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Ford invests \$100M in robot tech to build Focus, Explorer

Lasers to help ensure precision fit during the assembly process

Alisa Priddle/ The Detroit News

Ford Motor Co. is investing \$100 million in robotic laser technology to better attach doors and other large panels to vehicles, beginning with the 2012 Ford Focus and Explorer [SUV](#), during assembly.

The advanced robots can measure the opening on the car to guide the door perfectly into place, said Ron Ketelhut, [Ford](#) chief engineer, Body Construction Engineering. The laser-guided technology ensures a better fit with less room for human judgment or error.

"The door goes into the same place every time," Ketelhut said. "And robots don't get tired."

Further down the assembly line, robots with laser beams measure all gaps to evaluate the fit. The robots can stop the assembly line if the camera detects a door or hood does not meet strict quality guidelines.

Attaching doors is tricky, and a tight fit is crucial to prevent wind noise, which affects quality. Ford has worked to position itself as a quality leader and has been rewarded with high scores in the 2010 J.D. Power and Associates Initial Quality Study and "recommended buys" from Consumer Reports on 90 percent of its vehicles.

The advanced robots will be first used at the Michigan Assembly Plant in Wayne and the Saarlouis, Germany, facilities, both of which make the Focus, and the Explorer plant in Chicago. Over the next several years, 17 plants around the world will add the technology.

The same technology is also inspecting the quality of stages of assembly with a system developed with local supplier Gonzalez Design Group of Detroit. Gonzalez designs and builds robotic systems for welding parts together and has about 800 employees in the Detroit area, including 180 in the Production Systems division that worked on the Ford project.

"We developed this specifically for Ford," said Chief Executive Gary Gonzalez. The project took about eight months to develop and customize for Ford. The supplier will make it available to other automakers.

"The robots actually track the vehicle, but nothing touches the vehicle in taking the gap measurements," said Ray Kauffmann, Gonzalez vice president, technology development.

The system can verify dimensions in more than [500](#) places on a vehicle as it is being assembled, Ketelhut said. "We can ensure precision like never before; these measurements are to a tenth of a millimeter."

The Gonzalez system also uses the inspection data from each vehicle to detect problems. The information goes back to the body shop so adjustments can be made to the tooling, which fix the issue at the source, Gonzalez said.

"When it comes to quality, you can't cut corners," Ketelhut said.

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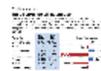
Small cars, small incentives

Increased demand in response to high gas prices, compounded by supply shortages, is making it harder to get an incentive-laden deal on a small car. Online automotive resource Edmunds.com says manufacturer incentive spending for compacts fell 23 percent in the last month, and incentives on subcompacts fell 14 percent.

Automaker	April 2011	May 2011	Percentage change
Chrysler Group	\$2,401	\$2,433	1.3%
Ford	2,341	2,283	-2.5%
General Motors	3,015	3,373	11.9%
Honda	1,679	907	-46.6%
Nissan	1,836	2,006	9.3%
Toyota	1,730	1,269	-26.6%
Industry average	2,109	2,094	-0.7%

Source: Edmunds.com Inc.

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