

### Challenge

A major transmission manufacturer was experiencing issues with inconsistent transmission. Assembly defects and variations in upstream gear heat treatment and machining operations were causing subtle deviations in transmission noise. Traditional subjective testing failed to identify defects, which were eventually discovered during vehicle assembly or by customers as they drove the finished automobile. This led to expensive warranty repairs and productivity disruptions. The manufacturer desperately needed a solution that would reliably increase product quality, enhance customer satisfaction and provide immediate feedback to improve upstream manufacturing processes.

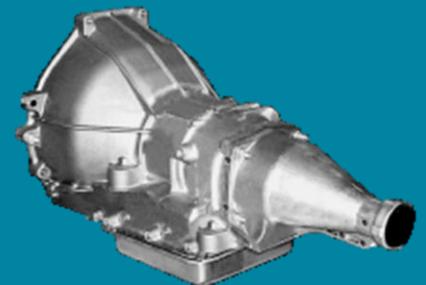
### Solution

Sciometric resolved the problem by installing the proven Transmission NVH Test, which features industry-leading NVH signature analysis technology that exposes defects that often go undetected in conventional testing. Transmission NVH Testing quickly identifies many common problems including missing bearings, valve noise, timing problems, gear noise and loose or rubbing components.

The Transmission NVH Test was seamlessly integrated into the existing end-of-line transmission test stand. Triggered by control signals, the Transmission NVH Test measured and analyzed transmission noise providing an immediate pass/fail signal to the operator. Sciometric's proprietary NVH measurement assessment technique combined statistically derived signature boundaries and user-specified signature characteristic limits to identify and eliminate quality deficiencies. The Transmission NVH Test also provided the manufacturer an invaluable advantage by providing an objective and repeatable verdict on transmission quality.

### TRANSMISSION NVH TESTING KEY FEATURES

- Part of the Sciometric In-process Testing (IPT) solution
- Uses signature analysis for most accurate verification
- Reduces manufacturer costs by finding NVH issues during production where repairs are less complex and less costly than when discovered by vehicle operations, dealers or end customers
- Improve the sound quality of transmissions.



the science  
of quality

With the addition of Sciometric's QualityWorX® software all test data, including full signatures against each transmission's serial number were recorded, allowing the manufacturer to trace test results from start to finish for each transmission. This provided Sciometric's customer with complete manufacturing traceability and an unparalleled warranty management tool.

## Results

By implementing Sciometric technology, the manufacturer was able to objectively identify previously undetectable defects prior to shipping, as well as traceable records of this improved quality from test start to finish.

After final commissioning, Sciometric's client reported an immediate reduction in customer complaints and warranty costs. Sciometric's Transmission NVH Test design makes it a practical, economic and low risk choice to improve the quality of any existing transmission end-of-line test.

## SCIOMETRIC POWERTRAIN SOLUTIONS

Request more information: [www.sciemetric.com](http://www.sciemetric.com)  
[inquiries@sciemetric.com](mailto:inquiries@sciemetric.com)  
1-877-931-9200

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