



A revival in infrastructure and construction industry will boost demand for cranes.

Managing for success

Technology, quality and safety is what matters when buying cranes

BY JAYASHREE MENDES

Demand for cranes is mainly driven by infrastructure and construction, power (generation and equipment), automobile, and the steel sector. A slowdown in any of these sectors can drastically affect the cranes sector.

Cranes play crucial roles in today's highly automated industrial activities.

Although the Indian industrial cranes segment is extremely fragmented, estimates put the industrial cranes market at ₹2,000-2,200 crore per annum. Approximately 70% of the Indian crane industry is dominated by reputed names in the organised sector.

Ravin Wadhawan, director (port solutions and cranes), Terex India, says, "The economic slowdown had a strong impact

in our markets; we are on a late cycle industry, so cranes suffer the impact of economic slowdown later than anyone. General construction has been weak, and this has affected the demand of related products. While we do see potential in the long term, we are cautiously optimistic."

The recent slowdown in the Indian economy also witnessed a drop in the announcement of new projects. This



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reflected on the demand for industrial cranes. According to Tushar Mehendale, managing director, ElectroMech Material Handling Systems, “Our estimate is that the market size has dropped to ₹1,500-1,800 crore, compared to ₹2,200-2,500 crore a couple of years ago.”

However, Mehendale adds, that over the past couple of months, his company has been seeing movement in the demand for material handling equipment. “Stalled projects seem to be getting back on track. Customers have started discussing expansion plans which had been shelved for a long time. As a result, there is a buildup of action in the industry. Our reading of the market is that the economy is slowly turning around, fuelled by the advent of a growth-oriented government at the Centre.”

Most manufacturers consider this the best time to invest in expanding operations or seek out new technology that could spur business when the market is back on its feet. While the crane industry has seen little revolutionary changes in technology last few years, evolutionary changes have certainly happened. For instance, one technology trend from ElectroMech is the standardisation of



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radio remote controls across all its cranes. Radio remote controls offer a substantial increase in flexibility for the crane operator as well as allow safer operations as the operator needn't remain under the crane. In addition, the need for the festooning system along the crane girder is negated, allowing the cranes to remain lighter as well as neater. ElectroMech also provides sophisticated anti-sway systems in their cranes that ensure that the machine works at high travel speeds without worrying about loads swinging dangerously. This in turn helps the customers in significantly ramping up productivity.

Manojit Acharya, executive director, Demag Cranes and Components (I) Pvt. Ltd, says, “Manufacturing process is undergoing several changes. Most of them are related to productivity on the shop floor and increasing the efficiency of people and processes. This calls for a whole lot of mechanisation and automation. There are many requirements that come to us that involve a high degree of automation. Cranes with diagnostic features and human-machine interface, cranes with memory, pre-programmed cranes, tandem operations, semi- or fully-automatic cranes, are some examples.”

Archarya adds that the technology found in most Terex cranes is proprietary. It involves the IC 1 graphical and touch control system. This not only stores all load charts and configurations in a user-friendly way, but also displays status information about the crane in real time and assists in basic trouble shooting. “Our CC2800 is a successful crawler crane in the 600 tonne capacity. We developed a new crane as a successor to this model. The result is the crane can do more than its predecessor with a reduced operating cost.”

Some of its benefits are:

- More load moment, maximum capacity, higher/heavier wind mills and longer boom configurations. A new cabin designed with Porsche design and ergonomic experts, with a fall protection system
- A reduced operating cost and an ability to self-erect main boom in long boom configurations without the use of assist crane and is easier and quicker to assemble

Quality of cranes manufactured in India is also of prime concern. As of now, most Indian companies manufacture

INDUSTRIAL & CRAWLER CRANES SPECIAL

cranes as per Indian Standards (IS). Most of them are bulky and unduly bulky. There are many local companies who make cranes for basic lifting purpose with less safety and advanced automation features. But the better cranes come from multinational companies who manufacture cranes of international standards with advanced technology and safety features. They are faster, safe and easy to operate and maintain.

Though the Indian crane industry has reached a certain level of capability, there is room for advanced technology so that customers can enjoy better lifting economics. Mehendale says, "The infrastructure, construction and civil construction industries have a huge requirement generation for the material handling industry. Primarily, there is a direct requirement for equipment at various project sites such as gantry cranes for precast segment yards and bridge constructions, specialised hoisting equipment for bridge launching girders, etc. Typically, the capacities for such cranes can range from 10mt to 150mt."

Infrastructure projects would also require portal cranes or goliath cranes. Acharya says, "It is difficult to pin a particular capacity to requirements. The ca-



“ Many requirements come to us seeking high degree of automation. Cranes with human-machine interface, with memory, tandem operations, semi- or fully-automatic cranes, etc.”

Manojit Acharya, executive director, Demag Cranes and Components

capacity of cranes keeps changing depending on the nature of project and weight of material or components to be lifted. It could be anywhere from three tonne to 80 tonne or more. We have a range starting at 80kgs and going up to 400 tonne."

The versatility of a crawler crane is based on the fact that it can be used for conventional lifting purpose. More so, as construction projects of refineries, power plants and other industrial projects are becoming complex and bigger in sizes. Crawler cranes are gaining prominence as equipment that can undertake heavy lifting and are particularly popular when it comes to erecting windmills.

In terms of after-sales services, most companies are committed and have a wide network. ElectroMech has Cranedge, a fully owned subsidiary, which caters exclusively to after-sales requirements. Cranedge has large in-house facilities dedicated for any kind of repair or modification job.

After-sales service of most companies in the organised sector include lifecycle services that include health assessment, annual maintenance contracts (AMC) and other services such as certifications, load testing, commissioning and relocations. Companies also offer modernisa-



Most cranes do well in terms of service and at lesser operating costs.



The new cranes come loaded with safety features that are in-built in the circuitry.

tions, overhauling, repairs and capacity enhancements. ElectroMech's Cranedge is also in a position to develop specialised parts or spares and help customers with their spares inventory planning. Besides this, it offers consultative services such as operator trainings, crane performance audits and analysis and crane Kaizen.

In terms of safety, Demag has equipped its cranes with safety features like overload protection, which does not permit the user to lift more than the safe working load (SWL) of the crane. Acharya says, "Users sometimes tend to ignore it without realising that this apart from stressing their structures can result in loss of life or limb for their plant personnel. For multiple cranes working in a bay, there are provisions for horizontal or vertical anti-collision systems that ensure that the cranes do not collide with one another."

Some of the other safety features Demag provides are human protection sensors in gantry cranes, A-V signals/alarms for alerting personnel working around, various interlocks in crane con-



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Cranes come fitted with electrical interlock so as to avoid accidents.



As crawlers require large bearing area, operators should ensure that it sits on a flat ground level position.

trols to minimise man-made errors.

Mehendale says that ElectroMech cranes have several electrical interlock systems hard wired in its circuitry which prevent an operator from running the crane in an unsafe manner even if he wishes to do so. "Through smooth start and functions as standard on all of our cranes, we ensure that the load swing is restricted to absolute minimum levels thus eliminating associated accidents. Overloading protection is standard in our ABUS range of cranes. The safety brakes used on the cranes are rated for one million operations on full load and ensure a lifetime of worry free duty."

Takeshi Miyashita, director, sales & marketing, Kobelco, says, "At Kobelco, safety is a major focus not only in the design stage but throughout the lifecycle of cranes. Moreover, we do not have a dealer-based business model and our engineers, who are well qualified and trained, directly service the customers. We take complete responsibility of the machine. We also have focused training programmes, class room training and on-site training, wherein we educate our operators and technicians and instil in them a safety consciousness. We have set

high standards for service."

Kobelco has also introduced a tracking system in its range of crawler cranes for remote monitoring. In fact, they have already supplied few machines with the tracking system installed; however, it is still in the testing stage. "We need to see its usage by the owner and the cost factor before giving it as a standard fitment in our range of crawlers," says Miyashita.

As compared to other cranes, crawler cranes require large bearing area. Based on the bearing requirement appropriate setting up of the crane is very important. The crane has to be placed on flat ground level position. This is as because placing the crane out of level even by one degree can cut down 10% of its capacity.

In terms of the rental market, about 60-70% of the cranes used in India are rented. Crawler cranes find their way into the rental market through import. Many rental companies import used cranes, sometimes without really knowing the complete usage history, which could be a risk. Miyashita says that his company prefers not to rent out equipment directly, but have customers from the hiring and rental segment. **CW**