CLEVELAND TRAMRAIL
By Gorbel Inc.

GORBEL®
A CLASS ABOVE

The Best in the Business is Better Than Ever!

Cleveland Tramrail by Gorbel: A Name Built on Quality

Since 1977, Gorbel Inc. has specialized in overhead material handling solutions, providing the highest quality and highest performance products on the market today. We are the leading supplier of Work Station Crane systems, offering near perfect on-time delivery, a focus on customer service and the industry's best warranty.

Now we're bringing that same level of service to the Cleveland Tramrail line of patented track and components. Cleveland Tramrail has been the industry leader in the manufacture of patented track monorail and underhung crane systems since 1919. The addition of the Cleveland Tramrail product line will allow us to provide comprehensive solutions in higher capacities.

What do you gain when you choose Cleveland Tramrail?

- In-depth knowledge of the material handling industry
- Accurate, on-time deliveries
- Ease of doing business made possible by our cutting edge Web technology
- Quick Ship programs unmatched in the industry
- Superior customer service from a helpful, knowledgeable team
- Consistently high quality products
- Proven track record in providing overhead lifting solutions

Cleveland Tramrail products continue to reflect the quality that made Cleveland Tramrail the patented track leader, with the value added customer service and support that made Gorbel "A Class Above."

What is a patented track?

Cleveland Tramrail's unique patented track system continues to be the benchmark of the overhead material handling industry.

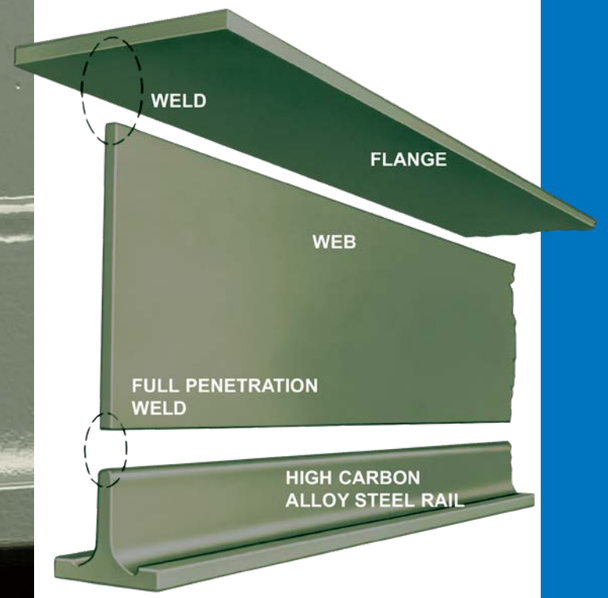
Its three piece welded construction is a compound section of a mild steel top flange and web and a specially rolled high-carbon steel lower rail. Patented track systems are characterized by consistently straight rail sections and durable, high quality atented track components. Our patented track systems offer unmatched versatility, durability and ease of installation.

Why Patented Track Over Structural Steel Track?

A structural I-beam is rolled from soft, mild steel according to fairly loose steel mill tolerances. Its bevelled flange prevents wheels from making balanced contact, causing uneven wear and a shortened track life.

Cleveland Tramrail's unique patented track, with its special raised tread and high carbon track, is superior to I-beams in strength, durability and consistency. Our exclusive rails permit the use of:

- Underhung carriers operating on a single straight, curved or inclined track
- Underhung cranes operating on two or more straight track runways.



Designed to be Low Maintenance!

"We've experienced less maintenance with the Cleveland Tramrail installation in one year's operation than had been required in a single week of operation with the I-beam runway just prior to its replacement."

Plant Manager
Babcock & Wilcox unit of
J. Ray McDermott & Co.

Patented track has a mild steel top flange and web and a high carbon steel lower rail with raised tread to resist peening.

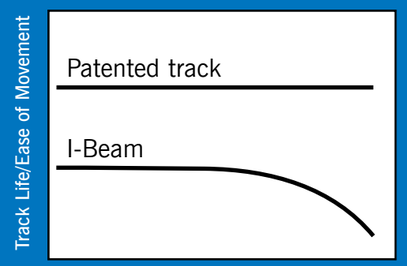
Continuous welding adds rigidity needed to cope with bending and twisting stresses of the most demanding applications.

The web and flange dimensions of each size are proportioned for maximum strength and spanning efficiency.

Patented Track: Engineered for Crane Applications

Peening caused the mild steel flange on this I-beam to bend, making it completely unsafe for crane travel.

Patented Track Outlasts and Outperforms I-Beams Over Time—Every Time!



Why choose Patented Track Systems?

- Track & components that stand the test of time
- Lower installation costs
- High quality designs mean reduced maintentance costs

Strong, Durable Rail

Patented track vs. I-beam

High carbon flange means longer track life

A common source of track wear is a process known as *peening*. Peening is the gradual movement of metal over time, caused by the rolling action of wheels. Because of I-beam's mild steel construction, peening tends to occur unevenly, weakening the beam flange and restricting smooth easy travel.

Patented track's raised tread design and extra hard alloy steel construction slow down the peening process. The full width of the raised tread wears evenly, extending track life well beyond that of I-beams.

Our raised tread provides durability and superior safety

The raised tread on patented track is 20 - 25% of the patented track rail thickness. And though this does add some strength, our stress calculations do not include the strength added by the raised wearing tread. That means you get even more strength and dependability because the rated capacity of the track is not affected by wear.

Since I-beams have virtually no raised tread, their initial load carrying capacity is in the total cross section. As a result, capacity and safety are greatly reduced as soon as the tread begins to wear.

100% weld penetration ensures quality

Patented track is manufactured using stringent quality assurance procedures. This is the basis for certifying 100% weld penetration for maximum strength, safety and rigidity. Extreme care is taken during track fabrication to maintain dimensional tolerances. Our tracks are straight and true with minimum distortion, so:

- Installs are quick and easy
- Load distribution is uniform
- Tracks and components last longer

Stop Throwing Away Your Installation Dollars!

Our stringent quality standards in manufacturing guarantee consistently straight, high quality beams. Plate is cut to size and leveled by precision machinery. Special equipment uses continuous welds to insure absolutely straight, uniform track. Standard mill practice dimensions for I-beams have tolerances more than twice those for patented track rail. For example, allowable sweep per 10' of structural beam may be as high as 1/4" while patented track rail is less than half that at 3/32".

Is It Really Cheaper to Use an I-Beam?

Consider the time and money you're throwing away during installation: redrilling holes and cutting, fitting, and shimming rails in order to align I-beams that aren't straight. Our consistently straight rails result in easy, predictable, cost effective installations.

Straight Rails Make System Expansions Easy

These tight quality standards even make system expansion and reorganization easier and more cost effective. Consistently straight beams will reduce labor costs when you want to expand a crane system or rearrange a work area.

Our Weight Is In All the Right Places

Efficient Design for Spanning

The thickness and width of patented track's web and flange for each size have been carefully engineered to maximize strength and loading capability while minimizing weight.
Patented track's three piece welded construction:

- Delivers maximum load carrying capacity to dead weight ratios
- Provides ability to cost effectively span longer distances
- Eliminates costly additional supporting structures
- Reduces drag in a manual system

I-beam simply can not match patented track's carrying capacity to dead weight ratio. Structural I-Beams are manufactured for a purpose other than overhead material handling. Because of this, they are manufactured to much looser mill tolerances than many crane and monorail applications require.

Standardized lower flange

Standardized lower flange provides compatibility

Patented track features the same 3-1/4" wide lower flange regardless of rail height or load carrying capacity.

- Allows systems to be easily expanded or rearranged
- Ensures compatibility of components
- Lower costs when suspension points vary

The lower flange of an I-beam increases in width and thickness as its depth increases. Beams of different sizes are therefore not compatible. The result? I-beam crane systems are costly and difficult to expand or relocate.

Rugged, Long Lasting Components

Hardened wheels to ride on high carbon track

Our forged, heat-treated wheels are built to last. They provide years of smooth, easy movement and reliable service. They have been:

- Designed to roll with minimal resistance (2 times easier than I-beam)
- Machined to meet the surface of the track for consistent, full contact and longer life
- Engineered to avoid flat spots for smooth, uniform rolling

Rugged end trucks and carriers

Cleveland Tramrail end trucks have been carefully engineered to provide the finest performance with little or no maintenance.

Extended drive life

All gears and shafts in Cleveland Tramrail drives are made with a remarkable alloy-steel that was chosen after long, grueling tests. This special alloy allows the drives to hold up to the wear and tear of constant service. This adds many years of reliable service to the motor head.

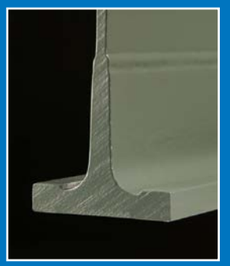
Flexible Suspensions

Flexible suspensions provide longer system performance and lower maintenance costs

Patented track is suspended using ball and socket connections, permitting the track to float in all directions. This means it can compensate for structural movement by allowing tracks to move and adjust to crane wheel centers. This:

- Prevents damaging stress
- Dampens shock loads
- Allows for smoother operation

In other words, patented track rails can adjust to loads as they move, enabling carrier wheels to maintain consistent contact. This "load balance" of the wheels and components allows for longer life with less maintenance.



Standardized lower flange provides compatibility.

Case Study: Patented Track: A Better Solution than I-Beam

Cleveland Tramrail Keeps Paper Industry Moving

Seven Cleveland Tramrail crane systems are the key to moving product around a Pittsburgh manufacturing plant. This plant manufactures fabric that is used in the paper industry to drain water out of the pulp mixture. On one end of the facility, the fabric is woven on looms using fishing wire. These pieces of woven wire are then seamed together in widths up to 40', taken off the loom and draped onto aluminum rolls.

These rolls weigh hundreds of pounds and their width makes them quite awkward to manipulate. It is vital to the quality of the paper that this fabric is free from impurities, so extreme care must be taken when handling these rolls.

Why was Cleveland Tramrail the best choice for this application?

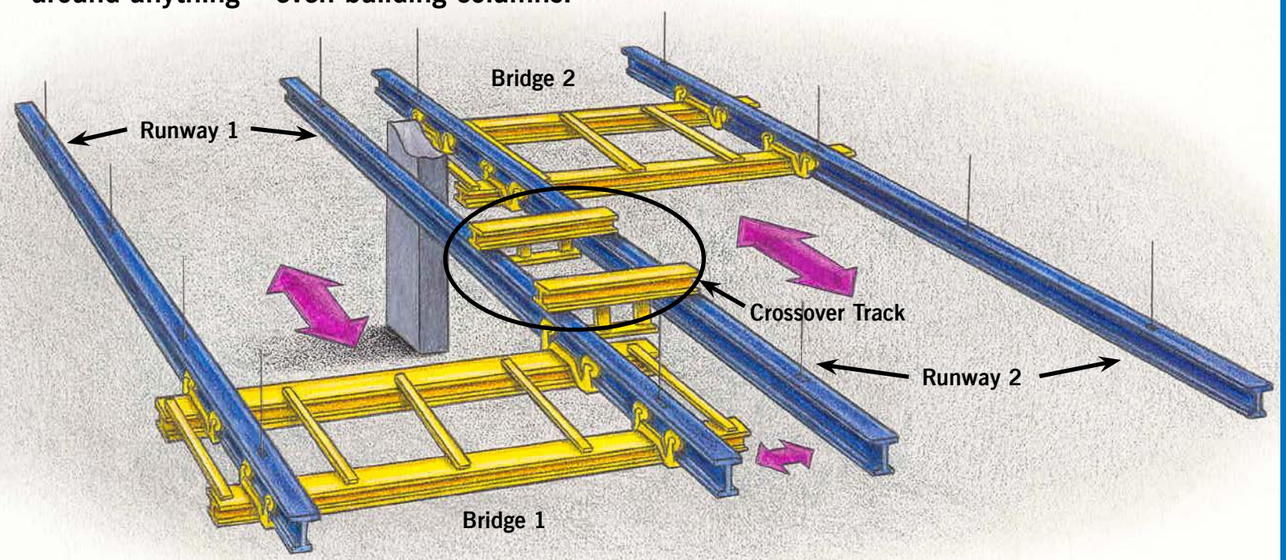
Capacity 3-ton double girder cranes

Durability I-beam wears too quickly for a high duty cycle application like this where cranes are lifting and positioning rolls at a rate of 15 to 20 lifts per shift.

Building Design Interlocks were needed to move the fabric rolls around building columns between the two systems. Cleveland Tramrail interlocks are so safe and simple to operate that transferring loads from one system to another is quick and easy.

Headroom Constraints The design of the building created headroom constraints. The size of I-beam needed for these loads would not have fit within the constraints of the building.

Our interlocks let you move your loads around anything—even building columns.



How do our interlocks operate?

1. Both bridge girders approach the crossover track. The operator pushes a button powering a gear motor that activates a pair of rollers.

2. The bridges line up with the crossover track. The rollers move from the interlocking beam toward a wedge type engaging mechanism on the crossover track (see Photo 2).

3. The rollers make contact with the wedge and self-align within 1-1/4" horizontal range. As both beams are interlocked, forks on powered and non-powered beams are raised for free passage of carrier (see Photo 3).

4. To disengage the interlock, the operator pushes a second button. Motor driven rollers move back and away from wedge, allowing forks to drop and make contact with rail tread. This prevents the carrier from travelling off the open end of the beam.

Cleveland Tramrail Bridge Components

Patented Track Rail

Patented track features specially rolled high-carbon alloy steel rail with raised treads welded to a steel flange and web.

Patented track is designed to provide maximum spanning capability for heavy loads while minimizing the weight of required material. Its material properties resist peening and assure a longer operating life than ordinary track designs.

Photo shows carrier with drive and SAFPOWRBAR® electrification.

Carriers (Trolleys)

Cleveland Tramrail carriers provide the connection between the lifting device and the bridge. Our carriers are designed for years of peak performance:

- The wheel base is proportioned for smooth, vibration-free carrier operation.
- Swiveling yoke provides unmatched performance through curves and switches on monorail systems, contributing to longer track life.
- Precision manufacturing and specially designed wheels assure consistent wheel to rail contact.
- The extensive variety of our carriers provides endless flexibility to tackle any application
- Manually driven carriers are also available

Belt-driven model show here.

Motorized Drives

Cleveland Tramrail's drives motorize the travel of carriers and end trucks. We offer:

- A gear driven drive, the best choice for most applications
- A belt driven drive designed to be a lower cost alternative to the gear driven drive
- A tractor driven drive for specialty systems, such as pulling loads up a slope or for use in wet conditions.

Our drives were specially designed to make them long wearing and easy to service.

- Guide rollers equipped with anti-friction bearings align wheels on track for easy movement
- Split frame construction for easy removal and reinstallation

Hanger Assemblies

Our hanger assemblies provide a connection between the patented track and structural support.

- Our hanger rods are made of high-quality steel with cold-rolled steel threads
- Adjusting clamp fits a range of flanges
- Ball and socket design compensates for structural shift
- Teflon® coated chair washers provide durable, long lasting performance

Motorized end truck shown here.

End Trucks

End truck with drive for motorized travel on runway

Cleveland Tramrail end trucks provide the connection between the bridge and runway. These rugged end trucks give you smooth, easy travel with little or no maintenance.

One advantage of our end trucks are their wheels. While other manufacturers have fixed wheels on their end trucks, our articulating wheels allow for irregularities in track and runways. End trucks can also be manually driven.

SAFPOWRBAR® is available in three materials for different applications:

- *Galvanized steel (standard) for 140 amps*
- *Stainless steel for 75 amps*
- *Copper for 300 amps*

SAFPOWRBAR® Electrification (Brackets, Collector Shoe and Bar)

Cleveland Tramrail SAFPOWRBAR® Electrification is used to deliver electric power to drives and hoists. This rugged, durable system is made to perform in the most demanding applications and environments.

- Inverted U-shaped conductor bars enclosed by flame resistant insulated covers
- Fiberglass molded insulators for double insulation, making them safer and more efficient
- Sliding current collector shoes inside the bars make positive, continuous contact with three surfaces of the bar for longer life and easier maintenance.

This bar is UL approved and perfect for bridge and monorail systems. It provides unmatched performance in complex monorail systems that involve switches and curves.

End Stop

End stops are required and must be provided at the ends of the carrier or trolley travel and at the end of crane travel on runways.

Our end stops are unique in that they strike the end of the load bar, rather than the wheels. This prevents the wheels from absorbing the force of the load and reduces the areas of wear.

We offer standard wheel end stops for lighter applications and rubber, spring or hydraulic bumpers for higher speed conditions.

Integrated Solutions for Every Application

This drawing shows how Cleveland Tramrail's underhung crane systems, including monorails, bridges, curves, switches, interlocks and SAFPOWRBAR®, can be used to efficiently move material overhead through an entire production facility.

Our Interlocks give you safe, smooth crane to crane transfers!

Cleveland Tramrail interlocks provide a safe, easy way to transfer from one crane system to another.

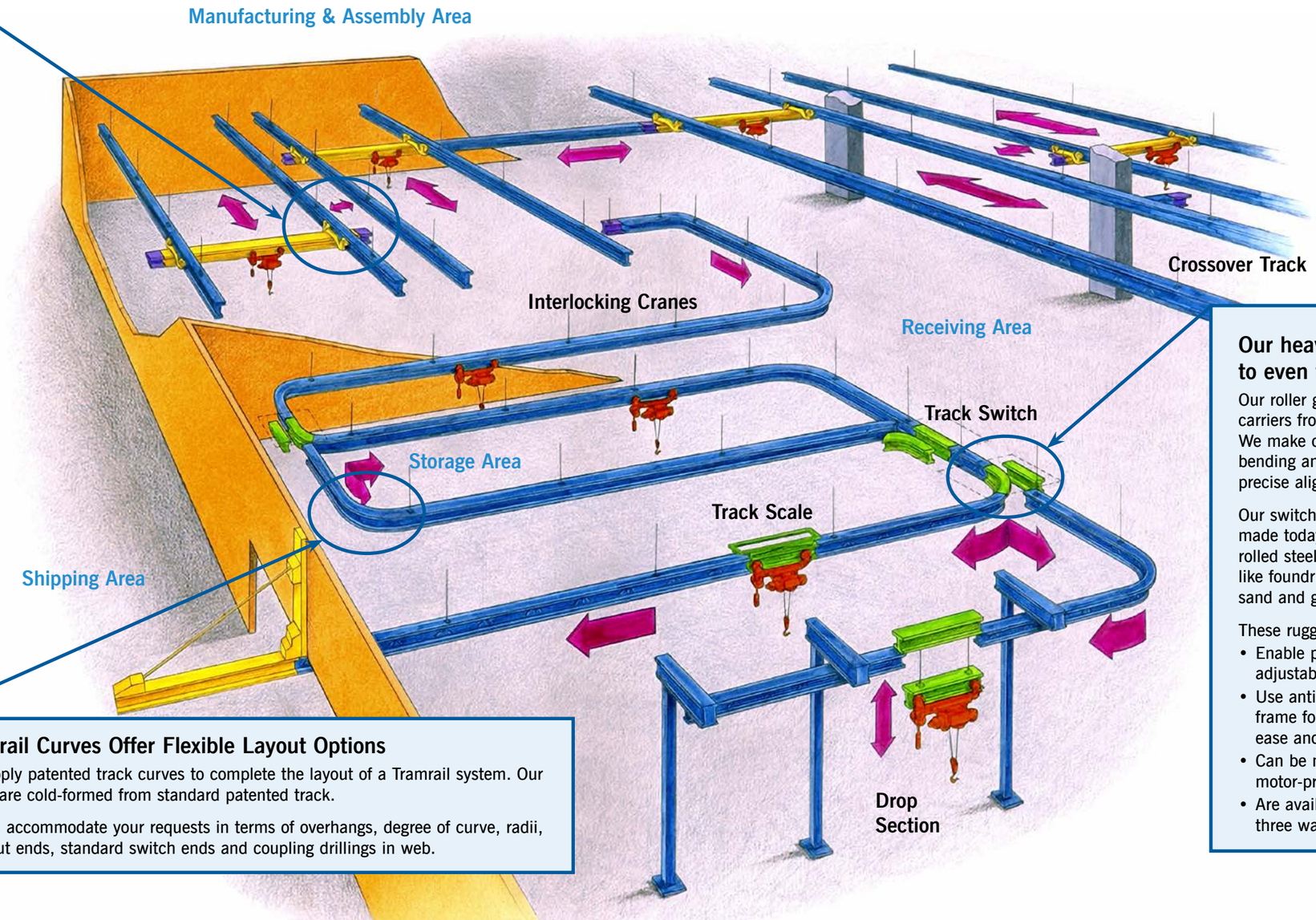
A real advantage is the automatic latch which is preset by use of a pull chain. This causes an interlock to snap into action immediately upon reaching the transfer point. The latch engages solidly and both sets of safety forks swing up simultaneously. No time is lost trying to jockey the cranes into position.

These rugged, reliable interlocks are available for manual and motor operation.

Cleveland Tramrail has built a reputation based on quality products, top notch service, engineering experience and application knowledge. This combination allows us to provide flexible integrated solutions. Plus, with local representation, we can work with you to solve any material handling problem.

SAFPOWRBAR® Electrification

SAFPOWRBAR® is ideal for a comprehensive system like this. It is simply the best choice in electrification for systems involving switches and curves.



Monorail Curves Offer Flexible Layout Options

We supply patented track curves to complete the layout of a Tramrail system. Our curves are cold-formed from standard patented track.

We can accommodate your requests in terms of overhangs, degree of curve, radii, undercut ends, standard switch ends and coupling drillings in web.

Our heavy duty switches stand up to even the toughest applications

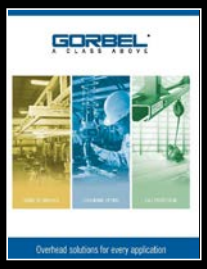
Our roller gliding switches guide loaded carriers from one overhead track to another. We make our switches with accurate curve bending and careful fitting so you get precise alignment and smooth operation.

Our switches are the heaviest duty switches made today. They are built from high grade rolled steel to stand up to tough environments like foundries, where prolonged exposure to sand and grit can ruin other equipment.

These rugged and easy to operate switches:

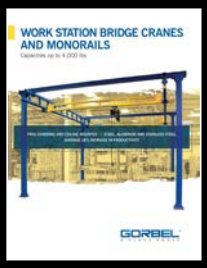
- Enable precise alignment due to an adjustable outer frame
- Use anti-friction rollers to carry the inner frame for even load distribution, operating ease and minimal wear
- Can be manually or motor operated & motor-propelled
- Are available in left-hand, right-hand and three way

Your authorized Gorbel dealer can give you more information on what makes Gorbel's Ergonomic Work Station Cranes and other Gorbel products "A Class Above."



Overview

Bridge Cranes

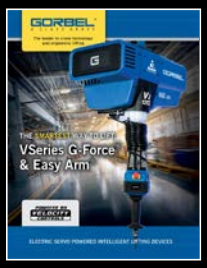


Work Station Cranes

Ergonomic Study

Ergonomic Lifting

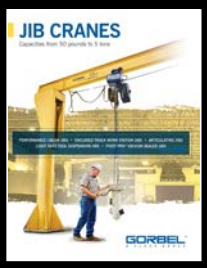
GS Series Hoist



G-Force & Easy Arm

Ergonomic Study

Jib Cranes



Jib Cranes

Fall Protection

Fall Arrest

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A CLASS ABOVE

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