

# HERCULES HOISTS LIMITED



## HERCULES ***ICRANE LR+***

**NEXT GENERATION LIGHT RAIL CRANE SYSTEM**



- ▶ ***iCrane LR+*** Light Rail System is the next generation light rail crane system for industrial environments, enabling improvement of productivity of handling loads up to 2000 kg.
- ▶ ***iCrane LR+*** helps increase production, productivity and efficiency while being easy to maintain
- ▶ ***iCrane LR+*** single and double girder cranes can be suspended from roof construction with standard suspensions or mounted on the floor with freestanding support frames

- ◆ Lifting
- ◆ Moving
- ◆ Storing

***Material Handling. Delivered.***

# HERCULES HOISTS LIMITED

Redefining material handling. Since 1962.

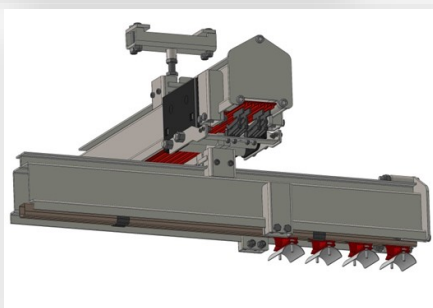
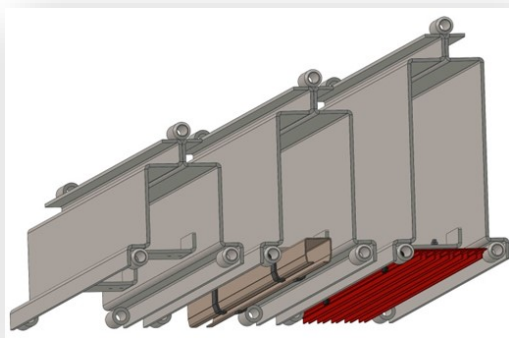
Our brand **Indef** is synonymous with customer requirements for LIFTING, MOVING and STORING.

Our **iCRANE** range of overhead material handling solutions have been specially engineered to provide optimised material handling solutions to our customers.

Big and small - our customer base spans almost all industrial sectors: name a sector and we can name a customer.

Our integrated design and manufacturing unit at Khopoli is equipped with contemporary manufacturing, assembly and testing facilities and has its quality systems certified to ISO 9001:2015 standards. Using contemporary design methodologies, our team of engineers design robust products and solutions to support the most demanding material handling requirements.

Checkout [www.indef.com](http://www.indef.com) to locate the support system closest to your location.



## **iCRANE LR+**

The **iCrane LR+** (Light Rail Crane) **System** is a comprehensive solution for industrial and / storage applications capable of handling loads up to 2000 kg.

Conceived, designed and built by proven experts in the field of material handling technologies with considerable design experience, the **iCrane LR System** is a patented\*, technologically advanced and efficient modular light crane system.

The **iCrane LR+ System** is suitable for being used in monorail and bi-rail configurations or as an underslung monorail with manually or electrically operated travel, for **capacities up to 2000 kg** and **wheelbase suspension up to 10 m**. They have been designed and produced with advanced design and validation software tools and using contemporary production technologies.

**iCrane LR+ Systems**, with manual or electric travel are designed and produced by for capacities up to 2000 kg and wheelbase suspension up to 10 m, The patented\* leading edge technology and design used in **iCrane LR+ Systems** which ensures high levels of safety and reliability, has been evolved in conformance with a strict "FMECA" (Failure Mode, Effects, and Criticality Analysis).

The **iCrane LR+ System**, is designed as an efficient material handling system for industrial or storage applications with cross or long travel movements that can be manually or electrically operated. The patented\* innovative design using modular parts allow the production of a wide range of **iCrane LR System** options.

**iCrane LR+ Systems** enable the following functions:

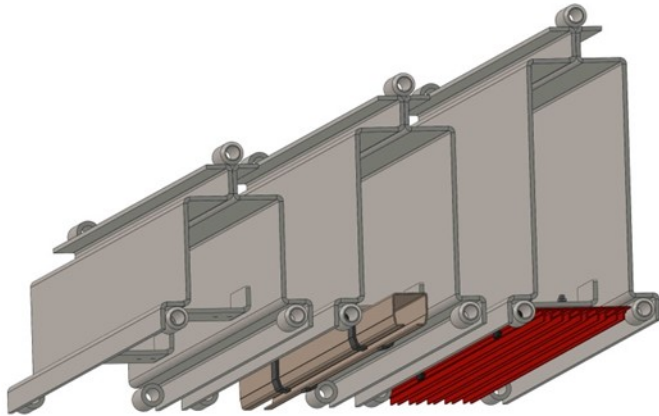
- ▶ Lifting the load in vertical motion, with lifting equipment, generally with an electric chain hoist or through lifting devices fit for such activity;
- ▶ Cross travel of the load, with the hoist mounted on an electrically or manually operated trolley, which moves along the main track of the "LR+" light crane
- ▶ Long travel of the load, using manual or electrical trolleys, which slide on the "LR+" track too.

As the **iCrane LR+ System** is an overhead material handling system enabling the users are able to use the floor area for manufacturing / production / storage applications.

The **iCrane LR+ System** as a crane or as a monorail is flexibly suspended with a ball and socket arrangement with adjustable tie-rods and cross bar with clamps, allowing it to move and adjust to compensate for structural movement and thereby absorbing horizontal forces and minimising loads on structures.

# ***iCRANE LR+***

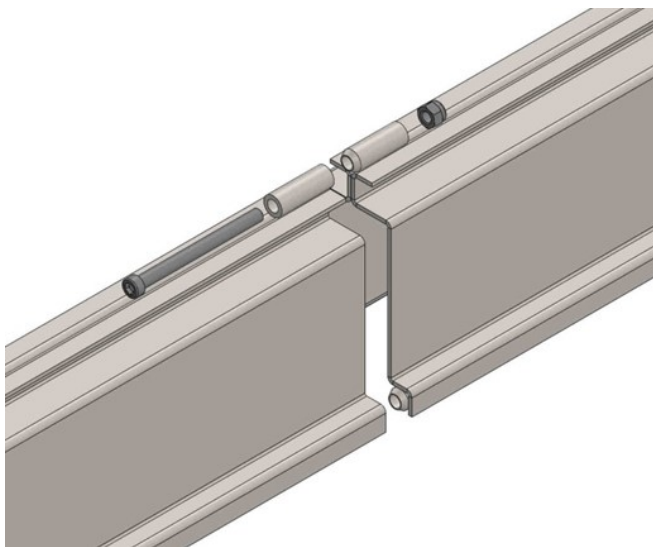
The innovative patented\* technology for the ***iCrane LR Systems*** uses modular parts allow the production of a wide range of light rail crane system options. The visually and technically distinct system which allows highly versatility for use, is achieved by the following basic framework:



## ***iCrane LR+ Systems Beams*** (patented\*)

***iCrane LR Systems*** beams are manufactured from high performance cold formed steel. The two mirrored halves are welded together to form a load bearing structure of high rigidity. The patented\* and uniquely designed ***LR+*** beam is able to deliver superior material handling, overcoming the technical limitations of similar other light crane systems and thereby offering the following distinctive advantages to users / applications:

- ▶ Ability to handle high flow of travelling trolleys and lifting components;
- ▶ Modular parts that form the system can be coupled easily and quickly, even at heights;
- ▶ Use of specially designed manual or electrical trolleys plying on external surface of the ***LR+*** beam;
- ▶ High visibility and fast accessibility of system to support inspection and periodic maintenance activities;
- ▶ Easy electrification of travel and lifting components, with trailing cable system and/or conductor system with current collectors easily incorporated in the ***LR+*** beam without space consuming additional accessories or loss of balance;
- ▶ Highly modular structure due to the possibility of connection between sections of different sizes.



## ***iCrane LR System Beams joint system***

The modular ***iCrane LR+ System*** beams (patented\*) can be connected with high durability bolted joints to form a continuous track for implementing a monorail system or light crane runways for travel of crane-trolley.

The joint systems used in the ***LR+*** beams ensure the best functionality and reliability of the system, as they are distinguished by the following technical details:

- ▶ Perfect alignment of profiles with precise centring given by the frustum conic compasses;
- ▶ Easy fitting and inspection, thanks to easy accessibility to the fixing screw;
- ▶ Protection against unscrewing with use of binx nut and auto locking;
- ▶ Corrosion protection with bolted and galvanized joints.

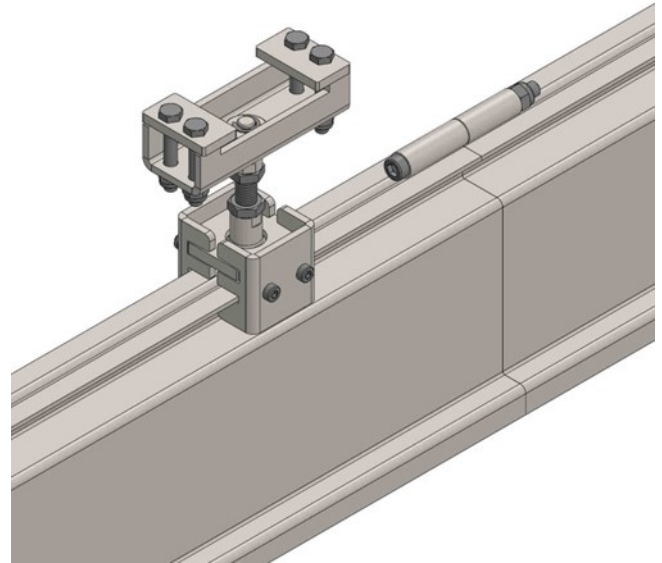
# iCRANE LR+

## **Suspension system of "LR+" Beams**

The patented\* modular LR+ beams operating as a monorail or light crane runways, are suspended on articulated joints in a ball and socket arrangement. This articulated suspension allows "pendulation" (max. 8°), thereby minimizing horizontal forces and stress on support structures.

Suspension system is formed by:

- ▶ Suspension crossbar, with fixing clamps for supporting structures with provision for the ball holding arrangement;
- ▶ Threaded tie-rod, to adjust the level of LR+ beam and provided for the connection within the threaded hole of ball arrangement. It is secured against unscrewing;
- ▶ Bracket of suspension of the LR+ beam. It is made up of by two half-brackets, connected through bolted joints, within which is located the support of the other end of the ball arrangement which lodges with a threaded hole



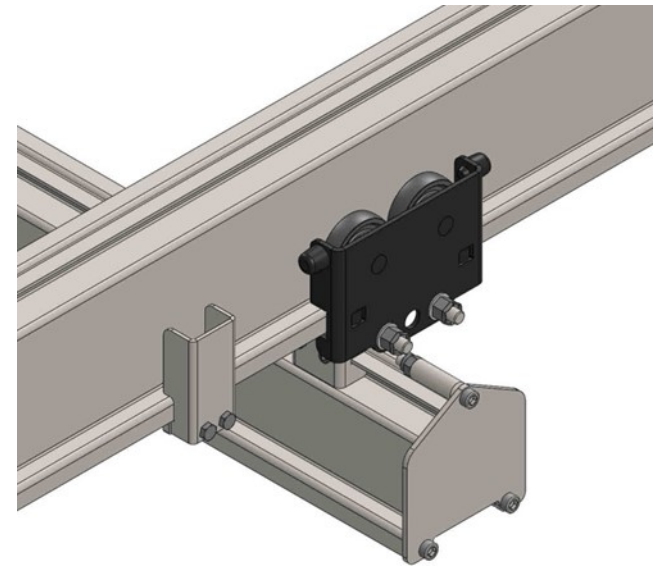
## **Travel System (Cross Travel / Long Travel) for "LR+" Beams**

In order to allow horizontal movements on LR+ beams for hoist (cross) travel and long travel, Model LRT standard trolleys are used: in a manual push execution "LRT-M" and in electrical execution "LRT-E".

"LRT" trolleys that slide on the lower wings of LRS beams, according to their capacity, can be simple, double or multiple as well, with balance and other characteristics as elaborated in the catalogues of our electrical chain hoists: HC+ / GC.

To complete cross travel and long travel system, travel limiting system / stop terminals are available:

- ▶ Travel limiting system, formed by brackets with clamp designed to adjust the run of trolleys "LRT" along the length of LR+ beam;
- ▶ Stop terminals, fixed at the end of the LR+ beams through bolted joints, define the very end of "LRT" trolley running.

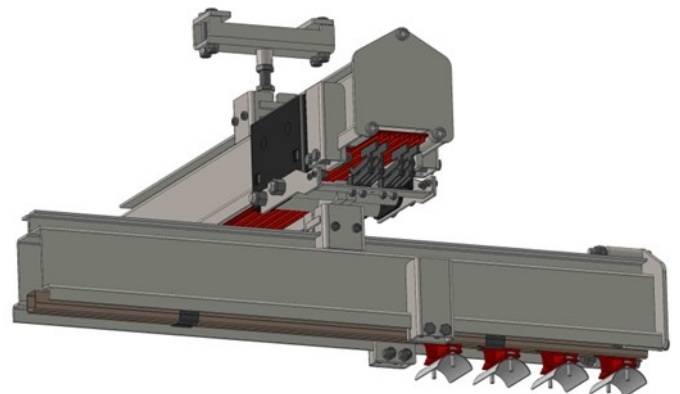


## **Power supply system**

Electrical power supply system with its moving accessories on all types of LR+ beam can be handled either by:

- ▶ Flat four pole "Bus bar" with block plug for protection against risks of accidental contact. This permits unhindered and safe power supply for several uses on long tracks lengths; Or
- ▶ With a flexible festoon line cable system with trolleys positioned inside the LR+ beam.

In both the options, the electric supply system is located in a specially designed, protected space in the lower part of LR+ beam. This system is patented\* by and is extremely safe and flexible to use, as also easy for maintenance and to inspections.

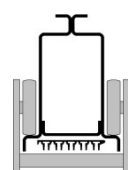
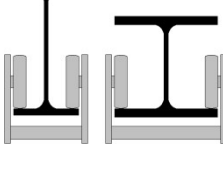
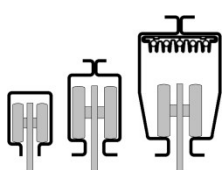
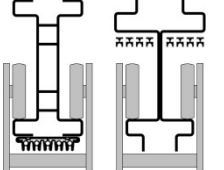


### Competitive advantages of the iCrane LR+ Systems

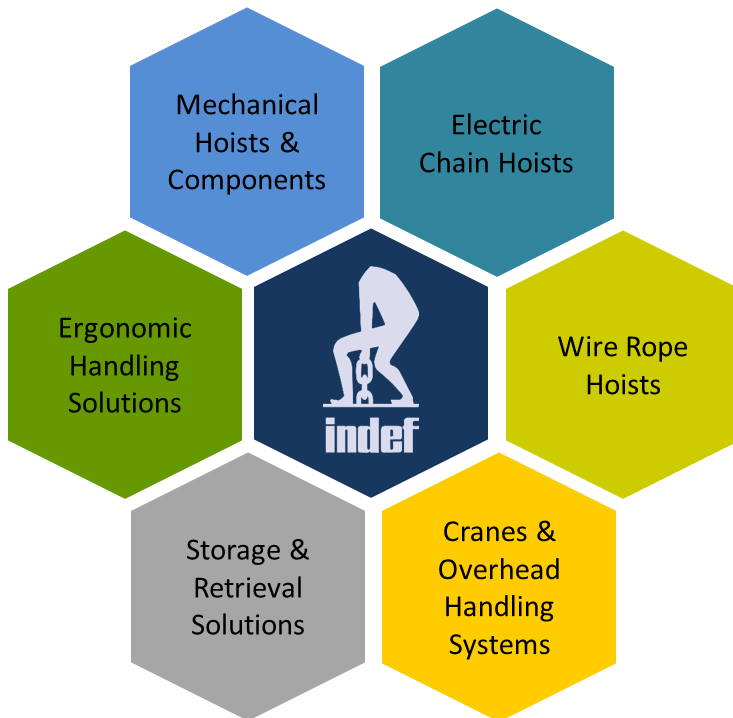
The **iCrane LR+ Systems**, achieves through its patented\* coupled modular parts, a safe working load capacity up to 2.000 kg and wheel base suspension up to 10 m. The most crucial element of “competitive advantage” of **iCrane LR+ Systems** is the patented profile made from cold rolled steel and with a section bar in three different sizes as under:

Characteristic static and dimensional data, of iCrane LRS Beams				
beam VS kind	150	210	270	
Static data	Jx ( cm <sup>4</sup> )	393	1026	2071
	Jy ( cm <sup>4</sup> )	309	402	495
	yg ( cm )	8,36	11,56	14,70
	Wx ( cm <sup>3</sup> )	47,0	88,7	140,9
	Wy ( cm <sup>3</sup> )	44,1	57,4	70,7
	Massa ( kg/ m )	15,0	18,7	22,6
Elastic constant “e” = 99,20635/Jx		0,2524	0,0967	0,0479
Dimensional data	H ( mm )	150	210	270
	L ( mm )	140		
	A ( mm )	25		
	B ( mm )	24		

A summarised comparison of the technical details and consequent competitive advantages of the **iCrane LR+ System** Vs. solutions commonly used is as in the below table:

Technical Details ↓	iCrane LR+ Beam 	I Beam / H Beam (with outer trolley) 	Cold rolled steel tracks	
			Enclosed Sections 	“I” shaped sections 
Smooth sliding surfaces for trolley wheels	Yes	No	Yes	Yes
Reduced dimensional tolerances controlled construction geometry	Yes	No	Yes	Yes
Easy treatment, of surface preparation and painting, within the profile	Yes	Yes	No	No
High profile stability at horizontal forces caused by non vertical forces	Yes	Yes	No	Yes
Use of pull-push (manual) cross travel trolleys of small size	Yes	Yes	Yes	No
Use of electric cross travel low head-room trolleys	Yes	Yes	No	No
Bus bar fitting inside the profile without size modification	Yes	No	Possible in rare cases	No
Easy inspection of bus bar and sliding brushes	Yes	Yes	No	Yes
Easy inspection of wheels of cross travel trolley	Yes	Yes	No	Yes
Easy inspection of profile interior for to check corrosion	Yes	Yes	No	No
Connecting all profiles of range with different heights	Yes	No	Possible in rare cases	No
Introduction of counterbalances within the profile	Yes	No	No	Possible in some cases
Introduction of electrical and air supply items within the profile	Yes	No	No	Possible in some cases

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**At HERCULES HOISTS LIMITED, we have been redefining material handling since our inception in 1962.**

Incorporated with a legacy of leadership: the BAJAJ Group from India and with technologies from some of the world's best in the material handling business, we have moved and grown with the times, donning the mantle of market leadership and providing you with any solution that you may need for LIFTING, MOVING and STORING.

We are never very far from you and you can be assured of the optimum solutions and our best service from us at all times.

**Material Handling. Delivered**

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