



**FLEXIBLE**  
**METAL**  
*100% employee owned*

Creating flexible solutions that last.



**When you can't see the  
forest through the trees...  
you need a new ~~perspective.~~**

**PARTNER**





**Hyspan Corporate Group**



**HYSPAN PRECISION PRODUCTS, INC.**

**HYSPAN de MEXICO**



**FLEXIAL CORPORATION**



**FLEXIBLE METAL, S.R.O., Prague**

**FLEXIBLE METAL, INC. Tucker GA**

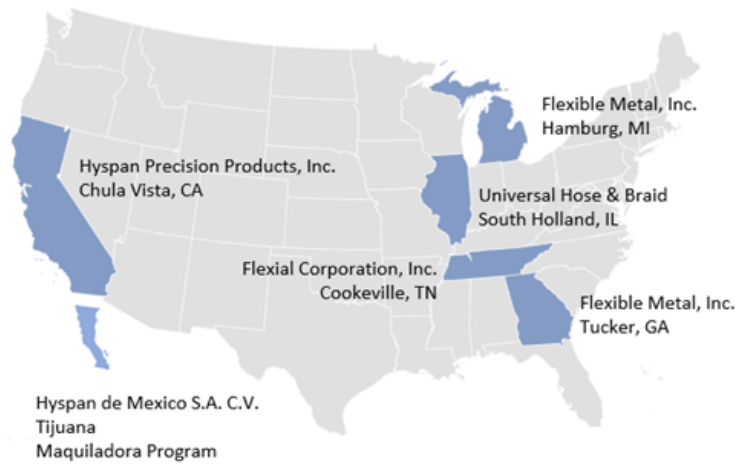
**FLEXIBLE METAL, INC. Hamburg MI**



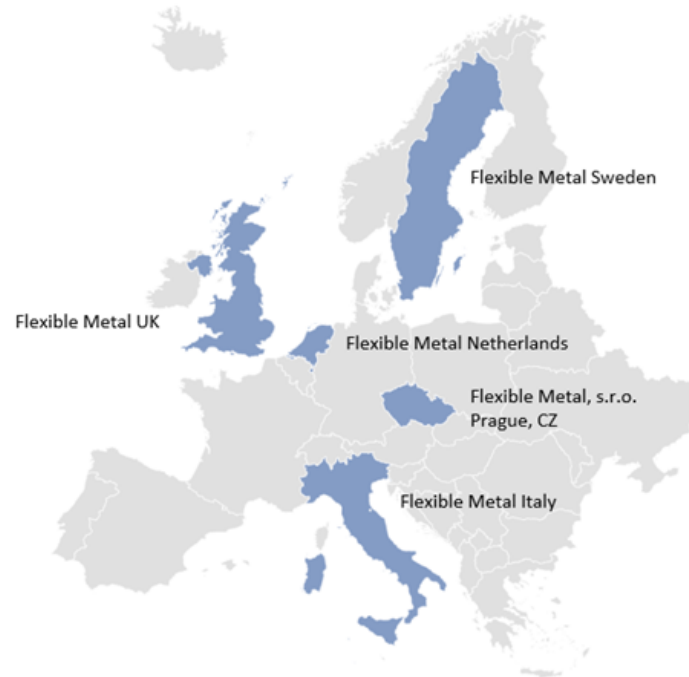
**UNIVERSAL HOSE & BRAID**

# Global Footprint

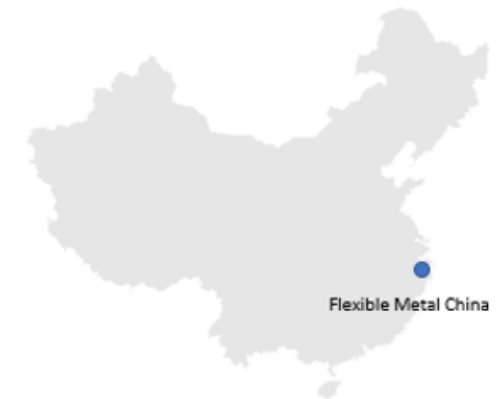
## North America



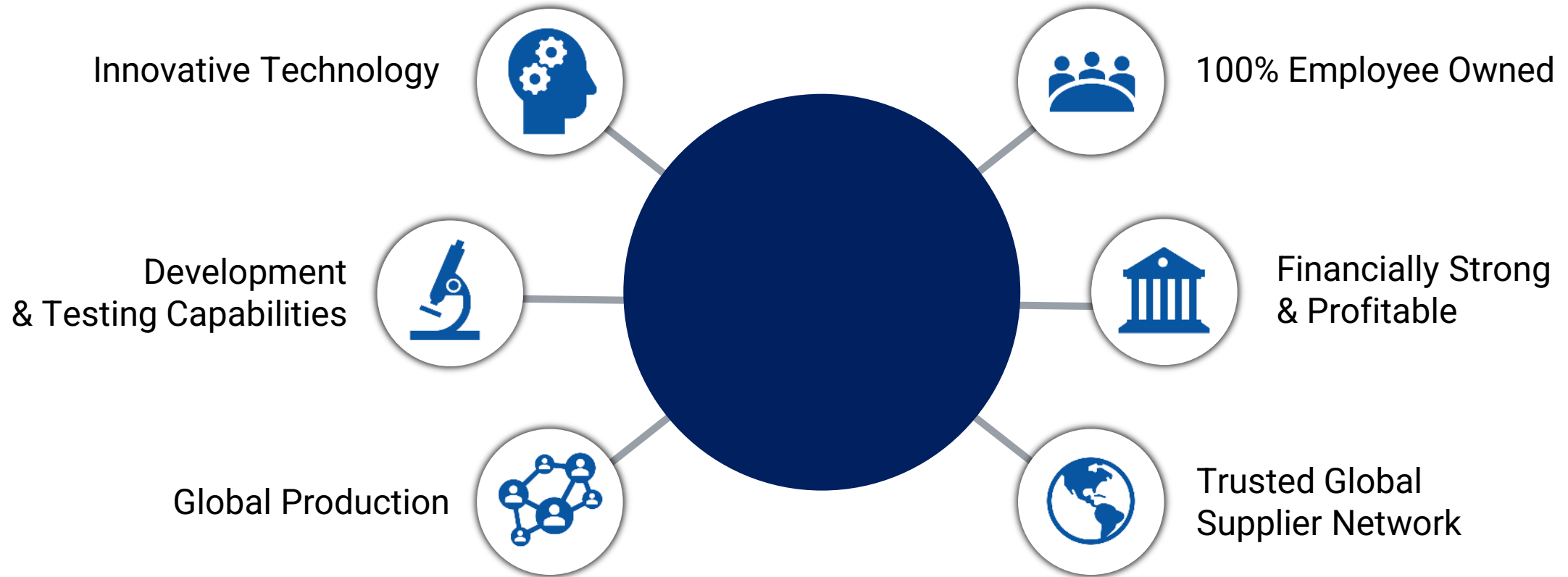
## Europe



## China



# Overview of Flexible Metal



# Employee Ownership Encourages Creative Problem Solving

In 2017, an ESOP was established as an employee benefit plan that gives workers ownership interest in the company.

Because our employees have stake in our company's success, we enjoy the freedom and desire to think outside the box to develop creative solutions that solve our customers' toughest challenges.

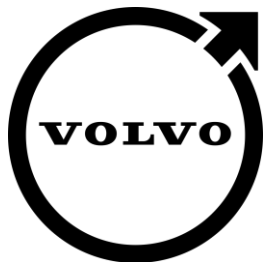
ESOP companies account for over half of Fortune Magazine's "100 Best Companies to Work for in America" \*



\*Source: [www.esop.org](http://www.esop.org)



# A Trusted Partner To Industry Leaders



# Innovative Solutions Start Here

Co-developed source control specification and design for:

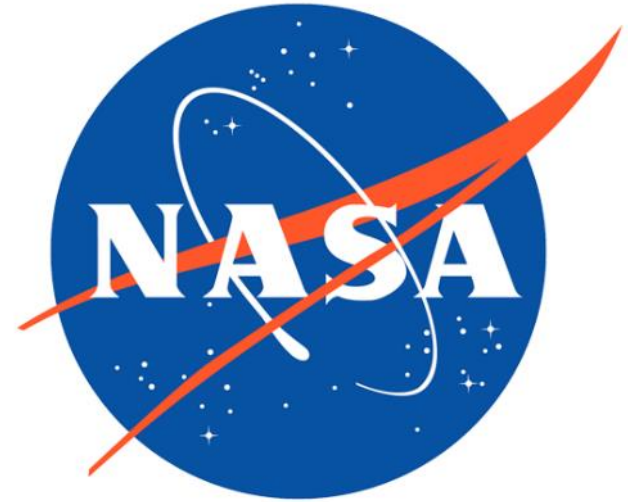
- NASA's Advanced Recycle Filter Tank Assembly
- Parker HSD A350 High Pressure Braking Accumulator
- Ratier Figeac C-Series High Pressure Accumulator

Technical contributor to NASA Marshall Space Flight Center  
best practices & guidelines

A350 High Pressure Braking Accumulator compliance to fracture  
critical hardware per NASA-STD-5019

First bellows vendor to supply and qualify all-titanium EHA for  
Parker Irvine F-35 EHA program

Reviewer and technical contributor to SAE International





# PROBLEM

Managing heat within an exhaust system.

# SOLUTION

Created vacuum-sealed insulation barrier on exhaust manifold.



# PROBLEM

Optimized design called for bellows at the bend.

# SOLUTION

Engineered a high/low convolution bending solution.



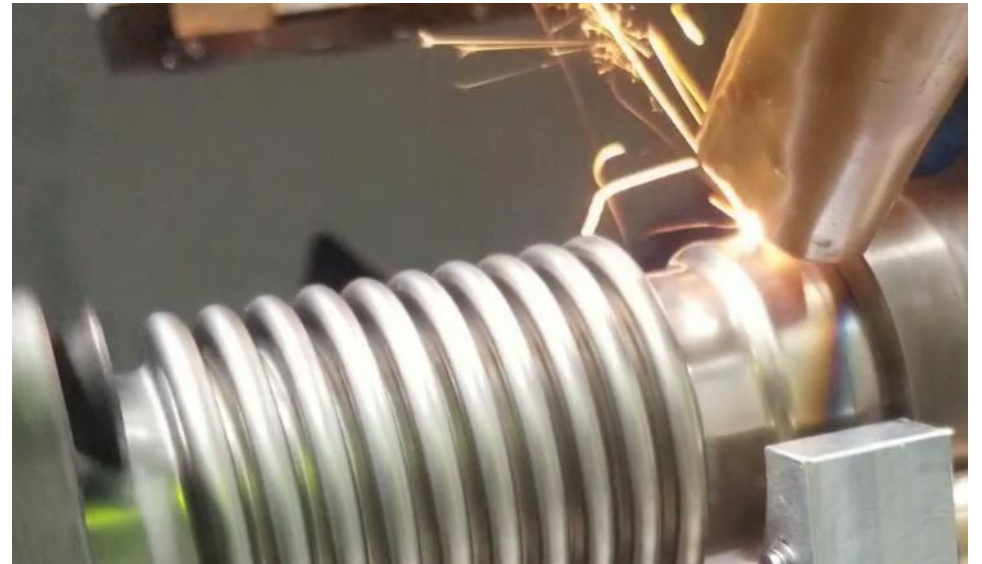


# PROBLEM

Needed a strong,  
economical welding  
solution.

# SOLUTION

Developed low-cost laser  
welding manufacturing process.

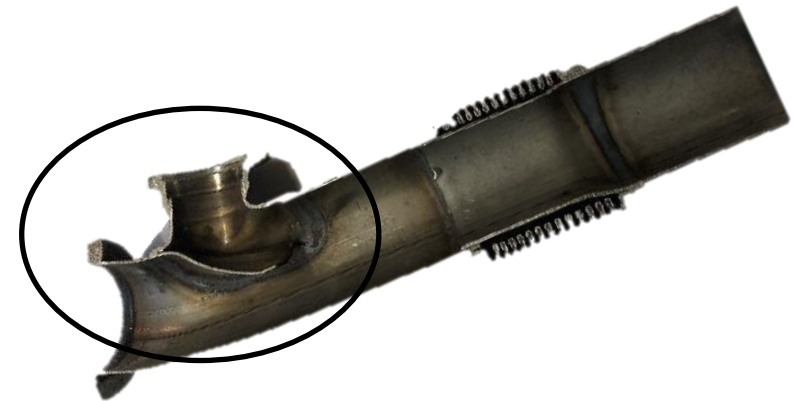


# PROBLEM

Wanted to have a better way divert more exhaust gas back into the system.

# SOLUTION

Patented a “scoop” design that redirected a certain amount of exhaust back into the system.



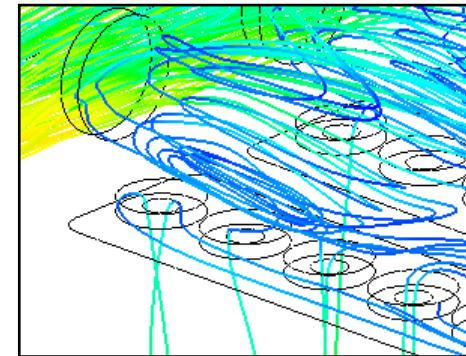


# PROBLEM

Needed to improve flow distribution in manifold and tube configuration in fuel cell.

# SOLUTION

Redesigned internal geometry to optimize flow and heat transfer performance.



# PROBLEM

**CONFIDENTIAL**

# SOLUTION

Needed a lightweight option for turbocharger housing.

Current turbocharger system was too loud.

Needed a way to insulate a tube with a bellows.

Wanted better efficiency for particular application.

Used a thin, dual-wall fabricated option with a lightweight material that could withstand the high heat.

Developed a design that could reduce noise at certain frequencies.

Co-created air gap insulation used in tubes for global truck manufacturer.

Developed proprietary sealing methodology to give more high-pressure cycle life to bellows.



# Partnering With Flexible Metal

*"We have no other supplier that can turn around data this fast, outstanding engineering support."*

**MAN Trucks & Bus**

*"Your technical competence and creative insights are most appreciated, respected, and recognized."*

**Ford Motor Company**

*"I have let the purchasing team know how impressed my team is with FMI and I am really pushing them to bring you on board for all new RFQs."*

**Ford Motor Company**



# Capabilities

Development  
& Testing

Global Manufacturing

Program Management

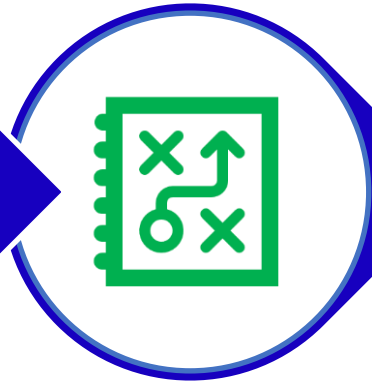
Quality Assurance

## Flexible Metal's Design Process

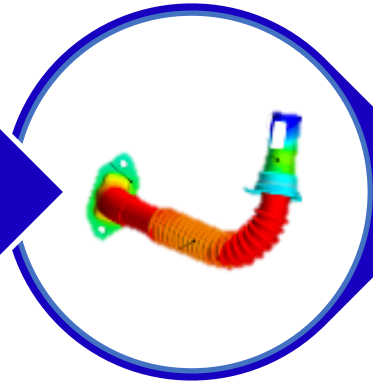
Discovery  
Conversations



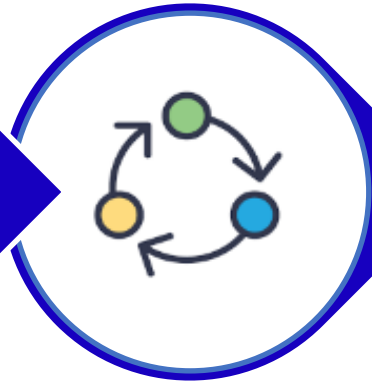
Problem  
Identification



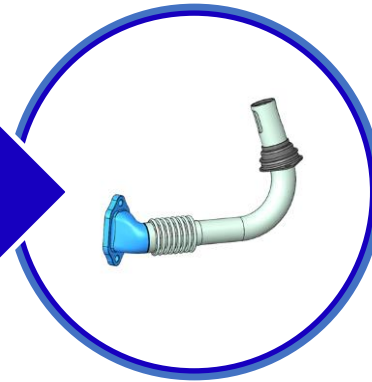
Initial  
Concept



Design  
Improvement



Design  
Optimization



# Capabilities

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& Testing

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Quality Assurance

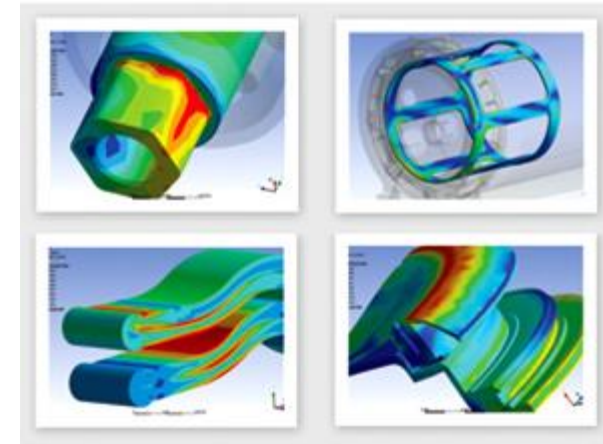
## Testing & Analysis

With data-backed designs and concepts validated against real-world scenarios and applications, risks are minimized to protect against defects and other system failures.

Thermal & Modal  
Analysis

Design Analysis  
via CFD/FEA

Hot Vibration Testing





# Capabilities

Development & Testing

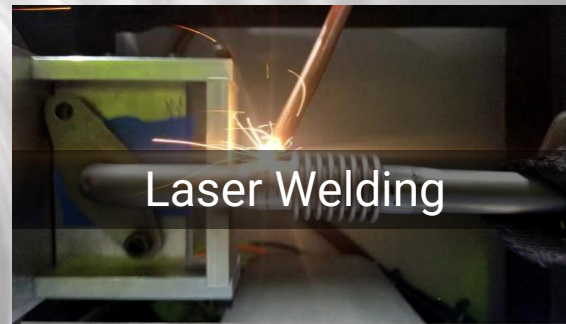
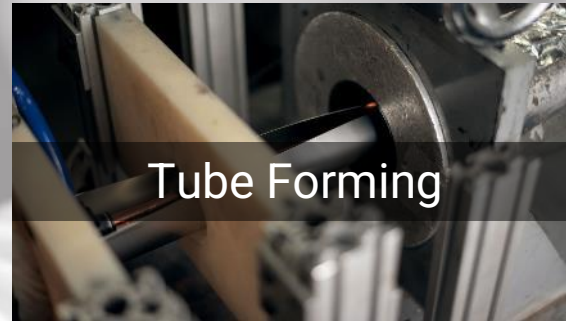
Global  
Manufacturing

Program Management

Quality Assurance

Manufacturing is located in

- Tucker, Georgia, USA
- Hamburg, Michigan, USA
- Prague, Czech Republic
- Tijuana, Mexico



# Capabilities

Development & Testing

Global Manufacturing

Program  
Management

Quality Assurance

From design concept to production, our engineering experts collaborate with you through the most challenging projects to design a system that lasts.

What you can expect from Flexible Metal:

- Fast, knowledgeable communication
- Data-backed designs for real-world application
- World-class engineering & customer support
- Collaborative workspace for instant updates
- Global manufacturing capabilities



# Capabilities

Development & Testing

Global Manufacturing

Program Management

Quality Assurance

Flexible Metal is  
**100% employee owned.**

That means each member of our  
team is **committed to your success.**

We adhere to the most strict  
regulations to provide you with  
**quality solutions you can trust.**



We work with the United States military,  
so you can trust us with your proprietary,  
confidential information and know it will  
be protected and safe-guarded.



Thank you for  
your attention.

**FLEXIBLE**  
**METAL**

