

# HUPPERT ENGINEERING

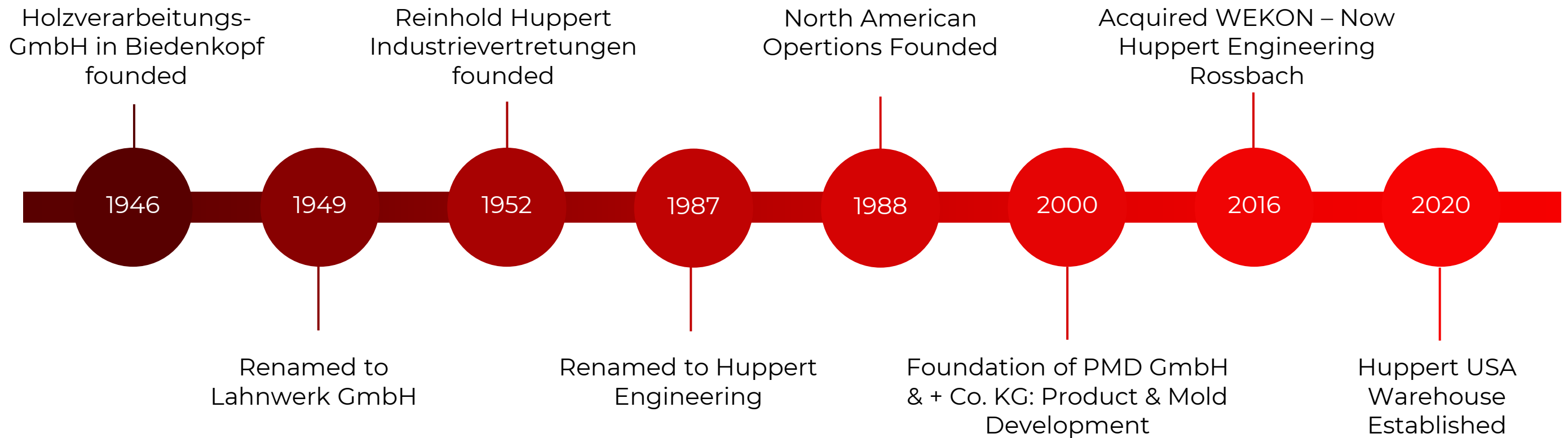
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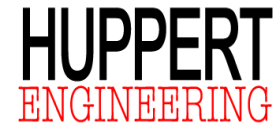
# Company History





# Huppert Engineering Global

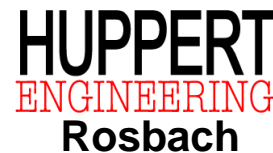
## Group Companies



- Manufacturer's Representation Regionally and Globally
- Sales, engineering, plant, resident engineering & quality support
- Global footprint



- Huppert Engineering Sister Company
- Full-service design and development company
- Component and systems level design and development
- Automotive OE, Tier 1, Foundry, lighting, mirrors, ICE, EV, body, structural, chassis etc.



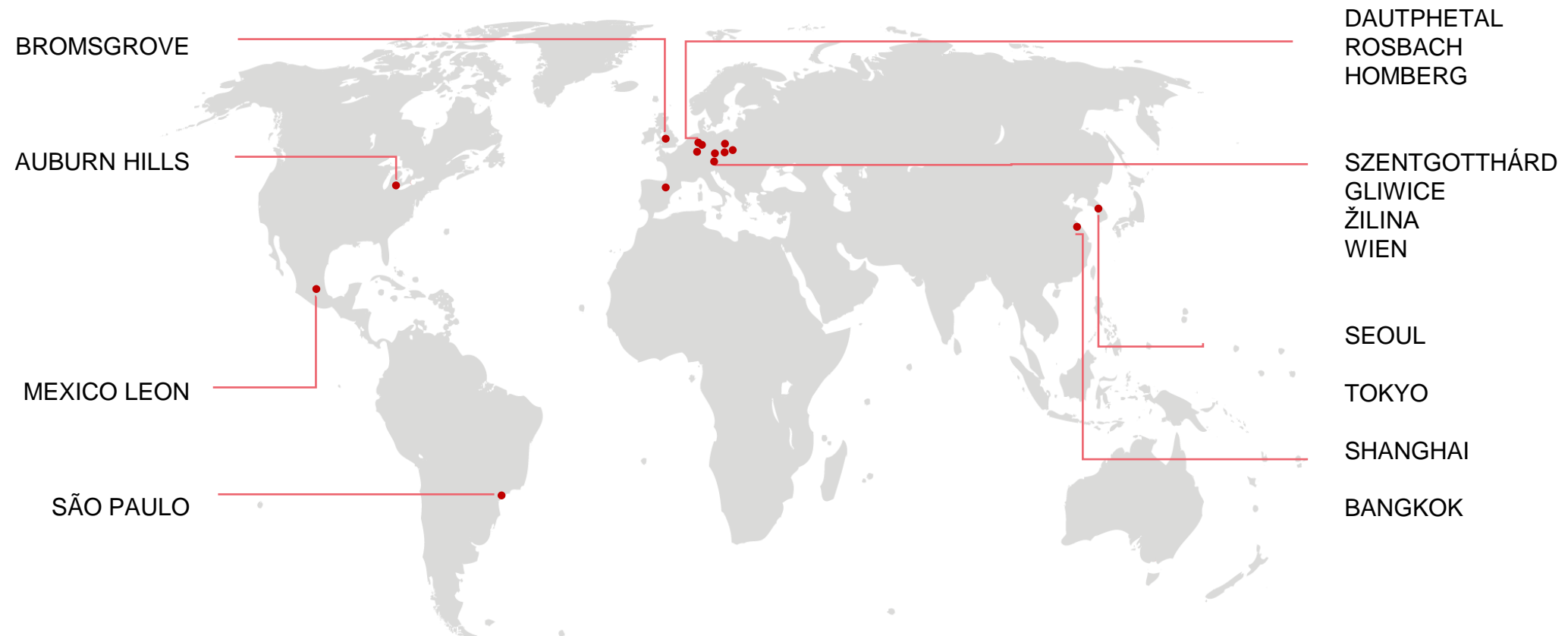
- In-House Precision Machining and Assembly
- Engine / Transmission / Driveline / Electrification / Commercial Diesel / Military and Aerospace
- Prototypes to volume production

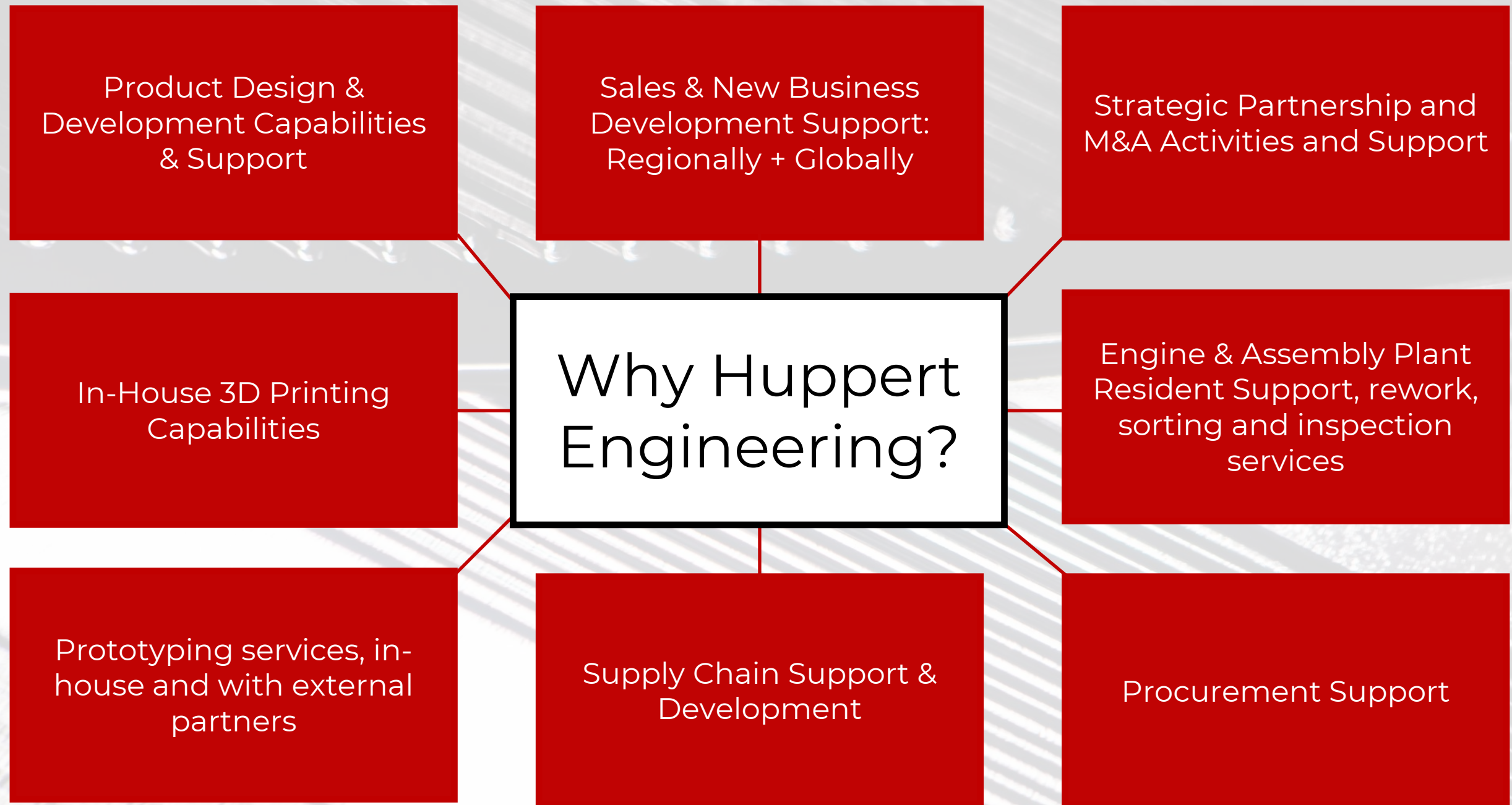


- Huppert Engineering Sister Company
- Foundry patterns, core boxes, core setting fixtures, low pressure and gravity tooling
- Vertically integrated with product design/development capabilities

# Global Presence

- Represent leading suppliers (casting, forging, machining, assembly, systems etc.) – Powertrain / Transmission / Chassis / Suspension / E-Mobility Products:
  - New Business Development / Sales and engineering support at OE's, Tier 1 and Tier 2 companies
  - In-Plant customer support across many OE and Tier 1 plants globally
  - In-house sales, program management, technical liaison engineers
- Project engagement with our principals (from initial sales to end of production)
- We offer procurement support solutions to OE's and manufacturers for purchased components, 3D printing and CAE/CAD support services







# Huppert Engineering Services

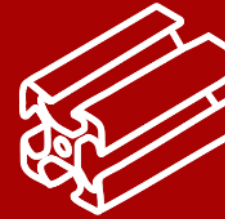
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MANUFACTURERS  
REPRESENTATION



PRECISION  
MACHINING



ALUMINUM EXTRUSIONS  
/ CASTINGS



3D PRINTING



WAREHOUSING



SORTING & INSPECTION



IN-PLANT  
RESIDENT SUPPORT

# 3D Printing



- Material capabilities include:
  - ABS, Nylon, PLA, PLA-CF (carbon fiber infused), PETG, PVA, TPU, Nylon, Wood simulated material, as well as aluminum and steel prints.
- Single part to high-volume
- In-house capabilities



## **Stereolithography (SLA)**

Prints sizes from small parts to an envelope size of 600mm x 600mm x 500mm (23.6in x 23.6in x 19.7in)

## **Fused Filament Fabrication (FFF)**

Prints size from small parts to a maximum envelope size of 610mm x 610mm x 610mm (24in x 24in x 24in)

## **Fused Deposition Modeling (FDM)**

Prints sizes from small parts to a maximum envelope size of 610mm x 610mm x 610mm (24in x 24in x 24in)

## **Select Laser Sintering (SLS)**

Powder-based 3D printing technology that uses a laser to fuse material layers into a final part.



# Warehousing

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**Storage Solutions:** Secure and organized space for storing goods, both short and long-term.

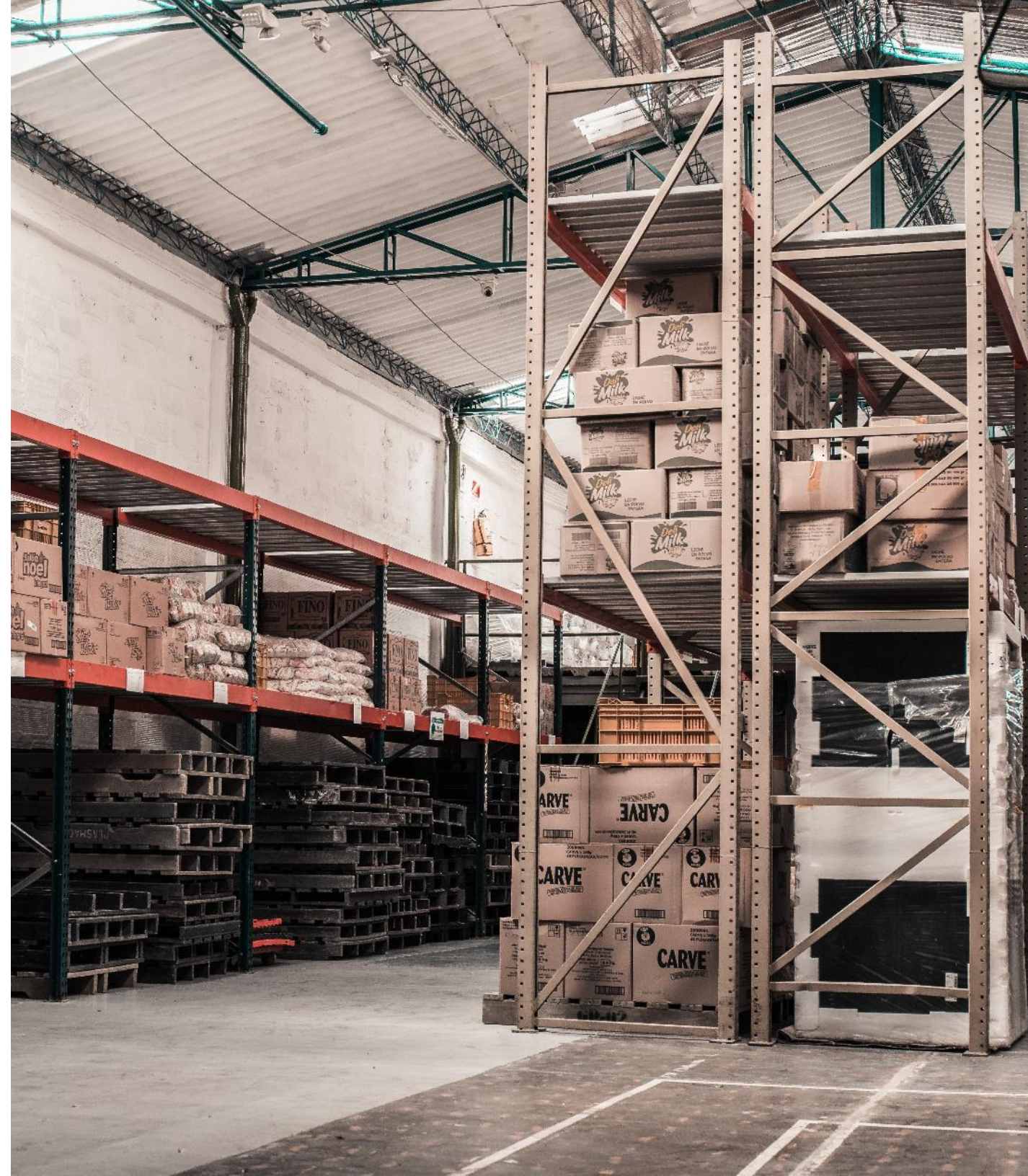
**Inventory Management:** tracking and control of stock levels for accuracy.

**Order Fulfillment:** Efficient picking, packing, and shipping of products to customers.

**Cross-Docking:** Quick transfer of goods between inbound and outbound transport with minimal storage time.

**Logistical Services:** We can provide necessary logistical services per project needs

**Heavy Products:** We are capable of providing support for heavy products as well.





# Sorting & Inspection

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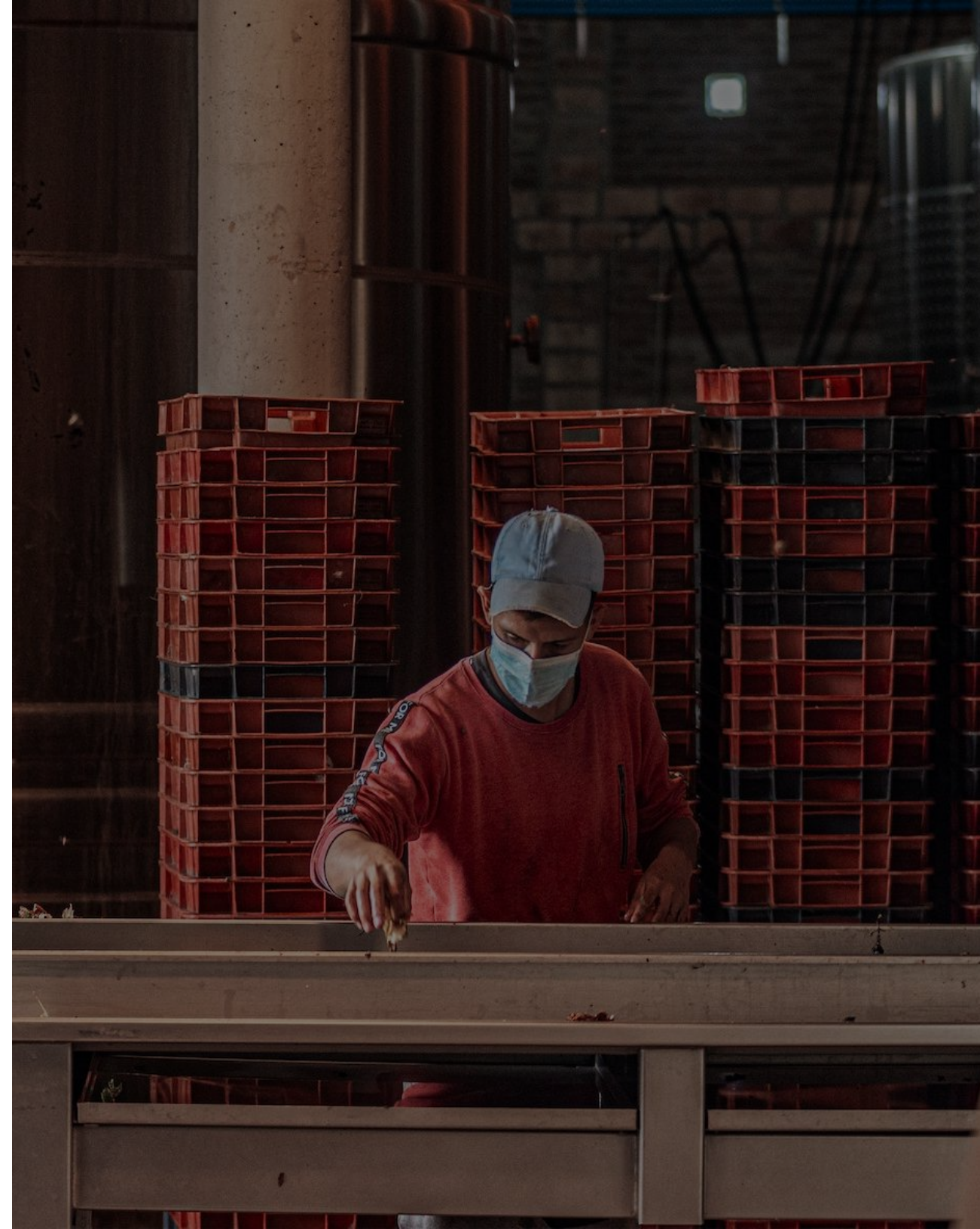
Huppert Engineering USA services include sorting & inspection services located in Auburn Hills, MI.

## **Sorting and Inspection Procedures:**

- **Visual Inspection:** Identify surface defects, cracks, or wear using magnification or the naked eye.
- **Functional Testing:** Confirm that parts operate as intended under real-world conditions.
- **Sorting:** Segregate defective, marginal, and conforming parts for further processing or rework.

## **Sorting and Inspection Benefits:**

- **Increased Reliability:** Ensures only quality parts proceed to assembly, reducing failures.
- **Cost Reduction:** Avoids costly rework or recalls by identifying defects early.
- **Improved Customer Satisfaction:** Guarantees high-quality end products, reducing warranty claims.





# Assembly Services

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## Value-Add Assembly Capabilities

Our company specializes in delivering tailored assembly solutions that enhance product quality and streamline production processes.

### Core Capabilities

- **Custom Assembly Solutions:** Experience in assembling components to meet specific customer requirements.
- **End-to-End Service:** From sourcing materials to final assembly, we provide a complete service, ensuring efficiency and precision at every step.
- **Quality Assurance:** Quality control protocols in place to maintain high standards across all product lines, ensuring robust deliveries.

### Value-Add Services

- **Kitting & Packaging:** Comprehensive kitting solutions tailored to streamline logistics and improve assembly time.
- **Testing & Inspection:** Advanced testing services to ensure the reliability and performance of every product.
- **Supply Chain Management:** Coordination of the entire supply chain to deliver on-time, every time.





# In-Plant Quality Support

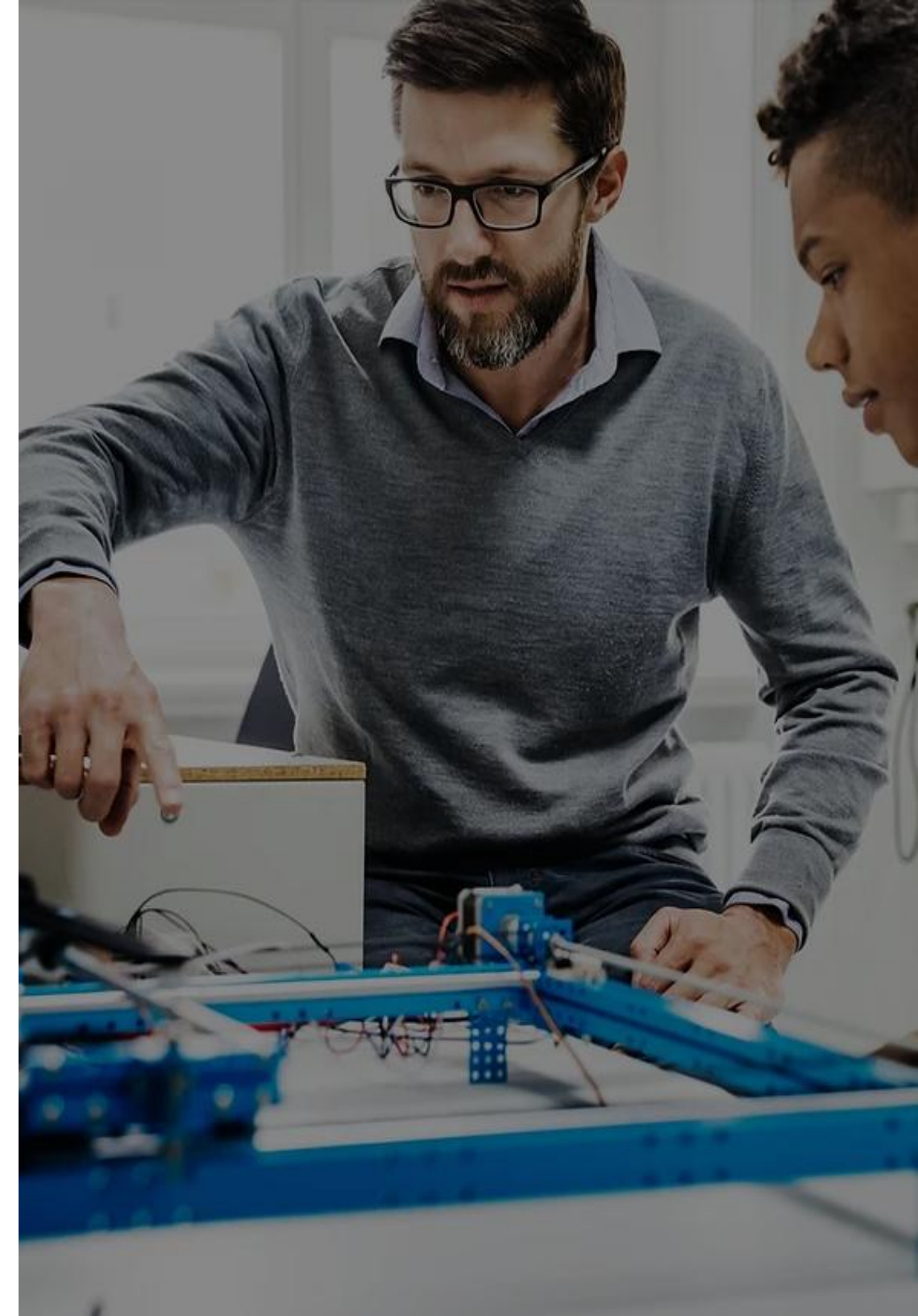
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## Core competencies include:

- Building relationships at the “plant level”.
- Quickly Working with Supplier Quality, Engineering, Launch, Manufacturing, Purchasing and Logistics within a supplier plant
- Scrap reporting and real-time data communication
- Managing sorting/containment companies and also performing sorting and containment

## Cost savings Include:

- *Reducing travel costs for our customers*
- *Improving customer/supplier relationships*
- *Solving quality issues quickly & effectively*
- *Established relationships with “key” players, product and plant procedures*
- *Providing experienced staff to create a positive customer and supplier experience*



# Examples of In-Plant Support in the USA, Canada and Mexico

## **American Axle** (GMC & SMF)

- Silao, Mexico
- Three Rivers Michigan

## **Aludyne**

- Michigan/Ohio

## **BMTS**

- Saltillo

## **Borg Warner**

- Seneca, S. Carolina
- Irapuato Mexico
- BW Saltillo
- San Luis Potosi

## **Delta Electronics**

- Saltillo, Mexico

## **Detroit Diesel / Daimler Truck**

- USA, Michigan

## **Stellantis**

- Dundee Engine Plant, Michigan
- Ramos Arizpe
- Trenton Engine Plant, Michigan
- Toluca Assembly Plant, Mexico
- Sterling Heights, MI
- CTC

## **Ford**

- Dearborn, MI

## **GM**

- Oshawa 1 and 2 Assembly, Canada
- Lansing Grand River Assembly, MI
- Warren, Michigan (VEC)
- Romulus Engine Plant, MI

## **GMPT**

- St. Catharine's, Canada
- Tonawanda, New York
- Spring Hill, Tennessee
- Silao Engine/Transmission, Mexico
- Toluca Engine Plant, Mexico
- Pontiac, Michigan
- Flint Engine Plant, Michigan
- Lake Orion Assembly, MI
- San Luis Potosi, Mexico
- Ramos Arizpe, Mexico

## **JTEKT**

- San Luis Potosi Mexico

## **Linamar Corp**

- Durango Mexico
- Ramos Arizpe
- Nuevo Laredo

## **Magna**

- Powertain, Ramos Arizpe Mexico

## **Nissan**

- Decherd, TN

## **Schaeffler Transmissions**

- Puebla Mexico

## **Volkswagen**

- Chattanooga, TN
- Silao Engine Plant Mexico

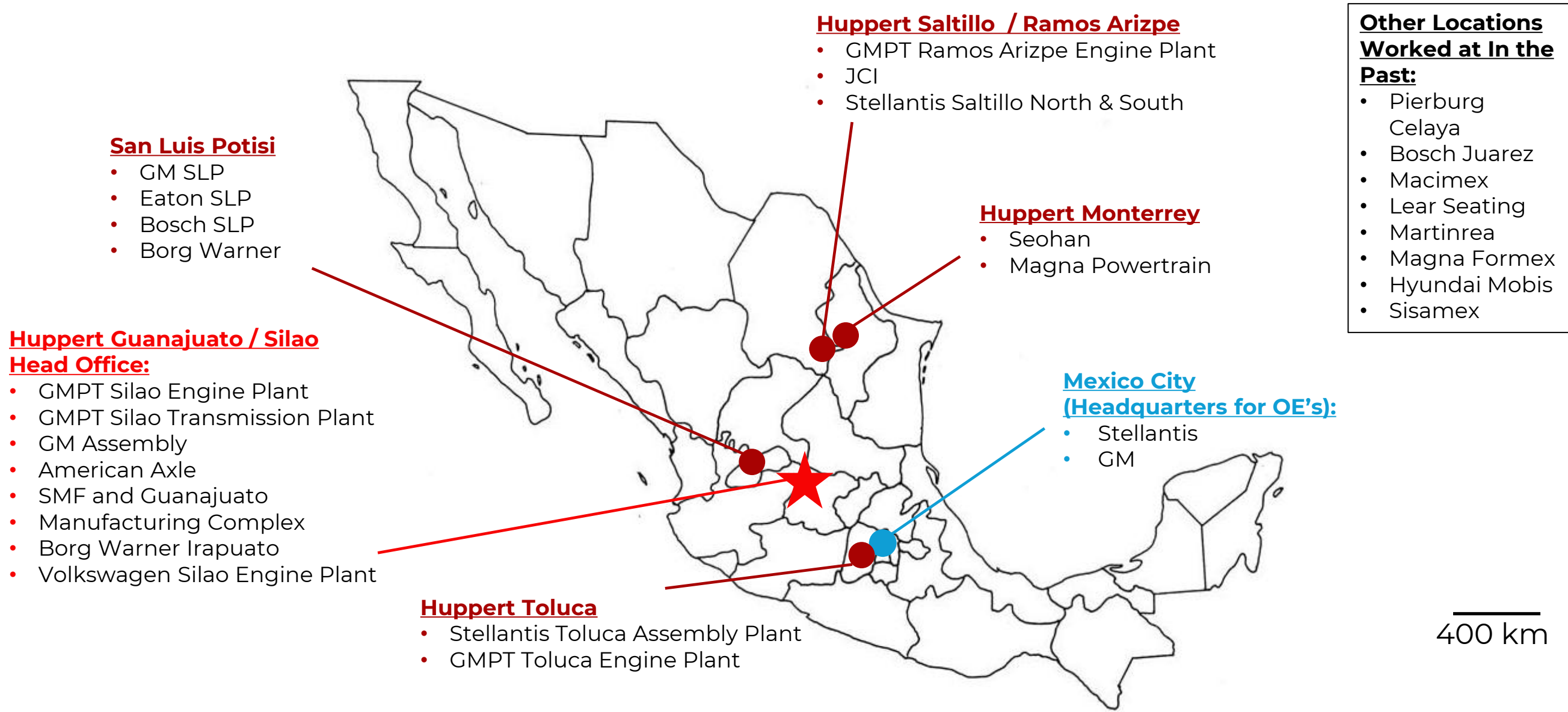
## **Additional Plants worked at, in the past:**

- |  |                               |
|--|-------------------------------|
| • Macimex, Ramos Arizpe/Tenango, Mexico          | • Lear, Silao, Mexico         |
| • Magna Seating, Ramos Arizpe Mexico             | • TVR, Reynosa, Mexico        |
| • Magna Formex & Stampings, Ramos Arizpe. Mexico | • Martinrea, Monterrey Mexico |
| • JCI, Deramadero, Saltillo, Mexico              | • Metalsa, Monterrey Mexico   |
| • JCI, Ramos Arizpe, Mexico                      | • Katcon, Monterrey Mexico    |
| • JCI, Matamoros, Mexico                         | • VW Puebla, Mexico           |

**\*\* Plants can be added per customer requirements**

# Huppert Engineering de Mexico

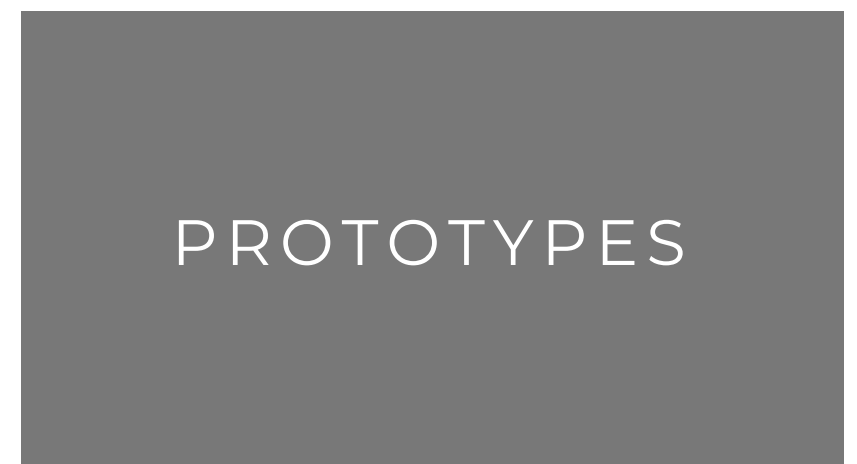
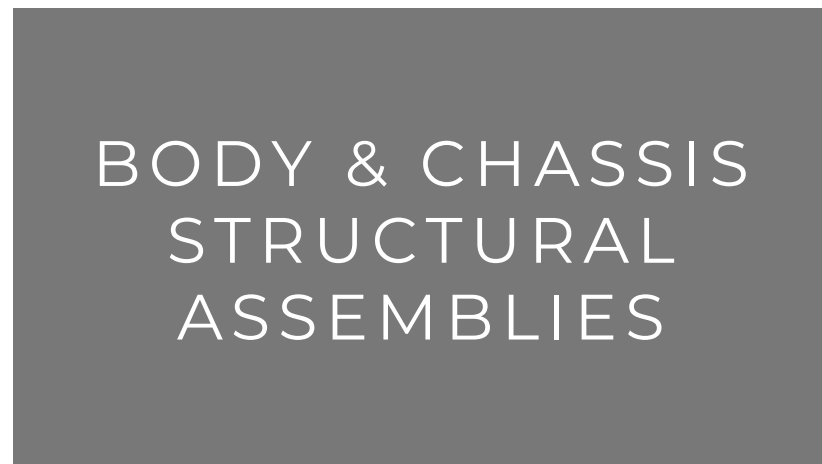
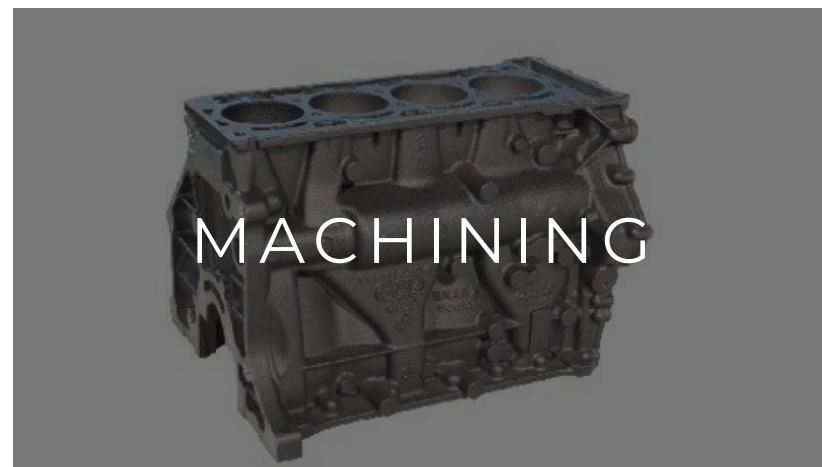
## Customer plant examples





# Current Technologies & Processes

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# Product Portfolio

## CASTINGS



Control Arms



Cylinder Blocks – Iron/Aluminum



Housings



Valve Covers

## MACHINING



Bearing Caps



Cylinder Heads



Oil Pans

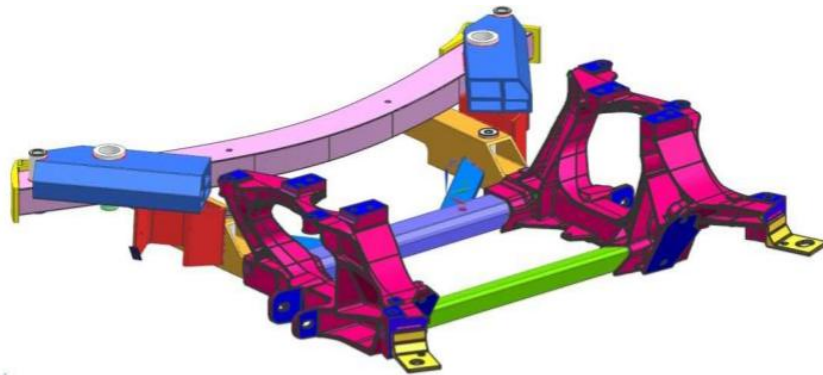
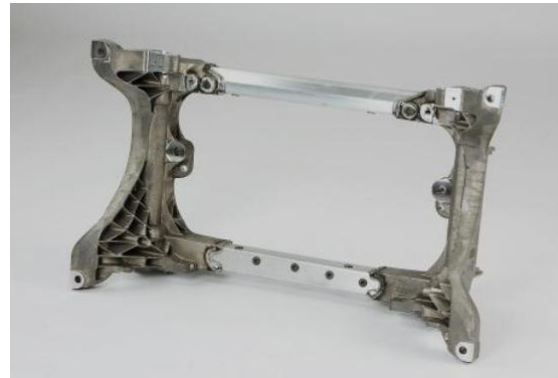


Bedplates



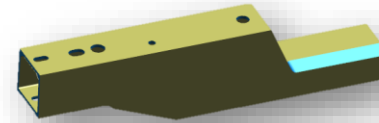
# Product Portfolio

## Body & Chassis Structural Assemblies

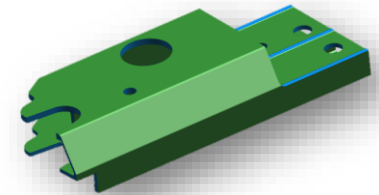


Front Cradle Assembly

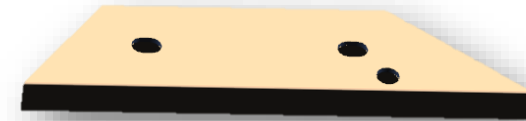
## Extrusions



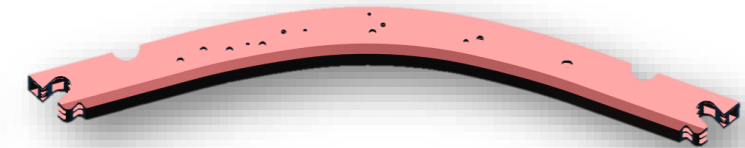
Front Rail Extrusion



Front Pedestal Extrusion



Side Gusset Extrusion



Deflector Beam



# Product Portfolio

## AFTERMARKET



Cylinder Heads



Cylinder Blocks – Iron/Aluminum



Housings



Front Cover

## PROTOTYPES



Intake/Exhaust Systems



Cylinder Heads



Oil Pans



Bedplates

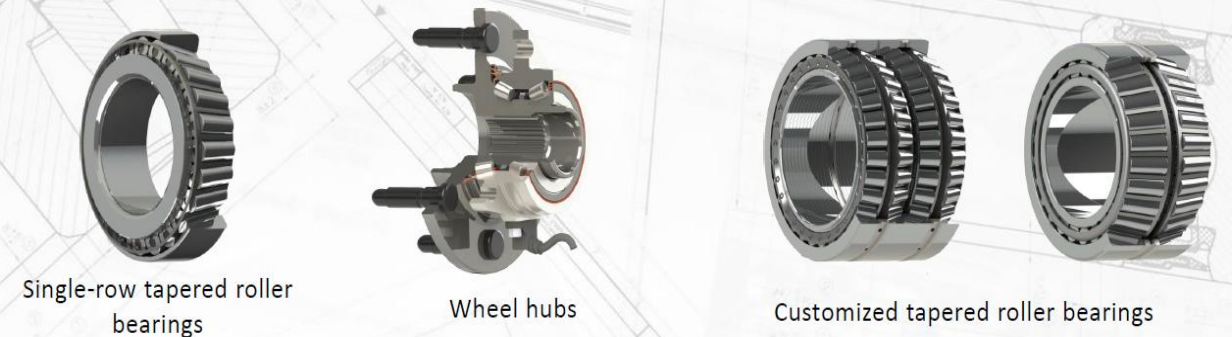
# Product Portfolio

## Bearings

### BALL BEARINGS OD (32÷1230mm) ID (15÷950mm)



### TAPERED ROLLER BEARINGS OD (35÷1130mm) ID (15÷850mm)



### CYLINDRICAL ROLLER BEARINGS OD (30,52÷1770 mm) ID (18÷1250 mm)

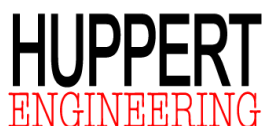
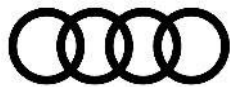


### CUSTOMIZED BEARINGS





# Our Customers





# Product Development: PMD

—  
a Group Company



# Core Competencies

## DEVELOPMENT

- Product Development
- Tool Development
- Project Management
- Prototypes
- Test Benches

## APPLICATIONS

- Powertrain
- E-Drive
- Chassis
- Spaceframe
- Exterior parts
- Interior parts



# Reference Work



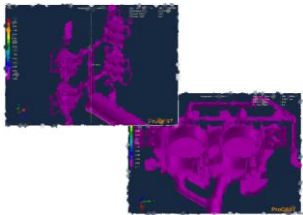
## Spaceframe

- Multifunctional castings
- Node elements
- Profiles



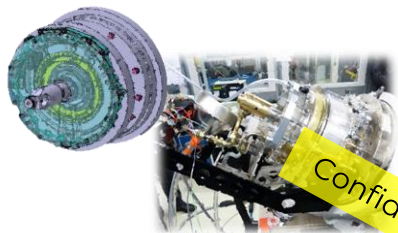
## E-Motor Housing

- Light weight design
- Water/Oil Cooling
- Sealing



## CAE Options

- Foundry simulation
- CFD
- FEA



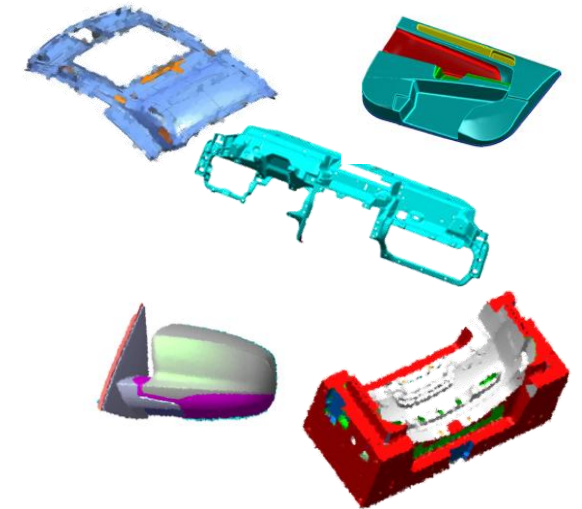
## Test Benches

- Oil flow
- Cooling systems
- NVH

Confidential!!

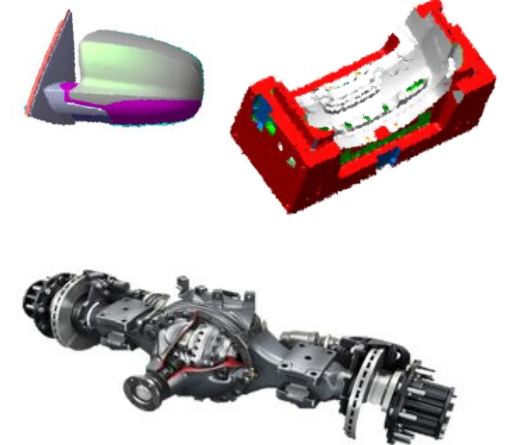
## Interior Parts

- Door panel
- Headliner
- Control panel carrier



## Exterior Parts

- Exterior mirror
- Bumper
- Headlight systems



## Chassis parts

- Axle (E-Drive)
- Rear Axle housing
- Break disc



## Several aluminium and plastic parts

- Packaging
- Sealing
- Tolerance studies



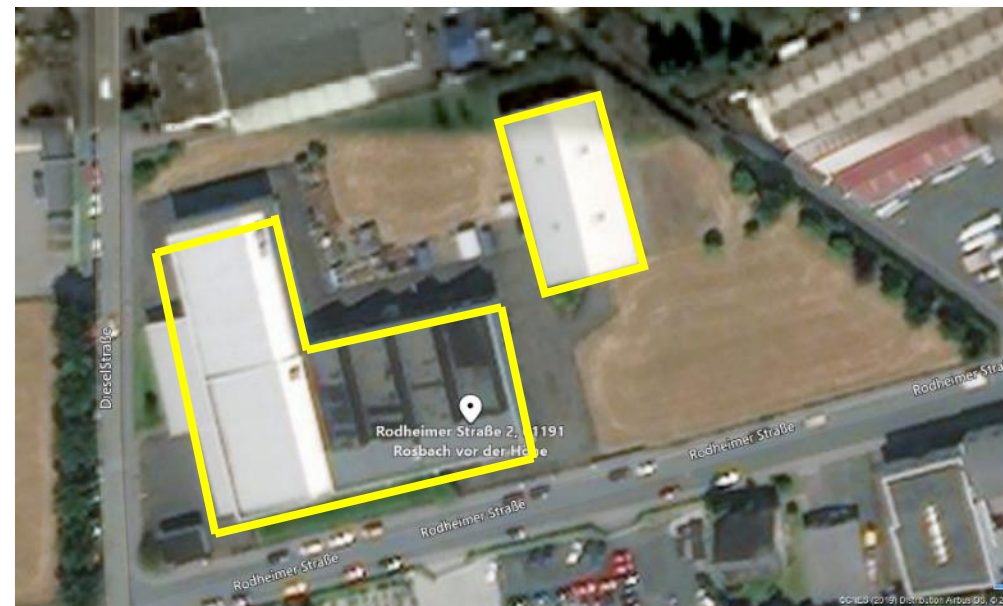
# Huppert Engineering Rosbach

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Production Site  
(Germany)



Rosbach vor der Höhe  
35 km north of Frankfurt



Production area :  
 $2600\text{m}^2$   
Storage:  $700\text{m}^2$

# History: Huppert Rossbach, Machining and Assembly

## Take over by Huppert Engineering GmbH & Co. KG

- Invest turn- mill center BIGLIA
- Invest in IT Infrastructure
- Implementation of CAD/CAM NC
- Refurbishment of the facilities

IATF 16949

Foundation Wekon  
Heinz Schnedler GmbH

1960

2011

2016

2017

2020

Insolvency but successful  
continuation of business

## Investment

- Leak Test Equipment
- 2 x 5-Axis CNC HEDELIUS T7 + T6
- Measurement Equipment Leitz PMM Xi
- Certified DIN ISO 9001:2015



# Production

- Turn -Mill -Center: 1 x BIGLIA
- 5-Axis CNC: 1 x OKK, 2 x HEDELIUS
- 4-Axis CNC: 6 x NIIGATA
- 3-Axis CNC: 2 x NIIGATA
- CMM: 2 x LEITZ
- Cleanliness Equipment





# Production Examples

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- Prototypes
- Low to Mid-Volume
- Aluminium, Gray Cast
- Ductile Iron
- Stainless & Carbon Steel
- Full Procurement Department
- Supply Chain Management and QA
- Established supply base for casting

