



THE RIGHT BATCH

Ready Mix Concrete (RMC) and batching solutions are changing as they become more effective and efficient.

BY BINDU GOPAL RAO

The fourth industrial revolution, also known as Industry 4.0, has been creating great upheavals and disruptions in the whole process of product design, manufacturing, services and operating conditions better than ever before. Armed with technological breakthroughs and improved connectivity, Industry 4.0 is fueled by the great strides in computing, the proliferation of connected systems (Internet of Things), and stronger, more powerful new ways to analyse big data using artificial intelligence algorithms and machine learning capabilities.

NEW VISTAS

Anand Sundaresan, VC & MD - Schwing Stetter India, and chairman - Infrastructure Equipment Skill Council, says, "We produce batching plants ranging from 18 m³ per hour capacity to 240 m³ per hour capacity. Our greatest achievement this year is the introduction of 3 m³ per batch batching plant that will produce roughly about 120-130 CBM concrete per hour in the mobile version. We are probably the only company in the world to have a mobile version batching plant with 130 m³ capacity."

Incidentally, all their batching plants are equipped with IoT and, at the moment, this is optional. IoT can gather complete

information on real-time performance of the batching plant, the production capacity, the maintenance-related feedback, replacement of parts and all kinds of statistical information, online.

The best performance of the equipment can be achieved when you have properly trained staff operating it and, hence, training is a key factor. "We have close to 300-plus engineers across our 26 branch offices, and we also have nine training centres, where we focus on continually training batching plant operators," says Sundaresan.

GOING GREEN

Modern batching plants are also becoming sustainable in terms of energy efficiency and curtailing pollution. "We always work towards keeping the environment in mind and work on keeping pollution levels at the minimal level. We have recently introduced a highly energy efficient engine for our truck mixer, which ensured reduction of fuel consumption by 30% on a 6 CBM truck mixer. As far as electric motors are concerned, we have energy-efficient motors which are now becoming a mandate, and we have an international efficiency norm – IE2 is the minimum level that is a must. We have gone a step forward and we use IE3 motor, and current consumption is lower by 12-15% and also less heat is emitted. All our



▲ All of Schwing Stetter's batching plants are equipped with IoT.



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batching plants are equipped with dust filters and controllers and do not emit dust above the prescribed limits. Hence, our batching plants are low pollutants," explains Sundaresan.

TECH EDGE

In the concreting and core construction equipment manufacturing sector, ever since the entry of PLCs (programmable logic controllers), there have been drastic improvements in the performance and accuracy of machines. Among the stellar achievements of automation in the manufacturing sector is its ability to support holistic simulation and testing, process optimisation, reduction of human stress from mundane tasks, and most importantly, initiate a virtuous cycle of continuous improvement.

Real-time field data from machines running around the world can now be automatically fed back to have a tremen-

dously positive impact in the product lifecycle management (PLM). PLM spans across design, engineering, and manufacturing stages of a machine. Heavy equipment machinery has now begun to imbibe more intelligent embedded systems, complex engineering controls, sensors and actuators, more than ever before. Through smart engineering, data on component functioning can be captured to improve them right at the manufacturing level. It also helps design better maintenance cycles. All these virtues of connected manufacturing bring down the cost of components, and maintenance requirements in the long run.

In batching plants, until the last decade, there was only potentiometer-enabled selector switches for making concrete, which gave just about 10 to 15 different mixes, called 'recipes' of concrete. With the entry of PLCs, batching plants of today can make an infinite variety of these concrete recipes at the click of a button.

LOOKING AHEAD

In the past decade, thanks to improvements in mobile connectivity, many manufactures have made significant progress through inclusion of connected technologies such as telematics in their machines. The next wave is going to be a complete integration of automation capabilities in new age machines that enable operators and owners with a firm control of real-time data from remote locations for better operations and accurate decision-making. Eventually, it is expected that automation in the sector is expected to increase to favorable levels, once virtuous adoption patterns push volumes up, bringing down input costs. As the economy continues its upswing and construction takes a forefront as far as infrastructure is concerned, RMC batching plants are sure to make a big impact. **cnw**