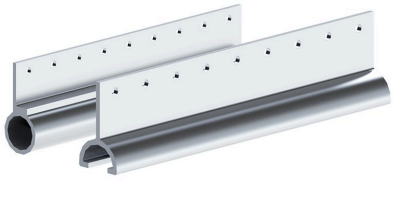
Engineered



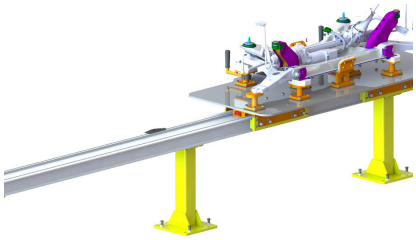
Engineered Aluminum rail Series



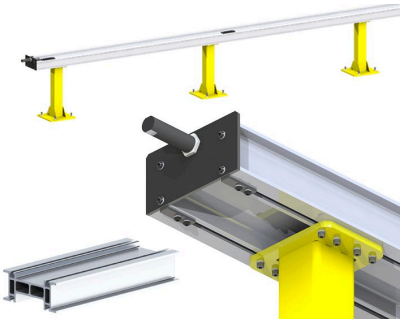
HAD3000 / HAD3500 - chambered rail



LRD9500 Series - linear rail



LRD shuttle table application



Linear rail application - pneumatic arm



RAD4700 / RAD6500 - round rail Series

Knight Global engineered aluminum rail system

Series: HAD3000 / HAD3500 / LRD9500

The Knight Global **HAD3000** Engineered Aluminum Rail uses a **Chambered Rail** design extruded from lightweight, high-strength aluminum alloy. Its low weight shortens installation time and reduces the load on the building ceiling structure. In addition, the HAD3000 can double as a **non-corrosive compressed air / fluid distribution system**, acting as a manifold that delivers higher CFM than traditional black pipe.

The **HAD3500** series suits light duty applications: welding guns, workbenches, workstations, festooning systems and lighting. Combined with nylon trolley wheels, the rail delivers **the lowest rolling friction in the industry**.

The **LRD9500 Engineered Linear Rail** series is designed for **post-mounted or floor-mounted** applications that require low-friction horizontal motion. It handles both direct and offset loads. It is a **lower-maintenance** alternative to traditional hardened rail and bearing blocks, and is commonly used with a **Pneumatic Arm** on the carriage.

The **RAD4700 and RAD6500** Engineered Round Rail Series provide low-friction vertical/horizontal linear motion and handle direct loads, offset loads and **high-torque** applications. The Round Rail offers a **more ergonomic** design than traditional linear motion products.

***Note:** Aluminum alloy to **ASTM B221 6005-T5**. The working load of the LRD9500 is typically determined by the specific application.

Engineered rail series overview

Series	Max. Load	Product Weight
HAD3000	56 kg [125 lbs]	4,91 kg/m [3,3 lbs/ft]
HAD3500	56 kg [125 lbs]	3,87 kg/m [2,6 lbs/ft]
LRD9500	136 kg [300 lbs]	14,58 kg/m [9,8 lbs/ft]

HAD3000 Series - multi-purpose chambered rail

Features

- Aluminum alloy **ASTM B221 6005-T5**.
- **Overhead and floor-standing** configurations.
- Compatible with Knight Global trolleys.
- Pre-drilled air outlet holes: **every 1,5 m [5 ft]**.
- NPT air outlet fittings: **3/8″ [9,5mm] or 1/2″ [12,7mm]**.
- NPT air inlet fitting: **1″ [25mm]**.
- Working pressure up to **600 psi** when used for compressed air / fluids.

Benefits

- Rail length: up to **6 m [20 ft]**.

- Wide range of **pre-assembled** components.
- Doubles as a **compressed air / fluid distribution system** and CFM manifold.
- Easy maintenance.
- Simple installation:

HAD3500 Series - compact light duty rail

- Aluminum alloy **ASTM B221 6005-T5**.
- **Overhead and floor-standing** configurations.
- Compatible with Knight Global trolleys.
- Slimmer profile than the HAD3000 - cost-effective for light loads.
- Rail length: up to **6 m [20 ft]**.
- Wide range of **pre-assembled** components.
- Easy maintenance.
- Simple installation:

LRD9500 Series - post / floor mounted linear rail

- Aluminum alloy **ASTM B221 6005-T5**.
- **Floor Mounted Post** configuration.
- Supports **Carriage and Pneumatic Arm**.
- **Ultra-low friction** horizontal motion.
- Handles direct and offset loads.
- Wide range of **pre-assembled** components.
- Carriage designed for both **cantilever and direct loads**.
- **Lower-maintenance** alternative to traditional hardened rail and bearings.
- Ideal for **carriage-mounted Pneumatic Arm** installations.
- Suited to shuttle tables, build-up tables and automated assembly stations.

Load by hanger span

Hanger Span	Deflection Standard			
	Ratio 1:350		Ratio 1:450	
ft / m	lbs	kg	lbs	kg
5 / 1.52	125	57	125	57
6 / 1.83	125	57	125	57
7 / 2.13	125	57	125	57
8 / 2.45	125	57	125	57

Hanger Span	Deflection Standard			
9 / 2.74	125	57	125	57
10 / 3.05	125	57	125	57
11 / 3.35	125	57	122	56
12 / 3.66	125	57	104	47
13 / 3.96	125	57	84	38
14 / 4.27	125	57	77	35
15 / 4.57	125	57	70	31
16 / 4.88	125	57	60	27
17 / 5.18	113	51	54	24
18 / 5.49	100	45	52	23
19 / 5.79	91	41	46	20
20 / 6.10	82	37	42	19

Knight Global follows material handling industry standards when rating its workstation crane rail systems. Each component is tested individually to establish its ultimate failure point, from which a safe working load is assigned. Recommended load ratings are based on **single point loading** at a 1:350 ratio (1 inch of deflection per 350 inches of length).

Load capacity chart - LRD9500 (Linear ergo forces)

***Specific to the LRD9500:** Instead of a deflection-by-span chart, the LRD9500 is rated by **ergonomic Push/Pull Force** and the resulting torque (lbs.ft) on a 4 ft (1,22 m) wall-mounted cantilever.

Torque by push/pull force

Linear Ergo Forces - LRD9500			
Push/Pull Force	**Equivalent kg**	**Torque (lbs.ft)**	**Torque (Nm)**
50 lbs	22,7 kg	3,97 lbs.ft	5,38 Nm
100 lbs	45,4 kg	6,33 lbs.ft	8,58 Nm
150 lbs	68,0 kg	7,10 lbs.ft	9,63 Nm
200 lbs	90,7 kg	10,46 lbs.ft	14,18 Nm

Test notes: Data was obtained from a series of 5 push/pull tests under controlled conditions. Test configuration: **4 ft (1,22 m) wall-mounted cantilever**. Actual working load depends on the specific application - please contact FULLSHARP for engineering advice.

Technical documents

Brochure

- Rail Brochure - Aluminum rail range overview PDF

Spec sheets

- HAD3000 Rail - Spec Sheet PDF
- HAD3500 Rail - Spec Sheet PDF
- LRD9500 Rail - Spec Sheet ZIP
- LRD9500 Rail Capacity Chart PDF

CAD drawings

- HAD3000 - CAD Drawings (.zip) ZIP
- HAD3500 - CAD Drawings (.zip) ZIP

Manuals

- Aluminum Rail Technical Manual PDF
- LRD9500 Linear Rail Installation / Maintenance Manual PDF

Installation guides

- Aluminum Rail General Standards for Materials & Design Process PDF
- Aluminum Rail Installation Checklist PDF
- Eye Bolt Safety Cable Installation Instructions PDF
- Rail Hanger Placement PDF
- Safety Cable Installation Instructions - End Trucks, Hangers, Trolleys PDF

FULL-SHARP AUTOMATIZED VN (FULLSHARP)
Authorized distributor of Knight Global aluminum rail systems and lifting equipment in Vietnam
For advice on an HAD3000/HAD3500/LRD9500 engineered aluminum rail configuration for your project, please contact a FULLSHARP representative for a quotation and detailed design drawings.

Contact us for consultation and a quotation

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Specifications may vary with the ordered configuration. Please contact FullSharp for exact details.