

The Backbone of Material Handling Technology

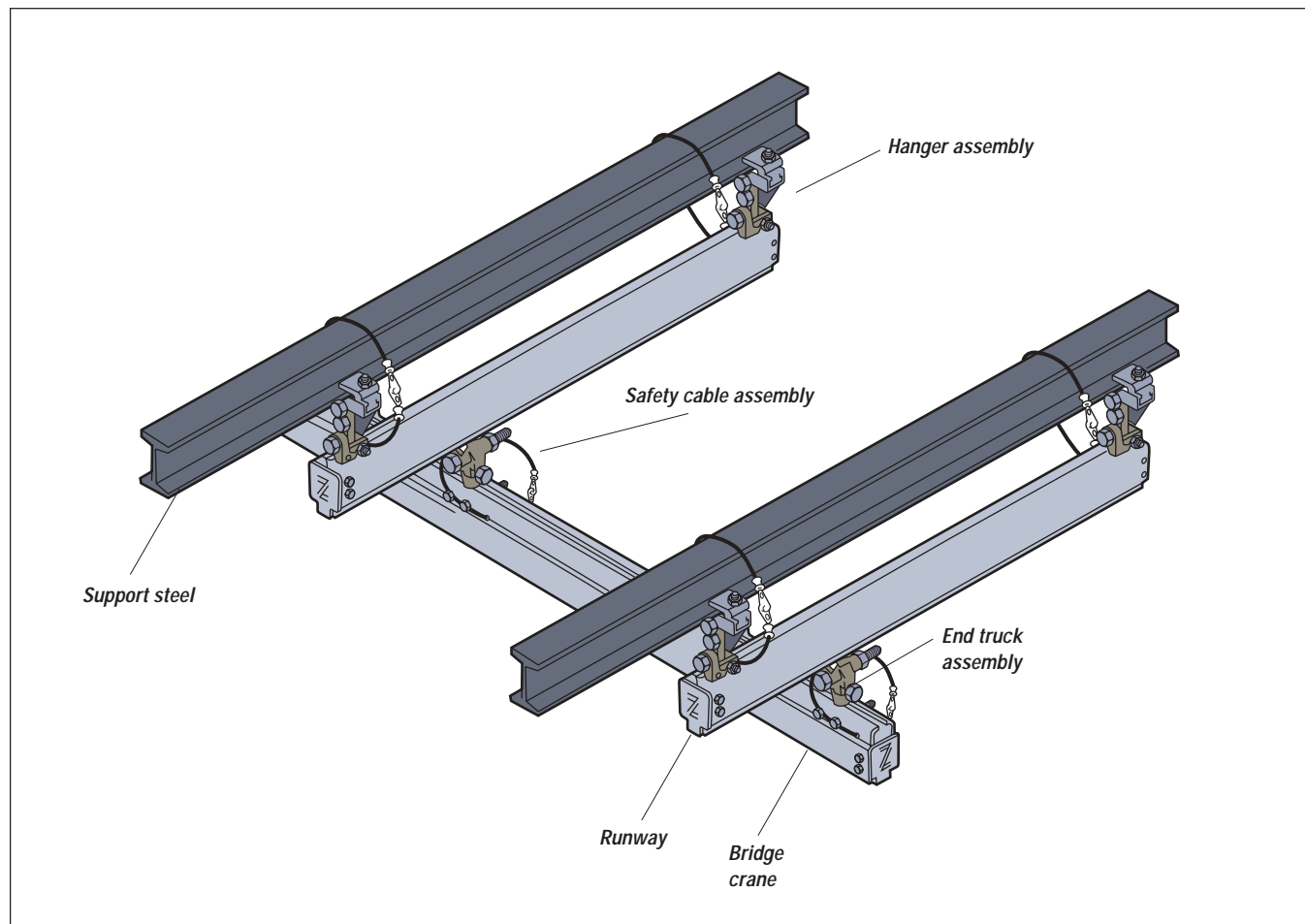
Engineered for the Interaction of Man and Machine.

Backbone to build on

Through a solid commitment to research and development, we have applied our expertise to produce the most complete line of enclosed track workstation crane and monorail systems from one manufacturer in the world. Available in aluminum, steel, and stainless steel, these overhead conveyance rails form the backbone for any material handling system.

The Ingersoll-Rand Rail Systems advantage

- **Lightweight and Ergonomic:** Less than 1% rolling resistance
- **Precision Running Surface:** Aluminum, steel, and stainless steel available
- **Modular and Flexible:** Bolted together; no welding required
- **Clean, Maintenance-free Operation:** No lubrication required
- **Safety:** Designed to meet or exceed all national and international standards



Quality Steel, Aluminum and Stainless Steel Rail Systems

Ingersoll-Rand rails are available in three different materials and five different sizes to meet your specific material handling needs. The Enclosed Rail Systems design reduces the accumulation of dirt and grime on the internal rolling surfaces, thus reducing rolling effort.

Aluminum

Lightweight and available for long spans

- **Extruded:** From aluminum alloy 6063-T6
- **Clear Anodized:** For a smooth, clean, corrosive-free surface
- **ZRAT:** Available in lengths up to 24 feet (7 meters)
- **ZRA1:** Available in lengths up to 30 feet (9 meters)
- **ZRA2:** Available in lengths up to 30 feet (9 meters)
- **Strongbacking:** Available for increased capacities

Steel

The strong, economical choice, ideal for heavy weight applications

- **Roll Formed:** From 9 gauge, A569 hot-rolled steel
- **Spot Welded:** With automated welder for maximum strength
- **Powder Coat Painted:** For durability and smoothness
- **ZRS2:** Available in lengths up to 24 feet (7 meters)
- **ZRS3:** Available in lengths up to 24 feet (7 meters)
- **Strongbacking:** Available for increased capacities

Stainless Steel

Engineered for cleanroom applications, ideal for the food and pharmaceutical industries

- **Roll Formed:** From 10 gauge, 316L stainless steel
- **Spot Welded:** With automated welder for maximum strength
- **ZRSS:** Available in lengths up to 24 feet (7 meters)



Ingersoll-Rand rail system application shown in a manufacturing facility.

Safety First

Ingersoll-Rand's primary and vital concern is safety.

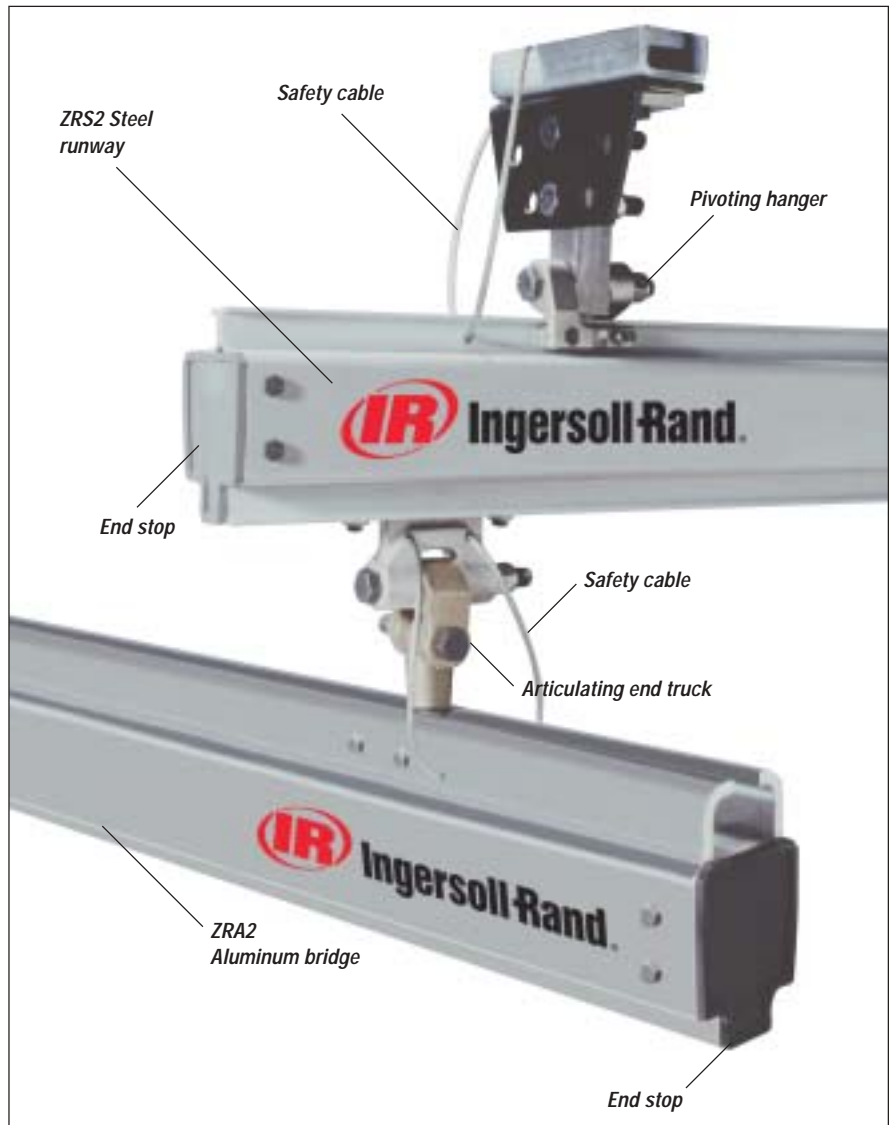
- **Deflection:** Ingersoll-Rand rail is designed to not exceed 1/450 of span, in accordance with ANSI B30.11 Monorail and Underhung Cranes.
- **Safety Cables:** We require the use of safety cables at all moving (hanger and end-truck) suspension points.
- **Redundant End Stops:** Available for extra safety.
- **Load Ratings:** Clearly marked on both sides of bridge rails.
- **Safety Factor:** All hardware components are rated at a 5 to 1 safety factor based on meticulous tests performed at independent testing laboratories.

Hangers

We offer a wide variety of hangers to attach to virtually any type of overhead steel. Available in either rigid (anti-compression) or pivoting styles to match the material handling operation, the hangers are available in fixed and adjustable lengths for all rails. For extra safety, We require that all hangers with a drop of 24 inches or greater have sway/thrust bracing for stability.

End Trucks

While we offer both articulating and rigid end trucks to match the material handling application, the primary system sold utilizes the articulating end truck. This feature maximizes the ability of the operator to precisely position loads by allowing them to move only the portion of the bridge crane near the load. This results in dramatic improvements over typical rigid end truck systems which require the user to move the entire mass of the bridge crane for each operation.



Ingersoll-Rand helps build a Deere

Overhead articulating bridge crane system from Ingersoll-Rand being used in a John Deere™ manufacturing facility.



Adjustable hanger shown with steel rail



Courtesy of Modern Material Handling Magazine.

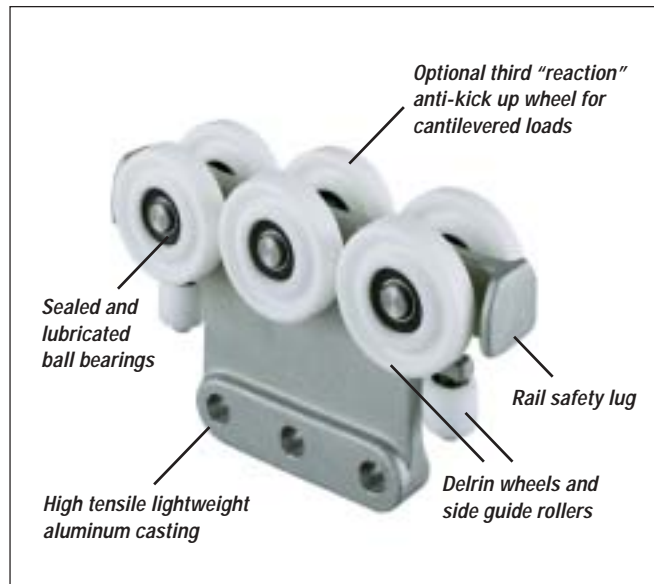
Advanced Trolley Design

Ingersoll-Rand trolleys are designed to work in conjunction with the Enclosed Track Rail to reduce the rolling effort required to move a load. In fact, only a force equal to one percent of the total rolling weight is needed when moving loads.

- **Lightweight:** Trolleys are primarily made from high-strength Almag castings. Also available in steel and stainless steel stampings.
- **Injection Molded Wheels:** Provide for clean, wear-free operation that resists flattening.
- **Sealed Precision Bearings:** In wheels and side guide rollers, they provide long life and reduced maintenance.
- **Rail Safety Lug:** Prevents the body of the trolley from being pulled through the enclosed track rail.
- **Versatile:** Ingersoll-Rand-built trolleys are available for use in virtually every manufacturer's enclosed track rail system.



Ingersoll-Rand bridge and runway system in a manufacturing plant.



Free Standing Workstation and Crane Systems

Ingersoll-Rand offers both standard and custom free standing floor supported systems. These systems allow for the placement of workstation rail systems independent of existing overhead structural steel.



Rail Systems



Power Supply

Air supply: Kits are available in both 3/8" and 1/2". Kits are available with a filter/regulator for use with Balancers and manipulator systems. We also supply air supply kits without the filter/regulator for use with oil-based pneumatic systems such as hoists and tractor drives.

Electrical supply: Kits are available to supplement virtually any type of electrical equipment. Insul-8 electrification systems are available.



Air supply festooning using pre coil tube assembly



Electric supply using Insul-8



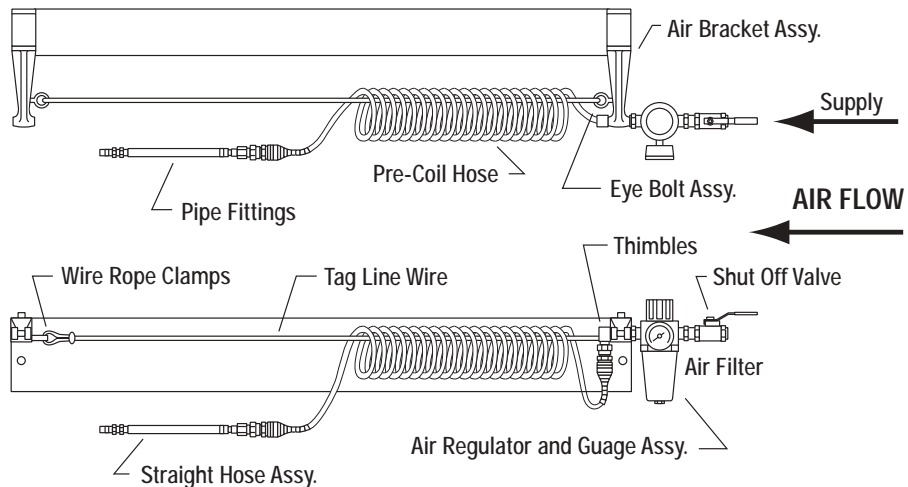
Powered track switch for use in monorail applications

Accessories

A wide range of accessories such as curved rail, track switches, bridge extensions, and custom designed components are available to enhance any crane or monorail system.

Air Supply Assembly

Keeps coil hose and electrical supply in place. Allows complete utilization of the bridge and runway system. Filter Regulator provides clean regulated air.



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