

Transforming the shop-floor

Industrial robots are taking over repetitive and hazardous tasks in a growing number of factories in the automotive, electronics and glass sectors in India.

A **Team India Now** report

WITH India's automotive, electronics and white goods sectors witnessing phenomenal growth in recent years, demand for industrial robots is also soaring.

Both international and domestic auto manufacturers use robots these days for a range of activities on the shop floor, especially repetitive and monotonous tasks. Increasingly, the auto components, electronics, and glass industries are also employing robots to do routine work.

Says Arvind Vasu, head, robotics, ABB India (part of the European automation major): "In India, the adoption of robotic automation is increasing, but is still in early stages. Industrial robots will primarily be used in industries where repetitive monotonous tasks need to be done on a daily basis and in sectors that need to deal with harsh working environments. Moreover in cases where accuracy and consistency are critical, robots are widely used."

According to Vasu, several companies are investing in industrial robots as they are entering their next phases of growth. He points out that industrial automation brings to the fold high productivity, consistent quality and aesthetics.

Sunil Raibagi, managing director, Pune-based, Gudel India Pvt. Ltd (a subsidiary of the Swiss automation and robots giant), says that besides the automotive and glass manufacturing industries, the food and white goods sectors are also investing in robots. "Surprisingly, small automotive, tier-I and tier-II suppliers are also installing

the systems," he adds.

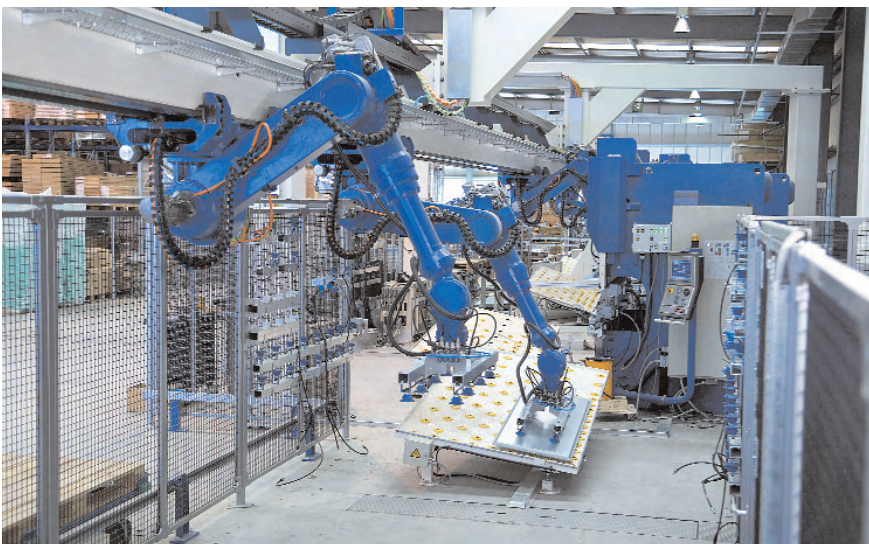
ABB, which is a market leader, with a global installed base of 140,000 robots - the largest in the world - has sold over 400 robots in India so far. "We are growing rapidly and have plans to market a broad range of products," explains Vasu.

The European group helps its customers to build a competitive advantage by improving productivity and efficiency. "We have had success in the automotive sector from car manufacturers," notes Vasu. "In addition to the automotive sector, ABB is helping companies across other industries and sectors with specific applications such as semiconductors, picture tubes, foundries etc."

The Indian market for industrial robots is expected to double over the next three to four years. "The primary reason for using robots in India is to get consistent quality that is ensured by the repetitive accuracy of the robot," points out the ABB executive. "Another reason is flexible manufacturing of multiple product models and the need to ramp up production significantly to meet market demands."

Most of the industrial robots that are bought by companies are used for a variety of operations, including welding, paint finishing and material handling operations.

Considering the tremendous potential for growth in India, ABB recently set up a Robotics Application Centre for Body-In-White (BIW) Systems (Body Shop Systems) in Bangalore. The centre has been set up to locally design, engineer and deliver BIW lines in India for Auto OEM



COMPETITIVE ADVANTAGE: Robots help improve productivity in various industries

(original equipment manufacturer) customers.

"The robots are sourced from our feeder factories in Sweden, Norway and China," says Vasu. "Engineering, programming, commissioning and procurement of peripherals are handled locally. Additionally, robot simulation software and other robotic applications are being developed in the India Corporate Research Centre."

Gudel, which set up its operations in Pune last year, has installed 10 large systems and 20 smaller ones in India. Globally, the Swiss major installs 100 large and 300 small systems. It has supplied several systems for the glass, picture tube and auto components sectors, mainly for handling applications, says Raibagi.

Some of its systems for the automotive sector are huge - a 200-metre gantry with eight arms. The large systems manufactured by Gudel also cost between \$250 and \$300 million a piece. But it can offer systems in India that start off as low as \$50,000 to \$4.5 million.

Raibagi says the company has a small team in India at present. The company imports large parts from Europe, but aims to do at least 50 per cent of the work in India. Gudel hopes to invest more in software development and standard components building in India, and then supply to all its global units. "We have now started supplying software and cabinet building services to Germany and Switzerland," adds Raibagi.

Indian industries are realising the importance of industrial robots, and are willing to make substantial investments, as the cost of skilled labour rises, and production processes are getting speeded up. Raibagi notes that besides ensuring accurate handling, robots also ensure consistent quality.

Rising labour costs, quality considerations and hazardous tasks are forcing Indian manufacturers to opt for industrial robots, despite the relatively high capital costs. And many manufacturers are realising the benefits of installing robots in their plants, as in the long run they save costs.

Growing demand for industrial robots has attracted leading global manufacturers of such systems. Kuka Robotics, another European major, has also established a presence in Gurgaon in the National Capital Region. Japanese automation and robots

major Fanuc also has a strong presence across India, providing technical support for factory automation, and marketing its robots and industrial automation products.

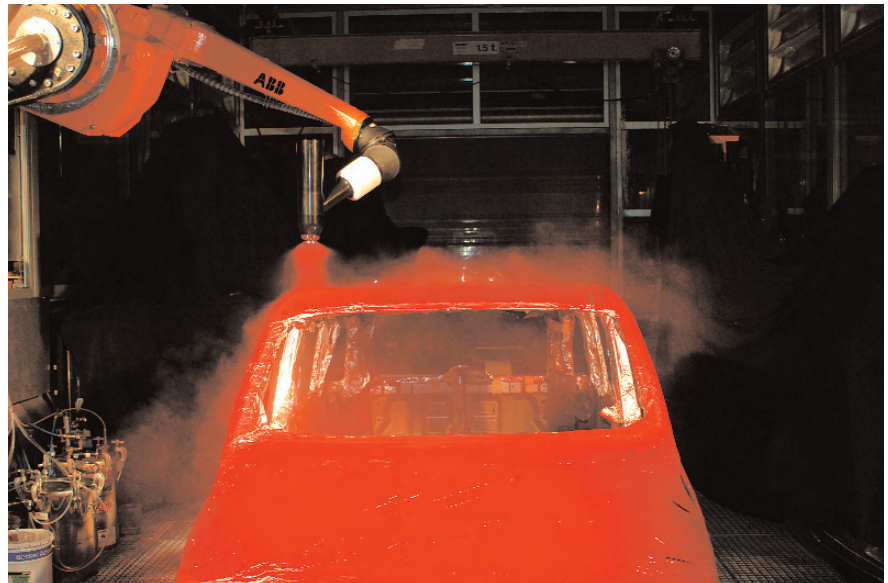
The company participates in various exhibitions, such as the Automobiles, Computers, Machinery, Electricals and Electronics exhibition (ACMEE), a major auto components industry show held in Chennai every year. Fanuc recently displayed its robotic handling solution and also had a robotic display, which enthused many of the auto component industry visitors.

India is rapidly emerging as an automobile hub, with several leading international auto majors setting up manufacturing units in the country, especially around cities like

US robot manufacturers sold over 10,000 robots worth nearly \$750 million during the first nine months of the year, according to the RIA. Material handling accounted for the largest share of robot applications (40 per cent), followed by welding (39 per cent), and assembly and dispensing (six per cent each).

According to RIA estimates, there are 164,000 robots installed in American factories. But though demand from the automobile industry has slowed down, other industries like aerospace and life sciences has seen a growing demand for robots.

Last year, global demand for robots surged by 30 per cent. The total world stock of operative industrial robots amounted to almost a million units towards



PAINT ME RED: Industrial robots are being deployed in auto shop-floors where accuracy is critical

Delhi, Pune, Chennai and Bangalore.

According to projections by the Society of Indian Automobile Manufacturers (SIAM), the country's auto market is expected to triple to three million units by 2015, after doubling to two million by 2010. Auto sales are growing by a brisk 25 per cent annually in India.

With the automobile industry growing so rapidly, most of the manufacturers are opting for industrial robots, boosting sales of such products. Interestingly, according to the Robotic Industries Association (RIA), new orders received by North American robotics companies were down by 36 per cent during the first nine months of 2006, mainly because of the slowdown in the automotive sector there.

the end of last year, and about 126,000 units were sold. Asia saw a 45 per cent growth in robot sales last year, with over 75,000 units being sold. Japan accounted for the lion's share at over 50,000 units.

Besides the big three markets for robots in Asia (Japan, South Korea and China), the other countries (including India) saw a 58 per cent growth in demand.

Service robots are used for professional, and personal and private use. Last year, 1.9 million service robots were sold globally for domestic use and over a million for entertainment and leisure.

In India, the industrial robotics business will remain vibrant, with sectors like automobiles and electronics experiencing phenomenal growth. 🌈