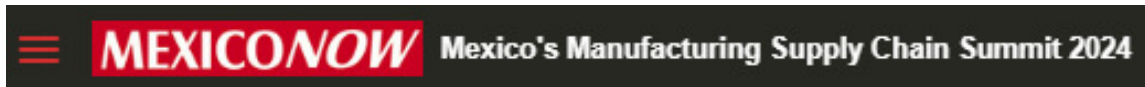




# Ricardo & Barbosa

## *Company profile*

Presentation for:



# 1. Company Introduction

*R&B is a private owned company, created in 1978.*

*Mainly supplying automotive industry, semi conductor industry, molds, progressive stamping tooling and electronics. Supplying parts for automotive wire harness makers for more than 45 years. New production facility in Mexico since August, 2012.*

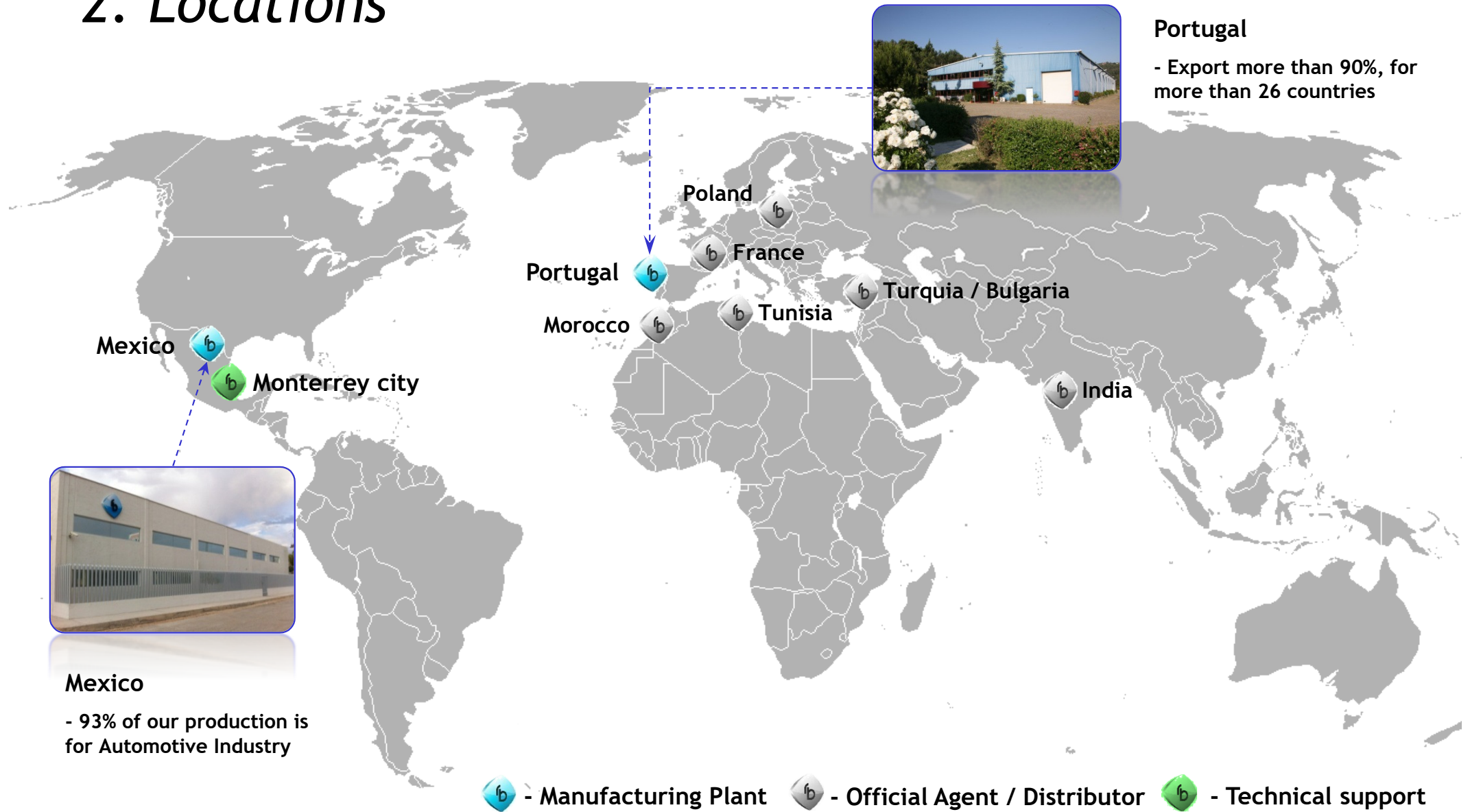


ISO 9001:2015  
ISO 14001:2015  
AS 9100:2016



ISO 9001:2015

## 2. Locations



### 3. Company General Data

#### **PORTUGAL** - Our Process video (4 minutes)

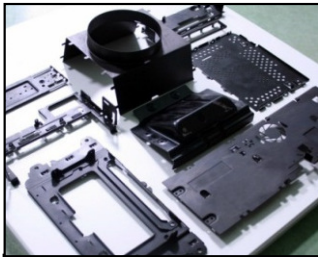
- Number of employees  
*147*
- Area of implementation  
*Plant = 3040 sqm*
- Equipment  
*CNC, EDM, Grinding Machines, Lathes, Heat & Surface Treatment (Hard-Chrome, Niquel, etc.)*
- Production Availability per Shift  
*1st 0%, 2nd 80%, 3rd 90%*
- Internal engineering R&D team

#### **MEXICO**

- Number of employees  
*52*
- Area of implementation  
*Plant = 900 sqm*
- Equipment  
*CNC, EDM, Grinding Machines, Surface Treatment (Hard-Chrome, Niquel, etc.)*
- Production Availability per Shift  
*1st 0%, 2nd 95%, 3rd 100%*
- Internal engineering R&D team

We're currently searching for new projects for R&B plants as we're continuously growing.

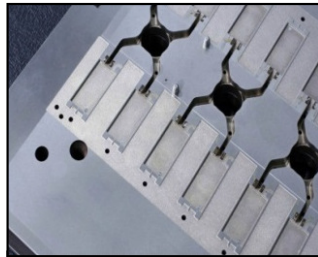
## 4. Business Areas & Main Customers



### Cut & Stamp Tools

Automotive Industry

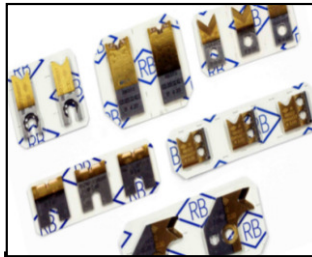
- Blaupunkt
- Bosch
- Grundig
- Faurecia
- Hutchinson
- Sakthi



### Molds & Die Forming

Electronic Industry

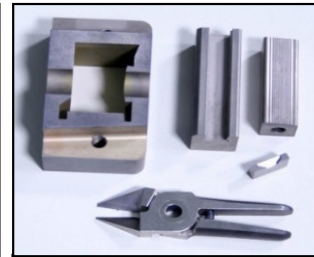
- Tyco Electronics
- Kemet
- Texas Instruments



### Cut & Crimping Tools

Wire Harness Industry

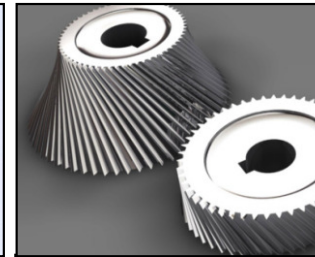
- Yazaki Corp.
- Lear Corp.
- Distributors (Relcon, Trustec, Sovtest, Techmac)



### Electrodes & USW

Welding industry

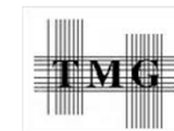
- Metalor
- Lear Corporation



### Surface Treatments

Navy and Textile Industry

- Textil MG
- Estaleiros NVC
- Johnson Controls



### Oil and gas Petrolious platforms

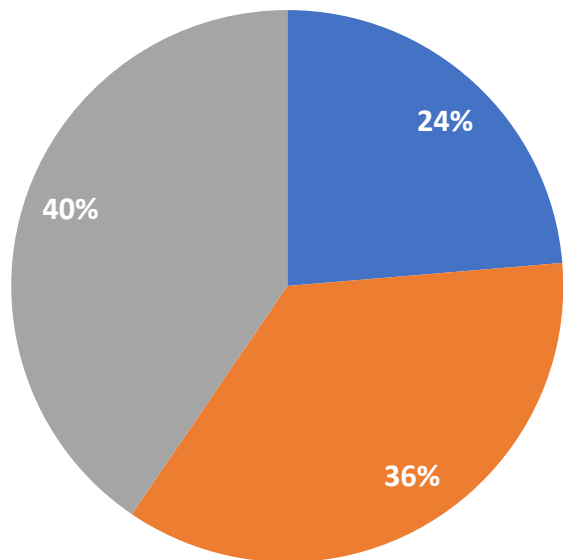


### Security Systems Surveillance Cameras



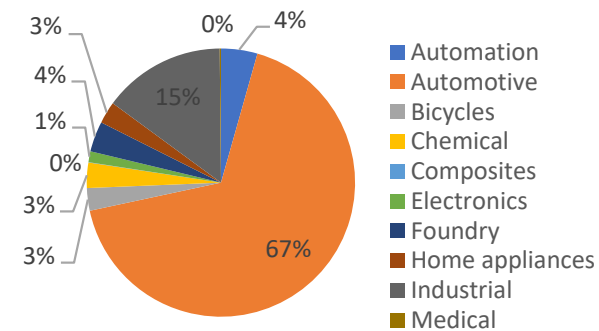
## 4. Business Areas & Main Customers (Sales 2022)

Sales per Division



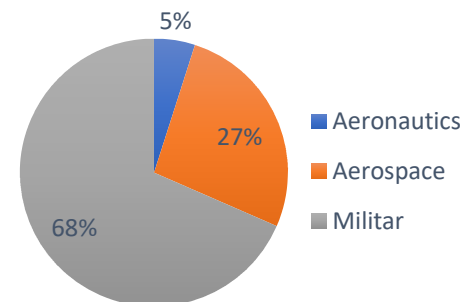
- Aeronautics, Aerospace, Defense and Militar
- Mechanical Precision
- Wire Harness

Mechanical Precision



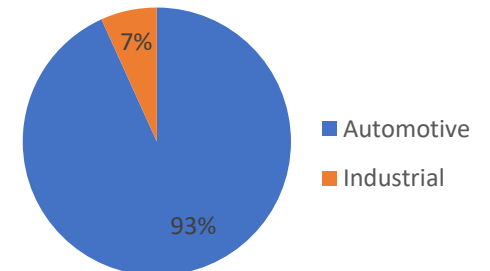
- Automation
- Automotive
- Bicycles
- Chemical
- Composites
- Electronics
- Foundry
- Home appliances
- Industrial
- Medical

Aeronautics, Aerospace and Militar



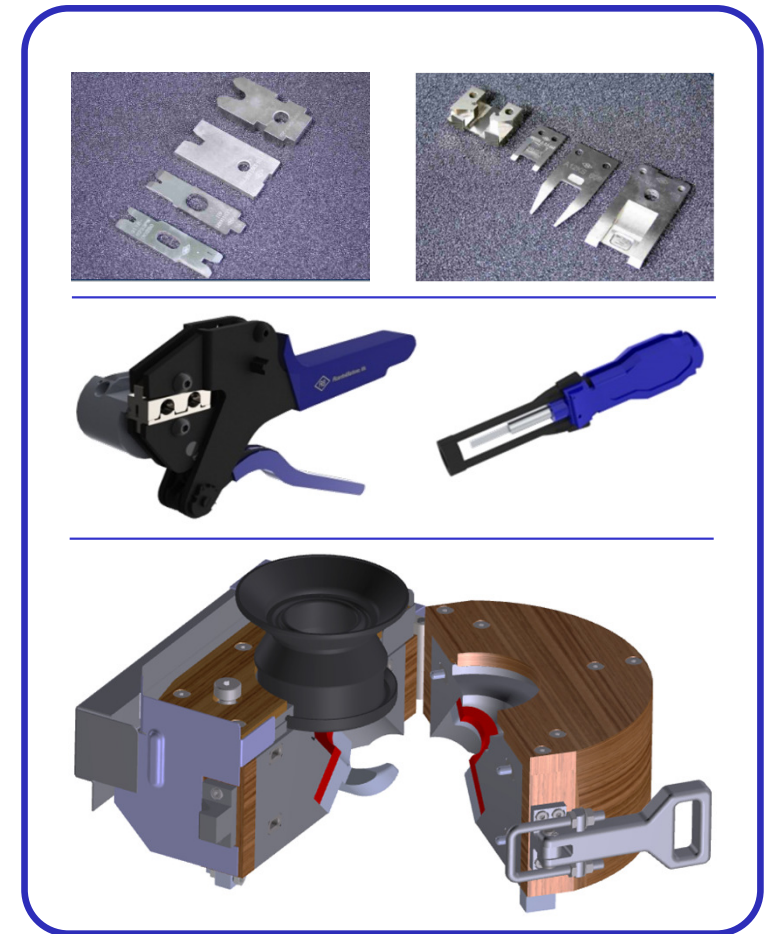
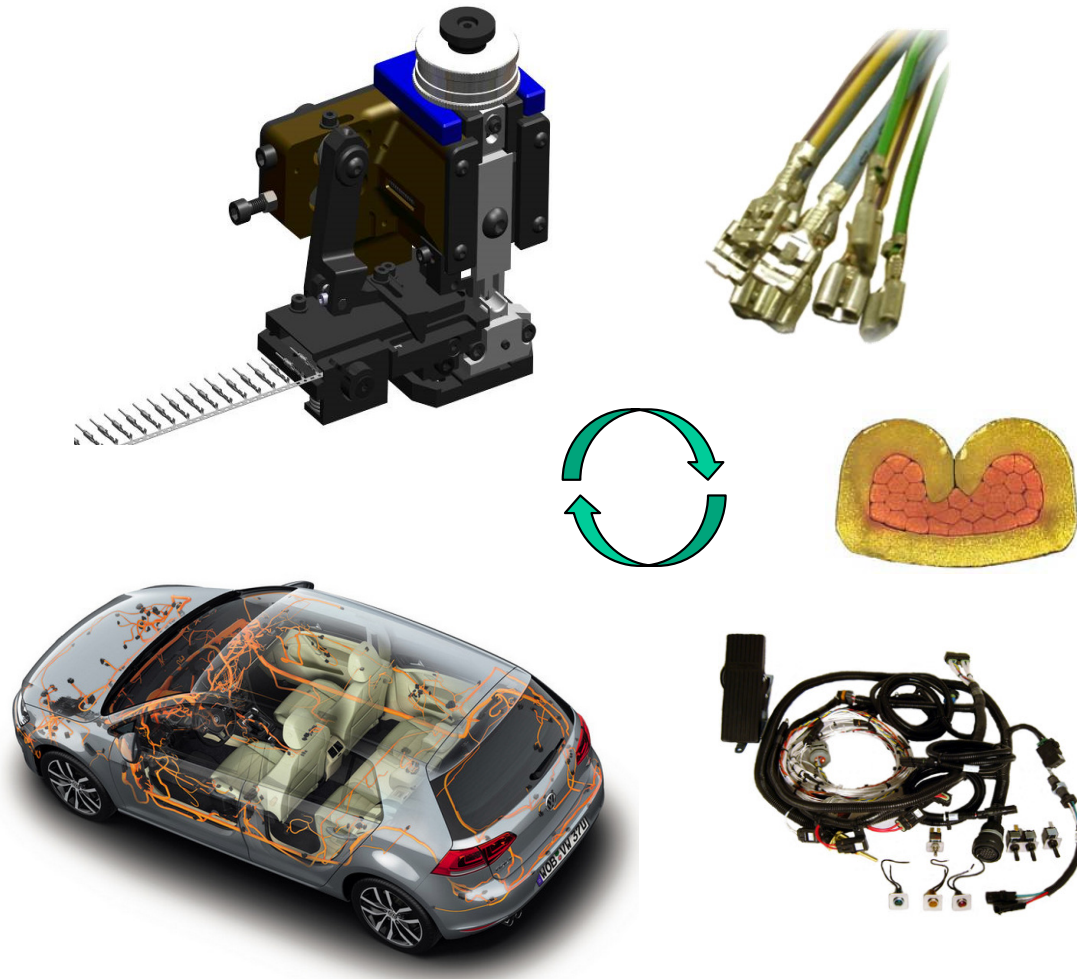
- Aeronautics
- Aerospace
- Militar

Wire Harness

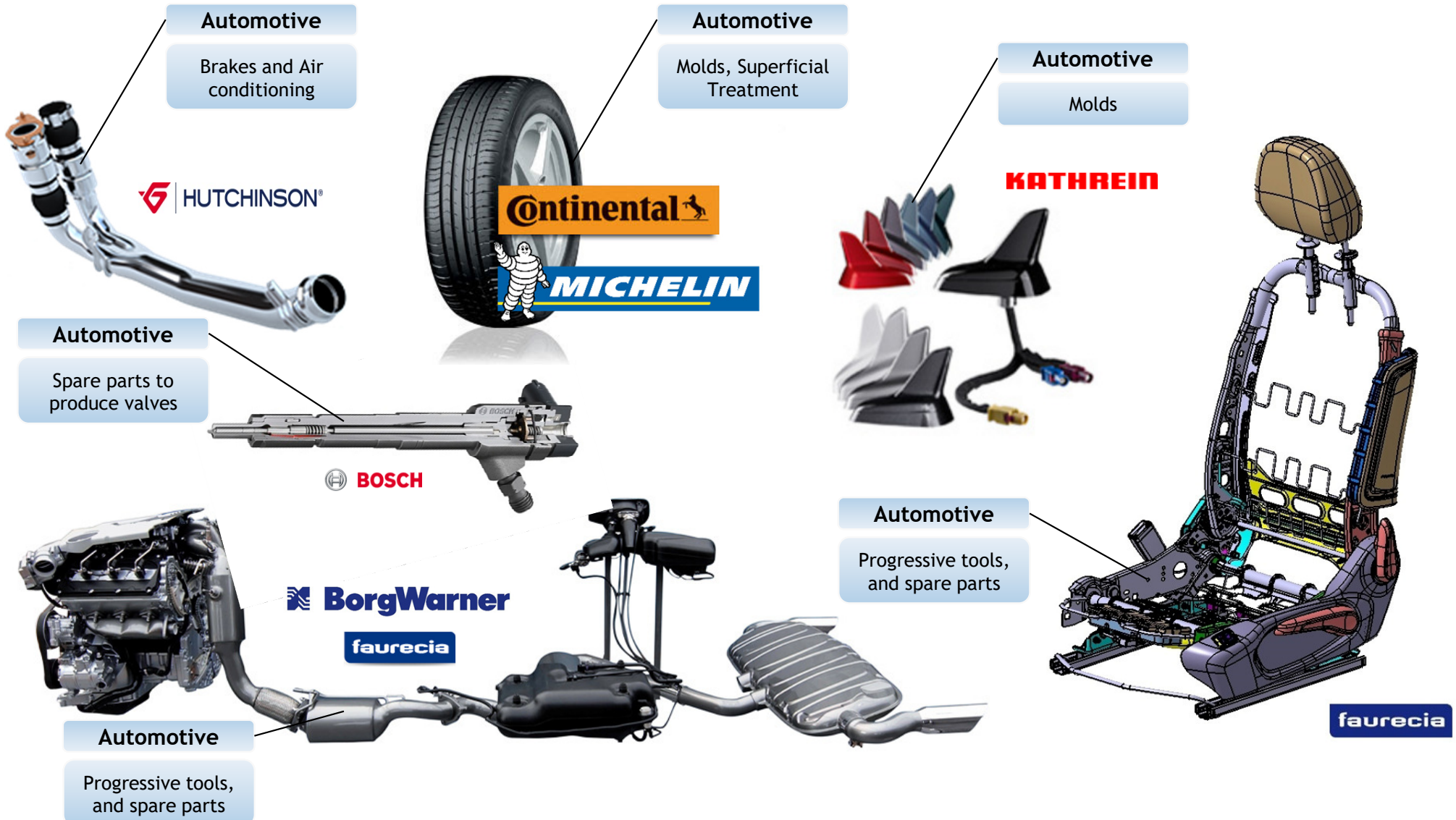


- Automotive
- Industrial

## 4. Business Areas & Main Customers (Wire Harness)



## 4. Business Areas & Main Customers (Mechanical Precision)



## 4. Business Areas & Main Customers (Mechanical Precision)



## 4. Business Areas & References (Aeronautics Industry)

- Certification AS9100 (since August 2017)



### Contact companies / certified

AIRBUS



MECACHROME



LATESYS



THALES



SAFRAN



LEONARDO



### Approved by these companies

PRATT & WHITNEY



OGMA



LAUAK



EMBRAER



COLLINS AEROSPACE

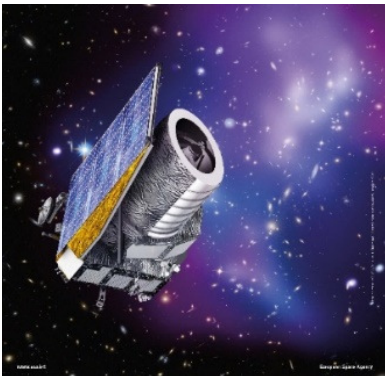


AERNNOVA



## 4. Business Areas & References *(Space Industry)*

- R&B participated till now in four ESA Space Missions



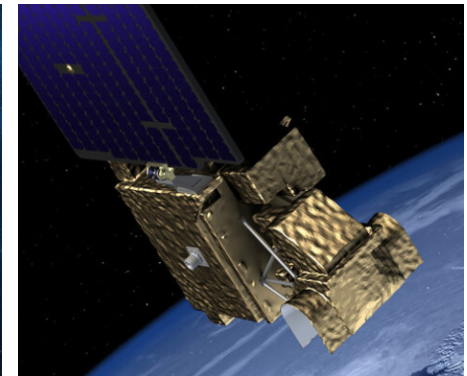
**EUCLID** is a space-borne survey mission dedicated to investigating the origin of the Universe's accelerating expansion and the nature of dark energy, dark matter, and gravity.



**JUICE** - Jupiter ICy moons Explorer - is the first large-class mission in ESA's Cosmic Vision 2015-2025 program. This mission will spend at least three years making detailed observations of the giant gaseous planet Jupiter and three of its largest moons, Ganymede, Callisto, and Europe.



The primary goal of **PLATO** (PLAnetary Transits and Oscillations of stars) is to open a new way in exoplanetary science by detecting terrestrial exoplanets.



The **AWS** - Arctic Weather Satellite mission will provide frequent coverage of Earth for improved nowcasting and numerical weather prediction.

## 4. *Business Areas & References* (Space Industry)

- We developed critical systems and precision parts for satellites for:

LUSOSPACE



OMNIDEA



ACTIVESPACE



DHV



FREZITE HIGH PERFORMANCE



AIRBUS ONEWEB



## 5. Engineering, Process Materials and Machines

### **PORTUGAL** (Machines)

- 18 CNC Milling (5, 4 and 3 axis)
- 3 Conventional Milling
- 5 CNC Lathes (9 and 3 axis)
- 4 Conventional Lathes
- 5 CNC Flat Grinding
- 7 Conventional Flat Grinding
- 2 CNC Cylindrical Grinding
- 2 Conventional Cylindrical Grinding
- 1 CNC PeTeWe (Profile Grinding Machine)
- 10 Wire erosion
- 4 Spark erosion
- 1 Automatic diamond polishing
- 2 Laser marking

Process movie PT

### **MEXICO** (Machines)

- 4 CNC Milling (4 and 3 axis)
- 2 Conventional Flat Grinding
- 3 Wire erosion
- 1 Spark erosion
- 1 Automatic diamond polishing
- 1 Laser marking

Process movie MX

## 5. *Engineering, Process Materials*

- **Processing Materials**

- Always defined by customer specification, when required.
- All kinds of metal:
  - HSS, Titanium, Aluminium, Tungsten Carbide (all types), AMPCO (all types), and Tungsten Copper;
  - Nickel base alloys: Inconel 625 and 718
  - Stainless steels: Duplex and Super Duplex

- **Types of heat treatment**

- Vacuum furnace quenching
- Controlled atmosphere quenching
- Vacuum tempering
- Tempering in neutral atmosphere
- Annealing
- Sub-zero
- Stress relieving
- Plasma nitriding
- Nitriding

## 5. *Engineering, Process Materials*

- **Other Processes**
  - Realization and Assembly of complete set
  - Waterjet cutting
  - Laser cutting
  - Presses (Onsite)
  - Painting (Powder)
  - Surface Treatments (Onsite - Not certified NADCAP)
- **Tolerance and precision**
  - $\pm 0,002$  (Wire Erosion)
  - $\pm 0,005$  (CNC Milling, Grinding and Lathes Machines)

# 5. Engineering, Process Materials and Equipments

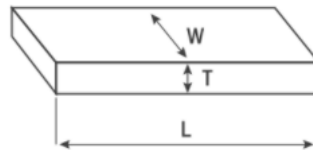
## PARTS RESTRAINTS LIMITAÇÕES PEÇAS

PRODUCT | Round Parts  
PRODUTO | Peças Redondas



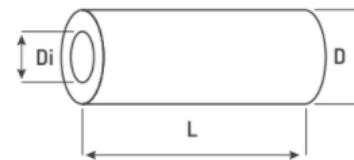
DIMENSIONS  
DIMENSÕES  
D <= 500  
L <= 1500

PRODUCT | Parts Bars  
PRODUTO | Peças em Barras



DIMENSIONS  
DIMENSÕES  
T <= 600  
W <= 800  
L <= 2000

PRODUCT | Hollow Parts  
PRODUTO | Peças Ocas



DIMENSIONS  
DIMENSÕES  
D <= 500  
Di <= 400  
L <= 400

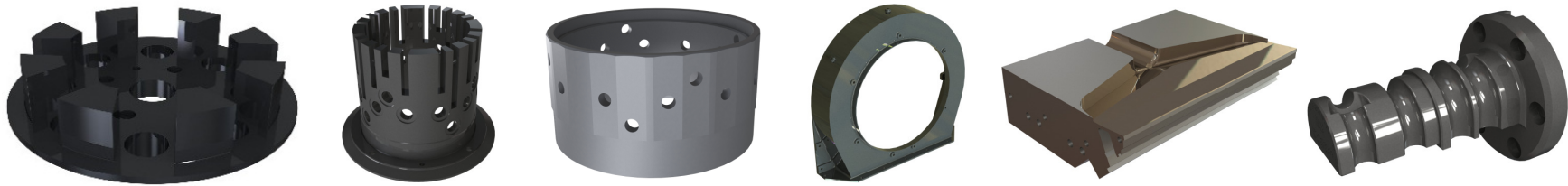
PRODUCT | Disks  
PRODUTO | Discos



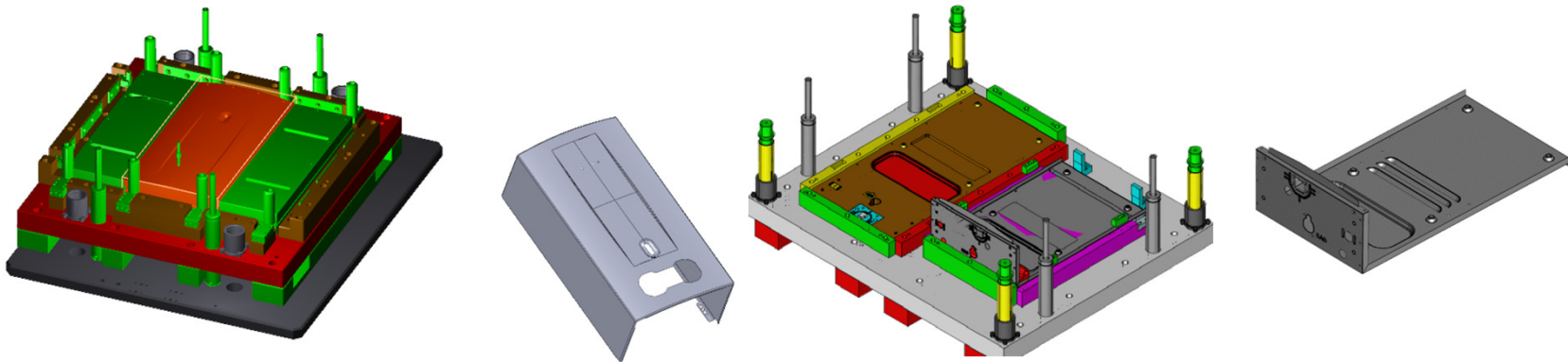
DIMENSIONS  
DIMENSÕES  
D <= 400  
H <= 600

## 6. *We can provide you* (High Precision Machining)

- Parts by order



- Project by order (Internal engineering and development team)



- Consignation stock

Reduce your cost of inventory, and reduce your warehousing footprint with just-in-time delivery

## 7. Benchmark advantages:

- **Partnership**

We understand customer needs, 45 years in industry.

- **Global Quality & Certification**

Same quality different locations

- (México) Perry Johnson's - ISO 9001:2015 certification.
- (Portugal) SGS - ISO 9001:2015, AS9100:2016 and 14001:2015 certifications.

- **Production Capacity**

Two production locations for local technical support, with strong focus in the Industrialization Process.

- **Logistics & Supply Chain Collaboration**

Continuously improving our delivery time and proactivity on plants cost reduction.

- **Competitive market price**

High quality at lowest price with the shortest OLT.

## 8. Global Quality Website

Purchase Order No.		Start Date	Status Date	Version	Report No.
7035691		10-09-2011	10-09-2011	1	QR031-11
Part Name	Supplier Part No.	P.O. Quantity	Rejected Qty.		
70091407DAN	70091407DAN	3	3		
Author of 8D report		Close-date			
D1 Customer Team					
Surname	Last Name	Leader	E-Mail - Address		
Hanae	Elantani		<a href="mailto:Hanae.Elantani@yazaki-europe.com">Hanae.Elantani@yazaki-europe.com</a>		
D1 R&B Team					
Surname	Last Name	Leader	E-Mail - Address		
D2 Problem Description Customer			D2 Problem Description R&B		
Thanks to be informed that we received 70041407DAN instead of 70091407DAN. Please send us the right parts.					
D3 Containment Action (s)			% Verific.	Impl. Date	Responsible
			0,00		

- Website features:**

8D report tool

Quality Report Search Tool

Upload and download QA documents

### Quality control devices:

CNC Microscope

Hardness measuring device (HRC, HRBr)

Micrometer, Caliper, Microscope, 3D Machine,

Surface treatment thickness measuring device (Hard-Chrome, Nickel...)



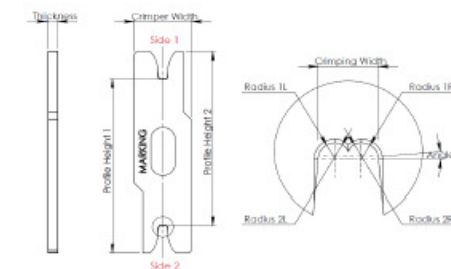
### CERTIFICATE OF COMPLIANCE

#### Wire Crimper

Part Nr:	71164618XWW.1	Lote OF:	13016443
Serial No:	2013.12.16 M021	Material:	MG50
Equipment:	Mitutoyo Microscope, Micrometer		

Description	Side	Drawing Dimensions				Measured Value
		Unit	Nominal	Tol. Sup.	Tol. Inf.	
Crimping Width	1	mm	1,350	0,020	0,000	1,370
Profile Height	1	mm	63,000	0,020	-0,020	63,020
Radius 1L	1	mm	0,380	0,020	-0,020	0,380
Radius 1R	1	mm	0,380	0,020	-0,020	0,380
Radius 2L	1	mm	0,300	0,020	-0,020	0,310
Radius 2R	1	mm	0,300	0,020	-0,020	0,320
Angle	1	°	6,000	0,500	-0,500	6,250
Crimping Width	2	mm	1,350	0,020	0,000	0,000
Profile Height	2	mm	63,000	0,020	-0,020	0,000
Radius 1L	2	mm	0,380	0,020	-0,020	0,000
Radius 1R	2	mm	0,380	0,020	-0,020	0,000
Radius 2L	2	mm	0,300	0,020	-0,020	0,000
Radius 2R	2	mm	0,300	0,020	-0,020	0,000
Angle	2	°	6,000	0,500	-0,500	0,000
Thickness		mm	4,000	0,020	-0,020	3,990
Crimper Width		mm	20,000	0,000	-0,010	19,990
Center Line		mm	0,000	0,010	-0,010	0,000

Coating:	Hard Chrome, 0,003 mm
Hardness (HRC):	0,000 HRC



# THANK YOU FOR YOUR ATTENTION!