



 **Solutions for Oil & Gas Industry**

شركة الكترولومك للصناعة
ElectroMech Industry Company

Partner of



Equipped to Excel

About ElectroMech

ElectroMech Industry Company is a part of the ElectroMech group and has its manufacturing plant in Jubail as well as sales offices in Al Khobar, Jeddah and Riyadh in Saudi Arabia.

ElectroMech is counted amongst the largest manufacturers of industrial cranes and related material handling equipment in the world. We are recognised for our unique solutions that address challenging material handling requirements across a wide spectrum of industries. Our loyal customers rely on us for our design capability, high manufacturing standards and service excellence. Since our inception in 1979, ElectroMech has commissioned over 10,000 cranes across more than 60 countries coupled with an unmatched track record of repeat orders.

ElectroMech Industry Company provides well-engineered crane solutions to industries and infrastructure projects alike.

The infrastructure

At ElectroMech, we have been involved in the designing, manufacturing and commissioning of material handling systems with a special emphasis on cranes & hoists since 1979.

Our main manufacturing facility located in Pune, in western part of India, with a manufacturing capacity of 2000 cranes per year, is amongst the largest dedicated overhead crane manufacturing facilities in the world. This facility is spread over 120,000sq.m and is equipped with state-of-the-art machinery, like CNC cutting machines and semi-automated girder manufacturing.

Through our range of cranes, we offer the safest lifting solutions for safe areas as well as hazardous, explosion-prone areas. For Explosion-proof crane solutions, we have partnered with **Italkrane s.r.l.** of Italy who are one of the world's leading manufacturers of Explosion-proof cranes, hoists and crane components.





About Italkrane s.r.l.

Italkrane was founded in Milan in 1962 by technocrats Enzo Banfi and Giovanni Penati. Since then, the objective of the company is to design, manufacture and commission different types of lifting and transport equipment. In the initial years, their focus was on manufacturing of electromechanical parts along with consulting services. Gradually, the company relocated to a larger plant and started offering completely manufactured cranes.

They have a well-equipped manufacturing plant (Total area: 30,000 sq.m. and Built-up area: 4,000 sq.m.) and office space of 1,200 sq.m. near Milan. **Italkrane** has installed over 8000 cranes in more than 100 countries in the world.

Explosion-proof Cranes

Italkrane's close cooperation with the world's most renowned petroleum groups and leading project engineers in the sector have led them to conduct extensive research into the safety aspects of equipment used in explosive environments. This has culminated into the development of specially designed explosion-proof components for lifting equipment, which include: self-braking motors, electromagnetic disc brakes, end stop switches, control panels, etc.

Today, **Italkrane** is one of the leading companies in the field and offers solutions of the highest quality for explosion-prone areas in industries such as oil & gas, chemicals, petrochemicals, pharmaceuticals, fertilisers, and food, to name a few.

Solutions for safe area & hazardous area

- Electric Wire Rope & Chain Hoists
- Jib Cranes
- Wall Travelling Cranes
- Single Girder Overhead Cranes
- Single Girder Suspension Cranes
- Double Girder Overhead Cranes
- Semi-gantry Cranes
- Gantry/Goliath Cranes
- Customised Solutions
- Stacker Cranes
- Shaft/Tunnel Mucking Systems



Explosion Protection Technology

Explosive atmospheres may occur in industries such as chemical or petrochemical. Every electrical equipment used in potentially explosive atmosphere must be constructed in such a way that it does not become a source of ignition.

In order to avoid serious injuries and damage to material and environment, safety regulations, laws, decrees and standards have been established in most states. In this way, a high degree of safety has developed in explosion protection across the world. As the physical laws regarding the occurrence of explosions and the measures taken to prevent them are based on similar principles everywhere, currently the aim is to harmonise approval conditions and regulations regarding conformity at an international level. This brochure merely

outlines the European explosion protection directives which, however, correspond largely to the international IECEx regulations. It cannot take the place of an intensive analysis of national legal principles and standards.

We are uncompromising when the safety of persons and machines in areas subject to explosion hazards is at stake. We offer the most reliable, comprehensive and complete programme of explosion-protected lifting, drive and control technology. Our product spectrum is broad with SWLs ranging from 125kg up to 150t suitable for use in Zone 1 and Zone 2 as well as Zone 21 and Zone 22.



ATEX

European Community has established the basis for uniform European explosion protection based on the ATEX product directive 94/9/EC (ATEX 95) and the ATEX user directive 1999/92/EC(ATEX137).

The safety concept is applicable for both, manufacturing and operating, electrical and non-electrical equipment. Directive 94/9/EC from ATEX defines the properties required by the equipment for safe use in hazardous areas. This includes classification into equipment groups and categories, the respective conformity assessment procedures to be followed, manufacturers' responsibility including CE conformity marking, basic safety requirements for the development and manufacture of explosion protected equipment and recognised quality management measures to be implemented during production. ATEX directive 99/92/EC defines the obligations of users and employers for employees' protection in explosive areas. Inter alia, the user must assess risk and classify the potentially explosive areas into corresponding zones, so that the apparatus required by directive 94/9/EC can be used in safety.



Italkrane Main Certifications

Assessment of conformity in compliance with ATEX 95					
Category 1 and M1	EC prototype test (III)	Production quality assurance (IV)			CE
	Individual verification (XI)	Product verification (V)			
Category 2 and M2	Electrical equipment or Internal combustion engine	EC prototype test (III)	Quality assurance of products (VII)	CE	
	Other apparatus	In-house production testing (VIII) and documentation at notified body			
	Individual verification (XI)				
Category 3	In-house production testing (VIII)		Conformity with prototype (VI)	CE	
	Individual verification (XI)				
The figures in brackets refer to the modules of directive 94/9/EC which define the procedures to be followed for meeting conformity.					

Examples for the classification of gases and vapours into groups and temperature classes						
	T1	T2	T3	T4	T5	T6
I	Methane					
IIA	Acetone Ethane Ethyl Ethanoate Ammonia Benzol (pure) Ethanoic acid Carbon oxide Methane Methanol Propane Toluene	Ethanol i-Amyl acetate n-Butane n-Butyl alcohol	Benzene Diesel fuel Aircraft fuel Heating Oils n-Hexane	Acetaldehyde Ethyl ether		
IIB	Coal gas (lighting gas)	Ethylene				
IIC	Hydrogen	Ethylene				Carbon disulphide

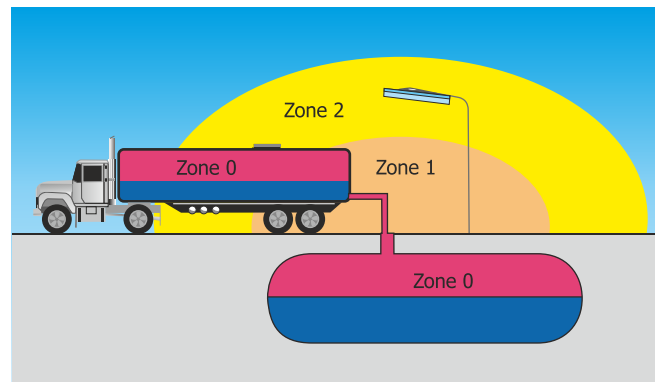
Explosion Protection Technology

Physical and technical principles

An explosion is a precipitate chemical reaction of combustible matter with oxygen, setting free high energy. In this connection, combustible matter may be gases, mists, vapours or dusts. An explosion can only take place if three factors come together: combustible matter (in suitable dispersion and concentration), oxygen (in the air) and a source of ignition (e.g. an electric spark). It is thus necessary to prevent ignition or reduce the effect of an explosion to an innocuous level.

To ensure this, equipment which is used in potentially explosive atmosphere must be designed, manufactured and of course marked in compliance with the relevant regulations (ATEX product directive 94/9/EC, IECEx regulations, etc.). Classification of devices into groups and categories according to ATEX product directives or in EPL according to IECEx standards results from their area of use or the safety level of protective measures and the frequency of occurrence of an explosive atmosphere. The highest possible risk potential must be taken into account when carrying out this classification. Only explosion protected equipment may be used in areas in which explosive atmospheres may occur in spite of all preventive measures. This equipment is produced in various types of

protection in accordance with the corresponding construction regulations (series of standards IEC/EN 60079, IEC/EN 61241 and EN 13463). The type of protection applied by the manufacturer depends on the type and function of the equipment. All standardised types of protection within a category are equivalent. In the EG declaration of conformity included in the technical documentation the manufacturer confirms that the product meets the ATEX directives.



Offshore Platform



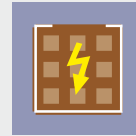
Petrochemical Industry



IEC/EN 60079 for equipment in areas subject to gas/dust explosion hazards

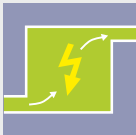


Ex d
flameproof
enclosure
IEC 60079-1
EN 60079-1

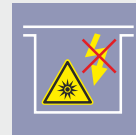


Ex m
encapsulation

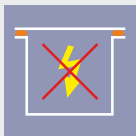
IEC 60079-18
EN 60079-18



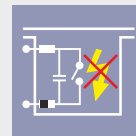
Ex p
pressurised
apparatus
IEC 60079-2
EN 60079-2



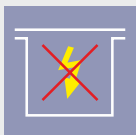
Ex op
optical
radiation
IEC 60079-28
EN 60079-28



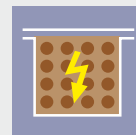
Ex e
increased
safety
IEC 60079-7
EN 60079-7



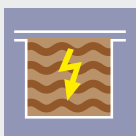
Ex I
intrinsic
safety
IEC 60079-11
EN 60079-11



Ex n
Zone 2
equipment
IEC 60079-15
EN 60079-15

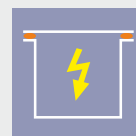


Ex q
powder
filling
IEC 60079-5
EN 60079-5



Ex o
oil immersion

IEC 60079-6
EN 60079-6



Ex t
protection
by housing
IEC 60079-31
EN 60079-31

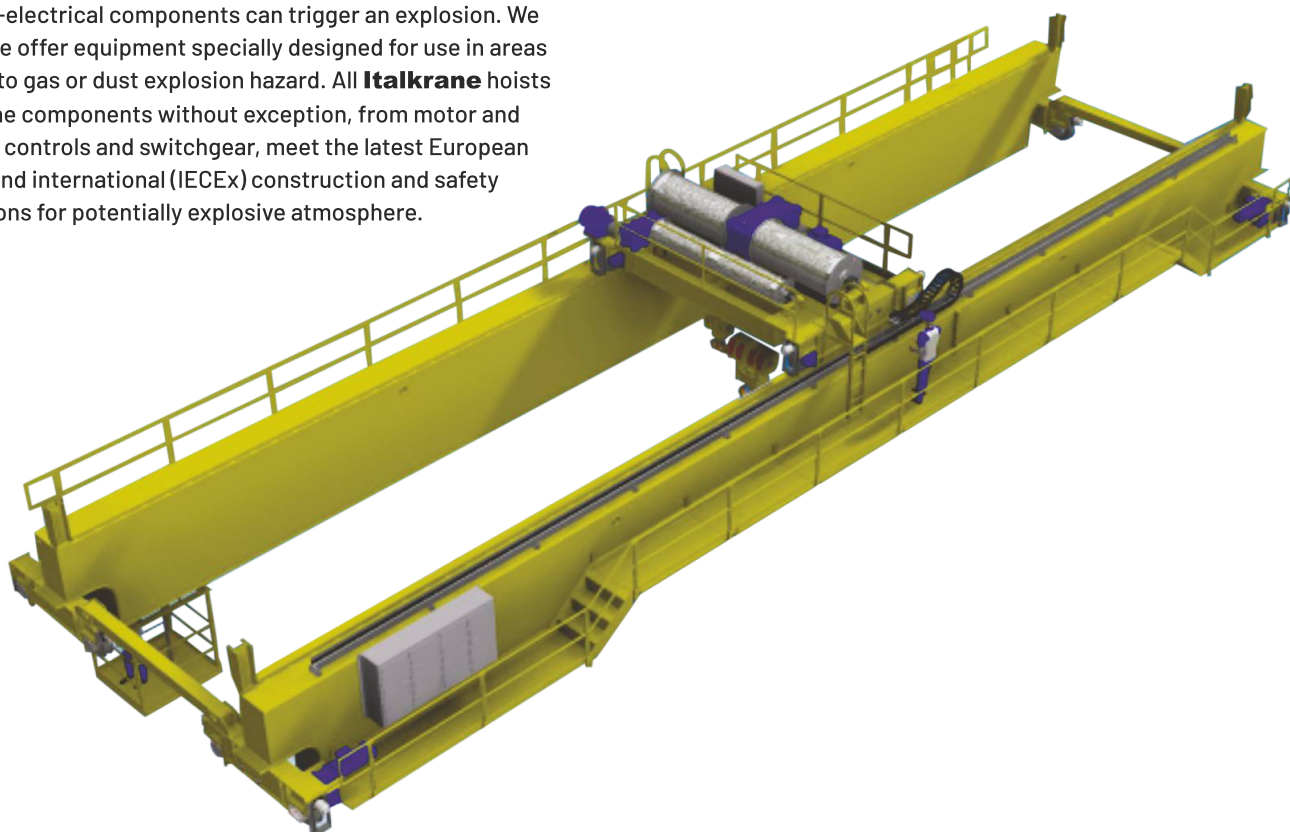
Typical crane features

- Protection against overloading
- Asbestos-free brake linings
- Over-hoist & over-lower limit switches
- Anti-derailment device on crane and crab unit, non-sparking type
- Control panel mounted on crane bridge platform
- Travel and traverse limit switches with actuators for mounting on crane runway
- Bronze coated load hooks
- Aggressive environment paint systems
- Low and high ambient temperatures
- Increased enclosure protection
- Anti-condensations panel heaters
- Radio control
- Off-standard supply voltages



Special Design for Cranes

While lifting, in both, drive and control technology - electrical and non-electrical components can trigger an explosion. We therefore offer equipment specially designed for use in areas subject to gas or dust explosion hazard. All **Italkrane** hoists and crane components without exception, from motor and brake to controls and switchgear, meet the latest European (ATEX) and international (IECEx) construction and safety regulations for potentially explosive atmosphere.



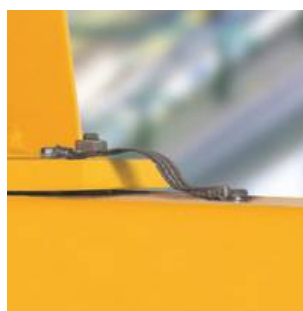
Bottom hook block

The type of protection employed is constructional safety >c<, no aluminium is used. If travel speeds are high, individual parts, such as the load hook, are bronze-coated.



Compact Ex d enclosure gear pendants

The type of protection of the housing is IP 66.



Equipotential bonding

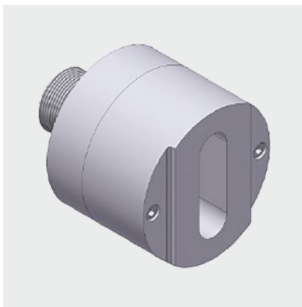
Equipotential bonding is essential for avoiding incendive sparks when installing crane technology in potentially explosive atmosphere.



Gear

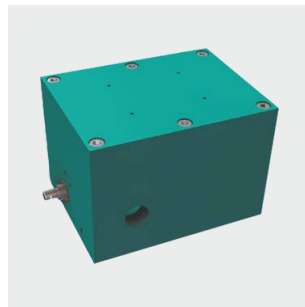
The types of protection of the gear are constructional safety >c< and liquid immersion >k<. The protective liquid (oil) prevents sparks.

Italkrane Special Features



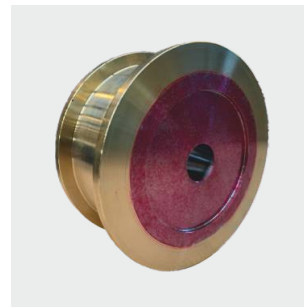
Special flat cable glands

Special flat cable glands which allows the usage of flat cables instead of round cables.



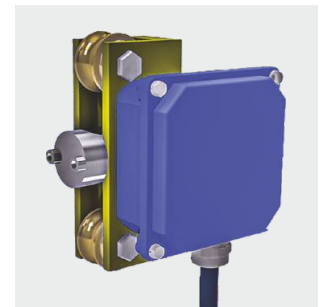
Ex d enclosed hoist limit switch

The type of protection of the limit switch to ensure over-hoisting and under-lowering has 'd' type flameproof enclosure.



Anti spark brass tyred wheels

The type of protection of all wheels is constructional safety 'c'. If travel speeds are high, this also includes brass wheels.



Overload device

IP66 mechanical load limiters suitable for Zone 1 & Zone 2.



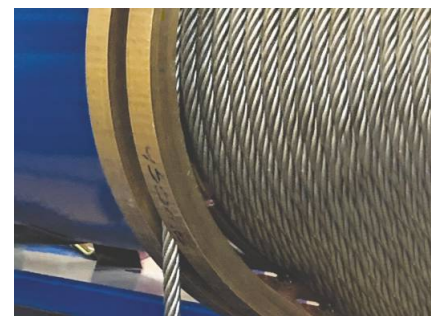
Motors

The hoists are available with both 1 speed and 2 speed versions. The slow speed is achieved by separate small motor with differential gearing and independent brake. Both the motors are rated for 40% CDF, which is unique compared to pole changing motors with 40/20% CDF for high/slow speeds.



Certified Ex d panels

The type of protection for panel boxes for Zone 1, 2 and 21 on cranes and hoists.



The wear-resistant rope guide

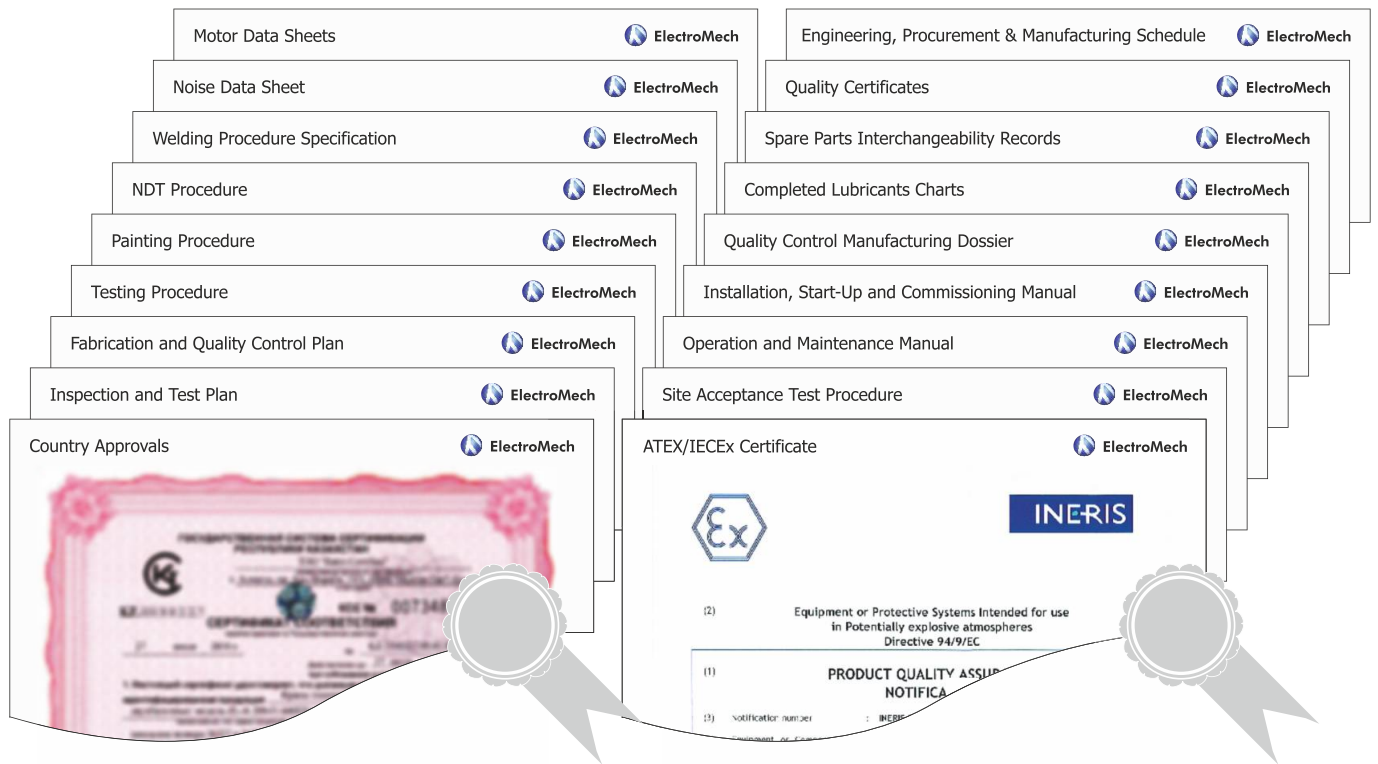
The wear-resistant rope guide is made of non-sparking brass material to ensure non-sparking and long life of the wire rope.

Certification and Documentation

Documentation

Documentation from ElectroMech meets and exceeds by far all the requirements of international project business. Even in the quotation stage, we assist you with all necessary documents and literature. In addition, you receive in-process documentation and extensive individual end-customer documentation.

During all phases of your project, we offer you comprehensive services relating to documentation, certification and approvals complying with international, country-specific regulations and specifications.



Solutions for LNG

When maintenance is performed on LNG tanks, a 100 percent reliable technology is required. LNG is neither inflammable nor poisonous in its liquefied state and is thus relatively innocuous. However, if it evaporates, it is highly explosive. For this reason, the most stringent explosion protection regulations apply in the whole LNG terminal - including the crane technology. The **Italkrane** LNG wire rope hoists and jib cranes from ElectroMech meet these requirements.

The LNG hoists have been designed especially for maintenance work in natural gas liquefaction plants (LNG). Thanks to their high-quality components and robust design, they are ideal for use near the coast in challenging climate conditions. The pumps which pump the liquid natural gas into a pipeline system at a temperature of -161°C must be lifted out of the tanks and transported outside for maintenance. The extreme conditions prevailing in the tank necessitate special ropes which are permanently connected to the liquid gas pump. When maintenance is required, these ropes are attached to the wire rope hoist by means of a rope clamp, so that no hook is necessary. All safety-relevant components are doubled. This means that the hoisting procedure proceeds without disruption even if a rope should break. One of the two wire rope hoists lifts the pump, the second hoist runs alongside with a dead rope as backup. If the load rope should break during the hoisting procedure, the second wire rope hoist carries on hoisting. The shock-absorbing rocking suspension of the hoist cushions the impact of the abrupt load change. Thanks to their redundant design and rocking suspension, **Italkrane** LNG wire rope hoists are regarded as the safest hoists available in the market.



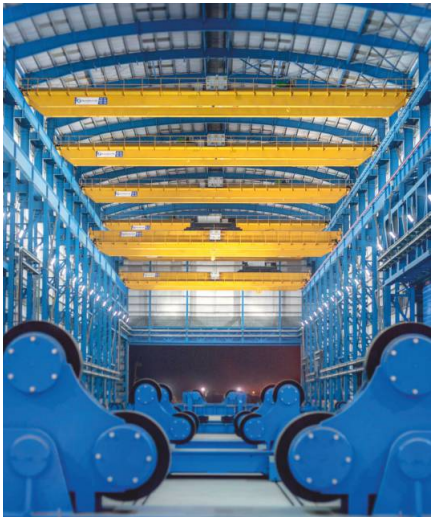
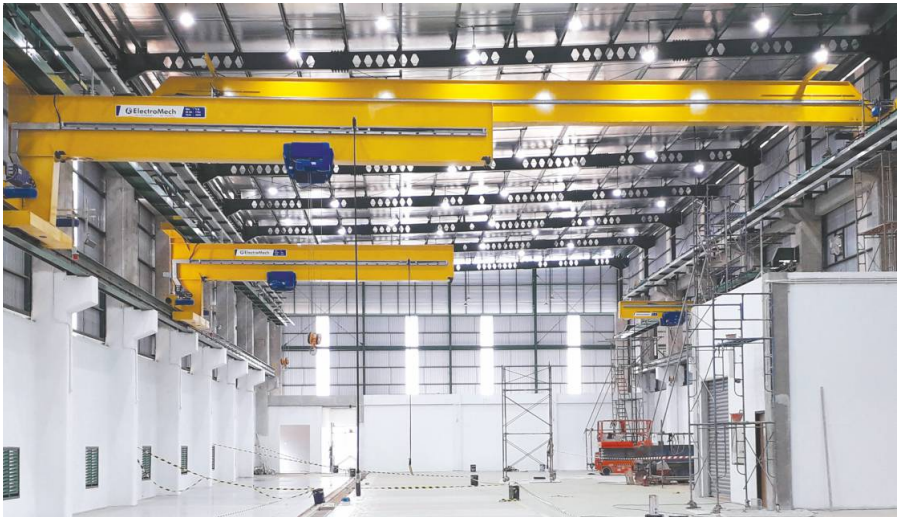
Customised Solutions Across Industries

ElectroMech customised crane solutions are helping several manufacturing plants and infrastructure projects across the world to reduce human efforts, ensure safe handling and enhance productivity.

Various sectors which are benefited through the use of our solutions include

- Automotive
- Cement
- Chemicals
- Fertilizers
- FMCG & consumer durables
- Food processing
- General engineering
- Heavy engineering
- Hydroelectric power plants
- Metro rails, flyovers, bridges
- Nuclear plants
- Oil & gas/ petrochemicals
- PEB & fabrication
- Pharmaceuticals
- Precast manufacturing
- Process plants
- Rails & roads
- Shipping
- Steel & metal
- Tunnelling projects
- Warehousing
- Windmill projects





Expert Services

Services for safe and hazardous area cranes.

- Annual Maintenance Contracts
- Repairs, renovation, relocation
- One-time health check-up

cranedge

Services By ElectroMech

**Ensure high crane uptime,
high productivity and higher profitability.**

ElectroMech is well-known for the most efficient services for all makes of Industrial Overhead Cranes. These services, available under the Cranedge brand, have become a benchmark in several parts of the world. Cranedge services focus on preventive maintenance to ensure high level of workplace safety and avoid production losses due to sudden crane failures. With this approach, ElectroMech is successful in ensuring nearly zero downtime of cranes.



Besides the existing customers of ElectroMech, our services are availed by customers using cranes of other makes as well. Our expertise, efficient service and ability to deliver required spares in the shortest possible time have earned us the loyalty of our customers.

Our experienced and trained teams are strategically located across the world and are supported by a strong logistics and inventory management system with quick access to spares.

Cranedge services cover almost all types of overhead cranes used in the safe zone as well as hazardous areas (oil & gas, chemicals, etc.). Availing our services means ensuring complete peace of mind while keeping your production unaffected due to non-availability of cranes at critical times. Moreover, the most important aspect assured by Cranedge services is **SAFETY**.



A World of Satisfaction

ElectroMech has earned a noteworthy reputation of being the most reliable name in the field of material handling systems through its products and prompt and efficient service. Our customers have been experiencing a world of delight and satisfaction.

Sturdy ElectroMech cranes operate year after year in extreme climatic conditions, irrespective of the sweltering heat of the

deserts in the Middle East, or the biting cold of the mighty Himalayas. Our experience with cranes, which ranges right from small workshops to gigantic shipyards, expands our expertise. We are inspired to broaden it further to help us design advanced cranes for more critical applications.

Our happy customers are a source of satisfaction and inspiration for us.



This is a pictorial representation and does not purport to be the political map.

 ElectroMech Factory & Office

 Customer

ElectroMech Material Handling Systems (India) Pvt. Ltd.

Gat No. 316, At post Kasar Amboli, Tal. Mulshi, Dist. Pune 412 115 INDIA
Telefax: +91-20-6654 2222
E-mail: cranes@emech.in

ElectroMech FZE

LOB 19 1002, P. O. Box 263019, Jebel Ali Free Zone, Dubai, UAE
Tel.: +971-4-8857466
Fax: +971-4-8857655
E-mail: contactus@emech.ae

Pt. ElectroMech Manufacturing Industries

Jl. Jati Raya Blok J 10 No. 01B, Newton Techno Park, Desa Serang, Cikarang Selatan, Kab. Bekasi, Jawa Barat 17530, Indonesia
Tel.: +62 21 899 23111
E-mail: contactus@emech.id

Electro Mech Equipment Trading LLC

Shop No. 8, Sector No. 44, Plot No. 13, Mussafah Industrial Area, Abu Dhabi, UAE
Tel.: +971-2-5588035
Fax: +971-2-5588235
E-mail: contactus@emech.ae



ElectroMech

| Solutions | Service | Satisfaction |

KSA Office

ElectroMech Industry Company

P.O Box 10034, Jubail 31961, Eastern Province, Kingdom of Saudi Arabia

Tel.: +966 503898671
+966 535897773

E-mail: contactus@emech.sa

Manufacturing Facilities & Offices



India



Indonesia



Saudi Arabia



UAE

Factory : Jubail

Offices : Al Khobar | Jeddah | Riyadh



www.emech.sa

follow us on:

© Copyright 2022 | All names, logos and monograms used in this brochure are registered trademarks of respective companies.

Technical changes reserved.