# Ball Guide Screw Linear Rail

Haydon Kerk Motion Solutions, a brand of AMETEK Precision Motion Control, has introduced the latest and final addition to the new BGS (Ball Guide Screw) linear rail product line. The BGS06 linear rail is a versatile system utilizing the popular size 17 single stack or double stack stepper motor linear actuator.

Depending on static, dynamic, and moment load requirements, the product design engineer can now choose between 3 BGS frame sizes; the BGS04, BGS06, and BGS08. All BGS frame sizes are designed to position heavy loads and maintain repeatability and accuracy while withstanding significant cantilevered loading.

All Haydon Kerk BGS rail systems utilize linear stepper motors and precision rolled 303 stainless steel lead screws. Lead screws are coated using Black Ice® TFE coating providing a wear-resistant and maintenance-free dry lubrication. The lead screw drives a precision nut embedded in a machined aluminum carriage mounted to a stainless steel ball rail. The result is a rigid, smooth operating motion system.

The following is a summary of the product line:

BGS04 Linear Rail

- Stepper Motor Sizes – size 11 double stack or size 17 single stack
- Max Stroke Length – 18-in (460mm)
- Max Horizontal Load – 22 lb (100N)
- Moment Load Capabilities
    - -Roll – 5.72 lb-ft (7.75 Nm)
    - -Pitch – 4.88 lb-ft (6.60 Nm)
    - -Yaw – 5.68 lb-ft (7.70 Nm)

BGS06 Linear Rail

- Stepper Motor Sizes – size 17 single or double stack
- Max Stroke Length – 24-in (610mm)
- Max Horizontal Load – 135 lb (600N)
- Moment Load Capabilities
    - -Roll – 11.62 lb-ft (15.75 Nm)
    - -Pitch – 7.93 lb-ft (10.75 Nm)
    - -Yaw – 9.15 lb-ft (12.40 Nm)

BGS08 Linear Rail

- Stepper Motor Sizes – size 23 single or double stack
- Max Stroke Length – 30-in (760mm)
- Max Horizontal Load – 225 lb (1000N)
- Moment Load Capabilities
    - -Roll – 22.50 lb-ft (30.5 Nm)
    - -Pitch – 19.36 lb-ft (26.25 Nm)
    - -Yaw – 22.27 lb-ft (30.20 Nm)

If a higher level system is needed, the IDEA™ drive is an available option resulting in an integrated linear rail, stepper motor, and programmable drive. The integrated drive package is available for all BGS frame sizes (size 17 and size 23 motors only). 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 integration cost to the customer is decreased by offering a complete solution that eliminates the need for rotary-to-linear conversion resulting in simplified product development.

A cornerstone of the Haydon Kerk Motion Solutions advantage is design and manufacturing flexibility. The BGS Linear Rail Systems can be further customized to better suit a customer's unique design. This includes, but is not limited to, custom wire harnesses, load carriages, and mounting configurations.

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