Quick Guide

Light Crane Systems 2025

ERIKKILA

ERIKKILA OY

Founded in 1912 in Vyborg Finland, Erikkila Oy has specialized in lifting solutions since 1976. Erikkila developed the advanced Prosystem light crane system and has established itself as a significant pioneer in the industry. The company was the first to bring to market a bridge structure suited for low-headroom applications, as well as a patented overload indicator for light cranes.

Erikkila's headquarters and manufacturing facilities are located in Masala, Kirkkonummi—about 25 kilometres from Helsinki. All of its light cranes, jib cranes, and movable cranes are made from high-quality European materials and meet the strictest quality standards. A network of over 100 partners across 40 countries ensures comprehensive, worldwide customer support.

Erikkila's light crane systems are designed for workstations and production lines, offering lifting capacities of up to 2 000 kg. As part of the Kito Crosby Group, the company continues to lead the way in safety, reliability, and innovation.

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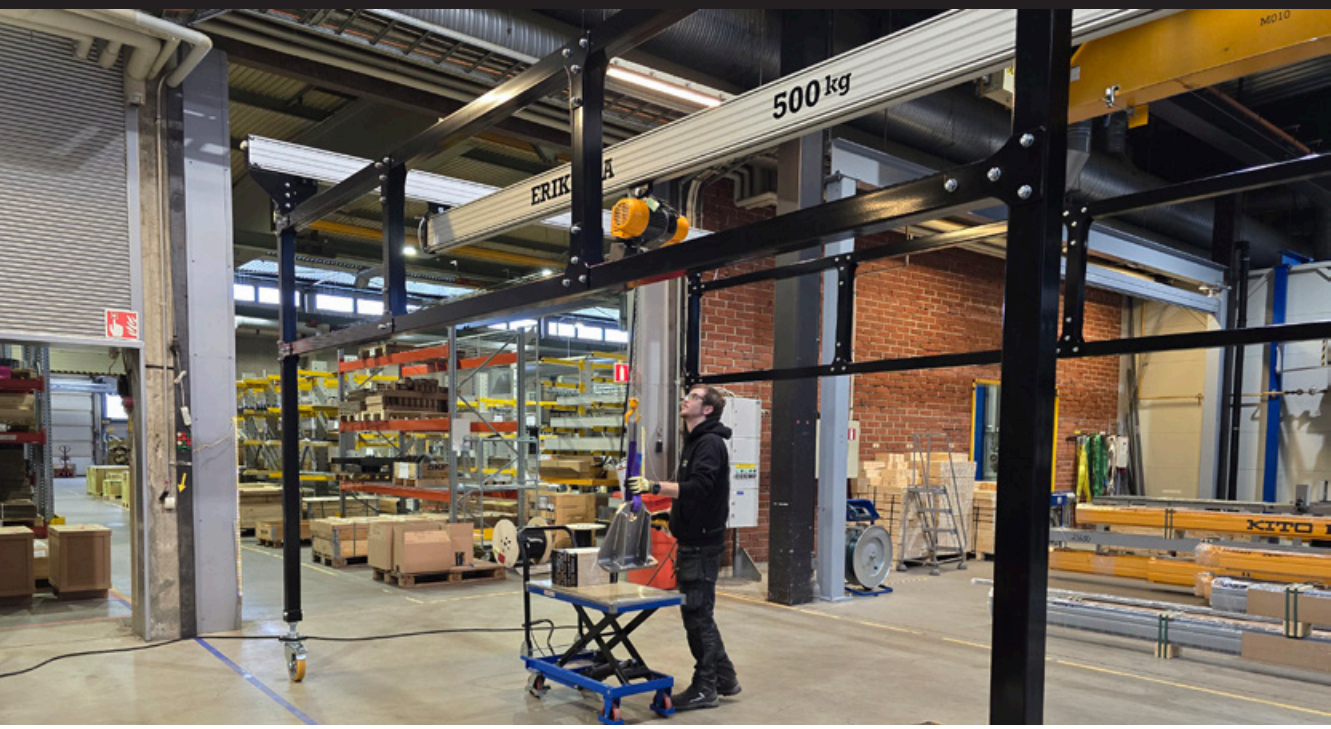


WELCOME TO THE WORLD OF TOP QUALITY AND INNOVATIONS

A Light Crane System (sometimes “Light Crane Solutions,” depending on context) is an efficient solution for a wide range of lifting and material handling needs. It is designed for light- to medium-duty lifting tasks, and when selecting the right system, both operational requirements and technical specifications must be considered. This guide introduces the basics of light cranes and supports readers in finding a suitable solution for their needs. It is intended for buyers, development and production managers, students, and anyone interested in Light Crane Solutions.

We hope you enjoy reading - with best wishes from the Erikkila light crane team!

For more information on light crane systems, dealers, and our solutions, please visit: **lightcranesolutions.com**.

lightcranesolutions.com

This guide focuses on Light Crane Solutions, with an emphasis on their fundamentals, design, and procurement.

Typically, these systems have a lifting capacity of about 50–2000 kg, setting them apart from heavier-duty cranes.

Light cranes are typically divided into three main categories:

- Light Cranes
- Jib Cranes
- Movable Cranes

The simplest systems may take the form of a single-track hoist between workstations, a jib crane in a welding station, or a movable floor-mounted portal crane.

Using these same elements, it is also possible to build a highly versatile system for internal material handling, particularly in spaces where the building structure or limited layout does not permit the use of forklifts or roller conveyors.

2.1 Light Cranes

A hoist track is usually installed on the ceiling or supporting structures. A trolley with a chain hoist runs along the track, enabling loads to be moved between two points, such as from a conveyor belt or pull-out pallet rack to a workstation.

A single-track solution allows only linear movement. By adding a single-girder or double-girder bridge between two parallel tracks, however, you create a complete light crane (bridge crane) capable of moving loads both longitudinally and transversely. The maximum span of a standard single girder is about 10 meters without special structures, while the track length can extend many tens of meters. As a result, a single bridge crane can cover several hundred square meters, and multiple systems can be interconnected to cover all required areas. These solutions are also highly flexible in terms of height, typically installed several meters above the floor, so that other machines do not obstruct lifting operations and to ensure efficient internal material flow.

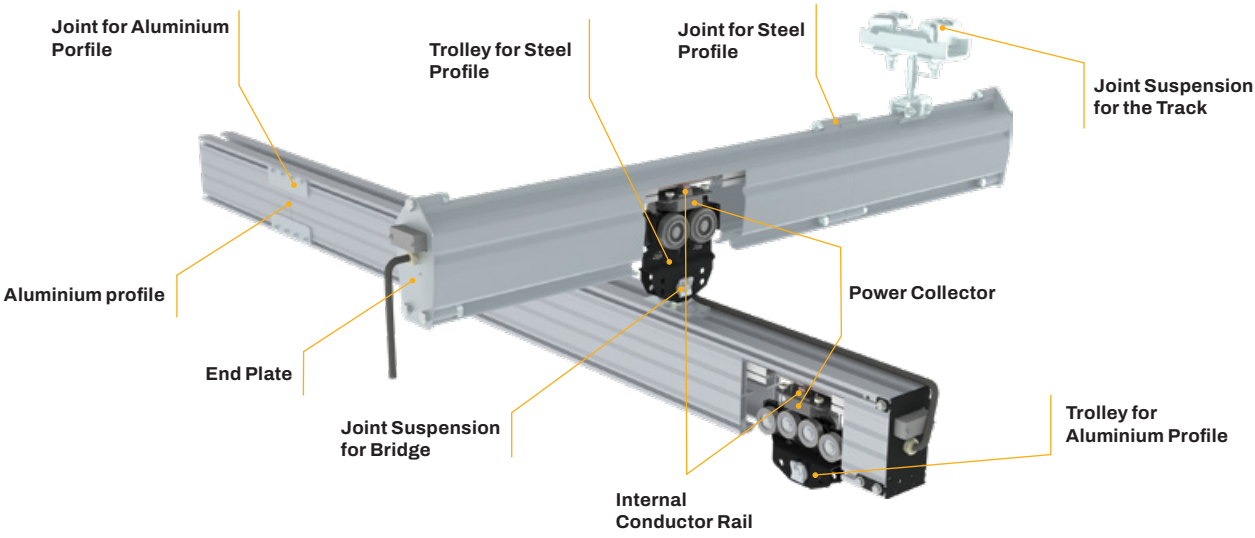
2.1.1 Main components of a light crane

Key components of Light Cranes include:

- Tracks (Steel Profiles or Aluminium Profiles)
- Trolleys
- Bridge Girder(s) (Single or Double)
- Hoists
- Lifting Accessories
- Suspensions
- Power Supply

Watch an illustrative video of the light crane system

Using these components—together with additional parts—different solutions can be built to meet almost any lifting requirement. The next section introduces the basic structure and functionality of a simple system, while later chapters will explore more specialized applications.



2.1.1.1 Tracks and Bridge Girders

Tracks are usually made of steel or aluminum profiles on which trolleys run, although I-beams are sometimes used as well. A single rail is called a hoist track, while two parallel rails supporting a crossbeam (bridge) form a light crane, also known as a bridge crane.

The bridge is a beam (or two beams) suspended between two rails. Trolleys at each end of the bridge travel along the tracks, allowing the bridge to move from one end of the track to the other. A hoist is usually suspended from a trolley on the bridge, enabling movement across the entire area between the tracks. If required, a single system can also be equipped with multiple bridges.

Tracks and bridges are made from aluminum or steel profiles, available in different sizes to suit specific requirements. The choice of material and profile height depends mainly on the required capacity, span length, operating environment, and the overall crane system size. In general, longer spans and heavier loads call for stiffer (taller) profiles. Additional factors influencing material and profile selection will be discussed later in this guide (see pages 19–20).

2.1.1.2 Trolleys

A trolley is a carriage with freely rolling wheels that run inside the runway profile, or on the outside in the case of an I-beam. Components such as a hoist can be suspended from the part extending below the profile, allowing the load to be moved along the runway.

Trolley for aluminium profile

Trolley for steel profile

2.1.1.3 Hoist

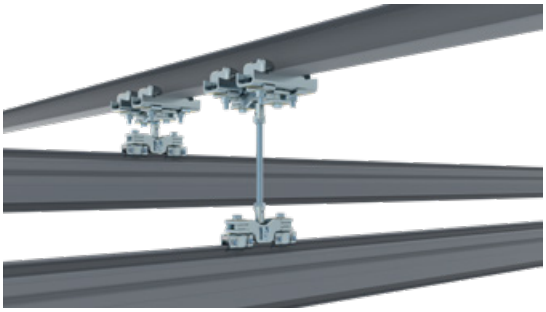
A light crane hoist is mounted on a trolley and can be operated manually or electrically. It uses a chain to lift a load, move it to the required location, and lower it—for example onto another area or a work surface.

Manual and electric Kito chain hoist

2.1.1.4 Lifting Devices

A lifting device is connected to the hoist and grips the load. The most common type is a hook, but many special attachments exist for unusual loads. Depending on the application, lifting devices can be mechanical, vacuum-based, or electrically powered.

2.1.1.5 Suspensions



Articulated double suspension for steel profiles

Light crane systems are installed using suspensions, which connect the rails to the supporting structure. Different suspension options are available depending on the type of structure, and they can be designed as either rigid or articulated.

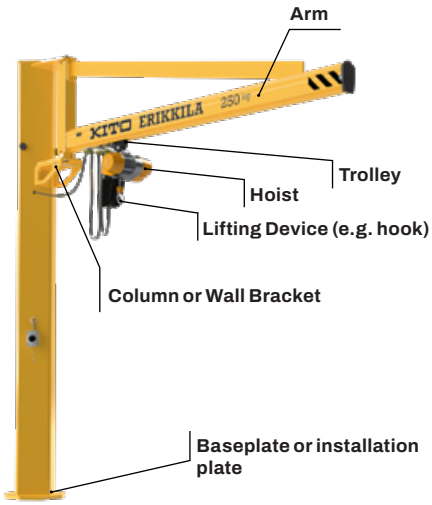
Articulated suspensions flex slightly during operation, preventing system damage and stress by allowing a degree of movement, and enabling easier maneuverability. Rigid suspensions, on the other hand, are required when the rail must withstand higher-than-normal forces—such as the greater upward loads induced for example by telescopic bridges.

Free Standing Light Crane

In some cases, the crane cannot be suspended from the ceiling or walls—for example, due to structural limitations. In such situations, the light crane system can be floor-mounted on its own supporting framework. A crane installation does not have to rely on a single type of suspension; in practice, different solutions can be combined within the same system.

2.2 Jib Cranes (Steel or Aluminium Profile)

A jib crane is attached by a pivot to its own column, to a building column, or to a wall bracket. The jib (arm) is typically 2–8 meters long, with a working radius of about 270° for a column-mounted jib or 180° for a wall-mounted jib. This radius defines the area the crane can serve. Operation often takes place near the jib tip, as moving the jib from its base can be physically more demanding. Typical lifting capacities reach up to 1,500 kg (about 1,000 kg at the tip of an 8-meter arm). Heights vary from under three meters up to around six meters, depending on the available space.



Beyond simply lifting loads, jib cranes are often used to carry cables—such as electric power, compressed air hoses, or welding cables—within a workstation. While this guide focuses on profile-based jib cranes (steel or aluminum profiles), many other variants exist that follow the same operating principle.

Jib cranes are generally more affordable than larger crane systems, though their reach is limited—an important factor to keep in mind when planning a solution.

2.2.1 Column or Wall/Column Console

A column jib crane uses a freestanding steel column anchored to the floor, while a wall jib crane is mounted on a console fixed to a wall or building column.

2.2.2 Arm

The jib arm is a steel or aluminum profile that carries a trolley and rotates around its mounting pivot.

2.2.3 Trolley, Hoist and Lifting Device

These correspond to the same components described in section 2.1.1: a trolley running along the arm, an electric or manual chain hoist, and a suitable lifting accessory (often a simple hook).

2.2.4 Example Application

- Workstations
- Repair shops
- Metal workshops
- Welding stations
- Assembly lines
- Warehouses

2.3 Movable Cranes

Sometimes it is neither necessary nor practical to fix a crane permanently in one location. In such cases, a movable crane—also referred to as a gantry crane, portal crane, or workstation crane, depending on the model—may be a suitable choice. Compared to fixed installations, movable cranes usually offer lower capacities and lifting heights, but if their specifications meet the requirements, they can be an excellent solution.

Movable Workstation Crane

Movable Cranes are ideal if:

- The buidling structure cannot support a ceiling-mounted system
- The workspace is temporary
- The production layout changes frequently

The capacity range is usually 50–1000 kg, with a total height of around 3.5 meters. A single-girder portal crane typically has a span of about 3.5–5.5 meters, while a larger workstation crane can cover an area of roughly 6 × 7 meters in its largest standard form.

Typical uses:

- Workstations in production or warehouses
- Frequently changing layouts
- Automotive repair shops
- Rented or temporary/seasonal facilities
- Floors with underfloor heating or insufficient load-bearing capacity for anchors
- Spaces without suitable wall/ceiling structures for mounting

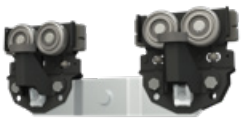
Double girder Portal Crane

2.4 Safety Enhancements for Cranes

Many optional safety devices are available to prevent misuse or mitigate damage from user errors. Common examples include overload prevention and collision limiters.

2.4.1 Overload Indicator

A mechanical profile overload indicator can be mounted on the trolley to prevent excessive profile spreading if the load exceeds the rated limit. When triggered, its metal ends embed into the profile. In addition to mechanical devices, electronic load limiters and scale-based overload indicators are also available.



Bogie EGW Trolley (External Guidance Wheels)

Overload Indicator (red)

2.4.2 Trolley Guide Wheels and Bogie Trolleys

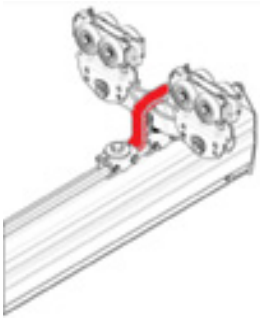
For heavier loads, special guide wheels can be used to keep the profile from spreading. In some cases, two trolleys are linked with a bogie or distance beam, distributing load across both trolleys.

2.4.3 Hoist Overload Limiter

In general, hoists are equipped with an overload limiter, which prevents lifting loads that are too heavy and significantly increases the safety of crane operation. The limiters can be either mechanical or electrical.

2.4.4. Anti-fall Bars and Wires

In the event of suspension failure, these bars or cables prevent the bridge from collapsing completely.



Anti-fall bar

2.4.5 End-of-Travel Stops and Collision Limiters

When transporting heavy loads, there is a risk that the trolley may not slow down in time and the trolley will collidate with the end plate. To prevent this, various mechanical or electrical end-stop solutions are installed on the rail or bridge profile, stopping the trolley before it strikes the endplate and causes damage. However, the trolley must always be stopped by the operator—end stops are not intended for normal braking, but serve only as a safeguard in case of user error.

Electrical limit switch

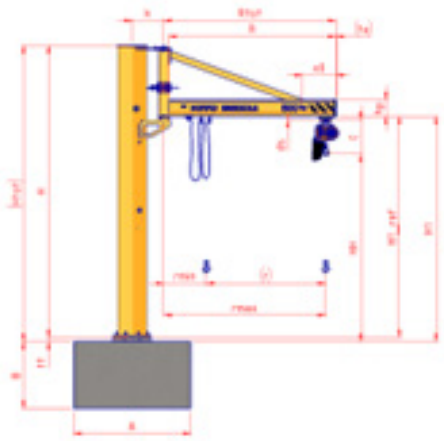
Distance Trolleys

If multiple bridge trolleys run on the same track, additional electrical or mechanical equipment is used to prevent collisions between them, such as mechanical distance trolleys or photoelectric (light- beam) sensors.

Cranes impose significant loads on supporting structures, so installation must ensure that these structures have sufficient load-bearing capacity to keep the cranes safe and secure throughout their service life. For this reason, every crane installation must involve a structural engineer to verify the strength and suitability of the building, as well as certified crane installers to assemble, install, and test the system. In practice, the crane manufacturer provides the client with the load data, and the structural engineer confirms that the building can safely withstand these loads. A crane receives its CE mark only after its installation has been inspected and tested by an authorized person.

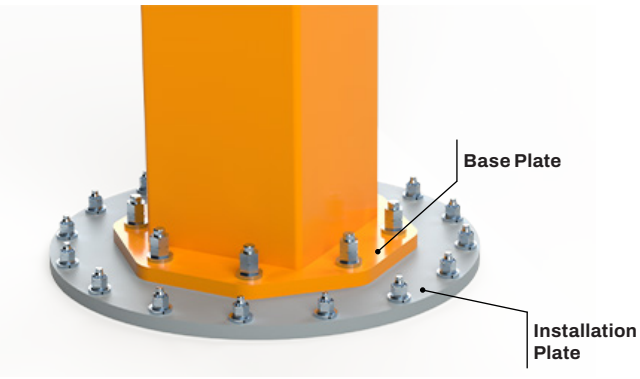
3.1 Light Crane Installation

A light crane can be suspended from the ceiling, attached to walls or building columns, or installed on a freestanding support frame—often in combination. Ceiling-mounted systems are typically fixed to roof trusses or pass through the ceiling structure. Wall-mounted systems use brackets or clamps, provided the wall can withstand the load. If neither the ceiling nor the walls is suitable, the crane can be mounted on a freestanding support frame anchored to the floor, assuming the floor has sufficient load-bearing capacity.



Example of Jib Crane and Bolt Cage Installation Dimensioning

3.2 Installation of Jib Cranes



Because jib cranes are subjected to very high loads, their foundations require special attention. When planning to anchor a jib crane to a wall, column, or floor, it is essential to verify that the target structure is suitable for the installation. In most cases, the most reliable information on a structure's load-bearing capacity comes from a local structural engineer. The crane manufacturer can provide general guidelines on the minimum required strength, but the final verification must always be made by a qualified structural engineer.

The column of a jib crane is anchored to the floor. Depending on the floor's load-bearing capacity, the column may be fixed directly through its base plate, with a larger installation plate, or into a cast-in anchor bolt cage. Jib cranes mounted to walls or pillars are typically secured using various types of consoles.

The choice of anchoring method depends on factors such as the wall's strength, the placement of reinforcement bars, and the size and construction of the pillar.

For floor-mounted columns, concrete quality, slab thickness, underfloor heating, and other structural conditions determine how—or even whether—the installation can be carried out. In older buildings, it is especially advisable to perform test boreholes to verify slab strength before ordering the crane.

3.3 Installation of Movable Cranes

Unlike other crane types, movable cranes do not need to be anchored to the building structure; instead, they rest on the floor via caster wheels. The floor must be level enough to stabilize the crane and strong enough to withstand the local pressure under the wheels.

As with all crane types, only authorized personnel are permitted to assemble, load-test, and issue the CE mark for the crane.

Vertically adjustable leg and wheel in movable workstations crane

3.4 Tailored Installations

Custom jib cranes and light cranes can be designed for highly specialized conditions. Accurate building plans and measurements are essential to ensure both safety and optimal performance. For situations where standard products are not suitable, consult your light crane supplier for tailored solutions.

Tailored Roof Installed Jib with Pneumatic Hose

Pillar assembled Jib with Energy Chain

Hoist track

Before ordering a light crane system, identify all loads it will need to lift—including their weight, dimensions, and any special handling requirements (for example, where the lifting device must attach).

4.1 Lifting Capacity: How heavy are the Loads?

The rated capacity (RC) specifies the maximum load a crane may carry, including the hoist and any accessories. For a light crane, oversizing should be avoided, as its key advantages are low weight, ease of movement, and ergonomic operation. The rated capacity must never be exceeded during use.

4.1.1 Selection and Classification of Chain Hoists

The weight of the load determines both the crane's structural design and the required hoist capacity. It is equally important to consider the hoist's duty cycle: hoists are engineered for different usage patterns, and their service life depends heavily on how intensively they are used. For example, if a hoist is only operated briefly each day and typically handles loads well below its maximum capacity, a light-duty model may be sufficient. For continuous use at full capacity, however, a heavy-duty hoist is required.

Hoists are classified by duty class, and your supplier can help define the correct class and select the appropriate model. The critical point is not to underestimate either the maximum load or the duty cycle, since overloading will significantly shorten the hoist's lifespan. On the other hand, an oversized or unnecessarily heavy hoist reduces the crane's usable capacity and may require additional suspension points and a stiffer profile. For cost-effectiveness, it is best to make a realistic assessment of both duty class and capacity needs.

Load Spectrum *		**Average Operating Time / Working Day (Hours)**			
L1	Light	2-4	4-8	8-16	More than 16
L2	Medium	1-2	2-4	4-8	8-16
L3	Heavy	0,5-1	1-2	2-4	4-8
L4	Very Heavy	0,25-0,5	0,5-1	1-2	2-4
Duty Class**	FEM	1Am	2m	3m	4m
	ISO	M4	M5	M6	M7

* Ratio of hoisted loads compared to nominal capacity
** Planned crane usage and frequency

Example of Kito Hoists – each has a specific duty classification:

- ED/EDC hoist 60–480 kg M4/1Am
- EQ hoist 125 kg–500 kg M6/3m
- EQ hoist 1000 kg M5/2m
- ER2 hoist 1500 kg–1600 kg M5/2m
- ER2 hoist 2000 kg M4/1Am

4.2 Lifting Height: How high are the Loads lifted?

Low Headroom Jib Cranes

Lifting height is the distance from the floor to the saddle of the hook when it is in its uppermost position.

In high spaces, the crane can be installed well overhead, but in low-headroom environments, specialized low-headroom light cranes or jib cranes may be required to achieve the necessary hook height.

4.3 Work Area

Do you need a linear work area, a swivel range, or broader coverage? The simplest option is a straight line between two points, served by a basic hoist track. Curves and switches can also be added to extend coverage to different positions beneath the track. A jib crane can cover up to a 270° working arc—for example, an 8-meter radius—but its most effective zone is usually some distance from the base, since handling loads close to the pivot can be more demanding. In practice, the most versatile coverage is achieved with a bridge crane, whose span can be matched to the dimensions of the required area.

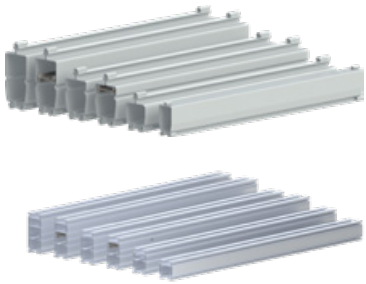
4.4 Operating Environment

4.4.1 Indoor vs. Outdoor, Temperature, and Dust Conditions

Cranes are generally designed for dry, relatively dust-free environments and operating temperatures between 0 °C and 50 °C. Conditions such as moisture, condensation, rainwater, salt, corrosive substances, or extreme temperatures can cause premature corrosion, wear, malfunctions, or other operational issues. It is therefore essential to inform the crane supplier in advance of any unusual operating conditions. This allows special requirements to be incorporated into the crane's design, outfitting, and maintenance program, ensuring the longest and most trouble-free service life.

4.5 Choosing the Type of System

The system should be selected—based on the considerations outlined above—primarily according to the area it must cover and the extent to which the surrounding structures allow different installation options. Other key factors include the size and weight of the loads, the required lifting height, and how often the layout is expected to change.



Steel and Aluminium Profiles

4.5.1 Technical features: Aluminium and Steel

Profiles for crane tracks and bridges are most often made of either steel or aluminum. The choice between the two depends on the requirements of the application, and a common question is when to select steel and when to select aluminum.

Aluminum offers advantages in lightness and ease of precise handling, while steel provides higher load-bearing capacity and is generally better suited for heavy-duty applications. There is no single 'right' choice, but the following guidelines can serve as a helpful starting point when designing a crane system.

Aluminium	
+ Light construction	Aluminium is easier to install and move, especially in long crane-beam structures. Its dimensional accuracy and the smooth surface quality of the track also contribute to its light weight.
+ Corrosion resistance	Thanks to the protective oxide layer that forms on its surface, aluminum is better suited than steel for certain humid or chemically aggressive environments. This oxide layer is most durable in contact with substances with a pH between 4 and 9; more acidic or alkaline conditions, as well as salts and other metals, can corrode aluminium.
+ Ease of handling	The lighter weight of aluminium reduces operator strain when using manually operated cranes, particularly with lighter loads.
- Load capacity limitations	Aluminium cannot support as heavy loads as steel, making it more suitable for lighter- duty applications.
- Cost	The material costs for aluminium are higher than those for steel.

Steel	
+ High load capactity	Steel is better suited than aluminium for heavier loads and longer spans.
+ Lower material cost	Steel is generally less expensive to purchase—and often to maintain—than aluminium.
+ Durable and robust	Steel does not bend or twist as easily as aluminium.
- Heavier	Installing and handling steel is more difficult, especially over long spans.
- Prone to corrosion	Steel requires surface protection in damp conditions. Today, steel profiles are most commonly powder-coated, which provides sufficient resistance for normal environments. In more demanding settings, steel profiles are typically hot-dip galvanized to ensure excellent corrosion protection.

4.5.2 Scalability

As operations evolve, you may need to expand or upgrade the crane system—something worth planning for from the very beginning.

Consider whether the required crane capacity might increase in the future. If so, select profiles that are sized to handle greater loads to avoid replacement later. Also consider potential add-ons, such as track electrification or compressed-air hoses; these are far easier to integrate if they are anticipated during the initial design phase.

As activity grows or shifts, the track's coverage area may eventually become too small. When investing in your first system, make sure compatible profiles will continue to be available and that tracks can be seamlessly extended or joined together.

4.5.3 Options and tailored solutions

Basic systems often include accessories that improve ease of use, safety, and versatility. Many of these are standardized catalog items, while others are custom-designed to meet specific customer needs. The following sections present a range of specialized solutions that can help a crane system perform its intended function more effectively—or adapt to spaces where a standard system cannot be installed.

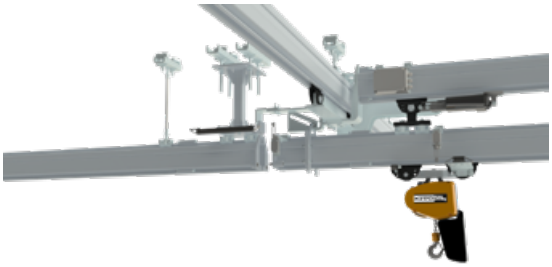
4.5.3.1 Hoist track curves

A traditional hoist track is straight, but it can be fitted with curved sections of various radii, allowing configurations such as closed loops or customized paths that follow production workstations. Standard curve sections are available bent to 15°, 30°, or 45°. When electrifying a curved track, the most practical solution is to use an internal conductor rail (ICR).

4.5.3.2 Telescopic Light Crane

A light crane's coverage area is typically confined within its tracks. This area can be expanded by adding a telescopic beam to the bridge, allowing the hoist to move laterally outside the tracks when needed. Because of the forces involved, a telescopic beam typically extends about one meter and supports up to 500 kg. Its actual capacity and reach depend on the hoist size and the mounting method, and must always be calculated on a case-by-case basis.

4.5.3.3 Track Lock



A track lock allows the hoist to be transferred from one crane to another. The bridge beam is positioned so the hoist enters the lock, which is then secured either electrically or manually. The hoist can then be rolled onto the adjacent track. This enables a suspended load to be moved to another crane without lowering it to the floor or using a separate transport device. Electrification is only possible when using an internal conductor rail (ICR).

4.5.3.4 Track Switch and Curve

A track switch (turnout) allows the operator to direct the load between two alternative routes. Typically, one route continues straight while the other diverts onto a sidetrack. The switch can be operated either manually or electrically, and it works on essentially the same principle as a railroad turnout. As with track locks, electrification is only possible with an internal conductor rail (ICR).

4.5.3.5 Turntable

A turntable can be installed at the intersection of crane tracks to transfer a load from one track onto a crossing track. The turntable rotates 90 ° and can be used with both straight and curved track sections.

4.6 Tailored Suspensions

In spaces with limited height, standard suspensions may not provide sufficient hook travel. In such cases, tailored suspensions can be engineered to achieve the required performance, with their limits defined only by physical factors such as load capacity and deflection.

Maximum lifting height with a tailored low suspension

4.7 System Control and Operation - Manual or Motorized

Light crane solutions can be entirely manual, fully motorized, or a hybrid of both.

For small, lightweight systems—such as movable workstation cranes or jib cranes—manual movement of the bridge and trolleys is often the simplest and most cost-effective option. Light loads are also easiest to position precisely by hand when high accuracy is required.

As loads, travel distances, or usage intensity increase, it becomes practical to partially or fully motorize the system. Both trolley and bridge movements can be electrified, and this is generally recommended when handling loads over 1,000 kg, when the system height exceeds 5–6 m, or when the bridge span exceeds 7–8 m.

Motorized movement reduces strain on the operator, improves ergonomics, and enhances safety. Electric drives typically include automatic end-of-travel deceleration and stops. In multi-trolley or multi-bridge systems, they feature collision-prevention functions. These safeguards reduce damage, improve safety, and extend the system's service life. A motorized bridge or trolley can also be designed to switch to manual mode when exact movement is required.

Hoists can be either manual or electric. Manual hoists are generally suited to light, mobile tasks such as facility maintenance or field service. For fixed installations and regular lifting operations, an electric hoist is often preferred, as it speeds up work and improves ergonomics by reducing operator effort. Even when the rest of the crane system is manual, an electric hoist is frequently the most practical choice.

Motorized bridge and limit switch

4.8 Electrification of the Crane System

Internal Conductor Rail (ICR)

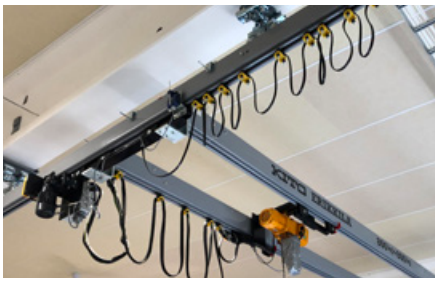
Common power supply methods include:

- Flat- or round-cable suspended from cable trolleys, trailing behind the hoist or bridge beam
- Internal conductor rail built into the bridge or track profile

Less common solutions include:

- External conductor rail mounted outside the track
- Energy-chain

The most cost-effective method of electrification is usually the flat- or round-cable system. It is easy to install and can often be retrofitted. In practice, however, cables hanging from the track may sometimes obstruct movement, and clearance must be left at the profile ends to accommodate them—limiting the end travel of the hoist or bridge. On longer tracks, pulling the cable trolleys becomes more demanding, and using multiple bridges or hoists on the same track is more difficult.



Flat Cable

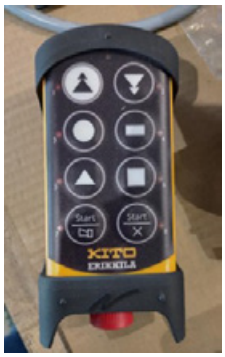
As the name suggests, the internal conductor rail (ICR) is integrated into the profile, and power is supplied through a current collector that moves with the trolley. Unlike flat- or round-cable systems, it eliminates external cables that might obstruct movement. The ICR is particularly well-suited for longer tracks, where multiple hoists or bridges can draw power from the same busbar. For spatial reasons, internal conductor rails are installed in taller profiles, even when the required lifting capacity alone would not demand it.

The final track length has a major influence on the choice of electrification method. As a general rule, a track with an internal conductor rail can be made substantially longer than one using flat- or round-cable systems—an important consideration when designing larger installations.

Other power-supply systems are usually applied only in upgrades or extensions of older installations, or when structural constraints or unusually high power or voltage requirements make standard internal busbars or cable trolleys impractical. Because of their higher cost and more complex construction, these alternatives are not recommended for standard installations.

4.8.1 Controllers

Motorized bridges, trolleys, and electric hoists can be operated either by radio control or by cable pendant. Radio control offers the advantage of wireless operation, while many operators prefer the reliability of a cabled pendant. For added security, a cable pendant can also be installed as a backup, to be used only if the radio control is unavailable.



Radio Controller

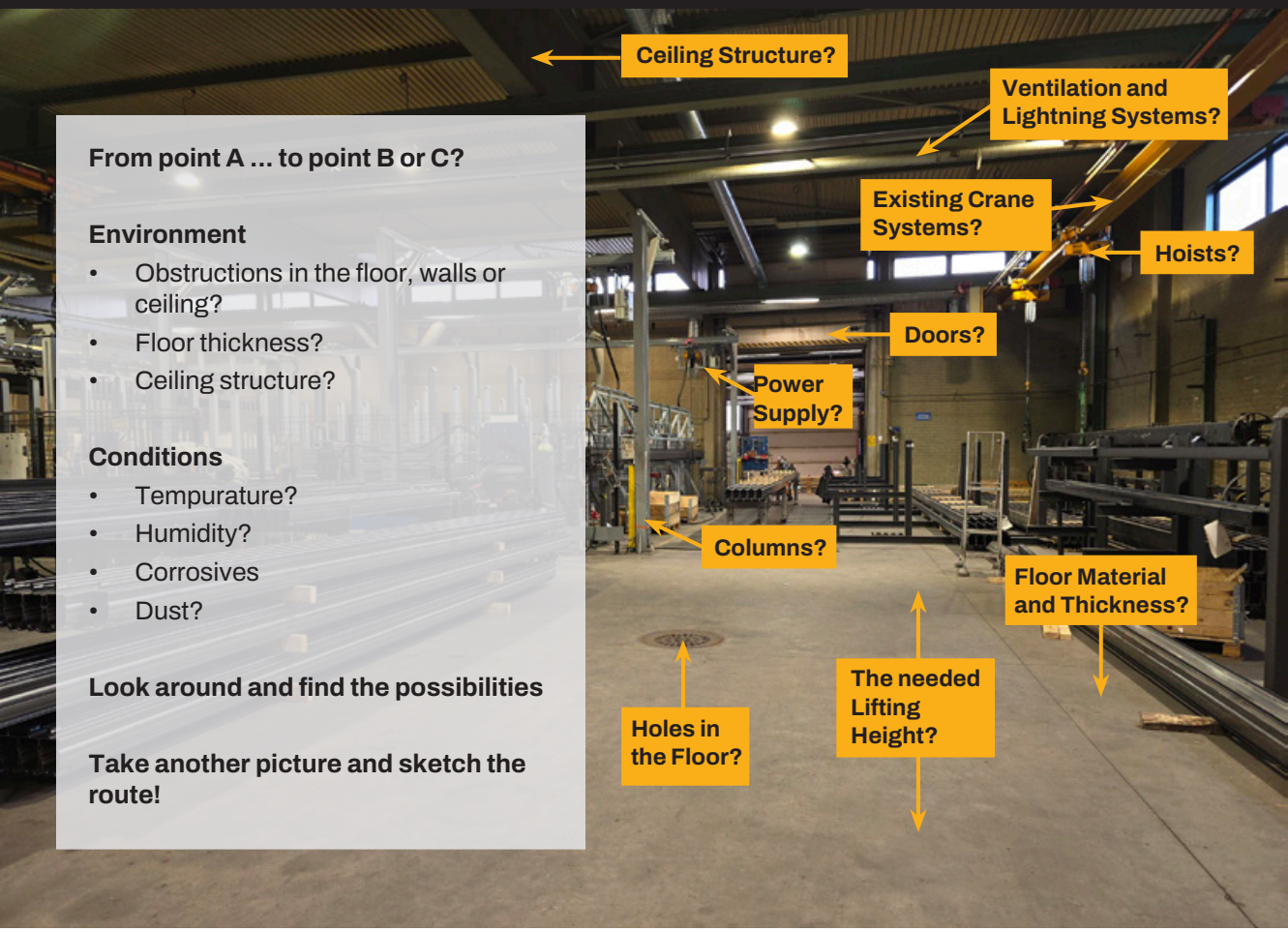
4.9 Installation and Space Requirements

The characteristics of the space play a critical role in every crane installation project. The placement, orientation, and load-bearing capacity of the structures determine how a light crane system can be selected and mounted. A local structural engineer must always verify the strength of the relevant roof structures, columns, walls, or floors, and approve any required modifications or reinforcements. Where structural capacity cannot be reliably confirmed, test boreholes are strongly recommended.

Beyond load-bearing capacity, all potential obstacles in the space must be identified and mapped. These include shelving, walls, overhead doors, expansion joints, HVAC or electrical installations, and other constructions. The operating envelopes of other cranes in the facility must also be considered to ensure that material flows remain unobstructed.

Accurate room dimensions are essential for crane-system design: length, width, and height; the size and location of columns and other obstacles; the spans and positions of roof trusses; and any fixtures or impediments that might affect installation or operation.

Light cranes are designed for ambient temperatures of 0 °C to 50 °C under normal humidity conditions (< 80%). For environments that are exceptionally humid, cold, dusty, or corrosive, consult the crane supplier for special-purpose solutions. In applications such as food processing, crane systems can also be customized to meet stricter hygiene and cleanliness requirements more effectively than standard models.



From point A ... to point B or C?

Environment

- Obstructions in the floor, walls or ceiling?
- Floor thickness?
- Ceiling structure?

Conditions

- Tempurature?
- Humidity?
- Corrosives
- Dust?

Look around and find the possibilities

Take another picture and sketch the route!

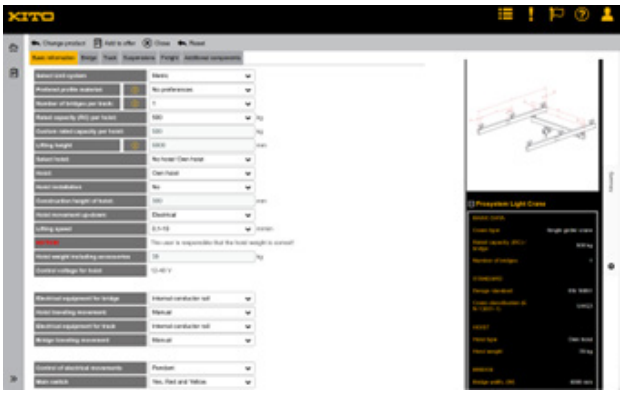
Even at the procurement-planning stage, it is advisable to review the building and its intended use together with the installer, in order to identify and avoid potential pitfalls as early as possible. The installation provider can also recommend special solutions if standard products are not suitable.

A crane system installation is only considered complete once it has been inspected, test-loaded by an approved inspector, and issued with a CE marking. For this reason, crane erection must always be carried out by qualified professionals and is not permitted for end users.

5. Configurations

Calculating the structural strength of a crane system is a complex task that must account for multiple factors: required capacity, profile strength, the positions and spacing of suspension points, profile lengths and joint locations, and the allowable deflection of each element.

In the past, crane systems were dimensioned and drafted by hand using initial data. Today, the same work is typically carried out with internet-based configurators, which generate optimized calculations and drawings from the supplied values. For specialized cases not suited to configuration, designers still perform the dimensioning, calculations, and design work manually.



Configurator View

6. Supplier Selection

All cranes and crane systems require CE marking, which can only be granted after successful inspection following installation. Because cranes handle heavy loads, professional installation and high-quality components are essential to ensure safety in the work environment.

A reputable crane supplier will provide durable, safe cranes and hoists, and will manage professional design, installation, inspection, maintenance, and upgrades throughout the system's service life. Ensure that your chosen supplier can reliably provide spare parts, training, and technical support when needed.

Warranty length and coverage should also be considered. Plan your maintenance and inspection schedule in advance: in addition to regular servicing, certain components must be replaced as they wear, and a safety and condition inspection—depending on usage—should be performed, typically on an annual basis.

A well-maintained and regularly inspected crane is the best guarantee of safe, trouble-free operation over its entire lifespan.

7. Budgeting

When procuring a crane, it is essential to consider not only the purchase price but also the installation costs. These include both the direct cost of installation work and indirect costs such as production downtime in the installation area, rental of forklifts or personnel lifts, and other related expenses. A professional crane supplier can help estimate these costs and provide a comprehensive package covering the entire installation.

Lifecycle costs must also be taken into account, including maintenance, inspections, repairs, and possible upgrades. For this reason, you should ask for a service agreement from your crane supplier.

A service agreement ensures that maintenance and inspections are carried out on schedule—helping you avoid unexpected costs and providing reliable crane operation throughout its lifetime.

8. Maintainance and Inspections

Proactive maintenance and inspections throughout a crane system's lifecycle improve safety, reduce downtime, and lower overall costs. Establishing a regular maintenance schedule or service contract ensures that all required tasks are completed on time and documented consistently.

In Finland, cranes must undergo an annual inspection and a comprehensive statutory inspection every ten years, both carried out by qualified personnel. During the ten-year inspection, worn components must be replaced with new ones. If an inspection has not been performed, the crane must not be used.

For detailed information on inspection requirements, qualifications, and documentation, consult your local crane-system supplier or the relevant authorities.

9. Safety and Training

Only personnel who have been trained and formally authorized in writing by their employer may operate a crane. The employer must be able to demonstrate that licensed operators have proven their knowledge and skills in crane operation.

In practice, this requires a workplace training protocol: employer-appointed instructors familiarize new crane operators, who must then complete both a theoretical exam and a practical skills test. The results of these assessments are documented and retained so they can be presented, if necessary, to occupational-safety authorities.

Alternatively, operators can be trained by an external provider. Many of these organizations offer both classroom and online training, maintain records, issue certificates and operating permits, and manage documentation and follow-up as a full-service solution.

Operator licensing and training requirements vary by country, but the core principles remain the same. Always consult your local crane supplier or relevant authorities for guidance on region-specific regulations.

10. Summary

The choice of a light crane system depends on your needs and work environment. Look over the available options and their features, ensure the supporting structures are strong enough, and confirm that the space is free of obstacles. Careful procurement planning, selecting a reputable supplier, and providing safe operation will help your light crane system serve efficiently and reliably for many years.

The table below provides a quick overview of the main features of the different crane types.

Selection			Suspended/Freestanding			Suspended/Freestanding						
			Single girder crane bridge			Double girder crane bridge			Single girder hoist track	Double girder hoist track	Column/wall jib crane	
			Articulated	Rigid	Low headroom	Articulated	Rigid	Low headroom			Standard	Low headroom
	Transportation	Linear	o	o	o	o	o	o	oo	oo	o	o
		2-dimensional	oo	oo	oo	oo	oo	oo	-	-	oo	oo
Steel	Capacity	<250 kg	oo	oo	oo	o	o	o	-	-	oo	oo
		<1000 kg	oo	oo	oo	o	o	o	oo	o	oo	-
		<1250 kg	oo	oo	oo	o	o	o	oo	o	oo	-
		<1500 kg	oo	oo	oo	o	o	o	oo	o	oo	-
		<2000 kg	-	-	-	oo	oo	oo	-	oo	-	-
	Span/ Reach	<5000 mm	oo	oo	oo	o	o	o	-	-	oo	oo
		<8000 mm	oo	oo	oo	o	o	o	-	-	oo	-
		<10 000 mm	oo	oo	oo	oo	oo	oo	-	-	-	-
Aluminium	Capacity	<125 kg	oo	oo	oo	o	o	o	oo	o	-	oo
		<250 kg	oo	oo	oo	o	o	o	oo	o	-	oo
		<1000 kg	oo	oo	oo	oo	oo	oo	oo	oo	-	-
		<1500 kg	-	-	-	-	-	-	-	-	-	-
		<2000 kg	-	-	-	-	-	-	-	-	-	-
	Span/ Reach	<5000 mm	oo	oo	oo	o	o	o	-	-	-	oo
		<8000 mm	oo	oo	oo	oo	oo	oo	-	-	-	-
		<10 000 mm	-	-	-	-	-	-	-	-	-	-
	Position of load during travel	Between track profiles	oo	o	o	o	o	o	-	-	-	-
		Outreach area (telescope)	o	oo	-	o	oo	-	-	-	-	-
	Limited height		-	-	oo	o	o	oo	-	-	-	oo

oo Recommended solution

o Possible solution

- Not available

11. Crane Procurement Checklist

1. Check the dimensions and weights of the loads to be lifted, and select sufficient capacity.
2. Measure the required system length and width.
3. Verify the structural load-bearing capacity with a structural engineer.
4. Choose a crane type suited to the application.
5. Select appropriate accessories and materials.
6. Ensure adequate lifting height and full coverage of the travel path.
7. Confirm there are no obstacles in the workspace that would obstruct crane operation.
8. Consider any unusual operating conditions (dust, dirt, humidity, corrosive substances, etc.).
9. Choose a reliable supplier who can also handle warranties and after-sales service.
10. Ensure the budget includes all essential costs.
11. Define a training plan and method for all crane users.
12. Establish a maintenance agreement or set up a documented, regular maintenance and inspection schedule.

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Together we lift and secure the world today, for a safer, stronger, and more productive tomorrow. Our iconic brands include Kito, Crosby, eepos, Erikkila and Gunnebo Industries.

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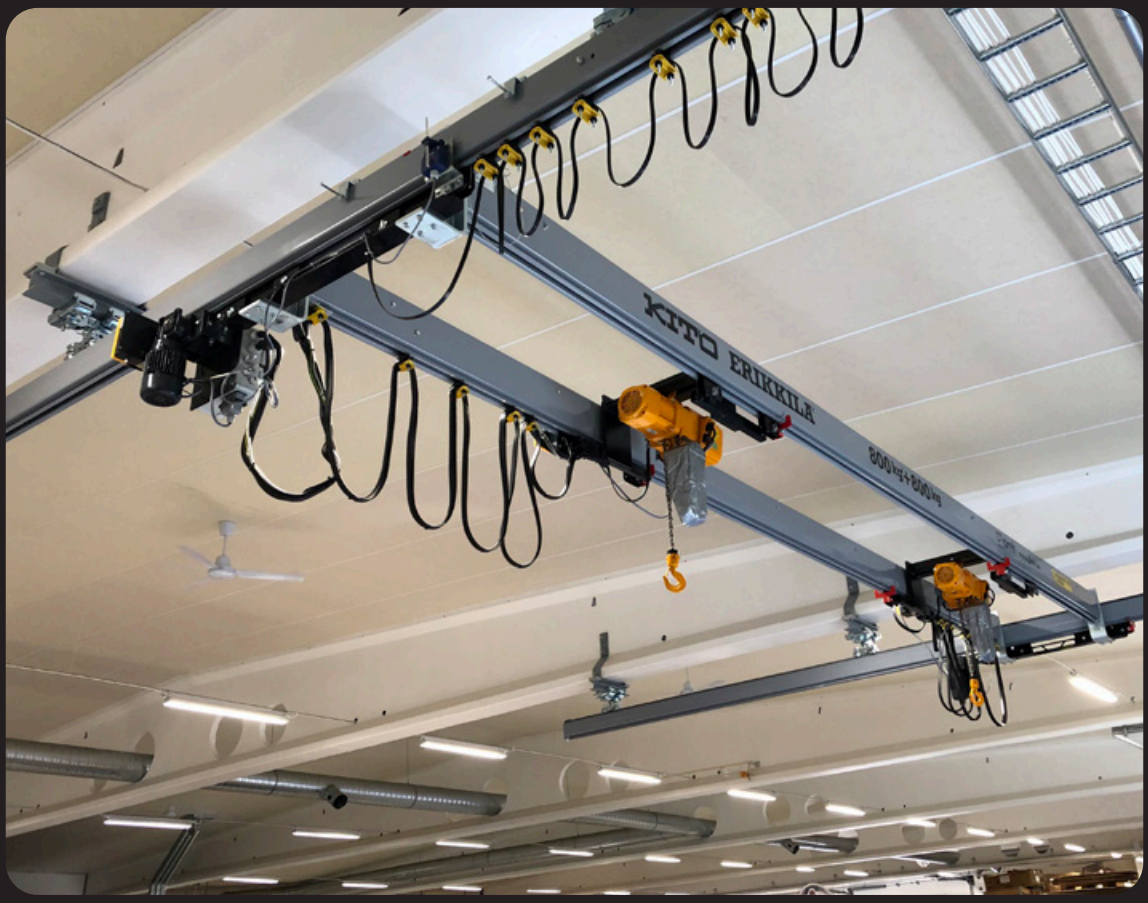

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