



**HOLDING COMPANY**

*when precision matters*

**Company Overview**

# Q Holding Company Overview

- Premier manufacturer of precision-molded and extruded rubber components
  - Branded under QSR Automotive/Industrial, Qure Medical and Quadra Tooling & Automation
- Formed through the combination of Lexington Precision and Quality Synthetic Rubber in 2012
  - Acquisition significantly expanded medical capabilities, created global leader in connector seal market and improved the global footprint
- Marketing-leading capabilities from product concept through delivery, including the largest selection of in-house tooling capabilities in the industry
- Seven manufacturing locations, generating revenues in excess of \$190 million



## QSR Automotive/ Industrial Markets



CONNECTOR SEALS



AUTOMOTIVE INSULATORS



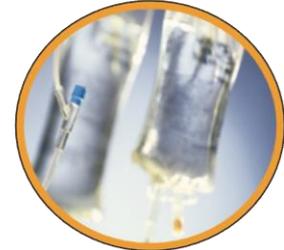
## Qure Medical Markets



MEDICAL SURGICAL

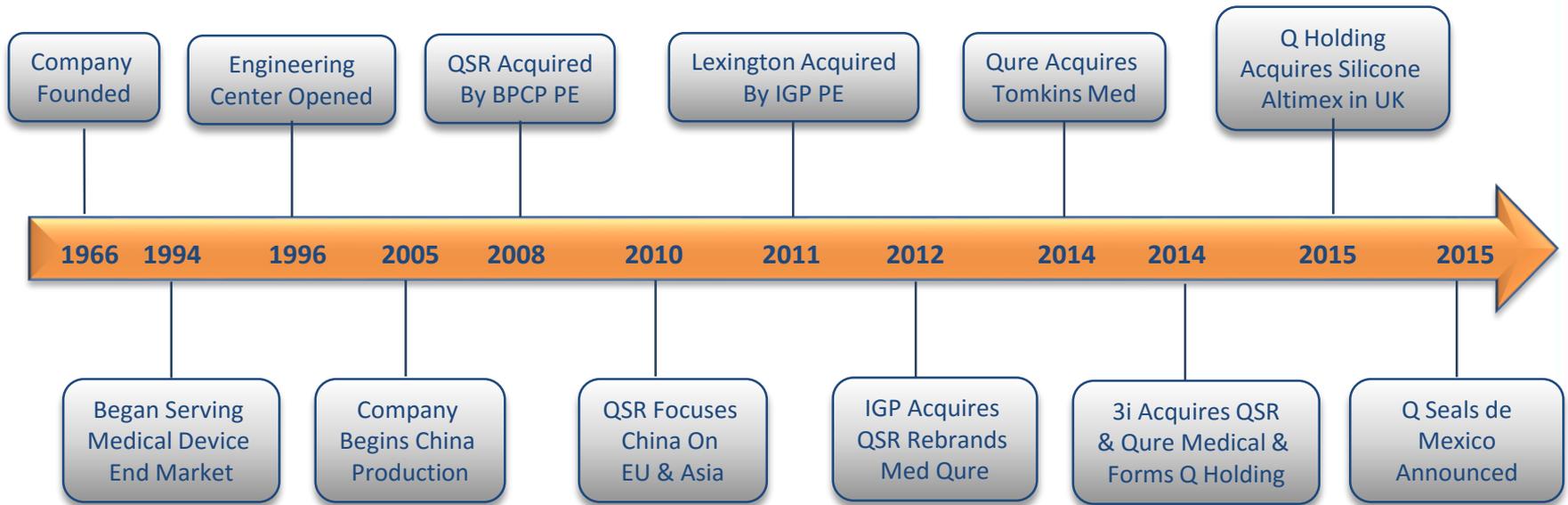


FLUID  
MANAGEMENT



DRUG  
DELIVERY

# Company History



# Q Holding Highlights



# Strong Value Proposition Drives Market Position

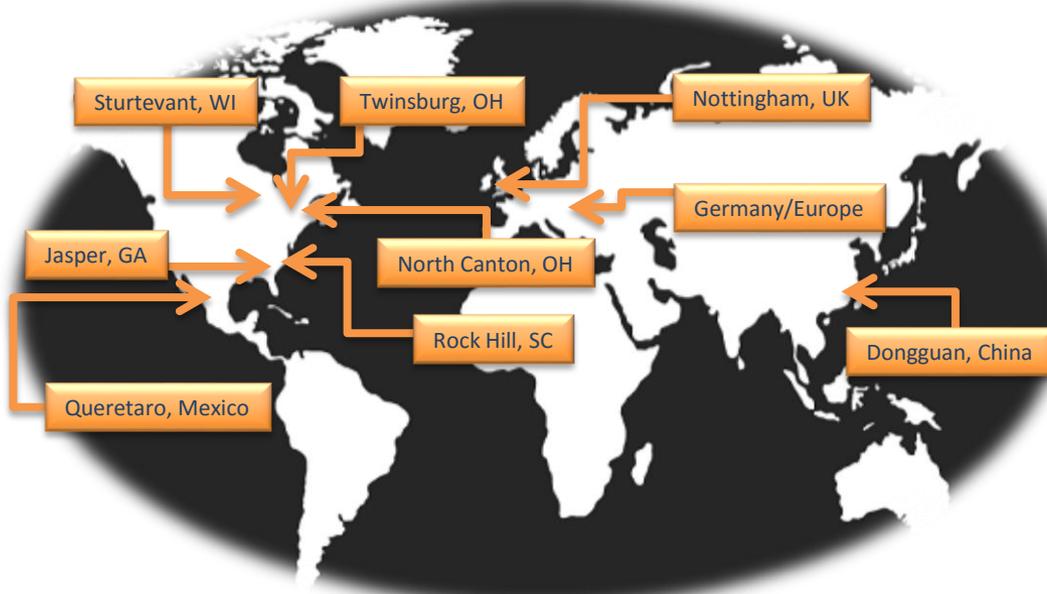
Q Holding has built strong relationships with a diverse group of leading medical device, connector manufacturers, and automotive aftermarket customers who rely on Q for their most complex products



# Facility Locations



**Twinsburg, Ohio**  
**Corporate HQ**  
 Automotive/Industrial  
 Manufacturing  
 Medical Manufacturing



**Dongguan, China**  
 Facility #1: Automotive/Industrial  
 Manufacturing  
 Facility #2: Medical Manufacturing



**Rock Hill, South Carolina**  
 Medical Manufacturing



**Nottingham, UK**  
 Medical Manufacturing

**Total Number of Company Employees: 1,105**



**North Canton, Ohio**  
 Engineering Center  
 Tooling & Automation



**Jasper, Georgia**  
 Automotive Manufacturing



**Sturtevant, Wisconsin**  
 Medical Manufacturing



**Germany, Europe**  
 Q Holdings Sales Office



**Queretaro, Mexico**  
 Automotive/Industrial  
 Manufacturing

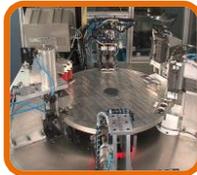
# Comprehensive Value Proposition



Materials Development



Design for Manufacturability



Automation Development



Compounding & Mixing



Mold Development



Precision Cleanroom Manufacturing



Precision Manufacturing



Cleanroom Assembly



Quality



Customized Testing & Analysis



Packaging & Distribution

*When precision matters and you need perfect products on time.*

QSR<sup>TM</sup> QUALITY  
SYNTHETIC  
RUBBER

● *when precision matters*

# 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.*



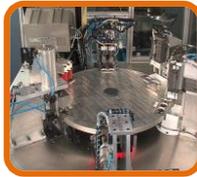
# Comprehensive Value Proposition



**Materials  
Development**



**Design for  
Manufacturability**



**Automation Development**



**Compounding & Mixing**



**Mold Development**



**Precision Cleanroom  
Manufacturing**



**Precision Manufacturing**



**Cleanroom Assembly**



**Quality**



**Customized  
Testing &  
Analysis**



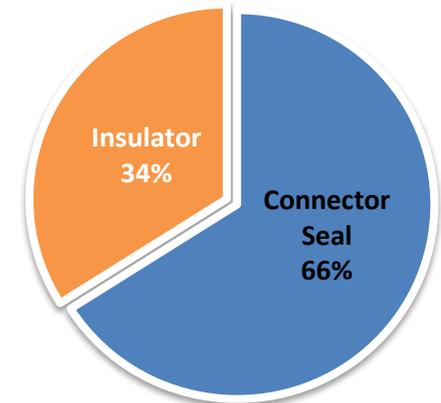
**Packaging & Distribution**

*When precision matters and you need perfect products on time.*

# QSR Key Differentiators

- Design support – **engineered product designs and proprietary materials**
- **Proprietary process technologies** – advanced automation and inspection
- Significant **SKU diversity** – mix of high and low-volume parts embeds QSR in customers' supply chains
- **Quality and reliability** – switching to alternative suppliers not worth the risk
- **“Mission critical”** products – highly technical and crucial to overall system performance
- **Low cost country** source capability – China facility with world class quality

## Revenue Breakdown



### Major Growth Opportunities:

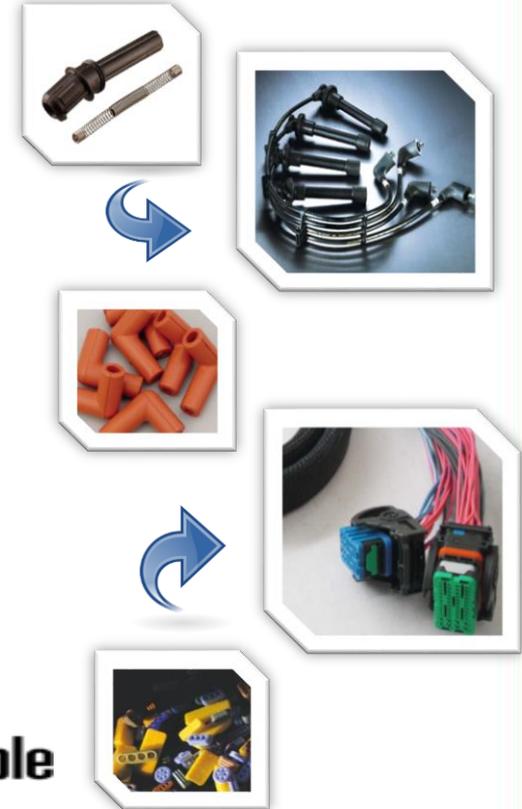
- Establish manufacturing and technology centers in **Europe** to increase market share
- New Mexican manufacturing – following industrial and medical customers into Latin America growth areas
- Conversion of customers from **LIM to HCR** materials and molding technology
- Increased density of electronics in vehicle systems – **micro-connector seal development**
- Continued development and expansion of breakthrough **“EMI Shielding”** materials and products

# QSR 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



**DC DIAMOND ELECTRIC**

**YAZAKI**

**MITSUBISHI ELECTRIC**

**General Cable**

**BOSCH**

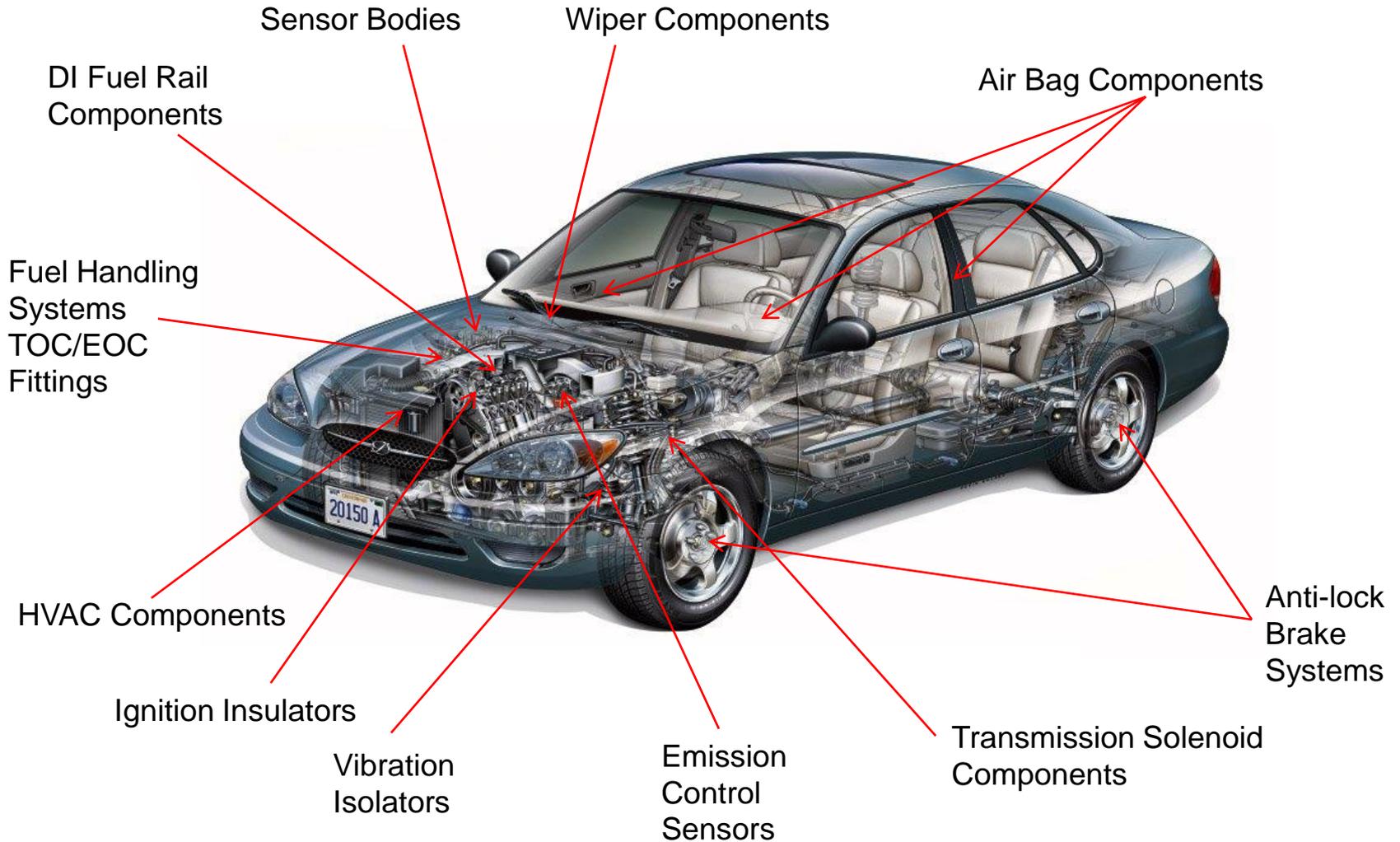
**SMP**  
Standard Motor Products, Inc

**TE**  
connectivity

**molex**

**DEUTSCH**

# Automotive Applications



# QSR 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

# QSR Products

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Insulator Products

## Custom Applications



# QSR Products



Matte seals

Grommets

Wire Seals

Ring Seals

Perimeter Seals

Face Seals

Cable Seals



# 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

# New Product Test Lab



Temperature Humidity Chamber



Programmable Oven

# New Product Test Lab

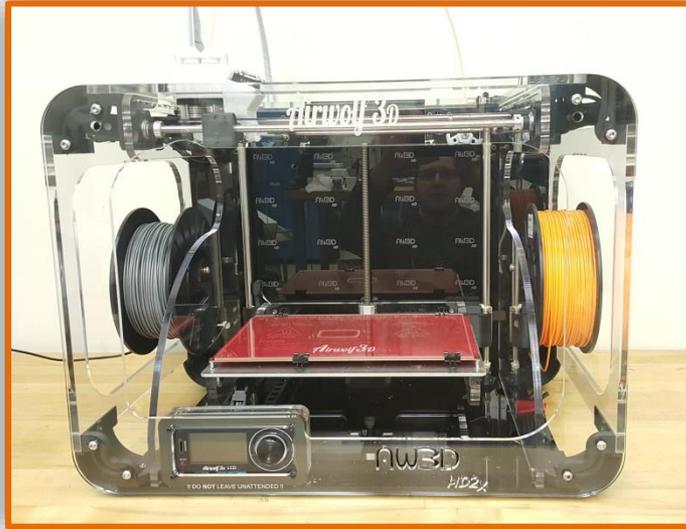


Mechanical force gage and test stand



Pressure/Vacuum leak station

# New Product Test Lab



3D Printer

In the future, QSR wants be more proactive with testing in the development phase in order to identify potential issues up front, before long term testing is initiated by the customer.



## Locations



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

# QSR 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
- Distribution warehouse for some QSR-China high volume transfer molded products
- 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





优品（中国） Dongguan

No 1 Building, E Section,

Jun Da Industry Zone, Dong Keng District,

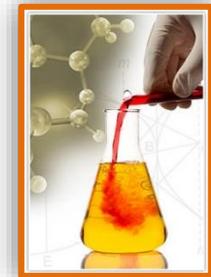
Dong Guan City, Guangdong, PRC



- 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

# QSR 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
- Transfer/compression molding
- Secondary operations (finishing, slitting)
- Assembly and packaging
- Washing
- Coating applications
- Data integration throughout plant





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

# QSR 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

# QSR Mexico Core Capabilities

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





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THANK YOU