

Introduction to GLSV

Steve Polakowski - President

Steve Mattson – Chief Engineer



47140 N. Main Street
Houghton MI 49931
906.482.7535
www.glsv.com

Overview

Our strength lies in our diversity and ability to solve challenging problems that require a broad range of knowledge and capability.

- Formed in 1996 to solve acoustics, vibration and shock related problems
- Grown to offer the complete solution from concept design & analysis, to experimental testing, prototyping, thru low-volume manufacturing
- Hub Zone small business
- Facilities include closed and restricted areas



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Noise & Vibration

Developing NVH Solutions from Start to Finish

Root Cause Problem Solving Method:

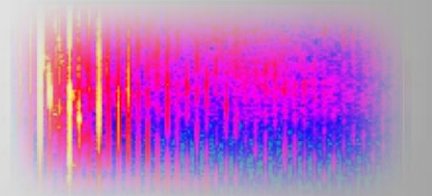
1. Understand the problem through experiment & analysis
2. Design & Prototype
3. Validate with lab & field tests
4. Manufacture custom parts

Experimental Capabilities

- Laboratory
- Field

Analytical Capabilities

- Finite element analysis (FEA)
- Numerical Acoustics
- Dynamics



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Exhaust Design & Development

Exhaust System Development – Concept to Hardware

Concept Development & Simulation:

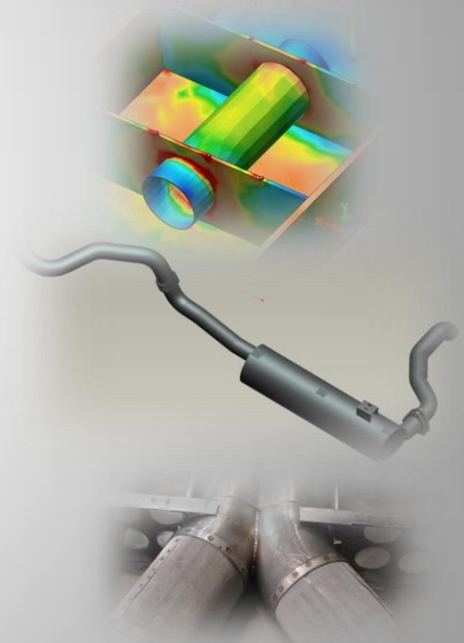
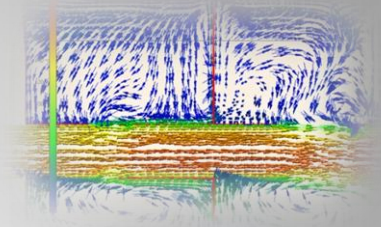
- ✓ CAD – Determine size, shape, and interfaces
- ✓ CFD – Insure engine performance
- ✓ FEA and Thermal Analysis
- ✓ Noise – Design optimal acoustic benefit

Prototype Development:

- ✓ In-house sheet metal fabrication, welding, tube bending, soft tooling, CNC machining
- ✓ Validation through installation & testing

Manufacturing:

- ✓ Providing low and mid volume manufacturing



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Isolation Systems

Isolation System Development – Concept to Hardware

Concept Development & Simulation:

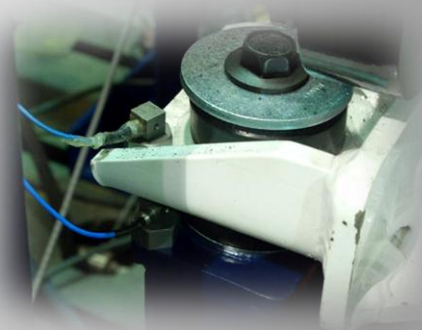
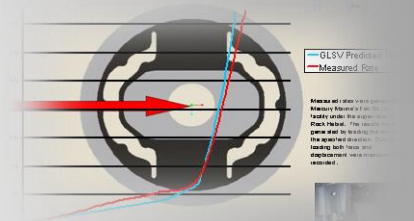
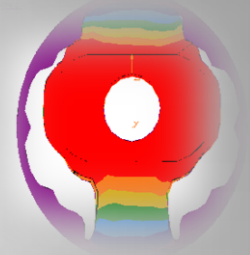
- ✓ CAD - component design
- ✓ Dynamic modeling – optimize positions and selection of COTS isolators
- ✓ FEA – verify strength and durability

Prototype Development:

- ✓ Prototype – Sheet metal fab, welding, soft tooling, CNC machining, molding, material development
- ✓ Development and validation – Capability for validating predicted performance

Manufacturing:

- ✓ Providing low and mid volume production

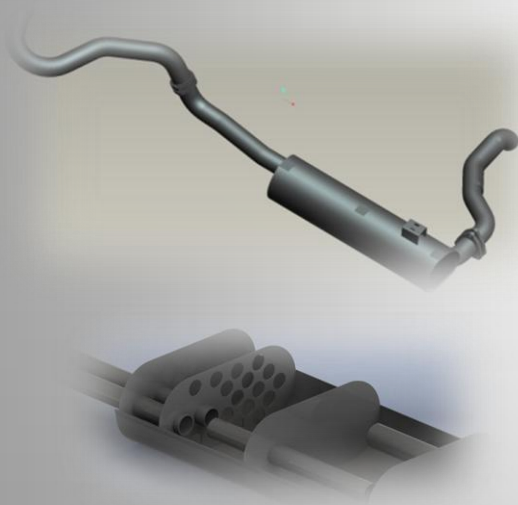


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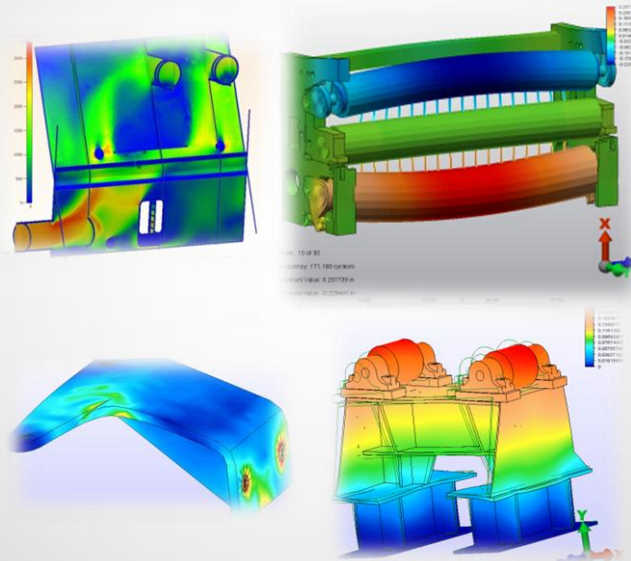
Engineering Services

Product Development – Concept design & analysis through the manufacturing process

CAD Modeling – ProEngineer, SolidWorks



Analysis - FEA, CFD, Acoustics & Dynamics



Manufacturing Process Development



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Test Services

Performance Testing with a Focus on NVH

Standard NVH Tests

- ✓ Sound Power Testing to ISO 3744 and EC/2000/14
- ✓ Whole Body Vibration to ISO 2631
- ✓ Hand and Arm Vibration to ISO 5349
- ✓ Acoustic material characterization
- ✓ Component Vibration to Mil-STD 810F

Performance Testing:

- ✓ Strain
- ✓ Pressure
- ✓ Load
- ✓ Temperature
- ✓ Torque
- ✓ Power
- ✓ Torsional Vibration



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Manufacturing Equipment

Supporting quick-turn around prototyping & low level production

- CNC Lathes (2)
- CNC Vertical Machining Center (2)
- Welding – TIG, MIG, Resistance, automation
- 100 ton forming press
- 100 ton molding press
- 72" x 120" CNC water jet cutting table
- 48" x 92" plastic thermoforming machine
- 3.5" capacity for mandrel bent tubing
- Cold Saw
- Automated horizontal band saw
- Manual milling machines (2)
- Manual Lathe
- Radial Drill
- Sheet metal break
- Sheet metal roll
- Bead Rolls
- Misc. presses



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Vehicle Subsystems

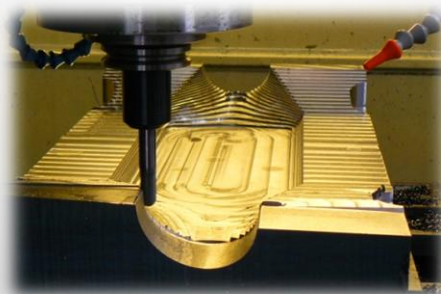
Using broad capabilities to solving system problems

- Auxiliary Power Units (External, under armor)
- Fans – Main Cooling, HVAC, compartment vent, scavenge
- Hydraulics Systems
- NBC/ECS systems



Facilities

Engineering – Fabrication – Testing - Security



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