

Case study

Underbody Installation

Improving operator ergonomics in overhead assemblies

Atlas Copco

The Challenge

1 2 3 4

Our customer had two stations installing numerous underbody components, with 144 bolts needing to be tightened and a torque range from 20Nm to over 100Nm. With the operators needing to tighten all the bolts overhead, the customer was concerned about operator comfort and safety. In addition, traditional methods meant the use of several separate tools, resulting in lengthy install times and a bottleneck on the line.



With an awkward underbody install, the customer was looking to prevent operator injuries.

The Solution

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We recommended our Power Focus 6000 solution, in combination with four wireless reporting tools. We eliminated the manual ratcheting of the original solution, combining the preliminary tightening and final torque tightening into one process, thereby cutting 12 minutes per vehicle off the assembly time. Not only did this have obvious cost saving benefits in terms of man-hours per operation, it also rebalanced the line, eliminating the bottleneck. Operator comfort was also significantly improved, since less time was spent in a non-ergonomic position under the vehicle.



By replacing 2 tools with 1, process time was reduced and operator comfort improved.

The Business Justification

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The cost saving implications of eliminating the bottleneck were self-evident immediately, but there were additional savings to be made. With a flexible cell-build assembly process, labor was freed up to work on other jobs. Additionally, improved operator ergonomics and reduced overhead working created significant savings for OSHA safety compliance.



Eliminating the bottleneck saved costs and freed up labor for other jobs.



The Validation

1 2 3 4

Post-install feedback reports that the solution is working well on both stations, with the original cost-savings estimates substantially exceeded. Operator comfort has been noticeably improved, with no process-related injuries having been reported.



Our original cost savings estimates have been exceeded, and operator comfort improved.