



Automotive / Industrial

The QSR Mission

Quality Synthetic Rubber is committed to providing world class, precision-molded, elastomeric components. The commitment is a company wide dedication to continuous improvement and customer satisfaction.



Automotive/Industrial Overview

QSR services global OEMs, Tier 1s and the domestic aftermarket with connector seals and insulators

- QSR is focused on two principal product lines:
 - Connector seals used in electrical connectors and wire harnesses to protect connections from harmful elements like oil, water, salt and dust
 - Insulators for automotive ignition systems to seal and insulate terminals on the spark plug and distributor
- Products require a high level of engineering due to material properties, temperature requirements, and tight tolerances
 - Majority of insulator and connector seal material is internally compounded from proprietary formulations
- Increased electrification of vehicles driven by regulatory and consumer shifts towards more fuel efficient and safer vehicles are increasing the number of connectors per vehicle
- QSR services a network of blue chip customers with connector seals and spark plug insulators

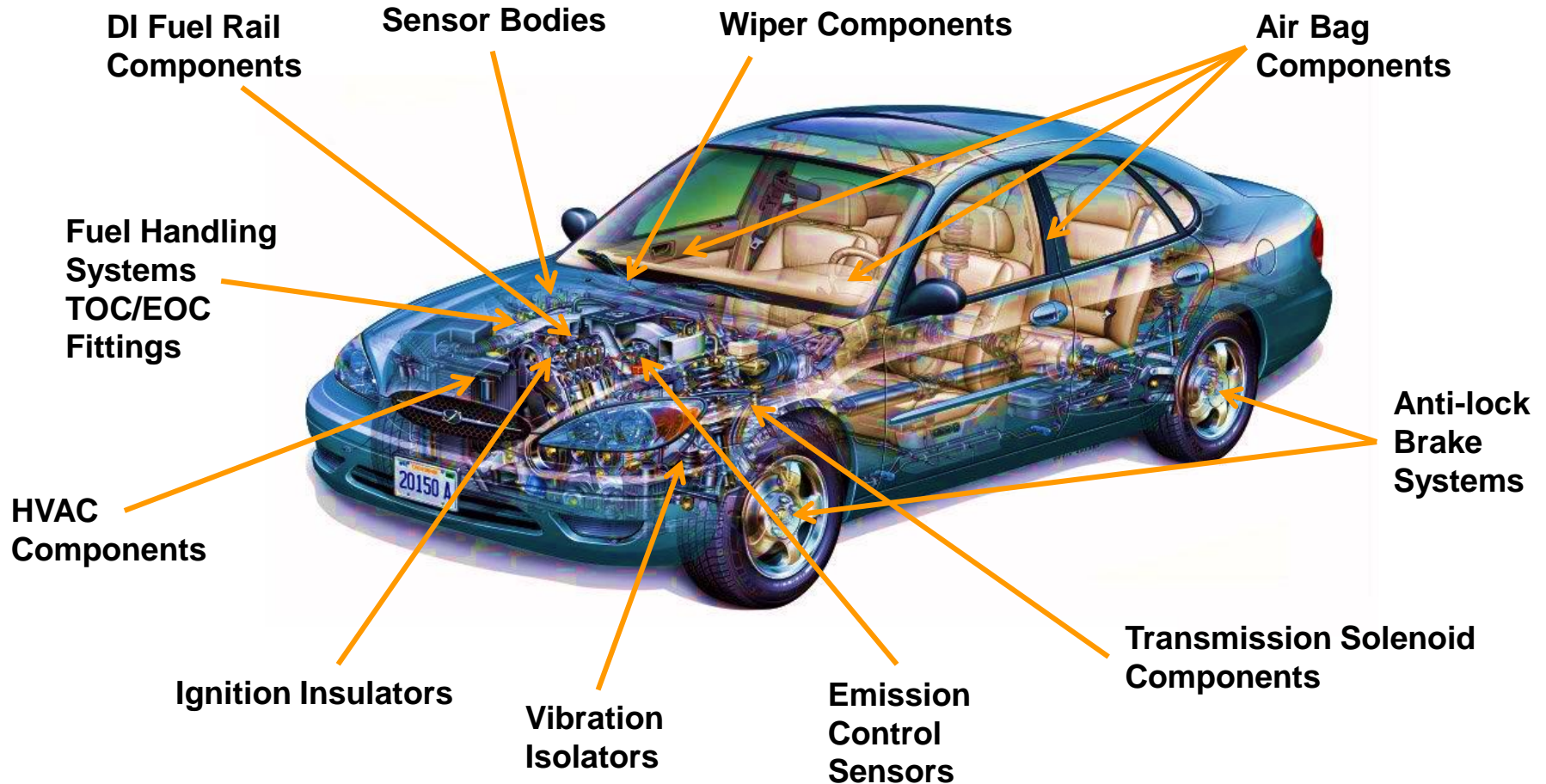
Products



Customers



Automotive Applications



Markets



**Ignition System
Insulators**

- Coil On Plug
- Pencil Coils
- 3 Piece Assemblies
- Small Engine/Marine
- Traditional Harness
 - ❖ Distributor
 - ❖ Spark Plug



**Connector
System Seals**

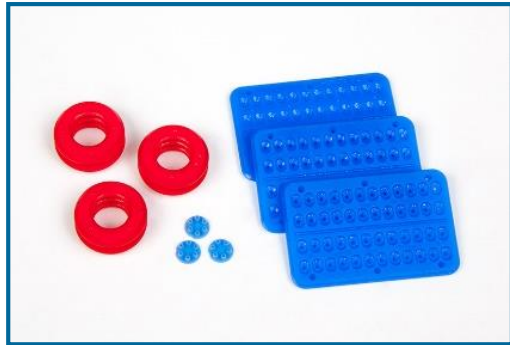
- Single wire
- Multi-Hole Grommets
- Peripheral
- Diaphragms
- Overmolded



**Automotive
Industrial**

- Isolators
- Seals
- Bellows
- Gaskets
- Grommets
- Diaphragms

Products



Electrical Connector Sealing



Industrial Sealing



Electrical Insulating



Cable Seals



Custom Molded Solutions

Customized Testing & Analysis

- Example automotive specifications utilized: SAE/USCAR-2 Rev. 6 and VW 75174 – LV214 with a focus on:
 - Leak testing
 - Mechanical testing
 - Environmental testing
- Customer specific tests
- R&D testing
- Fail mode evaluation testing



Locations



QSR Twinsburg

1700 Highland Rd
Twinsburg, OH 44087

- 110,000 sq ft Facility
- 270 Team members
- ISO 14001, ISO 17025, ISO/TS 16949, AS9100 certified
- 118 Molding presses ranging in size from 50 to 800 ton
- 36 Automated vision inspection systems

Twinsburg Core Capabilities

- Headquarters – Global product, process and material development center
- Manufacturing of transfer and liquid injection molded products for North and South American markets
- Global LIM manufacturing center
- Vertically integrated mold manufacturing (Quadra North Canton and Sturtevant)
- High and Low volume HCR and LIM molding
- 92 HCR Transfer Presses / 26 LSR (Liquid Silicone Rubber) presses
- 100% Automated vision designed and built internally for select products
- Fully integrated work management system
- Costing applications
- Custom material formulations
- FEA/CFD modeling/simulations
- Aerospace





QSR China

优品（中国）Dongguan
No 1 Building, E Section,
Junda Industry Zone, Dong Keng District,
Dongguan City, Guangdong, PRC

- 250,000 sq ft Facility
 - 50,000 sq ft Actual manufacturing
- 380+ Team members
- ISO/TS 16949, ISO 14001, OHSAS 18001 certified
- 68-350 ton HCR Transfer Presses, 6-700 ton manual HCR presses, 8-auto flip 700 ton presses 2-LV presses, 2-LIM presses
- 25 Automated vision inspection systems

Dongguan Core Capabilities

- Manufacturing of molded products for Asian and European Markets
- Parts shipped through QSR Hong Kong and domestically from Dongguan
- Asian sales and engineering support
- Local tooling sources developed for ring seal type products
- High precision tight tolerance components
- Inorganic/organic material offerings
- Custom material formulation
- On-site material mixing and testing
- LIM-Liquid Injection Molding/LSR-Liquid Silicone Rubber
- Secondary operations (finishing, slitting)
- Washing
- Data integration throughout plant
- Transfer/compression molding
- Assembly and packaging
- Coating applications





QSR Jasper

1076 Ridgewood Rd
Jasper, GA

- 110,000 sq ft Facility
- 248 Team members
- ISO 14001, ISO 9001, ISO/TS 16949 certified
- 72 Transfer molding presses ranging in size from 150 to 800 ton
- 2 Tilt mixers (110L) and 1 intermixer (90L)
- Comprehensive analytical laboratory
- Optical metrology laboratory
- 20 Automated secondary systems: vision inspection, function testing, assembly/insertion, coating application

Jasper Core Capabilities

- Ignition/coil insulator molding
- Electrical connector seal product molding
- Automotive products, such as insulators, bellows, grommets, covers
- High precision mold design and machining
- Automated HCR transfer molding
- Silicone and EPDM material mixing
- Comprehensive material development
- Post molding value-add and quality capability:
 - Vision inspection
 - Spring/insertion installation
 - Coating application
- Automated, networked process control systems
- Fully integrated work management system





Queretaro, Mexico

- 63,000 sq ft Facility with expansion property available
- Maquila-structured operation with the ability to ship internally to Mexico locations as well as internationally

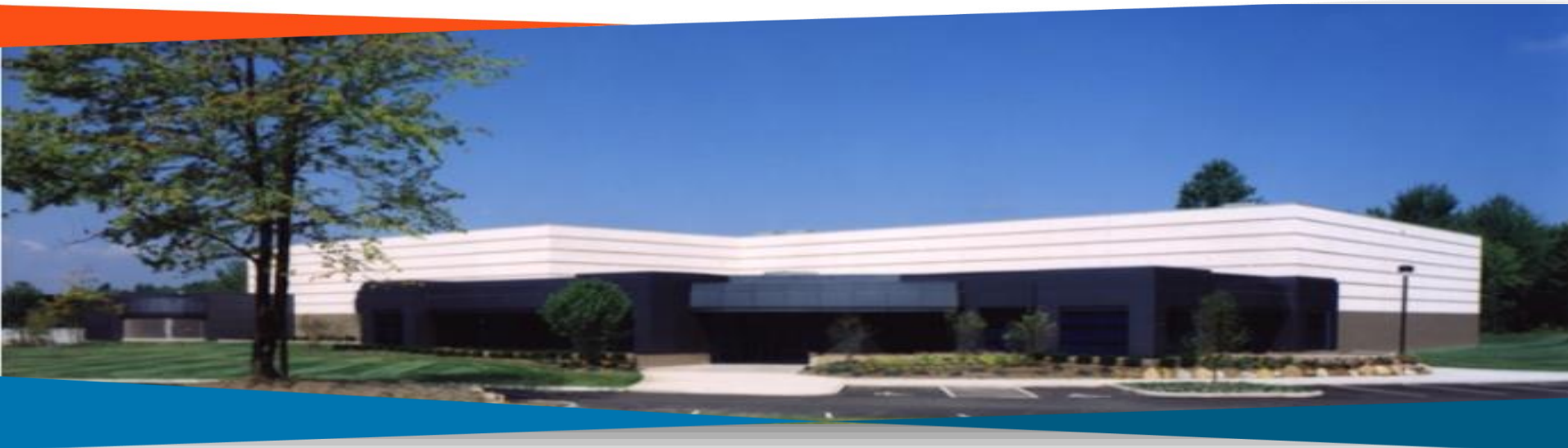
Mexico Core Capabilities

- Molded elastomeric components, including:
 - Electrical connector seals
 - Electrical insulator boots
 - Medical device components
 - Specialty rubber products
 - Consumer goods
- Extrusion
- Assembly
- Packaging
- Mixing
- Calendering of material
- Molding
- De-flashing
- Vision capabilities
- Metrology
- Lab analysis
- Process control
- SPC



Q HOLDING COMPANY

• *when precision matters™*

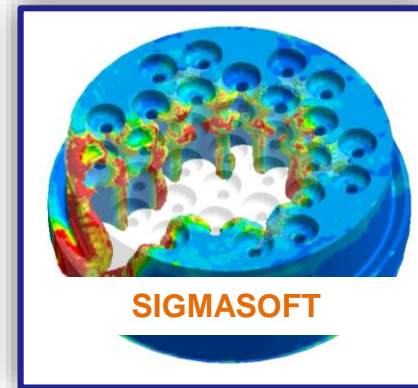


3565 Highland Park Street NW
North Canton, OH 44720

- 41,827 sq ft
- 33 employees
- In-house services for Qure Medical and Quality Synthetic Rubber (QSR)

Quadra North Canton Core Capabilities

- Software
 - Engineering
 - SolidWorks 2016
 - AutoCAD
 - Ansys Non-Linear FEA
 - CAM / CNC Programming
 - Power Mill
 - Part Maker
 - Surfcam
- Machines
 - CNC Machining Centers
 - Laser Marking Machine
 - Surface Grinders



Q HOLDING COMPANY

● *when precision matters™*



1810 Renaissance Blvd.
Sturtevant, WI 53177

- Software
 - Engineering
 - SolidWorks 2015
 - AutoCAD
 - CAM / CNC Programming
 - Gibbs Cam
 - Machining Strategist
- Machines
 - CNC Machining Centers
 - Surface Grinders
 - 5-Axis
 - 12,500 sq ft
 - 12 employees

Quadra Sturtevant Core Capabilities

- Industry-leading CAM (computer-aided-manufacturing) software
- Design for manufacturability
- Proprietary mold development
- Early-stage prototyping
- Flashless tooling
- Rubber to plastic/metal over mold tooling design and build

