

40 YEARS OF CUSTOMER SATISFACTION

November 2018

BLANKING & STAMPING OF METAL PARTS
INSERT-MOLDING & MULTI-MATERIAL MOLDING
INJECTION-MOLDING AND FINISHING OF THERMOPLASTICS
ASSEMBLING AND TESTING OF ELECTROMECHANICAL COMPONENTS

Overview



- Born in 1971, family owned
- 2017 sales: 35 m€
 - product design/codesign and process development : 3 m€
 - mass production: 32 million euro (approx. 4000 part numbers)
- 2 plants: Mista Spa, Italy (headquarter) and MST Sarl, Tunisia
- Customer's footprint: mainly Europe and North Africa
- Main customers:

Automotive (65%)



Appliances (20%)



E&E (15%)

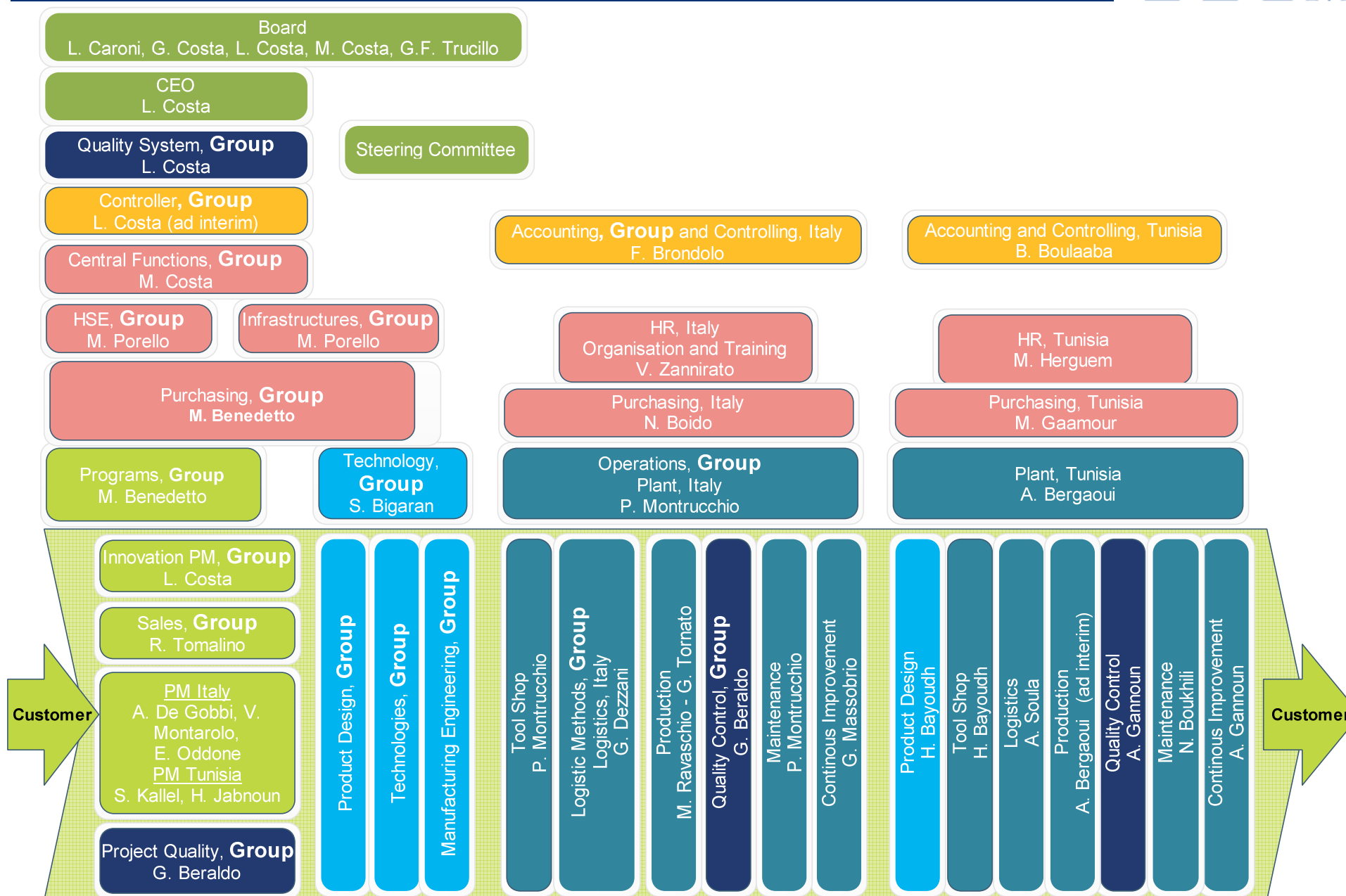


People



Area	Italy	Tunisia	Total
Programs : mkt, sales, project management	8	2	10
Tech : product and process design, technologist, methods	14	11	25
Quality : system, development, customer, supplier, metrological lab	7	12	19
Logistic : customer care, expeditors, warehouse	10	12	22
Purchasing, Accounting and HR	7	8	15
Production and process control:			
Stamping and welding	30	-	30
Injection moulding and insert-moulding	45	89	134
Assembly	8	149	157
Tool shop	14	8	21
Machine and equipment maintenance	2	7	9
Total	145	298	443

Organisation (September 2018)



Technologies

Metal stamping and welding

Thermoplastic injection moulding (1k, 2k)

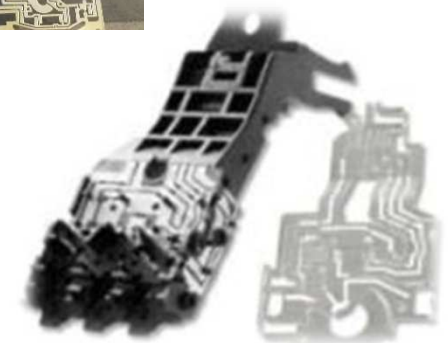
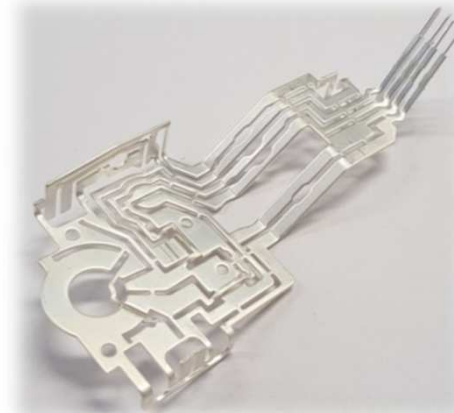
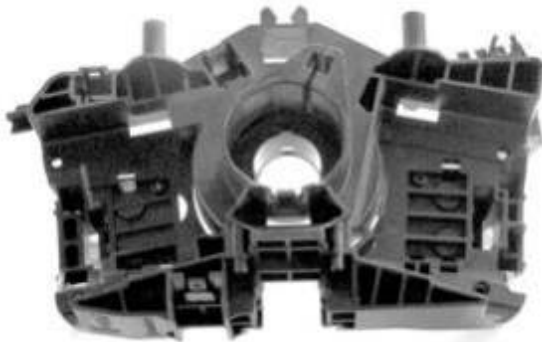
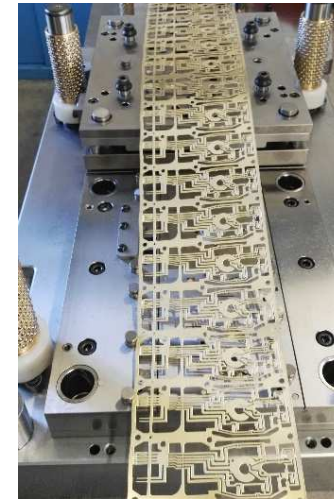
Insert moulding (manual, automatic, reel to reel)

In Mould Decoration

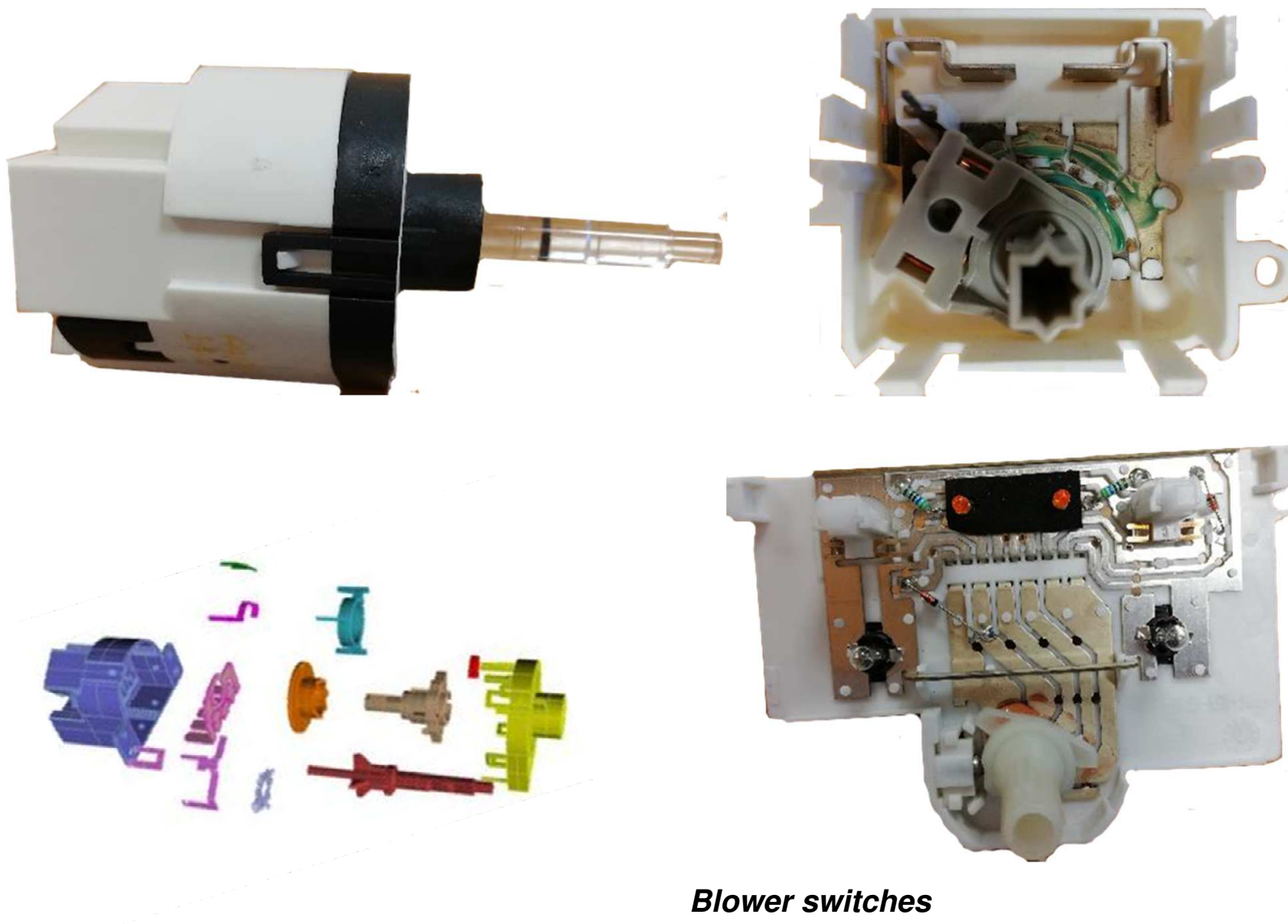
Assembly and testing, US welding, tampon printing

c/o partners: plating, painting and laser marking, UV coating

Automotive products, interiors (1)



Automotive products, interiors (2)



Blower switches

Automotive products, powertrain (1)



Power circuits for electronic unit to regulate radiator fan brush and brushless motor (up to 100 A)



Custom connector and cover for turbo-compressor and intake air valve regulation

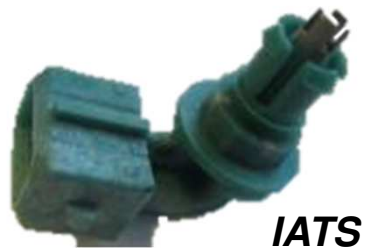


Custom connector and cover for robotized gearbox

Automotive products, powertrain (2)



TEGR



IATS



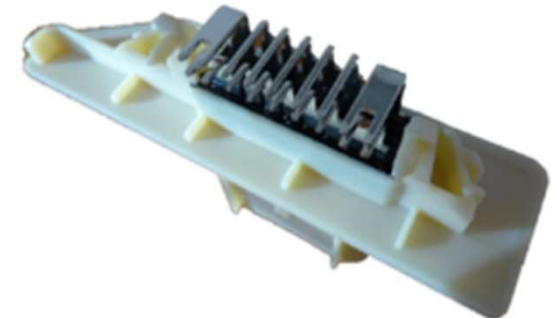
MAP



**Custom connectors
for parking brake ECU**

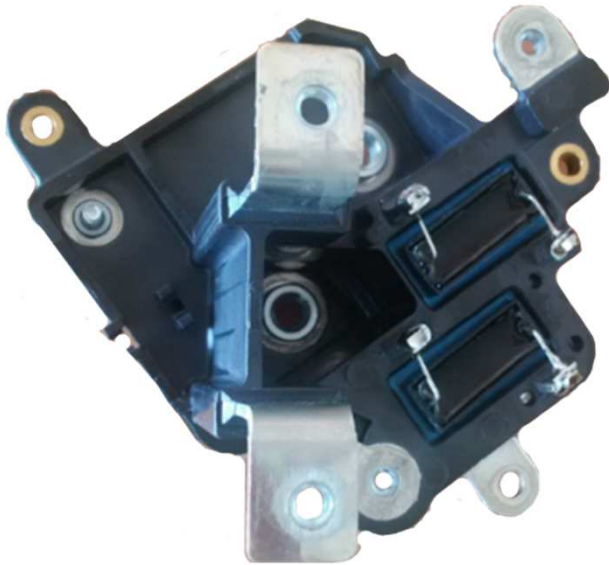


**Custom
connectors
for AdBlue
unit**



Hydraulic clutch circuit

Automotive products, hybrid vehicle



Battery junction i.e. between battery and inverter, 600V, 100A



Motor junction i.e. between inverter and motor, 600V, 100A



Brushless motors stator coil connections

Appliances and E&E products



Stamped parts with welded silver contacts



Riveted contacts

Household appliances:
Electrical contact for electromechanical products such as thermostats, pressure switches, vibration pumps ...



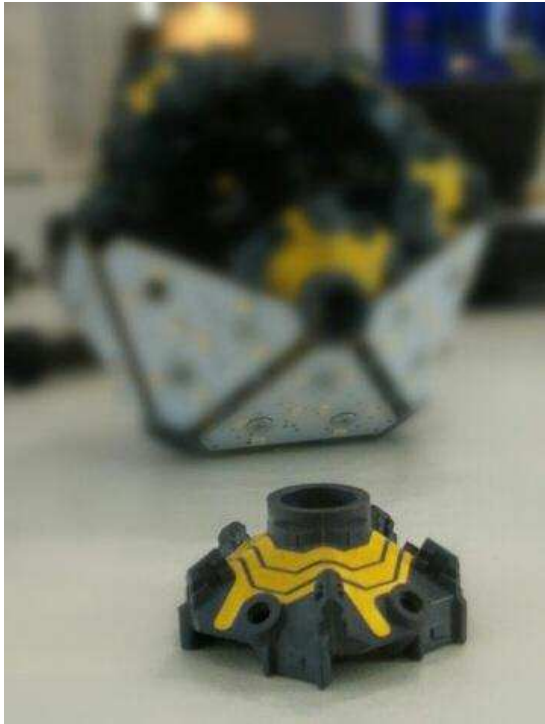
Threaded parts



Deep shaped and tape stampings

E&E:
Electrical contacts for industrial applications, terminal block for cable fixing, bus bar ...

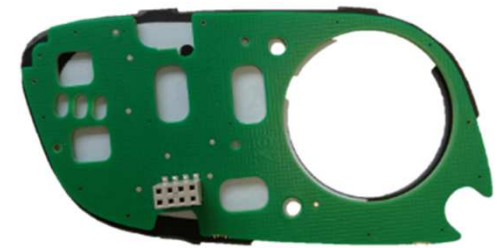
Latest technologies



LDS technology and conductive polymers to realise low / medium power electrical connection for vibrating actuators, heating system, and so on



IMD bezel: foil with aesthetic function over-moulded with crystal clear PC



Capacitive sensor

*IMD foil with 2 functions: aesthetic and capacitive sensor → **Aesthetic bezel with touch sensor in 1 IMD piece***



Additive Manufacturing

Certifications



	ISO 9001:2015	IATF 16949:2016	BS OHSAS 18001:2007	ISO 14001
Mista Italy	OK	OK	OK	Audit passed on October 5 th 2018
Mista Tunisia	OK	OK	2019	2020



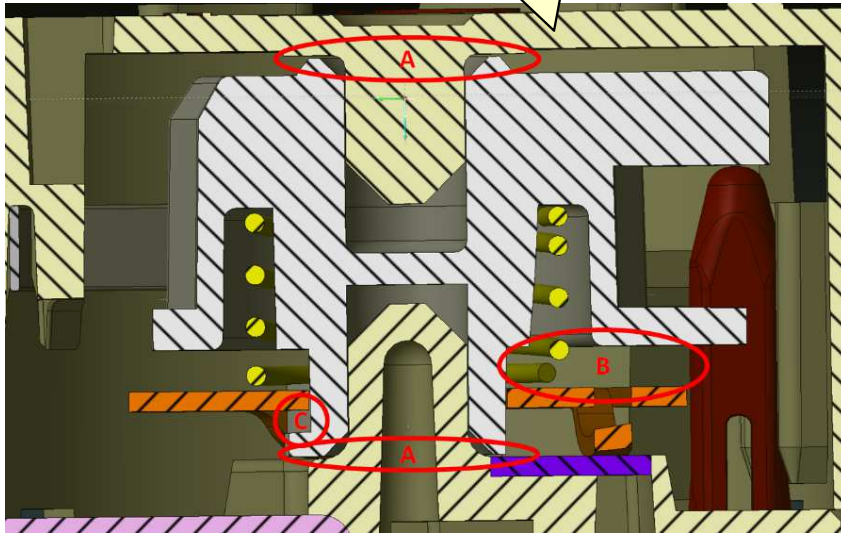
Download certificates: <http://www.mista.it/it/certificazioni.html>

Resources and equipment

Product design capabilities:

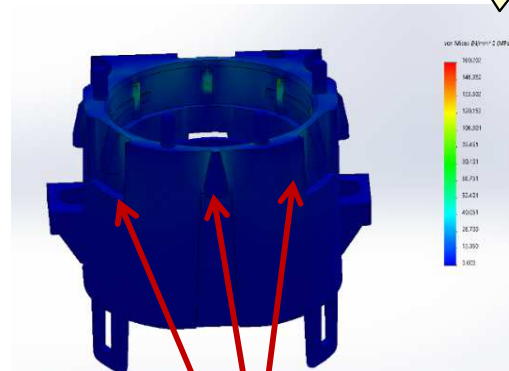
- Design / codesign, Design Verification and Product Validation of custom electrical connections such as connectors, circuits, switches

Tolerance stack analysis



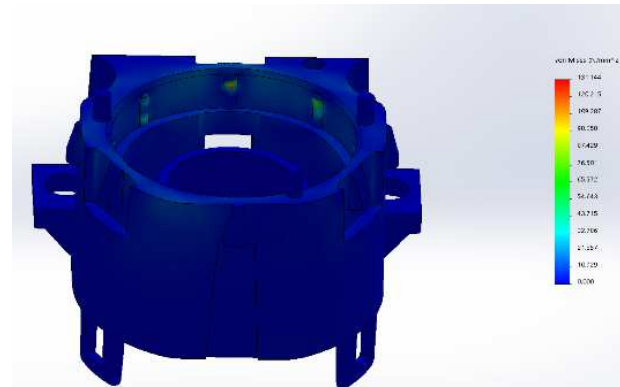
FEM analysis to redesign a plastic part and eliminate stress areas

Existing component



High stress concentrated areas

After changing position of ribs

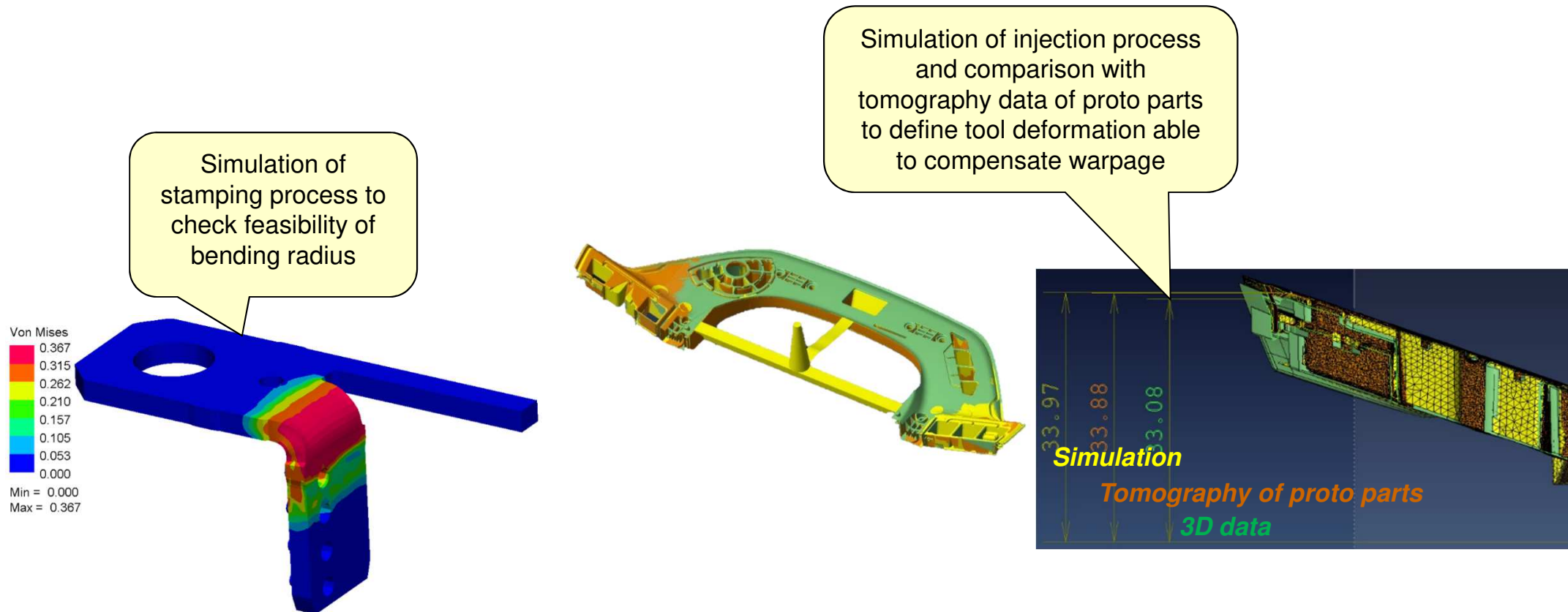


Von Mises stresses within limits

Process development

Process development capabilities:

- Design, construction, tuning and validation of stamping tools, resistance welding systems, injection and insert moulding tools, assembly and testing automatic / manual machines



Metrological lab c/o Mista Italy

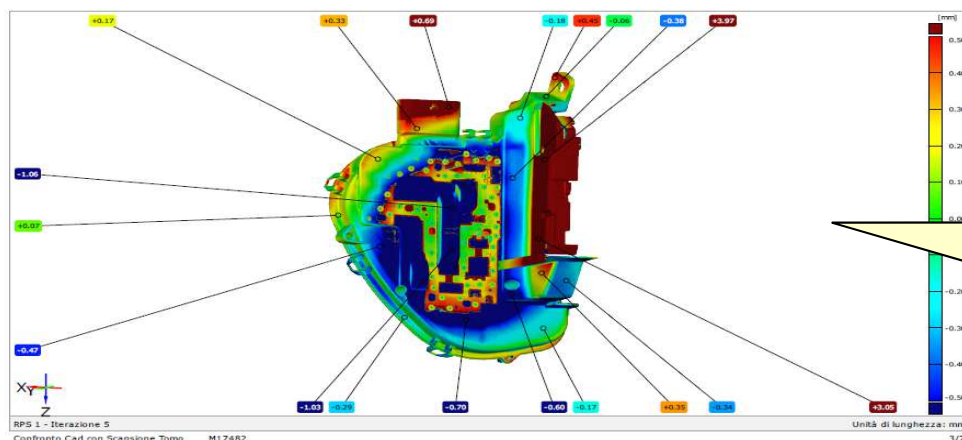
OGP Flash 300 equipped with vision system, contact probe and laser



OGP MVP 300 equipped with vision system and contact probe



Roughness meter

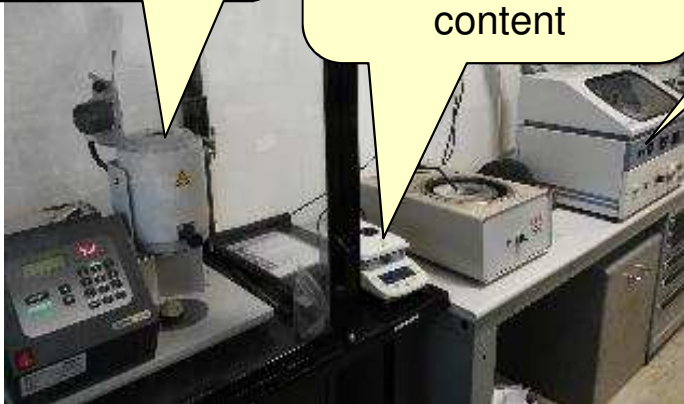


c/o external laboratories: 3D tomography

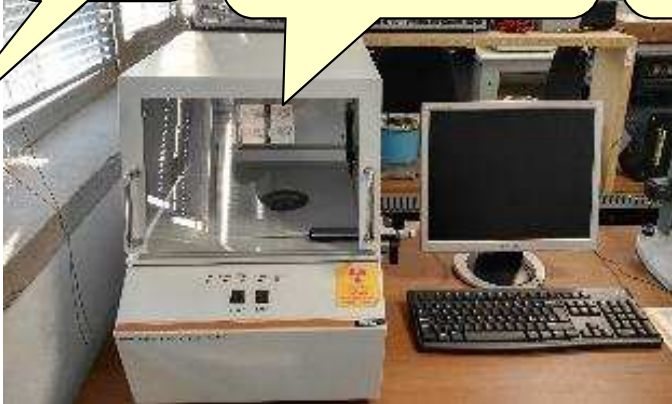
in house: VG Studio Max to analyse tomography data and measure the product

Products and materials lab c/o Mista Italy

MFI to control
polymer
degradation



thermogravimetric
balance to
measure moisture
content



Vicat

Fischer Scope to
measure metal
plating

Owen to measure
glass fibre weight
and therefore %

Climatic chamber,
power supply and
variable charges



Micro hardness
(copper, silver ...)



Tensile testing
machine with TLC



Lab c/o Mista Tunisia

OGP MVP equipped with
vision system and contact
probe



thermogravimetric
balance to measure
moisture content



Tool shop c/o Mista Italy



2 milling machines



3 wire cut EDMs



2 die sink EDMs



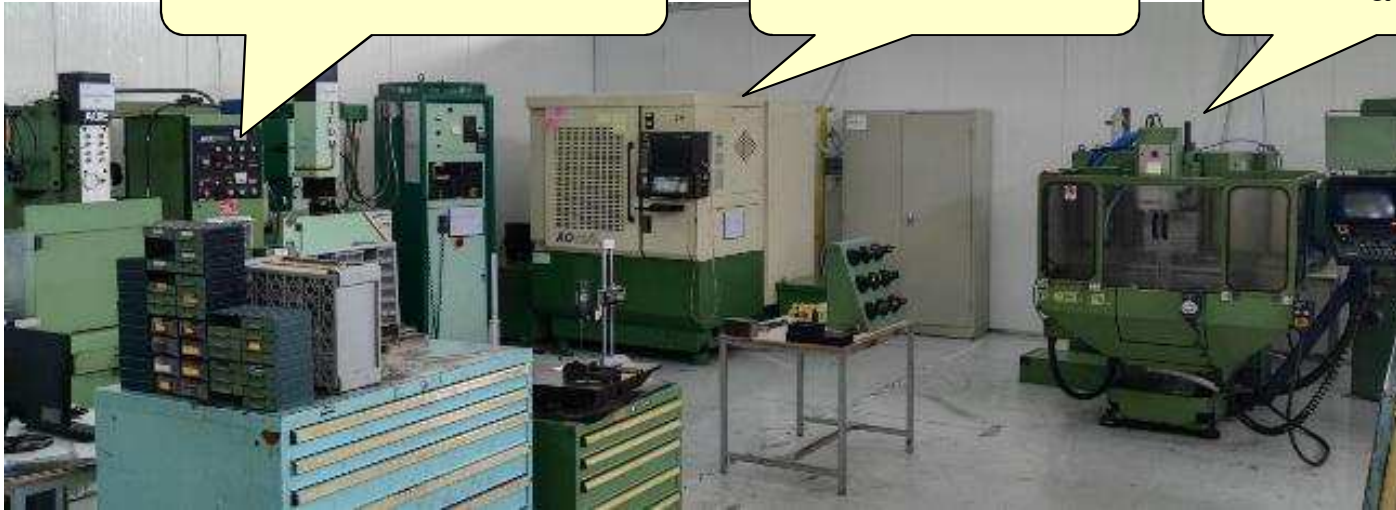
3D measuring and pre-setting machine

Tool shop c/o Mista Tunisia

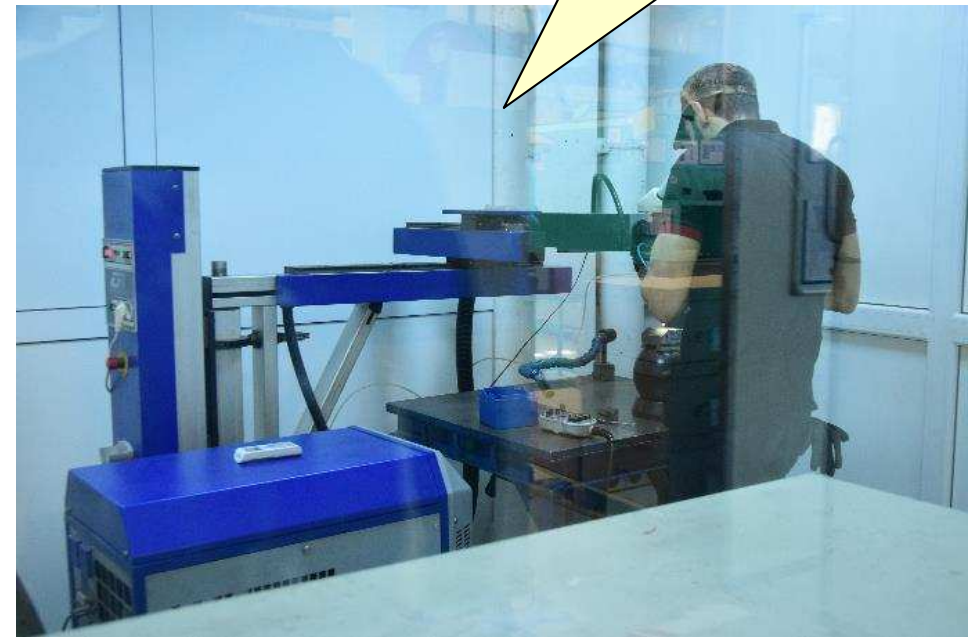
Die sink EDM

Wire cut EDM

3 axis milling machine



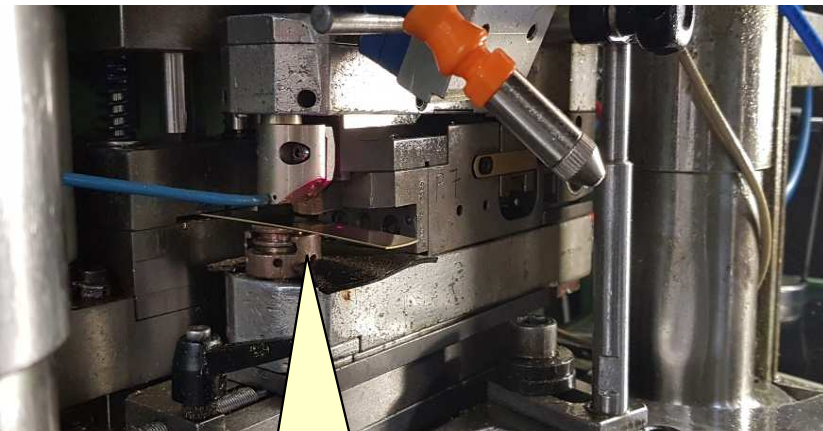
Laser welding machine



Metal stamping plant c/o Mista Italy



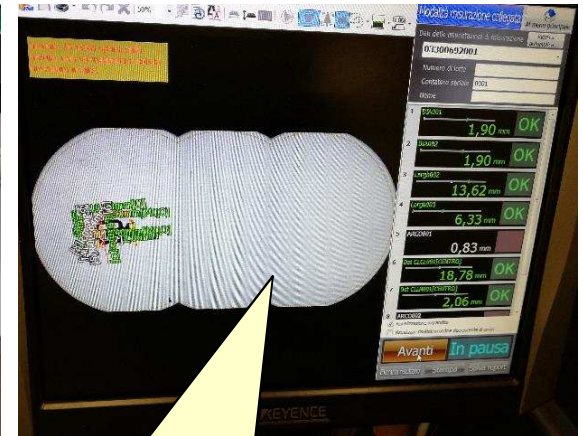
40 stamping and welding lines.
Press machines from 25 to 80 tons



Resistance
welding unit



Automatic controls of
process parameters



Automatic quality controls
of product

Injection moulding plant c/o Mista Italy



- 30 horizontal press machines from 35 to 320 tons (Arburg and Engel)
- 2 bi-injection machines 160 and 220 tons (Arburg)
- 1 baby press machine
- 3 vertical machines for insert moulding (Arbug)
- automatic assembly and testing lines

Automatic assembly lines c/o Mista Italy



Full automatic line equipped with 8 Scara robots able to fit and bend 7 types of pins into 2 types of plastic bodies:

- capacity: 1,5 million parts per year
- potting
- 100% EoL control
- packaging in trays



Mista Tunisia plant



- 25 injection moulding press machines from 50 to 320 tons (Arburg)
- 5 vertical injection insert-moulding press machines (Arburg)
- pad printing lines
- ultrasonic welding machinery
- several testing and assembly lines for electromechanical products