



# ElectroMech

| Solutions | Service | Satisfaction |

Newsletter Issue 11 : 2019



Automated stacker crane system at Aqua Group



ElectroMech joins hands with Taim Weser S.A.



Refurbish, relocate, reuse assets to save resources

# EMPOWER

Lifting & Handling



## Paving the way for Industry 4.0



## Must read

- Paving the way for Industry 4.0 – A case at EKK Infrastructure Ltd. 4
  - Automated stacker crane system at Aqua Group 6
  - Integration of in-plant handling at Ajax Fiori 8
  - ElectroMech joins hands with Taim Weser S.A., Spain 10
  - Cranes for the steel plant of Rungta Mines Ltd. 12
- 
- Explosion-protected cranes for a naval defence project 14
  - Easy Mover Roller helps push up productivity at Mercedes Benz 15
  - Advanced reach truck solutions for a leading beverage company 18
  - Cranedage helps L&T LLC to relocate its 200t cranes from Oman to India 20
  - Cranedage helps IVRCL to refurbish and reuse crane for a new project 22



## Take My Word!

Dear Reader,

**"Nothing happens until something moves." – Albert Einstein**

These words, of one of the greatest scientific minds of the twentieth century, summarise the essence of the material handling industry. At ElectroMech, we are in constant pursuit of solutions to move material in the most effortless, efficient and effective manner. No matter what the industry, how small or large the material, ElectroMech solutions are ubiquitous. We are proud of our contribution to the economic development of the country in the real sense!

Lately, our engineering minds are engaged in coupling hardcore mechanical engineering and technology. In a world where products are fast becoming services, our material handling solutions are armed with smart technology elements.

It gives me great pleasure to present to you this 11<sup>th</sup> issue of EMpower, our business and technology magazine which started exactly ten years ago. In this issue, we have discussed two very exciting projects demonstrating our capability to provide automated smart solutions. The first is about two gantry cranes operating in perfect unison to lift a heavy and long precast segment for an infrastructure project in Kerala, deploying advanced electronics and industrial Wi-Fi. The second, a fully automated stacker crane for foundry application is our contribution to make Indian foundries globally competitive.

We have added yet another exciting crane solution to our portfolio for steel, coker and waste-to-energy in association with Taim Weser, the global leader in these niche applications. What's more, our partnership with Hyster-Yale® has reached greater heights with the introduction of an eclectic mix of forklifts for the industry! We strongly believe that collaboration is the key to a better world.

Times are indeed changing and we look forward to providing smarter, better and more meaningful solutions to the industry. The possibilities are endless and the sky is the limit!

**Tushar Mehendale**  
Managing Director



# Paving the way for Industry 4.0

Perfectly synchronised handling of precast segments using two gantry cranes powered by advanced electronics and Wi-Fi technology.

Stepping up its problem-solving capabilities, ElectroMech has combined hardcore mechanical engineering with advanced electronics to achieve the perfect synchronisation of outdoor gantry cranes for lifting precast segments.

The case in point is the four-laning of the Thalassery-Mahe Bypass section of NH 17 under NHDP Phase-III in Kerala. Through a highly competitive bidding, the project was awarded to a renowned name in the Indian infrastructure sector – EKK Infrastructure Limited.

NH 17 is a busy national highway in India that runs along the Western coast and connects Mumbai to Kochi (Ernakulam), passing through four states. In Kerala, the road between Thalassery and Mahe passes through crowded cities, resulting in traffic congestion. To ease the traffic, the government has planned a four-lane bypass between the two commercial centres. This project consisting of an 18 km stretch is challenging due to patches of wetland and loose soil structure. Construction in such terrain necessitates the use of concrete precast segments to ensure faster completion and durability.

Each precast segment used in this project

is 33m long and weighs 75t. Onward transport of such mammoth segments commands an unerring lifting and handling solution. Any inadvertent tilting, falling or development of internal cracks can not only result in danger to property and personnel, but may also lead to financial losses due to rejection of the segments. A long-term danger is the weakening of critical public infrastructure.

Our engineers once again put on their thinking caps. Our infallible solutions handling precast segments at various prestigious infrastructure projects in India and abroad, bolstered our confidence.

The most pertinent solution for this requirement came in the form of 'twin' gantry cranes, identical in capacity and configuration, both travelling on the same rail. A precast segment can be suspended at two ends with a crane on either side, allowing easy lifting and even distribution of the load.



## Benefits

- Perfect synchronisation, avoiding uneven handling of mammoth precast segments
- Averts the risk of the segment falling or tilting, thus avoiding internal cracks and rejection
- Foolproof solution through digital prototyping and simulation for extreme operating conditions like storms and loose soil structure
- Remote diagnostics for quick resolution and high uptime
- Operating flexibility with multiple options, namely RRC, pendant or HMI





## Advanced electronics and use of Wi-Fi communication for foolproof synchronisation

The most important part of the project was to ensure perfectly synchronised movement during vertical lift as well as linear traverse. These 'tandem cranes' work in perfect synchronisation using the master-slave protocol of communication. Use of multiple options, namely pendant, cabin, RRC or HMI offers high flexibility of operation and control.

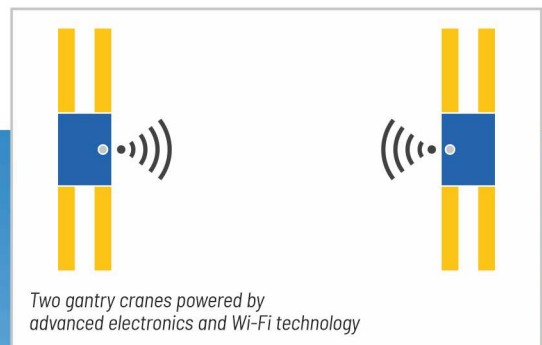
The controller is provided with a 'tandem' mode selection option. Once the tandem mode is selected, only the master crane accepts the command and transmits signals instantaneously to the slave crane. This way, both the cranes receive the same command simultaneously, ensuring synchronised movement. With the use of industrial Wi-Fi, signal transmission is instantaneous.

Eliminating the possibility of tilting of the precast segment ensures structural integrity and avoidance of breakage, essential for the safety of critical public infrastructure. Simultaneous long travel (LT) and cross travel (CT) of both the cranes is achieved through the Tandem Movement technique.

Use of wireless communication for synchronisation also avoids manual intervention, unlike in conventional systems, where the operator has to climb up to access the control panel and connect the wires manually.

The cranes are designed with utmost care to ensure error-free operation with digital prototyping and simulation, and remote diagnostics for quick resolution for high uptime. The in-built foolproofing logic secures safe and uninterrupted operation of the cranes. Structure, cables and panels are designed to withstand the gusty winds and rainfall of Kerala.

At ElectroMech, we are proud of our contribution to the economic development of the country in the real sense! This is a perfect example of how ElectroMech helps its customers overcome handling challenges and makes use of advanced technology for precise and safe handling. ■





# Smart storage solution through automated stacker crane and forklift

Aqua Group is a leading manufacturer of pumps for agricultural, industrial and domestic applications.

It has a large manufacturing plant in Coimbatore that caters to the requirements of domestic and international markets. Over the years, the company has developed a wide range of pumps of various capacities for different applications. Aqua Group is able to maintain quality and ensure faster deliveries due to its reliance on in-house manufacturing of almost all the components. As a part of this strategy, the company has a captive foundry that produces ferrous and non-ferrous castings.

A vast range of pumps and a variety of models calls for huge investment in a number of patterns for castings. Over the years, the company has developed a few thousand patterns and the inventory is increasing every year. These heavy and critical patterns require careful handling while storing and retrieving.

When Aqua Group approached ElectroMech for a solution to tackle these challenges, our team thought of using a stacker crane which could best address the requirement.

The ElectroMech stacker crane is a proven solution for store management needs of varied industries and is in operation at several places. Careful research was conducted by the ElectroMech team to understand the various requirement parameters such as types and quantity, sizes and weights, number of pick-ups per day, the present inventory management system and material flow from the store to the foundry.

A solution evolved in the form of a completely customised stacker crane system for storage and retrieval and a forklift for onward movement to the foundry.

With the use of a stacker crane, it was possible to utilise the height up to 10m and provide for narrow aisles. Keeping these aspects in mind, a complete store layout was designed that optimised the



floorspace and allowed efficient utilisation of the space within the racks. The heavy racks eliminate the need for additional structures, reducing investment. Each pallet has a RFID tag, making it easy to retrieve the pallet with its part number. This stacker crane has an advanced electronic controller for automated operations. The controller features several advanced capabilities such as –

- Accepting multiple commands simultaneously, storing them and prioritising
- Remembering pallet location and using the same information in repeat operations
- Taking the shortest possible path
- Auto deciding the sequence of operations for lesser travel and minimising retrieval time
- The controller can be interfaced with centralised ERP for effective planning and inventory management
- Ensuring access only to authorised persons through password/biometric detection

The stacker crane combined with a forklift provides a complete solution for inventory management both within and outside the store. ElectroMech offers Yale® forklifts which are ergonomically designed keeping in mind operator comfort, high productivity and reliability. The electric forklift is a must-have accessory for the store to transport material within the plant.

For Aqua Group, the use of the automated stacker crane from ElectroMech is a step towards achieving global competitiveness. The system is delivering a completely hassle-free experience to users while improving store management efficiency. ■





## AQUA GROUP

### Scope of supply

- 1t, 11.8m span, 10m lift  
fully automated stacker crane  
with racks
- 1t Abus EHB system
- 1.8t Yale® Electric Forklift

With the installation of the ElectroMech stacker crane, Aqua Group has experienced several benefits.

- Floor space requirement dramatically reduced due to utilisation of 10m height and narrow aisles. The freed up space is available for other operations.
- Completely automated operations reduced manpower requirement
- Effective control on inventory
- High level of safety due to precise positioning of forks, jerk-free handling and preventing unauthorised access









Uninterrupted material feed to workstations and hence no line stoppage

# At Ajax Fiori, ElectroMech provides a concrete solution for the integration of in-plant handling



Ajax Fiori is the global leader in self-loading concrete mixers and manufactures a wide range of quality equipment like batching plants, transit mixers, and concrete and boom pumps. The ultramodern facility of Ajax Fiori at Doddaballapur, houses the entire manufacturing and assembly unit of the self-loading concrete mixer and can roll out a mixer with an impressive turnaround time of less than 40 minutes.

Manufacturing of such sturdy, heavy-duty equipment needs an equally strong engineering and manufacturing capability and this is enabled by equally capable material handling solutions. ElectroMech was entrusted to provide crane solutions for the new automated assembly line. Entire in-plant handling integration has been achieved using several Abus HB System – Light Weight cranes in combination with single girder cranes. The HB System combines the effectiveness of a stationary hoist with the mobility of an overhead crane in an efficient and cost-effective fashion. The low-build design ensures that maximum hook height can be reached in the available space.

With the use of HB System and Single Girder cranes, the productivity at Ajax Fiori has increased almost 2.5 times with consistent material feed to workstations.

For a contemporary manufacturing plant like Ajax Fiori's, any line interruption leads to production loss. The reliable solution from ElectroMech and Abus ensures that the plant runs without any stoppages. An eclectic set of 23 cranes consisting of single girder, monorail and jib cranes are helping uninterrupted plant operations at every point along the assembly line. ■

## Total no. of cranes: 23

Type of crane	SWL (t)	Span (m)	HOL (m)	No. of cranes
SG EOT cranes with wire rope hoist	2	22.21	6.00	3
	4	22.60	6.00	2
	2	12.93	6.00	4
	4	6.33	6.00	1
	2	10.00	6.00	2
Light weight cranes (Abus - HB system) with chain hoist	1	7.77	5.00	5
	1.5	7.77	5.00	1
	0.5	7.25	5.00	2
	1	7.20	4.00	1
	1	12.20	4.00	1
Jib crane with chain hoist	0.5	3.00	4.00	1



# ElectroMech joins hands with Taim Weser S.A., Spain

**Expert solutions and dependable service across steel, coke handling and waste-to-energy applications.**

ElectroMech has been supplying various types of crane solutions to the steel industry. This includes special cranes such as heavy duty, double girder cranes with rotating crabs, double girder cranes with dual hoists operating in tandem, and cranes for ladle handling with ladle tilting attachment. Several ElectroMech cranes are performing efficiently in the harsh work environment of steel mills, foundries and allied plants.

Satisfied with our performance and expert services to ensure high uptime of our cranes, there has been a constant demand from customers to supply higher capacity and more specialised cranes for critical operations in the steel and metal industries. **In order to meet this demand for special cranes of higher capacity, we have partnered with one of the world's leading companies in the field – Taim Weser S.A.**

## One-stop shop for high-stake applications

Headquartered in Spain, Taim Weser possesses over 100 years of experience and has installations in close to 60 countries in major steel plants. The company is renowned in the areas of material handling, lifting, waste treatment and renewable energy projects. An innovative approach, their own developed technology, high capacity for heavy equipment manufacturing, advanced technology, highly reliable products and efficient project management make Taim Weser a leading company in the domain.

Our association with Taim Weser enables ElectroMech to provide technologically advanced solutions to some of the critical and high-stake applications, namely hot liquid metal ladle handling cranes for furnace charging, coil handling cranes, scrap handling

cranes, cranes for forge shops, coke handling cranes in delayed coker units in refineries, etc. Another major and upcoming area which offers exciting opportunities to us is application in waste-to-energy.

Going the extra mile, our services subsidiary, Cranedge, possesses domain specific expertise to ensure high uptime and 24x7 performance of these specialised cranes.

We are glad that with our own range of crane solutions and the new association with Taim Weser, ElectroMech has become a one-stop shop for solutions and services for cranes deployed for such high-stake and often hazardous applications. ■







In association with





# The finest steel has to go through the hottest fire

And ElectroMech cranes take it through, safely.



In 2017, India was the third largest producer of steel in the world, owing to the growth driven by robust domestic consumption and exports. The Indian steel sector boasts of state-of-the-art mills and is characterised by continuous modernisation and upgradation to achieve higher efficiency levels.

ElectroMech is proud of its contribution to the thriving and economically vital steel and metal sector and in turn, to India's development.

The demanding processes of the steel sector — right from the extraction of iron ore, iron and steel making, casting, refining and further downstream processes like rolling and galvanising are not only carried out at high temperatures and in the presence of chemicals, but they also involve handling of metals in solid and liquid states. Such conditions need unerring material handling solutions.

Rungta Mines Ltd., a group of companies with operations in steel, construction, mining and cement is a renowned name in the Indian steel sector. Although it is our first-time customer, due to our experience and reputation, Rungta Mines trusted our solutions for the steel melting shop and rolling mill at their plant located in Chaliyama, Jharkhand, India. ElectroMech has supplied a complete range of customised cranes to this plant.

Ladle handling cranes are meant for handling molten iron to basic oxygen furnaces or molten steel to casting machines and they operate in the heart of the steel mill i.e. the steel melting shop. The temperature here is in excess of 1400 °C and the surrounding area is laden with dust. Our crane is capable of operating in such environment at full load capacity, round-the-clock, at high speeds.

Our magnet crane deploys the power of the electromagnetic field, allowing the operator to lift and rotate loads carefully and in a controlled manner. This makes both lifting and stacking, productive and efficient, not to mention saving on the most valuable resource — time.





In the rolling section, hot steel undergoes shaping and finishing for conversion into intermediate and finished goods. To retain its malleability, the metal is transported at extreme temperatures. Undoubtedly, this operation demands high performance and a reliable material handling solution. Our rolling mill cranes are designed to handle steel sections gently and safely. The cranes supplied by ElectroMech for these applications are performing tirelessly.

It is no surprise that customer focus and process understanding has led to a long-term relationship between ElectroMech and all its customers. ■

#### Total no. of cranes: 8 - Chaliyama Steel Plant

Type of crane	SWL (t)	Span (m)	No. of cranes
DG EOT cranes for ladle handling	65/20	22.00	2
DG EOT crane	15	22.00	3
DG EOT crane	20/7	16.50	1
DG EOT crane	10	22.00	2





# Proud to be a part of India's prestigious naval defence project

**ElectroMech supplied 45 safe area cranes and 4 explosion-protected cranes to Goa Shipyard, through JMC Projects.**



JMC Projects (India) Ltd.

JMC Projects India Ltd., a leading infrastructure company in India, was awarded the EPC contract for the Goa Shipyard modernisation project in 2017.



Goa Shipyard Ltd. (GSL) is a decorated shipyard that has been deemed a 'Miniratna' by the Government of India. GSL has always made and continues in its endeavour of manufacturing state-of-the-art vessels for the Indian Navy and the Indian Coast Guard. This massive modernisation project will help GSL upgrade

its infrastructure and allow it to incorporate the latest technologies, and expand its shipbuilding capabilities.

JMC Projects was appointed the EPC contractor for GSL Phase 3B and Phase 4 activities. They entrusted the responsibility of the material handling solutions in these workshops to ElectroMech.

ElectroMech has successfully completed the installation of 45 cranes of various types in GSL's Phase 3B, where maintenance and repair work of existing Indian Navy vessels is carried out. However, Phase 4 of the project, where the Mine Counter Measure Vessels (MCMVs) will be manufactured once the modernisation is complete, was challenging.

ElectroMech has supplied four explosion-protected cranes for this workshop. The shipyard is now capable of building 'Fibre Reinforced Plastic Hull MCMVs' indigenously, under a technology transfer arrangement with a foreign shipyard.

MCMVs have FRP Monocoque (frameless) hull structures that provide excellent shock resistance against underwater explosion and lower acoustic and magnetic signals to avoid detection. While manufacturing such MCMVs, several coats of resins and special paints are applied on the fibreglass skeleton. These resins and paints are explosive in nature and hence demand explosion-protected equipment to handle the structure during the manufacturing stages.

These conditions make safe and explosion-proof material handling systems indispensable in such a shipyard. The technological partnership between ElectroMech and Stahl, the German leader in explosion-protected material handling solutions, has a range of products for this strategically

important sector. Our scope of supply to JMC Projects for Goa Shipyard Ltd. includes:

- 2 Nos. of 30t EOT cranes for Bay 1 and 2 with hazardous zone categorisation as per ATEX marking of Zone 2 IIA T2
- 2 Nos. of 15t EOT cranes for Mould Bay with hazardous zone categorisation as per ATEX marking of Zone 1 IIA T2

The 30t cranes would operate individually as well as in tandem. All the cranes are ATEX-approved, fulfilling the most stringent certification requirements. They are operated through special ATEX-certified cabins with various ATEX-certified electrical accessories. **ElectroMech is the first crane manufacturer in India to supply cranes for such a specialised shipbuilding facility.**

We are proud to contribute to the capability advancement of India's naval defence through this installation. ■





In association with

**easy  
mover®****ElectroMech**

| Solutions | Service | Satisfaction |



A little push goes a long way.

## Easy Mover Roller helps push up productivity at Mercedes Benz

Mercedes Benz India Pvt. Ltd., is a leading manufacturer of luxury passenger cars and SUVs. They have a state-of-the-art manufacturing plant at Pune, consisting of several assembly lines.

Conventionally, in the final assembly stages, near-complete vehicles were pushed manually to the next assembly station. This was time-consuming and about 4 to 5 people were required for the job.

Gone are those days! Team ElectroMech brings a solution in the form of the Easy Mover Roller, manufactured by our partner company – Easy Mover and marketed in India by ElectroMech.

Impressed with the capability of the small Easy Mover device, Mercedes Benz opted for the Roller type model E 800. Being lightweight and battery operated, it can be moved freely anywhere in the plant. The Easy Mover Roller is engaged on any one side of the rear wheels for moving the vehicle under assembly. When switched on, it gently pushes the wheel in order to move the vehicle to the next assembly station.

With this new device from ElectroMech, manual efforts and operator fatigue are considerably reduced. Besides pushing the vehicles, Easy Mover Roller from ElectroMech is also helping Mercedes Benz to push up their productivity! ■

**Mercedes-Benz**

Push, Pull & Manoeuvre

Roller

Pusher



# One small forklift for man, a giant lift for the industry.



Forklift is an indispensable equipment for any production plant and warehouse. Be it a manufacturing plant for paints and varnishes or the warehouse of a retail organisation, they require trouble-free, smooth and safe handling of materials. Expensive floor space and the need to provide fast service to the consumer make productivity the focal point while choosing material handling equipment.

At ElectroMech, we understand these concerns. In partnership with Hyster-Yale®, we bring you a wide range of versatile, ingenious forklifts to meet your needs. Our thoughtfully designed forklifts keep in mind ergonomics for the comfort of the operator. The perfect combination of engineering skills and creativity allows for energy conservation and the use of cleaner fuels.

The ElectroMech Yale association has reached greater heights since the two companies joined hands. We have supplied explosion-proof forklifts, dual fuel forklifts, stacker trucks, order pickers and hand pallet trucks all of which bespeak customer confidence. Our service subsidiary — Cranedge's capability to address any service call and help customers maintain forklifts in excellent working conditions makes us stand out in the market. ■

**P&G**

## Tow Truck for *Touching Lives, Improving Life!*

P&G is a globally renowned consumer goods company and now, a customer that trusts us!

The tow truck by ElectroMech Yale is at work at P&G's largest detergent manufacturing facility in Asia located in Hyderabad, India.

This 5t tow truck is being used to transfer trolleys of loads over short and long distances, horizontally. It comes with advanced features like side interlock and deadman switch.

These safety features are important in a detergent plant where unit operations like spray drying and mixing of various surfactants are involved. ■





## Efficient, ergonomic & economical solutions for FMCG



The Fast Moving Consumer Goods (FMCG) sector banks on staying competitive and profitable by keeping operations lean. High volume movement on a regular basis makes the FMCG sector highly dependent on efficient management of the supply chain. The processes of sourcing, production management, inventory stocking and distribution of finished goods make it necessary for this sector to have fast, reliable and efficient material handling solutions at stores and warehouses. Constant pressure to control costs necessitates the support of reliable, dependable and efficient warehousing solutions.

The ElectroMech Yale range of warehousing equipment is designed for high volume, multi-shift demands. Our equipment offer dependability, reliability and outstanding value for all material handling needs.

Additionally, effective fleet management is facilitated by combining technology with operations and the use of telemetry. Monitoring and reporting on the performance and the use of forklift trucks not only improve productivity, but also enhance the workable life of the equipment.

ElectroMech Yale forklifts and lift trucks deploy the telemetry features to monitor the material handling fleet, control operator access and help verify the compliance of operator pre-shift checklist. Asset protection, cost management and reduced downtime control are the obvious benefits besides tremendous improvement in safety. ■

### A few of our esteemed customers

**ARKEMA**  
INNOVATIVE CHEMISTRY

**asianpaints**

**FlintGroup**



**Mahindra**  
Rise.

**MAT**  
Maherson Automotive Technologies & Engineering

**P&G**

**Reliance**  
RETAIL





# Advanced reach truck solutions for a leading beverage company

In bottling plants of soft drinks, breweries, wineries or distilleries, we understand that the crates or packed boxes need gentler handling in a precise manner with the help of forklifts. It is also important that these forklifts are easy to operate and do not pollute or emit fumes, as the products are meant for human consumption.

Electric forklifts from ElectroMech Yale are thoughtfully designed equipment that make use of cleaner energy like lithium ion batteries. They get charged easily and last longer. Features like horizontal battery extraction ensure minimum downtime allowing for efficient battery exchange every time. Whether the application is inside or outside the plant, light or heavy duty, for long or short travel distances, for confined areas or unlimited space, ElectroMech Yale has solutions to keep your business moving.

In a recent example, our reach truck packed with advanced features made its way to Varun Beverages, the second largest franchisee of Pepsico in the world (outside the US). Varun Beverages needed reliable and precise equipment for their new facility in Pathankot, Punjab. The reach truck offered by ElectroMech Yale has a capacity of 1.6t and lift height of 10.5m. Our reach truck is designed for narrow aisles of warehouses where space commands a premium.

Making use of vertical space with taller racks and reducing the space between the two aisles allows greater utilisation of total cubic space available. However, it also adds to the challenges of navigation and material handling. Our reach truck is ideal for storing and retrieving pallets in racks in such locations. Every component of the forklift is designed considering productivity, ergonomic comfort of the operator, safety while turning, optimum use of battery life and minimal need for maintenance. ■

## Scope of supply

Reach truck capacity – 1.6t

Numbers supplied – 6 Nos.





In association with

**Yale** 



**ElectroMech**

| Solutions | Service | Satisfaction |





Cranedge helped L&T Heavy Engineering LLC to safely and swiftly relocate two overhead cranes.

# Relocating 200t cranes from Oman to India

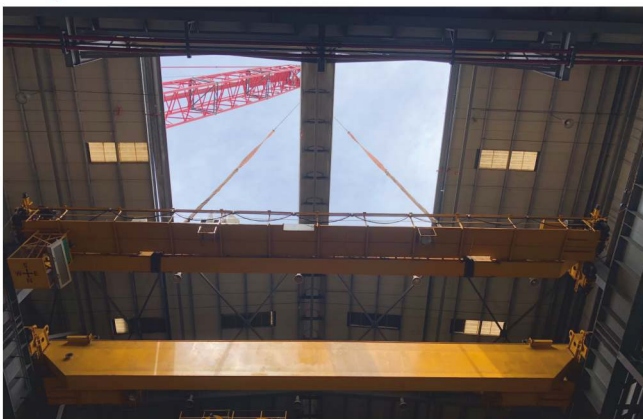
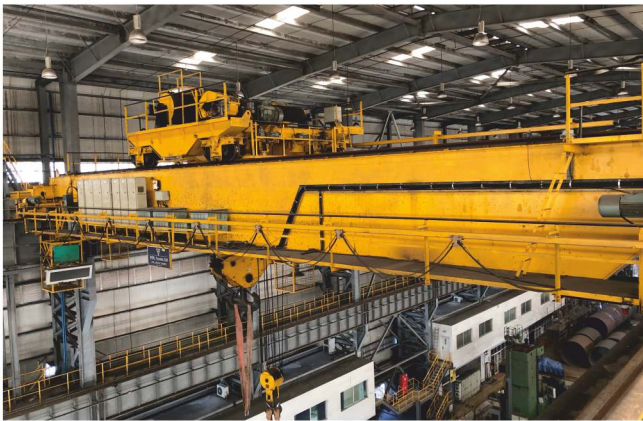


إل ان تي للهندسة الثقيلة  
L&T Heavy Engineering

L&T Heavy Engineering LLC is a Joint Venture between the L&T Group and the Zubair Corporation located at Sohar, Oman. Operational since 2009, this is the first Heavy Engineering facility of L&T Group outside India and is equipped to manufacture critical equipment for refineries, petrochemicals, fertilizers and other process industries.

Spread over 300,000 sq.m., Sohar Works has executed complex projects with a spectrum of metallurgies for renowned customers worldwide, and is ably supported by an infrastructure that covers 13,200 sq.m. under covered area with overhead cranes capable of lifting 500t. An open fabrication yard of 120,000 sq.m. is available for manufacturing large-sized vessels. The facility is fully equipped with state-of-the-art machines.

Thorough knowledge about cranes of other makes and perfect planning makes it possible for us to accomplish even the toughest tasks easily.





## Project challenges

The Sohar plant of L&T was using 2 nos. of 200/50t DG EOT cranes in one of its manufacturing bays for handling heavy components and fabricated structures. They wanted to relocate these cranes from the Sohar plant to their manufacturing facility at Hazira in India. The Hazira plant is one of the largest heavy engineering plants in the world where cranes of various manufacturers including ElectroMech are being used.

The relocation of these cranes from Sohar to the Hazira plant was planned to further boost the handling capacity of the Hazira plant to meet growing production requirements. The entire project was challenging for several reasons such as

- The two cranes, each with a capacity of 200/50t and span of 23.6m, were extremely heavy, being of old design
- Each crane with 25m long girders weighed 25t
- Both the cranes had been installed at 25m height and taking them down was indeed a challenge
- The entire crane dismantling was to be completed in just 15 days, that too, without affecting regular production in the plant
- The cranes were to be re-erected safely and commissioned at the Hazira plant in India

## Solution from Cranedge

Considering the mammoth size and weight of each crane, the L&T team was anxious about the feasibility of taking down the cranes safely without halting their regular work in the same plant.

However, the Cranedge team, with its expertise of providing solutions for such critical challenges, suggested an easy way out. They put forth the idea of temporarily opening the roof which would allow a crawler crane to handle large and heavy parts from outside just by lowering the hook from the opened roof without actually entering the shop floor.

With this idea, the Cranedge team developed a complete project schedule to meet the deadline stipulated by L&T.

The job was well done at Oman with proper packing and marking of components so as to make the re-erection easier. L&T undertook the responsibility of shipping the crane to the Hazira plant.

Once it reached there, the Cranedge team re-erected the cranes and commissioned them within just 15 days.

The L&T team is extremely happy with Cranedge's professional work and for completing the project well before the deadlines, while adhering to the highest safety standards.

The work of dismantling the cranes in Oman was handled through our associate company in Dubai – ElectroMech FZE. The erection & commissioning in the Hazira plant was handled by the Cranedge team in India.

## Benefits to L&T Heavy Engineering LLC

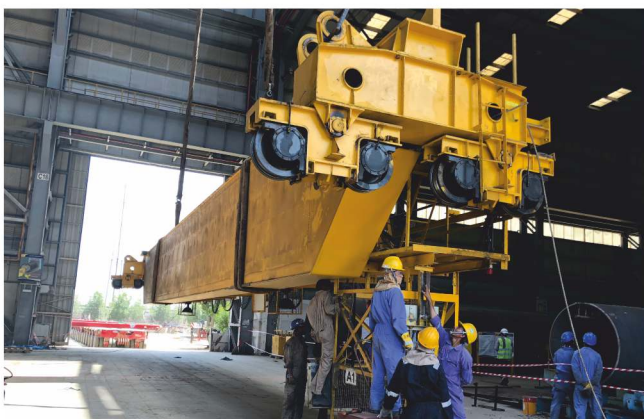
- Efficient use of existing assets for increasing productivity
- Phenomenal cost saving involved in procuring new cranes for the Hazira plant
- Strict adherence to the timeline by the ElectroMech and Cranedge teams in spite of a short notice helped in saving huge shipment costs. (The cranes were shipped from Oman with other machinery that was going to Hazira.) ■

### What our customer says...

We had an excellent experience of dealing with Cranedge for the overall project which was very well-planned and safely carried out. Cranedge has successfully completed the work in a 24/7 operational plant without affecting our production activities.

In line with the above, we confidently state that Cranedge has demonstrated technical ability and professional competence that satisfy our requirements.

**Rajendra V Deshpande**  
 Asst. General Manager,  
 L&T Heavy Engineering LLC,  
 Oman





A leading infrastructure company saves significant costs and time through the efficient reuse of assets.

# Refurbish, relocate, reuse assets to save resources

Infrastructure development in India is burgeoning and at the same time, the sector is witnessing phenomenal pressures to complete projects in a time-bound manner and within limited budgets. Cost pressures on infrastructure companies are increasing and 'sweating' assets is becoming an important solution to improve project profitability. Here is a classic case where we have helped a leading infrastructure company to effectively reuse its assets and achieve phenomenal savings in project costs.

## Project challenges

Our customer, IVRCL Infrastructures & Projects Ltd., is a renowned name in the Indian infrastructure sector. IVRCL has been awarded the Lift Irrigation Scheme from Thotapalli Reservoir to Gouravelli Reservoir proposed in the Flood Flow Canal, Phase-II of the Kaleshwaram Lift Irrigation Project. The project involves constructing an underground pump house and installing pumps and allied machinery.



## Cranes purchased by IVRCL in 2008 demonstrated peak performance

The joint venture between IVRCL and Unity, partnered with ElectroMech in 2008 for the prestigious project of an underground tunnel for the supply of drinking water to Mumbai. ElectroMech played a pivotal role through cranes supplied for tunnel mucking and TBM assembly.

ElectroMech Double Girder Gantry Cranes were deployed to match the excavation speed of the advanced TBM. The boring of the entire length of 8.3km was completed within a short span of 180 days and IVRCL set a record by achieving two million safe man-hours and maintained zero lost time and accidents. After the project was complete, the cranes supplied by ElectroMech, having fully discharged their duty, were lying unused in a stockyard.

## Idea to reutilise the crane for a new project

The typical life of a crane is close to 20 years. After the completion of the above-mentioned project, the cranes had about 10 years left for complete depreciation. Kaleshwaram Irrigation Project provided the perfect opportunity to IVRCL to reuse one of these cranes. However, the crane required modifications to suit the new requirements. The major challenge was the new span requirement, which was almost three times the span for which the crane had been originally designed. Besides modification, the crane was also to be relocated to the new site. IVRCL reiterated its complete trust in us for crane modification, erection and maintenance throughout the project.

Original crane supplied in 2008



Crane during modification at our factory, March 2018



Modified crane after installation, October 2018





## Solution from Cranedge

### How Cranedge helped IVRCL in 'sweating' its assets and reducing capex

It is the norm in the industry to write off an asset after it has served its purpose in a particular project. However, ElectroMech cranes, by default, are designed for serving on multiple projects. With a perfect understanding of this approach of ElectroMech's, Cranedge provides innovative solutions through engineering interventions that allow customers to reuse assets and maximise ROI. We also ensure that in spite of being old, refurbished cranes have a high uptime and that they are equally safe for reuse.

In this case as well, a systematic approach was followed considering the new project requirements. ■

### Engineering interventions

- Crane girder modifications to suit new requirement of 50m span
- Overhauling and testing of hoisting mechanism
- Strengthening existing support structure
- Thorough checking and overhauling of wheels, drives, bogies and connectors, making them suitable for reuse
- Checking of existing control panels and other electricals and providing replacements wherever essential

### Benefits

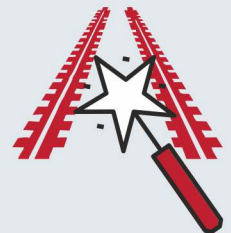
- Significant saving in capital expenditure involved in procuring a new crane
- Saving of time in engineering and manufacturing a new crane
- Commitment to resolve any post-commissioning service issue within 48 hours
- Consultation on utilisation and optimisation of existing asset
- Increased service life of the crane

**This is a model example of how Cranedge can help its customers reuse assets through modification and refurbishment and save significant capital expenditure. We are thankful to the IVRCL team for reposing their trust in our abilities.**

# Introducing Crane Rail Monitoring System – RAMON

For safe and smooth operation of cranes, perfect levels, track straightness and parallelism of the tracks are extremely important. They ensure longer life of the cranes, components and safe operations.

Cranedge offers a specialised and technologically advanced crane rail monitoring system – RAMON, for existing crane installations and for new cranes to be installed.



### Benefits

- Smooth and safe operations
- Longevity of components

Periodic rail monitoring helps avoid situations such as –

- Premature wear and tear of wheels and shafts
- Unpredictive crane downtime
- Cost-driven repairs or replacements

It helps ensure that crane components and sub-components have increased reliability and endurance, resulting in maximum availability of your equipment.

RAMON is used for checking alignment of rails in terms of span and water levels to identify the misalignment. This advanced system eliminates human error during the manual method of measurement and saves time as well as manpower. It enables supervisors to take precise readings at very close rail intervals along with the graphical interpretation of reports, which can be presented immediately.

RAMON offers a complete solution to keep the rail system in optimum condition by providing the timely inputs and corrective actions required. ■



# ElectroMech looks east



With a presence in close to 60 countries, ElectroMech is a force to reckon with in the global material handling space. While making strides in other continents, we are also focused on serving our neighbouring countries. With climatic, economic and cultural similarities, India and the SAARC countries have many opportunities to collaborate.

ElectroMech participated in the 5th Enterprise India Show at Myanmar, organised by the Confederation of Indian Industry, from 13-15 December, 2018. Sumit Hakhoo, VP (Sales) was invited as a panellist and shared his thoughts on Industry 4.0 in the manufacturing sector.

The event was graced by the presence of Honourable President of India, Ram Nath Kovind, First Lady Savita Kovind, Indian Ambassador to Myanmar, Vikram Misri and various industry representatives from both the countries. ■

#### Branch Offices:

Bengaluru : +91 89718 29999  
 Chennai : +91 89718 29999  
 Hyderabad : +91 89718 29999  
 Kolkata : +91 90515 33383  
 Mumbai : +91 77220 40422  
 Noida : +91 98999 79629  
 Vadodara : +91 89801 09849

#### Overseas Offices:

Abu Dhabi : +97 14885 7466  
 Bahrain : +97 31783 0860  
 Dubai : +97 14885 7466  
 Indonesia : +6221 2252 7980  
 Iran : +98 91210 84669  
 Nepal : +97 79801 023189  
 Oman : +96 89984 5015  
 Qatar : +97 43386 0130  
 South Africa : +27 11902 3907  
 Saudi Arabia : +96 65580 81221  
 Sri Lanka : +94 11 2500079



## ElectroMech

| Solutions | Service | Satisfaction |

#### Corporate Office & Plant

**ElectroMech Material Handling Systems (India) Pvt. Ltd.**

Gat No. 316, At post Kasar Amboli,  
 Tal. Mulshi, Dist. Pune 412 111 INDIA

Telefax : +91-20-6654 2222  
 E-mail : cranes@emech.in

#### Our presence across the world



Azerbaijan



Bahrain



India



Indonesia



Italy



Kenya



Nepal



Nigeria



Oman



Qatar



Saudi Arabia



South Korea



Sri Lanka



UAE



[www.emech.com](http://www.emech.com)

follow us on:

© Copyright 2019 | All names, logos and monograms used in this brochure are registered trademarks of respective companies. For private circulation only.  
 In-house publication of ElectroMech Material Handling Systems (India) Pvt. Ltd., Pune. Some of the data and information is either indicative or based on assumptions and theoretical calculations, hence may not be accurate and can't be considered as a claim by the company.