



ElectroMech

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Newsletter Issue 10 : 2018



DG gantry
crane with
54.6m span



Gantry crane
for nacelle handling
at Gamesa



Tower cranes for
dam construction
in the Himalayas

EMPOWER

Lifting & Handling



**The leader in crane solutions
now offers the world's leading lift trucks**

Double girder gantry crane for operating sluice gate installed on a dam in the Himalayas

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Take My Word!



Dear Customers, Colleagues, Business Associates and Well-wishers,

We are seeing a simultaneous resurgence in economic growth across several countries and this bodes well for the global industry. On top of this, the Indian industry has also got the 'spring' back in its feet on account of several infrastructure projects that have been launched and have now come into execution mode. While the introduction of GST has, to some extent, enhanced the 'ease of doing business', it is yet to translate into bigger benefits for the industry at large. As always, we at ElectroMech, are always geared up to be a part of this latest growth story.

The year 2017 was an eventful one for ElectroMech. With the addition of over 1000 new crane installations during the year, we have crossed the landmark of providing 6000 crane solutions across 50 countries around the world! We also ventured into new industry segments, tailored unique solutions and partnered with global leaders in the material handling space.

One of the testimonies to our achievements is our solution developed for Sheela Foam. It boasts of a crane with 54.6 metre span, as long as the wingspan of an aircraft. This crane is being used for handling large foam blocks.

We are playing an active and major role in India's defence equipment industry, which is gaining a boost under the 'Make in India' programme. In a major order, we are supplying 45 cranes to Goa Shipyard.

In this issue, we are also happy to share the success story of our 5000th crane that we supplied to Gamesa for handling nacelles. This was a 150t DG Gantry crane with 18m height of lift.

Our ingeniously designed **automated stacker crane solution** for Intas Pharma is helping them handle large volumes and variety with greater flexibility. These stacker cranes with the ability to travel vertically up to 7m have significantly reduced the floor-space requirement at Intas besides offering several other benefits. Read more about this interesting new application.

In our march to be your competent partner for a wide range of material handling solutions, we have partnered with Hyster-Yale®, which is one of the largest lift trucks manufacturers in the world. This association now enables us to address the requirements of the warehousing industry with a globally proven Yale® range of lift truck solutions.

Our aftermarket services subsidiary, Cranedge, helps several companies in the proper upkeep of their cranes by providing efficient and reliable services. The upgradation and modernisation services provided by Cranedge on older cranes allow the customers to have a longer life span of their equipment and sweat their assets. This significantly saves costs by avoiding the need for investing in new equipment. Do read about one such recent upgradation project carried out by Cranedge at GE.

Our construction equipment subsidiary, Zoomlion-ElectroMech, is a preferred partner of several construction companies for their tower crane requirements. Two tower cranes supplied by them during the previous year to Gammon, deserve a special mention. These are large capacity, flat top tower cranes that are being used at the Bajoli Holi hydroelectric power project. These are customised to withstand harsh environmental conditions and enable ease of maintenance in the chilling weather of the Himalayas. Do read more about this intriguing story in this issue.

With ambitious goals set for ourselves in 2018, we look forward to sharing with you many more of our future success stories.

Yours truly,

Tushar Mehendale
Managing Director



DG gantry crane with 54.6m span

As large as the wingspan of an aircraft.
Proving ability to develop customised solutions for unique requirements.

Sheela Foam Ltd. is the leader in Polyurethane (PU) Foam manufacture in India. With winning brands like Sleepwell, Feather Foam and Lamiflex, Sheela Foam is secure in its market leadership. It has manufacturing facilities across the country, with the Greater Noida plant being one of the oldest manufacturing units. Sheela Foam needed a material handling partner that could address their requirement for a customised crane to handle large foam blocks. The only challenge was to find a crane manufacturer with a capability of designing or manufacturing a crane with a span as large as half a football field!

When Sheela Foam approached ElectroMech for its material handling solution, it had just begun reconstruction at its Greater Noida unit. This reconstruction was due to a fire that had gutted down the entire pre-existing facility.

The cranes would be commissioned at a new structure that was being developed. The new structure had a clear span of about 60m. Sheela Foam team found it challenging to identify a competent solution provider to meet this unique requirement. When they came to know about ElectroMech's capability to provide customised solutions to address challenging requirements, they wasted no time in approaching us.



Solutions provided by ElectroMech

ElectroMech's technical team carried out a detailed study of the upcoming new structure and analysed their production volumes. Post a detailed analysis, our team inferred that Sheela Foam's material handling requirement would be best met by double girder gantry cranes.

It was recommended that Sheela Foam opts for two nos. of double girder gantry cranes instead of an EOT, (similar to the older existing crane). This option would not only be the perfect solution, but would also lessen the load on the upcoming structure. The double girder gantry cranes would also significantly reduce project costs by avoiding the need to reinforce the new structure, and being a more cost-effective solution in the long term.

These cranes would be equipped with four fixed crabs without any traverse motions and would be mounted atop the two 30t (7.5 x 4 nos) double girder gantry cranes with 54.6m span and 9m height of lift. These cranes would mainly be used for stacking and handling 52m long foam blocks through specialised lifting tackles. >>





DG gantry crane with 54.6m span

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Inbuilt safety features

- Load limiters which prevent loading more than the rated capacity
- Tandem operations of the four fixed crabs
- Anti-collision feature between two cranes
- Alarm for long travel
- Synchronised motion for all hooks to be brought in at one level for the loads to be picked up and the load limiters to be activated
- Manual chain hoists for continued production, if required



| Sr. no. | Type | SWL | Span | HOL | Application | Nos. |
|---------|-----------|----------|-------|-------|--|------|
| 1 | DG Gantry | 7.5t x 4 | 54.6m | 9.00m | Throughout the length of the warehouse | 2 |

Benefits to Sheela Foam

- Optimal solution which needed no reinforcement or modifications to the building structure
- Customised cranes with 54.6m long span, which were built to meet the customer's requirement optimally
- Time-bound and quick delivery with short turnaround time
- Faster installation and reliable on-time services
- All ElectroMech cranes have specific safety features which ensure operator and production safety
- Solutions which perfectly address requirements and overcome space constraints ■

Performing a significant role in India's Naval Defence

ElectroMech will be supplying 45 cranes to Goa Shipyard through JMC Projects

JMC Projects India Ltd. is a leading infrastructure company in India. Over the past three decades, JMC's capabilities have expanded to cover an entire gamut of construction, civil, mechanical and electrical engineering projects for all major industries across various sectors.

JMC Projects was awarded the EPC contract for the Goa Shipyard modernisation project. Goa Shipyard Ltd. (GSL) is a decorated shipyard which has been deemed a 'Miniratna' by the Government of India. This massive modernisation project will help GSL upgrade its infrastructure framework and allow it to incorporate latest technologies and expand its shipbuilding capabilities.

The proposed modernisation is in sync with the Government of India (GoI) initiative of 'Make in India'. This will allow GSL to focus on increased indigenisation and implementing 'Skill India' along with other peripheral GoI schemes. GSL has always made and continues in its endeavour of making state-of-the-art vessels for the Indian Navy and Indian Coast Guard.

JMC was appointed the EPC contractor for GSL Phase 3B and

Phase 4 activities. ElectroMech has bagged the prestigious order for the provision of dependable, reliable and competent crane solutions for both these phases. In Phase 3B, ElectroMech cranes will be used in the maintenance and repair of existing Indian Navy vessels. Under Phase 4, ElectroMech cranes will play an integral role in the manufacture of Mine Counter Measure Vessels (MCMV).

ElectroMech will provide a total of 45 cranes for the Phase 3B activities. This includes 25 Jib Cranes, 8 DGEOT cranes, 7 SGEOT cranes and 2 semi-gantry cranes. The DGEOT cranes will range from 15 to 80t with a span of 16 to 30m. The SGEOT cranes will range from 2 to 10t with a span of 9 to 21m. Besides this, there is also the requirement to provide three cranes of 1t each with hoist and monorail combination for the same phase.

Four Special Hazardous Area DGEOT cranes with 15-30t and a span of 24 to 35m have also been added to the wish list.

With ElectroMech being an active participant in the 'Make in India' initiative, this order is close to our hearts and we are proud to be associated with a project of this magnitude. ■



Photo courtesy - goashipyard.co.in



Siemens Gamesa is a global leader in renewable energy products and solutions with presence in more than 90 countries worldwide and a total installed capacity of 75GW. The company has an annual revenue of approximately €10 billion.

Siemens Gamesa is represented in India as Gamesa Renewable Pvt. Ltd. since 2009. Today, Gamesa Renewable Pvt. Ltd. (Gamesa India) is India's largest wind turbine maker with an installed wind power generating capacity of 3500MW. Over the years, Gamesa has been strengthening its industrial capability in India, which accounts for close to 30% of the company's total sales volume.

This success also has a lot to do with the fact that India has emerged as one of the countries with the greatest potential for wind energy. In 2016-17, India added a record 5,400MW of wind power which exceeded the initial target of 4,000MW. The Central

Government's ambitious target of achieving 60GW by the year 2022 via wind power implies that the wind power capacity in the country is set to more than double in the span of a few years.

It is under these emerging market conditions that Gamesa India reached out to ElectroMech for its material handling requirement

at its nacelle factory at Mamandur near Chennai. Gamesa India's unit near Chennai manufactures and assembles nacelles with more than 40% localised parts. Gamesa India relies heavily on its manufacturing facilities at Chennai to help it keep up with the burgeoning demand for wind power generation.

Challenges at Gamesa's nacelle plant in Chennai

At that time, Gamesa India was facing unforeseen delays in delivering nacelles as per schedule, which, in turn, was deferring its installations of wind turbines on site. This delay was caused due to the inability of a crane supplied by another brand to lift the rated SWL. With the existing crane being unable to lift the rated load, Gamesa was unable to load the nacelles onto trucks in a safe and timely manner. This meant a mammoth rise in the project costs and delayed project execution leading to a financial impact on Gamesa India.

With each nacelle typically costing about 30%-40% of the entire wind turbine cost and weighing around 75t to 120t, there were

very high stakes involved. Gamesa was looking for a safe and effective solution to aid it in despatching nacelles on time, allowing for installation on site as per schedule. The material handling requirement was to aid in loading the heavy and expensive nacelles on truck beds for despatch to the project site.

The nacelles, which are covered with fiberglass reinforced materials needed to be handled in a smooth and jerk-free manner, preventing any damage. Also, timely despatch of the nacelles would bring down the project costs and an optimal material handling solution would maximise the uptime of the Mamandur plant.

ElectroMech heralds winds of change at Gamesa

What is a Nacelle?

A nacelle is a critical part of a windmill and contains all main technical parts of the wind turbine. The nacelle of a wind turbine consisting of gearbox, generator, brake and a high-low speed shaft, is mounted on top of the tower. The nacelle also has the rotor hub at one end to which all the blades are attached. This is a hydraulic system that controls the angle of the blades, and the yaw drive, which controls the position of the turbine relative to the wind.

Solution from ElectroMech

The ElectroMech technical team was suitably challenged to suggest a material handling solution for Gamesa India's nacelle plant at Chennai. This requirement was on an urgent basis to resume delivery of the nacelles to the installation site.

The ElectroMech solutions team audited the pre-existing material handling equipment and immediately identified the shortfalls. Based on the details provided, the crane specifications were worked out. The team suggested a 150t Gantry Crane with a 20m span and height of lift of 18m.

Keeping in mind the customer's past experience, our technical team also recommended efficient industrial crane services from Cranedge. These services would focus on preventive maintenance to ensure greater workplace safety and avert production losses due to a sudden crane failure.

Total number of cranes: 01

| Sr. no. | Type | SWL | Span | HOL | Application |
|---------|--------------|------|------|-----|------------------------------------|
| 1 | Gantry Crane | 150t | 20m | 18m | Loading nacelles on the truck beds |

Benefits to Gamesa

- An optimal material handling solution was provided to them in an extremely short time frame. The entire project gestation period was mere 45 days, which meant that ElectroMech was able to address the requirement in a very efficient and timely manner.
- Solutions for handling high value nacelles in a smooth, safe and jerk-free manner were provided after a complete understanding of the requirement.
- On-time commissioning of cranes due to the presence of local offices and a competent team of professionals.
- ElectroMech's ability to customise as per the client's requirement and expertise in suggesting the optimal solution for specific needs provided Gamesa India with the perfect solution to their concern. ■

Intas is an Indian company that has made a great impact on the global pharmaceutical scene with its integrated pharmaceutical formulation development and manufacturing. As a rapidly growing pharmaceutical company, Intas experiences a steady movement of finished medicines and products from its plants to its warehouses. These products are then moved from the warehouses to the main distributors, and ultimately, to the retail outlets.

Intas has its main production plant at Chargodhar near Ahmedabad in Gujarat. Right across this plant is its warehouse which safely stores medicines and finished pharma products for further distribution. As a pharmaceutical company of repute,

Intas stores its medicines in a palletised, safe, and hygienic manner. On an average, these pallets weigh about 500kg each. With space at a premium, and a growing need for storing larger number of finished medicines, Intas has resorted to the internationally accepted vertical storage system, where the medicines packed in boxes are stacked in pallets which are one atop the other. Intas needed material handling solutions for safe storage and efficient distribution of medicines from its warehouse to the distributors.

ElectroMech worked with Intas Pharmaceuticals for this project to whom we provided an optimal, efficient and cost-effective solution for its requirement.

ElectroMech stacker cranes help cure material handling malaise at Intas

Challenging requirements at Intas

Intas Pharmaceuticals uses Automated Storage and Retrieval System (ASRS) in several of its production plants and is happy with its capabilities. However, there were certain specific requirements at Chargodhar, which could also be addressed optimally through ElectroMech material handling solutions.

The first and foremost challenge was the space constraint between aisles. There was a limited space of only about 1800mm between two racks where the material handling equipment would be able to operate. This was compounded by the fact that there were three such storage rows each with vertical storage of pallets up to 5m height. The solution would then need to have the capability to stack pallets and access these housed in vertical racks efficiently.

Intas operates on a high volume and multiple shift basis where medicines are moved round-the-clock in three shifts. This mandated the material handling solutions to work efficiently (on 24x7 basis) with little or zero downtime. The material handling equipment would need to move pallets from the stacking racks to the trucks.

Another specification was for the high value medicines for life threatening diseases like cancer that are distributed in comparatively low volumes. These medicines need to be accessed on a per-packet basis as opposed to the per-pallet basis. This may not be viable with ASRS. Each time such a requirement arises, the ASRS would have to be shifted to the manual mode and the medicines would have to be retrieved by the operator. This could lead to considerable loss of efficiency and productivity. This meant that the optimal solution would need the capability to address requirements both, in manual and automated formats.

Another critical and determining factor was the investment costs. Intas specifically needed a more cost-effective and efficient solution which would help it control its investment costs while helping it to increase productivity. These stipulated 'medicine-specific' and 'requirement-specific' solutions necessitated a manual material handling solution instead of an automated one.



Solution from ElectroMech

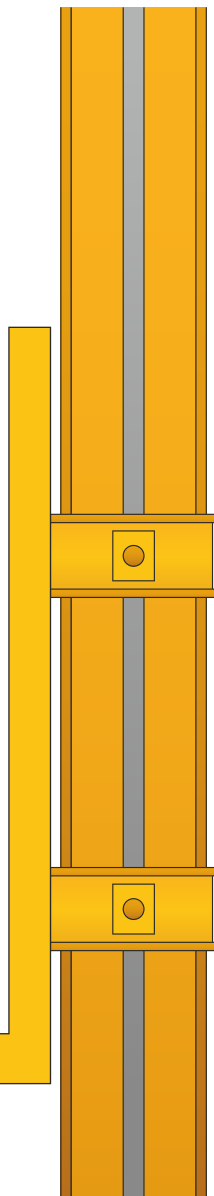
The ElectroMech technical team gathered in-depth information and studied the production and storage volumes and material movement schedules on a daily and monthly basis. The team then went on to identify certain areas where it was felt that our solutions would be better suited than an ASRS. It was suggested that with increased vertical storage, Intas would be able to maximise its space utilisation and would be able to store more volumes of medicines in the same warehouse space. Our solutions would also enable efficient material movement on a per-pallet or per-packet basis, as was required.

Based on its analysis, our team advised Intas about our stacker cranes which would be able to meet requirements in the most cost-efficient manner. The requirement would be optimally

resolved by three stacker cranes having SWL of 0.5t each with the height of lift of 7m and a span of 14.3m each.

These stacker cranes would be able to load pallets over and above the rack height of 5m and would be able to easily operate within the 1800mm aisle space between racks. This would not only increase speed and efficiency, but would also be able to provide access to pallets to extract individual packets of medicines for distribution. Manual operations reduced dependency on availability of power for operations of automated systems.

Intas is satisfied with the solutions provided by ElectroMech and within a short span of time, we have gained three more orders for Intas' warehousing units at different locations.



Solutions from ElectroMech

- Three stacker cranes having SWL of 0.5t each, with height of lift of 7m and span of 14.3m each
- Ability of stacker cranes to operate efficiently in a narrow aisle space
- Increased vertical storage ability for maximum space utilisation
- Cost-effective and efficient option for switching between manual and automated operations
- Nearly zero downtime for round-the-clock operations in high volume and multiple shift operations.
- Timely and effective maintenance and upkeep



Benefits to Intas

- Complete solution to stack, store, and move pallets on a regular basis from warehouse to trucks
- Ability of the solution to switch operations seamlessly between low-volume, high-value medicine movement and high-volume, multiple shift basis without loss of productivity
- Maximum space utilisation and increased vertical storage within the limited aisle space of 1800mm between racks
- Safe and efficient handling of medicines
- Solution independent of power availability for round-the-clock operations ■

Leveraging Strengths. ElectroMech and Hy



ElectroMech Material Handling Systems signed and sealed an agreement on April 26, 2017 with Hyster-Yale® for sales and service of their Yale® and UTILEV® brands of forklifts and lift trucks in India.

Yale®, a Hyster-Yale® brand, is one of the oldest lift truck manufacturers in the world, and is globally recognised for quality material handling equipment for over 140 years. Yale® provides dependable forklifts and warehousing solutions globally.

With this announcement, ElectroMech has extended its portfolio of products to include a wider range of material handling solutions in India. This wide and expansive range right from industrial cranes to pallet stackers gives us an undoubted lead in providing optimal solutions for a wide range of material handling requirements. This agreement, specifically for the sales and service of the Yale® and UTILEV® product ranges will allow both companies to build on each other's strengths.



ElectroMech

Yale®



Hyster-Yale join forces to lead Indian market.

ElectroMech's leadership position in the Indian market and dependable service support through its subsidiary, Cranedge are bolstered by the global technology from Hyster-Yale®. This agreement boosts the reach of ElectroMech to a wider audience across untapped industry segments and is in line with the goals of Hyster-Yale® for the Asia-Pacific region of strategic alliances in burgeoning markets.

ElectroMech Yale will now offer a wide range of warehousing solutions and counterbalanced trucks for industries like Pharmaceuticals, FMCGs, Food and Beverages, Warehousing and Logistics, and Cold Storage and Perishables. The range of high-quality and high-performance forklifts starts from 1000kg capacity warehouse equipment to the IC Engine powered

counterbalanced forklifts which can handle a load of up to 16,000kg. These products are offered across all categories - counterbalanced forklifts in both, electric and IC models, narrow aisle trucks, pallet trucks and stackers are offered in electric models.

The estimated annual market size for forklifts in India is about 10,000 units. With several governmental initiatives, increasing demand for products that use the latest technologies, increasing e-commerce activities and the surge of western trends of standardisation including palletisation and containerisation, we expect an increase in productivity and lower cost of ownership in the warehousing industry.

With the addition of Yale® range of lift trucks to our solutions offerings, we are now better equipped to address handling requirements in large number of industries. ■



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Do visit and let us
know what you think!



DILIP BUILDCON LIMITED
INFRASTRUCTURE & BEYOND

Proud to be a part of infrastructure project for the progress of Goa

The Government of Goa recently approved the construction of an eight-lane elevated bridge over the Zuari river which will assist in controlling the traffic on the old NH 17. This new bridge parallel to the older one aims to assuage traffic snarls and cut short the commute time between Madgaon and Cortalim.

For the construction and maintenance of the new Zuari bridge, the EPC contract has been awarded to Dilip Buildcon Ltd. (DBL). DBL is one of the fastest growing infrastructure development companies in India. Its focus is on infrastructure development including roads and bridges, water sanitation and sewage, irrigation and commercial buildings.

For executing this project on time and as per the specifications mandated by the Government of Goa, DBL was looking for a capable material handling partner to provide reliable, dependable and customised cranes for the necessary precast yard work. After receiving several bids for the material handling equipment for this project, DBL chose to partner with

ElectroMech based on the optimal solutions proposed by ElectroMech for precast yard work.

This is a first ever partnership between ElectroMech and DBL. ElectroMech has supplied three gantry cranes of SWL 100/30t for this project. These cranes will aid in the construction of precast segments for the bridge at two separate lots adjacent to the proposed construction site. Two cranes of 25m span will help in the activities in Precast Yard B, and one crane with an 18m span will assist in the work at Precast Yard A. Our cranes will help carry the segments, stock them and ultimately help load ready segments onto truck beds for on-site installation. For the project to be on time, it is imperative that the cranes perform reliably with minimal downtime - an important reason for DBL to partner with ElectroMech.

ElectroMech is proud to be a part of this ongoing infrastructure project for the development and progress of Goa. ■

ROMON joins the Cranedge maintenance brigade

Wire ropes are an integral part of different equipments, especially cranes, which depend heavily on the ability of the wire rope to lift, hoist and carry the designed Safe Working Load (SWL). As with any mechanical part, wire ropes are subjected to deterioration during operations. The wire rope must be regularly inspected throughout its service life for the safety of employees and assets. It is also essential to comply with various statutory requirements.

The life span of the wire rope and the time for replacement is typically judged on its breaking strength, rotational stability, flexibility, structural ability and spooling behaviour. Any reconciliation on these factors will lead to compromise on the health of the wire rope and will affect the efficiency of the crane.

A wire rope, through constant operations, is subjected to wear and tear which compromises its structural strength and health. This, combined with environmental factors like dirt, water, and grime will result in corrosion in the core of the wire rope. These wear and tear and corrosion factors may severely compromise the safe working of the crane.

Keeping these factors in mind, Cranedge has introduced ROMON - Rope Conditioning Monitoring System.

ROMON is a portable and non-destructive inspection equipment that helps Cranedge monitor wire rope conditions. These portable devices are used for regular testing of the wire rope to help predict maintenance and prevent loss of productivity due to sudden wire rope failures.

ROMON uses the technique of magnetisation of the crane wire rope to check for compromised quality and strength due to broken wires, corrosion, and excess wear and tear. Smaller defects like internal strand breakage in the coil, depreciation of wires at specific points, cannot be detected during visual inspections. These and other defects can be detected when the wire rope passes through the special sensors of the device.

Thus, ROMON helps identify wire rope defects and allows customers to take informed decisions to schedule maintenance or replacement of wire ropes before any untoward incident resulting in loss of life, or damage to machinery or property or production halts, takes place.

So, get your Wire Ropes checked by Cranedge ROMON today! ■

**cranedge**

upkeep • upgrade • upraise



Enhancing SWL of existing crane without compromising safety and performance

Cranedge demonstrated its expertise at GE

General Electric (GE) is an American multinational conglomerate and operates in various segments like Aviation, Power, Renewable energy, Healthcare, Lighting, Oil and gas, Transportation, Medical devices, Life sciences and Capital.

GE operates 10 manufacturing and service plants in India. One of the plants situated in Pune, commenced production in the summer of 2011. This plant is GE's first manufacturing centre in India and is spread across a 68 acre campus on the outskirts of the city. This is a Multi-modal Manufacturing facility and caters to various business units of GE like Transportation, Oil & gas, Renewable Energy, etc.

The ElectroMech group and GE India have been associated since 2013 when Cranedge supported GE India for capacity enhancement of a 60t gantry crane to a 70t gantry crane. The existing hoisting equipment of 60t was replaced by new 70t hoisting equipment. The existing structure was restrengthened and made suitable for 70t capacity. This gantry crane is being used to lift wind turbine nacelles. Later, Cranedge also relocated this 70t gantry crane from GE's rented plant to their new plant in Pune.

As a part of the evolving needs at GE, they had a requirement for enhancing the SWL of the same 70t gantry crane to lift a heavier nacelle of their new model of wind turbine. The maximum weight of the nacelle was going to be 71t. After adding the weight of the lifting beams and slings, GE had an immediate requirement for a crane having an SWL of 75t. However, considering the future production requirements, GE was contemplating to go in for a gantry crane with SWL capacity of 100t which would run on the existing rail beams.

When the GE team approached Cranedge with the new requirement, our engineers did a thorough technical evaluation of the site where the existing gantry crane was installed. A detailed analysis of the subsoil strata and strength of the existing foundations of the crane rails was carried out to check feasibility. The analysis revealed that the existing foundation could carry maximum wheel load of an 80t gantry crane. Strengthening the foundations to make it suitable for a 100t gantry crane was not feasible as it involved major downtime for GE's operations.

After analysing the foundations, Cranedge engineers also thoroughly analysed the design of the existing 70t gantry crane

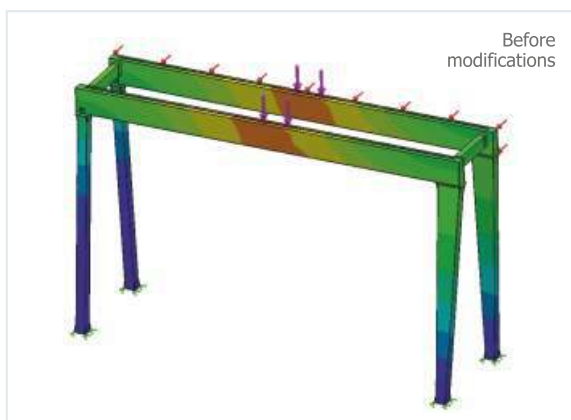
installed at GE using the latest FEA tools. As a result, our team suggested that the existing structure could be made suitable for lifting a maximum load of 77t after a few minor modifications.

During our discussion with the GE team to come up with a most pertinent solution, Cranedge proposed a unique idea. According to our team, GE could use the existing structure of the 70t crane with a few minor modifications and ElectroMech would supply a bespoke 80t Abus hoisting trolley for installation on the existing 70t crane structure. The 80t Abus crab would be programmed to have its safety limit set to 77t. This way, it would be possible for the existing 70t gantry crane to be certified as having an SWL of 77t.

GE evaluated the proposal and after a series of technical discussions and clarifications, they decided to go ahead with it. Cranedge was asked to modify the existing 70t gantry crane to a 77t gantry crane. On receiving the order, Cranedge executed it within the strict time lines prescribed by GE.



Finite Element Analysis (FEA)




cranedge

upkeep • upgrade • upraise

Why Cranedge?

- Ability of the Cranedge team to provide a customised, complete as well as economical solution to meet application requirements
- Cranedge has an implicit understanding of diverse requirements across different industries
- In-depth knowledge of all types and makes of cranes allowing us to quickly diagnose and resolve problems
- For complex analysis, design backup is available from India's largest crane manufacturer - ElectroMech
- Expertise in handling cranes across a host of different design standards - IS, BS, DIN, FEM, CMAA, etc.
- Ability to respond to the business needs of the customers and respect the time lines for completion
- Provides aftersales support on the modified crane through Annual Maintenance Contract
- Consults clients on enhancing equipment utilisation and optimisation, thus enhancing the value derived by the client

Advantages for GE

- Effective utilisation of an existing asset, enhancing the return on the original investment.
- Achieved savings on investment to the tune of 50% compared to buying a brand new 80t gantry crane.
- No compromise on safety aspects.
- Having the support of Cranedge - a professional services company dedicated to providing complete aftermarket services for industrial overhead cranes, hoists and related material handling systems.

Cranedge has successfully built credibility with its continued and prompt support to GE. Our expertise, sincerity and consistent service support culminated into new orders from GE. We will be supplying 7 cranes for their expansion project at Pune. Another 6 cranes will be supplied to the GE Transportation unit which in turn will be installed at the Roza Shed of the Indian Railways Project manufacturing diesel locomotives/railway engines.

We sincerely thank the GE team for their complete trust in our expertise and capability to deliver optimum solutions. ■



Just 4 days!

Dismantling, relocating, re-erecting and commissioning a tower crane saves significant costs and time at Rohan Builders' prestigious project.

The construction industry has seen several technological advancements over the last decade or so. Speed of construction plays a vital role in large construction projects as it has a direct impact on project time lines and costs. Rohan Builders, one of our esteemed customers, faced a challenge to dismantle and re-erect a tower crane from one of their sites to another in Pune. The entire construction at the new site was held up due to unavailability of a tower crane on-site and the company was losing money per day. Zoomlion-ElectroMech dismantled and re-erected the same tower crane within a record time at Rohan Builders' Wagholi site in Pune.

The opportunity

Rohan Builders, a renowned construction player in the country wanted to use advanced Tunnel Form technology to speed up construction work. Tunnel Form technology which is all about speed in construction is an ideal solution for completing construction projects speedily. The use of conventional formwork in any structure takes about 12 to 15 days per floor cycle and if aluminium formwork is used, it usually takes 7 to 12 days per floor cycle. However, in Tunnel Form technology, the construction is carried out within three to four days per floor cycle.

The challenge of installing the tower crane in record time

Tunnel Form technology utilises big 'L' shaped plate structures, weighing approximately 5t each. These L-shaped plate structures need to be lifted and placed on the floor, which are later to be constructed into high-rise towers. This operation calls for a high-speed tower crane to move these structures. Rohan Builders had employed a team of 15 technical experts flown in especially from Turkey to handle the Tunnel Form technology on their site. The cost per day for accommodating this team was around INR five lakhs.

Due to the non-availability of a tower crane at site, the entire Turkish team was left waiting. Normally, it takes around 14 days to dismantle and re-erect a tower crane, but this was not a viable option for Rohan Builders at the time. A delay would result in a loss of about INR 70 lakhs in wages for about 15 days - the time the Turkish team of experts sat idle.

Rohan Builders wanted to install a tower crane on-site as soon as possible.

Focus and hard work payoff

Zoomlion-ElectroMech was all charged up to accomplish this challenging task. Since the deadlines were extremely tight, ZEIPL started with the job immediately. Our team of experts studied and analysed the process and then segmented each task into smaller ones. Various team members were assigned these smaller tasks and additional manpower and resources were deployed urgently. The team also drew up a time-bound schedule comprising round-the-clock work for four consecutive days. This was designed with the strong determination to implement it successfully.

Day 1 was dedicated to the dismantling of the crane. Day 2 was dedicated to moving all crane components to the new site. Day 3 was committed to re-erecting the crane at the new site.

Finally, Day 4 was marked out entirely for height increase and commissioning.

These tasks were planned with meticulous precision and were accomplished as per schedule. While planning, the team had considered all crucial factors and placed the right experts to accomplish tasks. The assigned chief project manager ensured smooth coordination amongst all the teams to come through on the ultimate goal of meeting the deadline.

The ZEIPL team is extremely proud that the crane was successfully commissioned and ready to use by the end of the fourth day, as promised. Team work, focus, dedication, willpower to provide solutions for every lifting challenge, and pure determination made this challenging task possible. ■



Gujarat Office



ElectroMech recently inaugurated its new office at Vadodara, which is centrally located in the fast developing and popular commercial district of the city, Akshar Square. With this office, ElectroMech has over six major regional offices and reinforces its nationwide presence for speedy sales and service resolution.

Vadodara is an important city for ElectroMech owing mostly to its status as a critical industrial hub in western India. The new Regional Office is well-equipped and is led by a young, professional team of engineers.

We wish our Gujarat team great success and congratulate them.

Zoomlion-ElectroMech helps Gammon in the construction of an ambitious project in

Proven performance and reliability of Zoomlion-ElectroMech tower cranes help Gammon in its monumental task of dam construction for a power project.



the Himalayas

About Gammon India Ltd.

Gammon India is one of the largest infrastructure construction companies in India. Its track record spans significant landmark projects across all sectors of civil engineering, design and construction. It is renowned for some of modern India's iconic structures.

Gammon India has often placed its trust in ElectroMech as its one-stop material handling solutions provider. ElectroMech on the other hand, has always contributed its best by getting involved with Gammon right from the project planning stages, helping it achieve smooth project execution. ElectroMech cranes are relied upon for their precise engineering design and quality operations at various projects being executed by Gammon and other infrastructure companies in India and across the world.

About Bajoli Holi Power Project

The Bajoli Holi Power Project is a 180MW HEP run-of-the-river power facility being constructed on the River Ravi in the Chamba district of Himachal Pradesh. Gammon India is the EPC partner for this hydroelectric power project and is constructing a 66m high concrete gravity dam near Bajoli village, about 950m downstream. The tentative project cost is estimated at INR 1,050 crores. Based on the current flow pattern of the river, the generation from the project would be at least 664 million units per year. Himachal Pradesh, Haryana, Punjab and the Union territory of Delhi would all benefit from the power generation from this project.

Handling challenges at Bajoli Holi

For their power plant project at Bajoli Holi, Gammon India had very precise and defined requirements for tower cranes. Knowing the reputation of ElectroMech for providing customised solutions for most critical requirements, Gammon approached us. Zoomlion-ElectroMech, a subsidiary company of ElectroMech, offers an advanced range of Tower Cranes.

For Gammon India, the main challenge was the process of concreting of the dam at Bajoli Holi, which was complex and intricately designed as per the cycle time calculated to complete the project. This cycle time was a short window of opportunity of 7 to 8 months when the weather in Himachal Pradesh was favourable to work. Post this, the extreme and inhospitable work conditions would make it impossible to carry out project activities.

This time-bound specification made it critical for the tower crane to give maximum productivity with almost zero downtime during the project cycle. This meant increased uptime and productivity with minimal maintenance. Since the power project work would be carried out in the remote Himalayan region, the cranes also needed to have customised features for operator comfort, functioning and maintenance.

The remote geographic location of Bajoli Holi made it mandatory for the cranes to be made of quality material enabling them to work incessantly in extreme conditions. The material handling solutions provider also needed to have the capability to provide swift and efficient service support in this remote and difficult to access area. The critical challenge was to ensure that solutions provided »



Zoomlion-ElectroMech helps Gammon in the construction of an ambitious project in the Himalayas



were also designed to suit the cycle time of 7 to 8 months calculated to complete the project.

Gammon sought proposals from several material handling solution providers to help it meet the project deadlines. Ultimately, after extensive discussions, Gammon awarded the contract to ZE IPL.

Solutions from Zoomlion-ElectroMech

Based on detailed discussions and understanding of the project's critical challenges the ZE IPL technical team suggested the use of two Flat Top Tower Cranes which are best suited for working round-the-clock and in extreme weather conditions, with minimal maintenance and upkeep.

The two 32t Flat Top Tower Cranes (T630-32) were optimal for the concreting of the dam activity. Furthermore, based on the project conditions and specific requirements, a 4 cu.m bucket was also added after which the tip load of the crane was derived. ZE IPL T630-32 tower cranes would provide over 12.5t lifting capacity at a 50m radius and a 60m jib length. The crane's maximum jib length could be extended to 80m. With a free-standing height of 77.8m, this tower crane would be ideally suited for dam concreting and other infrastructure projects.

A customised feature of a specially integrated cabin was also introduced for operator functionality. This cabin is about three times longer than a standard cabin and has all electrical components fitted within it. These components are separated by a door partition and can be accessed any time by the operator without stepping out into the cold.

| Sr. no. | Type | SWL | Span | HOL | Application | Nos. |
|---------|---------|------|------|-------|-------------------------|------|
| 1 | T630-32 | 32MT | 60m | 77.8m | Dam concreting activity | 2 |

How Gammon benefited from our solutions

- Indigenously crafted solutions
- Post-sales support which is efficient, fast and reliable
- High quality components which allow the cranes to work effectively even in extreme climatic conditions and sub-zero temperatures
- Ability of ZE IPL to commission cranes in remote and hilly areas
- Free-standing height of 77.8m and jib length which can be extended from 60m up to a maximum of 80m making it a perfect solution for dam construction and infrastructure projects

- Customisable features like specially designed cabins for operator functionality
- Increased uptime with round the clock crane operations

Challenges

- Requirement of cranes which were specifically suited for dam construction activity
- Remote location of the project necessitating commissioning by a capable material handling company
- Ability of cranes to work with nearly zero downtime in a short project window of 7-8 months
- Quality cranes for optimal output in sub-zero temperatures
- Customised features for enhanced operator functionality

Solutions

- Two 32t Flat Top Tower Cranes with 32t SWL and 60m span with 77.8m height of lift
- A bucket with a lifting capacity of 4 cu.m.
- Customised operator cabin for enhanced operator functionality
- Reliable and capable cranes for near zero downtime outputs to meet project deadlines
- Maintenance and service options even in a remote area like Bajoli Holi ■



Launch of Yale® Forklifts at Warehousing Shows

ElectroMech participated in two consecutive exhibitions on Warehousing & Logistics - the 7th India Warehousing Show, 2017 held at New Delhi and the India Warehousing & Logistics Show, 2017 held at Pune. These exhibitions offered us the right platforms to announce our association with Hyster-Yale® and introduce our new range of Forklifts.

With prominently located booths at both the shows, the ElectroMech Yale stalls had a three-side open layout and were divided into three main zones. The reception area housed our welcome/sales team which offered visitors basic information on the market presence and expertise of Yale® products, as sold and serviced by ElectroMech. The display area showcasing the Yale®

Reach Truck, allowed several curious visitors and potential customers to learn more and get a first-hand experience of the application, lifting abilities and manoeuvrability of this world-class product. The discussion zone offered visitors a chance to learn in-depth about ElectroMech Yale and also gave them information about our wide-ranging warehousing equipment and counterbalance trucks. Our competent and capable sales team was at hand to answer specific customer questions.

With both shows eliciting good response and with numerous enquiries pouring in, we now look forward to serving diverse industries with a wide range of solutions. ■



Employee Volunteer

Meet **Mr. Mangesh Badad, Manager - Production** at our head office.

At the first glance, Mangesh comes across as a regular ElectroMech employee, but what sets him apart from all of us is his tireless and selfless work in giving back to the community.

Mangesh has been actively involved with several charitable activities for more than a decade. As a part of the Nirnakari Charitable Foundation, Mangesh has been volunteering on his off days for the upliftment and betterment of his community. On most weekends, he can be seen organising blood donation drives, hosting tree plantation camps, aiding underprivileged school - going children, and assisting cleaning of railway stations under the Swachh Bharat Abhiyan.

consumption. With over 97% of Earth's water being salt water, the remaining 3% fresh water should be conserved and utilised prudently.

Mangesh has been working steadfastly for Ground Water Replenishment on the slopes of Dighi Hills. A team of volunteers has undertaken the task of cleaning the hill premises and barricading water from flowing-off freely. This activity, while checking top soil erosion, will also replenish the depleting ground water levels. This work caught the interest of the local television networks and was carried on air as well.

Mangesh is a firm believer in spirituality and advocates its use for empowerment, education and enrichment of lives. "The simplest way to God is through His people. Any individual who lives only



It is with pride that we highlight Mangesh's voluntary work at Dighi Hills. Dighi Hills - a small cluster of hills in Pune around the Dighi village. An easily accessible area, it provides 360° views of surrounding areas of Alandi, Bhosari, and Pimpri Chinchwad.

Increasing urban sprawl is allowing rainfall to flow freely as surface water rather than seeping back into the underground reservoirs. This constant run-off from the surface leads to wastage of fresh water, which can be used for human

for himself has not understood the true meaning of life", he says.

Such is Mangesh's commitment to his community work that most of his family including his wife, children, brother and other relatives are also involved in these activities.

Kudos to Mangesh who truly knows how to live life to its fullest and give back to the community! We are proud of his efforts towards the betterment of society. ■



ElectroMech

| Solutions | Service | Satisfaction |

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