

## CASE STUDY:



# Ideal Tridon Heavy-Duty V-Band Clamp Solution Reduces Customer Risk of Expensive Downtime



Ideal Tridon's  
Heavy-Duty V-Band Clamp Solution Reduces  
Customer Risk of Expensive Downtime

### At Risk

A potential replacement cost of  
\$90,000 per clamp

### Customer Profile

Global OEM manufacturer drives top  
performance and maximum efficiency with  
its line of mining trucks designed to ensure  
high reliability with low operating costs

### Website

[idealtridon.com](http://idealtridon.com)

### Industry

Industrial OEM  
Automotive OEM  
Automotive Aftermarket  
Industrial

## The Challenge

Highly specialized clamps used in a heavy-duty mining truck application failed. These failures significantly affected the mining operations and resulted in chargebacks to the heavy-equipment supplier. The cost including downtime was estimated at \$90,000 for a single clamp failure. It can be expensive when 32 of these specialized clamps are used for each vehicle. For this heavy-duty truck manufacturer whose reputation relies on lower operating costs with reliable performance, the financial and reputation hit was a gut-punch.

Unfortunately, there was little support from the incumbent clamp supplier to address or solve the issue. That is when the heavy equipment supplier turned to Ideal Tridon for help.

For over 15 years, Ideal Tridon supplied this heavy-duty truck manufacturer with quality engineering support, offering significant savings alongside improved quality and delivery metrics. Now, company officials were putting Ideal Tridon engineers to the test—could Ideal Tridon solve the problem?

## Discovery

The Ideal Tridon engineering teams kicked off an investigation with an assessment to capture the customer's design inputs. Meanwhile, both teams collaborated, meeting weekly and bi-weekly to perform rigorous testing and analysis.

The thorough examination revealed the competitor clamps used flawed geometry in their design. Additionally, they had excess variation in the manufacturing process that led to the complete clamp failure.

Ideal's Chief Engineer and Vice President of Global Quality confirmed the finding. "We modeled their design on Computer-Aided Engineering (CAE) and Finite Element Analysis (FEA) and showed them why it failed with simulation of dimensional variation and engine operating conditions."

## Solution

Ideal engineers developed and presented improved design solutions that incorporated a variety of aerospace alloys such as Inconel® and stabilized grades of stainless that were better suited for the operating environment. These were also resistant to corrosion and oxidation at high temperatures. The team was confident that the new designs would not fail like the competitor clamps.

On the design execution, said Ideal's Chief Engineer, "We credit our tooling guys—they designed tooling that held much tighter tolerances."

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- Ideal Tridon Global Quality Leader





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## About V-Bands

Specialty V-Bands for specific OE applications are available such as the Univee and the Clam Shell. For more information on how Ideal Tridon can custom engineer a product for your specific application, please contact 800-251-3220.

## Engineering & Quality

Ideal Tridon's superior quality, environmental responsibility, and process integrity has earned certifications for IATF16949 in addition to ISO 9001 and 14001. Ideal's global facilities use only the finest quality certified steel and the best practice manufacturing processes to craft clamp products.

## Customization

The industry leader in custom joint sealing products, Ideal Tridon develops custom designs for any application, from band notching and slotting to special finishes and screw head designs. Using 3-D modeling that includes stress and finite element analysis, we can help determine the best materials and configuration for your application.



## Results

As a top preferred supplier, Ideal Tridon was awarded the business. This trusted technology partnership opened the door to additional opportunities with this manufacturer.

## Conclusion

Ideal Tridon has a 100-year history of legendary quality, reliability, and innovation. Building deep partnerships with customers like this heavy-duty truck manufacturer are core to the Ideal Tridon mission. Ideal Tridon is a global leader in engineering expertise and sophisticated testing labs to identify problems, improve the overall design process, and offer the finest materials to deliver custom sealing solutions. With results like this, Ideal Tridon will continue to be an extension of their customer's technical engineering staff.



## About Ideal Tridon Group

Ideal Tridon Group forges strategic partnerships and engineers growth by designing stainless steel and specialty clamps; pipe, hose, conduit support; and fastening solutions. Headquartered in Smyrna, Tennessee, Ideal Tridon Group manufactures and distributes globally from facilities in North America, Europe, and Asia. For more information, about Ideal Tridon Group, visit [www.idealtridon.com](http://www.idealtridon.com).

