td>
<td>.38</td>
<td>.115</td>
<td>.11</td>
<td>.20</td>
<td>.09</td>
<td></td>
</tr>
</tbody>
</table>

* Metric carriage hole sizes available: M3 and M4

**Dimensional Drawings:**

**RGS04 WITHOUT MOTOR or GUIDE SCREW**

Standard Series

Recommended for horizontal loads up to 15 lbs (67 N)

Dimensions = inches (mm)

### Dimensions: RGS04 Standard, non-motorized without guide screw

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RGS04</td>
<td>.40</td>
<td>.75</td>
<td>.75</td>
<td>.53</td>
<td>1.4</td>
<td>1.000</td>
<td>.500</td>
<td>4-40 UNC</td>
<td>.375</td>
<td>.600</td>
<td>.50</td>
<td>.37</td>
<td>.15</td>
<td>.23</td>
<td>.11</td>
<td>.20</td>
<td>.09</td>
<td></td>
</tr>
</tbody>
</table>

* Metric carriage hole sizes available: M3 and M4
RGS06 and RGW06 WIDE Series Linear Rail with Hybrid 43000 Series Size 17 Linear Actuator Stepper Motors

This system combines many Haydon Kerk Motion Solutions patented motion technologies into a single integrated, linear motion control system. The Motorized RGS linear rails feature standard wear-compensating, anti-backlash driven carriages to insure repeatable and accurate positioning. All moving surfaces include Kerkite® engineered polymers running on Kerkote® TFE coating, providing a strong, stable platform for a variety of linear motion applications. When integrated with an IDEA Drive, the system combines Haydon® hybrid linear actuator technology with a fully programmable, integrated stepper motor drive.

Hybrid Motor Specifications:
- 43000 Series Size 17 Single Stack
  - See page 95
- 43000 Series Size 17 Double Stack
  - See page 102
- 43000 Series Size 17 IDEA™ Drive
  - See page 100
- Programmable IDEA™ Drive
  - See page 194
- Integrated Connector Option
  - See page 117

To determine what is best for your application see the Linear Rail Applications Checklist on page 203.

Identifying the Motorized RGS part number codes when ordering

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Frame Style</th>
<th>Frame Size Load</th>
<th>Coating</th>
<th>Drive / Mounting</th>
<th>Nominal Thread Lead Code</th>
<th>Unique Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG</td>
<td>S</td>
<td>06</td>
<td>K</td>
<td>M</td>
<td>0100</td>
<td>XXX</td>
</tr>
</tbody>
</table>

Prefix
- RG = Rapid Guide Screw

Frame Style
- S = Standard
- W = Wide sensor mount capability

Frame Size Load
- 06 = 35 lbs (156 N) (Maximum static load)

Coating
- K = TFE Kerkote®
- X = Special (example: Kerkote with grease)

Drive / Mounting
- M = Motorized
- G = Motorized + IDEA™ integrated programmable drive – USB communications
- J = Motorized + IDEA™ integrated programmable drive – RS485 communications

Nominal Thread Lead Code
- 0050 = .050-in (.127)
- 0079 = .079-in (.200)
- 0100 = .100-in (.254)
- 0157 = .157-in (.400)
- 0197 = .197-in (.500)
- 0200 = .200-in (.508)
- 0250 = .250-in (.635)
- 0375 = .375-in (.953)
- 0400 = .400-in (1.016)
- 0472 = .472-in (1.200)
- 0500 = .500-in (1.270)
- 0750 = .750-in (1.905)
- 0984 = .984-in (2.500)
- 1000 = 1.000-in (2.54)
- 1200 = 1.200-in (3.048)

Unique Identifier
- Suffix used to identify specific motors (43000 Single/Double Stack)
- or a proprietary suffix assigned to a specific customer application. The identifier can apply to either a standard or custom part.

NOTE: Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 203 756 7441.

Carriage holes available in Metric sizes
- M3
- M4
- M5
- M6

Standard products available 24-hrs.
### RGS06 STANDARD Series with 43000 Series Size 17 Single and Double Stack

Recommended for horizontal loads up to 35 lbs (156 N)

| (inch) | A  | D  | D1 | E  | F  | G  | H  | I* | L1 | N  | N1 | P  | Q  | S  | T  | U  | V  | Z1  | Z2  | Z3  |
|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|
|        | (0.6) | (1.13) | (0.79) | (2.0) | (1.5) | (0.75) | 6-32 | (1.0) | (0.5) | (1.5) | (0.9) | (0.74) | (0.55) | (0.22) | (0.35) | (1.1) | (0.14) | (0.25) | (0.13) |
| mm     | 15.2 | 28.7 | 28.7 | 20.1 | 50.8 | 38.1 | 19.0 | 6-32 | 25.4 | 12.7 | 38.1 | 22.9 | 18.8 | 13.9 | 5.6 | 8.9 | 27.8 | 3.6 | 6.3 | 3.3 |

* Metric threads also available for carriage.

### RGW06 WIDE Series with 43000 Series Size 17 Single and Double Stack

Recommended for horizontal loads up to 35 lbs (156 N)

| (inch) | A  | D  | D1 | E  | F  | G  | H  | I* | L1 | N  | N1 | P  | Q  | S  | T  | U  | V  | Z1  | Z2  | Z3  |
|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|
|        | (0.6) | (2.0) | (1.13) | (2.0) | (1.5) | (0.75) | 6-32 | (1.0) | (0.5) | (1.46) | (0.04) | (21.1) | 13.0 | 16.0 | 35.3 | 3.6 | 6.3 | 3.6 |
| mm     | 15.2 | 50.8 | 28.7 | 20.1 | 50.8 | 38.1 | 19.0 | 6-32 | 25.4 | 12.7 | 37.1 | 26.4 | 21.1 | 13.0 | 16.0 | 35.3 | 3.6 | 6.3 | 3.6 |

* Metric threads also available for carriage.

### RGW06 Sensor Mount Kit  Part No. RGW06SK

Sensor mounting kits, based on a U-channel optical sensor, are available for the RGW Series. Each kit includes one flag, three sensor mounts, and all mounting hardware. Sensors are not included in the kit and must be ordered separately from the sensor manufacturer.
RGW06 Sensor Mount Kit Part No. RGW06SK

Sensor mounting kits, based on a U-channel optical sensor, are available for the RGW Series. Each kit includes one flag, three sensor mounts, and all mounting hardware. Sensors are not included in the kit and must be ordered separately from the sensor manufacturer.
RGS06 Series and RGW06 Wide Series Linear Rail with Hybrid 57000 Series Size 23 Linear Actuator Stepper Motors

A combination of Haydon Kerk Motion Solutions patented motion technologies into a single integrated, linear motion control system. RGS linear rails feature standard wear-compensating, anti-backlash driven carriages to insure repeatable and accurate positioning. All moving surfaces include Kerkite® engineered polymers running on Kerkote® TFE coating, providing a strong, stable platform for a variety of linear motion applications.

Hybrid Motor Specifications:
57000 Series Size 23 Single Stack
- See page 106
57000 Series Size 23 Double Stack
- See page 111

To determine what is best for your application see the Linear Rail Applications Checklist on page 203.

Identifying the Motorized RGS part number codes when ordering

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Frame Style</th>
<th>Frame Size Load</th>
<th>Coating</th>
<th>Drive / Mounting</th>
<th>Nominal Thread Lead Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG</td>
<td>S</td>
<td>06</td>
<td>K</td>
<td>M</td>
<td>0100</td>
</tr>
</tbody>
</table>

Prefix:
- RG = Rapid Guide Screw
- S = Standard
- W = Wide sensor mount capability

Frame Size Load:
- 06 = 35 lbs (156 N) (Maximum static load)

Coating:
- K = TFE
- X = Special (example: Kerkote with grease)

Drive / Mounting:
- M = Motorized

Nominal Thread Lead Code:
- 0050 = .050-in (1.27)
- 0079 = .079-in (2.00)
- 0100 = .100-in (2.54)
- 0157 = .157-in (4.00)
- 0197 = .197-in (5.00)
- 0200 = .200-in (5.08)
- 0250 = .250-in (6.35)
- 0375 = .375-in (9.53)
- 0400 = .400-in (10.16)
- 0472 = .472-in (12.00)
- 0500 = .500-in (12.70)
- 0750 = .750-in (19.05)
- 0984 = .984-in (25.00)
- 1000 = 1.000-in (25.4)
- 1200 = 1.200-in (30.48)

Unique Identifier:
- XXX

Suffix used to identify specific motors (57000 Single/Double Stack)
- or a proprietary suffix assigned to a specific customer application.
- The identifier can apply to either a standard or custom part.

NOTE: Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 603 213 6290.

Carriage holes available in Metric sizes:
- M3
- M4
- M5
- M6

Standard products available 24-hrs.
RGS06 STANDARD Series with 57000 Series Size 23 Single and Double Stack
Recommended for horizontal loads up to 35 lbs (156 N)

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>D1</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I*</th>
<th>L1</th>
<th>N</th>
<th>N1</th>
<th>P</th>
<th>Q</th>
<th>S</th>
<th>T</th>
<th>U</th>
<th>V</th>
<th>Z1</th>
<th>Z2</th>
<th>Z3</th>
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<tr>
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<td>(mm)</td>
<td>(inch)</td>
<td>(inch)</td>
<td>(inch)</td>
<td>(inch)</td>
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<td></td>
</tr>
<tr>
<td>15.2</td>
<td>38.1</td>
<td>20.1</td>
<td>50.8</td>
<td>25.4</td>
<td>58.4</td>
<td>12.7</td>
<td>38.1</td>
<td>22.9</td>
<td>18.8</td>
<td>13.9</td>
<td>5.6</td>
<td>8.9</td>
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<td>3.6</td>
<td>6.3</td>
<td>3.3</td>
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<td></td>
</tr>
</tbody>
</table>

* Metric threads also available for carriage.

RGW06 WIDE Series with 57000 Series Size 23 Single and Double Stack
Recommended for horizontal loads up to 35 lbs (156 N)

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>D1</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I*</th>
<th>L1</th>
<th>N</th>
<th>N1</th>
<th>P</th>
<th>Q</th>
<th>S</th>
<th>T</th>
<th>U</th>
<th>V</th>
<th>Z1</th>
<th>Z2</th>
<th>Z3</th>
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<tbody>
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<td>(mm)</td>
<td>(inch)</td>
<td>(inch)</td>
<td>(inch)</td>
<td>(inch)</td>
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<td>(inch)</td>
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<tr>
<td>15.2</td>
<td>38.1</td>
<td>28.7</td>
<td>58.4</td>
<td>25.4</td>
<td>58.4</td>
<td>12.7</td>
<td>38.1</td>
<td>22.9</td>
<td>18.8</td>
<td>13.9</td>
<td>5.6</td>
<td>8.9</td>
<td>27.9</td>
<td>3.6</td>
<td>6.3</td>
<td>3.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Metric threads also available for carriage.

RGS06 Sensor Mount Kit  Part No. RGS06SK
Sensor mounting kits, based on a U-channel optical sensor, are available for the RGW Series. Each kit includes one flag, three sensor mounts, and all mounting hardware. Sensors are not included in the kit and must be ordered separately from the sensor manufacturer.
RGS06 Standard Series and RGW06 Wide Series Non-Motorized Linear Rails

Non-motorized RGS linear rails feature standard wear-compensating, anti-backlash driven carriages to insure repeatable and accurate positioning. All moving surfaces include Kerkite® engineered polymers running on Kerkote® TFE coating, providing a strong, stable platform for a variety of linear motion applications.

To determine what is best for your application see the Linear Rail Applications Checklist on page 203.

Identifying the Non-Motorized RGS part number codes when ordering

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Frame Style</th>
<th>Frame Size Load</th>
<th>Coating</th>
<th>Drive / Mounting</th>
<th>Nominal Thread Lead Code</th>
<th>Unique Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG</td>
<td>S</td>
<td>06</td>
<td>K</td>
<td>A</td>
<td>0100</td>
<td>XXX</td>
</tr>
<tr>
<td></td>
<td>= Standard</td>
<td>= 35 lbs (156 N)</td>
<td>= TFE</td>
<td>= None</td>
<td>= No screw</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W = Wide</td>
<td>(Maximum static load)</td>
<td>Kerkote®</td>
<td></td>
<td>0000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>sensor</td>
<td></td>
<td>X = Special (example: Kerkote with grease)</td>
<td></td>
<td>0100 = .100-in (2.54)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>mount</td>
<td></td>
<td></td>
<td></td>
<td>0200 = .200-in (5.08)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>capability</td>
<td></td>
<td></td>
<td></td>
<td>0500 = .500-in (12.70)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1000 = 1.000-in (25.4)</td>
<td></td>
</tr>
</tbody>
</table>

Carriage holes available in Metric sizes

- M3
- M4
- M5
- M6

Carriage holes available in Metric sizes

NOTE: Dashes must be included in Part Number (∼) as shown above. For assistance or order entry, call our engineering team at 603 213 6290.
RGS06 Screw-Driven STANDARD Series linear rail
WITHOUT MOTOR

Specifications

<table>
<thead>
<tr>
<th>Inch Lead (mm)</th>
<th>Thread Lead Code</th>
<th>Nominal Rail Diam. (mm)</th>
<th>Nominal Screw Diam. (mm)</th>
<th>Typical Drag Torque oz - in (N·m)</th>
<th>Life @ 1/4 Design Load* oz-in/lb (N·m/Kg)</th>
<th>Torque-to-Move Load* lbs (N)</th>
<th>Design Load* oz-in sec²/in (KgM²/M)</th>
<th>Screw Inertia</th>
</tr>
</thead>
<tbody>
<tr>
<td>.100 (2.54)</td>
<td>0100</td>
<td>.6 (15.2)</td>
<td>3/8 (9.5)</td>
<td>4.0 (.03)</td>
<td>100,000,000 (254,000,000)</td>
<td>1.0 (156)</td>
<td>35 (156)</td>
<td>1.5 x 10⁻⁵</td>
</tr>
<tr>
<td>.200 (5.08)</td>
<td>0200</td>
<td>.6 (15.2)</td>
<td>3/8 (9.5)</td>
<td>5.0 (.04)</td>
<td>100,000,000 (254,000,000)</td>
<td>1.5 (156)</td>
<td>35 (156)</td>
<td>1.5 x 10⁻⁵</td>
</tr>
<tr>
<td>.500 (12.70)</td>
<td>0500</td>
<td>.6 (15.2)</td>
<td>3/8 (9.5)</td>
<td>6.0 (.04)</td>
<td>100,000,000 (254,000,000)</td>
<td>2.5 (156)</td>
<td>35 (156)</td>
<td>1.5 x 10⁻⁵</td>
</tr>
<tr>
<td>1.000 (25.40)</td>
<td>1000</td>
<td>.6 (15.2)</td>
<td>3/8 (9.5)</td>
<td>7.0 (.05)</td>
<td>100,000,000 (254,000,000)</td>
<td>4.5 (156)</td>
<td>35 (156)</td>
<td>1.5 x 10⁻⁵</td>
</tr>
</tbody>
</table>

NOTE: RGS® assemblies with lengths over 36-in. (914.4 mm) and/or leads higher than .5-in (12.7 mm) will likely have higher drag torque than listed values.

* Determined with load in a horizontal position

Dimensional Drawings: RGS06 Screw-Driven STANDARD Series linear rail WITHOUT MOTOR
Recommended for horizontal loads up to 35 lbs (156 N)

Dimensions = inches (mm)

** Metric carriage hole sizes available: M3, M4, M5 and M6
### Dimensional Drawings:

**RGW06 WIDE Series**  
Screw-Driven linear rail  
**WITHOUT MOTOR**

Recommended for horizontal loads up to 35 lbs (156 N)

Dimensions = inches (mm)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.60 (15.2)</td>
<td>1.25 (31.8)</td>
<td>0.1875 (4.782)</td>
<td>2.00 (50.8)</td>
<td>1.13 (28.6)</td>
<td>2.00 (50.8)</td>
<td>1.500 (38.10)</td>
<td>0.750 (19.05)</td>
<td>6-32 (UNC)</td>
<td>1.2 (30)</td>
<td>0.80 (20.3)</td>
<td>0.80 (20.3)</td>
<td>0.500 (12.70)</td>
<td></td>
</tr>
</tbody>
</table>

### MOTOR MOUNT for

**RGW06 WIDE Series**  
Screw-Driven linear rail  
**WITHOUT MOTOR**

* NOTE: The coupling shown in the Dimensional Drawing is not included.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.60 (15.2)</td>
<td>2.00 (50.8)</td>
<td>1.13 (28.6)</td>
<td>1.67 (42.2)</td>
<td>2.0 (50.8)</td>
<td>1.500 (38.10)</td>
<td>0.750 (19.05)</td>
<td>6-32 (UNC)</td>
<td>0.80 (20.3)</td>
<td>1.93 (48.9)</td>
<td>0.31 (7.9)</td>
<td>0.500 (12.70)</td>
<td>1.50 (38.1)</td>
</tr>
</tbody>
</table>

### RGW06 Sensor Mount Kit  Part No. RGW06SK

Sensor mounting kits, based on a U-channel optical sensor, are available for the RGW Series. Each kit includes one flag, three sensor mounts, and all mounting hardware. Sensors are not included in the kit and must be ordered separately from the sensor manufacturer.
### Dimensional Drawings: RGS06 WITHOUT motor and WITHOUT Guide Screw

#### STANDARD Series

Recommended for horizontal loads up to 35 lbs (156 N)

Dimensions = inches (mm)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>D</th>
<th>D1</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>N</th>
<th>P</th>
<th>Q</th>
<th>S</th>
<th>T</th>
<th>U</th>
<th>V</th>
<th>Z1</th>
<th>Z2</th>
<th>Z3</th>
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</thead>
<tbody>
<tr>
<td>RGS06</td>
<td>.60</td>
<td>1.13</td>
<td>1.13</td>
<td>.79</td>
<td>2.0</td>
<td>1.50</td>
<td>.750</td>
<td>6-32</td>
<td>.900</td>
<td>.74</td>
<td>.55</td>
<td>.22</td>
<td>.35</td>
<td>1.1</td>
<td>.14</td>
<td>.25</td>
<td>.13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(15.2)</td>
<td>(28.6)</td>
<td>(28.6)</td>
<td>(20.1)</td>
<td>(51)</td>
<td>(38.10)</td>
<td>(19.05)</td>
<td>(12.70)</td>
<td>(22.86)</td>
<td>(18.8)</td>
<td>(14.0)</td>
<td>(5.6)</td>
<td>(8.9)</td>
<td>(28)</td>
<td>(3.6)</td>
<td>(6.4)</td>
<td>(3.3)</td>
<td></td>
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</table>

* Metric carriage hole sizes available: M3, M4, M5 and M6

### Dimensional Drawings: RGW06 WITHOUT motor and WITHOUT Guide Screw

#### WIDE Series

Recommended for horizontal loads up to 35 lbs (156 N)

Dimensions = inches (mm)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>D</th>
<th>D1</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I*</th>
<th>N</th>
<th>P</th>
<th>Q</th>
<th>S</th>
<th>T</th>
<th>U</th>
<th>V</th>
<th>Z1</th>
<th>Z2</th>
<th>Z3</th>
</tr>
</thead>
<tbody>
<tr>
<td>RGW06</td>
<td>.60</td>
<td>2.00</td>
<td>1.13</td>
<td>2.00</td>
<td>1.50</td>
<td>.750</td>
<td>6-32</td>
<td>.500</td>
<td>1.460</td>
<td>.83</td>
<td>.51</td>
<td>.63</td>
<td>1.4</td>
<td>.14</td>
<td>.25</td>
<td>.14</td>
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<tr>
<td></td>
<td>(15.2)</td>
<td>(50.8)</td>
<td>(28.6)</td>
<td>(50.8)</td>
<td>(38.10)</td>
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<td>(12.70)</td>
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<td>(36)</td>
<td>(3.6)</td>
<td>(6.4)</td>
<td>(3.6)</td>
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</table>

* Metric carriage hole sizes available: M3, M4, M5 and M6
RGS08 Series for Heavier Weight Applications with Hybrid 57000 Series Stepper Motors

A combination of patented motion technologies into a single integrated, linear motion control system. RGS linear rails feature standard wear-compensating, anti-backlash driven carriages to insure repeatable and accurate positioning. All moving surfaces include Kerktite® engineered polymers running on Kerkote® TFE coating, providing a strong, stable platform for a variety of linear motion applications.

Identifying the Motorized RGS part number codes when ordering

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Frame Style</th>
<th>Frame Size Load</th>
<th>Coating</th>
<th>Drive / Mounting</th>
<th>Nominal Thread Lead Code</th>
<th>Unique Identifier</th>
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<tbody>
<tr>
<td>RG</td>
<td>S</td>
<td>08</td>
<td>K</td>
<td>M</td>
<td>0100 - XXX</td>
<td>RGS08</td>
</tr>
</tbody>
</table>

Prefix RG = Rapid Guide Screw

Frame Style S = Standard

Frame Size Load 08 = 50 lbs (222 N) (Maximum static load)

Coating K = TFE

Kerkote®

Drive / Mounting M = Motorized

Nominal Thread Lead Code

0098 = .098-in (2.50)
0100 = .100-in (2.54)
0197 = .197-in (5.00)
0200 = .200-in (5.08)
0500 = .500-in (12.70)
0630 = .630-in (16.00)
1000 = 1.000-in (25.4)

Unique Identifier

Suffix used to identify specific motors (57000 Single/Double Stack – or a proprietary suffix assigned to a specific customer application. The identifier can apply to either a standard or custom part.

Identifying the Motorized RGS part number codes when ordering

NOTE: Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 603 213 6290.

RGS08® with 57000 Series Size 23 Single and Double Stack linear motors

Recommended for horizontal loads up to 50 lbs (222 N)

Dimensions = (inches) mm

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>D1</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I*</th>
<th>L1</th>
<th>N</th>
<th>N1</th>
<th>P</th>
<th>Q</th>
<th>S</th>
<th>T</th>
<th>U</th>
<th>V</th>
<th>Z1</th>
<th>Z2</th>
<th>Z3</th>
</tr>
</thead>
<tbody>
<tr>
<td>(inch)</td>
<td>0.8</td>
<td>(1.6)</td>
<td>1.06</td>
<td>2.7</td>
<td>1.0</td>
<td>1.0</td>
<td>10-24</td>
<td>1.0</td>
<td>1.0</td>
<td>0.625</td>
<td>1.5</td>
<td>1.25</td>
<td>1.0</td>
<td>0.74</td>
<td>0.3</td>
<td>0.51</td>
<td>1.47</td>
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<td>mm</td>
<td>20.3</td>
<td>40.6</td>
<td>26.9</td>
<td>66.8</td>
<td>25.4</td>
<td>15.9</td>
<td>38.1</td>
<td>15.9</td>
<td>25.4</td>
<td>18.8</td>
<td>7.6</td>
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<td>5.1</td>
<td>8.4</td>
<td>4.8</td>
<td></td>
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</tbody>
</table>

* Metric threads also available for carriage.

Dimensions = (inches) mm
RGS08 Non-Motorized Linear Rails

Non-motorized RGS linear rails feature standard wear-compensating, anti-backlash driven carriages to insure repeatable and accurate positioning. All moving surfaces include Kerkite® engineered polymers running on Kerkote® TFE coating, providing a strong, stable platform for a variety of linear motion applications.

To determine what is best for your application see the Linear Rail Applications Checklist on page 203.

Identifying the Non-Motorized RGS part number codes when ordering

<table>
<thead>
<tr>
<th>RG</th>
<th>S</th>
<th>08</th>
<th>K</th>
<th>A</th>
<th>0200</th>
<th>XXX</th>
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<tbody>
<tr>
<td>Prefix</td>
<td>Frame Style</td>
<td>Frame Size Load</td>
<td>Coating</td>
<td>Drive / Mounting</td>
<td>Nominal Thread Lead Code</td>
<td>Unique Identifier</td>
</tr>
<tr>
<td>RG = Rapid Guide Screw</td>
<td>S = Standard</td>
<td>08 = 50 lbs (222 N) (Maximum static load)</td>
<td>K = Kerkite® TFE</td>
<td>A = None</td>
<td>0000 = No screw</td>
<td>0100 = .100-in (2.54)</td>
</tr>
</tbody>
</table>

Carriage holes available in Metric sizes

M3
M4
M5
M6

NOTE: Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 603 213 6290.

RGS08 Screw-Driven STANDARD Series linear rail WITHOUT MOTOR

Specifications

<table>
<thead>
<tr>
<th>Inch Lead</th>
<th>Thread Lead Code</th>
<th>Nominal Rail Diam. (in mm)</th>
<th>Nominal Screw Diam. (in mm)</th>
<th>Typical Drag Torque oz - in (N-m)</th>
<th>Life @ 1/4 Design Load* (inch)</th>
<th>Torque-to-Move Load* (oz-in/lb (N-m/Kg))</th>
<th>Design Load* (lbs)</th>
<th>Screw Inertia (oz-in sec^2/in (Kgm^2/M))</th>
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<tbody>
<tr>
<td>RGS08 Non-Motorized with Guide Screw</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.100 (2.54)</td>
<td>0100</td>
<td>.8 (20.3)</td>
<td>1/2 (12.7)</td>
<td>5.0 (0.04)</td>
<td>100,000,000 (254,000,000)</td>
<td>1.1 (0.018)</td>
<td>50 (222)</td>
<td>5.2 x 10^5 (20.0 x 10^4)</td>
</tr>
<tr>
<td>.200 (5.08)</td>
<td>0200</td>
<td>.8 (20.3)</td>
<td>1/2 (12.7)</td>
<td>6.0 (0.06)</td>
<td>100,000,000 (254,000,000)</td>
<td>1.7 (0.027)</td>
<td>50 (222)</td>
<td>5.2 x 10^5 (20.0 x 10^4)</td>
</tr>
<tr>
<td>.500 (12.70)</td>
<td>0500</td>
<td>.8 (20.3)</td>
<td>1/2 (12.7)</td>
<td>7.0 (0.08)</td>
<td>100,000,000 (254,000,000)</td>
<td>3.0 (0.047)</td>
<td>50 (222)</td>
<td>5.2 x 10^5 (20.0 x 10^4)</td>
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<tr>
<td>1.000 (25.40)</td>
<td>1000</td>
<td>0.8 (20.3)</td>
<td>1/2 (12.7)</td>
<td>8.0 (0.10)</td>
<td>100,000,000 (254,000,000)</td>
<td>6.0 (0.096)</td>
<td>50 (222)</td>
<td>5.2 x 10^5 (20.0 x 10^4)</td>
</tr>
</tbody>
</table>

NOTE: RGS® assemblies with lengths over 36-in. (914.4 mm) and/or leads higher than .5-in (12.7 mm) will likely have higher drag torque than listed values.

* Determined with load in a horizontal position
Dimensional Drawings: RGS08 Screw-Driven linear rail
WITHOUT Motor
STANDARD Series
Recommended for horizontal loads up to 50 lbs (222 N)

Dimensions = inches (mm)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
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<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>K</th>
<th>L1</th>
<th>L2</th>
<th>N</th>
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<td>.80</td>
<td>1.50</td>
<td>2.50</td>
<td>1.60</td>
<td>1.60</td>
<td>1.06</td>
<td>2.7</td>
<td>1.75</td>
<td>1.00</td>
<td>1.3</td>
<td>1.09</td>
<td>.77</td>
<td>.625</td>
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<tr>
<td></td>
<td>(20.3)</td>
<td>(38.1)</td>
<td>(63.50)</td>
<td>(40.6)</td>
<td>(40.6)</td>
<td>(26.9)</td>
<td>(69)</td>
<td>(44.45)</td>
<td>(25.4)</td>
<td>(33)</td>
<td>(27.7)</td>
<td>(19.6)</td>
<td>(15.88)</td>
</tr>
</tbody>
</table>

* Metric carriage hole sizes available: M3, M4, M5 and M6

---

Dimensional Drawings: RGS08 WITHOUT motor and WITHOUT Guide Screw
STANDARD Series
Recommended for horizontal loads up to 50 lbs (222 N)

Dimensions = inches (mm)

|      | A   | D   | D1  | E   | F   | G   | H   | I   | N   | P   | Q   | R   | S   | T   | U   | V   | X   | Y   | Z1  | Z2  | Z3  |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| RGS08| .80 | 1.60| 1.60| 1.06| 2.7 | 1.75 | 1.00| 10-24| .625| 1.250| 1.0  | .74 | .30 | .51 | 1.47| .20 | .33 | .19 |
|      | (20.3)| (40.6)| (40.6)| (26.9)| (69) | (44.45)| (25.4)| (UNC)| (15.88)| (31.75)| (25.4)| (18.8)| (7.6)| (13.0)| (37.3)| (5.1)| (8.38)| (4.82) |

* Metric carriage hole sizes available: M3, M4, M5 and M6
RGS10 Standard and RGW10 Motorized Linear Rails
57000 Series Size 23 Linear Actuator Stepper Motors

Driven by a Size 23 Hybrid motor, the 25.4 mm (1-inch) diameter splined carriage guide has been designed to carry a weight load up to 100 lbs (445 N). A high performance motion control system combines power and precision. The system combines many Haydon Kerk Motion Solutions patented motion technologies into a single integrated, linear motion control system. The Motorized RGS linear rails feature standard wear-compensating, anti-backlash driven carriages to insure repeatable and accurate positioning. All moving surfaces include Kerkite® engineered polymers running on Kerkote® TFE coating, providing a strong, stable platform for a variety of linear motion applications.

Hybrid Motor Specifications:
57000 Series Size 23 Single Stack
• See page 106
57000 Series Size 23 Double Stack
• See page 111

To determine what is best for your application see the Linear Rail Applications Checklist on page 203.

Identifying the Motorized RGS part number codes when ordering

Prefix | Frame Style | Frame Size Load | Coating | Drive / Mounting | Nominal Thread Lead Code | Unique Identifier
--- | --- | --- | --- | --- | --- | ---
RG | Standard | 100 lbs (445 N) | K = TFE | Motorized | 0100 |
S | Wide | (Maximum static load) | Kerkote® | | (.100-in) (2.54) |
10 | | | X = Special | | (.125-in) (3.18) |
K | | | (example: Kerkite with grease) | | (.200-in) (5.08) |
M | | | | | (.250-in) (6.35) |
| | | | | | (.315-in) (8.00) |
| | | | | | (.500-in) (12.70) |
| | | | | | (.630-in) (16.00) |
| | | | | | (.1000-in) (25.4) |
| | | | | | (.1500-in) (38.10) |
| | | | | | (.2000-in) (50.80) |

NOTE: Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 603 213 6290.

Carriage holes available in Metric sizes
M3
M4
M5
M6

RGS® MOTORIZED LINEAR RAILS
RGS10 STANDARD Series with 57000 Series Size 23 Single and Double Stack
Recommended for horizontal loads up to 100 lbs (445 N)

Dimensions = (inches) mm

RGS10 WIDE Series with 57000 Series Size 23 Single and Double Stack
Recommended for horizontal loads up to 100 lbs (445 N)

RGW10 Sensor Mount Kit  Part No. RGW10SK
Sensor mounting kits, based on a U-channel optical sensor, are available for the RGW Series. Each kit includes one flag, three sensor mounts, and all mounting hardware. Sensors are not included in the kit and must be ordered separately from the sensor manufacturer.
**RGS10 and RGW10 Non-Motorized Linear Rails With and Without Guide Screw**

Haydon Kerk Motion Solutions, Inc. • www.haydonkerkpittman.com • Phone: 800 243 2715 • International: 203 756 7441

**RGS10 Non-Motorized Linear Rails**

Non-motorized RGS linear rails feature standard wear-compensating, anti-backlash driven carriages to insure repeatable and accurate positioning. All moving surfaces include Kerkite® engineered polymers running on Kerkote® TFE coating, providing a strong, stable platform for a variety of linear motion applications.

To determine what is best for your application see the Linear Rail Applications Checklist on page 203.

**Identifying the Non-Motorized RGS part number codes when ordering**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RG</td>
<td>S</td>
<td>10</td>
<td>K</td>
<td>A</td>
</tr>
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<td><strong>Prefix</strong></td>
<td><strong>Frame Style</strong></td>
<td><strong>Frame Size Load</strong></td>
<td><strong>Coating</strong></td>
<td><strong>Drive / Mounting</strong></td>
</tr>
<tr>
<td>RG = Rapid Guide Screw</td>
<td>S = Standard</td>
<td>10 = 100lbs (445 N) (Maximum static load)</td>
<td>K = TFE</td>
<td>A = None</td>
</tr>
<tr>
<td></td>
<td>W = Wide sensor mount capability</td>
<td></td>
<td>Kerkote®</td>
<td>B = In-line screw motor mount</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Special (example: Kerkote with grease)</td>
<td></td>
</tr>
</tbody>
</table>

**Frame holes available in Metric sizes**

- M3
- M4
- M5
- M6

**NOTE:** Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 603 213 6290.

**RGW10 non-motorized with drive screw, sensor mount, and motor mount**

**Nominal Thread Lead Code**

- 0000 = No screw
- 0100 = .100-in (2.54)
- 0200 = .200-in (5.08)
- 0500 = .500-in (12.70)
- 1000 = 1.000-in (25.4)

**Unique Identifier**

Suffix used to identify specific features

- or a proprietary suffix assigned to a specific customer application. The identifier can apply to either a standard or custom part.
RGS10 Screw-Driven linear rail WITHOUT MOTOR
STANDARD Series

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Inch Lead Code</th>
<th>Inch Lead (mm)</th>
<th>Thread Lead Code</th>
<th>Nominal Screw Diam. (inch)</th>
<th>Nominal Screw Diam. (mm)</th>
<th>Typical Drag Torque oz-in (N-m)</th>
<th>Life @ 1/4 Design Load (inches)</th>
<th>Torque-to-Move Load* oz-in/lb (N-m/Kg)</th>
<th>Design Load* lbs (N)</th>
<th>Screw Inertia oz-in sec²/in (KgM²/M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RGS10</td>
<td>.100 (2.54)</td>
<td>0100</td>
<td>1.0 (25.4)</td>
<td>5/8 (15.9)</td>
<td>5.0 (.04)</td>
<td>100,000,000 (254,000,000)</td>
<td>1.3 (.020)</td>
<td>100 (445)</td>
<td>14.2 x 10⁻² (3.9 x 10⁻³)</td>
<td></td>
</tr>
<tr>
<td>Non-Motorized with Guide Screw</td>
<td>.200 (5.08)</td>
<td>0200</td>
<td>1.0 (25.4)</td>
<td>5/8 (15.9)</td>
<td>6.5 (.05)</td>
<td>100,000,000 (254,000,000)</td>
<td>2.0 (.031)</td>
<td>100 (445)</td>
<td>14.2 x 10⁻² (3.9 x 10⁻³)</td>
<td></td>
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<tr>
<td></td>
<td>.500 (12.70)</td>
<td>0500</td>
<td>1.0 (25.4)</td>
<td>5/8 (15.9)</td>
<td>7.0 (.05)</td>
<td>100,000,000 (254,000,000)</td>
<td>3.0 (.047)</td>
<td>100 (445)</td>
<td>14.2 x 10⁻² (3.9 x 10⁻³)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.000 (25.40)</td>
<td>1000</td>
<td>1.0 (25.4)</td>
<td>5/8 (15.9)</td>
<td>8.5 (.06)</td>
<td>100,000,000 (254,000,000)</td>
<td>.101 (.445)</td>
<td>100 (445)</td>
<td>14.2 x 10⁻² (3.9 x 10⁻³)</td>
<td></td>
</tr>
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</table>

NOTE: RGS® assemblies with lengths over 36-in. (914.4 mm) and/or leads higher than .5-in (12.7 mm) will likely have higher drag torque than listed values.

* Determined with load in a horizontal position

---

Dimensional Drawings: RGS10 Screw-Driven linear rail WITHOUT MOTOR
STANDARD Series

Recommended for horizontal loads up to 100 lbs (445 N)

Dimensions = inches (mm)

---

### Dimensions

#### RGS10

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>D1</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I*</th>
<th>K</th>
<th>L1</th>
<th>L2</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00 (25.4)</td>
<td>1.75 (44.5)</td>
<td>.3125 (7.938)</td>
<td>2.00 (50.8)</td>
<td>2.00 (50.8)</td>
<td>1.32 (33.5)</td>
<td>3.3 (83)</td>
<td>2.250 (57.15)</td>
<td>1.250 (31.8)</td>
<td>1/4-20 UNC</td>
<td>1.6 (41)</td>
<td>1.30 (33.0)</td>
<td>.30 (9.5)</td>
<td>.750 (19.05)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P</th>
<th>Q</th>
<th>R</th>
<th>S</th>
<th>T</th>
<th>U</th>
<th>V</th>
<th>X</th>
<th>Y</th>
<th>Z1</th>
<th>Z2</th>
<th>Z3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.500 (38.10)</td>
<td>1.25 (31.8)</td>
<td>1.30 (33.0)</td>
<td>.92 (23.4)</td>
<td>.92 (23.4)</td>
<td>.64 (16.3)</td>
<td>1.83 (46.5)</td>
<td>.88 (22.4)</td>
<td>.280 (7.11)</td>
<td>.26 (6.6)</td>
<td>.50 (12.7)</td>
<td>.22 (5.6)</td>
</tr>
</tbody>
</table>

* Metric carriage hole sizes available: M3, M4, M5 and M6

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---
RGW10 Sensor Mount Kit  Part No. RGW10SK

Sensor mounting kits, based on a U-channel optical sensor, are available for the RGW Series. Each kit includes one flag, three sensor mounts, and all mounting hardware. Sensors are not included in the kit and must be ordered separately from the sensor manufacturer.
**Dimensional Drawings: RGS10 WITHOUT motor and WITHOUT Guide Screw**

**STANDARD Series**
Recommended for horizontal loads up to 100 lbs (445 N)

Dimensions = inches (mm)

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>D1</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
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<th>U</th>
<th>V</th>
<th>Z1</th>
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<td>.92</td>
<td>.375</td>
<td>.64</td>
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<td>.22</td>
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<td>50.8</td>
<td>50.8</td>
<td>33.5</td>
<td>83</td>
<td>57.15</td>
<td>31.75</td>
<td>38.10</td>
<td>19.05</td>
<td>31.8</td>
<td>23.4</td>
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<td>46.5</td>
<td>6.6</td>
<td>12.7</td>
<td>5.6</td>
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* Metric carriage hole sizes available: M3, M4, M5 and M6

---

**Dimensional Drawings: RGW10 WITHOUT motor and WITHOUT Guide Screw**

**WIDE Series**
Recommended for horizontal loads up to 100 lbs (445 N)

Dimensions = inches (mm)

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>D1</th>
<th>F</th>
<th>G</th>
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<th>I</th>
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<th>P</th>
<th>Q</th>
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<th>U</th>
<th>V</th>
<th>Z1</th>
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<th>Z3</th>
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<tr>
<td>1.00</td>
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<td>2.00</td>
<td>3.3</td>
<td>2.250</td>
<td>1.250</td>
<td>1/4-20</td>
<td>.750</td>
<td>2.600</td>
<td>1.56</td>
<td>1.22</td>
<td>.69</td>
<td>1.33</td>
<td>2.15</td>
<td>.26</td>
<td>.40</td>
<td>.43</td>
</tr>
<tr>
<td>25.4</td>
<td>85.7</td>
<td>50.8</td>
<td>83</td>
<td>57.15</td>
<td>31.75</td>
<td>38.10</td>
<td>19.05</td>
<td>66.04</td>
<td>39.6</td>
<td>31</td>
<td>17.5</td>
<td>33.8</td>
<td>54.6</td>
<td>6.6</td>
<td>10.2</td>
<td>10.9</td>
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</table>

* Metric carriage hole sizes available: M3, M4, M5 and M6
WGS06 Motorized Low Profile Linear Rails
43000 Series Size 17 Single/Double Stacks and
57000 Series Size 23 Single and Double Stacks

Kerk® Motorized WGS Linear Slide utilizes a screw-driven carriage that offers reliable, continuous linear speed while maintaining accurate positioning. The length and speed of the WGS is not limited by critical screw speed, allowing high RPM, linear speed and long stroke lengths. The WGS slide has a unique, compact profile that provides improved torsional stiffness and stability over RGS and RGW products.

Hybrid Motor Specifications:
43000 Series Size 17 Single Stack
• See page 95
43000 Series Size 17 Double Stack
• See page 102
43000 Series Size 17 IDEA™ Drive
• See page 100
Programmable IDEA™ Drive
• See page 194
57000 Series Size 23 Single Stack
• See page 106
57000 Series Size 23 Double Stack
• See page 111
Integrated Connector Option
• See page 117

To determine which motor assembly is best for your application see the Linear Rail Applications Checklist on page 203.

Identifying the Motorized WGS part number codes when ordering

<table>
<thead>
<tr>
<th>WG</th>
<th>S</th>
<th>06</th>
<th>K</th>
<th>G</th>
<th>0100</th>
<th>XXX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefix</td>
<td>Frame Style</td>
<td>Frame Size Load</td>
<td>Coating</td>
<td>Drive / Mounting</td>
<td>Nominal Thread Lead Code</td>
<td>Unique Identifier</td>
</tr>
<tr>
<td>WG = Wide Guide Screw</td>
<td>S = Standard</td>
<td>06 = Max. static load 35 lbs (156 N)</td>
<td>K = TFE wear resist, dry lubricant Kerko® Special coating, (Example: Kerko® with grease)</td>
<td>M = Motorized</td>
<td>0100 = 0.1-in (2.54)</td>
<td>– M43 = 43000 Series Size 17 Motor</td>
</tr>
<tr>
<td>Carriage holes available in Metric sizes</td>
<td></td>
<td></td>
<td></td>
<td>G = IDEA™ integrated programmable drive - USB communications</td>
<td>0200 = 0.2-in (5.08)</td>
<td>– G43 = 43000 Series Size 17 Motor with IDEA Drive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>J = IDEA™ integrated programmable drive - RS485 communications</td>
<td>0500 = 0.5-in (12.7)</td>
<td>– M57 = 57000 Series Size 23 Motor</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1000 = 1.0-in (25.4)</td>
<td>Proprietary suffix assigned to a specific customer application. The identifier can apply to either a standard or custom part.</td>
</tr>
</tbody>
</table>

NOTE: Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 203 756 7441.
WGS06 Motorized Selector Chart

Motorized with Size 17 and Size 23 Single and Double Stack Hybrid Linear Actuator Stepper Motors

<table>
<thead>
<tr>
<th>Inch Lead</th>
<th>inch (mm)</th>
<th>Thread Lead Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.050</td>
<td>0.127</td>
<td>0050</td>
</tr>
<tr>
<td>0.079</td>
<td>0.200</td>
<td>0079</td>
</tr>
<tr>
<td>0.100</td>
<td>0.254</td>
<td>0100</td>
</tr>
<tr>
<td>0.157</td>
<td>0.400</td>
<td>0157</td>
</tr>
<tr>
<td>0.197</td>
<td>0.500</td>
<td>0197</td>
</tr>
<tr>
<td>0.200</td>
<td>0.508</td>
<td>0200</td>
</tr>
<tr>
<td>0.250</td>
<td>0.635</td>
<td>0250</td>
</tr>
<tr>
<td>0.375</td>
<td>0.953</td>
<td>0375</td>
</tr>
<tr>
<td>0.400</td>
<td>1.016</td>
<td>0400</td>
</tr>
<tr>
<td>0.472</td>
<td>1.200</td>
<td>0472</td>
</tr>
<tr>
<td>0.500</td>
<td>1.270</td>
<td>0500</td>
</tr>
<tr>
<td>0.500</td>
<td>1.270</td>
<td>0500</td>
</tr>
<tr>
<td>0.750</td>
<td>1.905</td>
<td>0750</td>
</tr>
<tr>
<td>0.984</td>
<td>2.500</td>
<td>0984</td>
</tr>
<tr>
<td>1.000</td>
<td>2.540</td>
<td>1000</td>
</tr>
<tr>
<td>1.200</td>
<td>3.048</td>
<td>1200</td>
</tr>
</tbody>
</table>

WGS06 Low Profile Linear Slide with Hybrid 43000 Size 17 Single and Double Stack linear motors

Recommended for horizontal loads up to 35 lbs (156 N)

Dimensions = (inches) mm

* Metric carriage hole sizes available: M3, M4, M5 and M6
WGS06 Motorized Low Profile Linear Rails

**WGS06 Low Profile Linear Slide with Hybrid 43000 Size 17 Single and Double Stack linear motors with programmable IDEA™ Drive**

Recommended for horizontal loads up to 35 lbs (156 N)

**WGS06 Low Profile Linear Slide with Hybrid 57000 Size 23 Single and Double Stack linear motors**

Recommended for horizontal loads up to 35 lbs (156 N)
**WGS™ Non-Motorized Linear Rail for improved torsional stiffness and linear motion stability**

Kerk® Non-Motorized WGS Linear Slide utilizes sliding plane bearings on a low profile aluminum guide rail that keeps the motion smooth throughout the travel distance. The lead-screw is precision-made of high-quality stainless steel and all moving surfaces include Kerkite® high performance polymers running on Kerkote® TFE coating.

The integral mounting base can provide support over the entire length that can extend up to 8 feet (2.4 meters). Longer lengths are possible on a special order basis.

The slides come with a wear-compensating, anti-backlash driven carriage. Additional driven or passive carriages can be added, along with application specific customization. Linear guides, without the drive screw, are also available.

To determine which motor assembly is best for your application see the Linear Rail Applications Checklist on page 203.

### Identifying the Non-Motorized WGS part number codes when ordering

<table>
<thead>
<tr>
<th>WG</th>
<th>S</th>
<th>06</th>
<th>K</th>
<th>G</th>
<th>0100</th>
<th>A00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefix</td>
<td>Frame Style</td>
<td>Frame Size Load</td>
<td>Coating</td>
<td>Drive / Mounting</td>
<td>Nominal Thread Lead Code</td>
<td>Unique Identifier</td>
</tr>
<tr>
<td>WG</td>
<td>S = Standard</td>
<td>06 = Max. static load 35 lbs (156 N)</td>
<td>K = TFE wear resist, dry lubricant Kerkite®</td>
<td>A = None</td>
<td>0.05-in (1.27)</td>
<td>– A00 = Without Motor Mount</td>
</tr>
<tr>
<td>Carriage holes available in Metric sizes</td>
<td>M3</td>
<td>M4</td>
<td>M5</td>
<td>M6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 203 756 7441.
WGS Non-Motorized Product Selector Chart

<table>
<thead>
<tr>
<th>Inch Lead**</th>
<th>Thread Lead Code</th>
<th>Nominal Screw Diam. inch (mm)</th>
<th>Typical Drag Torque oz - in (N-m)</th>
<th>Life @ 1/4 Design Load* inch (cm)</th>
<th>Torque-to-Move Load oz-in/lb (N-m/Kg)</th>
<th>Design Load lbs (N)</th>
<th>Screw Inertia oz-in-sec²/in (kg-m-sec²/m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.050 (1.27)</td>
<td>0.050</td>
<td>3/8 (.95)</td>
<td>4.0 (.03)</td>
<td>100,000,000 (254,000,000)</td>
<td>1.0 (.016)</td>
<td>35 (156)</td>
<td>1.5 x 10⁻⁵ (4.2 x 10⁻⁴)</td>
</tr>
<tr>
<td>0.079 (2.00)</td>
<td>0.079</td>
<td>3/8 (.95)</td>
<td>5.0 (.04)</td>
<td>100,000,000 (254,000,000)</td>
<td>1.5 (.023)</td>
<td>35 (156)</td>
<td>1.5 x 10⁻⁵ (4.2 x 10⁻⁴)</td>
</tr>
<tr>
<td>0.157 (4.00)</td>
<td>0.157</td>
<td>3/8 (.95)</td>
<td>6.0 (.04)</td>
<td>100,000,000 (254,000,000)</td>
<td>2.5 (.039)</td>
<td>35 (156)</td>
<td>1.5 x 10⁻⁵ (4.2 x 10⁻⁴)</td>
</tr>
<tr>
<td>0.197 (5.00)</td>
<td>0.197</td>
<td>3/8 (.95)</td>
<td>7.0 (.05)</td>
<td>100,000,000 (254,000,000)</td>
<td>4.5 (.070)</td>
<td>35 (156)</td>
<td>1.5 x 10⁻⁵ (4.2 x 10⁻⁴)</td>
</tr>
<tr>
<td>0.250 (6.35)</td>
<td>0.250</td>
<td>3/8 (.95)</td>
<td>8.0 (.06)</td>
<td>100,000,000 (254,000,000)</td>
<td>6.0 (.100)</td>
<td>35 (156)</td>
<td>1.5 x 10⁻⁵ (4.2 x 10⁻⁴)</td>
</tr>
</tbody>
</table>

NOTE: WGS assemblies with lengths over 36 inches (914.4 mm) and/or leads higher than .5 inch (12.7 mm) will likely have higher drag torque than listed values.

* Determined with load in a horizontal position

** Other inch and metric leads available

Dimensional Drawings: WGS Motor Mounts for 43000 Series, Size 17, and 57000 Series, Size 23 Hybrid Linear Actuator Motors

Dimensions = inch [ mm ]

OVERALL LENGTH = STROKE + F + D + G

ADDITIONAL MOUNTING HOLES RECOMMENDED EVERY 10 inches (254mm) FROM DRIVE END. CONTACT HAYDON KERK FOR EXACT LOCATIONS OR CUSTOM LOCATIONS.

** Metric threads also available  ***Maximum coupling size = .846 inch (21.49 mm) Diameter X 1.25 inches (31.8 mm) length
WGS Performance

RGW vs WGS

with 1,000,000 inches [2,540,000 cm] Travel (Roll Moment Deflection*)

ANGULAR DEFLECTION (DEGREES)

0.5

0.45

0.4

0.35

0.3

0.25

0.2

0.15

0.1

0.05

0

0.005

0.01

0.015

0.02

0.025

0.03

0.035

0.04

0.045

0.05

0.055

0.06

0.065

0.07

0.075

0.08

0.085

0.09

0.095

0.1

0.105

0.11

0.115

0.12

0.125

0.13

0.135

0.14

0.145

0.15

0.155

0.16

0.165

0.17

0.175

0.18

0.185

0.19

0.195

0.2

0.205

0.21

0.215

0.22

0.225

0.23

0.235

0.24

0.245

0.25

0.255

0.26

0.265

0.27

0.275

0.28

0.285

0.29

0.295

0.3

0.305

0.31

0.315

0.32

0.325

0.33

0.335

0.34

0.345

0.35

0.355

0.36

0.365

0.37

0.375

0.38

0.385

0.39

0.395

0.4

0.405

0.41

0.415

0.42

0.425

0.43

0.435

0.44

0.445

0.45

0.455

0.46

0.465

0.47

0.475

0.48

0.485

0.49

0.495

0.5

0.505

0.51

0.515

0.52

0.525

0.53

0.535

0.54

0.545

0.55

0.555

0.56

0.565

0.57

0.575

0.58

0.585

0.59

0.595

0.6

0.605

0.61

0.615

0.62

0.625

0.63

0.635

0.64

0.645

0.65

0.655

0.66

0.665

0.67

0.675

0.68

0.685

0.69

0.695

0.7

0.705

0.71

0.715

0.72

0.725

0.73

0.735

0.74

0.745

0.75

0.755

0.76

0.765

0.77

0.775

0.78

0.785

0.79

0.795

0.8

0.805

0.81

0.815

0.82

0.825

0.83

0.835

0.84

0.845

0.85

0.855

0.86

0.865

0.87

0.875

0.88

0.885

0.89

0.895

0.9

0.905

0.91

0.915

0.92

0.925

0.93

0.935

0.94

0.945

0.95

0.955

0.96

0.965

0.97

0.975

0.98

0.985

0.99

1

MOMENT LOAD: in-lbs [Nm]

0

5 [0.56]

10 [1.13]

15 [1.69]

20 [2.26]

25 [2.82]

30 [3.39]

35 [3.95]

40 [4.52]

*Typical values based on static measurement. Results may vary due to application specific parameters.

1,000,000 inches [2,540,000 cm] travel performed with 6.5 in-lb [0.73 Nm] roll moment on carriage.

WGS Standard Series

The Wide Guide Screw utilizes sliding plane bearings on a dovetailed aluminum guide rail. The plane bearings, made of Kerkite® high performance polymers, act as gibs securely mating the carriage to the Kerkote® TFE coated rail. This design reduces roll moment deflection of the carriage when compared to the RGS and RGW products.

Recommended horizontal loads:

• WGS06 – up to 156 N (35 lbs)

WGS Standard Series Dimensional Drawings

Dimensions = inch [ mm ]

| A     | B     | C     | D     | E     | F     | G     | H     | I     | J     | K     | L     | M     | N*    | O     | P1    | P2    | P3    | Q     | R     |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.04  | 2.50  | 2.61  | .44   | 2.00  | 1.00  | 75    | 39    | 1.875 | 1.220 | 2.124 | 1.624 | #8-32  | 09    | 150   | .280  | .265  | .45   | .92   |
| [26.4]| [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [UNCG28]| [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  |
| 1.1   | .1    | .44   | 2.00  | 1.00  | 75    | 39    | 1.875 | 1.220 | 2.124 | 1.624 | #8-32  | 09    | 150   | .280  | .265  | .45   | .92   |
| [26]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  |
| .02   | .01   | .01   | .01   | .01   | .01   | .01   | .01   | .01   | .01   | .01   | .01   | .01   | .01   | .01   | .01   | .01   | .01   | .01   | .01   |

* METRIC THREADS ALSO AVAILABLE
LRS™ Linear Rail Systems available with a Haydon® Hybrid 43000 Series Size 17 single and double stack linear actuator stepper motor or as a non-motorized linear rail

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 various 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.

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.
- Lead 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 lead-screws of similar size.
- Lead-screw end configurations adapt to various rotary motion sources.
- Kerkote® or Black Ice® TFE coatings on a 303 stainless steel lead-screw.
- 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 LRS part number codes when ordering

<table>
<thead>
<tr>
<th>LR</th>
<th>W</th>
<th>04</th>
<th>B</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefix</td>
<td>Frame Style</td>
<td>Frame Size Load</td>
<td>Coating</td>
<td>Drive / Mounting</td>
</tr>
<tr>
<td>LR = Linear Rail System (LRS)</td>
<td>B = BFW nut</td>
<td>04 = Max. static load 50 lbs (222 N)</td>
<td>S = Uncoated</td>
<td>A = None</td>
</tr>
<tr>
<td>C = CMP nut</td>
<td></td>
<td></td>
<td>B = Black Ice® TFE</td>
<td></td>
</tr>
<tr>
<td>W = WDG nut</td>
<td></td>
<td></td>
<td>K = Kerkote® TFE</td>
<td></td>
</tr>
<tr>
<td>G = Guide only</td>
<td></td>
<td></td>
<td>N = No screw</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 203 756 7441.

Hybrid Motor Specifications:
43000 Series Size 17 Single Stack
- See page 95
43000 Series Size 17 Double Stack
- See page 102
43000 Series Size 17 IDEA™ Drive
- See page 100
Programmable IDEA™ Drive
- See page 194

LRS with Size 17 Double Stack Hybrid Linear Actuator with IDEA™ programmable Drive and Black Ice® TFE lead-screw.

LRS with Size 17 Double Stack Hybrid Linear Actuator

LRS non-motorized

Carriage holes available in Metric sizes
M3
M4
M5
M6

Nominal Thread Lead Code
0000 = No screw
0025 = .25-in (.635)
0125 = .125-in (.3125)
0250 = .25-in (.635)
0500 = .5-in (12.7)
0750 = .75-in (19.05)
1000 = 1.0-in (25.4)

Unique Identifier
Proprietary suffix assigned to a specific customer application. The identifier can apply to either a standard or custom part.

www.HaydonKerkExpress.com
Standard products available 24-hrs.
**LRS™ Linear Rail with Hybrid 43000 Size 17 linear motors**

Recommended for horizontal loads up to 50 lbs (222 N)

**Specifications**

<table>
<thead>
<tr>
<th>Width</th>
<th>Length of Stroke (max)</th>
<th>Speed (max)</th>
<th>Straight Line Accuracy</th>
<th>Twist</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5/8-in square (4.3 cm square)</td>
<td>40-in (1000 mm)</td>
<td>20-in/sec (0.5 M/sec)</td>
<td>+/- 0.012-in/ft (+/- 1.0 mm/M)</td>
<td>+/- 0.25°/ft. (+/- 0.75°/M)</td>
</tr>
</tbody>
</table>

**Load Ratings (max)**

<table>
<thead>
<tr>
<th>Top Load “Z” Direction</th>
<th>Max. Pitch Moment Roll</th>
<th>Max. Pitch Moment Yaw</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 lbs (225 N)</td>
<td>75-in-lbs (6.5 N-M)</td>
<td>75-in-lbs (6.5 N-M)</td>
</tr>
</tbody>
</table>

**Width Length of Stroke (max)**

1-5/8-in square (4.3 cm square)

40-in (1000 mm)

**Speed (max)**

20-in/sec (0.5 M/sec)

**Straight Line Accuracy**

+/- 0.012-in/ft (+/- 1.0 mm/M)

**Twist**

+/- 0.25°/ft. (+/- 0.75°/M)

**Dimensional Drawing: LRS with 43000 Series Size 17**

Dimensions = (inches) mm

---

**Dimensional Drawing: LRS with 43000 Series Size 17 and IDEA™ Drive**

Dimensions = (inches) mm

---

**LRS Anti-Backlash and “Freewheeling” Nut Assembly Options**

- **WDG Series Anti-Backlash Assembly**
  - For moderate loads.
  - Compact design to provide stiffness and balanced accuracy for precise positioning. For more information see page 32.

- **CMP Series Anti-Backlash Assembly**
  - For light loads.
  - Self-lubricating acetal nut; ideally suited for applications using oil or grease. See page 28.

- **BFW Series**
  - For applications that do not require anti-backlash, long life at minimal cost. See page 42.
ScrewRails®, Spline Shafts and Linear Guide Rails
Kerk® ScrewRail® Linear Actuators

Linear motion has traditionally required separate components to handle both drive and support/guidance. The compact Kerk® ScrewRail® combines both functions in a single, coaxial component. By eliminating the need for external rail-to-screw alignment, the ScrewRail simplifies the design, manufacture and assembly of motion systems. The ScrewRail’s coaxial design saves as much as 80% of the space used by a two-rail system and is generally less expensive than the equivalent components purchased separately. The savings can be substantial due to lower component costs and reduced labor. An added benefit is the ability to get three-dimensional motion from a single ScrewRail.

The ScrewRail consists of a precision rolled lead-screw, supported by sealed bearings and contained within a concentric steel guide rail, driving an integrated nut/bushing. Because all the alignment requirements are achieved within the ScrewRail, support and positioning of the ScrewRail is much less critical than with traditional slide assemblies. Kerkote® TFE coating and self-lubricating nut/bushing materials ensure long life without maintenance.

When mounted vertically, the ScrewRail can be used to simultaneously lift and rotate (Z-theta motion). With one motor driving the screw and a second rotating the rail, a compact, self-supporting pick and place mechanism can be created.
### Identifying the Kerk® ScrewRail part number codes when ordering

#### ScrewRail® Guide Screw

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Nut Style</th>
<th>Nominal Rail Diam.</th>
<th>Coating</th>
<th>Drive Mounting</th>
<th>Unique Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR</td>
<td>A = free-wheeling style nut</td>
<td>03 = 3/8-in (10 mm)</td>
<td>S = Uncoated</td>
<td>A = None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Z = Anti-Backlash Nut</td>
<td>06* = 3/4-in (19 mm)</td>
<td>K = Kerkote®</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>08* = 1-in (25 mm)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* END SUPPORTS available, see page 251.

#### Nominal Thread Lead Code

- **SRA/SRZ03:**
  - 0050 = .050-in (1.27)
  - 0100 = .100-in (2.54)
  - 0250 = .250-in (6.35)
  - 0375 = .375-in (9.53)

- **SRA/SRZ04:**
  - 0050 = .050-in (1.27)
  - 0250 = .250-in (6.35)
  - 0500 = .500-in (12.7)
  - 1000 = 1.00-in (25.40)

- **SRA/SRZ06:**
  - 0100 = .100-in (2.54)
  - 0500 = .500-in (12.7)
  - 1000 = 1.00-in (25.40)

- **SRA/SRZ08:**
  - 0100 = .100-in (2.54)
  - 0500 = .500-in (12.7)
  - 1000 = 1.00-in (25.40)

**Note:** Right-hand/Left-hand ScrewRail® assemblies are also available.

### Identifying the Kerk® ScrewRail End Support part number codes when ordering

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Size</th>
<th>ES</th>
<th>Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR</td>
<td>04  = 1/2-in</td>
<td>ES = End Support</td>
<td>Z00 = Standard</td>
</tr>
<tr>
<td></td>
<td>06  = 3/4-in</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>08  = 1-in</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 603 213 6290.
Kerk® SRA Series  
**General Purpose**  
**ScrewRail® Linear Actuators**

A standard nut for general applications where anti-backlash compensation is not required.

The SRA is recommended anywhere low drag and minimal free play is required.

*Note: Right-hand/Left-hand ScrewRail® assemblies are also available.*

---

### ScrewRail®: SRA Series General Purpose

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>SRA 03</strong></td>
<td>.364/.367</td>
<td>.38</td>
<td>.1245/.1250</td>
<td>.98</td>
<td>1.0</td>
<td>.28</td>
<td>.562</td>
<td>.75</td>
<td>.094</td>
<td>.37</td>
<td>.38</td>
</tr>
<tr>
<td></td>
<td>(9.24/9.32)</td>
<td>(9.56)</td>
<td>(3.16/3.18)</td>
<td>(24.9)</td>
<td>(25.4)</td>
<td>(7.2)</td>
<td>(14.3)</td>
<td>(19.1)</td>
<td>(2.39)</td>
<td>(9.4)</td>
<td>(9.66)</td>
</tr>
<tr>
<td><strong>SRA 04</strong></td>
<td>.489/.492</td>
<td>.62</td>
<td>.1870/.1875</td>
<td>1.25</td>
<td>1.4</td>
<td>.38</td>
<td>.750</td>
<td>1.03</td>
<td>.140</td>
<td>.26</td>
<td>.36</td>
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<tr>
<td></td>
<td>(12.42/12.5)</td>
<td>(15.75)</td>
<td>(4.75/4.76)</td>
<td>(31.8)</td>
<td>(36)</td>
<td>(9.5)</td>
<td>(19.1)</td>
<td>(26.2)</td>
<td>(3.56)</td>
<td>(6.6)</td>
<td>(9.1)</td>
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<tr>
<td><strong>SRA 06</strong></td>
<td>.739/.742</td>
<td>.75</td>
<td>.2490/.2495</td>
<td>1.75</td>
<td>2.0</td>
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<td>1.120</td>
<td>1.48</td>
<td>.173</td>
<td>.38</td>
<td>.70</td>
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<tr>
<td></td>
<td>(18.77/18.85)</td>
<td>(19.05)</td>
<td>(63.3/63.44)</td>
<td>(51)</td>
<td>(12.7)</td>
<td>(28.4)</td>
<td>(37.6)</td>
<td>(43.9)</td>
<td>(9.7)</td>
<td>(17.8)</td>
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<tr>
<td><strong>SRA 08</strong></td>
<td>.989/.992</td>
<td>.75</td>
<td>.2490/.2495</td>
<td>2.23</td>
<td>2.5</td>
<td>.63</td>
<td>1.495</td>
<td>1.92</td>
<td>0.200</td>
<td>.48</td>
<td>.77</td>
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<tr>
<td></td>
<td>(25.12/25.2)</td>
<td>(19.05)</td>
<td>(63.3/63.44)</td>
<td>(64)</td>
<td>(15.9)</td>
<td>(38.0)</td>
<td>(48.8)</td>
<td>(5.08)</td>
<td>(12.2)</td>
<td>(19.6)</td>
<td></td>
</tr>
</tbody>
</table>

**Note: Total Travel = L – (L1 + L2 + E)**

---

*R.H.*  
*L.H.*  
*Set screw permitted to protrude up to .03-in (.762 mm)*

---

**Guides: ScrewRail® Linear Actuators**  
**SRA: General Purpose Assembly**

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**Haydon Kerk Motion Solutions, Inc.**  
*www.haydonkerkpittman.com*  
*Phone: 800 243 2715*  
*International: 203 756 7441*
**Kerk® SRZ Series Anti-Backlash ScrewRail® Linear Actuators**

A nut designed and manufactured with our unique axial take-up mechanism providing continuous self-adjusting anti-backlash compensation.

*Note: Right-hand/Left-hand ScrewRail® assemblies are also available.*

### ScrewRail®: SRZ Series Anti-Backlash

<table>
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<tbody>
<tr>
<td>SRZ 03</td>
<td>.364/.367 (9.24/9.32)</td>
<td>.38 (9.66)</td>
<td>.1245/.1250 (3.16/3.18)</td>
<td>.98 (24.9)</td>
<td>1.1 (27.94)</td>
<td>.28 (7.2)</td>
<td>.73 (18.5)</td>
<td>.75 (19.05)</td>
<td>#2-56</td>
<td>.37 (9.4)</td>
<td>.38 (9.66)</td>
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<tr>
<td>SRZ 04</td>
<td>.489/.492 (12.42/12.5)</td>
<td>.62 (15.75)</td>
<td>.1870/.1875 (4.75/4.76)</td>
<td>1.31 (33.3)</td>
<td>1.4 (36)</td>
<td>.38 (9.5)</td>
<td>.097 (24.7)</td>
<td>1.03 (26.2)</td>
<td>#6-32</td>
<td>.26 (6.6)</td>
<td>.36 (9.1)</td>
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<td>SRZ 06</td>
<td>.739/.742 (18.77/18.85)</td>
<td>.75 (19.05)</td>
<td>.2490/.2495 (6.33/6.34)</td>
<td>1.81 (46.0)</td>
<td>2.0 (51)</td>
<td>.50 (12.7)</td>
<td>1.38 (35.1)</td>
<td>1.48 (37.6)</td>
<td>#10-32</td>
<td>.38 (9.7)</td>
<td>.70 (17.8)</td>
</tr>
<tr>
<td>SRZ 08</td>
<td>.989/.992 (25.12/25.2)</td>
<td>.75 (19.05)</td>
<td>.2490/.2495 (6.33/6.34)</td>
<td>2.30 (58.4)</td>
<td>2.5 (64)</td>
<td>.63 (15.9)</td>
<td>1.72 (43.7)</td>
<td>1.92 (48.8)</td>
<td>#10-32</td>
<td>.48 (12.2)</td>
<td>.77 (19.6)</td>
</tr>
</tbody>
</table>

* metric available as requested

**Note:** Total Travel = L – (L1 + L2 + E)
As an additional option for all Kerk® ScrewRails, standard End Supports offer the convenience of simple and compact mounting for the ScrewRail. The End Supports are designed to slide over the outside diameter of each end of the rail and “key” off the slot in the ScrewRail. The Kerkite® composite polymer End Supports come standard with three hex nuts that are captured in the flange for easy assembly. The End Supports are also supplied with a brass threaded insert and a set screw to fasten to the outside diameter of the rail.

With the End Supports, the Kerk ScrewRail can be easily mounted to your assembly. However, if the End Supports are not utilized it is recommended to center the clamping force on each end at the L3 dimension as shown in the drawing below.

### ScrewRail®: End Support Styles

<table>
<thead>
<tr>
<th>Style</th>
<th>A Diam.</th>
<th>D</th>
<th>F</th>
<th>H Diam.</th>
<th>L3</th>
<th>L4</th>
<th>Q</th>
<th>R</th>
<th>S</th>
<th>T (Hex Nut)</th>
<th>U</th>
<th>W Diam.</th>
<th>X</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRA 04</td>
<td>0.624/0.626 (15.85/15.90)</td>
<td>0.160</td>
<td>0.200</td>
<td>0.390</td>
<td>0.720</td>
<td>0.080</td>
<td>0.060</td>
<td>#6-32</td>
<td>1.03</td>
<td>#8-32</td>
<td>0.47</td>
<td>0.460</td>
<td>0.500</td>
<td></td>
</tr>
<tr>
<td>SRA 06</td>
<td>0.749/0.751 (19.03/19.08)</td>
<td>0.160</td>
<td>0.250</td>
<td>0.603</td>
<td>0.900</td>
<td>0.100</td>
<td>0.100</td>
<td>#8-32</td>
<td>1.31</td>
<td>#10-32</td>
<td>0.60</td>
<td>0.594</td>
<td>0.645</td>
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<tr>
<td>SRA 08</td>
<td>0.999/1.001 (25.38/25.43)</td>
<td>0.220</td>
<td>0.375</td>
<td>0.920</td>
<td>1.200</td>
<td>0.125</td>
<td>0.175</td>
<td>#10-32</td>
<td>1.82</td>
<td>#10-32</td>
<td>0.82</td>
<td>0.800</td>
<td>0.820</td>
<td></td>
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</tbody>
</table>

* metric available as requested

Dimensions E and L are referenced in the ScrewRail Dimensions

Note: Total Travel = L – (E + 2[L4])
### SRA Series Selector Chart ScrewRail® Linear Actuators

<table>
<thead>
<tr>
<th>ScrewRail</th>
<th>Inch Lead Code</th>
<th>Thread Lead Code</th>
<th>Nominal Rail Dia. (in)</th>
<th>Nominal Screw Dia. (in)</th>
<th>Max. Drag Torque (oz - in)</th>
<th>Life @ 1/4 Design Loadx10^6 (Non Anti-Backlash)</th>
<th>Torque-to-Move Load oz-in/lb (N-m/Kg)</th>
<th>Design Load lbs (Kg)</th>
<th>Screw Inertia per unit length oz-in sec/in (Kg*M^2/lb)</th>
<th>Equivalent Diam. inch.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRA 03</td>
<td>0050</td>
<td>3/8 (10)</td>
<td>3/16 (5)</td>
<td>1.5 (0.014)</td>
<td>100 to 150 (250 to 380)</td>
<td>0.5 (0.007)</td>
<td>10 (4.5)</td>
<td>0.1 x 10^-5 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRA 03</td>
<td>0100</td>
<td>3/8 (10)</td>
<td>3/16 (5)</td>
<td>2.0 (0.018)</td>
<td>100 to 150 (250 to 380)</td>
<td>1.0 (0.016)</td>
<td>10 (4.5)</td>
<td>0.1 x 10^-5 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRA 03</td>
<td>0250</td>
<td>3/8 (10)</td>
<td>3/16 (5)</td>
<td>2.5 (0.020)</td>
<td>100 to 150 (250 to 380)</td>
<td>1.25 (0.019)</td>
<td>10 (4.5)</td>
<td>0.1 x 10^-5 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRA 03</td>
<td>0375</td>
<td>3/8 (10)</td>
<td>3/16 (5)</td>
<td>3.0 (0.025)</td>
<td>100 to 150 (250 to 380)</td>
<td>2.0 (0.030)</td>
<td>10 (4.5)</td>
<td>0.1 x 10^-5 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRA 04</td>
<td>0050</td>
<td>1/2 (6)</td>
<td>1/4 (3)</td>
<td>2.0 (0.015)</td>
<td>150 to 200 (380 to 500)</td>
<td>0.5 (0.007)</td>
<td>25 (10)</td>
<td>0.3 x 10^-5 .39</td>
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</tr>
<tr>
<td>SRA 04</td>
<td>0250</td>
<td>1/2 (6)</td>
<td>1/4 (3)</td>
<td>3.0 (0.020)</td>
<td>150 to 200 (380 to 500)</td>
<td>1.5 (0.007)</td>
<td>25 (10)</td>
<td>0.3 x 10^-5 .39</td>
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<tr>
<td>SRA 04</td>
<td>0500</td>
<td>1/2 (6)</td>
<td>1/4 (3)</td>
<td>4.0 (0.030)</td>
<td>150 to 200 (380 to 500)</td>
<td>2.5 (0.007)</td>
<td>25 (10)</td>
<td>0.3 x 10^-5 .39</td>
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<td></td>
</tr>
<tr>
<td>SRA 06</td>
<td>1000</td>
<td>1/2 (6)</td>
<td>1/4 (3)</td>
<td>5.0 (0.040)</td>
<td>150 to 200 (380 to 500)</td>
<td>4.5 (0.007)</td>
<td>25 (10)</td>
<td>0.3 x 10^-5 .39</td>
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<td></td>
</tr>
<tr>
<td>SRA 06</td>
<td>0100</td>
<td>3/8 (10)</td>
<td>3/16 (5)</td>
<td>3.0 (0.020)</td>
<td>180 to 280 (450 to 710)</td>
<td>1.0 (0.006)</td>
<td>50 (20)</td>
<td>1.5 x 10^-5 .60</td>
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<td></td>
</tr>
<tr>
<td>SRA 06</td>
<td>0200</td>
<td>3/8 (10)</td>
<td>3/16 (5)</td>
<td>4.0 (0.030)</td>
<td>180 to 280 (450 to 710)</td>
<td>1.5 (0.006)</td>
<td>50 (20)</td>
<td>1.5 x 10^-5 .60</td>
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</tr>
<tr>
<td>SRA 06</td>
<td>0500</td>
<td>3/8 (10)</td>
<td>3/16 (5)</td>
<td>5.0 (0.040)</td>
<td>180 to 280 (450 to 710)</td>
<td>2.5 (0.006)</td>
<td>50 (20)</td>
<td>1.5 x 10^-5 .60</td>
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<tr>
<td>SRA 06</td>
<td>1200</td>
<td>3/8 (10)</td>
<td>3/16 (5)</td>
<td>6.0 (0.045)</td>
<td>180 to 280 (450 to 710)</td>
<td>4.5 (0.007)</td>
<td>50 (20)</td>
<td>1.5 x 10^-5 .60</td>
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</tr>
<tr>
<td>SRA 06</td>
<td>1200</td>
<td>3/8 (10)</td>
<td>3/16 (5)</td>
<td>7.0 (0.050)</td>
<td>180 to 280 (450 to 710)</td>
<td>6.0 (0.007)</td>
<td>50 (20)</td>
<td>1.5 x 10^-5 .60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRA 08</td>
<td>1000</td>
<td>1/2 (6)</td>
<td>1/4 (3)</td>
<td>4.0 (0.030)</td>
<td>280 to 320 (710 to 810)</td>
<td>1.0 (0.006)</td>
<td>100 (45)</td>
<td>5.2 x 10^-5 .81</td>
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<td></td>
</tr>
<tr>
<td>SRA 08</td>
<td>0100</td>
<td>1/2 (6)</td>
<td>1/4 (3)</td>
<td>5.0 (0.040)</td>
<td>280 to 320 (710 to 810)</td>
<td>1.5 (0.006)</td>
<td>100 (45)</td>
<td>5.2 x 10^-5 .81</td>
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</tr>
<tr>
<td>SRA 08</td>
<td>0200</td>
<td>1/2 (6)</td>
<td>1/4 (3)</td>
<td>6.0 (0.045)</td>
<td>280 to 320 (710 to 810)</td>
<td>2.0 (0.006)</td>
<td>100 (45)</td>
<td>5.2 x 10^-5 .81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRA 08</td>
<td>1200</td>
<td>1/2 (6)</td>
<td>1/4 (3)</td>
<td>8.0 (0.060)</td>
<td>280 to 320 (710 to 810)</td>
<td>4.5 (0.007)</td>
<td>100 (45)</td>
<td>5.2 x 10^-5 .81</td>
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*ScrewRail® stiffness may be modeled using Classical Beam Deflection Theory with equivalent stainless steel beam of diameter given.

** Other leads available as custom orders.
### SRZ Series Selector Chart ScrewRail® Linear Actuators

<table>
<thead>
<tr>
<th>ScrewRail</th>
<th>Inch Lead **</th>
<th>Thread Lead Code</th>
<th>Nominal Rail Diam. inch (mm)</th>
<th>Nominal Screw Diam. inch (mm)</th>
<th>Max. Drag Torque oz - in (N-m)</th>
<th>1/4 Design Load10* (Non Anti-Backlash) inch (cm)</th>
<th>Torque-to-Move Lead oz-in/lb (N-m/Kg)</th>
<th>Design Load lbs (Kg)</th>
<th>Screw Inertia per unit length oz-in sec²/in (Kgm²/M)</th>
<th>Equivalent Diam.* inch (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRZ 03</td>
<td>.050  (1.27)</td>
<td>0050</td>
<td>3/8 (10)</td>
<td>3/16 (5)</td>
<td>2.0 (0.014)</td>
<td>50 to 80 (130 to 200)</td>
<td>0.5 (0.007)</td>
<td>10</td>
<td>0.1 x 10⁻⁶</td>
<td>.30</td>
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<td>SRZ 03</td>
<td>.100  (2.54)</td>
<td>0100</td>
<td>3/8 (10)</td>
<td>3/16 (5)</td>
<td>2.5 (0.018)</td>
<td>50 to 80 (130 to 200)</td>
<td>1.0 (0.016)</td>
<td>10</td>
<td>1 x 10⁻⁶</td>
<td>.30</td>
</tr>
<tr>
<td>SRZ 03</td>
<td>.250  (6.35)</td>
<td>0250</td>
<td>3/8 (10)</td>
<td>3/16 (5)</td>
<td>3.0 (0.020)</td>
<td>50 to 80 (130 to 200)</td>
<td>1.25 (0.019)</td>
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<td>1 x 10⁻⁶</td>
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<td>3/8 (10)</td>
<td>3/16 (5)</td>
<td>3.5 (0.025)</td>
<td>50 to 80 (130 to 200)</td>
<td>2.0 (0.030)</td>
<td>1.0</td>
<td>1 x 10⁻⁶</td>
<td>.30</td>
</tr>
<tr>
<td>SRZ 04</td>
<td>.050  (1.27)</td>
<td>0050</td>
<td>1/2 (6)</td>
<td>1/4 (6)</td>
<td>3.0 (0.020)</td>
<td>75 to 100 (190 to 250)</td>
<td>0.5 (0.007)</td>
<td>.025</td>
<td>.3 x 10⁻⁶</td>
<td>.39</td>
</tr>
<tr>
<td>SRZ 04</td>
<td>.250  (6.35)</td>
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<td>1/2 (6)</td>
<td>1/4 (6)</td>
<td>4.0 (0.030)</td>
<td>75 to 100 (190 to 250)</td>
<td>0.25 (0.023)</td>
<td>.010</td>
<td>1 x 10⁻⁶</td>
<td>.39</td>
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<tr>
<td>SRZ 04</td>
<td>.500  (12.7)</td>
<td>0500</td>
<td>1/2 (6)</td>
<td>1/4 (6)</td>
<td>5.0 (0.040)</td>
<td>75 to 100 (190 to 250)</td>
<td>0.39 (0.023)</td>
<td>.025</td>
<td>1 x 10⁻⁶</td>
<td>.39</td>
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<tr>
<td>SRZ 04</td>
<td>1.000 (25.4)</td>
<td>1000</td>
<td>1/2 (6)</td>
<td>1/4 (6)</td>
<td>6.0 (0.045)</td>
<td>75 to 100 (190 to 250)</td>
<td>0.45 (0.025)</td>
<td>.025</td>
<td>1 x 10⁻⁶</td>
<td>.39</td>
</tr>
<tr>
<td>SRZ 06</td>
<td>.100  (2.54)</td>
<td>0100</td>
<td>3/4 (10)</td>
<td>3/8 (6)</td>
<td>6.0 (0.045)</td>
<td>90 to 140 (230 to 350)</td>
<td>1.0 (0.016)</td>
<td>1.0</td>
<td>1.5 x 10⁻⁶</td>
<td>.60</td>
</tr>
<tr>
<td>SRZ 06</td>
<td>.200  (5.08)</td>
<td>0200</td>
<td>3/4 (10)</td>
<td>3/8 (6)</td>
<td>6.5 (0.047)</td>
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<td>1.5 (0.023)</td>
<td>1.0</td>
<td>1.5 x 10⁻⁶</td>
<td>.60</td>
</tr>
<tr>
<td>SRZ 06</td>
<td>.500  (12.7)</td>
<td>0500</td>
<td>3/4 (10)</td>
<td>3/8 (6)</td>
<td>7.0 (0.050)</td>
<td>90 to 140 (230 to 350)</td>
<td>1.5 (0.039)</td>
<td>1.0</td>
<td>1.5 x 10⁻⁶</td>
<td>.60</td>
</tr>
<tr>
<td>SRZ 06</td>
<td>1.000 (25.4)</td>
<td>1000</td>
<td>3/4 (10)</td>
<td>3/8 (6)</td>
<td>7.5 (0.050)</td>
<td>90 to 140 (230 to 350)</td>
<td>2.5 (0.070)</td>
<td>1.0</td>
<td>1.5 x 10⁻⁶</td>
<td>.60</td>
</tr>
<tr>
<td>SRZ 08</td>
<td>.100  (2.54)</td>
<td>0100</td>
<td>1 (6)</td>
<td>1/2 (6)</td>
<td>8.0 (0.053)</td>
<td>120 to 160 (350 to 410)</td>
<td>1.0 (0.006)</td>
<td>100</td>
<td>5.2 x 10⁻⁵</td>
<td>.81</td>
</tr>
<tr>
<td>SRZ 08</td>
<td>.200  (5.08)</td>
<td>0200</td>
<td>1 (6)</td>
<td>1/2 (6)</td>
<td>8.5 (0.060)</td>
<td>120 to 160 (350 to 410)</td>
<td>1.5 (0.023)</td>
<td>100</td>
<td>5.2 x 10⁻⁵</td>
<td>.81</td>
</tr>
<tr>
<td>SRZ 08</td>
<td>.500  (12.7)</td>
<td>0500</td>
<td>1 (6)</td>
<td>1/2 (6)</td>
<td>9.0 (0.064)</td>
<td>120 to 160 (350 to 410)</td>
<td>2.5 (0.039)</td>
<td>100</td>
<td>5.2 x 10⁻⁵</td>
<td>.81</td>
</tr>
<tr>
<td>SRZ 08</td>
<td>1.000 (25.4)</td>
<td>1000</td>
<td>1 (6)</td>
<td>1/2 (6)</td>
<td>9.5 (0.067)</td>
<td>120 to 160 (350 to 410)</td>
<td>4.5 (0.070)</td>
<td>100</td>
<td>5.2 x 10⁻⁵</td>
<td>.81</td>
</tr>
</tbody>
</table>

*ScrewRail® stiffness may be modeled using Classical Beam Deflection Theory with equivalent stainless steel beam of diameter given.

** Other leads available as custom orders.
Kerk® SS / SZ Series Spline Shafts

The Kerk® Spline Shaft (SS/SZ) series spline shaft system has been designed for light to moderate load applications, where low cost, low friction, and long life are primary design considerations.

Kerk Spline Shafts provide anti-rotation for one axis motion or a drive mechanism with rotation for two axes of motion. They are excellent alternatives for applications where hex shafts, square shafts and high-cost ball splines are typically used.

The assembly consists of a stainless steel spline shaft treated with Haydon Kerk Motion Solutions, Inc. proprietary low friction Kerkote® TFE coating, mated with a Kerkite® composite polymer bushing. The bushing is supplied with an integral brass collar to facilitate various mounting configurations without nut distortion.

Standard shaft straightness is .003-in (.08mm/30cm) per foot. Typical radial and torsional clearance between shaft and bushing for a basic assembly (SSA) is .002-in to .003-in (.05-.08mm). An anti-backlash assembly (SZA) is available for applications requiring minimum torsional play.

As with other Kerk® assemblies, special bushing configurations and end machining configurations are available upon request. Aluminum or carbon steel spline shafts are also available upon request.

Identifying the Kerk® Spline Shafts and Guide Rails part number codes

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Nut Style</th>
<th>Mounting</th>
<th>Rail Diameter</th>
<th>Number of Bushings per Rail</th>
<th>Coating</th>
<th>Length in Inches</th>
<th>Unique Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS</td>
<td>Assembly</td>
<td>T</td>
<td>02 = 1/8-in</td>
<td>0</td>
<td>S</td>
<td>06 = 6-in</td>
<td>XXX</td>
</tr>
<tr>
<td>SZ</td>
<td>Bushing</td>
<td></td>
<td>04 = 1/4-in</td>
<td>1</td>
<td>K</td>
<td>08 = 8-in</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shaft</td>
<td>G</td>
<td>06 = 3/8-in</td>
<td>2</td>
<td>B</td>
<td>XXX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>only</td>
<td></td>
<td>08 = 1/2-in</td>
<td>3</td>
<td>N</td>
<td>XXX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>only</td>
<td></td>
<td>12 = 3/4-in</td>
<td>4</td>
<td>XXX</td>
<td>XXX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>only</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td>XXX</td>
<td></td>
</tr>
</tbody>
</table>

Use “0” for Shaft only and “1” if Bushing only

NOTE: Dashes must be included in Part Number (–) as shown above. For assistance or order entry, call our engineering team at 603 213 6290.

EXAMPLES:

SZAT041K-12-XXXX = Spline shaft with anti-backlash, shaft and threaded bushing assembly, 1/4-in shaft, 1 bushing per rail, Kerkote® coating, 12-in length, with no special features added.

GRBPO41N-00-XXXX = Guide rail, plain bushing only, 1/4-in shaft, with no special features added.
SS Series Spline Shafts

<table>
<thead>
<tr>
<th>Rail Diameter Code</th>
<th>Shaft Diameter</th>
<th>Root Diameter</th>
<th>Tube I.D.</th>
<th>Bushing Diameter</th>
<th>Bushing Length</th>
<th>Thread</th>
<th>Thread Length</th>
<th>Equivalent Diameter**</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS/SZ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>0.125</td>
<td>0.095</td>
<td>NA</td>
<td>0.375</td>
<td>0.500</td>
<td>3/8-24</td>
<td>0.250</td>
<td>0.110</td>
</tr>
<tr>
<td></td>
<td>(3.18)</td>
<td>(2.41)</td>
<td></td>
<td>(9.53)</td>
<td>(12.70)</td>
<td></td>
<td>(6.35)</td>
<td>(2.79)</td>
</tr>
<tr>
<td>04</td>
<td>0.250</td>
<td>0.202</td>
<td>NA</td>
<td>0.500</td>
<td>0.75</td>
<td>7/16-20</td>
<td>0.250</td>
<td>0.226</td>
</tr>
<tr>
<td></td>
<td>(6.35)</td>
<td>(5.13)</td>
<td></td>
<td>(12.70)</td>
<td>(19.1)</td>
<td></td>
<td>(6.35)</td>
<td>(5.74)</td>
</tr>
<tr>
<td>06</td>
<td>0.375</td>
<td>0.306</td>
<td>NA</td>
<td>0.625</td>
<td>1.00</td>
<td>9/16-20</td>
<td>0.375</td>
<td>0.341</td>
</tr>
<tr>
<td></td>
<td>(9.53)</td>
<td>(7.77)</td>
<td></td>
<td>(16.88)</td>
<td>(25.4)</td>
<td></td>
<td>(9.53)</td>
<td>(8.65)</td>
</tr>
<tr>
<td>08</td>
<td>0.500</td>
<td>0.419</td>
<td>NA</td>
<td>0.813</td>
<td>1.50</td>
<td>3/4-20</td>
<td>0.500</td>
<td>0.458</td>
</tr>
<tr>
<td></td>
<td>(12.70)</td>
<td>(10.64)</td>
<td></td>
<td>(20.65)</td>
<td>(38.1)</td>
<td></td>
<td>(12.70)</td>
<td>(11.63)</td>
</tr>
<tr>
<td>12</td>
<td>0.750</td>
<td>0.630</td>
<td>NA</td>
<td>1.125</td>
<td>2.25</td>
<td>1-16</td>
<td>0.750</td>
<td>0.690</td>
</tr>
<tr>
<td></td>
<td>(19.05)</td>
<td>(16.00)</td>
<td></td>
<td>(28.58)</td>
<td>(57.2)</td>
<td></td>
<td>(19.05)</td>
<td>(17.53)</td>
</tr>
</tbody>
</table>

Maximum Twist:
3°/ft about Spline Shaft axis

Torsional Clearance (SSA):
3° Bushing to Shaft

Spline Shaft stiffness may be modeled as a round rod with diameters given.

0.125-in rail size only available in SSAP and SSAT styles.
Kerk® GR Series Linear Rails and Bushings

The GR Series linear rail system has been designed for light load applications where low cost, minimum frictional drag and long wear life are primary design considerations.

The assembly consists of a centerless ground and burnished stainless steel shaft mated with a Kerkite® composite polymer bushing. The material combinations have been selected so that thermal fluctuations have minimal effect on system performance. Additional lubricity and extended life can be obtained by using a low friction Kerkote® TFE coating on support shafts available in both stainless and alloy steel.

Standard shaft straightness is .002-in (0.05mm) per foot and typical radial clearance between shaft and bushing is .0005-in (.013mm) on non-coated assemblies and .001-in (.025mm) on Kerkote TFE coated assemblies.

Bushings are manufactured with standard retaining ring grooves.

---

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Linear Rail Application Checklist

Haydon Kerk Linear Rail Systems are designed to be precision motion devices. Many variables must be considered before applying a particular rail system in an application. The following is a basic checklist of information needed that will make it easier for the Haydon Kerk engineering team to assist you in choosing the proper linear rail.

<table>
<thead>
<tr>
<th>Question</th>
<th>Unit(s)</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Maximum Load?</td>
<td>(N or lbs.)</td>
<td></td>
</tr>
<tr>
<td>2) Load Center of Gravity (cg) Distance and Height?</td>
<td>(mm or inches)</td>
<td>See illustrations (A), (B), (C) below.</td>
</tr>
<tr>
<td>3) Rail Mount Orientation?</td>
<td></td>
<td>Must make it easier for the Haydon Kerk engineering team to assist you in choosing the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>proper linear rail.</td>
</tr>
<tr>
<td>4) Stroke Length to Move Load?</td>
<td>(mm or inches)</td>
<td>Overall rail size will be a function of stroke length needed to move the load, the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>rail frame size (load capability), the motor size, and whether programmable drive system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>is added.</td>
</tr>
<tr>
<td>5) Move Profile?</td>
<td></td>
<td>A trapezoidal move profile divided into 3 equal segments is a common move profile and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>easy to work with.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Another common move profile is a triangular move profile divided into 2 equal segments.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The trapezoidal move profile is a good starting point in helping to size a system for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>prototype work.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A complex move profile requires more information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a) Point to point move distance _______ (mm or inches)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) Move time _______ (seconds) including time of acceleration and deceleration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) Dwell time between moves _______ (seconds)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The trapezoidal move profile is a good starting point in helping to size a system for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>prototype work.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For details contact Haydon Kerk Motion Solutions Engineering – call 203 756 7441.</td>
</tr>
<tr>
<td>6) Position Accuracy Required?</td>
<td>(mm or inches)</td>
<td>Accuracy = the difference between the theoretical position and actual position capability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of the system. Due to manufacturing tolerances, actual travel will be slightly different</td>
</tr>
<tr>
<td></td>
<td></td>
<td>than theoretical “commanded” position. See figure (M) on right.</td>
</tr>
<tr>
<td>7) Position Repeatability Required?</td>
<td>(mm or inches)</td>
<td>Repeatability = the range of positions attained when the rail is commanded to approach</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the same position multiple times under identical conditions. See figure (M) on right.</td>
</tr>
<tr>
<td>8) Positioning Resolution Required?</td>
<td>(mm/step or inches/step)</td>
<td>Positioning resolution is the smallest move command that the system can generate. The</td>
</tr>
<tr>
<td></td>
<td></td>
<td>resolution is a function of many factors including the drive electronics, lead-screw</td>
</tr>
<tr>
<td></td>
<td></td>
<td>pitch, and encoder (if required). The terms “resolution” and “accuracy” should never</td>
</tr>
<tr>
<td></td>
<td></td>
<td>be used interchangeably.</td>
</tr>
<tr>
<td>9) Closed-Loop Position Correction Required?:</td>
<td>YES / NO</td>
<td>In stepper motor-based linear rail systems, position correction is typically accomplished</td>
</tr>
<tr>
<td></td>
<td></td>
<td>using a rotary incremental encoder (either optical or magnetic).</td>
</tr>
<tr>
<td>10) Life Requirement?: (select the most important application parameter)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Total mm or inches _______   b) Number of Full Strokes _______   c) Number of Cycles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11) Operating Temperature Range?</td>
<td>(“C or °F)</td>
<td></td>
</tr>
<tr>
<td>a) Will the system operate in an environment in which the worst case temperature is</td>
<td></td>
<td></td>
</tr>
<tr>
<td>above room temperature?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Will the system be mounted in an enclosure with other equipment generating heat?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12) Controller / Drive Information?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Haydon Kerk IDEA™ Drive (with Size 17 Motors only)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Customer Supplied Drive... Type... Chopper Drive... L / R Drive Model:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13) Power Supply Voltage?</td>
<td>(VDC)</td>
<td></td>
</tr>
<tr>
<td>14) Step Resolution?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Full Step   b) Half-Step   c) Micro-Step</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15) Drive Current?</td>
<td>(A&lt;sub&gt;rms&lt;/sub&gt; / Phase)</td>
<td></td>
</tr>
<tr>
<td>and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(A&lt;sub&gt;peak&lt;/sub&gt; / Phase)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16) Current Boost Capability?</td>
<td>(%)</td>
<td></td>
</tr>
</tbody>
</table>

* If the Haydon Kerk IDEA™ Drive is used disregard items 14, 15, and 16.
To complement the Haydon Kerk® brand of products AMETEK® Advanced Motion Solutions also offers the PITTMAN® brand of DC motor products. Our experienced team of sales engineers will work with you to help determine the optimum motion solution.

PITTMAN offers a broad range of DC brush and brushless motors with various power ratings, sizes, lengths, and options to meet just about any motion application. In addition to a standard offering of optional components such as drives, encoders, brakes, and gearboxes, motors can be further customized to include unique motor windings, special wire harnesses, EMI/RFI suppression, shaft modifications, custom output devices such as pinions and worm gears, and just about any other value-added feature to help streamline and simplify your product design and manufacturing.
Haydon Kerk Motion Solutions has the people and technology to design and manufacture a solution that will put your challenging ideas into practical motion.

Haydon Kerk Motion Solutions has been designing and manufacturing precision linear motion products for over 50 years.

- **Linear Actuators** - can-stack and hybrid stepper motors designed for direct conversion to linear motion
- **Precision Lead Screw / Nut Assemblies** - Extensive offering of 303 stainless steel lead-screws along with standard or custom nuts. Custom nut designs can include multi-functionality to help simplify product manufacturing.
- **Motorized Linear Rails** - More extensive linear motion assembly designed to minimize overall system cost, engineering time, and final assembly cost of end user equipment.

**AMETEK®** is a global leader in electronic instruments and electromechanical devices.

AMETEK has more than 15,000 colleagues at nearly 150 operating locations and a global network of sales, service and support locations across the United States and in 30 other countries worldwide.

AMETEK consists of two operating groups:
- **Electronic Instruments** - a leading manufacturer of advanced monitoring, testing, calibrating, and display instruments for the process, aerospace, power and industrial.
- **Electromechanical Instruments** - a differentiated supplier of electrical interconnects, technical motors and systems, and electric motors for floor care and other specialty applications.

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