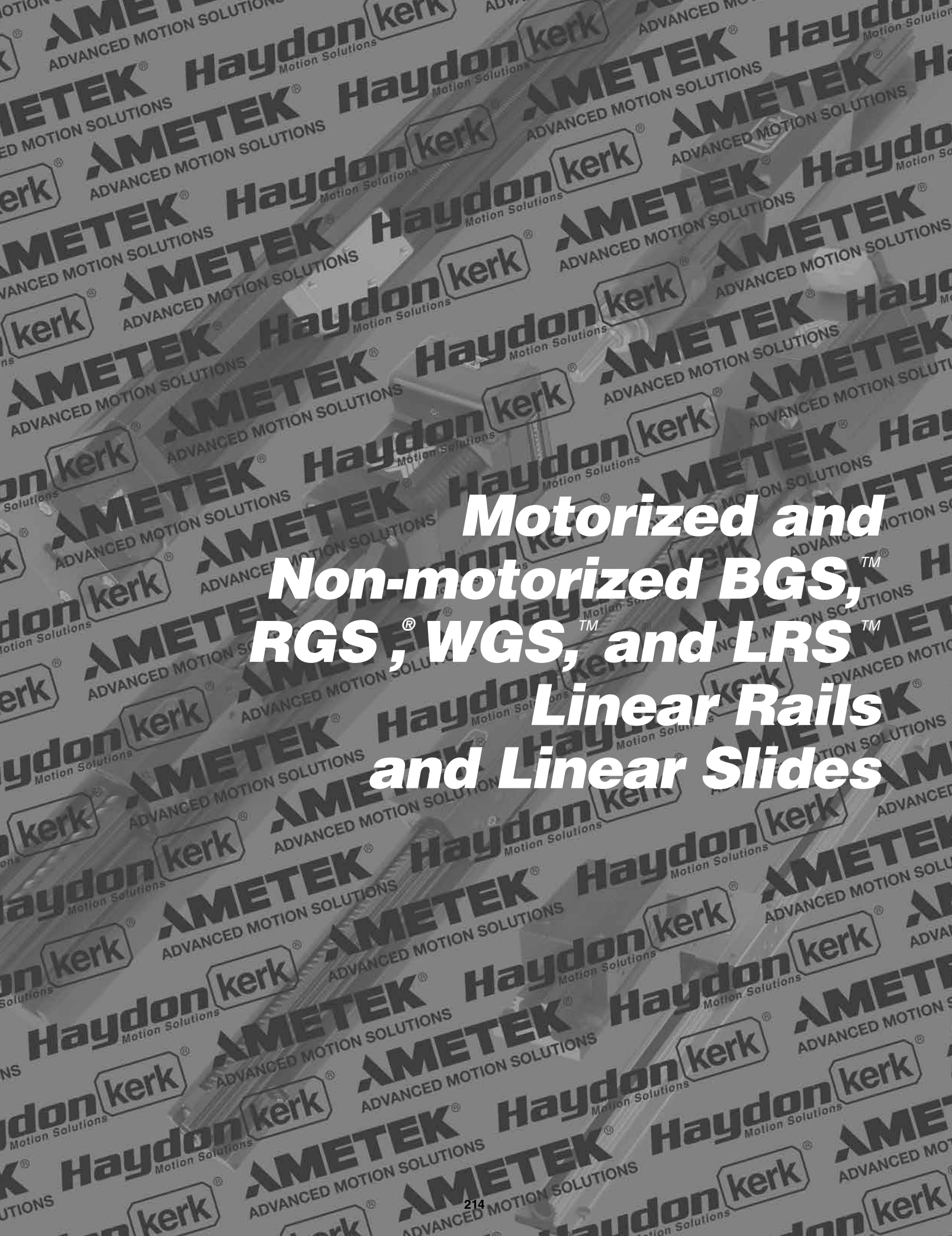

Motorized and Non-motorized BGS,™ RGS,® WGS,™ and LRS™ Linear Rails and Linear Slides

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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 preasssembled 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.

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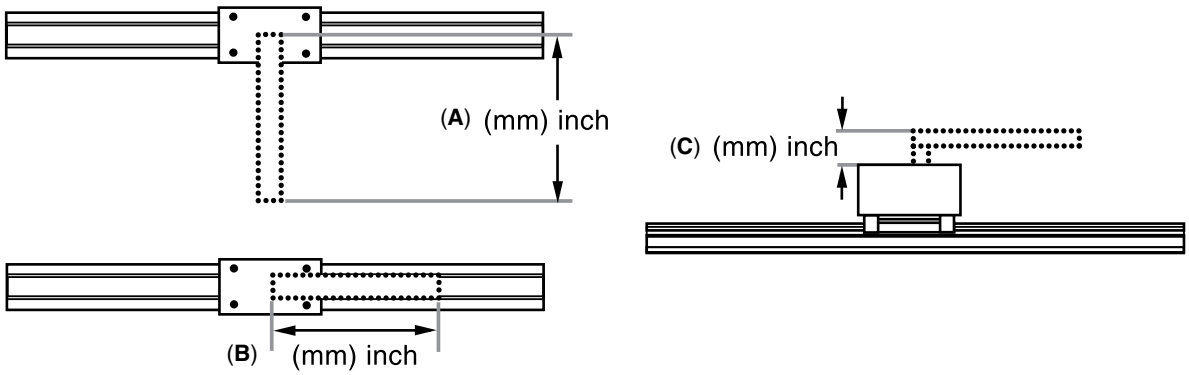
Information needed to properly size a linear rail system

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

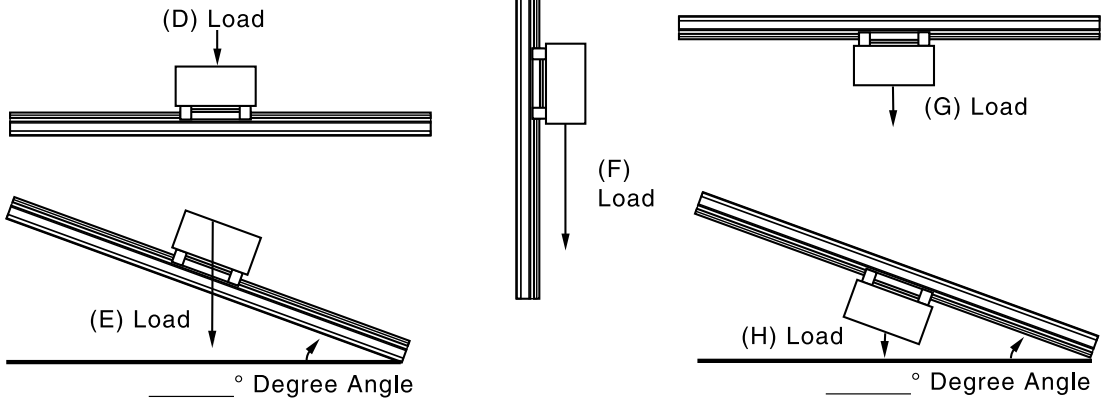
1) ❑ **Maximum Load?** _____ (N or lbs.)

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 ($F_f + F_a$). Total force in the vertical plane is a function of friction, load acceleration, and gravity ($F_f + F_a + F_g$).

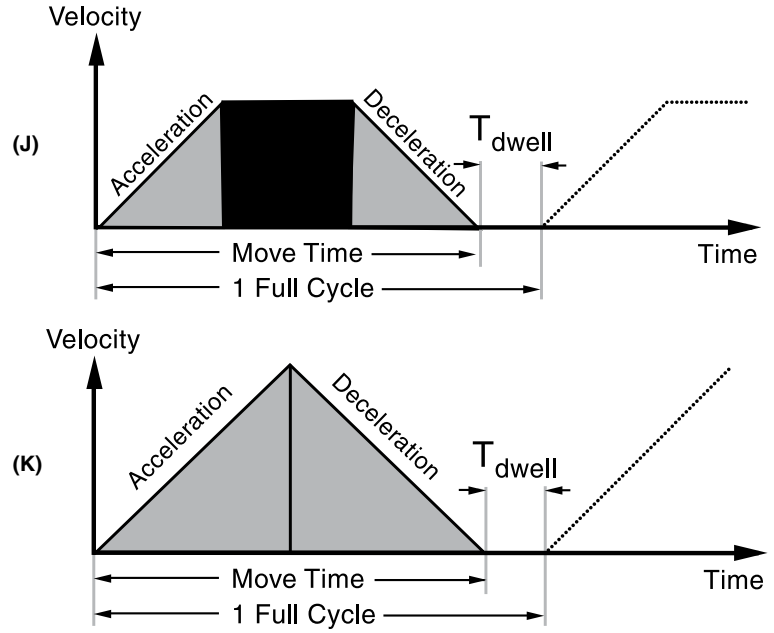
Orientation:
❑ **(D)**
❑ **(E)** _____°
❑ **(F)**
❑ **(G)**
❑ **(H)** _____°



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…

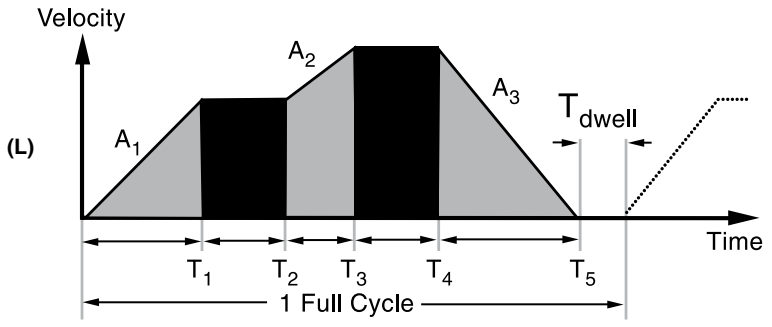
a) ❑ Point to point move distance _____ (mm or inches)
b) ❑ Move time _____ (seconds) including time of acceleration and deceleration
c) ❑ Dwell time between moves _____ (seconds)

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.

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

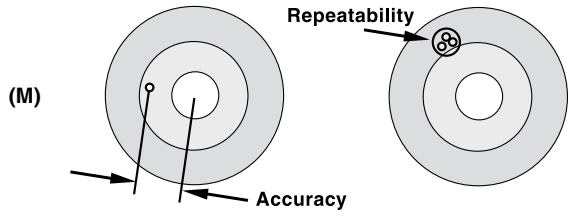
For more information call Haydon Kerk Motion Solutions Engineering at 203 756 7441.



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.*

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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

	BGS04	BGS06	BGS08
Hybrid Linear Actuator Motor...	**Size 11 Double Stack Size 17 Single Stack***	**Size 17 Single Stack* Size 17 Double Stack***	**Size 23 Single Stack* Size 23 Double Stack***
Max. Stroke Length	**18-in (460 mm)**	**24-in (610 mm)**	**30-in (760 mm)**
Max. Load (Horizontal)**	**22 lbs (100 N)**	**135 lbs (600N)**	**225 lbs (1,000 N)**
Roll Moment	**5.72 lbs-ft (7.75 N-m)**	**11.62 lbs-ft (15.75 N-m)**	**22.50 lbs-ft (30.5 N-m)**
Pitch Moment	**4.88 lbs-ft (6.60 N-m)**	**7.93 lbs-ft (10.75 N-m)**	**19.36 lbs-ft (26.25 N-m)**
Yaw Moment	**5.68 lbs-ft (7.70 N-m)**	**9.15 lbs-ft (12.40 N-m)**	**22.27 lbs-ft (30.20 N-m)**

Nominal Thread Lead inches	Nominal Thread Lead mm	Lead Code	BGS04	BGS06	BGS08
0.025	0.635	**0025**	●		
0.039	1.00	**0039**	●		
0.050	1.27	**0050**	●	●	
0.0625	1.59	**0063**	●		
0.079	2.00	**0079**	●	●	
0.098	2.50	**0098**			●
0.100	2.54	**0100**	●	●	●
0.118	3.00	**0118**	●		
0.125	3.18	**0125**			
0.157	4.00	**0157**		●	
0.197	5.00	**0197**		●	●
0.200	5.08	**0200**	●	●	●
0.250	6.35	**0250**	●	●	
0.315	8.00	**0315**			
0.375	9.53	**0375**		●	
0.394	10.00	**0394**	●		
0.400	10.16	**0400**		●	
0.472	12.00	**0472**		●	
0.500	12.70	**0500**	●	●	●
0.630	16.00	**0630**			●
0.750	19.05	**0750**	●	●	
0.984	25.00	**0984**		●	
1.000	25.40	**1000**	●	●	●
1.200	30.48	**1200**		●	

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).

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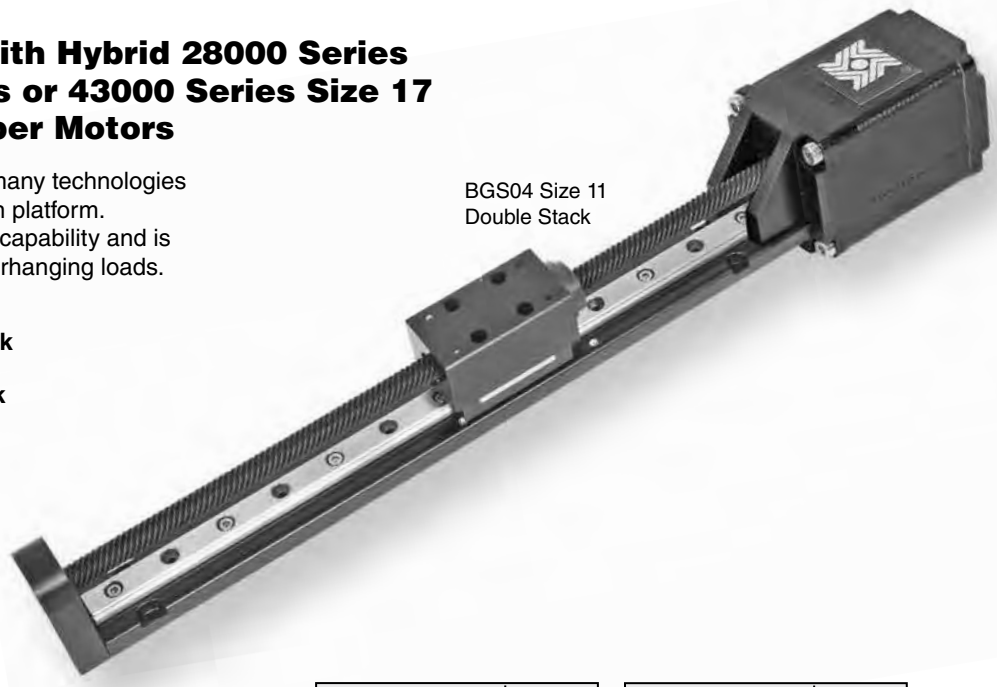
BGS04™ Linear Rail with Hybrid 28000 Series Size 11 Double Stacks or 43000 Series Size 17 Linear Actuator Stepper Motors

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.



BGS04 Size 11 Double Stack

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

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

Nominal Thread Lead		Lead Code
inches	mm	
0.025	0.635	**0025**
0.039	1.00	**0039**
0.050	1.27	**0050**
0.0625	1.59	**0063**
0.079	2.00	**0079**
0.100	2.54	**0100**
0.118	3.00	**0118**
0.200	5.08	**0200**

Nominal Thread Lead		Lead Code
inches	mm	
0.250	6.35	**0250**
0.394	10.00	**0394**
0.500	12.70	**0500**
0.750	19.05	**0750**
1.000	25.40	**1000**

* 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

BG	S	04	B	–	M	0025	–	XXX

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

For 43000 Series Size 17 Only
G = IDEA™ integrated programmable drive – USB communications

J = IDEA™ integrated programmable drive – RS485 communications

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.

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

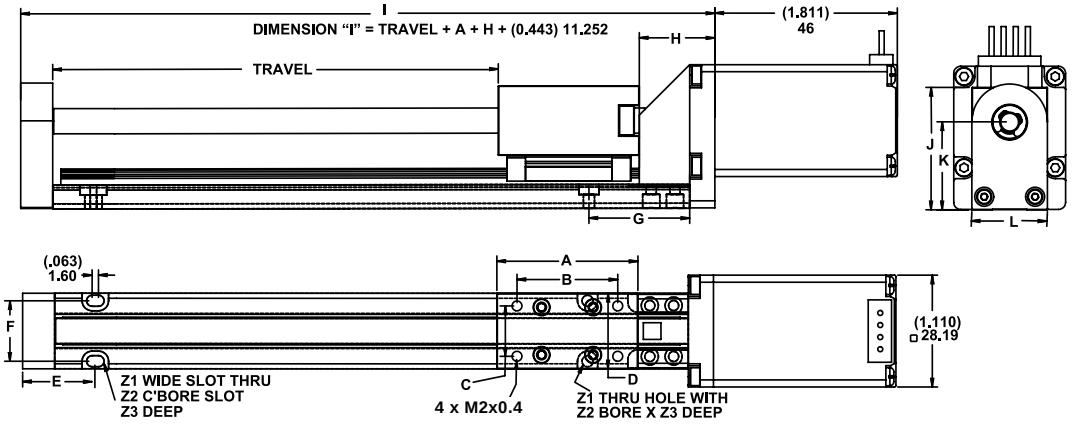
BGS04™ Linear Rail with 28000 Series Size 11 Double Stack linear motors

Recommended for horizontal loads up to 22 lbs (100 N)

	A	B	C	D	E	F	G	H	I	J	K	L	Z1	Z2	Z3
(inch)	(1.40)	(1.0)	(0.50)	(0.75)	(0.69)	(0.60)	(1.00)	(0.75)	*	(1.22)	(0.87)	(0.75)	(0.11)	(0.20)	(0.09)
mm	33.56	25.40	12.70	19.05	17.53	15.24	25.40	19.05	*	30.86	22.10	19.05	2.8	5.1	2.3

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

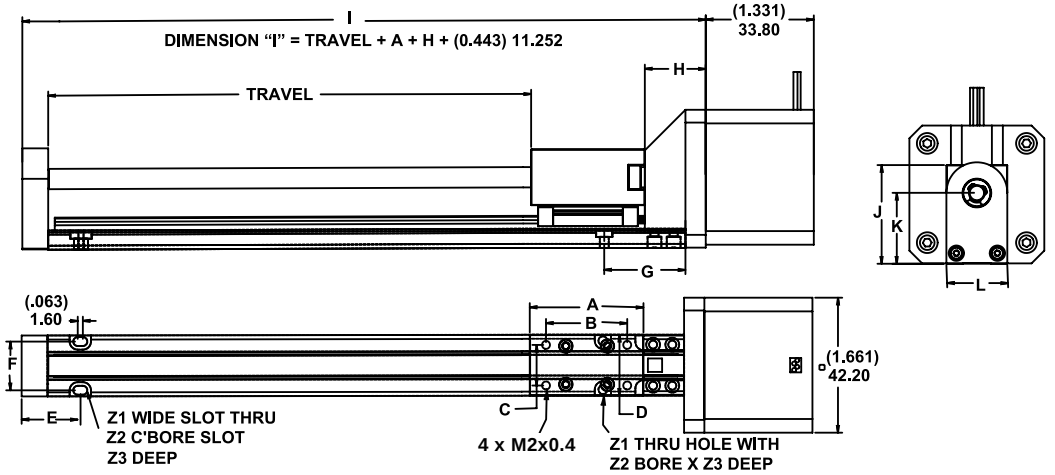
Dimensions = (inches) mm



BGS04™ Linear Rail with 43000 Series Size 17 Single Stack linear motors

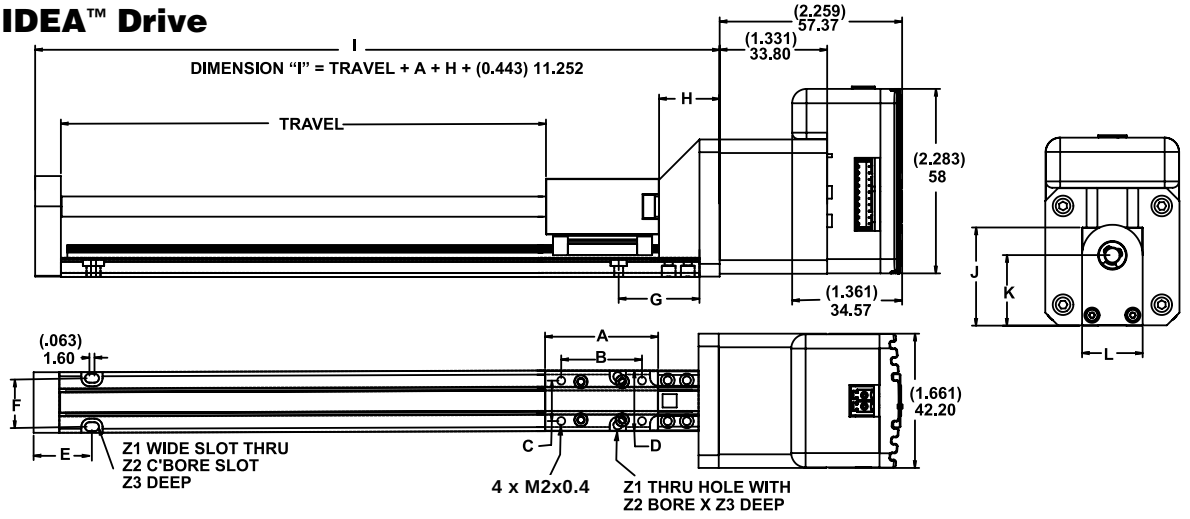
Recommended for horizontal loads up to 22 lbs (100 N)

Dimensions = (inches) mm



...with IDEA™ Drive

Dimensions = (inches) mm



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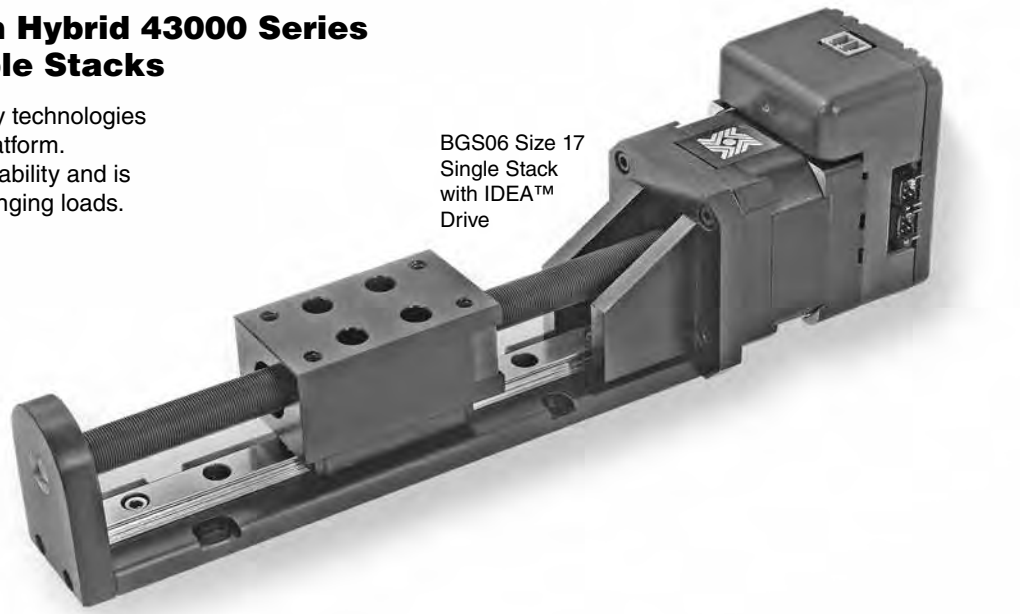
BGS06™ Linear Rail with Hybrid 43000 Series Size 17 Single and Double Stacks

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.



BGS06 Size 17 Single Stack with IDEA™ 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

BGS06

Specifications

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

Nominal Thread Lead		Lead Code
inches	mm	
0.050	1.27	**0050**
0.079	2.00	**0079**
0.100	2.54	**0100**
0.157	4.00	**0157**
0.197	5.00	**0197**
0.200	5.08	**0200**
0.250	6.35	**0250**
0.375	9.53	**0375**

Nominal Thread Lead		Lead Code
inches	mm	
0.400	10.16	**0400**
0.472	12.00	**0472**
0.500	12.70	**0500**
0.750	19.05	**0750**
0.984	25.00	**0984**
1.000	25.40	**1000**
1.200	30.48	**1200**

* 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 – **S** – **06** – **B** – **G** – **0079** – **XXX**

Prefix
BG = Ball Guide System

Frame Style
S = Standard

Frame Size Load*
06 = Max. static load 135 lbs (600 N)

Coating
B = TFE wear resist, dry lubricant Black Ice®

Drive / Mounting
M = Motorized

G = IDEA™ integrated programmable drive - USB communications
J = IDEA™ integrated programmable drive - RS485 communications

Nominal Thread Lead Code
0079 = .079-in (2.0)
(see Lead Code charts above)

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.

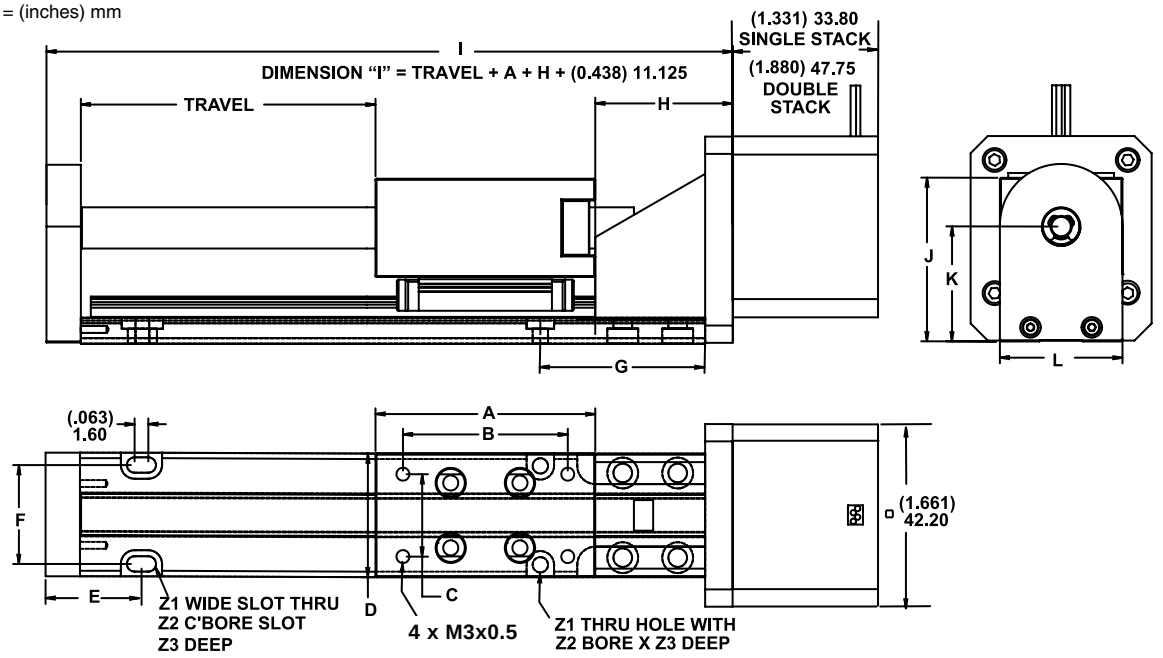
Carriage holes available in Metric sizes
M3
M4
M5
M6

BGS06™ Linear Rail with Hybrid 43000 Size 17 linear motors are recommended for horizontal loads up to 135 lbs (600 N)

	A	B	C	D	E	F	G	H	I	J	K	L	Z1	Z2	Z3
(inch)	(2.00)	(1.50)	(0.75)	(1.13)	(0.81)	(0.90)	(1.50)	(1.25)	*	(1.50)	(1.05)	(1.13)	(0.14)	(0.25)	(0.13)
mm	50.80	38.10	19.05	28.58	20.57	22.86	38.10	31.75	*	38.15	26.77	28.58	3.6	6.4	3.3

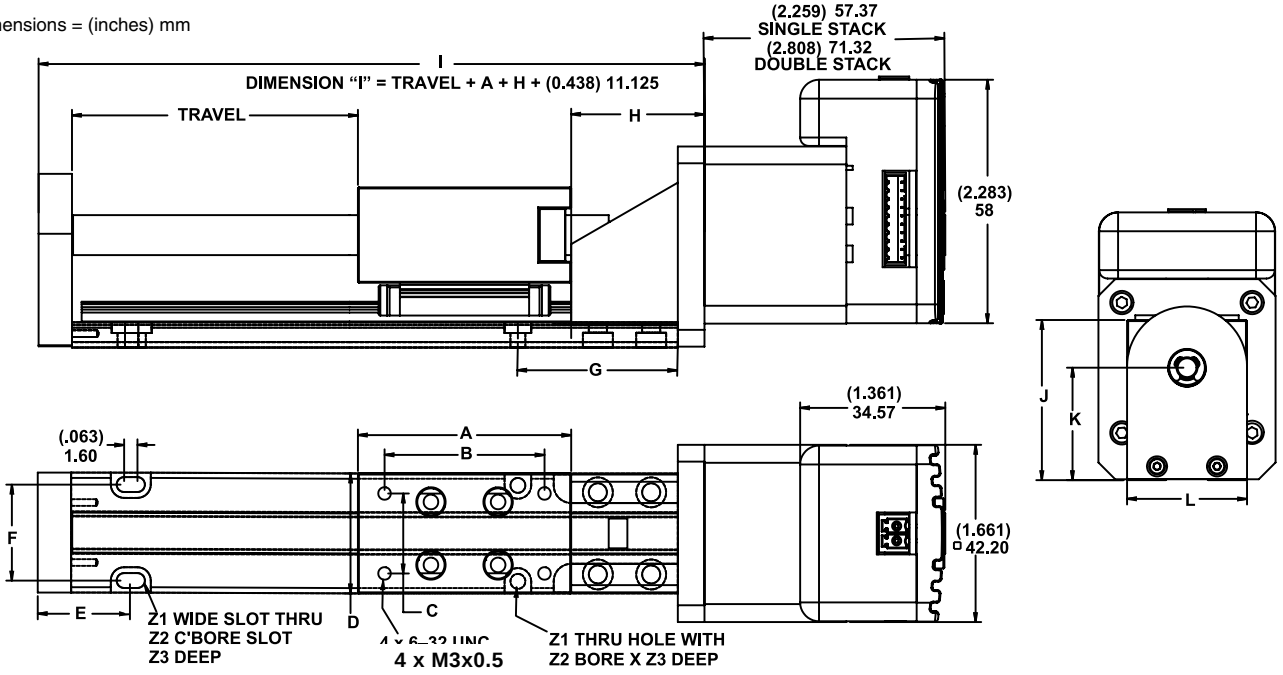
* Dimension "I" is a function of required travel distance.

Dimensions = (inches) mm



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

Dimensions = (inches) mm



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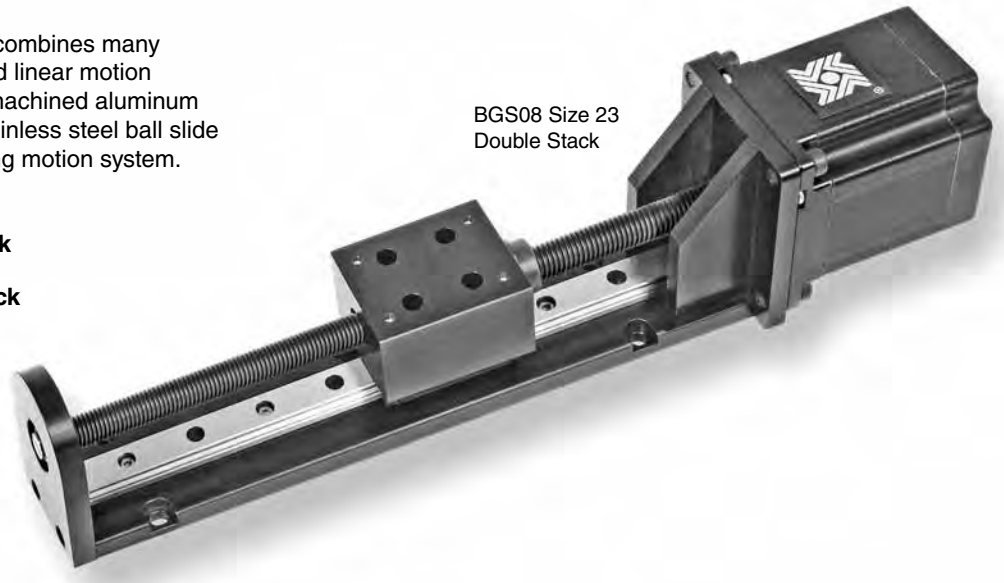
BGS08™ Linear Rail with Hybrid 57000 Series Size 23 Single and Double Stacks

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 Size 23
Double Stack

BGS08 Specifications

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

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

Nominal Thread Lead		Lead Code
inches	mm	
0.098	2.50	**0098**
0.100	2.54	**0100**
0.197	5.00	**0197**
0.200	5.08	**0200**
0.500	12.70	**0500**
0.630	16.00	**0630**
1.000	25.40	**1000**

Identifying the Motorized BGS part number codes when ordering

BG – **S** – **08** – **B** – **M** – **0197** – **XXX**

Prefix
BG = Ball Guide System

Frame Style
S = Standard

Frame Size Load*
08 = Max. static load 225 lbs (1,000 N)

Coating
B = TFE wear resist, dry lubricant Black Ice®

Drive / Mounting
M = Motorized

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

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.

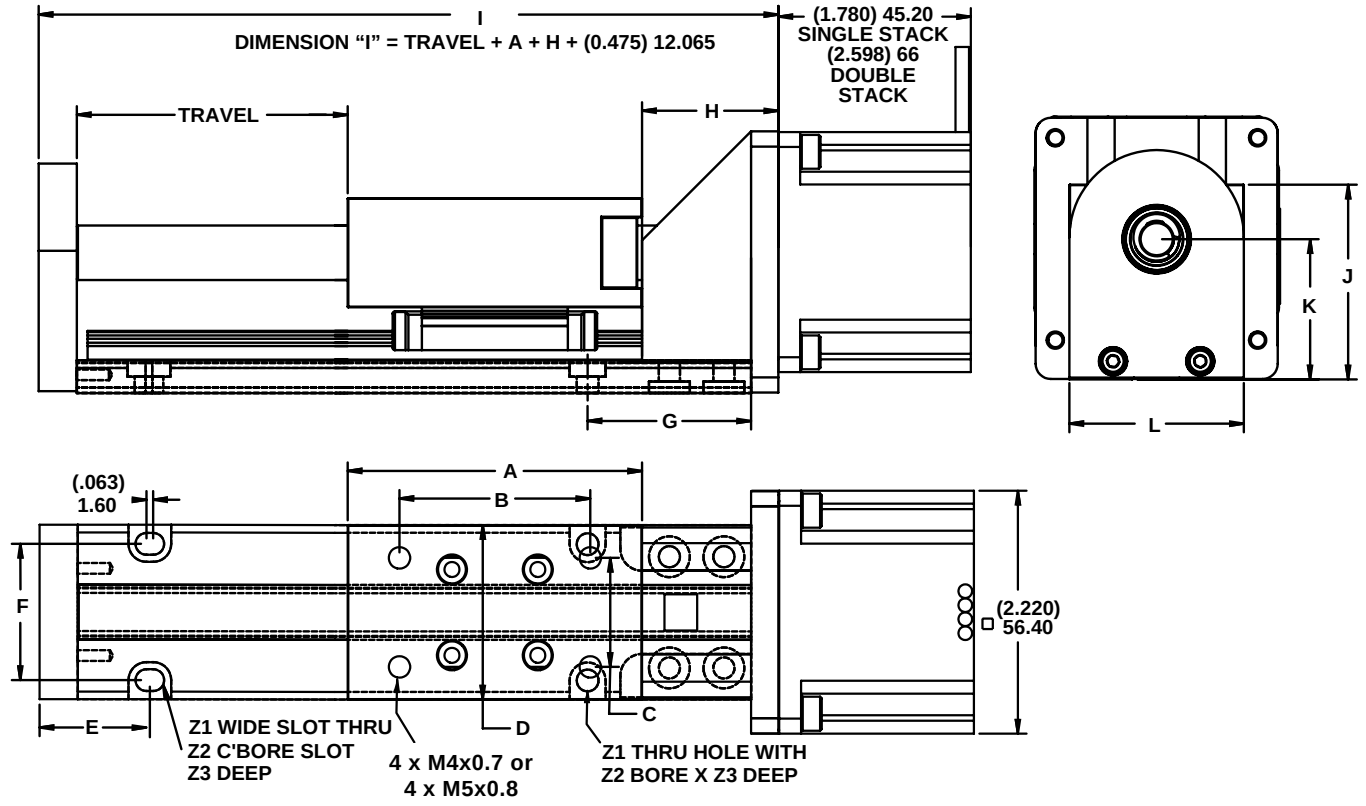
Carriage holes available in Metric sizes
M3
M4
M5
M6

BGS08™ Linear Rail with Hybrid 57000 Size 23 linear motors are recommended for horizontal loads up to 225 lbs (1,000 N)

	A	B	C	D	E	F	G	H	I	J	K	L	Z1	Z2	Z3
(inch)	(2.70)	(1.75)	(1.00)	(1.60)	(0.98)	(1.25)	(1.50)	(1.25)	*	(1.79)	(1.29)	(1.60)	(0.20)	(0.33)	(0.19)
mm	68.58	44.45	25.40	40.64	24.89	31.75	38.10	31.75	*	45.39	32.69	40.64	5.1	8.4	4.8

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

Dimensions = (inches) mm



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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 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. 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.

Motorized RGS04 with 28000 Series Double Stack

Motorized RGW10 with 57000 Series Double Stack

Motorized RGW06 with 43000 Series Double Stack

Motorized RGS Selector Chart

Nominal Thread Lead inches	mm	Lead Code	RGS04 Size 11DS Size 17SS Size 17DS	RGS06 Size 17SS Size 17DS Size 23SS Size 23DS	RGW06 Size 17SS Size 17DS Size 23SS Size 23DS	RGS08 Size 23SS Size 23DS	RGS10 Size 23SS Size 23DS	RGW10 Size 23SS Size 23DS
0.025	0.635	**0025**	●					
0.039	1.00	**0039**	●					
0.050	1.27	**0050**	●	●	●			
0.0625	1.59	**0063**	●					
0.079	2.00	**0079**	●	●	●			
0.098	2.50	**0098**				●		
0.100	2.54	**0100**	●	●	●	●	●	●
0.118	3.00	**0118**	●					
0.125	3.18	**0125**					●	●
0.157	4.00	**0157**		●	●			
0.197	5.00	**0197**		●	●	●		
0.200	5.08	**0200**	●	●	●	●	●	●
0.250	6.35	**0250**	●	●	●		●	●
0.315	8.00	**0315**					●	●
0.375	9.53	**0375**		●	●			
0.394	10.00	**0394**	●					
0.400	10.16	**0400**		●	●			
0.472	12.00	**0472**		●	●			
0.500	12.70	**0500**	●	●	●	●	●	●
0.630	16.00	**0630**				●	●	●
0.750	19.05	**0750**	●	●	●			
0.984	25.00	**0984**		●	●			
1.000	25.40	**1000**		●	●	●	●	●
1.200	30.48	**1200**		●	●			
1.500	38.10	**1500**					●	●
2.000	50.80	**2000**					●	●

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

SS = Single Stack, standard Hybrid Linear Actuator Stepper Motor

DS = Double Stack Hybrid Linear Actuator Stepper Motor

RGW = wide base with parallel guide tracks for traversing sensor mount devices

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.

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Non-Motorized RGS Linear Rails
Product Selector Chart

Rapid Guide Screw	Inch Lead inch (mm)	Thread Lead Code	Nominal Rail Diam. inch (mm)	Nominal Screw Diam. inch (mm)	Typical Drag Torque oz - in (N-m)	Life @ 1/4 Design Load* inch (cm)	Torque-to-Move Load* oz-in/lb (N-m/Kg)	Design Load* lbs (N)	Screw Inertia oz-in sec^2/in (KgM^2/M)
RGS 04	.100 (2.54)	**0100**	0.4 (10.2)	1/4 (6.4)	3.0 (.02)	100,000,000 (254,000,000)	1.0 (.016)	15 (67)	$.3 \times 10^{-5}$ (6.5×10^{-6})
RGS 04	.200 (5.08)	**0200**	0.4 (10.2)	1/4 (6.4)	4.0 (.03)	100,000,000 (254,000,000)	1.5 (.023)	15 (67)	$.3 \times 10^{-5}$ (6.5 x 10)
RGS 04	.500 (12.70)	**0500**	0.4 (10.2)	1/4 (6.4)	5.0 (.04)	100,000,000 (254,000,000)	2.5 (.039)	15 (67)	$.3 \times 10^{-5}$ (6.5×10^{-6})
RGS 04	1.000 (25.40)	**1000**	0.4 (10.2)	1/4 (6.4)	6.0 (.04)	100,000,000 (254,000,000)	4.5 (.070)	15 (67)	$.3 \times 10^{-5}$ (6.5×10^{-6})
RGS 06	.100 (2.54)	**0100**	0.6 (15.2)	3/8 (9.5)	4.0 (.03)	100,000,000 (254,000,000)	1.0 (.016)	35 (156)	1.5×10^{-5} (4.2×10^{-6})
RGS 06	.200 (5.08)	**0200**	0.6 (15.2)	3/8 (9.5)	5.0 (.04)	100,000,000 (254,000,000)	1.5 (.023)	35 (156)	1.5×10^{-5} (4.2×10^{-6})
RGS 06	.500 (12.70)	**0500**	0.6 (15.2)	3/8 (9.5)	6.0 (.04)	100,000,000 (254,000,000)	2.5 (.039)	35 (156)	1.5×10^{-5} (4.2×10^{-6})
RGS 06	1.000 (25.40)	**1000**	0.6 (15.2)	3/8 (9.5)	7.0 (.05)	100,000,000 (254,000,000)	4.5 (.070)	35 (156)	1.5×10^{-5} (4.2×10^{-6})
RGS 08	.100 (.254)	**0100**	0.8 (20.3)	1/2 (12.7)	5.0 (.04)	100,000,000 (254,000,000)	1.1 (.018)	50 (222)	5.2×10^{-5} (20.0×10^{-6})
RGS 08	.200 (5.08)	**0200**	0.8 (20.3)	1/2 (12.7)	6.0 (.04)	100,000,000 (254,000,000)	1.7 (.027)	50 (222)	5.2×10^{-5} (20.0×10^{-6})
RGS 08	.500 (12.70)	**0500**	0.8 (20.3)	1/2 (12.7)	7.0 (.05)	100,000,000 (254,000,000)	3.0 (.047)	50 (222)	5.2×10^{-5} (20.0×10^{-6})
RGS 08	1.000 (25.40)	**1000**	0.8 (20.3)	1/2 (12.7)	8.0 (.06)	100,000,000 (254,000,000)	6.0 (.096)	50 (222)	5.2×10^{-5} (20.0×10^{-6})
RGS 10	.100 (2.54)	**0100**	1.0 (25.4)	5/8 (15.9)	5.0 (.04)	100,000,000 (254,000,000)	1.3 (.020)	100 (445)	14.2×10^{-5} (3.9×10^{-5})
RGS 10	.200 (5.08)	**0200**	1.0 (25.4)	5/8 (15.9)	6.5 (.05)	100,000,000 (254,000,000)	2.0 (.031)	100 (445)	14.2×10^{-5} (3.9×10^{-5})
RGS 10	.500 (12.70)	**0500**	1.0 (25.4)	5/8 (15.9)	7.0 (.05)	100,000,000 (254,000,000)	3.0 (.047)	100 (445)	14.2×10^{-5} (3.9×10^{-5})
RGS 10	1.000 (25.40)	**1000**	1.0 (25.4)	5/8 (15.9)	8.5 (.06)	100,000,000 (254,000,000)	6.5 (.101)	100 (445)	14.2×10^{-5} (3.9×10^{-5})

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

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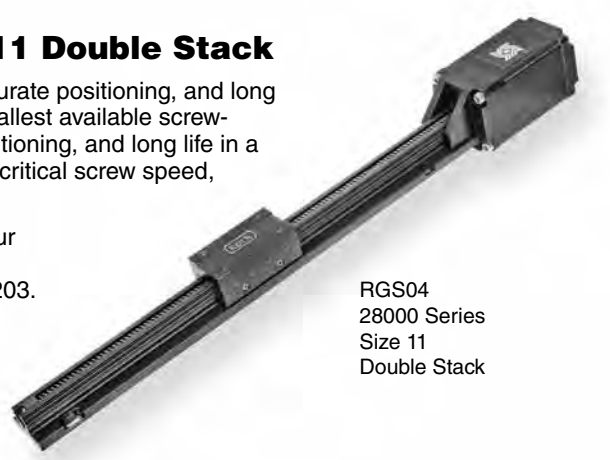
RGS04 Linear Rail with a 28000 Series Size 11 Double Stack

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

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



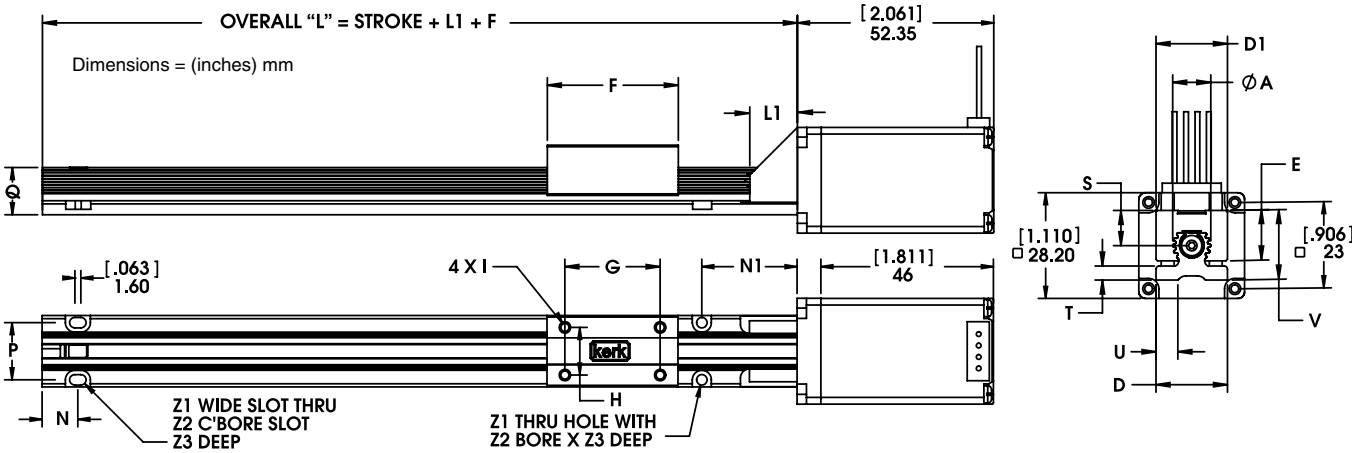
RGS04
28000 Series
Size 11
Double Stack

RGS04 Linear Rail with Hybrid 28000 Series Size 11 Double Stack linear motors

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

	A	D	D1	E	F	G	H	I*	L1	N	N1	P	Q	S	T	U	V	Z1	Z2	Z3
(inch)	(0.4)	(0.75)	(0.75)	(0.53)	(1.4)	(1.0)	(0.5)	4-40	(0.5)	(0.375)	(1.0)	(0.6)	(0.5)	(0.37)	(0.15)	(0.23)	(0.7)	(0.11)	(0.2)	(0.09)
mm	10.2	19.0	19.0	13.5	35.6	25.4	12.7	UNC	12.7	9.52	25.4	15.2	12.7	9.4	3.8	5.8	18.5	18	5.1	2.3

* Metric threads also available for carriage.



Identifying the Motorized RGS part number codes when ordering

RG	S	04	K	–	M	0100	–	XXX

Prefix
RG = Rapid Guide Screw

Frame Style
S = Standard

Frame Size Load*
04 = 15 lbs (67 N) (Maximum static load)

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

Drive / Mounting
M = Motorized (Double Stack only)

Nominal Thread Lead Code

0025 = .025-in (.635)	**0118** = .118-in (3.00)
0039 = .039-in (1.00)	**0200** = .200-in (5.08)
0050 = .050-in (1.27)	**0250** = .250-in (6.35)
0063 = .0625-in (1.59)	**0394** = .394-in (10.00)
0079 = .079-in (2.00)	**0500** = .500-in (12.70)
0100 = .100-in (2.54)	**0750** = .750-in (19.05)

Unique Identifier
Suffix used to identify specific motors (28000 Double Stack)

– 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

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

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www.HaydonKerkExpress.com
Standard products available 24-hrs.

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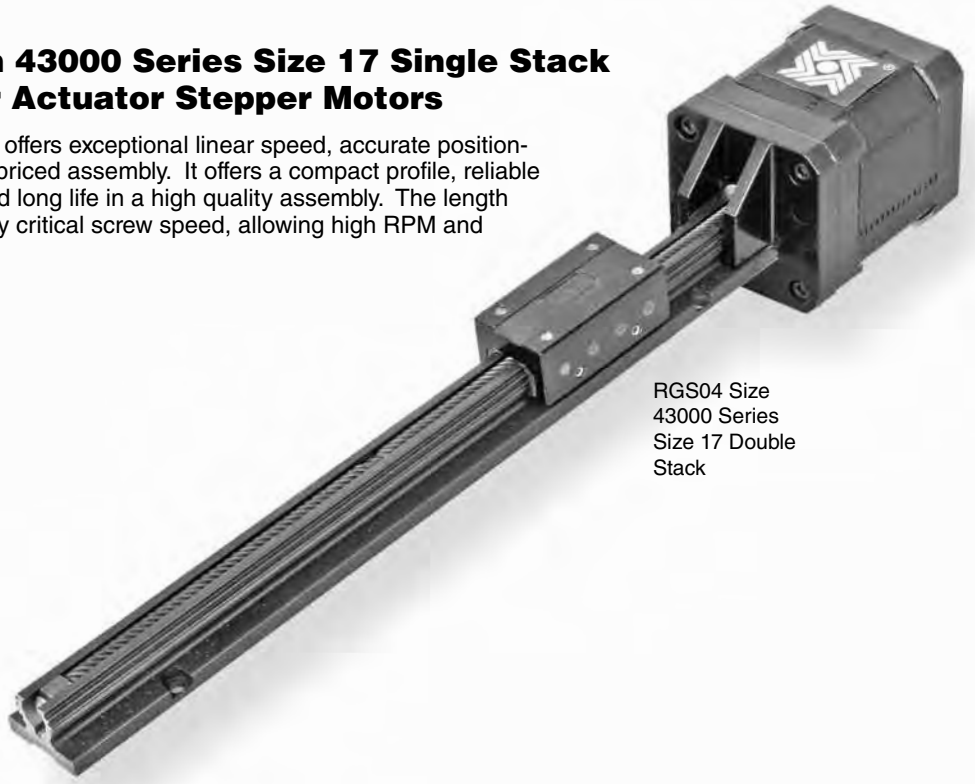
RGS04 Linear Rail with 43000 Series Size 17 Single Stack or Double Stack Linear Actuator Stepper Motors

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.



RGS04 Size 43000 Series Size 17 Double Stack

Identifying the Motorized RGS part number codes when ordering

RG	S	04	K	–	M	0100	–	XXX

Prefix
RG = Rapid Guide Screw

Frame Style
S = Standard

Frame Size Load*
04 = 15 lbs (67 N) (Maximum static load)

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

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

Nominal Thread Lead Code
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)

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.

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.

Haydon Kerk Express℠
www.HaydonKerkExpress.com
Standard products available 24-hrs.

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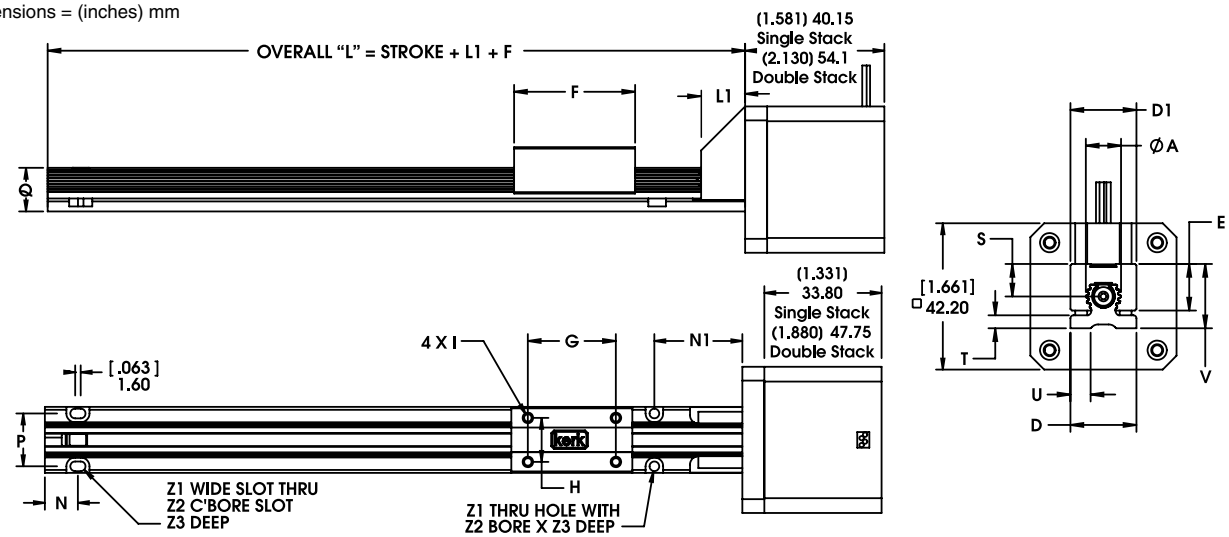
RGS04 with 43000 Series Size 17 Single Stack and Double Stack linear actuator stepper motors

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

	A	D	D1	E	F	G	H	I*	L1	N	N1	P	Q	S	T	U	V	Z1	Z2	Z3
(inch)	(0.4)	(0.75)	(0.75)	(0.53)	(1.4)	(1.0)	(0.5)	4-40	(0.5)	(0.375)	(1.0)	(0.6)	(0.5)	(0.37)	(0.15)	(0.23)	(0.73)	(0.11)	(0.2)	(0.09)
mm	10.2	19.0	19.0	13.5	35.6	25.4	12.7	UNC	12.7	9.52	25.4	15.2	12.7	9.4	3.8	5.8	18.5	2.8	5.1	2.3

* Metric threads also available for carriage.

Dimensions = (inches) mm



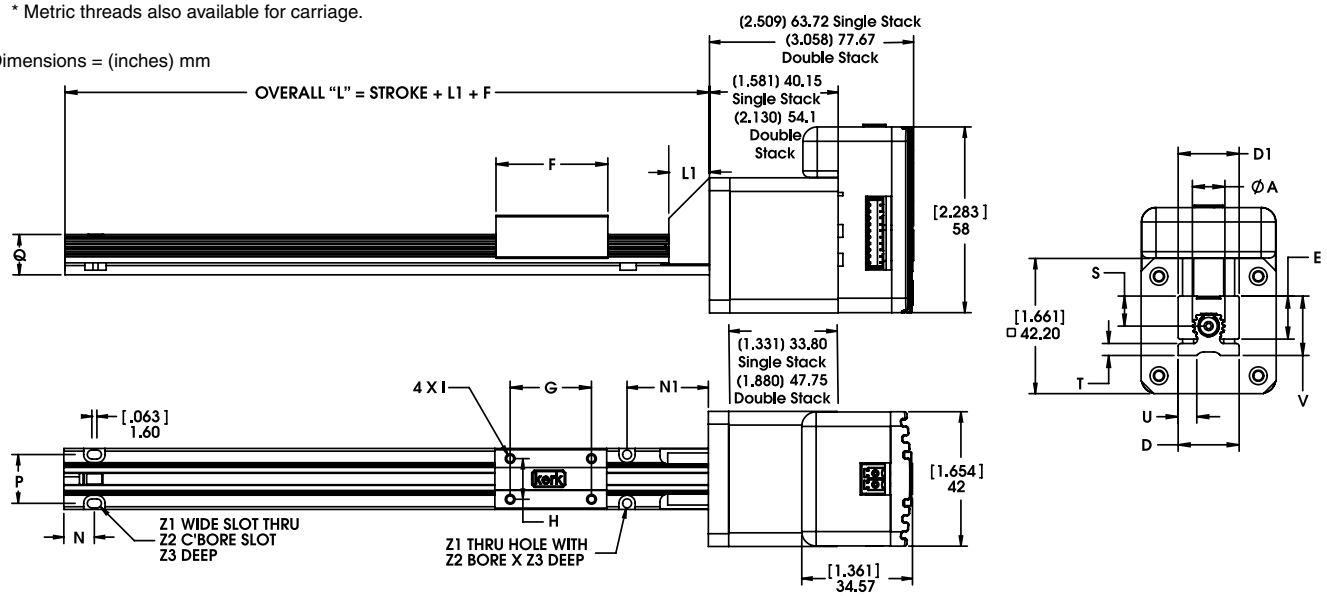
RGS04 with 43000 Series Size 17 Single Stack and Double Stack linear actuator stepper motors with an integrated programmable IDEA™ Drive

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

	A	D	D1	E	F	G	H	I*	L1	N	N1	P	Q	S	T	U	V	Z1	Z2	Z3
(inch)	(0.4)	(0.75)	(0.75)	(0.53)	(1.4)	(1.0)	(0.5)	4-40	(0.5)	(0.375)	(1.0)	(0.6)	(0.5)	(0.37)	(0.15)	(0.23)	(0.73)	(0.11)	(0.2)	(0.09)
mm	10.2	19.0	19.0	13.5	35.6	25.4	12.7	UNC	12.7	9.52	25.4	15.2	12.7	9.4	3.8	5.8	18.5	2.8	5.1	2.3

* 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.

RGS04 Non-motorized Screw-driven linear rail

RGS04 Non-motorized linear rail without screw

Identifying the Non-Motorized RGS part number codes when ordering

RG	S	04	K	–	A	0100	–	XXX

Prefix

RG = Rapid Guide Screw

Frame Style

S = Standard

Frame Size Load

04 = 15 lbs (67 N) (Maximum static load)

Coating

K = TFE Kerkote®

X = Special (example: Kerkote with grease

Drive / Mounting

A = None

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.

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.

Haydon kerk Express℠
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Standard products available 24-hrs.

RGS04® Screw-Driven linear rail WITHOUT MOTOR Standard Series

Specifications

	Inch Lead inch (mm)	Thread Lead Code	Nominal Rail Diam. inch (mm)	Nominal Screw Diam. inch (mm)	Typical Drag Torque oz - in (N-m)	Life @ 1/4 Design Load* inch (cm)	Torque-to-Move Load* oz-in/lb (N-m/Kg)	Design Load* lbs (N)	Screw Inertia oz-in sec²/in (KgM²/M)
RGS04 Non-Motorized with Guide Screw	.100 (2.54)	**0100**	0.4 (10.2)	1/4 (6.4)	3.0 (.02)	100,000,000 (254,000,000)	1.0 (.016)	15 (67)	.3 x 10^{-5} (6.5 x 10^{-6})
	.200 (5.08)	**0200**	0.4 (10.2)	1/4 (6.4)	4.0 (.03)	100,000,000 (254,000,000)	1.5 (.023)	15 (67)	.3 x 10^{-5} (6.5 x 10)
	.500 (12.70)	**0500**	0.4 (10.2)	1/4 (6.4)	5.0 (.04)	100,000,000 (254,000,000)	2.5 (.039)	15 (67)	.3 x 10^{-5} (6.5 x 10^{-6})
	1.000 (25.40)	**1000**	0.4 (10.2)	1/4 (6.4)	6.0 (.04)	100,000,000 (254,000,000)	4.5 (.070)	15 (67)	.3 x 10^{-5} (6.5 x 10^{-6})

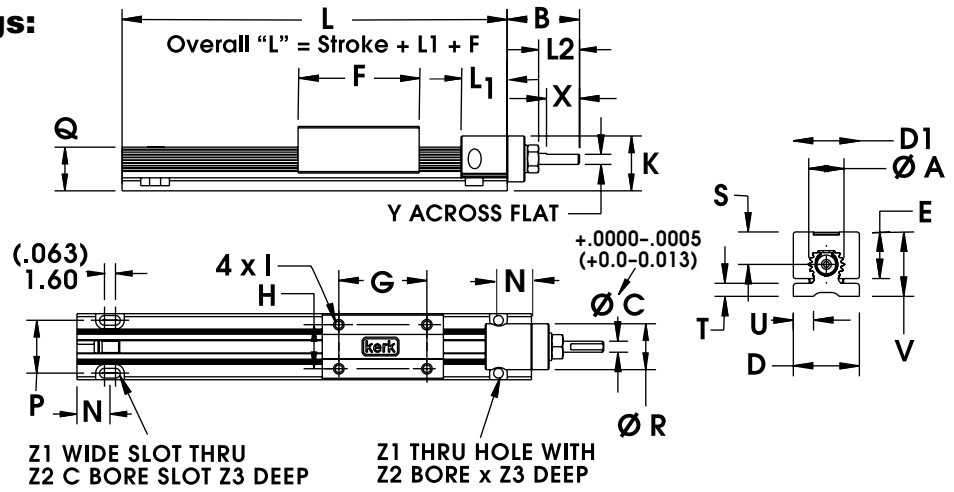
NOTE: RGS® assemblies with lengths over 36-in. (914.4 mm) and/or leads higher than .5-in (12.7 mm) will likely have higher drag torque than listed values.

* Determined with load in a horizontal position

Dimensional Drawings: RGS04 Screw-Driven linear rail WITHOUT MOTOR

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

Dimensions = inches (mm)



Dimensions: RGS04

Standard, non-motorized with guide screw

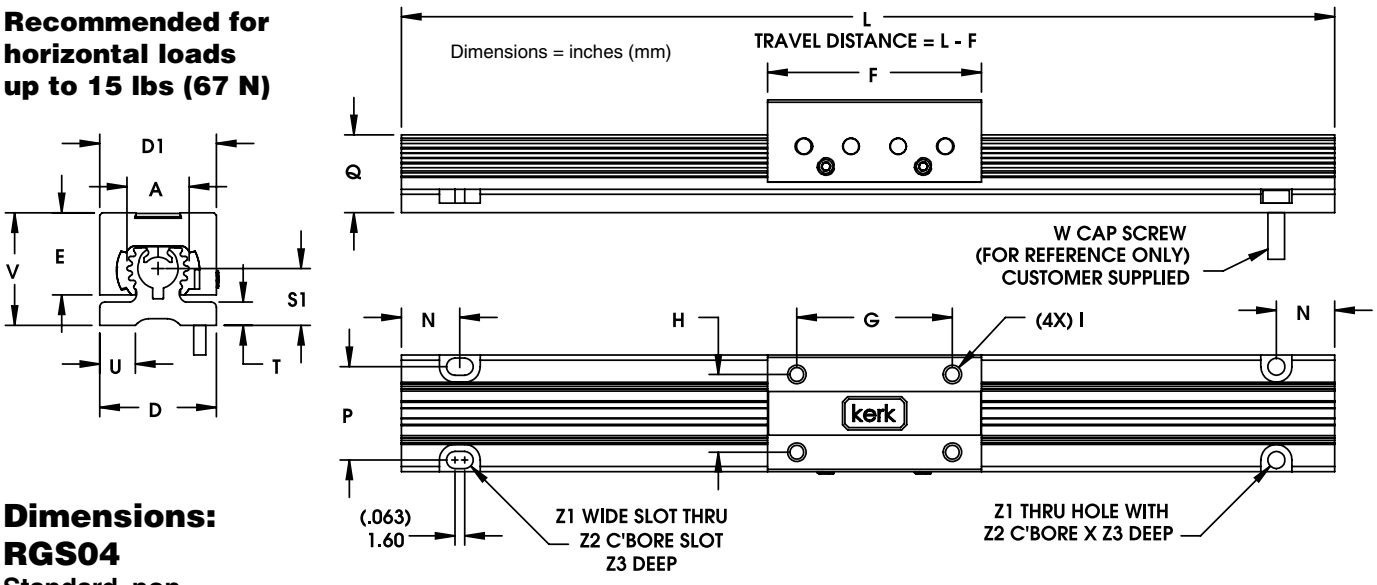
	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	D1 inch (mm)	E inch (mm)	F inch (mm)	G inch (mm)	H inch (mm)	I*	K inch (mm)	L1 inch (mm)	L2 inch (mm)	N inch (mm)
RGS04	.40 (10.2)	.83 (21.1)	.1250 (3.175)	.75 (19.1)	.75 (19.1)	.53 (13.5)	1.38 (35.1)	1.000 (25.40)	.500 (12.7)	4-40 UNC	.6 (15)	.53 (13.5)	.47 (11.9)	.375 (9.53)

	P inch (mm)	Q inch (mm)	R inch (mm)	S inch (mm)	T inch (mm)	U inch (mm)	V inch (mm)	X inch (mm)	Y inch (mm)	Z1 inch (mm)	Z2 inch (mm)	Z3 inch (mm)
RGS04	.600 (15.24)	.50 (12.7)	.52 (13.2)	.37 (9.4)	.15 (3.8)	.23 (5.8)	.7 (18)	.38 (9.7)	.115 (2.92)	.11 (2.8)	.20 (5.1)	.09 (2.3)

* 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: RGS04

Standard, non-motorized without guide screw

	A inch (mm)	D inch (mm)	D1 inch (mm)	E inch (mm)	F inch (mm)	G inch (mm)	H inch (mm)	I*	N inch (mm)	P inch (mm)	Q inch (mm)	S inch (mm)	T inch (mm)	U inch (mm)	V inch (mm)	Z1 inch (mm)	Z2 inch (mm)	Z3 inch (mm)
RGS04	.40 (10.2)	.75 (19.1)	.75 (19.1)	.53 (13.5)	1.4 (36)	1.000 (25.40)	.500 (12.70)	4-40 UNC	.375 (9.53)	.600 (15.24)	.50 (12.7)	.37 (9.4)	.15 (3.8)	.23 (5.8)	.7 (18)	.11 (2.8)	.20 (5.1)	.09 (2.3)

* Metric carriage hole sizes available: M3 and M4

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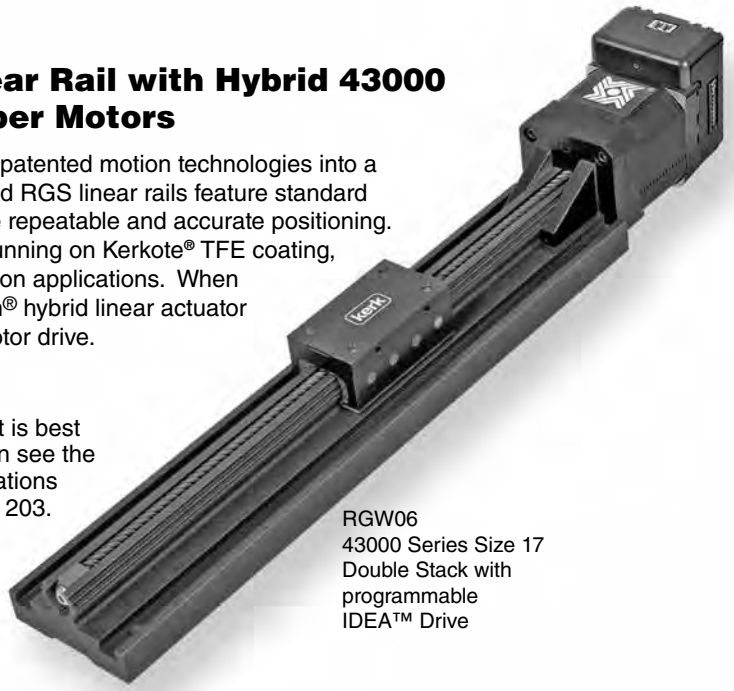
RGS06 and RGW06 WIDE Series Linear Rail with Hybrid 43000 Series Size 17 Linear Actuator Stepper Motors

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.



RGW06
43000 Series Size 17
Double Stack with
programmable
IDEA™ Drive

Identifying the Motorized RGS part number codes when ordering

RG	S	06	K	–	M	0100	–	XXX

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 (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

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.

Haydon kerk Express℠
www.HaydonKerkExpress.com
Standard products available 24-hrs.

Carriage holes available in Metric sizes
M3
M4
M5
M6

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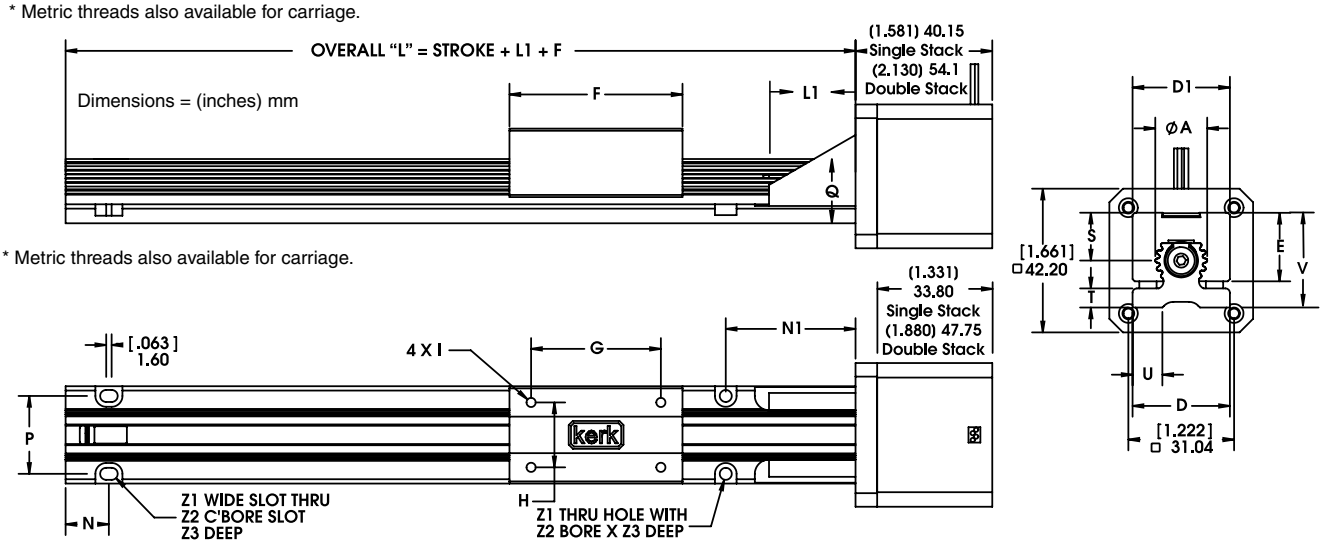
RGS06 STANDARD Series with 43000 Series Size 17 Single and Double Stack

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

	A	D	D1	E	F	G	H	I*	L1	N	N1	P	Q	S	T	U	V	Z1	Z2	Z3
(inch)	(0.6)	(1.13)	(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	UNC	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.



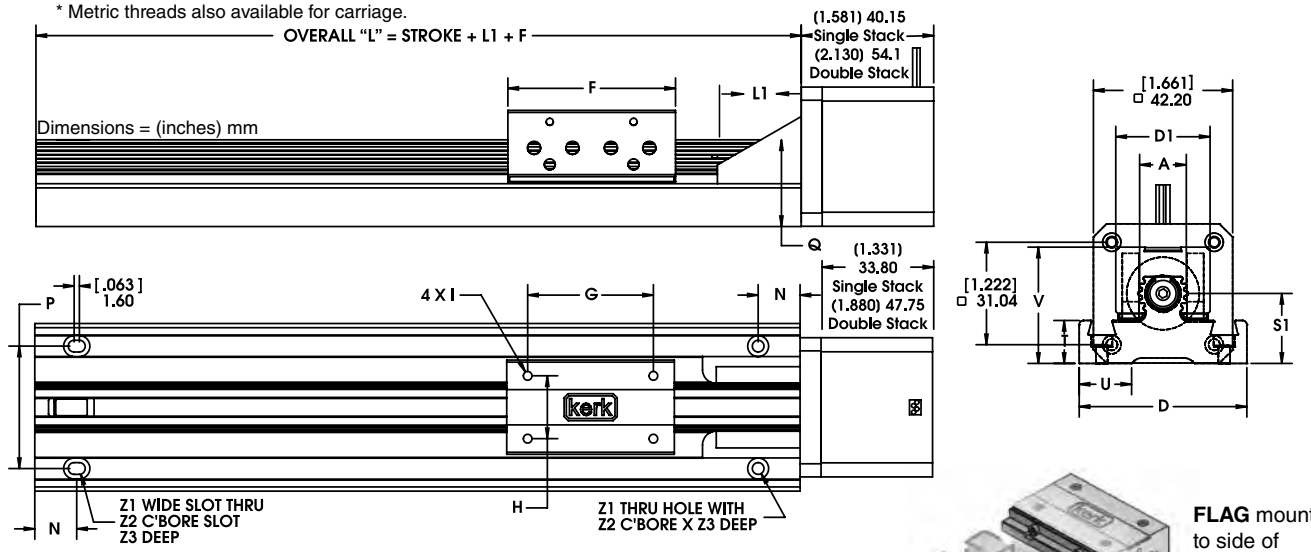
* Metric threads also available for carriage.

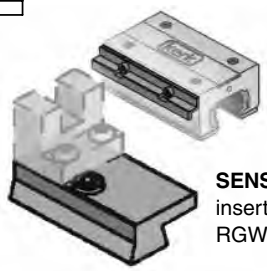
RGW06 WIDE Series with 43000 Series Size 17 Single and Double Stack

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

	A	D	D1	F	G	H	I*	L1	N	P	Q	S1	T	U	V	Z1	Z2	Z3
(inch)	(0.6)	(2.0)	(1.13)	(2.0)	(1.5)	(0.75)	6-32	(1.0)	(0.5)	(1.46)	(1.04)	(0.83)	(0.51)	(0.63)	(1.39)	(0.14)	(0.25)	(0.14)
mm	15.2	50.8	28.7	50.8	38.1	19.0	UNC	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.





FLAG mounts to side of carriage

SENSOR MOUNT inserts into slot of RGW base

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.

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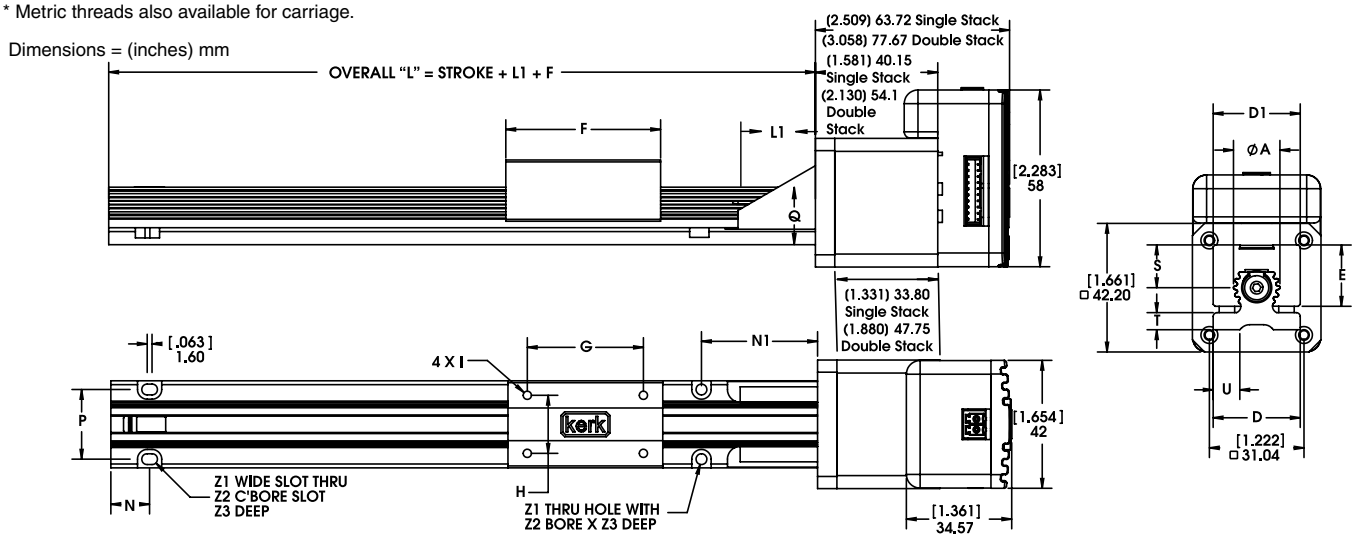
RGS06 STANDARD Series with 43000 Series Size 17 Single and Double Stack linear motors with IDEA Drive Recommended for horizontal loads up to 35 lbs (156 N)

	A	D	D1	E	F	G	H	I*	L1	N	N1	P	Q	S	T	U	V	Z1	Z2	Z3
(inch)	(0.6)	(1.13)	(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	UNC	25.4	12.7	38.1	22.9	18.8	13.9	5.6	8.9	27.9	3.6	6.3	3.3

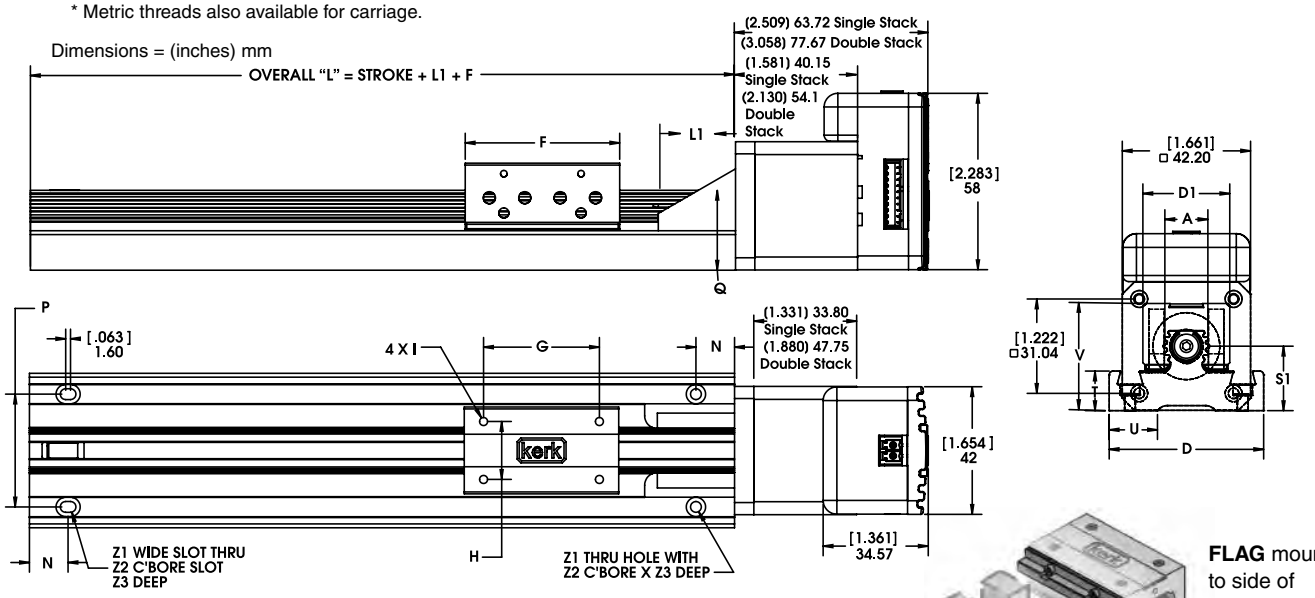
* Metric threads also available for carriage.



RGW06 WIDE Series with 43000 Series Size 17 Single and Double Stack linear motors with IDEA Drive Recommended for horizontal loads up to 35 lbs (156 N)

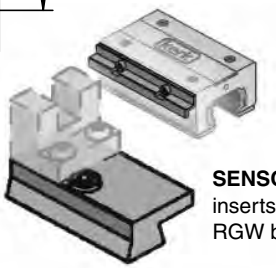
	A	D	D1	F	G	H	I*	L1	N	P	Q	S1	T	U	V	Z1	Z2	Z3
(inch)	(0.6)	(2.0)	(1.13)	(2.0)	(1.5)	(0.75)	6-32	(1.0)	(0.5)	(1.46)	(1.04)	(0.83)	(0.51)	(0.63)	(1.39)	(0.14)	(0.25)	(0.14)
mm	15.2	50.8	28.7	50.8	38.1	19.0	UNC	25.4	12.7	37.1	26.4	21.1	13.0	16.0	35.3	3.6	6.3	3.6

* 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.



FLAG mounts to side of carriage

SENSOR MOUNT inserts into slot of RGW base

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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.

RGW06
57000 Series Size 23
Double Stack

Identifying the Motorized RGS part number codes when ordering

RG	S	06	K	–	M	0100	–	XXX

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

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
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.

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.

Haydon kerk Express℠
www.HaydonKerkExpress.com
Standard products available 24-hrs.

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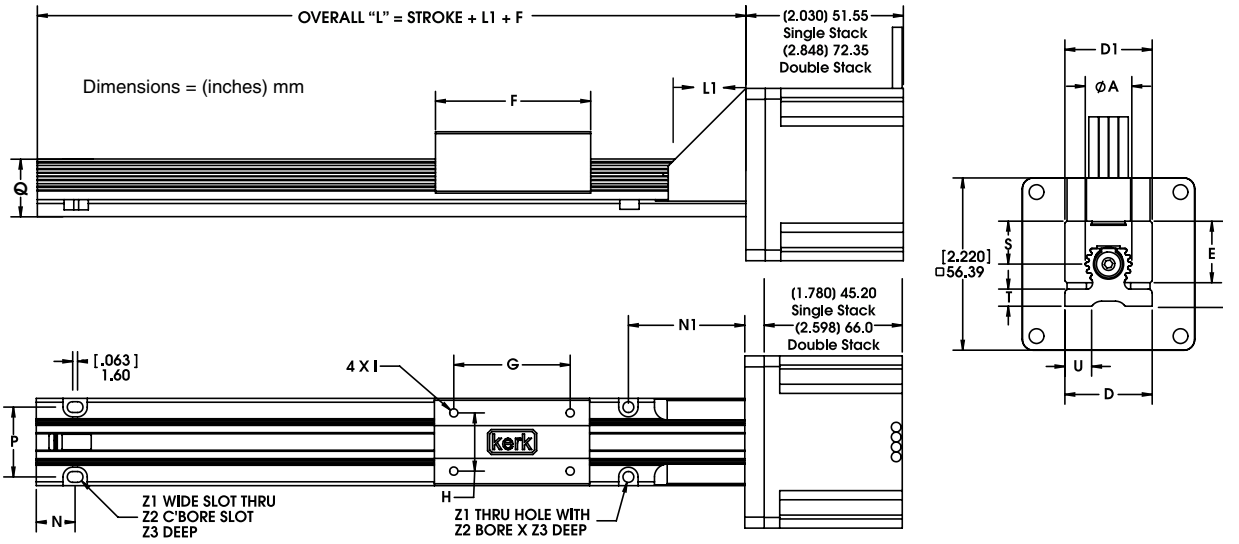
RGS06 STANDARD Series with 57000 Series Size 23 Single and Double Stack

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

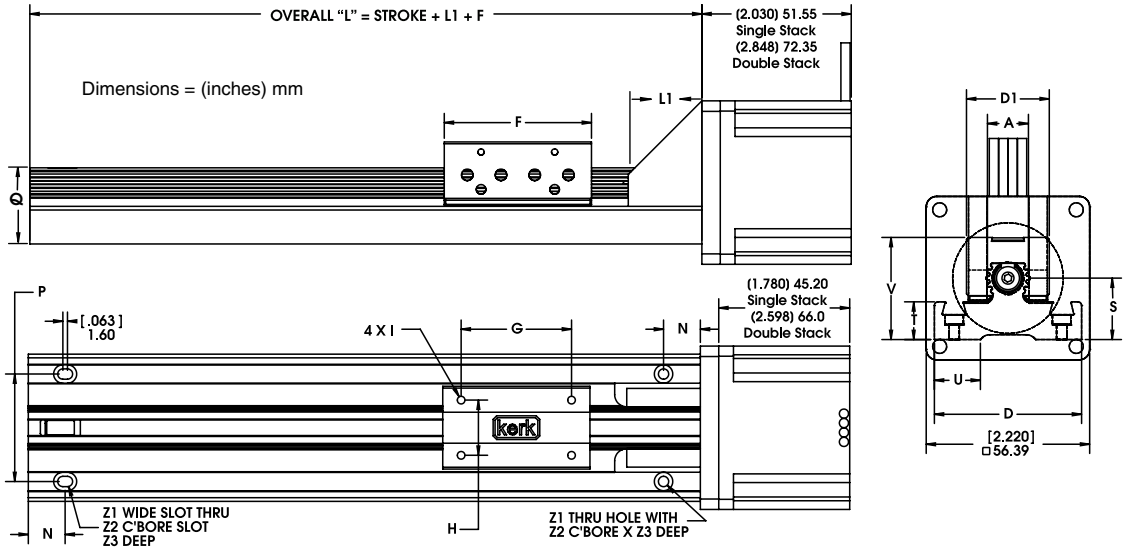


	A	D	D1	E	F	G	H	I*	L1	N	N1	P	Q	S	T	U	V	Z1	Z2	Z3
(inch)	(0.6)	(1.13)	(1.13)	(0.79)	(2.0)	(1.5)	(0.75)	6-32	(1.0)	(0.5)	(1.5)	(0.9)	(0.74)	(0.55)	(0.22)	(0.35)	(1.1)	(0.14)	(0.25)	(0.13)
mm	15.2	28.7	28.7	20.1	50.8	38.1	19.0	UNC	25.4	12.7	38.1	22.9	18.8	13.9	5.6	8.9	27.9	3.6	6.3	3.3

* 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)

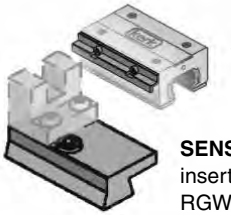


	A	D	D1	F	G	H	I*	L1	N	P	Q	S	T	U	V	Z1	Z2	Z3
(inch)	(0.6)	(2.0)	(1.13)	(2.0)	(1.5)	(0.75)	6-32	(1.0)	(0.5)	(1.46)	(1.04)	(0.83)	(0.51)	(0.63)	(1.39)	(0.14)	(0.25)	(0.14)
mm	15.2	50.8	28.7	50.8	38.1	19.0	UNC	25.4	12.7	37.1	26.4	21.1	13.0	16.0	35.3	3.6	6.3	3.6

* 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.



FLAG mounts to side of carriage

SENSOR MOUNT inserts into slot of RGW base

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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.

RGW06 non-motorized with drive screw

RGW06 non-motorized without drive screw

Identifying the Non-Motorized RGS part number codes when ordering

RG	S	06	K	–	A	0100	–	XXX

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

A = None

B = In-line screw 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.

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

Haydon kerk Express℠
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Standard products available 24-hrs.

RGS06 Screw-Driven STANDARD Series linear rail WITHOUT MOTOR

Specifications

	Inch Lead inch (mm)	Thread Lead Code	Nominal Rail Diam. inch (mm)	Nominal Screw Diam. inch (mm)	Typical Drag Torque oz - in (N-m)	Life @ 1/4 Design Load* inch (cm)	Torque-to-Move Load* oz-in/lb (N-m/Kg)	Design Load* lbs (N)	Screw Inertia oz-in sec²/in (KgM²/M)
RGS06 Non-Motorized with Guide Screw	.100 (2.54)	**0100**	0.6 (15.2)	3/8 (9.5)	4.0 (.03)	100,000,000 (254,000,000)	1.0 (.016)	35 (156)	1.5×10^{-5} (4.2×10^{-6})
	.200 (5.08)	**0200**	0.6 (15.2)	3/8 (9.5)	5.0 (.04)	100,000,000 (254,000,000)	1.5 (.023)	35 (156)	1.5×10^{-5} (4.2×10^{-6})
	.500 (12.70)	**0500**	0.6 (15.2)	3/8 (9.5)	6.0 (.04)	100,000,000 (254,000,000)	2.5 (.039)	35 (156)	1.5×10^{-5} (4.2×10^{-6})
	1.000 (25.40)	**1000**	0.6 (15.2)	3/8 (9.5)	7.0 (.05)	100,000,000 (254,000,000)	4.5 (.070)	35 (156)	1.5×10^{-5} (4.2×10^{-6})

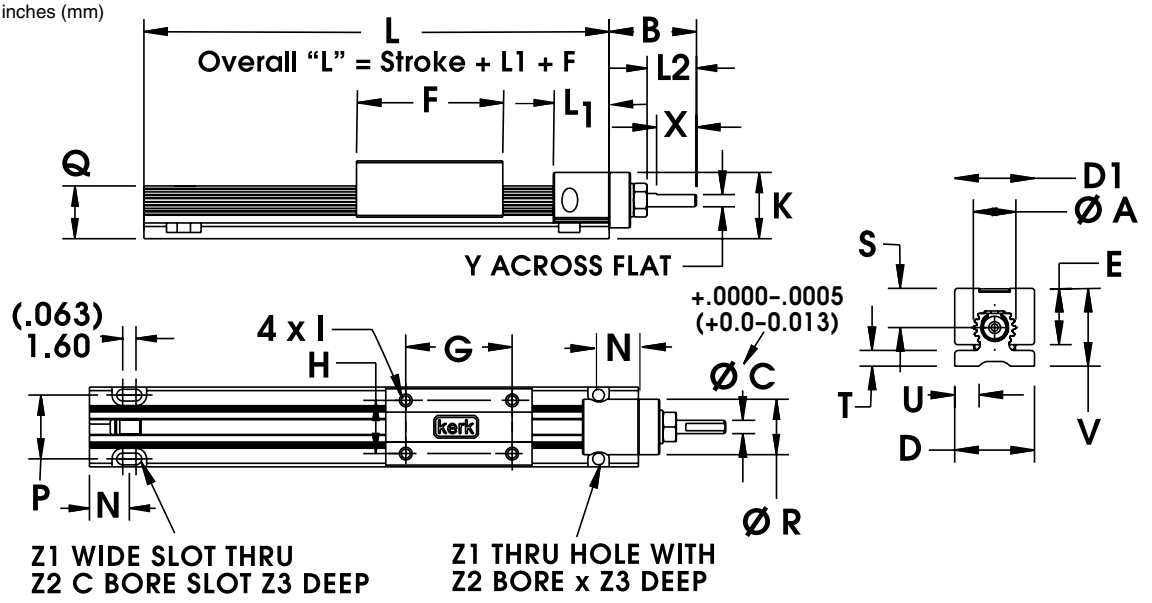
NOTE: RGS® assemblies with lengths over 36-in. (914.4 mm) and/or leads higher than .5-in (12.7 mm) will likely have higher drag torque than listed values.

* 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)



Dimensions	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	D1 inch (mm)	E inch (mm)	F inch (mm)	G inch (mm)	H inch (mm)	I*	K inch (mm)	L1 inch (mm)	L2 inch (mm)	N inch (mm)
RGS06	.60 (15.2)	1.25 (31.8)	.1875 (4.762)	1.13 (28.6)	1.13 (28.6)	.79 (20.1)	2.0 (51)	1.500 (38.10)	.750 (19.1)	6-32 UNC	.9 (23)	.80 (20.3)	.80 (20.3)	.500 (12.70)

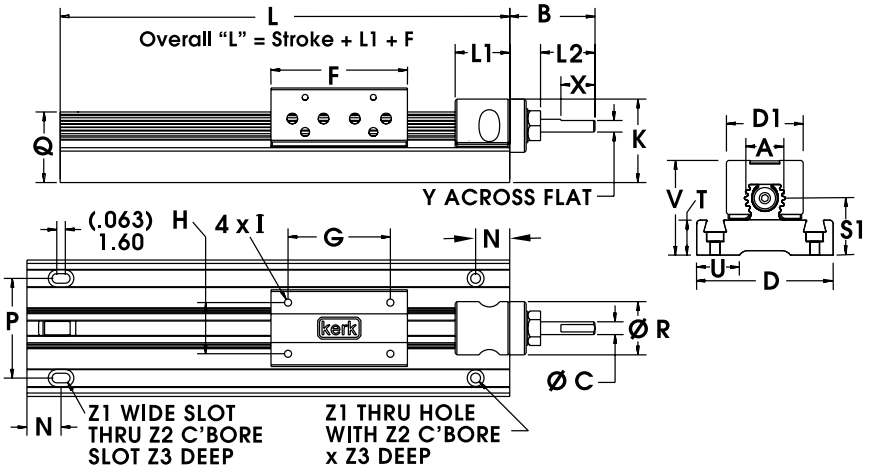
	P inch (mm)	Q inch (mm)	R inch (mm)	S inch (mm)	T inch (mm)	U inch (mm)	V inch (mm)	X inch (mm)	Y inch (mm)	Z1 inch (mm)	Z2 inch (mm)	Z3 inch (mm)
RGS06	.900 (22.86)	.74 (18.8)	.80 (20.3)	.55 (14.0)	.22 (5.6)	.35 (8.9)	1.1 (28)	.50 (12.7)	.170 (4.32)	.14 (3.6)	.25 (6.4)	.13 (3.3)

* 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)

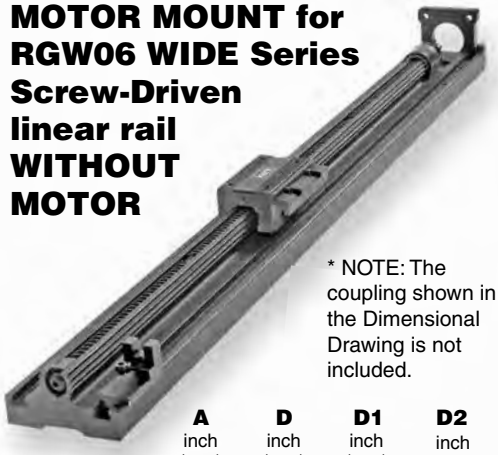


	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	D1 inch (mm)	F inch (mm)	G inch (mm)	H inch (mm)	I*	K inch (mm)	L1 inch (mm)	L2 inch (mm)	N inch (mm)
RGW06	.60 (15.2)	1.25 (31.8)	.1875 (4.762)	2.00 (50.8)	1.13 (28.6)	2.00 (50.8)	1.500 (38.10)	.750 (19.05)	6-32 (UNC)	1.2 (30)	.80 (20.3)	.80 (20.3)	.500 (12.70)

	P inch (mm)	Q inch (mm)	R inch (mm)	S1 inch (mm)	T inch (mm)	U inch (mm)	V inch (mm)	X inch (mm)	Y inch (mm)	Z1 inch (mm)	Z2 inch (mm)	Z3 inch (mm)
RGW06	1.460 (37.08)	1.04 (26.4)	.80 (20.3)	.83 (21.2)	.51 (13.0)	.63 (16.0)	1.4 (36)	.50 (12.7)	.170 (4.32)	.14 (3.6)	.25 (6.4)	.14 (3.6)

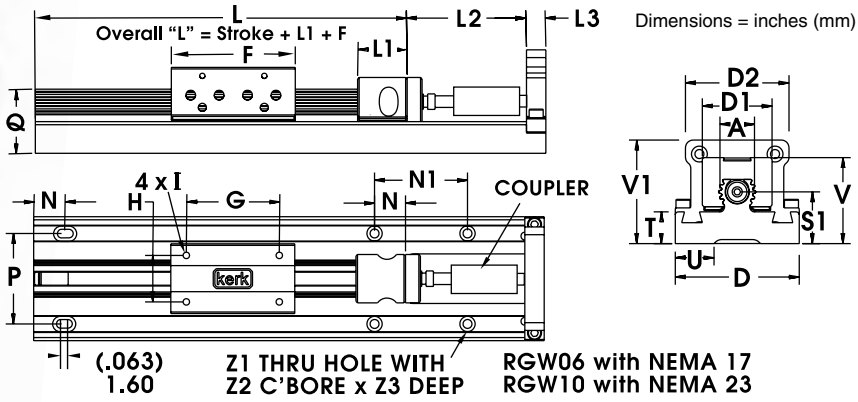
* Metric carriage hole sizes available: M3, M4, M5 and M6

MOTOR MOUNT for RGW06 WIDE Series Screw-Driven linear rail WITHOUT MOTOR



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

Dimensions = inches (mm)



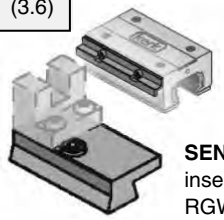
	A inch (mm)	D inch (mm)	D1 inch (mm)	D2 inch (mm)	F inch (mm)	G inch (mm)	H inch (mm)	I*	L1 inch (mm)	L2 inch (mm)	L3 inch (mm)	N inch (mm)	N1 inch (mm)
RGW06	.60 (15.2)	2.00 (50.8)	1.13 (28.6)	1.67 (42.2)	2.0 (50.8)	1.500 (38.10)	.750 (19.05)	6-32 UNC	.80 (20.3)	1.93 (48.9)	.31 (7.9)	.500 (12.70)	1.50 (38.1)

	P inch (mm)	Q inch (mm)	R inch (mm)	S1 inch (mm)	T inch (mm)	U inch (mm)	V inch (mm)	V1 inch (mm)	Z1 inch (mm)	Z2 inch (mm)	Z3 inch (mm)
RGW06	1.460 (37.08)	1.04 (26.4)	.78 (19.8)	.83 (21.2)	.51 (13.0)	.63 (16.0)	1.39 (35.3)	1.7 (43)	.14 (3.6)	.25 (6.4)	.14 (3.6)

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

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.



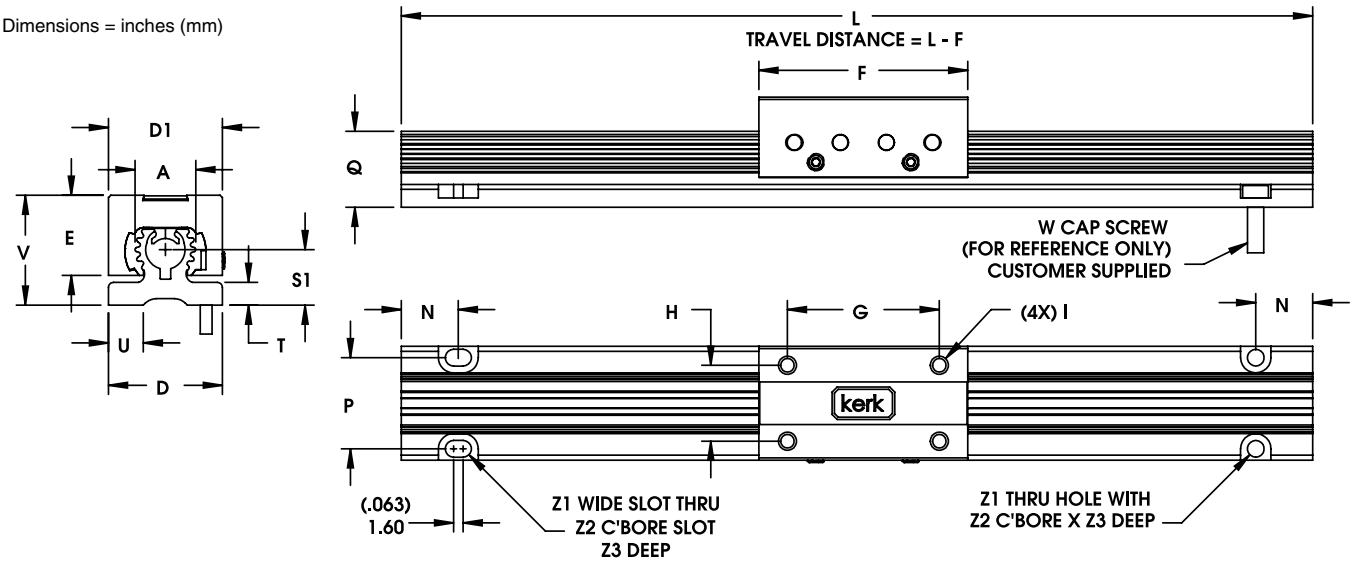
FLAG mounts to side of carriage

SENSOR MOUNT inserts into slot of RGW base

Dimensional Drawings: RGS06 WITHOUT motor and WITHOUT Guide Screw STANDARD Series

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

Dimensions = inches (mm)

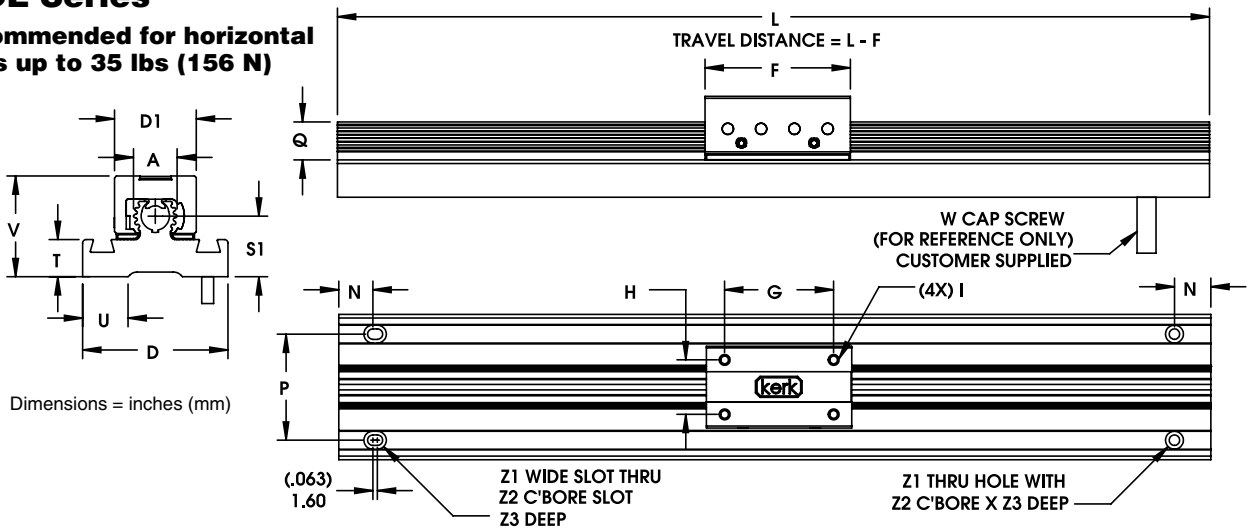


	A inch (mm)	D inch (mm)	D1 inch (mm)	E inch (mm)	F inch (mm)	G inch (mm)	H inch (mm)	I*	N inch (mm)	P inch (mm)	Q inch (mm)	S inch (mm)	T inch (mm)	U inch (mm)	V inch (mm)	Z1 inch (mm)	Z2 inch (mm)	Z3 inch (mm)
RGS06	.60 (15.2)	1.13 (28.6)	1.13 (28.6)	.79 (20.1)	2.0 (51)	1.500 (38.10)	.750 (19.05)	6-32 UNC	.500 (12.70)	.900 (22.86)	.74 (18.8)	.55 (14.0)	.22 (5.6)	.35 (8.9)	1.1 (28)	.14 (3.6)	.25 (6.4)	.13 (3.3)

* 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)

	A inch (mm)	D inch (mm)	D1 inch (mm)	F inch (mm)	G inch (mm)	H inch (mm)	I*	N inch (mm)	P inch (mm)	Q inch (mm)	S inch (mm)	T inch (mm)	U inch (mm)	V inch (mm)	Z1 inch (mm)	Z2 inch (mm)	Z3 inch (mm)
RGW06	.60 (15.2)	2.00 (50.8)	1.13 (28.6)	2.00 (50.8)	1.500 (38.10)	.750 (19.05)	6-32 UNC	.500 (12.70)	1.460 (37.08)	1.04 (26.4)	.83 (21.2)	.51 (13.0)	.63 (16.0)	1.4 (36)	.14 (3.6)	.25 (6.4)	.14 (3.6)

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

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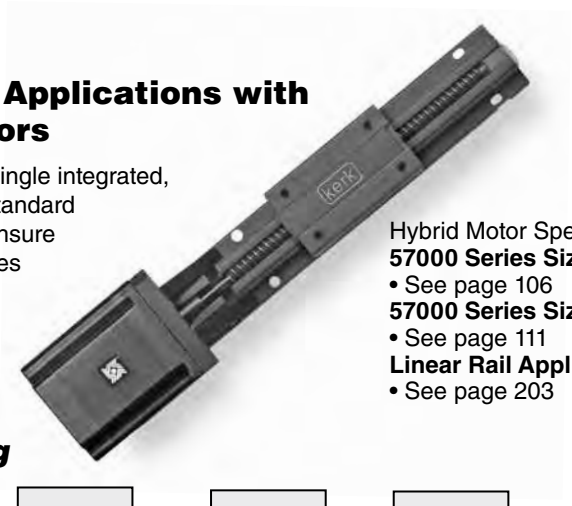
RGS08 Series for Heavier Weight Applications with Hybrid 57000 Series Stepper Motors

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 Kerkite® engineered polymers running on Kerkote® TFE coating, providing a strong, stable platform for a variety of linear motion applications.



RGS08
57000 Series Size 23
Double Stack

Hybrid Motor Specifications:
57000 Series Size 23 Single Stack
• See page 106
57000 Series Size 23 Double Stack
• See page 111
Linear Rail Applications Checklist
• See page 203

Identifying the Motorized RGS part number codes when ordering

RG	S	08	K	–	M	0100	–	XXX

Prefix
RG = Rapid Guide Screw

Frame Style
S = Standard

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

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

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.

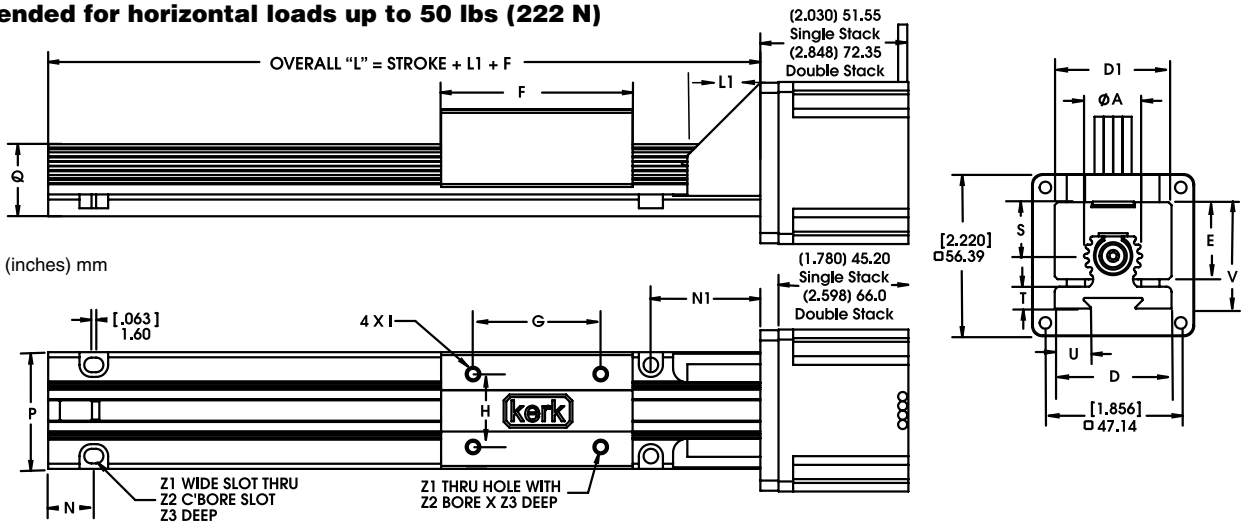
Haydon kerk Express℠
www.HaydonKerkExpress.com
Standard products available 24-hrs.

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

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

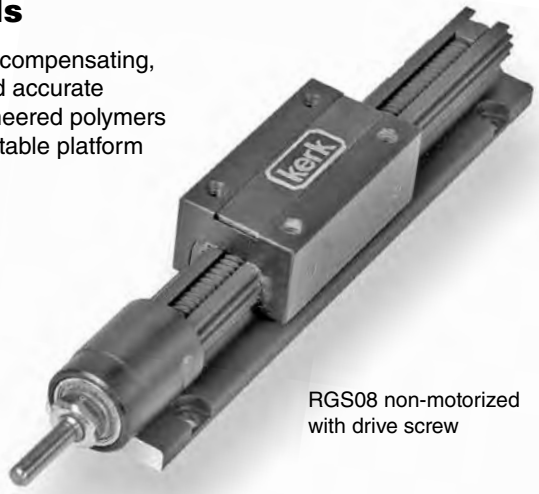
	A	D	D1	E	F	G	H	I*	L1	N	N1	P	Q	S	T	U	V	Z1	Z2	Z3
(inch)	(0.8)	(1.6)	(1.6)	(1.06)	(2.7)	(1.75)	(1.0)	10-24	(1.0)	(0.625)	(1.5)	(1.25)	(1.0)	(0.74)	(0.3)	(0.51)	(1.47)	(0.2)	(0.33)	(0.19)
mm	20.3	40.6	40.6	26.9	68.6	44.5	25.4	UNC	25.4	15.9	38.1	15.9	25.4	18.8	7.6	12.9	37.3	5.1	8.4	4.8

* Metric threads also available for carriage.

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.



RGS08 non-motorized with drive screw

Identifying the Non-Motorized RGS part number codes when ordering

RG	S	08	K	–	A	0200	–	XXX

Prefix

RG = Rapid Guide Screw

Frame Style

S = Standard

Frame Size Load

08 = 50 lbs (222 N) (Maximum static load)

Coating

K = TFE Kerkote®

X = Special (example: Kerkote with grease

Drive / Mounting

A = None

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.

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Standard products available 24-hrs.

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

RGS08 Screw-Driven STANDARD Series linear rail WITHOUT MOTOR

Specifications

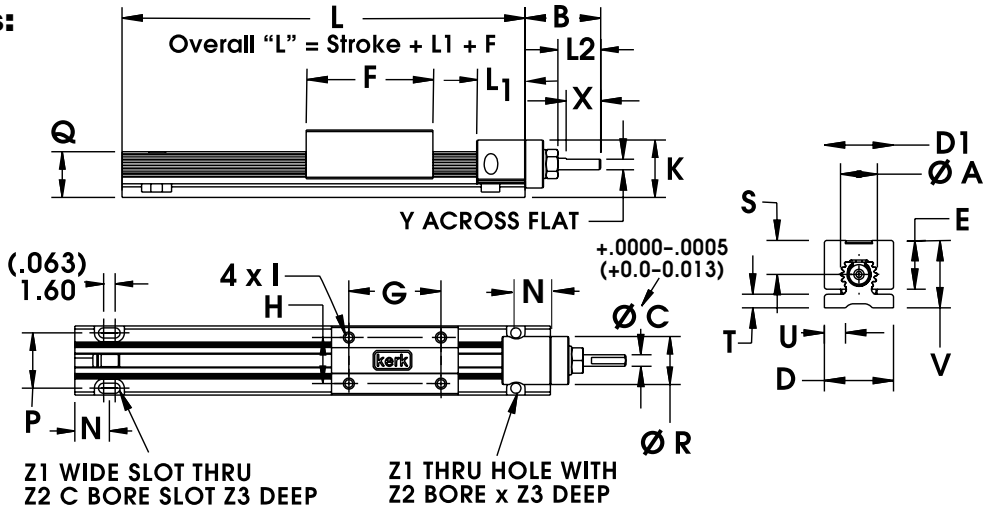
	Inch Lead inch (mm)	Thread Lead Code	Nominal Rail Diam. inch (mm)	Nominal Screw Diam. inch (mm)	Typical Drag Torque oz - in (N-m)	Life @ 1/4 Design Load* inch (cm)	Torque-to-Move Load* oz-in/lb (N-m/Kg)	Design Load* lbs (N)	Screw Inertia oz-in sec²/in (KgM²/M)
RGS08 Non-Motorized with Guide Screw	.100 (2.54)	**0100**	0.8 (20.3)	1/2 (12.7)	5.0 (.04)	100,000,000 (254,000,000)	1.1 (.018)	50 (222)	5.2×10^{-5} (20.0×10^{-6})
	.200 (5.08)	**0200**	0.8 (20.3)	1/2 (12.7)	6.0 (.04)	100,000,000 (254,000,000)	1.7 (.027)	50 (222)	5.2×10^{-5} (20.0×10^{-6})
	.500 (12.70)	**0500**	0.8 (20.3)	1/2 (12.7)	7.0 (.05)	100,000,000 (254,000,000)	3.0 (.047)	50 (222)	5.2×10^{-5} (20.0×10^{-6})
	1.000 (25.40)	**1000**	0.8 (20.3)	1/2 (12.7)	8.0 (.06)	100,000,000 (254,000,000)	6.0 (.096)	50 (222)	5.2×10^{-5} (20.0×10^{-6})

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)

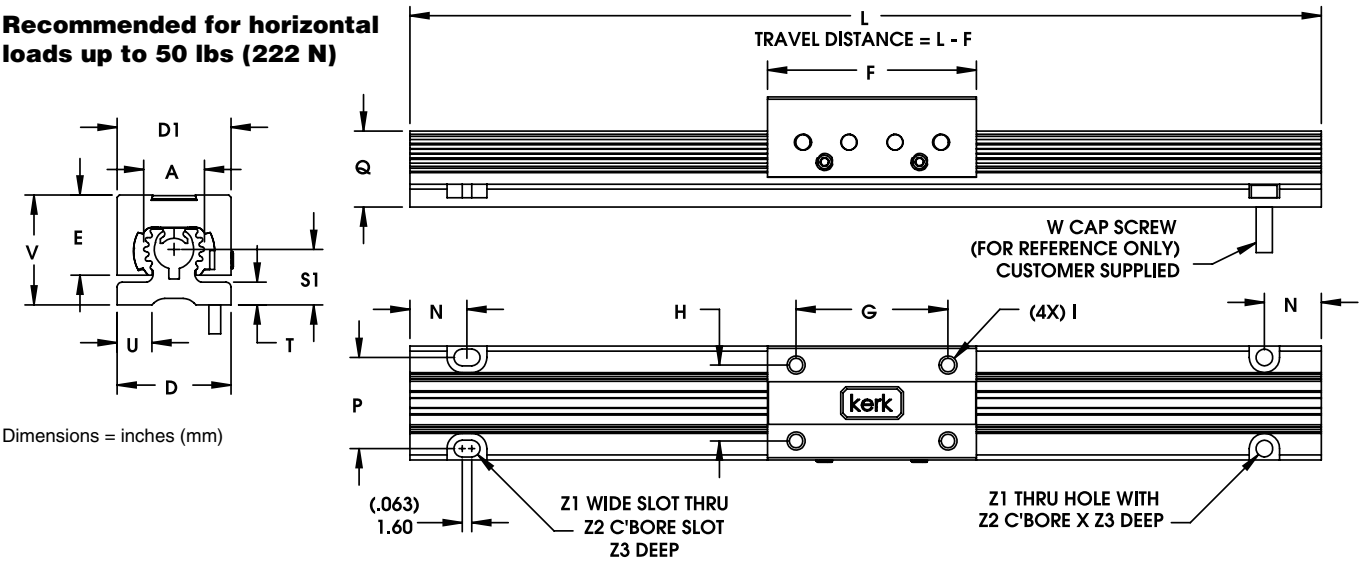
	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	D1 inch (mm)	E inch (mm)	F inch (mm)	G inch (mm)	H inch (mm)	I*	K inch (mm)	L1 inch (mm)	L2 inch (mm)	N inch (mm)
RGS08	.80 (20.3)	1.50 (38.1)	.2500 (6.350)	1.60 (40.6)	1.60 (40.6)	1.06 (26.9)	2.7 (69)	1.750 (44.45)	1.000 (25.4)	10-24 UNC	1.3 (33)	1.09 (27.7)	.77 (19.6)	.625 (15.88)

	P inch (mm)	Q inch (mm)	R inch (mm)	S inch (mm)	T inch (mm)	U inch (mm)	V inch (mm)	X inch (mm)	Y inch (mm)	Z1 inch (mm)	Z2 inch (mm)	Z3 inch (mm)
RGS08	1.250 (31.75)	1.00 (25.4)	1.04 (26.4)	.74 (18.8)	.30 (7.6)	.51 (13.0)	1.47 (37.3)	.70 (17.8)	.220 (5.59)	.20 (5.1)	.33 (8.4)	.19 (4.8)

* 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 inch (mm)	D inch (mm)	D1 inch (mm)	E inch (mm)	F inch (mm)	G inch (mm)	H inch (mm)	I*	N inch (mm)	P inch (mm)	Q inch (mm)	S inch (mm)	T inch (mm)	U inch (mm)	V inch (mm)	Z1 inch (mm)	Z2 inch (mm)	Z3 inch (mm)
RGS08	.80 (20.3)	1.60 (40.6)	1.60 (40.6)	1.06 (26.9)	2.7 (69)	1.750 (44.45)	1.00 (25.4)	10-24 UNC	.625 (15.88)	1.250 (31.75)	1.0 (25.4)	.74 (18.8)	.30 (7.6)	.51 (13.0)	1.47 (37.3)	.20 (5.1)	.33 (8.38)	.19 (4.82)

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

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RGS10 Standard and RGW10 Wide Series Linear Rail with Hybrid 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 precison. 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.

RGW10
57000 Series Size 23
Double Stack

Identifying the Motorized RGS part number codes when ordering

RG	S	10	K	–	M	0100	–	XXX

Prefix
RG = Rapid Guide Screw

Frame Style
S = Standard
W = Wide sensor mount capability

Frame Size Load
10 = 100 lbs (445 N) (Maximum static load)

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

Drive / Mounting
M = Motorized

Nominal Thread Lead Code
0100 = .100-in (2.54)
0125 = .125-in (3.18)
0200 = .200-in (5.08)
0250 = .250-in (6.35)
0315 = .315-in (8.00)
0500 = .500-in (12.70)
0630 = .630-in (16.00)
1000 = 1.000-in (25.4)
1500 = **1**.500-in (38.10)
2000 = **2**.000-in (50.80)

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.

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Standard products available 24-hrs.

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.

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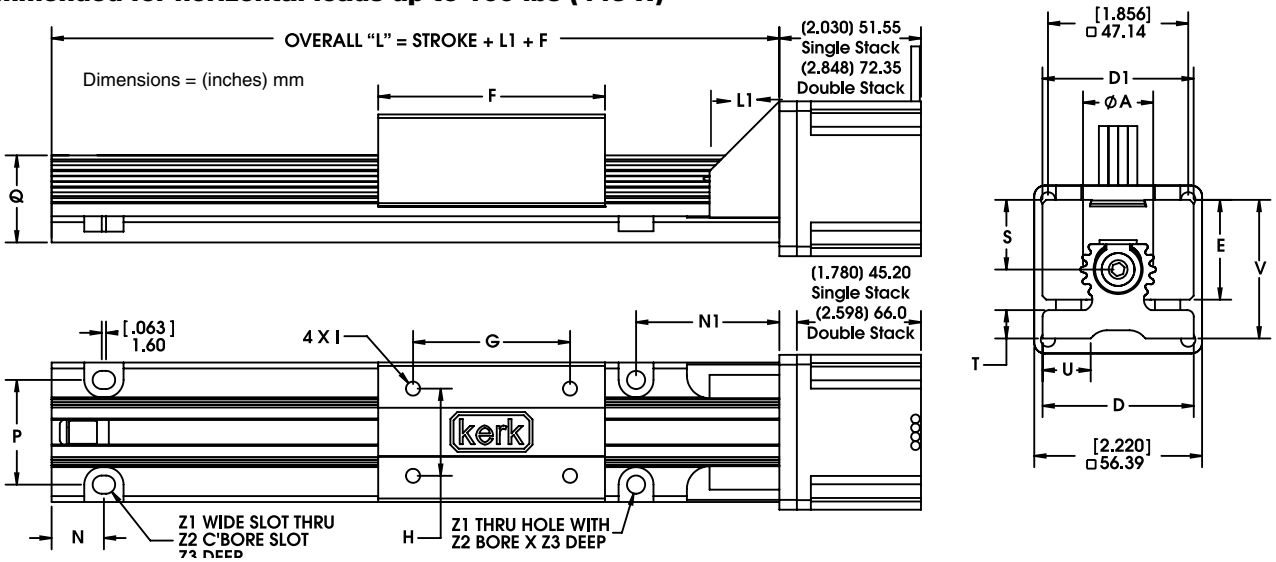
RGS10 STANDARD Series with 57000 Series Size 23 Single and Double Stack

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

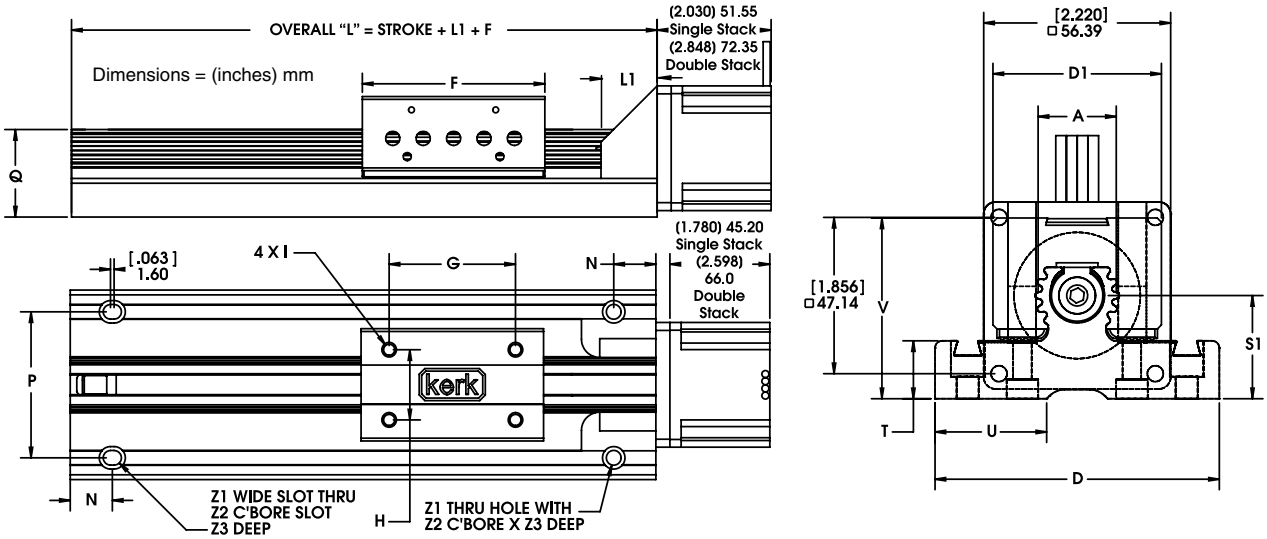


	A	D	D1	E	F	G	H	I*	L1	N	N1	P	Q	S	T	U	V	Z1	Z2	Z3
(inch)	(1.0)	(2.0)	((2.0)	(1.32)	(3.3)	(2.25)	(1.25)	1/4-20	(1.0)	(0.75)	(2.054)	(1.5)	(1.25)	(0.92)	(0.375)	(0.64)	(1.83)	(0.26)	(0.5)	(0.22)
mm	25.4	50.8	50.8	33.5	83.8	57.1	31.7	UNC	25.4	19.0	52.2	38.1	37.1	23.4	9.53	16.3	46.5	6.6	12.7	5.6

* Metric threads also available for carriage.

RGW10 WIDE Series with 57000 Series Size 23 Single and Double Stack

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



	A	D	D1	F	G	H	I*	L1	N	P	Q	S	T	U	V	Z1	Z2	Z3
(inch)	(1.0)	(3.38)	(2.0)	(3.3)	(2.25)	(1.25)	1/4-20	(1.0)	(0.75)	(2.6)	(1.56)	(1.22)	(0.69)	(1.33)	(2.15)	(0.26)	(0.4)	(0.43)
mm	25.4	85.9	50.8	83.8	57.1	31.7	UNC	25.4	19.0	66.0	39.6	31.0	17.5	33.8	54.6	6.6	10.2	10.9

* Metric threads also available for carriage.

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.

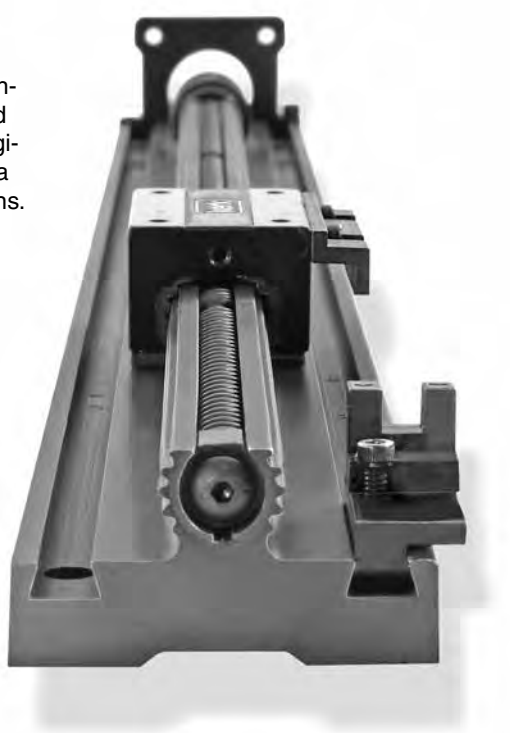
FLAG mounts to side of carriage

SENSOR MOUNT inserts into slot of RGW base

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.



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

Identifying the Non-Motorized RGS part number codes when ordering

RG	S	10	K	–	A	0500	–	XXX

Prefix

RG = Rapid Guide Screw

Frame Style

S = Standard
W = Wide sensor mount capability

Frame Size Load

10 = 100lbs (445 N) (Maximum static load)

Coating

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

Drive / Mounting

A = None

B = In-line screw 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.

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.

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Standard products available 24-hrs.

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RGS10 Screw-Driven linear rail WITHOUT MOTOR STANDARD Series

Specifications

	Inch Lead inch (mm)	Thread Lead Code	Nominal Rail Diam. inch (mm)	Nominal Screw Diam. inch (mm)	Typical Drag Torque oz - in (N-m)	Life @ 1/4 Design Load* inch (cm)	Torque-to-Move Load* oz-in/lb (N-m/Kg)	Design Load* lbs (N)	Screw Inertia oz-in sec^2/in (KgM^2/M)
RGS10 Non-Motorized with Guide Screw	.100 (2.54)	**0100**	1.0 (25.4)	5/8 (15.9)	5.0 (.04)	100,000,000 (254,000,000)	1.3 (.020)	100 (445)	14.2 x 10^{-5} (3.9 x 10^{-5})
	.200 (5.08)	**0200**	1.0 (25.4)	5/8 (15.9)	6.5 (.05)	100,000,000 (254,000,000)	2.0 (.031)	100 (445)	14.2 x 10^{-5} (3.9 x 10^{-5})
	.500 (12.70)	**0500**	1.0 (25.4)	5/8 (15.9)	7.0 (.05)	100,000,000 (254,000,000)	3.0 (.047)	100 (445)	14.2 x 10^{-5} (3.9 x 10^{-5})
	1.000 (25.40)	**1000**	1.0 (25.4)	5/8 (15.9)	8.5 (.06)	100,000,000 (254,000,000)	6.5 (.101)	100 (445)	14.2 x 10^{-5} (3.9 x 10^{-5})

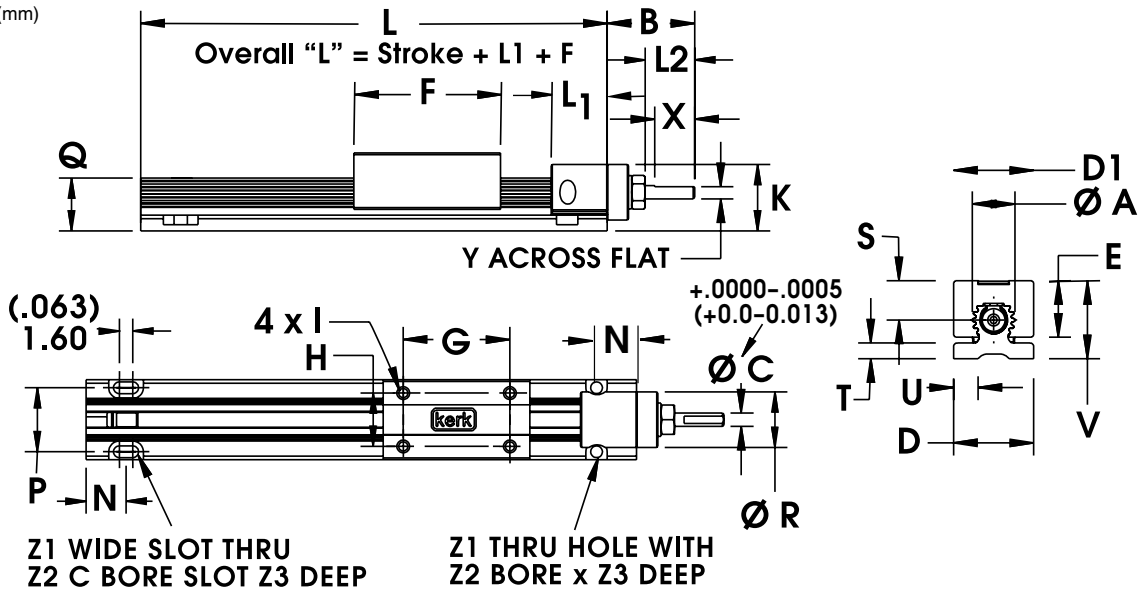
NOTE: RGS® assemblies with lengths over 36-in. (914.4 mm) and/or leads higher than .5-in (12.7 mm) will likely have higher drag torque than listed values.

* 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)



	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	D1 inch (mm)	E inch (mm)	F inch (mm)	G inch (mm)	H inch (mm)	I* 	K inch (mm)	L1 inch (mm)	L2 inch (mm)	N inch (mm)
RGS10	1.00 (25.4)	1.75 (44.5)	.3125 (7.938)	2.00 (50.8)	2.00 (50.8)	1.32 (33.5)	3.3 (83)	2.250 (57.15)	1.250 (31.8)	1/4-20 UNC	1.6 (41)	1.30 (33.0)	.30 (33.0)	.750 (19.05)

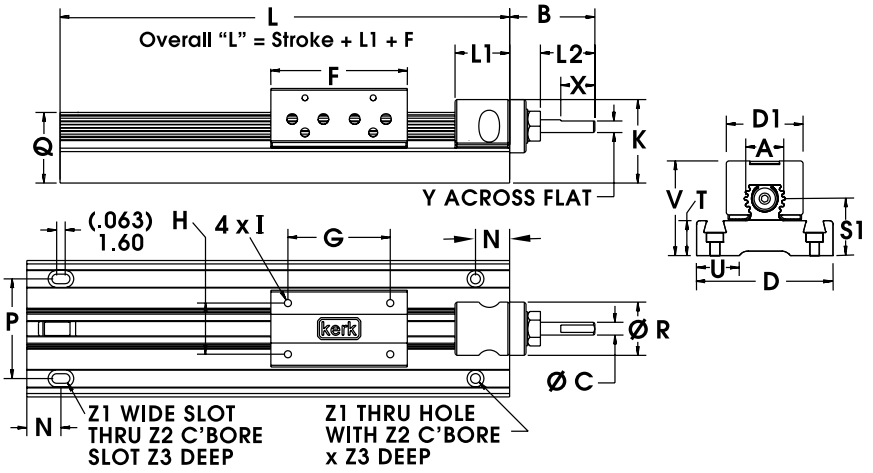
	P inch (mm)	Q inch (mm)	R inch (mm)	S inch (mm)	T inch (mm)	U inch (mm)	V inch (mm)	X inch (mm)	Y inch (mm)	Z1 inch (mm)	Z2 inch (mm)	Z3 inch (mm)
RGS10	1.500 (38.10)	1.25 (31.8)	1.30 (33.0)	.92 (23.4)	.375 (9.5)	.64 (16.3)	1.83 (46.5)	.88 (22.4)	.280 (7.11)	.26 (6.6)	.50 (12.7)	.22 (5.6)

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

Dimensional Drawings: RGW10 WIDE Series Screw-Driven linear rail WITHOUT MOTOR

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

Dimensions = inches (mm)



	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	D1 inch (mm)	F inch (mm)	G inch (mm)	H inch (mm)	I*	K inch (mm)	L1 inch (mm)	L2 inch (mm)	N inch (mm)
RGW10	1.00 (25.4)	1.75 (44.5)	.3125 (7.938)	3.38 (85.7)	2.00 (50.8)	3.3 (83)	2.250 (57.15)	1.250 (31.75)	1/4-20 (UNC)	1.9 (48)	1.30 (33.0)	1.30 (33.0)	.750 (19.05)

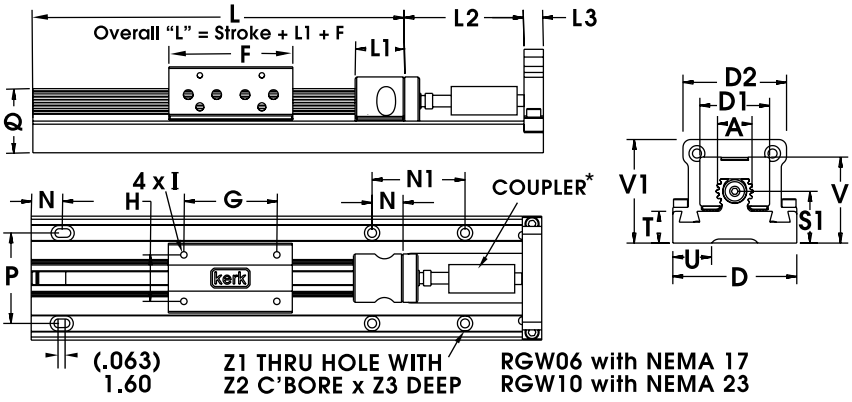
	P inch (mm)	Q inch (mm)	S inch (mm)	T inch (mm)	U inch (mm)	V inch (mm)	X inch (mm)	Y inch (mm)	Z1 inch (mm)	Z2 inch (mm)	Z3 inch (mm)
RGW10	2.600 (66.04)	1.56 (39.6)	1.22 (31.0)	.69 (17.5)	1.33 (33.8)	2.15 (54.6)	.88 (22.4)	.280 (7.11)	.26 (6.6)	.40 (10.2)	.43 (10.9)

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

MOTOR MOUNT for RGW10 WIDE Series Screw-Driven linear rail WITHOUT MOTOR

Dimensions = inches (mm)

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



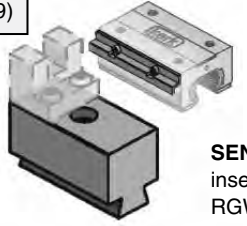
	A inch (mm)	D inch (mm)	D1 inch (mm)	D2 inch (mm)	F inch (mm)	G inch (mm)	H inch (mm)	I*	L1 inch (mm)	L2 inch (mm)	L3 inch (mm)	N inch (mm)	N1 inch (mm)
RGW10	1.00 (25.4)	3.38 (85.7)	2.00 (50.8)	2.22 (56.4)	3.3 (83)	2.250 (57.15)	1.250 (31.75)	1/4-20 UNC	1.30 (33.0)	2.16 (54.9)	.50 (12.7)	.750 (19.05)	1.50 (38.1)

	P inch (mm)	Q inch (mm)	S inch (mm)	T inch (mm)	U inch (mm)	V inch (mm)	V1 inch (mm)	Z1 inch (mm)	Z2 inch (mm)	Z3 inch (mm)
RGW10	2.600 (66.04)	1.56 (39.6)	1.22 (31.0)	.69 (17.5)	1.33 (33.8)	2.15 (54.6)	2.34 (59.3)	.26 (6.6)	.40 (10.2)	.43 (10.9)

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

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.



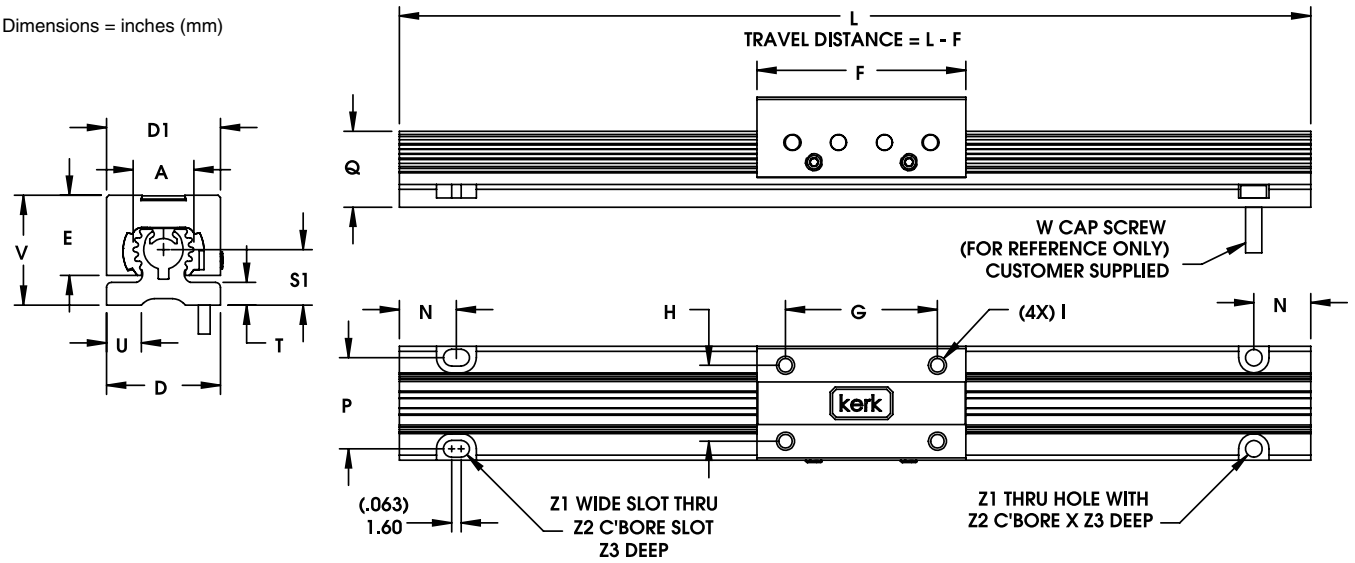
FLAG mounts to side of carriage

SENSOR MOUNT inserts into slot of RGW base

Dimensional Drawings: RGS10 WITHOUT motor and WITHOUT Guide Screw STANDARD Series

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

Dimensions = inches (mm)



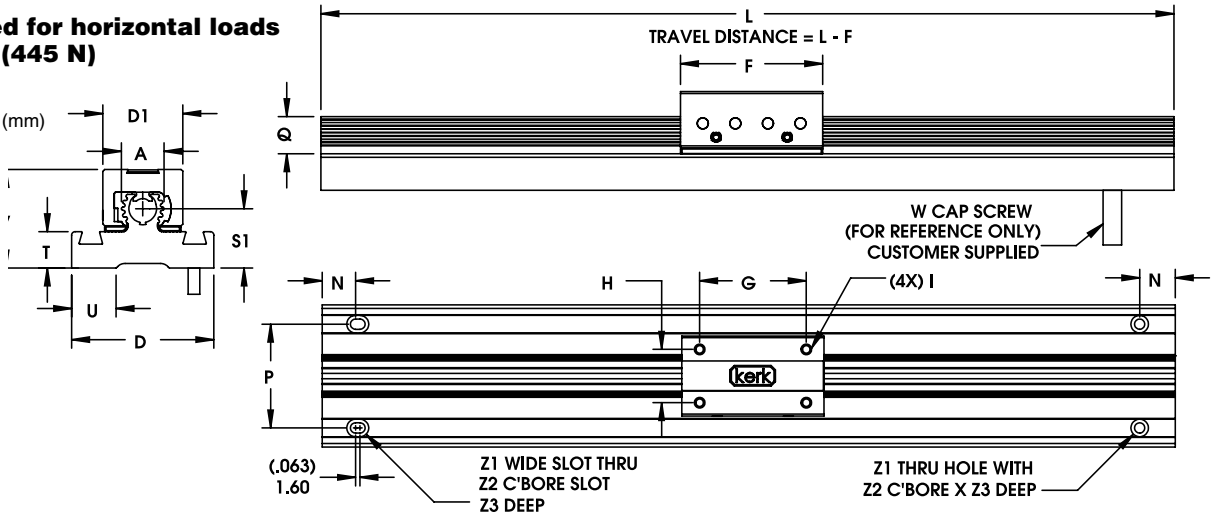
	A inch (mm)	D inch (mm)	D1 inch (mm)	E inch (mm)	F inch (mm)	G inch (mm)	H inch (mm)	I*	N inch (mm)	P inch (mm)	Q inch (mm)	S inch (mm)	T inch (mm)	U inch (mm)	V inch (mm)	Z1 inch (mm)	Z2 inch (mm)	Z3 inch (mm)
RGS10	1.00 (25.4)	2.00 (50.8)	2.00 (50.8)	1.32 (33.5)	3.3 (83)	2.250 (57.15)	1.250 (31.75)	1/4-20 UNC	.750 (19.05)	1.500 (38.10)	1.25 (31.8)	.92 (23.4)	.375 (9.5)	.64 (16.3)	1.83 (46.5)	.26 (6.6)	.50 (12.7)	.22 (5.6)

* 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)



	A inch (mm)	D inch (mm)	D1 inch (mm)	F inch (mm)	G inch (mm)	H inch (mm)	I*	N inch (mm)	P inch (mm)	Q inch (mm)	S inch (mm)	T inch (mm)	U inch (mm)	V inch (mm)	Z1 inch (mm)	Z2 inch (mm)	Z3 inch (mm)
RGW10	1.00 (25.4)	3.38 (85.7)	2.00 (50.8)	3.3 (83)	2.250 (57.15)	1.250 (31.75	1/4-20 UNC	.750 (19.05	2.600 (66.04)	1.56 (39.6)	1.22 (31)	.69 (17.5)	1.33 (33.8)	2.15 (54.6)	.26 (6.6)	.40 (10.2)	.43 (10.9)

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

WGS06 Linear Rail with Hybrid 43000 Series Size 17 Single and 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.

WGS06 with Size 17 [43 mm] hybrid linear stepper motor
– and –
WGS06 with Size 17 [43 mm] with an optional PC programmable IDEA™ Drive (not available for Size 23 motor)

Identifying the Motorized WGS part number codes when ordering

WG	S	06	K	–	G	0100	–	XXX

Prefix
WG =Wide Guide Screw

Frame Style
S = Standard

Frame Size Load*
06 = Max. static load 35 lbs (156 N)

Coating
K = TFE wear resist, dry lubricant Kerkote®
X = Special coating, *(Example: Kerkote® with grease)*

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

Nominal Thread Lead Code
0100 = 0.1-in (2.54)
0200 = 0.2-in (5.08)
0500 = 0.5-in (12.7)
1000 = 1.0-in (25.4)

Unique Identifier
– M43 = 43000 Series Size 17 Motor
– G43 = 43000 Series Size 17 Motor with IDEA Drive
– M57 = 57000 Series Size 23 Motor
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 203 756 7441.

WGS06 Motorized Selector Chart

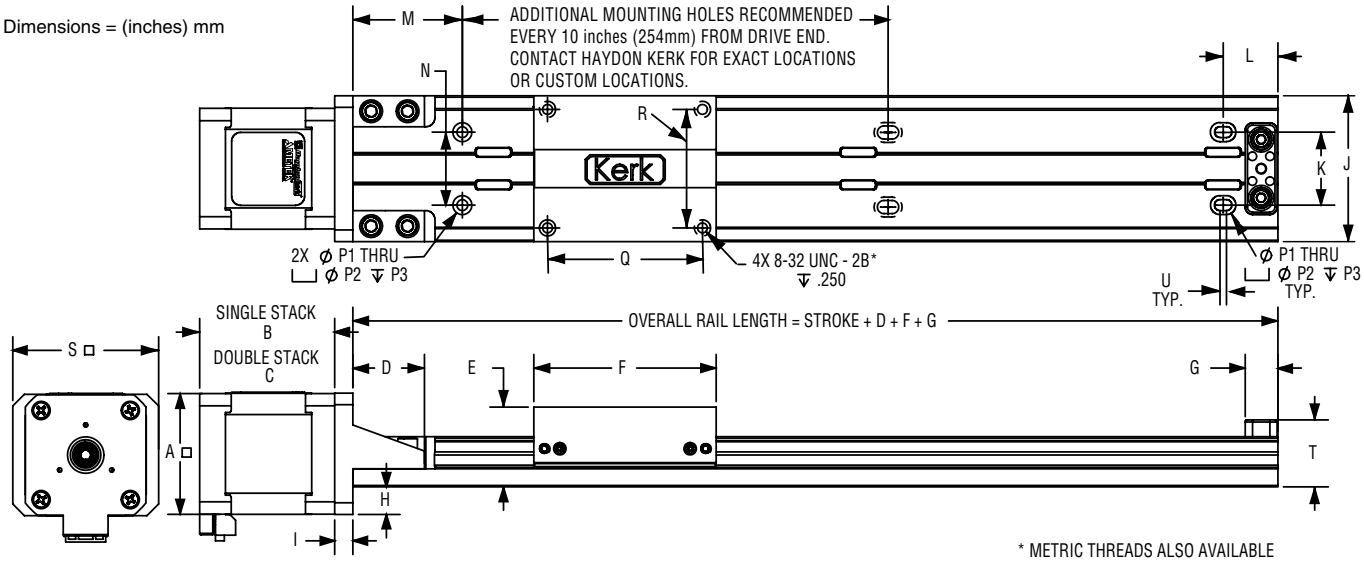
Motorized with Size 17 and Size 23 Single and Double Stack Hybrid Linear Actuator Stepper Motors

Inch Lead	inch (mm)	0.050 (1.27)	0.079 (2.00)	0.100 (2.54)	0.157 (4.00)	0.197 (5.00)	0.200 (5.08)	0.250 (6.35)	0.375 (9.53)	0.400 (10.16)	0.472 (12.00)	0.500 (12.70)	0.750 (19.05)	0.984 (25.00)	1.000 (25.40)	1.200 (30.48)
Thread Lead Code		**0050**	**0079**	**0100**	**0157**	**0197**	**0200**	**0250**	**0375**	**0400**	**0472**	**0500**	**0750**	**0984**	**1000**	**1200**

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 THREADS ALSO AVAILABLE

(MM) INCH	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P1	P2	P3	Q	R	S	T	U
-M43 SIZE 17	(42.2) 1.660 MAX.	(33.8) 1.330 MAX.	(47.75) 1.880 MAX.	(24.9) .98	(27.9) 1.1	(63.5) 2.50	(11.2) .44	(9.7) .38	(6.4) .250	(50.8) 2.00	(25.4) 1.000	(19.1) .75	(38.1) 1.50	(25.4) 1.000	(3.81) .150	(6.60) .260	(6.50) .256	(53.95) 2.124	(41.25) 1.624	(50.8) 2.00	(23.3) .92	(2.3) .090

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

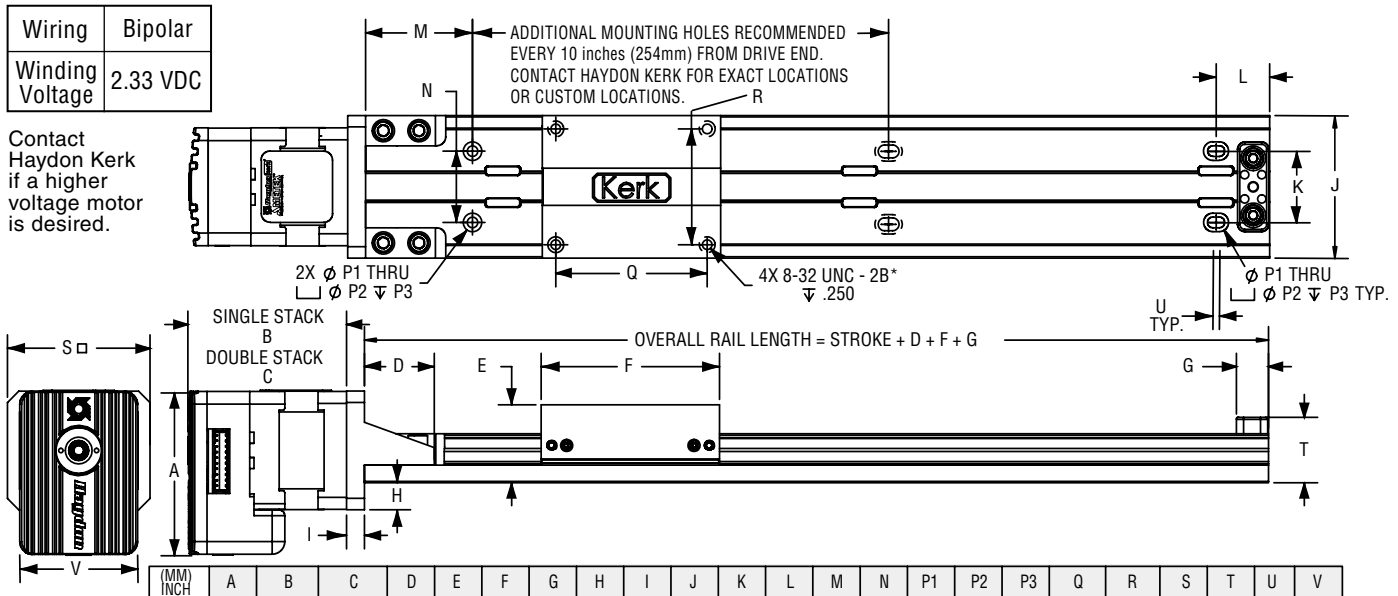
Haydon Kerk Motion Solutions, Inc. • www.haydonkerkpittman.com • Phone: 800 243 2715 • International: 203 756 7441

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)

Wiring	Bipolar
Winding Voltage	2.33 VDC

Contact Haydon Kerk if a higher voltage motor is desired.



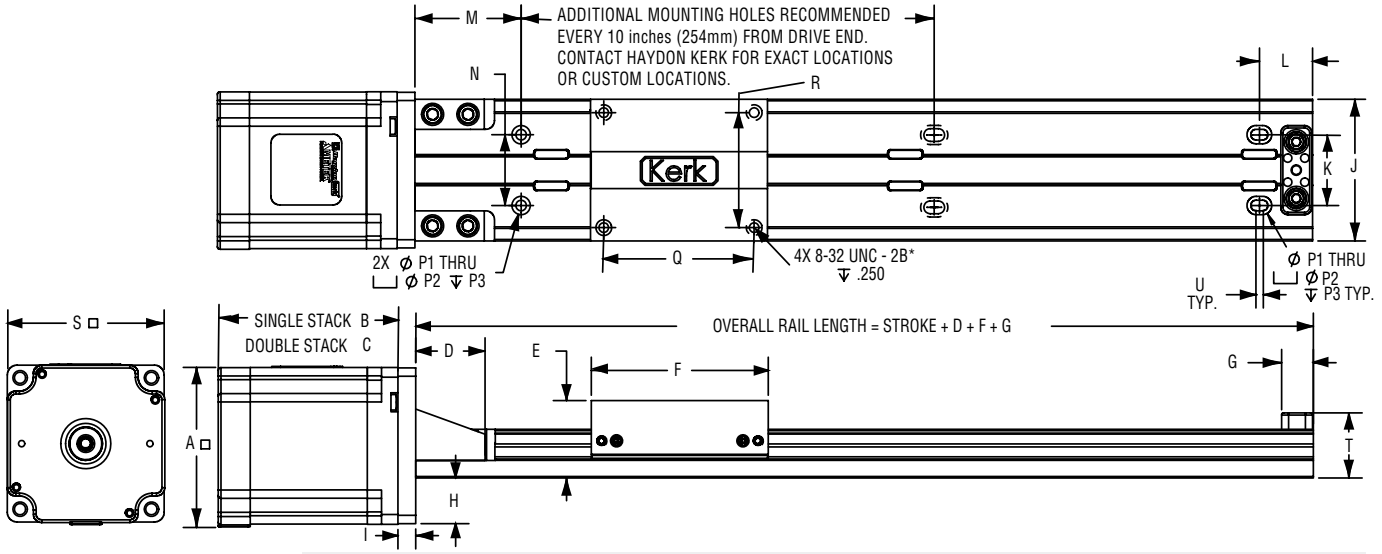
Dimensions = (mm) inch

(MM) INCH	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P1	P2	P3	Q	R	S	T	U	V
-G43 SIZE 17	(58.0) 2.283 MAX.	(63.72) 2.509 MAX.	(77.67) 3.058 MAX.	(24.9) .98	(27.9) 1.1	(63.5) 2.50	(11.2) .44	(9.7) .38	(6.4) .250	(50.8) 2.00	(25.4) 1.000	(19.1) .75	(38.1) 1.50	(25.4) 1.000	(3.81) .150	(6.60) .260	(6.50) .256	(53.95) 2.124	(41.25) 1.624	(50.8) 2.00	(23.3) .92	(2.3) .090	(42.0) 1.66

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

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)



Dimensions = (mm) inch

(MM) INCH	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P1	P2	P3	Q	R	S	T	U
-M57 SIZE 23	(56.4) 2.220 MAX.	(45.2) 1.780 MAX.	(66) 2.598 MAX.	(24.9) .98	(27.9) 1.1	(63.5) 2.50	(11.2) .44	(16.5) .65	(6.4) .250	(50.8) 2.00	(25.4) 1.000	(19.1) .75	(38.1) 1.50	(25.4) 1.000	(3.81) .150	(6.60) .260	(6.50) .256	(53.95) 2.124	(41.25) 1.624	(56.4) 2.220 MAX.	(23.3) .92	(2.3) .090

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

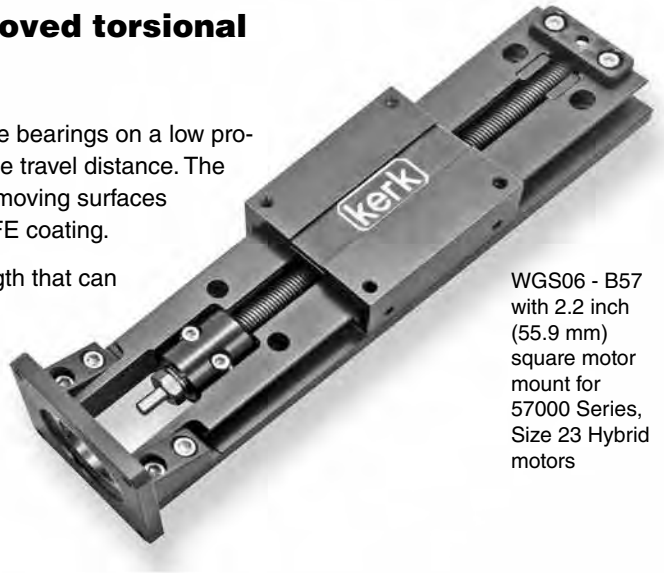
WGS™ Non-Motorized Linear Rail for improved torsional stiffness and linear motion stability

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.



WGS06 - B57 with 2.2 inch (55.9 mm) square motor mount for 57000 Series, Size 23 Hybrid motors

Identifying the Non-Motorized WGS part number codes when ordering

WG	S	06	K	–	G	0100	–	A00

Prefix

WG = Wide Guide Screw

Frame Style

S = Standard

Frame Size Load*

06 = Max. static load 35 lbs (156 N)

Coating

K = TFE wear resist, dry lubricant Kerkote®

X = Special coating, *(Example: Kerkote® with grease)*

Drive / Mounting

A = None

B = In-line motor mount

Nominal Thread Lead Code

0050 = 0.05-in (1.27)
0079 = 0.079-in (2.0)
0157 = 0.157-in (4.0)
0197 = 0.197-in (5.0)
0250 = 0.25-in (6.35)
0375 = 0.375-in (9.53)
0400 = 0.40-in (10.16)
0472 = 0.472--in (12.0)
0750 = 0.75-in (19.05)
0984 = 0.984-in (25.0)
0100 = 0.1-in (2.54)
0200 = 0.2-in (5.08)
0500 = 0.5-in (12.7)
1000 = 1.0-in (25.4)
1200 = 1.20-in (30.48)

Unique Identifier

– A00 = Without Motor Mount
– B43 = Motor Mount for Size 17
– B57 = Motor Mount for Size 23

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

Haydon kerk Express℠
www.HaydonKerkExpress.com
Standard products available 24-hrs.

WGS Non-Motorized Product Selector Chart

	Inch Lead** inch (mm)	Thread Lead Code	Nominal Screw Diam. inch (mm)	Typical Drag Torque oz - in (N-m)	Life @ 1/4 Design Load* inch (cm)	Torque-to-Move Load oz-in/lb (N-m/Kg)	Design Load lbs (N)	Screw Inertia oz-in-sec^2/in (kg-m-sec^2/m)
WGS	.100 (2.54)	**0100**	3/8 (9.5)	4.0 (.03)	100,000,000 (254,000,000)	1.0 (.016)	35 (156)	1.5 x 10^{-5} (4.2 x 10^{-6})
	.200 (5.08)	**0200**	3/8 (9.5)	5.0 (.04)	100,000,000 (254,000,000)	1.5 (.023)	35 (156)	1.5 x 10^{-5} (4.2 x 10^{-6})
	.500 (12.70)	**0500**	3/8 (9.5)	6.0 (.04)	100,000,000 (254,000,000)	2.5 (.039)	35 (156)	1.5 x 10^{-5} (4.2 x 10^{-6})
	1.000 (25.40)	**1000**	3/8 (9.5)	7.0 (.05)	100,000,000 (254,000,000)	4.5 (.070)	35 (156)	1.5 x 10^{-5} (4.2 x 10^{-6})

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.

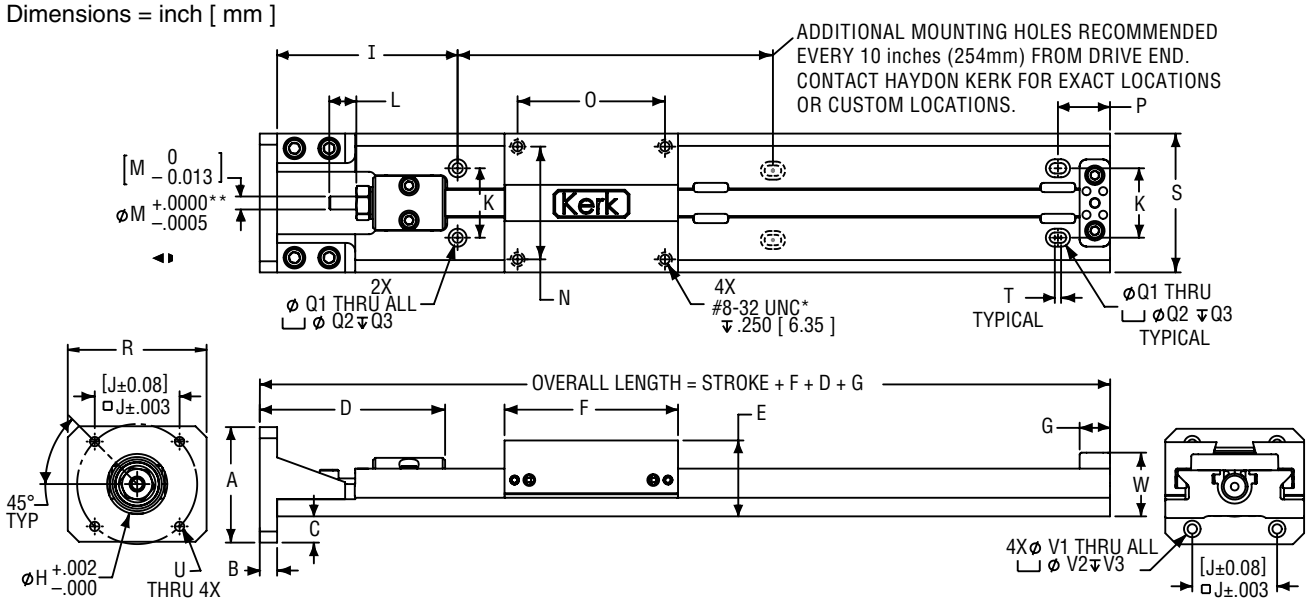
* Determined with load in a horizontal position

** Other inch and metric leads available.

Inch Lead inch (mm)	0.050 (1.27)	0.079 (2.00)	0.157 (4.00)	0.197 (5.00)	0.250 (6.35)	0.375 (9.53)	0.400 (10.16)	0.472 (12.00)	0.750 (19.05)	0.984 (25.00)	1.200 (30.48)
Thread Lead Code	**0050**	**0079**	**0157**	**0197**	**0250**	**0375**	**0400**	**0472**	**0750**	**0984**	**1200**

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

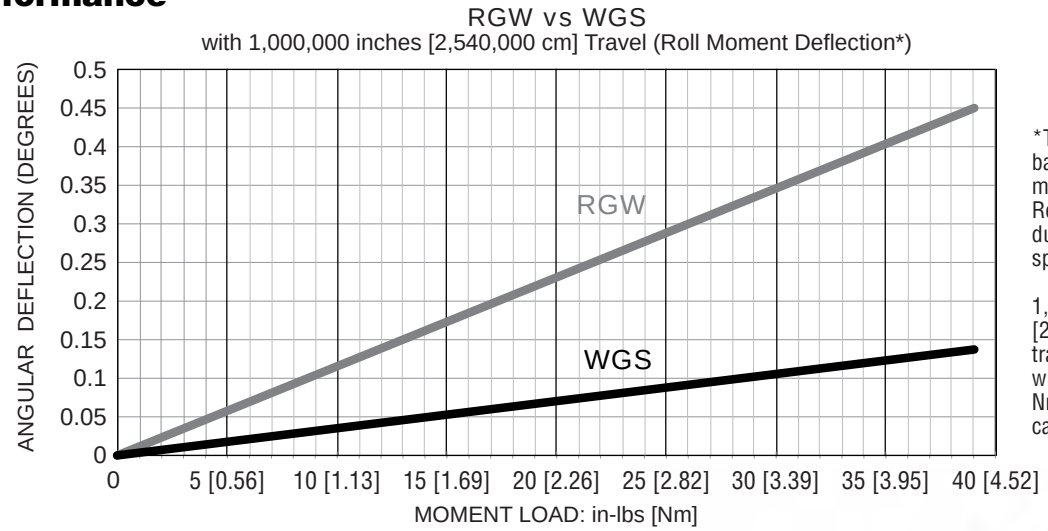
Dimensions = inch [mm]



	A inch [mm]	B inch [mm]	C inch [mm]	D inch [mm]	E inch [mm]	F inch [mm]	G inch [mm]	H inch [mm]	I inch [mm]	J inch [mm]	K inch [mm]	L inch [mm]	M** inch [mm]	N inch [mm]	O inch [mm]	P inch [mm]	Q1 inch [mm]	Q2 inch [mm]	Q3 inch [mm]	R inch [mm]	S inch [mm]	T inch [mm]	U inch [mm]	V1 inch [mm]	V2 inch [mm]	V3 inch [mm]	W inch [mm]
-B43	1.66 [42.2]	.25 [6.4]	.38 [9.7]	2.67 [67.8]	1.1 [28]	2.50 [63.5]	.44 [11.2]	.866 [22]	2.60 [66]	1.222 [31.04]	1.000 [25.4]	.39 [9.9]	.1875 [4.763]	1.624 [41.25]	2.124 [53.95]	.75 [19.05]	.150 [3.81]	.260 [6.60]	.256 [6.50]	2.00 [50.8]	2.00 [50.8]	.09 [2.3]	–	.136 [3.45]	.240 [6.09]	.128 [3.25]	.92 [23.3]
-B57	2.20 [55.9]		.65 [16.5]					1.503 [38.18]		1.856 [47.14]										2.20 [55.9]			#8-32 UNC	–	–	–	

* METRIC THREADS ALSO AVAILABLE **MAXIMUM COUPLING SIZE = .846 inch (21.49 mm) DIAMETER X 1.25 inches (31.8 mm) LENGTH

WGS Performance



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

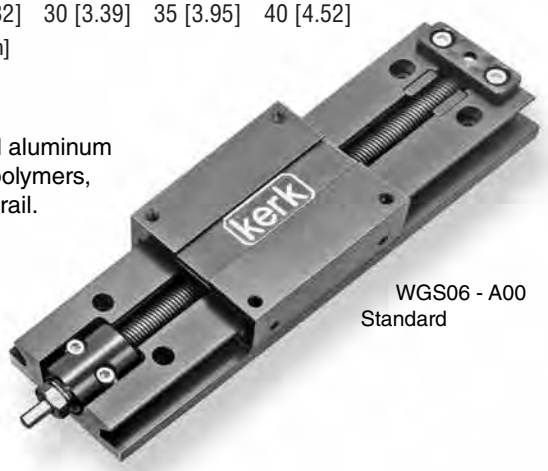
1,000,000 inches [2,540,000 cm] travel performed with 6.5 in-lb [0.73 Nm] roll moment on carriage.

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:

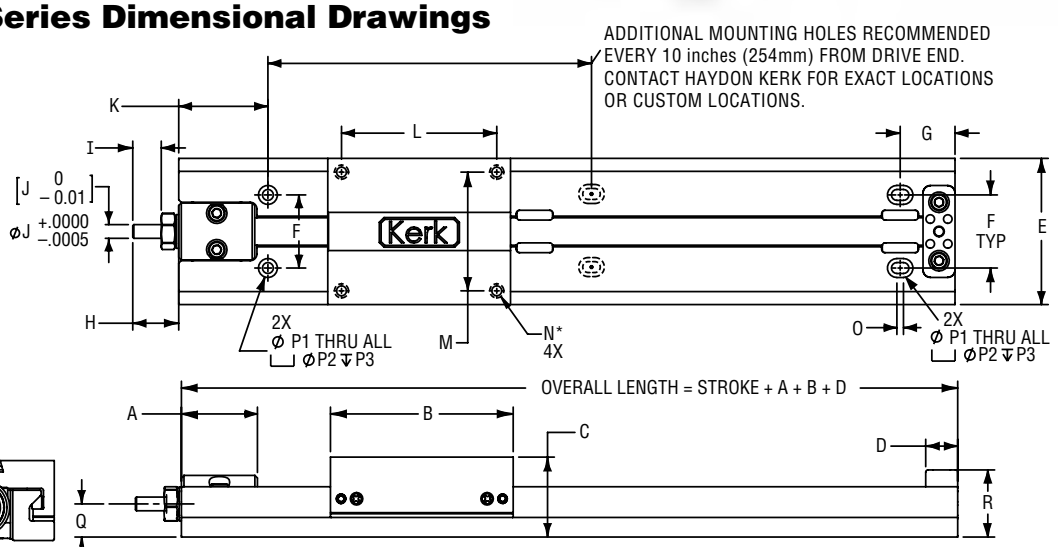
• WGS06 – up to 156 N (35 lbs)



WGS06 - A00
Standard

WGS Standard Series Dimensional Drawings

Dimensions = inch [mm]



	A inch [mm]	B inch [mm]	C inch [mm]	D inch [mm]	E inch [mm]	F inch [mm]	G inch [mm]	H inch [mm]	I inch [mm]	J inch [mm]	K inch [mm]	L inch [mm]	M inch [mm]	N* inch [mm]	O inch [mm]	P1 inch [mm]	P2 inch [mm]	P3 inch [mm]	Q inch [mm]	R inch [mm]
-A00	1.04 [26.4]	2.50 [63.5]	1.1 [28]	.44 [11.2]	2.00 [50.8]	1.000 [25.40]	.75 [19.1]	.63 [16]	.39 [9.9]	.1875 [4.763]	1.220 [39.99]	2.124 [53.95]	1.624 [41.25]	#8-32 UNC-2B	.09 [2.3]	.150 [3.81]	.260 [6.60]	.256 [6.50]	.45 [11.4]	.92 [23.3]

* 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 several in-line motor options including a single stack or double stack size 17 stepper motor, a stepper motor with an integral chopper drive, or the IDEA™ programmable linear actuator, consisting of the stepper motor, drive, and controller programmed through a graphic user interface (GUI). The LRS is also available without a motor, easily allowing the designer flexibility to integrate with a variety of motor types and belt and pulley configurations.

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

Key Product Features

- "T" slots integrated into exterior rail bottom and sides that accommodate full length support and various mounting options.
- Loads easily attach to the compact, moving carriage with four or six M4 x 0.7 size screws.
- Load bearing carriage moves efficiently and smoothly within the internal rail geometry of this specially designed aluminum extrusion.
- Rail provides end-to-end axial stability and precise motion system accuracy.
- Automatic adjustments of slide bearing play with a patent pending "anti-backlash" linear bearing.
- Rated life equals that of the existing 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.

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

Identifying the LRS part number codes when ordering

LR	W	04	B	–	M	0025	–	XXX

Prefix

LR = Linear Rail System (LRS)

Frame Style

B = BFW nut
C = CMP nut
W = WDG nut
G = Guide only

Frame Size Load

04 = Max. static load 50 lbs (222 N)

Coating

S = Uncoated
B = Black Ice® TFE
K = Kerkote® TFE
N = No screw

Drive / Mounting

A = None

M = Motorized 43000 Series Size 17 Hybrid

G = Motor with IDEA™ integrated programmable drive - USB communications

J = Motor with IDEA™ integrated programmable drive - RS485 communications

Nominal Thread Lead Code

0000 = No screw

0025 = .25-in (.635)
0031 = .03125-in (.794)
0039 = .0394-in (1.0)
0050 = .05-in (1.27)
0063 = .0625-in (1.588)
0079 = .0787-in (2.0)
0100 = .01-in (2.54)
0125 = .125-in (3.175)
0197 = .1969-in (5.0)
0250 = .25-in (6.35)
0394 = .3937-in (10.0)
0500 = .5-in (12.7)
0750 = .75-in (19.05)
1000 = 1.0-in (25.4)

Unique Identifier

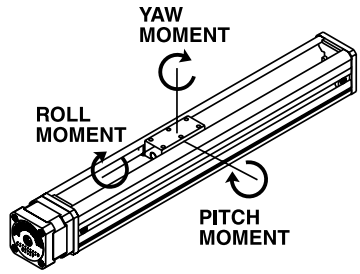
Proprietary suffix assigned to a specific customer application. The identifier can apply to either a standard or custom part.

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 203 756 7441.

LRS™ Linear Rail with Hybrid 43000 Size 17 linear motors

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



Specifications

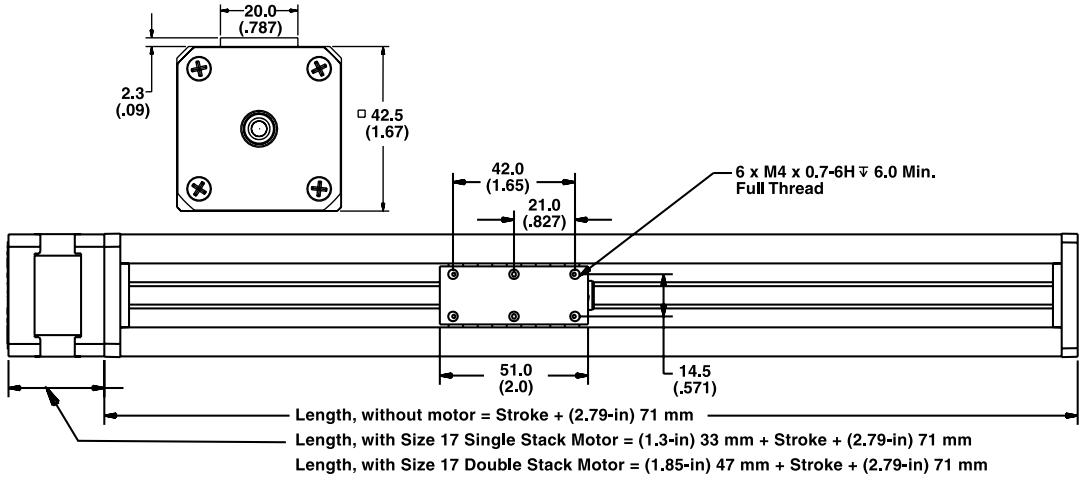
Width	Length of Stroke (max)	Speed (max)	Straight Line Accuracy	Twist
1-5/8-in square (4.3 cm square)	40-in (1000 mm)	20-in/sec (0.5 M/sec)	+/- 0.012-in/ft (+/- 1.0 mm/M)	+/- 0.25°/ft (+/- 0.75°/M)

Load Ratings *(max)*

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

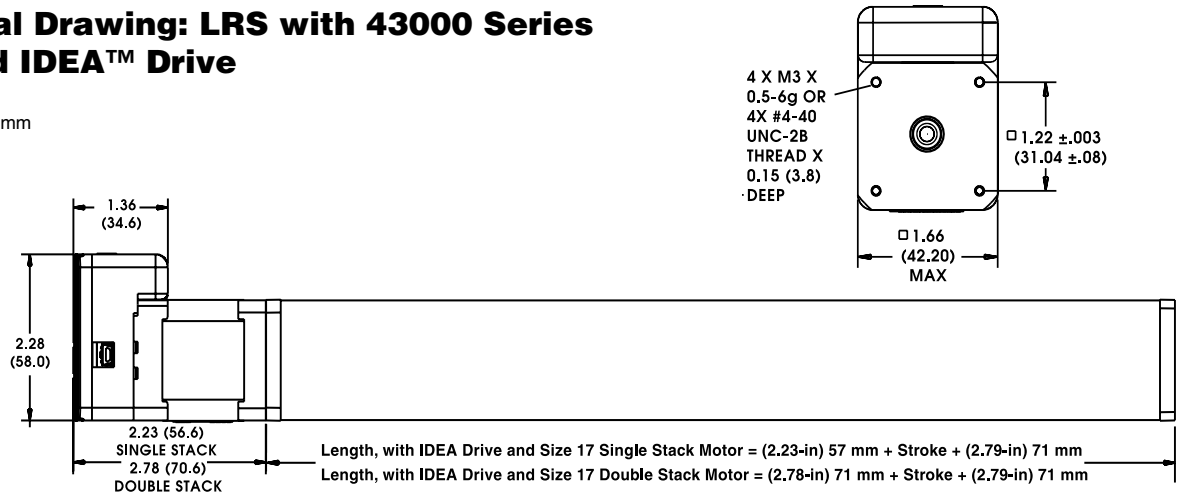
Dimensional Drawing: LRS with 43000 Series Size 17

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.

Z-Theta ScrewRail Assembly

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

Haydon Kerk Express℠
www.HaydonKerkExpress.com
Standard products available 24-hrs.

SR	Z	06	K	–	A	0100	–	XXX

Prefix
SR = ScrewRail®

Nut Style
A = free-wheeling style nut
Z = Anti-Backlash Nut

Nominal Rail Diam.
03 = 3/8-in (10 mm)
04* = 1/2-in (13 mm)
06* = 3/4-in (19 mm)
08* = 1-in (25 mm)
* END SUPPORTS available, see page 251.

Coating
S = Uncoated
K = Kerkote®

Drive Mounting
A = None

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/SRZ06:
0100 = .100-in (2.54)
0200 = .200-in (5.08)
0500 = .500-in (12.7)
1000 = 1.00-in (25.40)

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

SRA/SRZ08:
0100 = .100-in (2.54)
0200 = .200-in (5.08)
0500 = .500-in (12.7)
1000 = 1.00-in (25.40)

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

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

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

SR	06	ES	–	Z00

Prefix:
SR = ScrewRail®

Size
04= 1/2-in
06= 3/4-in
08= 1-in

ES = End Support

Identifier = Standard

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

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

Kerk® SRA Series General Purpose ScrewRail® Linear Actuators

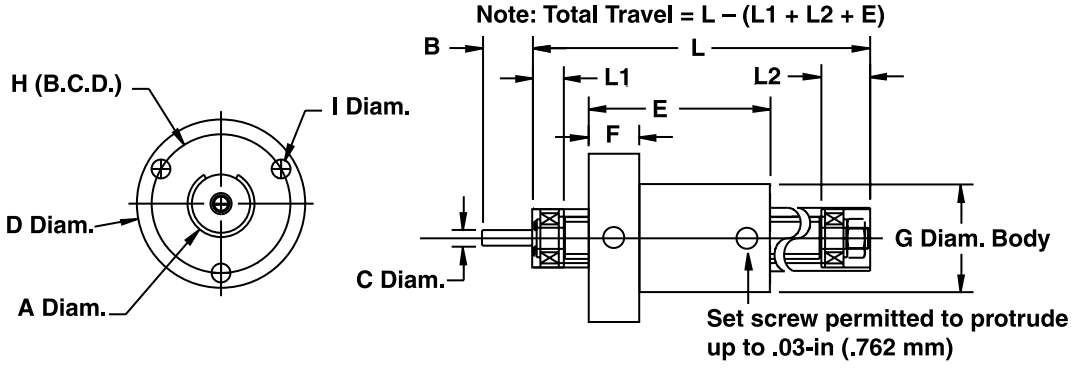
A standard nut for general applications where anti-backlash compensation is not required.

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

	A Diam. inch (mm)	B inch (mm)	C Diam. inch (mm)	D Diam. inch (mm)	E inch (mm)	F inch (mm)	G Diam. inch (mm)	H(B.C.D.) inch (mm)	I inch (mm)	L1 inch (mm)	L2 inch (mm)
SRA 03	.364/.367 (9.24/9.32)	.38 (9.56)	.1245/.1250 (3.16/3.18)	.98 (24.9)	1.0 (25.4)	.28 (7.2)	.562 (14.3)	.75 (19.1)	.094 (2.39)	.37 (9.4)	.38 (9.66)
SRA 04	.489/.492 (12.42/12.5)	0.62 (15.75)	.1870/.1875 (4.75/4.76)	1.25 (31.8)	1.4 (36)	.38 (9.5)	.750 (19.1)	1.03 (26.2)	0.140 (3.56)	0.26 (6.6)	0.36 (9.1)
SRA 06	.739/.742 (18.77/18.85)	0.75 (19.05)	.2490/.2495 (6.33/6.34)	1.75 (44.5)	2.0 (51)	.50 (12.7)	1.120 (28.4)	1.48 (37.6)	0.173 (4.39)	0.38 (9.7)	0.70 (17.8)
SRA 08	.989/.992 (25.12/25.2)	0.75 (19.05)	.2490/.2495 (6.33/6.34)	2.23 (56.6)	2.5 (64)	.63 (15.9)	1.495 (38.0)	1.92 (48.8)	0.200 (5.08)	0.48 (12.2)	0.77 (19.6)



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

Kerk® SRZ Series Anti-Backlash ScrewRail® Linear Actuators

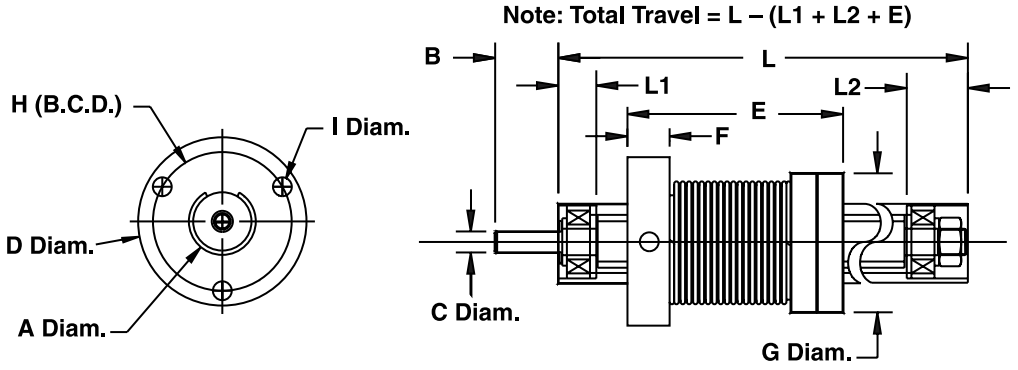
A nut designed and manufactured with our unique axial take-up mechanism providing continuous self-adjusting anti-backlash compensation.

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

ScrewRail®: SRZ Series Anti-Backlash

	A Diam. inch (mm)	B inch (mm)	C Diam. inch (mm)	D Diam. inch (mm)	E inch (mm)	F inch (mm)	G Diam. inch (mm)	H(B.C.D.) inch (mm)	I (Brass Inserts) inch (mm)	L1 inch (mm)	L2 inch (mm)
SRZ 03	.364/.367 (9.24/9.32)	.38 (9.56)	.1245/.1250 (3.16/3.18)	.98 (24.9)	1.1 (27.94)	.28 (7.2)	.73 (18.5)	.75 (19.05)	#2-56 (*)	.37 (9.4)	.38 (9.66)
SRZ 04	.489/.492 (12.42/12.5)	0.62 (15.75)	.1870/.1875 (4.75/4.76)	1.31 (33.3)	1.4 (36)	.38 (9.5)	.097 (24.7)	1.03 (26.2)	#6-32 (*)	0.26 (6.6)	0.36 (9.1)
SRZ 06	.739/.742 (18.77/18.85)	0.75 (19.05)	.2490/.2495 (6.33/6.34)	1.81 (46.0)	2.0 (51)	.50 (12.7)	1.38 (35.1)	1.48 (37.6)	#10-32 (*)	0.38 (9.7)	0.70 (17.8)
SRZ 08	.989/.992 (25.12/25.2)	0.75 (19.05)	.2490/.2495 (6.33/6.34)	2.30 (58.4)	2.5 (64)	.63 (15.9)	1.72 (43.7)	1.92 (48.8)	#10-32 (*)	0.48 (12.2)	0.77 (19.6)

* metric available as requested



ScrewRail® Linear Actuators: End Supports

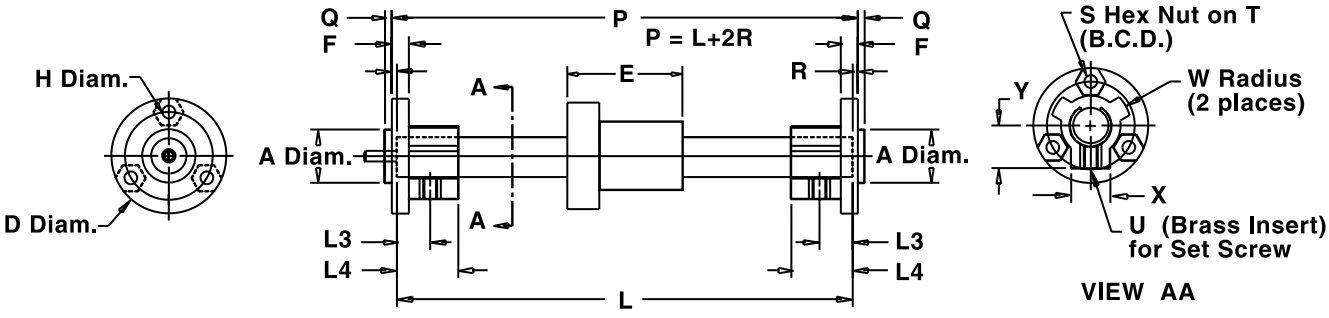
As an additional option for all Kerk® ScrewRails, standard End Supports offer the convenience of simple and compact mounting for the ScrewRail. The End Supports are designed to slide over the outside diameter of each end of the rail and "key" off the slot in the ScrewRail. The Kerkite® composite polymer 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

	A Diam. inch (mm)	D inch (mm)	F inch (mm)	H Diam. inch (mm)	L3 inch (mm)	L4 inch (mm)	Q inch (mm)	R inch (mm)	S inch (mm)	T (Hex Nut) inch (mm)	U inch (mm)	W Diam. (Brass Insert) inch (mm)	X inch (mm)	Y inch (mm)
SRA 04	.624/.626 (15.85/15.90)	1.35 (34.3)	0.200 (5.08)	0.150 (3.81)	0.390 (9.91)	.720 (18.29)	0.080 (2.03)	0.060 (1.52)	#6-32 (*)	1.03 (26.2)	#8-32	0.47 (12.0)	0.460 (11.68)	0.500 (12.70)
SRA 06	.749/.751 (19.03/19.08)	1.60 (40.6)	0.250 (6.35)	0.173 (4.39)	0.603 (15.32)	0.900 (22.86)	0.100 (2.54)	0.100 (2.54)	#8-32 (*)	1.31 (33.3)	#10-32	0.60 (15.3)	0.594 (15.09)	0.645 (16.38)
SRA 08	.999/1.001 (25.38/25.43)	2.20 (55.9)	0.375 (9.53)	0.200 (5.08)	0.920 (23.37)	1.200 (30.48)	0.125 (3.18)	0.175 (4.45)	#10-32 (*)	1.82 (46.2)	#10-32	0.82 (20.9)	0.800 (20.32)	0.820 (20.83)

* 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

ScrewRail	Inch Lead ** inch (mm)	Thread Lead Code	Nominal Rail Diam. inch (mm)	Nominal Screw Diam. inch (mm)	Max. Drag Torque oz - in (N-m)	Life @ 1/4 Design Loadx10⁶ (Non Anti-Backlash) inch (cm)	Torque-to-Move Lead oz-in/lb (N-m/Kg)	Design Load lbs (Kg)	Screw Inertia per unit length oz-in sec²/in (KgM²/M)	Equivalent Diam.* inch (mm)
SRA 03	.050 (1.27)	0050	3/8 (10)	3/16 (5)	1.5 (0.014)	100 to 150 (250 to 380)	0.5 (0.007)	10 (4.5)	.1 x 10^{-5} (.4 x 10^{-6})	30 (7.6)
SRA 03	.100 (2.54)	0100	3/8 (10)	3/16 (5)	2.0 (0.018)	100 to 150 (250 to 380)	1.0 (0.016)	10 (4.5)	.1 x 10^{-5} (.4 x 10^{-6})	30 (7.6)
SRA 03	.250 (6.35)	0250	3/8 (10)	3/16 (5)	2.5 (0.020)	100 to 150 (250 to 380)	1.25 (0.019)	10 (4.5)	.1 x 10^{-5} (.4 x 10^{-6})	30 (7.6)
SRA 03	.375 (9.53)	0375	3/8 (10)	3/16 (5)	3.0 (0.025)	100 to 150 (250 to 380)	2.0 (0.030)	10 (4.5)	.1 x 10^{-5} (.4 x 10^{-6})	30 (7.6)
SRA 04	0.050 (1.27)	0050	1/2 (13)	1/4 (6)	2.0 (0.015)	150 to 200 (380 to 500)	0.5 (0.007)	25 (10)	.3 x 10^{-5} (1.3 x 10^{-6})	.39 (9.9)
SRA 04	0.250 (6.35)	0250	1/2 (13)	1/4 (6)	3.0 (0.020)	150 to 200 (380 to 500)	1.5 (0.023)	25 (10)	.3 x 10^{-5} (1.3 x 10^{-6})	.39 (9.9)
SRA 04	0.500 (12.7)	0500	1/2 (13)	1/4 (6)	4.0 (0.030)	150 to 200 (380 to 500)	2.5 (0.039)	25 (10)	.3 x 10^{-5} (1.3 x 10^{-6})	.39 (9.9)
SRA 04	1.000 (25.40)	1000	1/2 (13)	1/4 (6)	5.0 (0.040)	150 to 200 (380 to 500)	4.5 (.0.70)	25 (10)	.3 x 10^{-5} (1.3 x 10^{-6})	.39 (9.9)
SRA 06	0.100 (2.54)	0100	3/4 (19)	3/8 (10)	3.0 (0.020)	180 to 280 (450 to 710)	1.0 (0.016)	50 (20)	1.5 x 10^{-5} (6.5 x 10^{-6})	.60 (15.2)
SRA 06	0.200 (5.08)	0200	3/4 (19)	3/8 (10)	4.0 (0.030)	180 to 280 (450 to 710)	1.5 (0.023)	50 (20)	1.5 x 10^{-5} (6.5 x 10^{-6})	.60 (15.2)
SRA 06	0.500 (12.70)	0500	3/4 (19)	3/8 (10)	5.0 (0.040)	180 to 280 (450 to 710)	2.5 (0.039)	50 (20)	1.5 x 10^{-5} (6.5 x 10^{-6})	.60 (15.2)
SRA 06	1.000 (25.4)	1000	3/4 (19)	3/8 (10)	6.0 (0.045)	180 to 280 (450 to 710)	4.5 (0.070)	50 (20)	1.5 x 10^{-5} (6.5 x 10^{-6})	.60 (15.2)
SRA 08	0.100 (2.54)	0100	1 (25)	1/2 (13)	4.0 (0.030)	280 to 320 (710 to 810)	1.0 (0.016)	100 (45)	5.2 x 10^{-5} (20.0 x 10^{-6})	.81 (20.5)
SRA 08	0.200 (5.08)	0200	1 (25)	1/2 (13)	5.0 (0.040)	280 to 320 (710 to 810)	1.5 (0.023)	100 (45)	5.2 x 10^{-5} (20.0 x 10^{-6})	.81 (20.5)
SRA 08	0.500 (12.70)	0500	1 (25)	1/2 (13)	6.0 (0.045)	280 to 320 (710 to 810)	2.5 (0.039)	100 (45)	5.2 x 10^{-5} (20.0 x 10^{-6})	.81 (20.5)
SRA 08	1.000 (25.40)	1000	1 (25)	1/2 (13)	8.0 (0.060)	280 to 320 (710 to 810)	4.5 (0.070)	100 (45)	5.2 x 10^{-5} (20.0 x 10^{-6})	.81 (20.5)

*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

ScrewRail	Inch Lead ** inch (mm)	Thread Lead Code	Nominal Rail Diam. inch (mm)	Nominal Screw Diam. inch (mm)	Max. Drag Torque oz - in (N-m)	Life @ 1/4 Design Loadx10⁶ (Non Anti-Backlash) inch (cm)	Torque-to-Move Lead oz-in/lb (N-m/Kg)	Design Load lbs (Kg)	Screw Inertia per unit length oz-in sec²/in (KgM^2/M)	Equivalent Diam.* inch (mm)
SRZ 03	.050 (1.27)	0050	3/8 (10)	3/16 (5)	2.0 (0.014)	50 to 80 (130 to 200)	0.5 (0.007)	10 (4.5)	$.1 \times 10^{-5}$ ($.4 \times 10^{-6}$)	30 (7.6)
SRZ 03	.100 (2.54)	0100	3/8 (10)	3/16 (5)	2.5 (0.018)	50 to 80 (130 to 200)	1.0 (0.016)	10 (4.5)	$.1 \times 10^{-5}$ ($.4 \times 10^{-6}$)	30 (7.6)
SRZ 03	.250 (6.35)	0250	3/8 (10)	3/16 (5)	3.0 (0.020)	50 to 80 (130 to 200)	1.25 (0.019)	10 (4.5)	$.1 \times 10^{-5}$ ($.4 \times 10^{-6}$)	30 (7.6)
SRZ 03	.375 (9.53)	0375	3/8 (10)	3/16 (5)	3.5 (0.025)	50 to 80 (130 to 200)	2.0 (0.030)	10 (4.5)	$.1 \times 10^{-5}$ ($.4 \times 10^{-6}$)	30 (7.6)
SRZ 04	0.050 (1.27)	0050	1/2 (13)	1/4 (6)	3.0 (0.020)	75 to 100 (190 to 250)	0.5 (0.007)	25 (10)	$.3 \times 10^{-5}$ (1.3×10^{-6})	.39 (9.9)
SRZ 04	0.250 (6.35)	0250	1/2 (13)	1/4 (6)	4.0 (0.030)	75 to 100 (190 to 250)	1.5 (0.023)	25 (10)	$.3 \times 10^{-5}$ (1.3×10^{-6})	.39 (9.9)
SRZ 04	0.500 (12.7)	0500	1/2 (13)	1/4 (6)	5.0 (0.040)	75 to 100 (190 to 250)	2.5 (0.039)	25 (10)	$.3 \times 10^{-5}$ (1.3×10^{-6})	.39 (9.9)
SRZ 04	1.000 (25.40)	1000	1/2 (13)	1/4 (6)	6.0 (0.045)	75 to 100 (190 to 250)	4.5 (.0.70)	25 (10)	$.3 \times 10^{-5}$ (1.3×10^{-6})	.39 (9.9)
SRZ 06	0.100 (2.54)	0100	3/4 (19)	3/8 (10)	6.0 (0.045)	90 to 140 (230 to 350)	1.0 (0.016)	50 (20)	1.5×10^{-5} (6.5×10^{-6})	.60 (15.2)
SRZ 06	0.200 (5.08)	0200	3/4 (19)	3/8 (10)	6.5 (0.047)	90 to 140 (230 to 350)	1.5 (0.023)	50 (20)	1.5×10^{-5} (6.5×10^{-6})	.60 (15.2)
SRZ 06	0.500 (12.70)	0500	3/4 (19)	3/8 (10)	7.0 (0.050)	90 to 140 (230 to 350)	2.5 (0.039)	50 (20)	1.5×10^{-5} (6.5×10^{-6})	.60 (15.2)
SRZ 06	1.000 (25.4)	1000	3/4 (19)	3/8 (10)	7.5 (0.053)	90 to 140 (230 to 350)	4.5 (0.070)	50 (20)	1.5×10^{-5} (6.5×10^{-6})	.60 (15.2)
SRZ 08	0.100 (2.54)	0100	1 (25)	1/2 (13)	8.0 (0.057)	120 to 160 (350 to 410)	1.0 (0.016)	100 (45)	5.2×10^{-5} (20.0×10^{-6})	.81 (20.5)
SRZ 08	0.200 (5.08)	0200	1 (25)	1/2 (13)	8.5 (0.060)	120 to 160 (350 to 410)	1.5 (0.023)	100 (45)	5.2×10^{-5} (20.0×10^{-6})	.81 (20.5)
SRZ 08	0.500 (12.70)	0500	1 (25)	1/2 (13)	9.0 (0.064)	120 to 160 (350 to 410)	2.5 (0.039)	100 (45)	5.2×10^{-5} (20.0×10^{-6})	.81 (20.5)
SRZ 08	1.000 (25.40)	1000	1 (25)	1/2 (13)	9.5 (0.067)	120 to 160 (350 to 410)	4.5 (0.070)	100 (45)	5.2×10^{-5} (20.0×10^{-6})	.81 (20.5)

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

** Other leads available as custom orders.

SS / SZ Series: Spline Shafts

GR Series: Linear Guide Rails and Bushings

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

SZ	A	T	04	1	K	–	08	–	XXX

Prefix
SS = Spline Shaft
SZ = Anti-Backlash Spline Shaft

GR = Guide Rail

Nut Style
A = Assembly
B = Bushing only
S = Shaft only

Mounting
T = Threaded *(for **Spline Shafts** only)*
G = Snap ring groove *(for **Guide Rails** only)*
P = Plain (no features)
S = Shaft only
X = Custom

Rail Diameter
02 = 1/8-in
04 = 1/4-in
06 = 3/8-in
08 = 1/2-in
12 = 3/4-in

Number of Bushings per Rail
0
1
2
3
4
5
Use "0" for Shaft only and "1" if Bushing only

Coating
S = Uncoated
K = Kerkote®
B = Black Ice™
N = Bushing only

Length in Inches *(Rounded up)*
Example:
06 = 6-in
08 = 8-in
00 = Bushing only

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.

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.

GRBP041N-00-XXXX = Guide rail, plain bushing only, 1/4-in shaft, with no special features added.

SS Series Spline Shafts

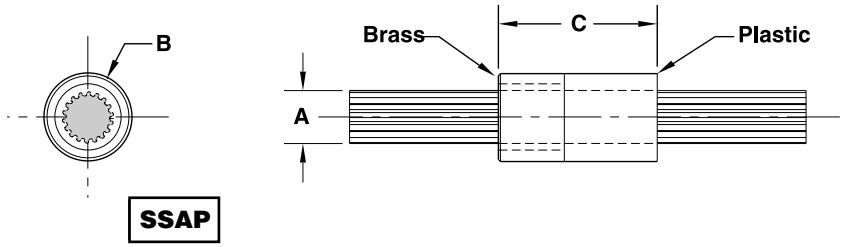
	Rail Diameter Code	Shaft A in ± .002 (mm ± 0.05)	Root Diameter in ± .002 (mm ± 0.05)	Tube I.D. in ± .002 (mm ± 0.05)	Bushing Diameter B in ± .001 (mm ± 0.025)	Bushing Length C in ± .01 (mm ± 0.25)	Thread M	Thread Length N in ± .002 (mm ± 0.05)	Equivalent Diameter** inch (mm)
SS/SZ	02	0.125 (3.18)	0.095 (2.41)	NA	0.375 (9.53)	0.500 (12.70)	3/8-24	0.250 (6.35)	0.110 (2.79)
	04	0.250 (6.35)	0.202 (5.13)	NA	0.500 (12.70)	0.75 (19.1)	7/16-20	0.250 (6.35)	0.226 (5.74)
	06	0.375 (9.53)	0.306 (7.77)	NA	0.625 (15.88)	1.00 (25.4)	9/16-20	0.375 (9.53)	0.341 (8.65)
	08	0.500 (12.70)	0.419 (10.64)	NA	0.813 (20.65)	1.50 (38.1)	3/4-20	0.500 (12.70)	0.458 (11.63)
	12	0.750 (19.05)	0.630 (16.00)	NA	1.125 (28.58)	2.25 (57.2)	1-16	0.750 (19.05)	0.690 (17.53)

MaximumTwist:
3°/ft about Spline Shaft axis

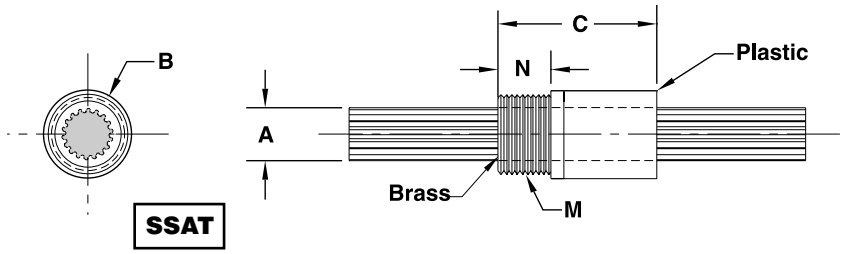
Torsional Clearance (SSA):
3° Bushing to Shaft

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

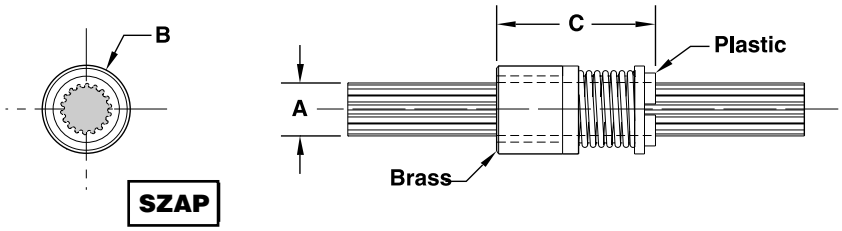
0.125-in rail size only available in SSAP and SSAT styles.



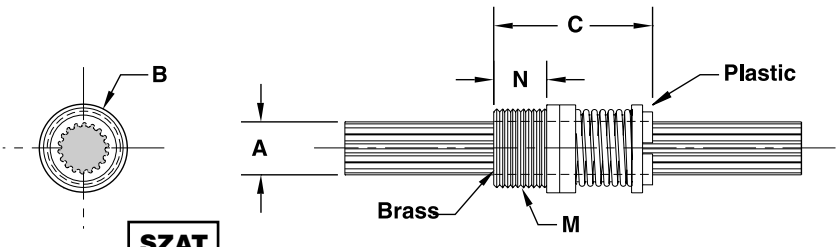
SSAP



SSAT



SZAP



SZAT

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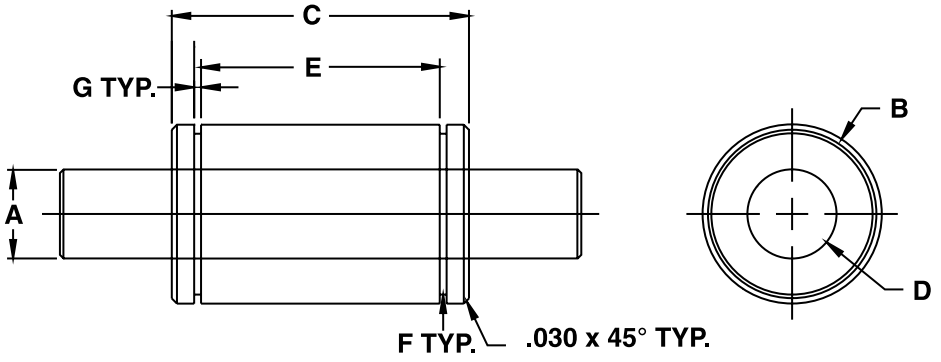
Kerk® GR Series Linear Rails and Bushings

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.



	Rail Diameter Code	Standard Part Lengths in ±.010 (mm ±0.25)	Rail Diameter A in ±.0006 (mm ±0.015)	Rail Diameter w/TFE A in ±.0006 (mm ±0.015)	Bushing Outside Diam. B in ±.0006 (mm ±0.015)	Bushing Length C in ±.010 (mm ±0.25)	Bushing Inside Diam. D in ±.0005 (mm ±0.013)	Snap Ring Groove Location E in +.010 −.000 (mm +0.25 − 0.00)	Snap Ring Groove Diam. F in ±.004 (mm ±0.100)	Snap Ring Groove Width G in ±.0003 (mm ±0.008)	Rail Chamfer H in (mm)	Radial Load lbs (Kg)
GR	04	6/8 10/12	.2475 (6.287)	.2472 (6.279)	.5000 (12.700)	.765 (19.43)	.2485 (6.311)	.535 (13.59)	.450 (11.43)	.040 (1.02)	.020 (.51)	5 (2.3)
	06	6/12 15/18	.3715 (9.436)	.3712 (9.428)	.7500 (19.050)	1.275 (32.39)	.3725 (9.462)	.995 (25.27)	.676 (17.17)	.046 (1.17)	.020 (.51)	10 (4.5)
	08	12/15 18/24	.4965 (12.611)	.4962 (12.603)	1.0000 (25.400)	1.660 (42.16)	.4975 (12.637)	1.330 (33.78)	.900 (22.86)	.046 (1.17)	.020 (.51)	15 (6.8)
	12	18/24 36	.7415 (18.834)	.7412 (18.826)	1.2500 (31.750)	2.036 (51.72)	.7425 (18.860)	1.620 (41.15)	1.125 (28.60)	.058 (1.47)	.030 (.76)	25 (11.4)

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.

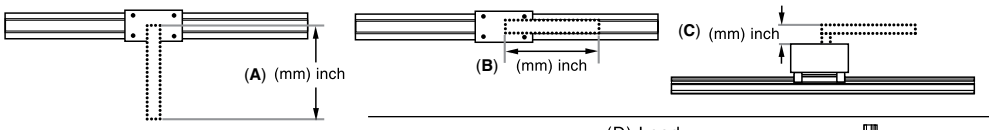
Name _____ Company _____

Address _____ City _____ State _____ Zip _____

Country_____ Phone _____ Email _____

1) ❑ **Maximum Load?** _____ (N or lbs.)

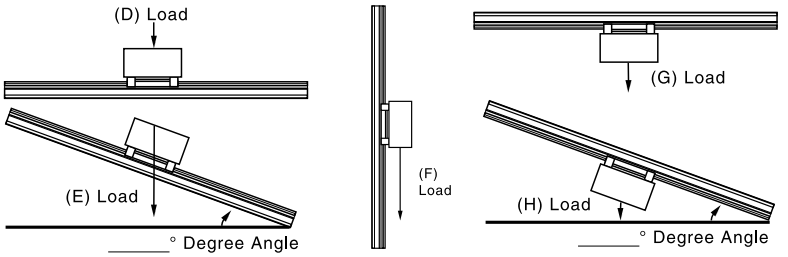
2) ❑ **Load Center of Gravity (cg) Distance and Height?** (mm or inches) See illustrations (A) (B) (C) below.



Dimensions
(❑ **mm** / ❑ **inch**):
❑ **(A)** _____
... OR ❑ **(B)** _____
AND... ❑ **(C)** _____

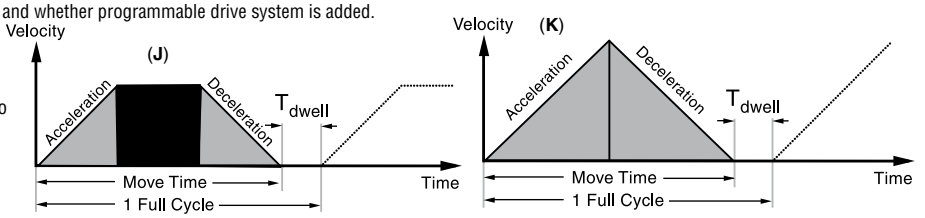
3) ❑ **Rail Mount Orientation?**
The force needed to move the load is dependent on the orientation of the load relative to the force of gravity. For example, total required force in the horizontal plane (D) is a function of friction and the force needed for load acceleration ($F_f + F_a$). Total force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

Orientation:
❑ **(D)**
❑ **(E)** ____°
❑ **(F)**
❑ **(G)**
❑ **(H)** ____°



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 programmable drive system is added.

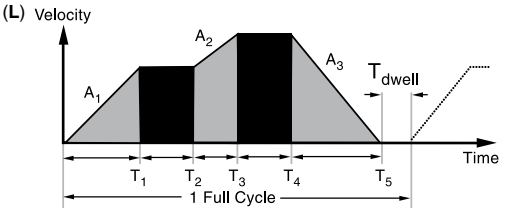
5) ❑ **Move Profile?** A **trapezoidal** move profile divided into 3 equal segments is a common move profile and easy to work with. Another common move profile is a **triangular** profile divided into 2 equal segments.
❑ **(J) Trapezoidal**
❑ **(K) Triangular**
❑ **(L) Complex**



If using a **trapezoidal (J)** or **triangular (K)** move profile, the following is needed…
a) ❑ Point to point move distance _____ (mm or inches)
b) ❑ Move time _____ (seconds) including time of acceleration and deceleration
c) ❑ Dwell time between moves _____ (seconds)

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

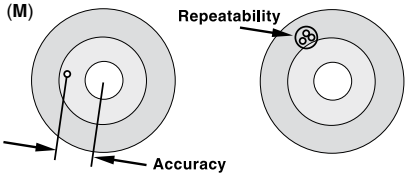
A **complex** move profile **(L)** requires more information.
a) ❑ Time (in seconds) including: $T_1, T_2, T_3, T_4, T_5 \ldots T_n$ and T_{dwell}
b) ❑ Acceleration/Deceleration (in mm/sec.^{2} or inches/sec.^{2}) including: $A_1, A_2, A_3 \ldots A_n$



For details contact Haydon Kerk Motion Solutions Engineering – call 203 756 7441.

6) ❑ **Position Accuracy Required?** _____ (mm or inches). Accuracy = the difference between the theoretical position and actual position capability of the system. Due to manufacturing tolerances, actual travel will be slightly different than theoretical "commanded" position. See figure (M) on right.

7) ❑ **Position Repeatability Required?** _____ (mm or inches) Repeatability = the range of positions attained when the rail is commanded to approach the same position multiple times under identical conditions. See figure (M) on right.



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 _____ b) ❑ Number of Full Strokes _____ 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 Motors only)
b) ❑ Customer Supplied Drive... Type?... ❑ Chopper Drive ❑ L / R Drive Model: _____

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.*

SEE CATALOG PAGES 203 THROUGH 205 FOR EXPLANATIONS