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

www.qsr-inc.com
Key Capabilities

- Design support – engineered product designs and proprietary materials
- FEA/CFD modeling/simulations
- Internal compounding
- Custom early stage prototyping
- Internal tooling capabilities (transfer and LIM)
- “Mission critical” products – highly technical and crucial to overall system performance
- Broad capabilities (HCR, LIM, extrusion, overmolding)
- Wasteless/flashless production
- Subassembly and full assembly
- Proprietary process technologies – advanced automation and vision inspection
- Secondary operations (finishing, slitting)
- Coating application
Single-Source: Multiple Suppliers in 1!

When precision matters and you need excellent products on time.
### Industrial Markets and Solutions

**Automotive**
- Cable seals
- Insulators
- Grommets
- Coil-on-plugs (COP)
- Class 3 and class 4 high temperature seals
- Ring seals

**Aerospace**
- Fiber optic seals
- Wire grommets
- Electrical connector seals
- Wire bundle guides
- Wire seals

**Military, Marine, HVAC, Appliances & Other Industries**
- Capacitors
- Electronic gauging
- Chromatography
- Scientific instrumentation
Industrial Markets and Solutions

**Lighting**
- Electrical connector sealing products
- Industrial sealing products
- Enclosure seals

**Automotive Aftermarket**
- Coil-on-plug (COP) boots with connector springs made in the USA
- Spark plug insulators
- Distributor insulators
- Three-piece assemblies
- One-piece boots
- Boot accessories: nylon clips, heat shields
- Sub-assembly services

**Solar**
QSR supplies rubber components for these and other solar applications:
- Electric vehicle charging stations
- Residential and commercial solar lighting systems
Products

Electrical Connector Sealing

Electrical Insulating

Industrial Sealing

Cable Seals

Industrial Sealing

Custom Molded Solutions
Blue Chip Customer Base

- TE
- molex
- APTIV
- MITSUBISHI ELECTRIC
- BOSCH
- DELPHI
- LEAR Corporation
- Ford
- SMP
- JST
- General Cable
- phelon
- YAZAKI
- DC ELECTRIC
- MATRIX
Locations
Twinsburg, Ohio

1700 Highland Road
Twinsburg, OH  44087

Key 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
• Additional Capabilities:
  • Vertically integrated mold manufacturing (Quadra North Canton and Sturtevant)
  • High and Low volume HCR and LIM molding
  • 90 HCR Transfer / 26 LSR (Liquid Silicone Rubber) presses
  • 100% Automated vision designed and built internally
  • Fully integrated work management system
  • Coating application; OSIXO coating machine
  • Custom material formulations
  • FEA/CFD modeling/simulations
  • Aerospace
Jasper, Georgia

1076 Ridgewood Road
Jasper, GA

Key Capabilities

• Ignition/coil insulator molding
• Electrical connector seal product molding
• Automotive products, such as insulators, bellows, grommets, covers

Additional Capabilities

• 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
  • Metal detection
  • Prototyping
  • Automated, networked process control systems
  • Fully integrated work management system

• 110K sq ft facility
• 248 Team members
• ISO 14001, ISO 9001, ISO/TS 16949 certified
• 65 Transfer molding presses 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
Quadra Tooling & Automation

3565 Highland Park Street NW
North Canton, OH 44720

1810 Renaissance Blvd.
Sturtevant, WI 53177

Key Capabilities

- Custom early stage prototyping skills
- SIGMASOFT mold flow simulation
- Mold design and flow engineering
- SolidWorks and AutoCad
- Ansys non-linear FEA Modeling and simulations
- CAM / CNC programming
- Additional Capabilities
  - Power mill, part maker
  - Surfcam, Gibbs cam
  - Machines
    - 5 axis CNC machining
    - Laser marking machine
    - Surface grinders
  - Wasteless flashless tooling design
  - Overmolding rubber to plastic and rubber to metal mold design

Surpassed 5K Molds Engineered and Manufactured July, 2016
Dongguan, China

Key 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
- Additional Capabilities
  - 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 application

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

- 250,000 sq ft Facility
- 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
Querétaro, Mexico

Q Seals de México, SRL de CV
Carretera Estatal 431km 2+200, Calle B Int.69
Parque Tecnológico Innovación
El Marqués, Querétaro CP. 76246

Key Capabilities

• Molded elastomeric components, including:
  • Electrical connector seals
  • Electrical insulator boots
  • Medical device components
  • Specialty rubber products
  • Consumer goods

• Additional Capabilities
  • Extrusion
  • Assembly
  • Packaging
  • Mixing
  • Molding
  • De-flashing
  • Vison capabilities
  • Metrology
  • Lab analysis
  • Process control
  • SPC

• 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
Business Development Team

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Thank You