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Chrysler Group's Warren Truck Redesigns Assembly Line to Build More Than 28,500 Additional Ram Trucks a Year

- Redesign of 353 work stations mean five more trucks an hour or an average of 100 more trucks a day roll off the assembly line
- Additional capacity at the 76-year-old plant needed to meet growing demand
- Implementation of World Class Manufacturing improves safety, productivity and quality
- UAW-represented employees drive changes from the shop floor, submitting nearly 7,000 suggestions

September 25, 2014, Warren, Mich. - With sales of the Ram 1500 on a 52-month sales streak, Chrysler Group's Warren Truck Assembly Plant (Mich.) is increasing production. The plant that built back-to-back Motor Trend Truck of the Year winners in 2013 and 2014 will be building an average of an additional 100 vehicles a day or 28,585 more trucks a year to keep up with demand.

(Editor's note: This news release has been edited to change the number of additional Ram trucks Warren Truck Assembly Plant will produce a year.)

The production increase meant rethinking the assembly process and implementing significant changes that began at the end of 2013 and continued through the summer shutdown this past August. From automation changes in the body shop to improvements to the color booths in the paint shop, modifications were made across the plant. But the most extensive transformation came on the assembly line.

"Building back-to-back Motor Trend Truck of the Year winners is something that has never been done before and it's something we take great pride in," said Curt Towne, Warren Truck Assembly Plant Manager. "So, as we approached this opportunity to rethink our processes, we wanted to make sure we kept our focus on the customer and doing things that would continue to improve the quality of the vehicle we deliver. I think this team accomplished that task."

A critical aspect of preparing the plant for the new run rate was the establishment of a Work Place Integration (WPI) process. As part of WPI, every operation in every workstation was reviewed, best practices evaluated and processes verified before a single vehicle was built, all while integrating the World Class Manufacturing (WCM) methodology with a focus on improving safety, logistics and quality.

The goal of WCM is to reduce waste, increase productivity, and improve quality and safety in a systematic and organized way. WCM engages the workforce to provide and implement suggestions on how to improve their jobs and their plants. WCM was first implemented by Fiat in 2006 and introduced to Chrysler Group as part of the alliance between the two companies in June 2009.

With the guiding principles of WCM and the use of the WPI room, Warren Truck UAW-represented team leaders and operators redesigned more than 353 work stations – or nearly all of the work stations in the assembly process; identified and corrected more than 100 issues that could cause injury; and moved nearly 300 parts to provide better ergonomics and build processes for the employees. Nearly all of the operators in assembly – about 63 percent of the plant population – were trained on the new processes, generating nearly 7,000 additional suggestions on how to improve the efficiency of the line.

As a result of the redesign carried out using the WPI process, material and parts that were once located line side are now gathered into kits or carriers, also known as limos. Two areas – the chassis frame line and the Motorhouse line – benefitted from the integration of limos and kits.

On the chassis frame line, limos attach to the truck frame as it moves down the line, positioning larger and heavier

parts, like front and rear shocks, springs and lower control arms, in the optimal location – or the “Golden Zone,” the area immediately in front of the operator – for installation, improving the ergonomics for the operator. Limos also reduce the time spent walking to retrieve parts or tools, enabling the team to use that savings to achieve the increased production target of five additional trucks built per hour or 100 trucks per day. The easy accessibility of parts in a kit also allows operators to focus more on the proper installation of the part, thereby improving the quality of the product.

In the Motorhouse, where the engine assembly is completed before being mated to the chassis, the Warren Truck team had to figure out a way to manage the complexity of building three different engines – the 3.6-liter Pentastar V-6, 5.7-liter HEMI® V-8 and the 3.0-liter V-6 EcoDiesel with over 170 unique parts and nearly 70 parts that look and feel the same, but are very different – on the same line efficiently and correctly. The answer was to kit the parts and put the kit right in the truck, which reduces waste in the form of walking, a non-value-added activity. When there are several variations in an operation, like the Motorhouse line, kitting also helps error proof the process by taking decision-making away from the operator.

“The employees actually like the kits,” said Towne. “They like the fact that they don’t have to walk as far to grab their parts, which is a waste. That’s time that could be spent building a truck. Plus, at the end of a 10-hour day, they’re not as tired as they once were.”

The Warren Truck team benchmarked other facilities that incorporated kits on their engine lines, but all of the solutions implemented were designed and developed by the plant’s workforce, and built and maintained by the skilled trades. What makes the Warren Truck solution unique is that the team found a way to attach the kit to the carrier without touching it by utilizing automated guided vehicles to deliver the parts to the line, something the other plants don’t do.

With the issue of complexity on the line resolved, the team realized that the variation had moved to the kitting cell, the area where the parts are pulled to create the kit. To mistake-proof the cell, each engine is color coded, so the operator knows where to begin pulling the parts for that respective kit.

“The kitting and limos allow us to optimize our workers and their ability to build a vehicle with precision the same way every time,” said Towne. “We think of our operators as surgeons. When a surgeon needs a scalpel, he doesn’t need to look for one; he’s handed one. That’s exactly how we want our operators to feel, so they can focus on building a quality vehicle for our customers.”

About Warren Truck Assembly Plant
Warren Truck Assembly Plant has built more than 13 million trucks since 1938, including the current Ram 1500 which won back-to-back Motor Trend Truck of the Year awards in 2013 and 2014. On Nov. 15, 2012, the Company announced it would add about 1,000 jobs on a third crew, which began on March 4, 2013. The plant currently employs more than 3,800, working four 10-hour days on two shifts six days per week. In 2013, the Warren Truck Assembly Plant built 291,554 Ram Trucks, up from 227,453 in 2012.
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