

Beyçelik Gestamp in fast lane

Turkey's Beyçelik Gestamp Mold and Automotive Parts Production Industry Company is keeping pace with the country's fast-expanding automotive industry, producing and supplying parts for car makers and commercial vehicle manufacturers, using ABB robots.

> In 2007, Turkey produced a record 1,132,932 motor vehicles, including 632,883 automobiles, a 10 percent increase over the same period in 2006 and more than a fivefold rise from 1990.

"The country's motor vehicle manufacturers are barreling along in the fast lane, and we as suppliers are racing alongside them, providing parts and components," says Mustafa Boga, commercial manager of Beyçelik Gestamp, as he takes guests along the company's assembly floor where more than two dozen robots are feverishly welding chassis parts for vehicle manufacturers.

Beyçelik Gestamp is based in the city of Bursa, Turkey's automobile manufacturing capital, 250 kilometers southeast of Istanbul. In its 50,000-square-meter production area the company produces assembled sheet metal parts and dies, chassis and skin panels, as well as front end and crash body parts for motor vehicles. It processes 100,000 tons of sheet metal a year.

Faik Çelik, a master craftsman in mold making, founded Beyçelik in 1978 as a mold production company. At the time there were only three employees. By 1983, Beyçelik started forming sheet metal for the automotive industry, a ready market for the company's products. From that point the company grew rapidly. In 2007, the Spanish company Gestamp Automoción acquired a 50 percent share of Beyçelik. Nevertheless, Çelik still heads the company as chairman. His brother Nedim Çelik serves on the board of directors, and his son Baran Çelik, a mechanical engineer, is its CEO.

"We like working with robots," says Boga, who joined the company in 1993 as a mechanical engineer, fresh out of college. "The efficiency of ABB robots has given us confidence to be aggressive in planning, investments and production."

Since 2002, Beyçelik Gestamp has invested EUR 4

million in 26 spot welding, arc welding and transfer robots from ABB – including IRB 6600, IRB 6650, IRB 2400 robots as well as s4c+ and IRC5 controllers. In 2008, it placed orders for seven additional transfer robots from ABB that have yet to be installed.

"When we decided to use robots in welding, it was not easy to adapt the robots, due to the variety and small quantity of the parts produced," notes Boga. "So we planned a flexible production solution together with our integrator, AB Rotech. With this flexibility, production quantity has increased and quality of the welded equipment has improved."

"Our production has doubled as a result of the use of robots," he continues. "We employ half the amount of people that would have been needed for manual welding. We also use 75 percent less space, and we waste less."

The robotic systems produce a significantly higher quality of parts, resulting in a standard production and almost no scrapped parts.

Before robots, if there was a large area on a part that required welding, the operator would spot weld more or less than the actual amount needed, which could result in flaws in a piece. In such cases, delivery of faulty pieces would cause the whole part to be refused. This has never happened with robotic production, says Boga.

"Spot welding is a process that can have devastating results that can cause irreparable damage," he says. "But after we started with robotic production, due to the impeccable production, part loss is minimized."

The robots have also provided a better work environment, Boga says. The system is cleaner, safer and more pleasant for employees. "We have a nicer workshop today," he says. "When we were doing manual welding, the factory was not as clean and didn't look as good as it does today." ☉

> FACTS

Reaping the benefits

Benefits of robotizing welding at Beyçelik include:

- **Reduced waste:** The robotic systems produce significantly higher quality, resulting in almost no scrapped parts.
- **Better work environment:** The system is cleaner, safer and nicer for employees.
- **More room:** The robotized welding system takes up a quarter of the space of a manual system, allowing more room for production and other activities at the plant.

**Facts about
Beyçelik Gestamp**

Founded: 1978 as Beyçelik.

Headquarters: Bursa, Turkey.

Current ownership: Joint venture between Faik Çelik Holding of Turkey and Gestamp Automoción of Spain (Gestamp Automoción acquired a 50 percent stake in the company in 2007).

Products: Sheet metal parts and dies for motor vehicle bodies, chassis and skin panels, front end parts and crash parts.

Metal-processing capacity: 200,000 tons a year.

Main customers: Tofa Fiat, Oyak Renault, Ford Otosan, Ford Europe.

Annual sales: USD 83 million in 2006, USD 135 million in 2007.

Annual exports: USD 5.2 million in 2006, USD 13.5 million in 2007.

Number of employees: 1,000



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Mustafa Boga, Beyçelik Gestamp