DSAgrupo

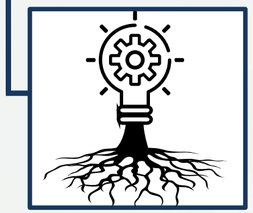
About Us

- Design
- Engineering
- R&D
- Manufacturing & Assembly
- Team
- Sustainable Development
- Reduction of CO2
- Self-sufficient energy

Evolution

1984

Delta and Disur companies were created, in Cádiz.



1994

The founding parteners of Delta and Disur merge their knowledge and experience to create "Desarrollo de Sistemas Avanzados"

2008

DSA´s international expansion

2011

Enter into Asian marketplace

2014

Creation of AMSX

2016

Dynamic & Sistematic Applications was created

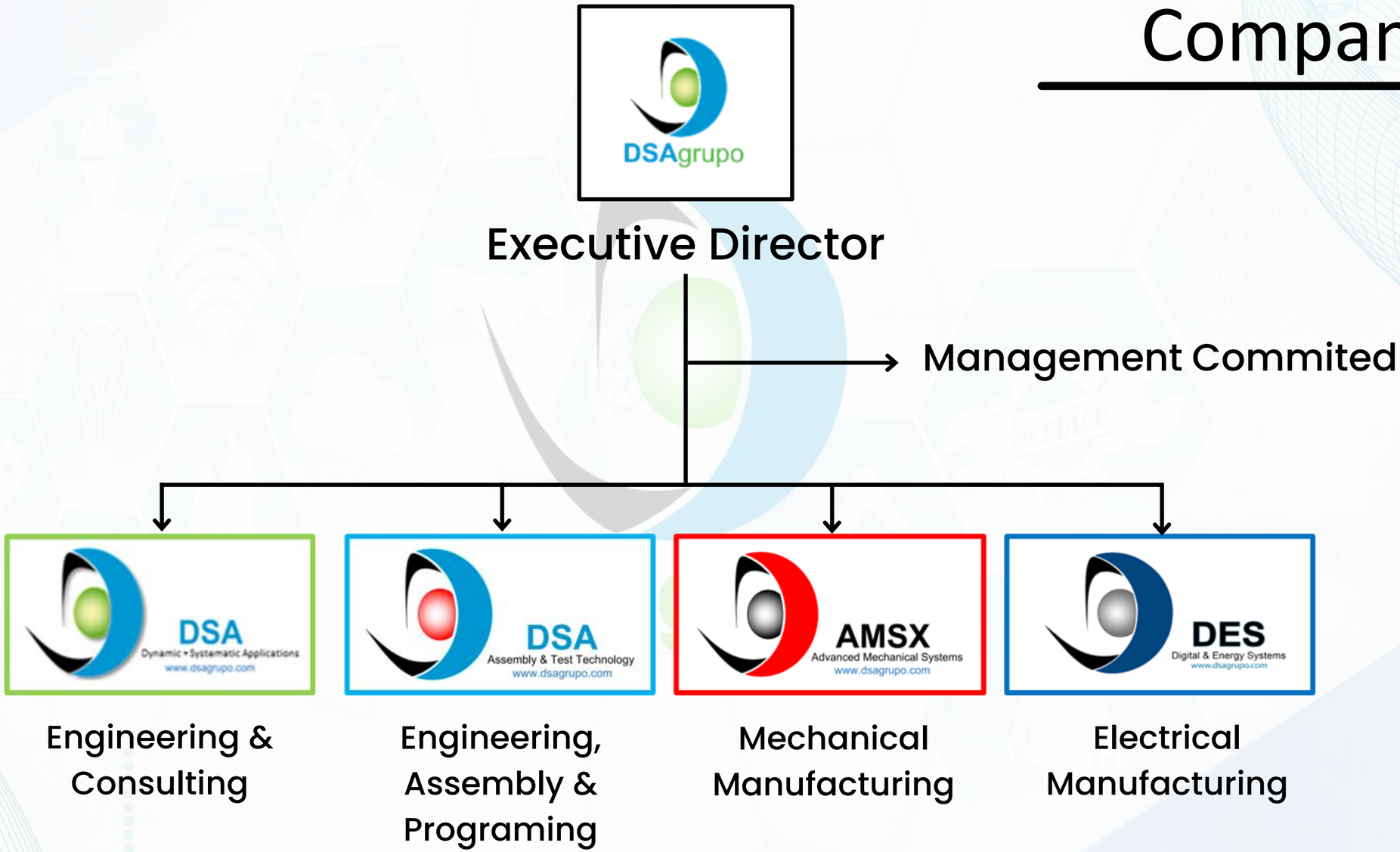
2019

Enter into healthcare sector

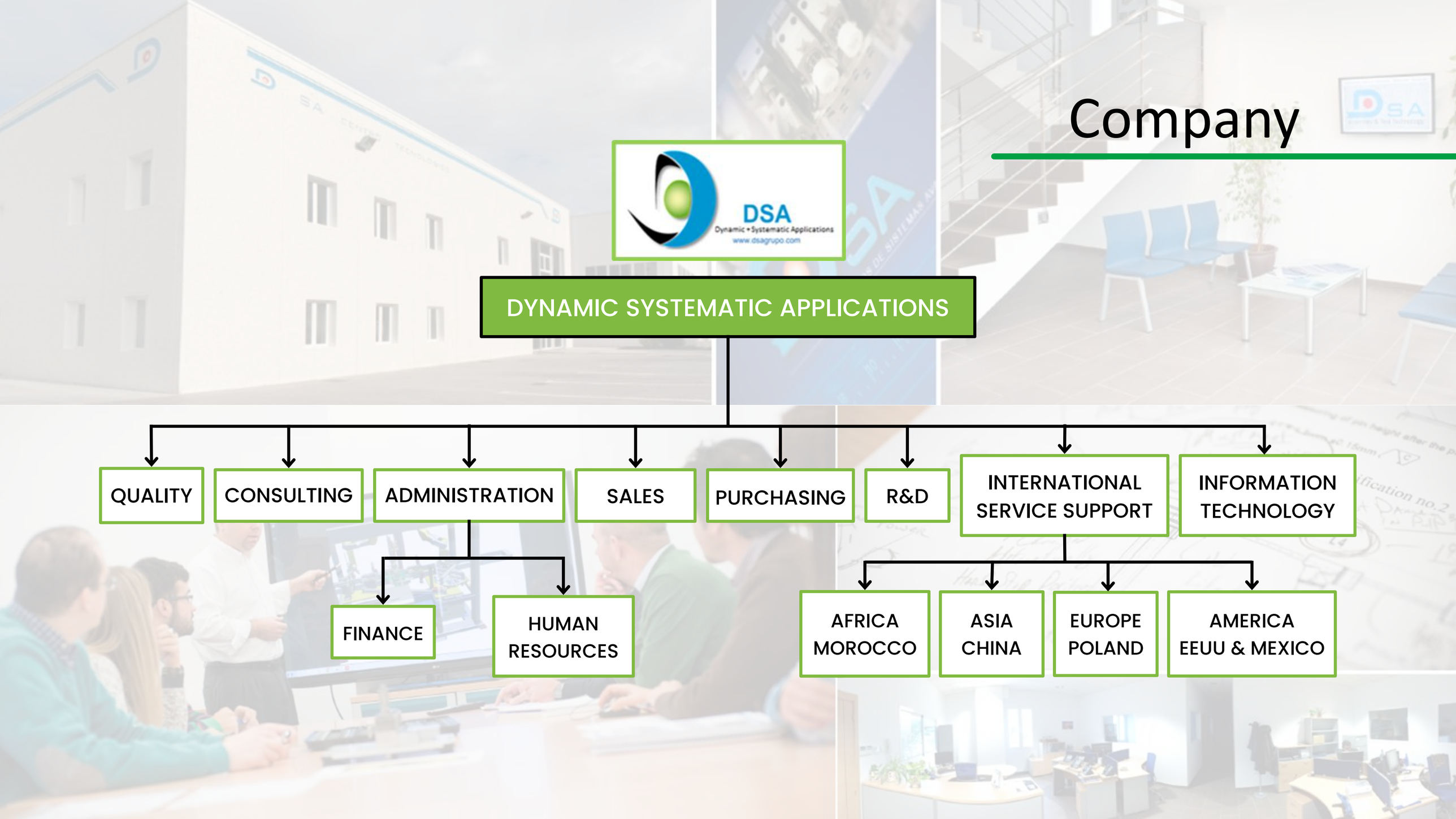
2021 - Presente

Beginnings Digital Energy Systems

Company


DSAgrupo
Executive Director
Management Commited
DSA
Dynamic • Systematic Applications
www.dsagrupo.com
DSA
Assembly & Test Technology
www.dsagrupo.com
AMSX
Advanced Mechanical Systems
www.dsagrupo.com
DES
Digital & Energy Systems
www.dsagrupo.com
Engineering & Consulting
Engineering, Assembly & Programing
Mechanical Manufacturing
Electrical Manufacturing

Company


DSA
Dynamic + Systematic Applications
www.dsagrupo.com
DYNAMIC SYSTEMATIC APPLICATIONS
QUALITY
CONSULTING
ADMINISTRATION
SALES
PURCHASING
R&D
INTERNATIONAL SERVICE SUPPORT
INFORMATION TECHNOLOGY
FINANCE
HUMAN RESOURCES
AFRICA MOROCCO
ASIA CHINA
EUROPE POLAND
AMERICA EEUU & MEXICO

Company

DSA
Assembly & Test Technology
www.dsagrupo.com

ASSEMBLY & TEST TECHNOLOGY

- QUALITY
- DESIGN OFFICE
  - MECHANICAL DESIGN
  - ELECTRICAL DESIGN
- RESOURCE MANAGER
- PROJECT MANAGERS
- ASSEMBLY & PROGRAMMING
  - MECHANICAL ASSEMBLY
  - ELECTRICAL ASSEMBLY
  - PROGRAMMING
- SAFETY & DOCUMENTATION

Company

AMSX
Advanced Mechanical Systems
www.dsagrupo.com

ADVANCED MECHANICAL SYSTEMS

- QUALITY
- RESOURCE MANAGER
- SALES
- PURCHASING
- LOGISTICS
- MECHANICAL FARICATION
  - CNC PROGRAMING
  - MACHINING
  - METROLOGY

Company

DES
Digital & Energy Systems
www.dsagrupo.com

DIGITAL & ENERGY SISTEMS

- QUALITY
- RESOURCE MANAGER
- SALES
- PURCHASING
- LOGISTICS
- ELECTRICAL
  - ELECTRICAL DESIGN
  - MANUFACTURING
  - FINAL TEST

Company

HEAD OFFICE & ASSEMBLY CENTERS
Total Plot Size 4.100 m2

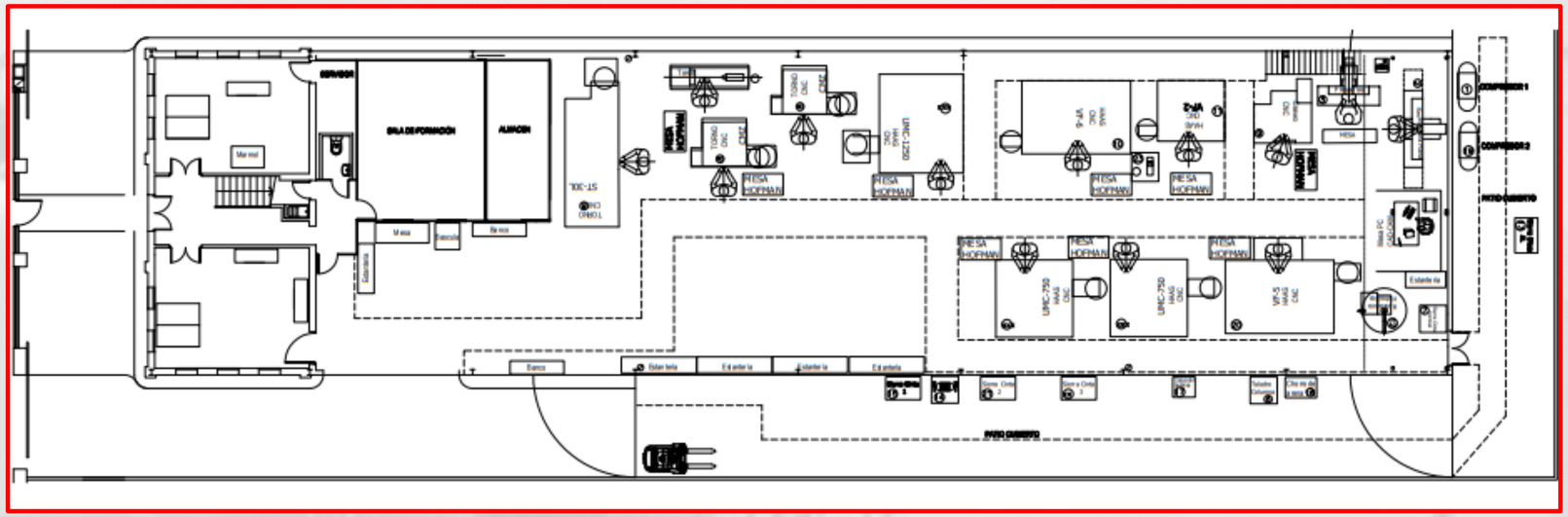
PTA1 (SITE 1)

- Productive floorspace: 600 m2
- Offices: 450 m2

PTA2 (SITE 2)

- Productive floorspace: 1.100 m2

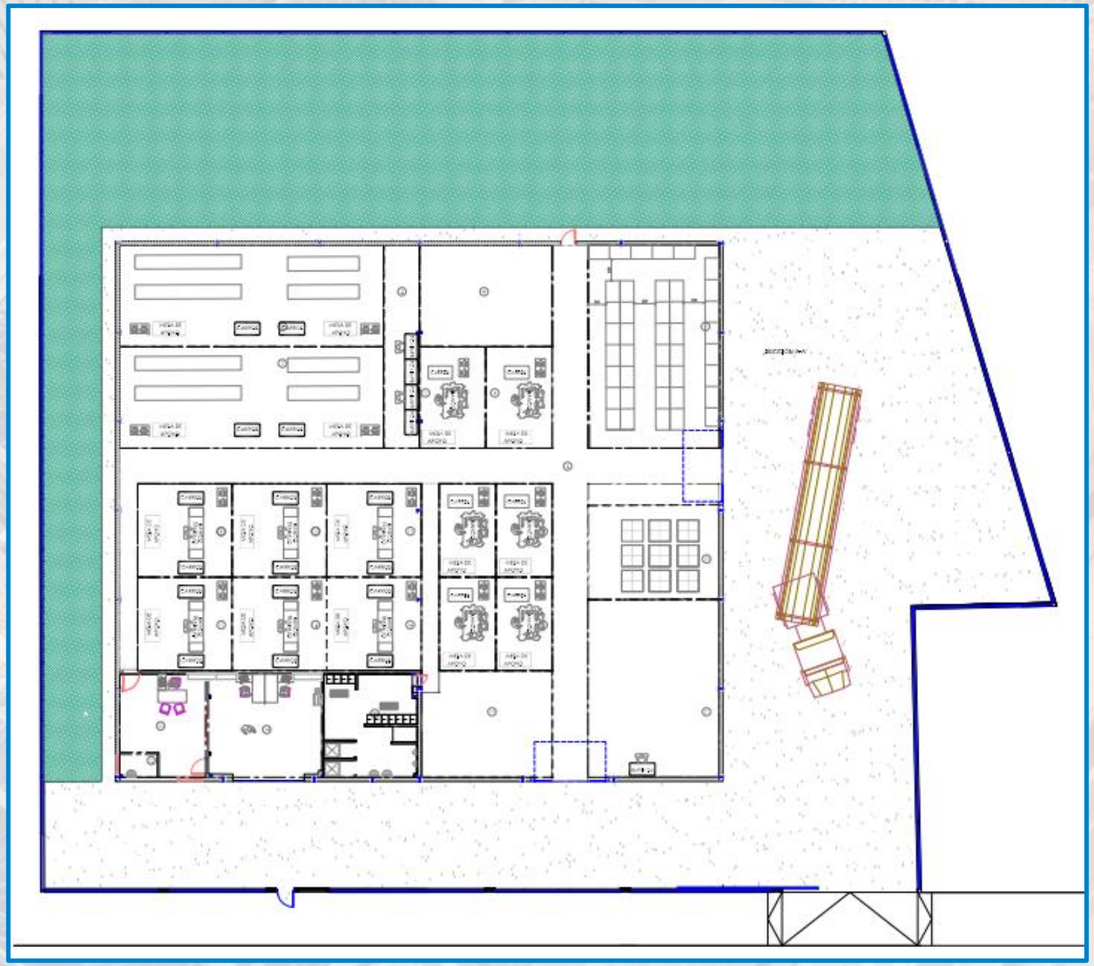
Company



AMSX - MACHINING CENTER

- Productive floorspace: 500 m2
- Offices: 185 m2
- Total Plot Size: 1050 m2

Company



DES - ELECTRICAL CABINET CENTER

- Productive floorspace: 980 m2
- Total Plot Size: 1030 m2

Company

Czech Rep.
Poland
Germany
U.K.
Belgium
France
Portugal
USA
Morocco
Mexico
Slovakia
Romania
Spain
China
India
Thailand
Brazil
Argentina

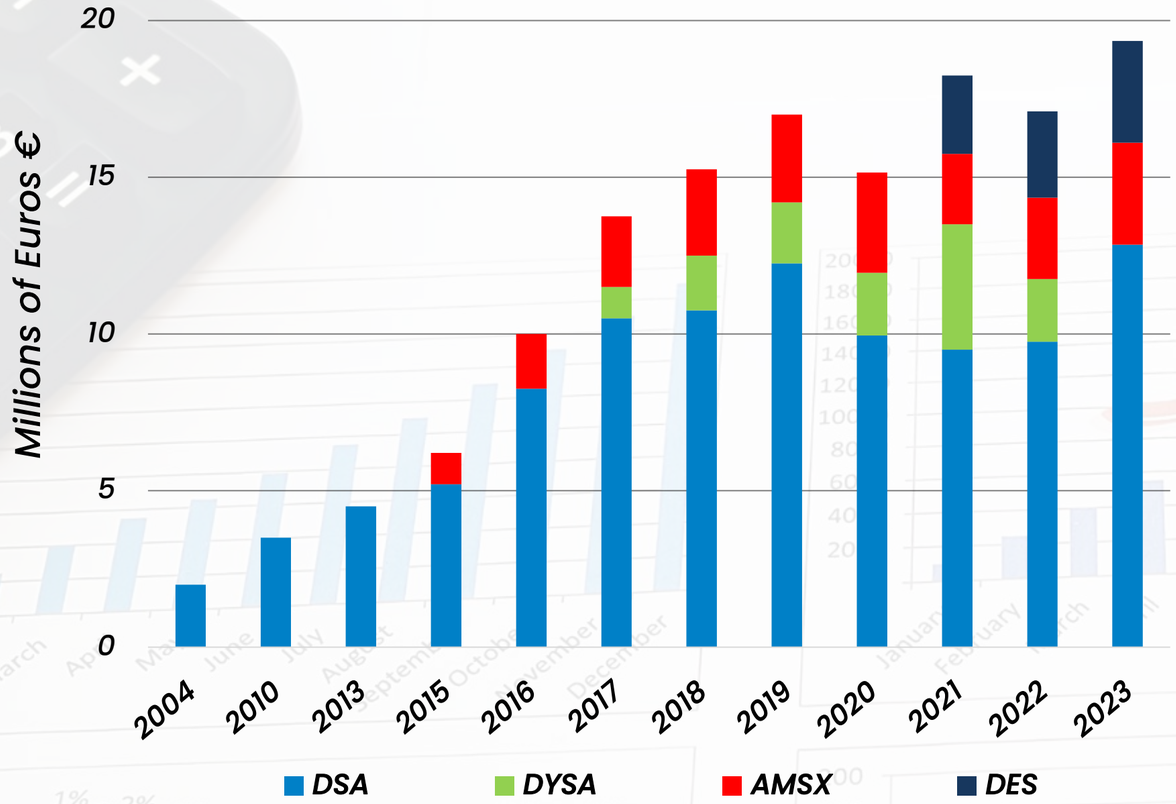
KEY

- Head Offices
  - Spain: Jerez de la Frontera
- Service Offices
  - China: Shanghai
- Collaborating Partners:
  - Mexico: Juarez & Queretaro
  - Poland: Blonie & Krakow
  - U.S.A.: Michigan
  - Morocco: Kenitra & Tanger

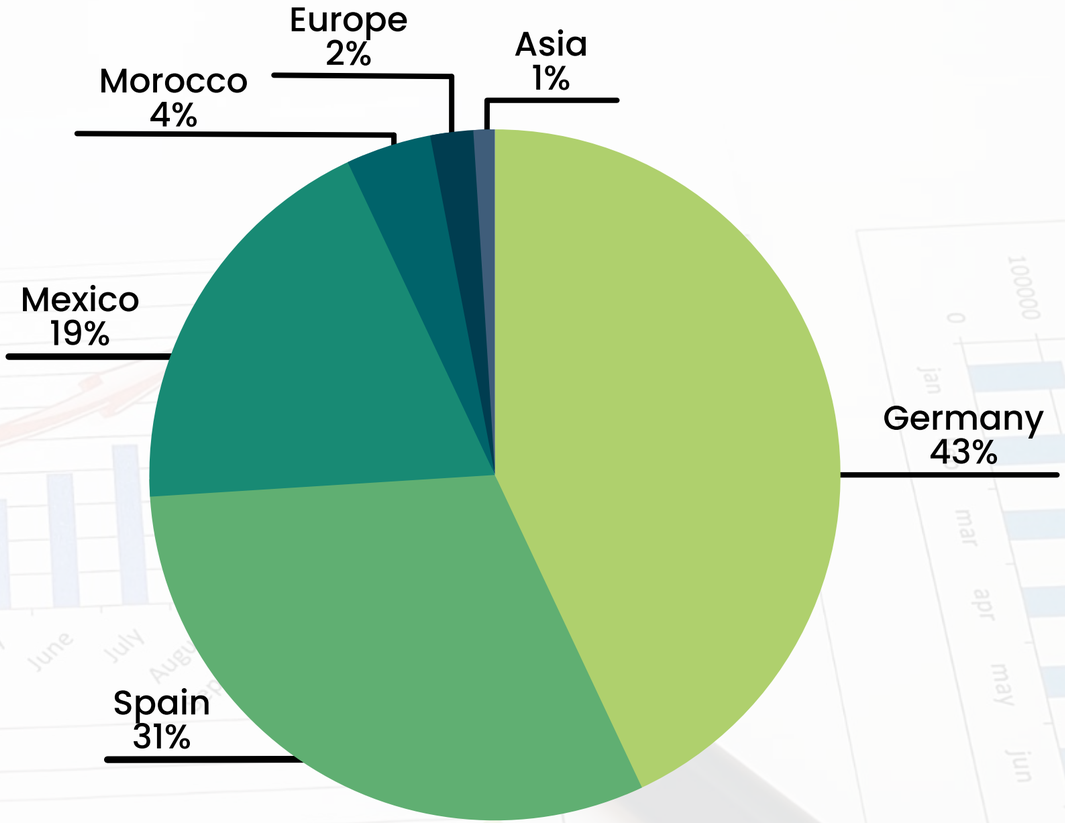
OUR LOCATION

Evolution of Business

Economic Progress



Customers Location (DSA)



Customers Location (DSA)

Team

DSA GROUP STAFF (2023)	DSA	AMSX	DES	DYSA
Project Managers	6			
Mechanical Designers	8			7
Electrical Designers	4			2
Fabrication		26		
Purchasing/Receiving				5
Mechanical Assembly	9	10		
Electrical Assembly	4		11	
Finances				6
Programmers	11		6	
TI				2
Sales Department				6
TOTAL	42	36	17	28

TOTAL DSA GROUP	123

Quality

ISO 9001:2015

This is a translation of the certificate ES16/20049

The management system of
DSA GROUP (DESARROLLO DE SISTEMAS AVANZADOS, S.L. (DSA), ADVANCED MECHANICAL SYSTEMS XEREZ, S.L. (AMSX), DIGITAL ENERGY SYSTEM, S.L. (DES), DYNAMIC SYSTEMATIC APPLICATIONS, S.L. (DYSA), ALESIA QUANTUM, S.L. (AQ))

has been assessed and certified as meeting the requirements of
ISO 9001:2015

For the following activities
Design and manufacture of spacial machinery and utilery.
Machining of parts.
Design and manufacture of electrical panels.
Industrial Consulting and industrialization.
Masks Manufacturing.

Quality Management System

ISO 14001:2015

This is a translation of the certificate ES16/20093

The management system of
DSA GROUP (DESARROLLO DE SISTEMAS AVANZADOS, S.L. (DSA), ADVANCED MECHANICAL SYSTEMS XEREZ, S.L. (AMSX), DIGITAL ENERGY SYSTEM, S.L. (DES), DYNAMIC SYSTEMATIC APPLICATIONS, S.L. (DYSA), ALESIA QUANTUM, S.L. (AQ))

has been assessed and certified as meeting the requirements of
ISO 14001:2015

For the following activities
Design and manufacture of spacial machinery and utilery.
Machining of parts.
Design and manufacture of electrical panels.
Industrial Consulting and industrialization.
Masks Manufacturing.

Enviroment Management System

ISO 9100:2016

Certificate ES17/22261/AE

ADVANCED MECHANICAL SYSTEMS XEREZ, S.L.

Parque Empresarial
C/ Newton, nº 11
11407 Jerez de la Frontera, Cádiz (Spain)

EN 9100:2018
the Organization meets the requirements of ISO 9001:2015

Machining of parts.

Parque Empresarial, C/ Newton, nº 11 - 11407 Jerez de la Frontera, Cádiz (España)

Type of Structure : Single Site.

This certificate is valid from
19 September 2020 (Issue Date) until 18 September 2023 (Expiry Date)
Issue 3. Certified with SGS since September de 2017

Quality Management System in Aeronautics

Key Suppl iers

DSAgrupo

PARTNER SYSTEM INTEGRATOR PSI COGNEX

UL

Schneider Electric

ABB Robotics AUTHORIZED Partner

KUKA OFFICIAL SYSTEM PARTNER

FESTO System Partner

SMC

CE Ex

Solution Partner Automation SIEMENS

FANUC Robotics AUTHORIZED INTEGRATOR

OMRON AUTOMATION & SAFETY

Rockwell Automation PartnerNetwork™

Key Customers

Automotive Sector

RENAULT

GRUPO ANTOLIN

BorgWarner

nexteer AUTOMOTIVE

thyssenkrupp

Valeo

DEUTZ

Textil Sector

Jeanologia

Medical Sector

alesia quantum

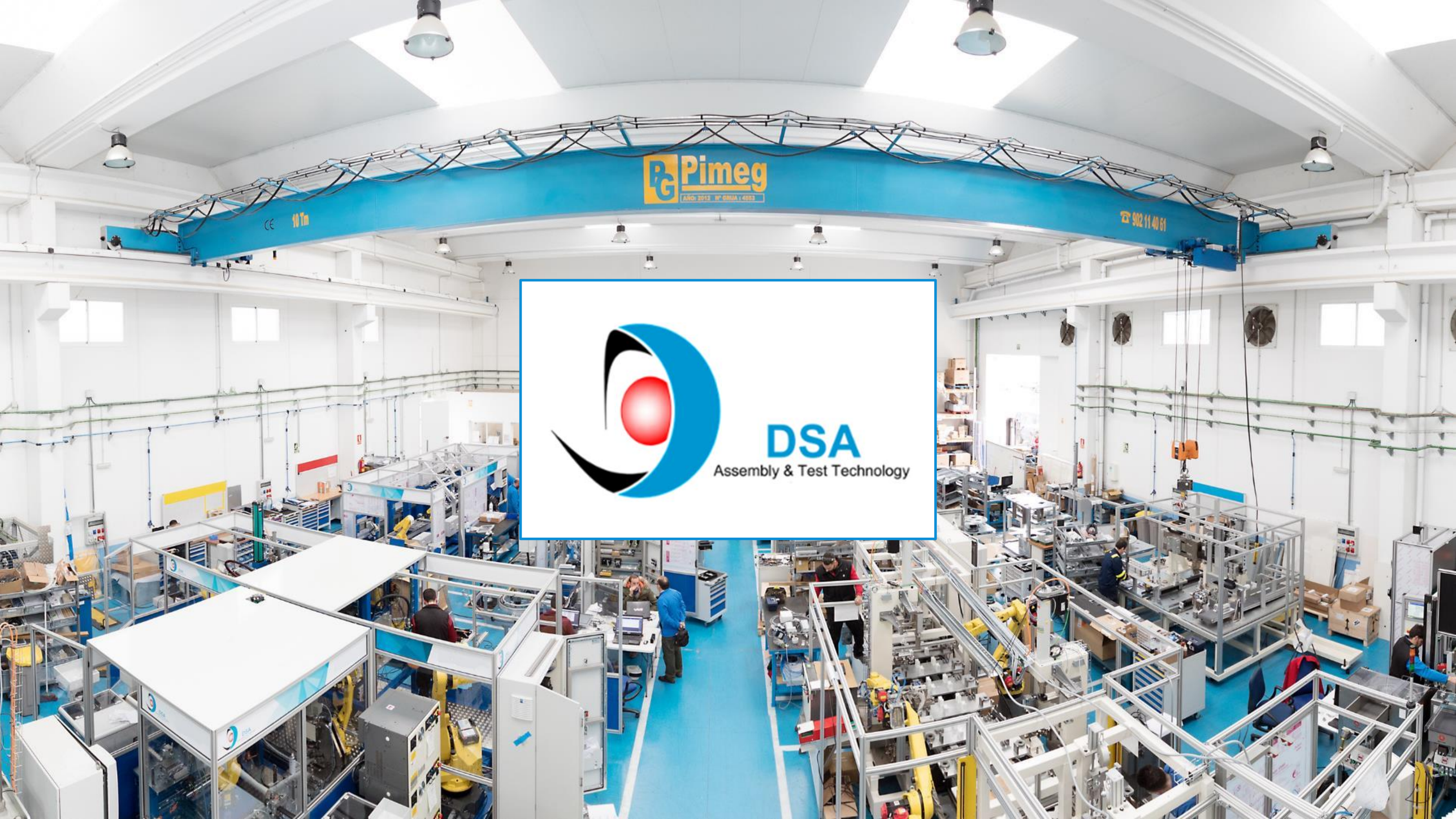
BD

NORUCO

Electronic Sector

Metallisation thermal spray solutions

TDK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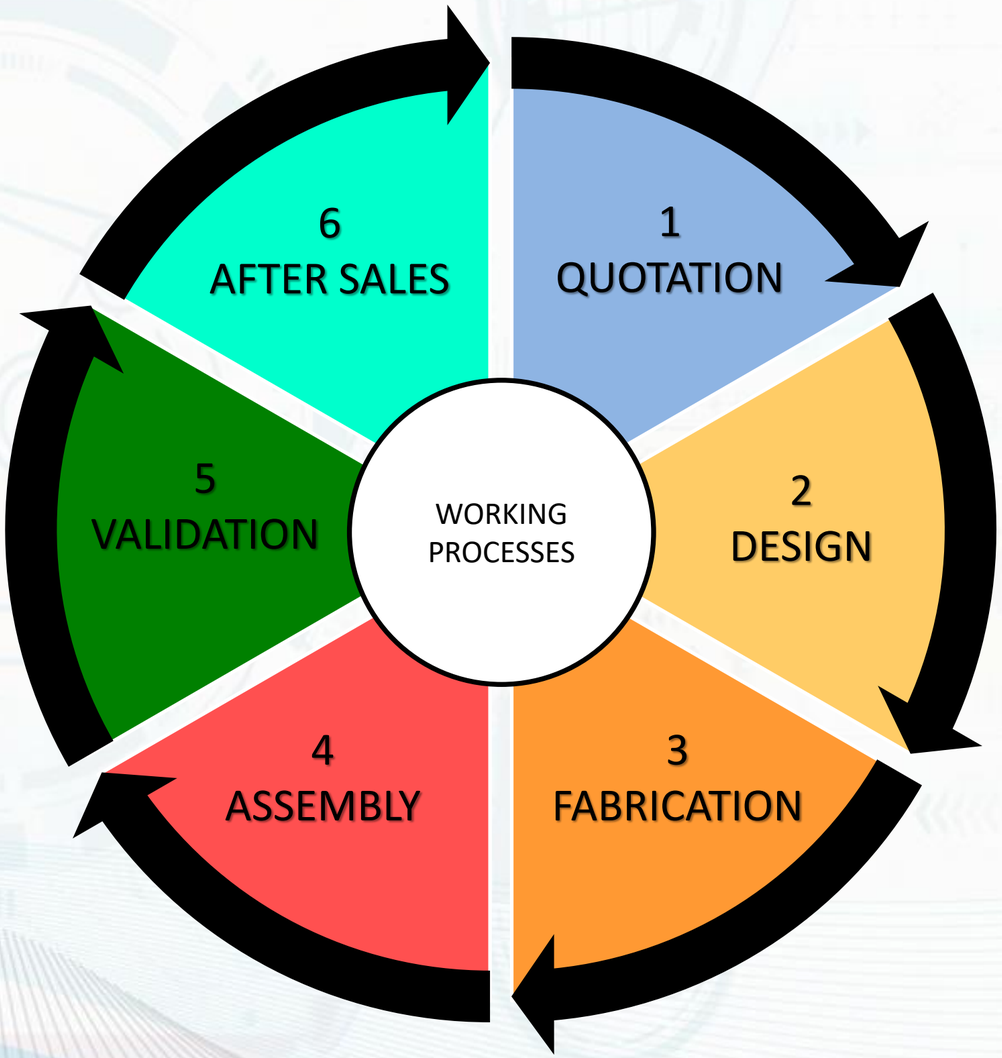
10 Tm
902 11 40 61
DSA
Assembly & Test Technology

Work Process

ONE SOLUTION FOR EVERY NEED

1. Technical & economical quotations and preliminary design of projects.
2. Mechanical, electrical, pneumatic & hydraulic design, 3D models generation.
3. Manufacturing of mechanical elements & electrical cabinets.
4. Manufactured and standard elements assembly. PLC & software programming.
5. Commisioning in DSA. Commisioning at customer´s training and support.
6. Guarantee, spare parts, remote support & reparations in customer facility.



Automotive Sector

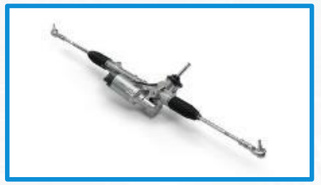
Fuel Injection System

Halfshafts

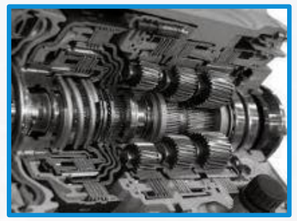
Motors

Control Clusters

Electric Steering Systems



Gearboxes



Cylinders Heads

Safery Components

Ignition Modules

Klaxons

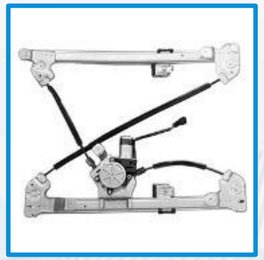
Shock Absorbers

Intermediate Shafts

DCU Clusters

Door Panels

Windows Mechanisms



Headliners

Seats

Steering Columns

Industrial Sector

Agricultural Equipment

- Gearbox

- Chopper

- Drive Box

Household Appliances & Food Industry

- Cold Wax Strips

- Corks Assembly

Aeronautical

- Aeronautical parts

Medical Equipment

- Masks

- Syringes

Industrial Sector

Electronics & Electrification

- ECU

- Varistor

- Condenser

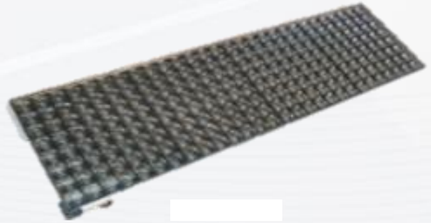
- BMC Module (SEAT)

Renewable Energy

- Photo Voltaic Cells

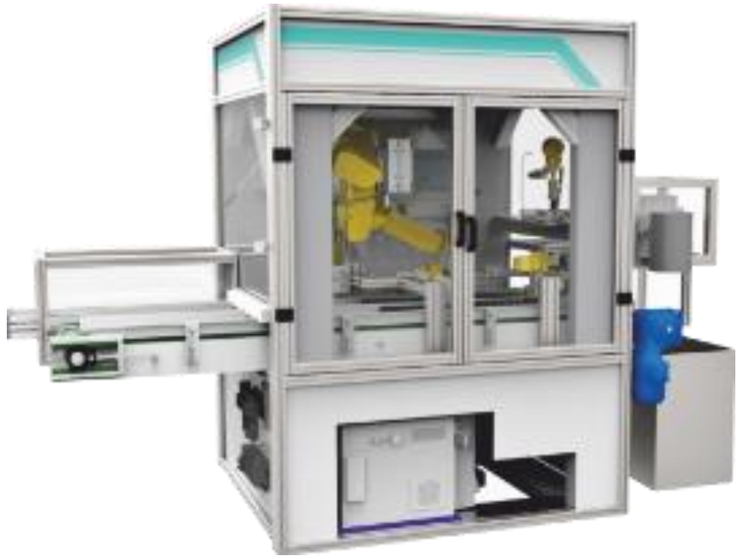
- Water Heating Panel

- Concentration Cells



DSA
Assembly & Test Technology

Our Products



- Lean Assembly Cells
- Automatic assembly lines and advanced traceability
- Function Test Machines(Product Validation + EOLT)
- Press Machines (Electric, Hydraulic, Pneumatic and Air over Oil)
- Welding machines (Laser, Induction, Resistance, Ultrasonic, TIG, MIG…)
- Robot integration for industrial applications
- Vision systems for presence detection, selection and measurement
- Tooling for machining center
- Machines for the medical sector

Our Products


Assembly Lines

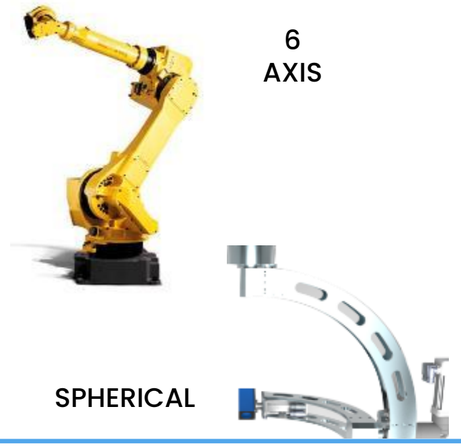
Welding Machines


Lines for the medical sector

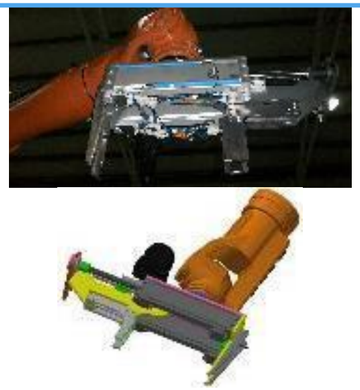

Test Machines


Assembly Machines & Cells

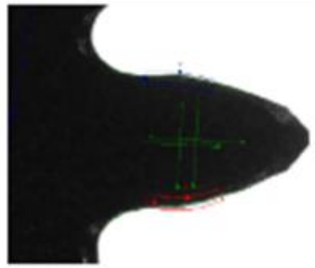
Integrated Technologies

			
Robots	Electro Servo Presses	Vision Systems	Welding (Laser/Ultrasonic/Sold.)
			
Marking Systems (Laser, Percusion, Ink-Jet)	Screwdrivers (Electric/Pneumatic)	Aut. Feeding Systems	Transport Systems (Palletized Conv./AGVs)

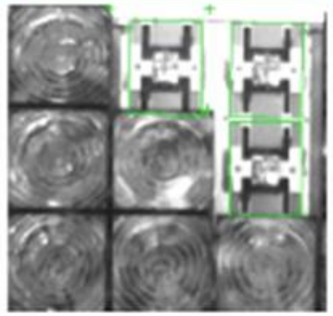
Integrated Technologies

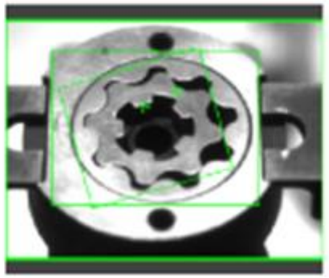
			
Rotary Dial Tables	Load Cells	Dispensing Equipment	Electric / Pneumatic Cylinders
			
Traceability Integration (1D/2D/) and RFID	Special Grippers	HMI Monitors & Pick-Two Lights	Special Sensors

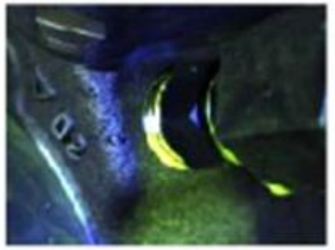
DSA
Assembly & Test Technology



Part Present / Not Present	Identification OCR	Robot Guidance 2D	Dimensional Control	Metrology	Maximum Flexibility





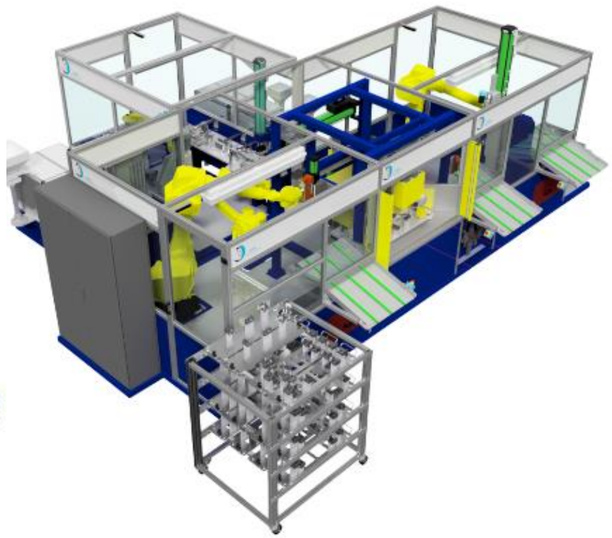


Integration of Vision Systems

Our brands: KEYENCE · ifm electronic · BALLUFF · OMRON · BASLER · COGNEX

Special Machines & Lines for Assembly

ASSEMBLY LINES



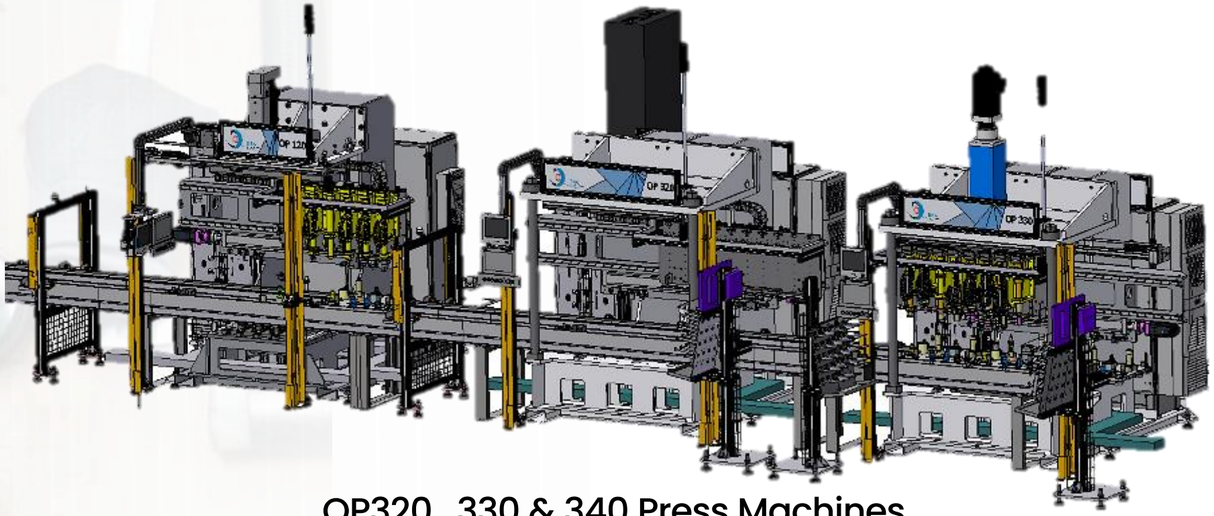
ASSEMBLY CELL

ASSEMBLY MACHINES

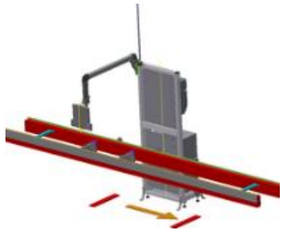
Assembly – Gearbox

Main Characteristics:

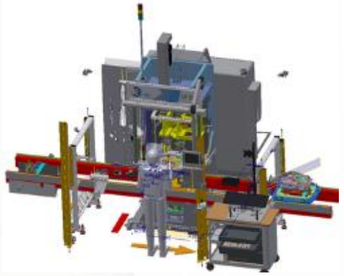
- Robot-manipulated parts
- Reading OCR code
- Product traceability
- Presses with traceability



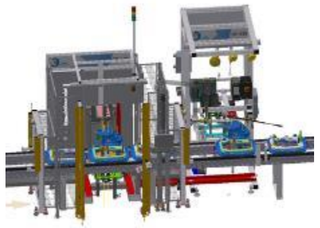
OP320 , 330 & 340 Press Machines



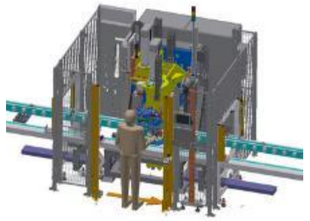
OP487 (read & write)



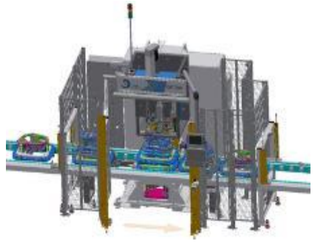
OP690, Press



OP630, Screwing

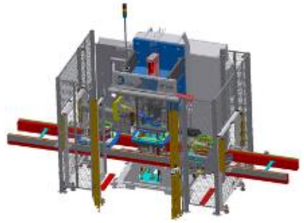


OP780, Seal press



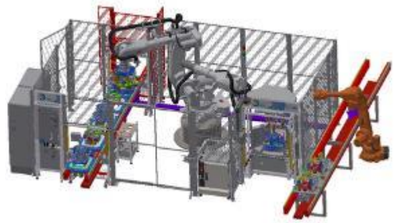
OP500, Bushing Press

OP680, assembly gauges



OP770, Bearing Press

OP 520, Break assembly

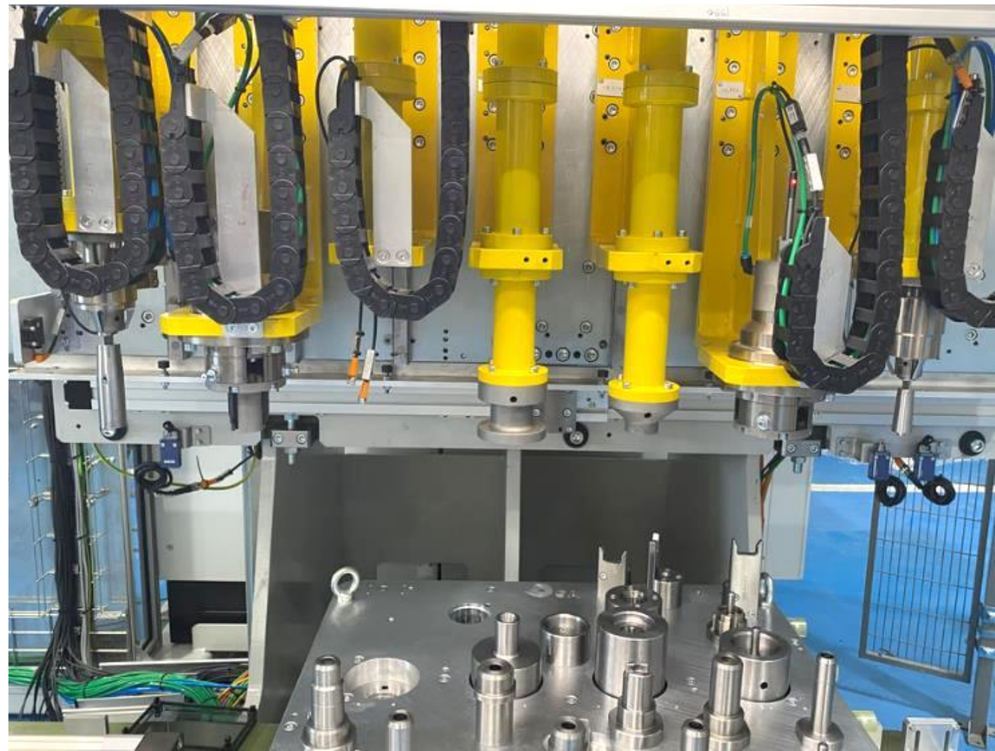


OP600, Assembly Machine

Assembly – Gearbox (OP320, press)

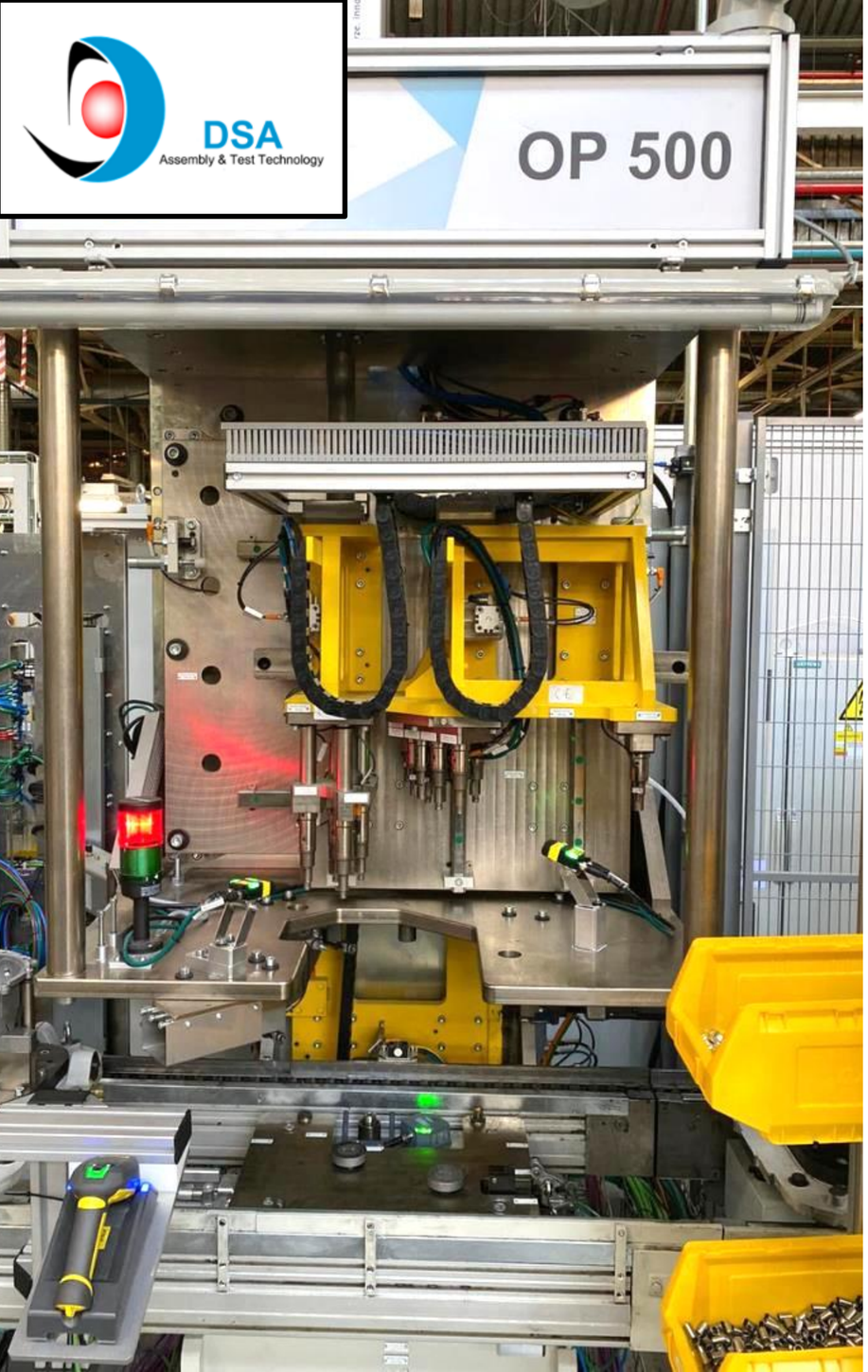
Main Characteristics:

- Press Kistler with 100Kn
- Capacity for assembly 9 types of parts
- Automatic press
- Presence control of the parts
- Pallet with some press parts



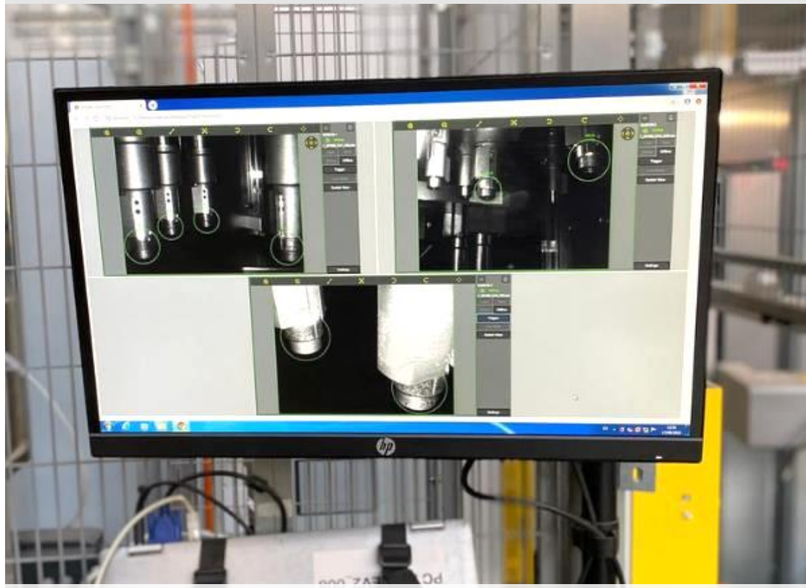
DSA
Assembly & Test Technology

Assembly – Gearbox (OP500, press)



Main Characteristics:

- Press Kistler with 100Kn
- Capacity for assembly 7 types of bushing
- Automatic press
- Presence control of the parts
- Pallet with some press parts



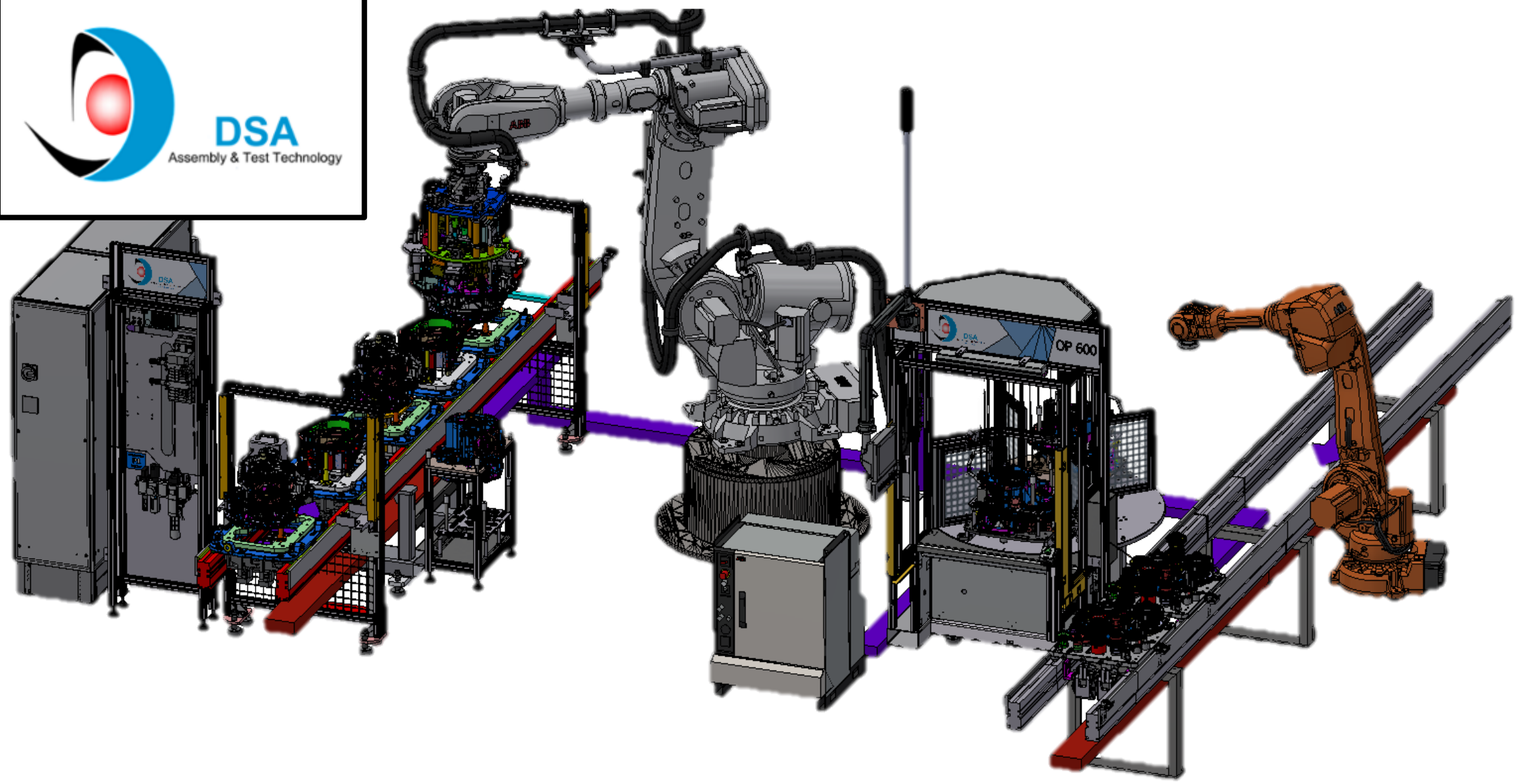
Vision system for check the tooling

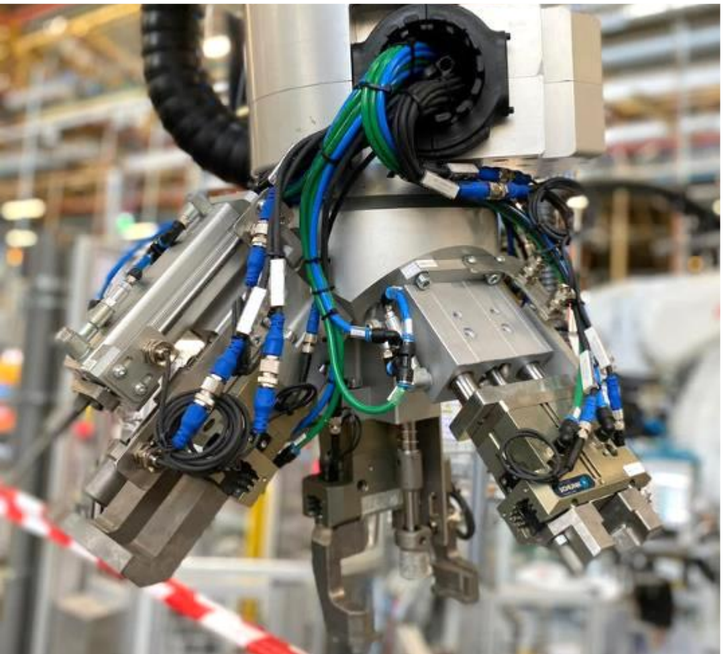
DSA
Assembly & Test Technology

Assembly – Gearbox (OP600)

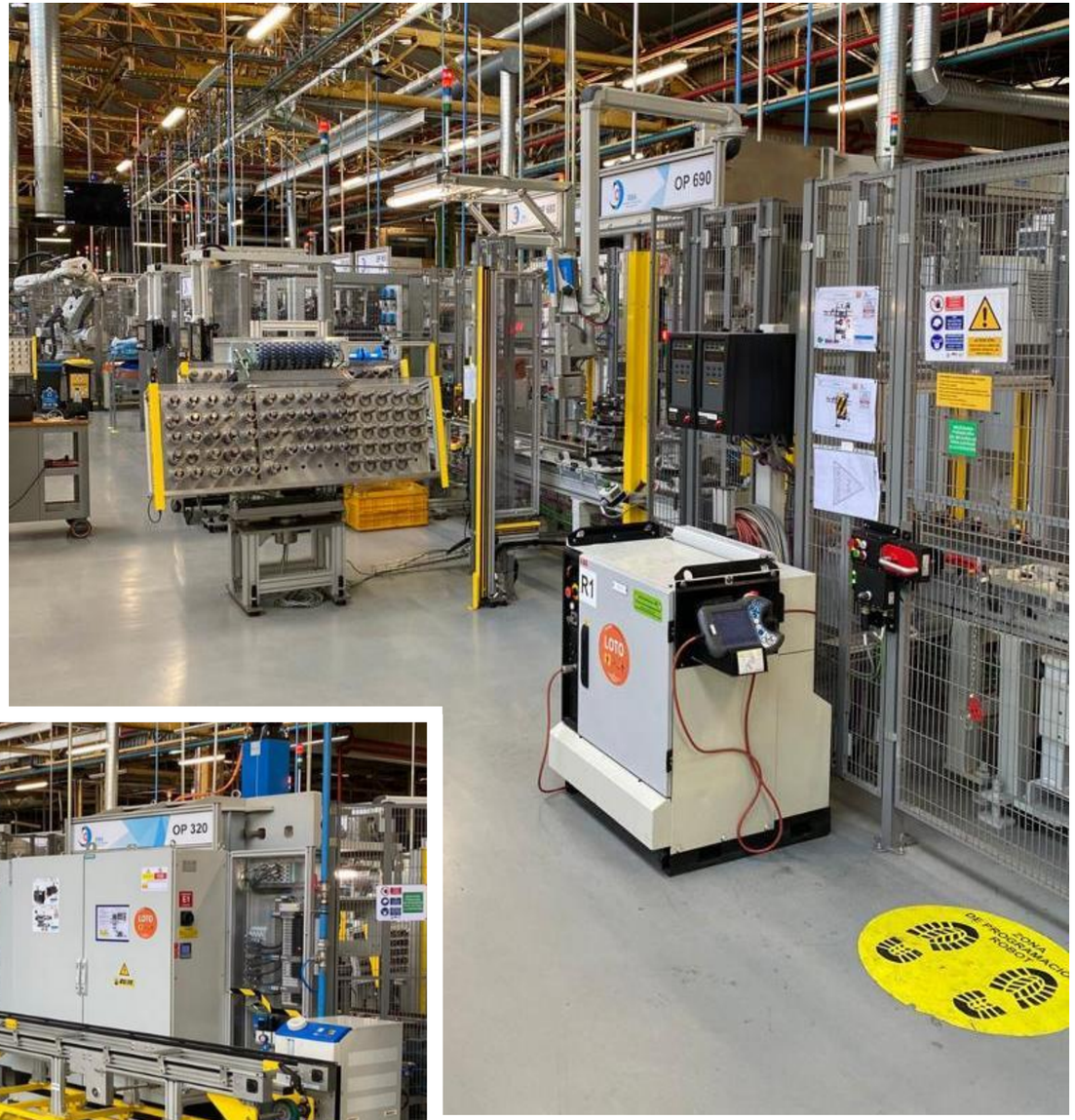
Main Characteristics:

- Two ABB robots for manipulate the gears
- Specific gripper for take all the parts at the same time
- Automatic machine





Assembly – Gearbox General



Assembly – Gearbox

Main Characteristics:

- Transmission cover assembly
- Sealing and bearing by pressing
- Error correction system or poka-yoke
- Artificial vision system for the control of assembled components.
- Axel bearing set
- Handling the product by a robot Electric Screwdrivers

Assembly – Gearbox

Main Characteristics:

- Components loaded semi-automatically
- Placement of components controlled
- Electric press with force and displacement control
- Gear assembly system

ST150.Assembly of the 5th gear

ST175.Assembly of the 6th fixed gear

ST180.Assembly of the 6th gear

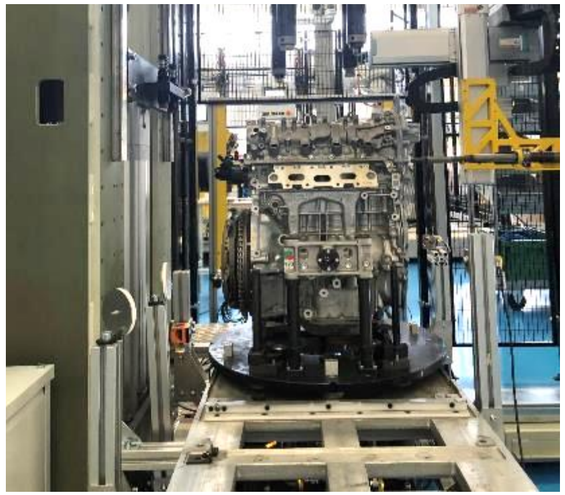
ST190.1/190.2. Press bearing and tighten 2 screws

Main Characteristics:

- Vision system for part OK/NO OK detection
- Error proofing and Poka-Yoke integration
- Generation of images of the process
- Traceability of the product

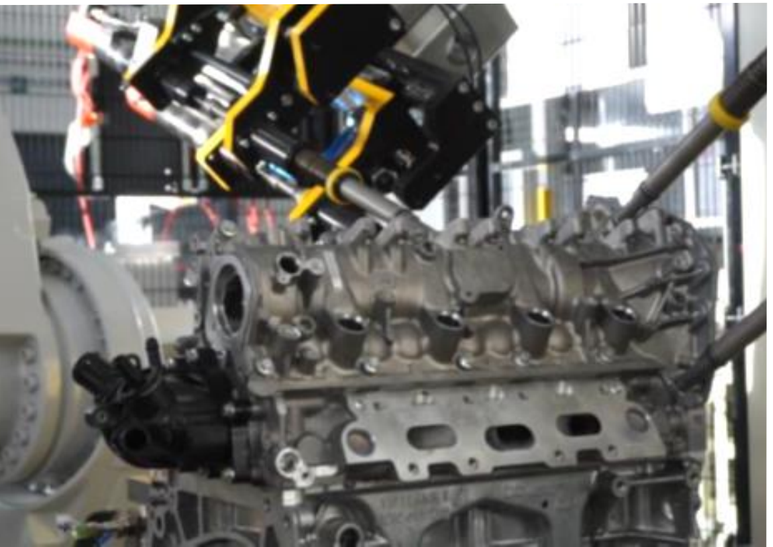
DSA
Assembly & Test Technology

Assembly – Engine

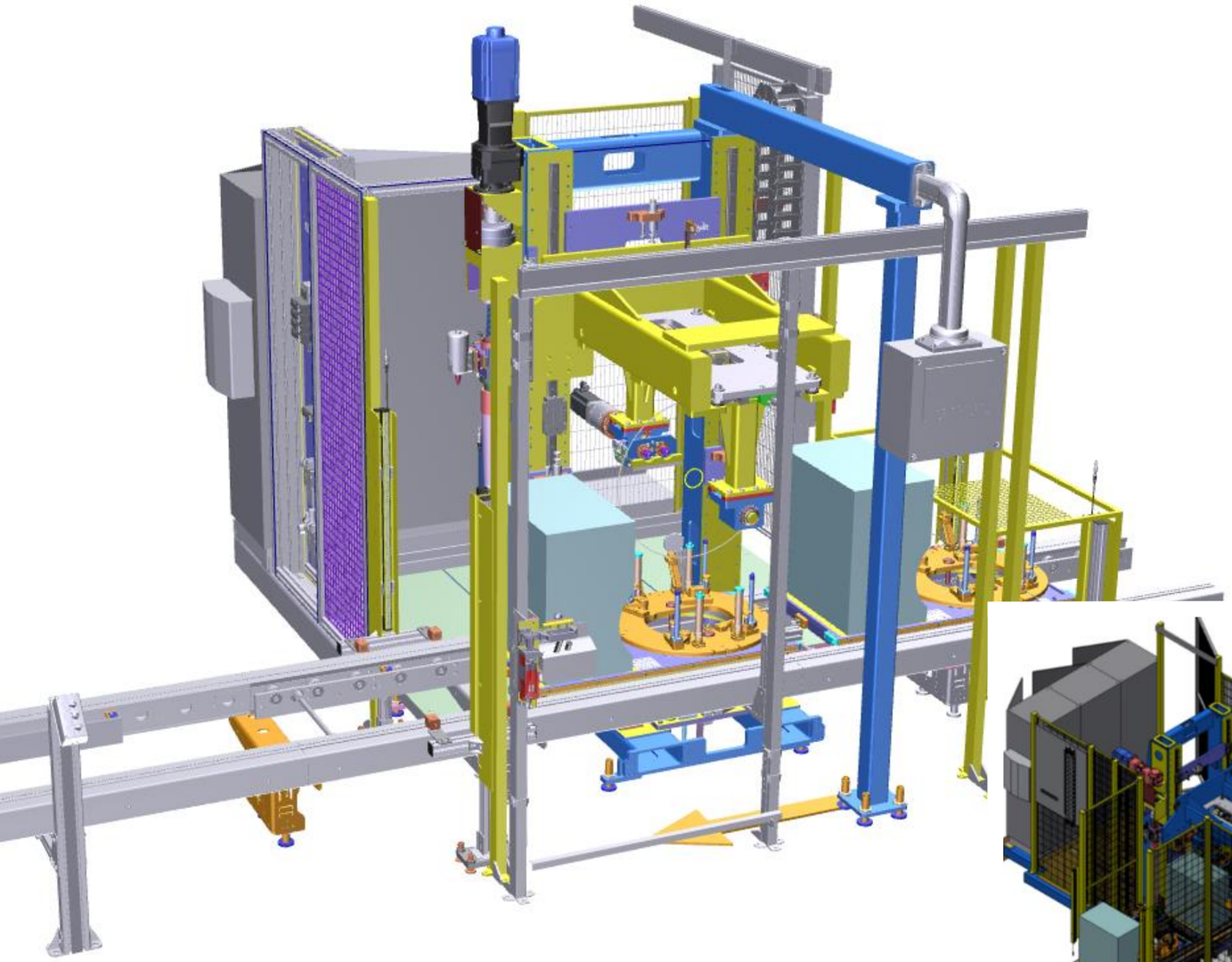


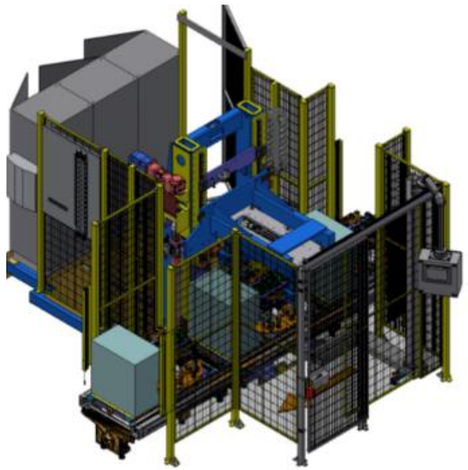
Main Characteristics:

- Robot for automatic screwing
- Traceability
- Automatic cell



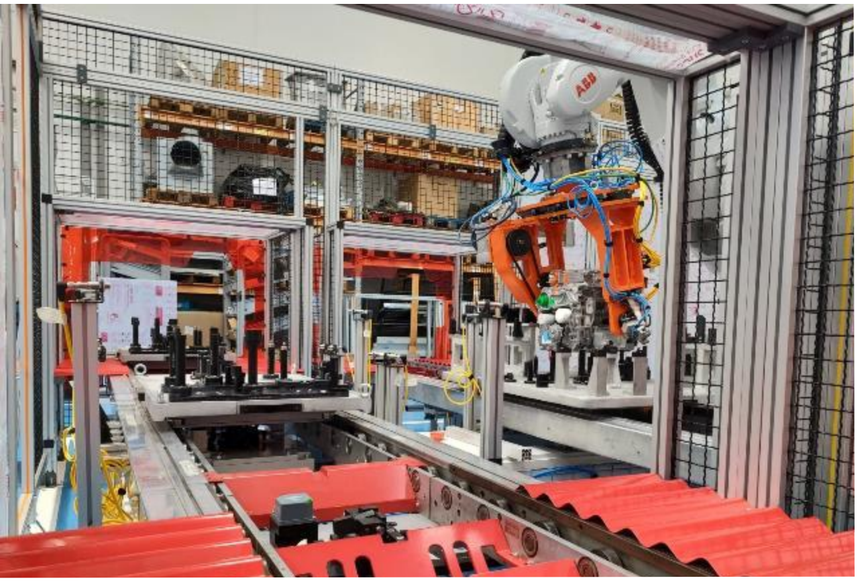
Assembly – Engine

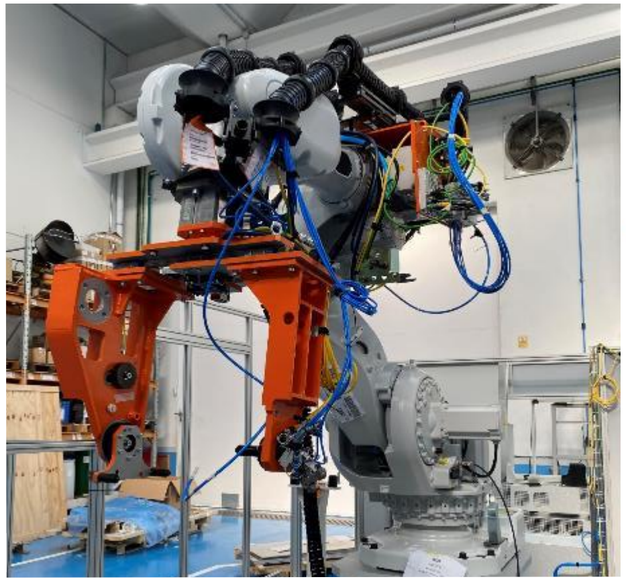


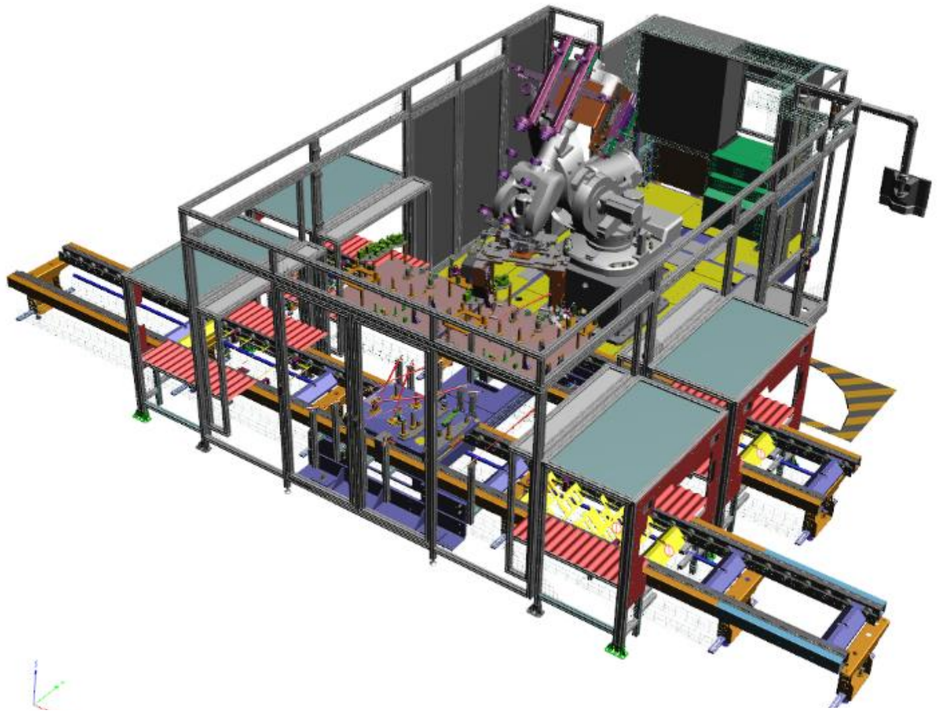


DSA
Assembly & Test Technology

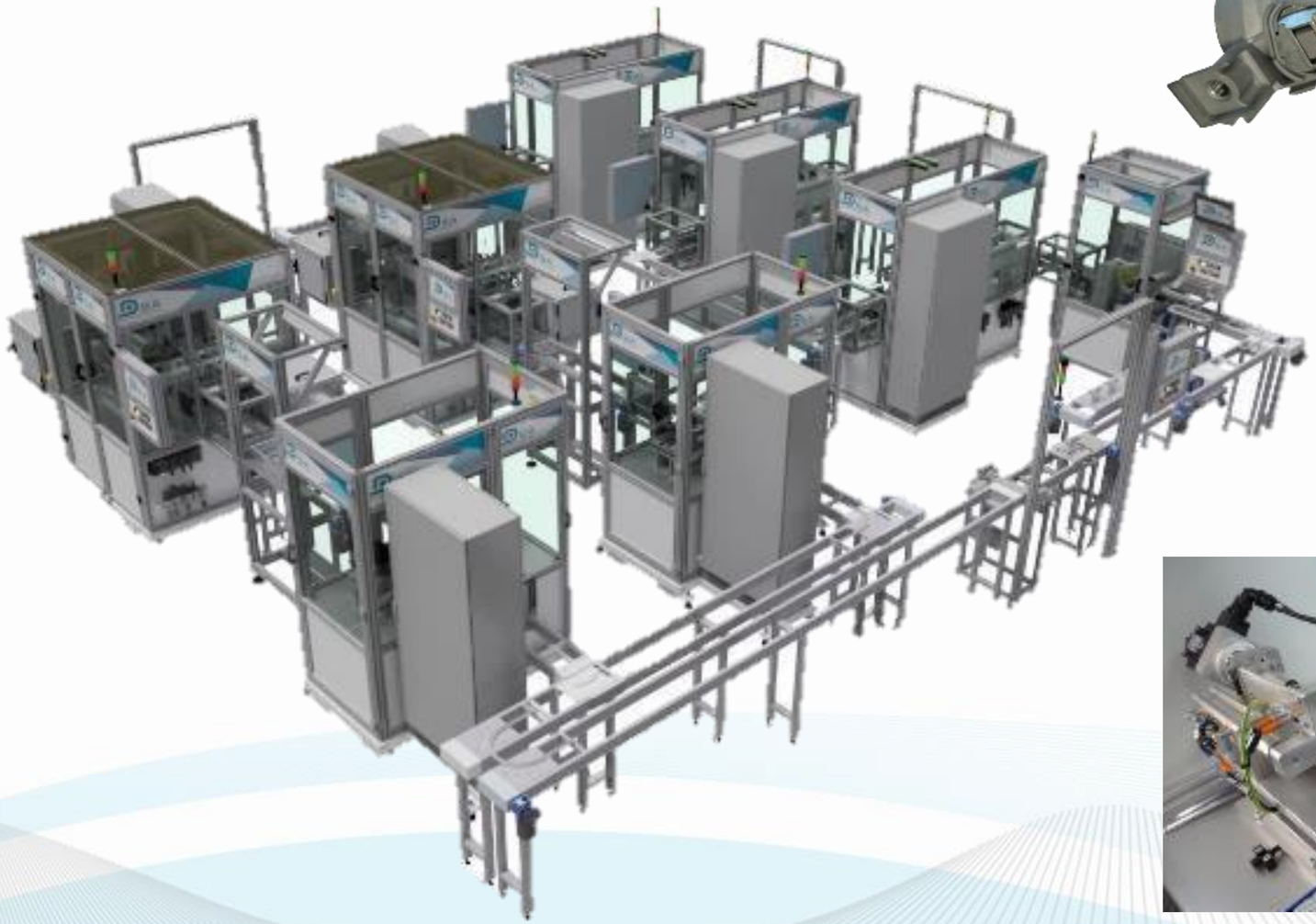
Assembly – Engine







Assembly – Key and Lock Cylinder



Main Characteristics:

- Automatic loading of components
- Robot-manipulated parts
- Sprat pin set via electric press
- Automatic pin feeder
- Reading OCR code
- Product traceability

Assembly – Key and Lock Cylinder

Mounting the housing locking system automatically

Automatic Audi door preassembly

Main Characteristics:

- Robot-manipulated parts
- Sprat pin set via electric press
- Automatic pin feeder
- OCR code reading Product traceability

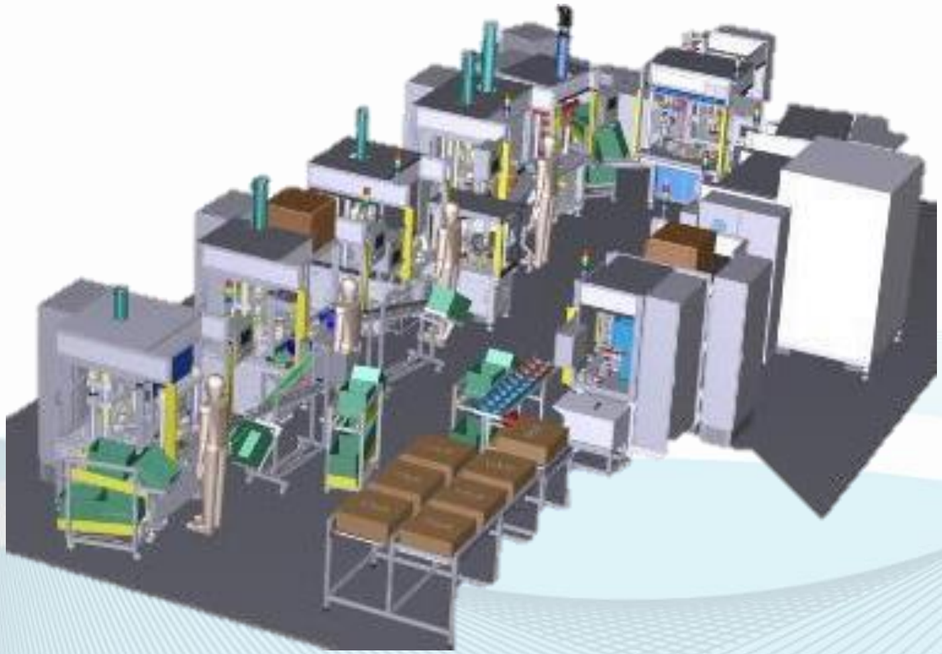
VW automatic door preassembly

Automatic anti-theft system pre-assembly

Assembly & Test – Klaxons

Main Characteristics:

- 10-station assembly line
- Functional test that performs Automatic pressing of pins on parts
- Error correction system or poka-yoke
- Artificial vision system for the control of assembled components.
- Vacuum system included
- Handling the product by an electrical shaft



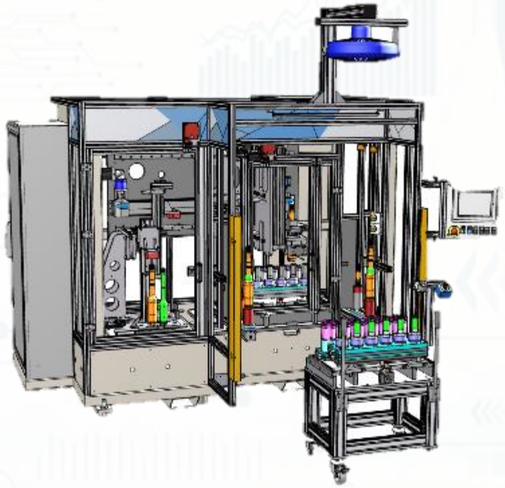
Assembly - Components in Headliner

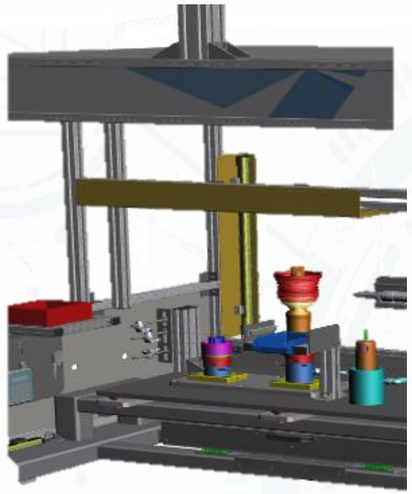
Main Characteristics:

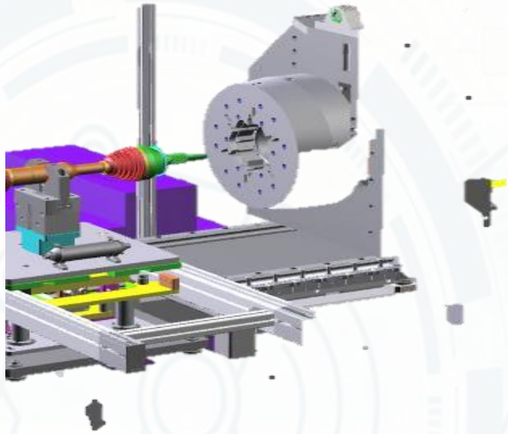
- Components assembled semi-automatically
- Hotmelt application by a robot.
- Gantry system for positioning of components.
- Error proofing system or Poka-Yoke
- Artificial Vision System for controlling assembled components,
- Traceability

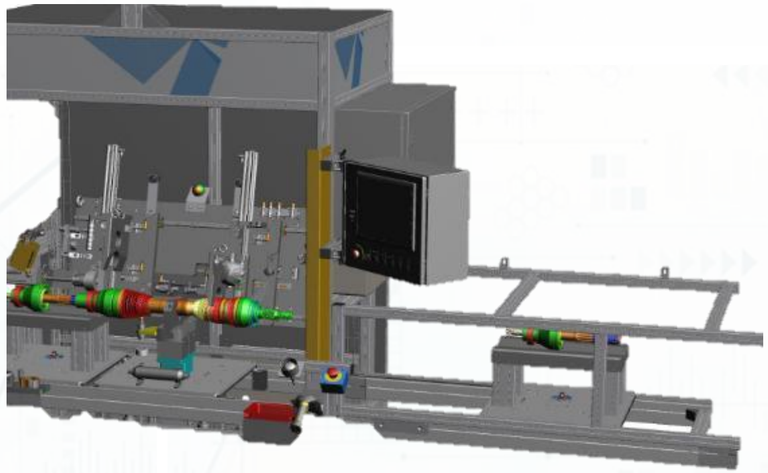
DSA
Assembly & Test Technology

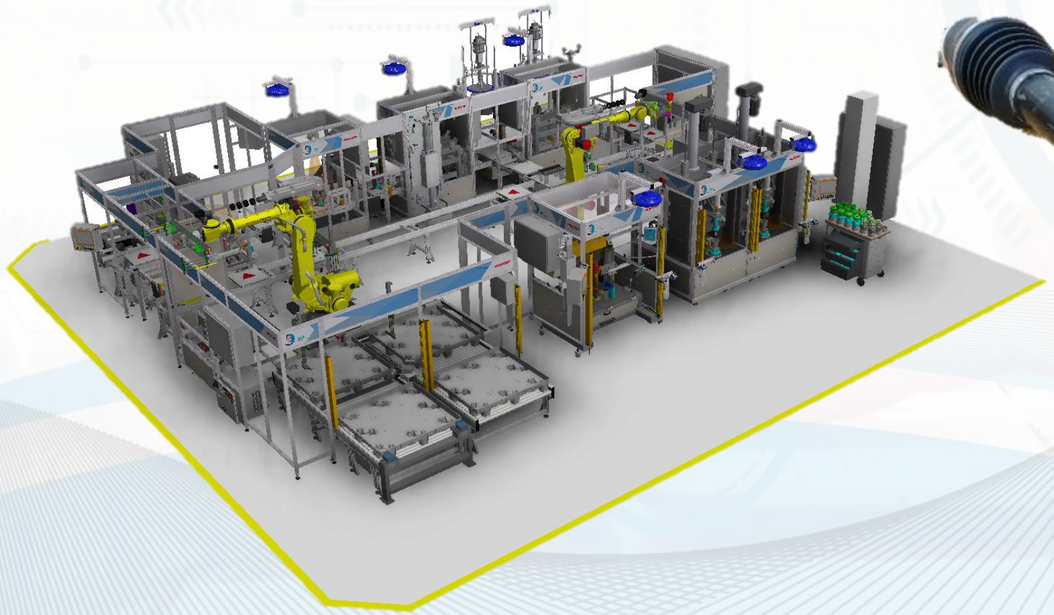
Assembly – Axle Bar

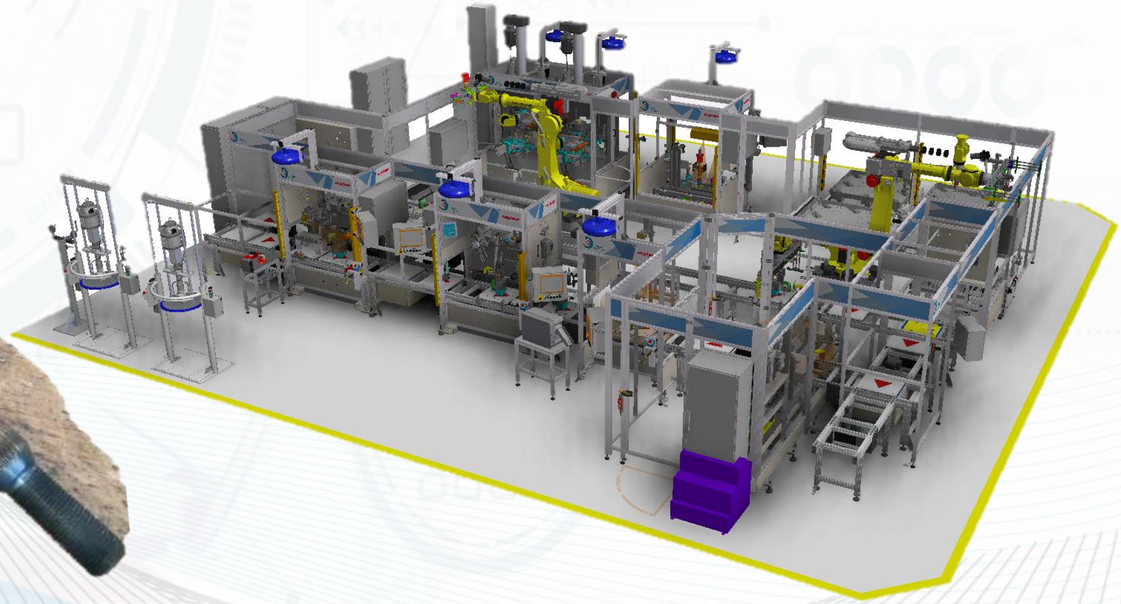








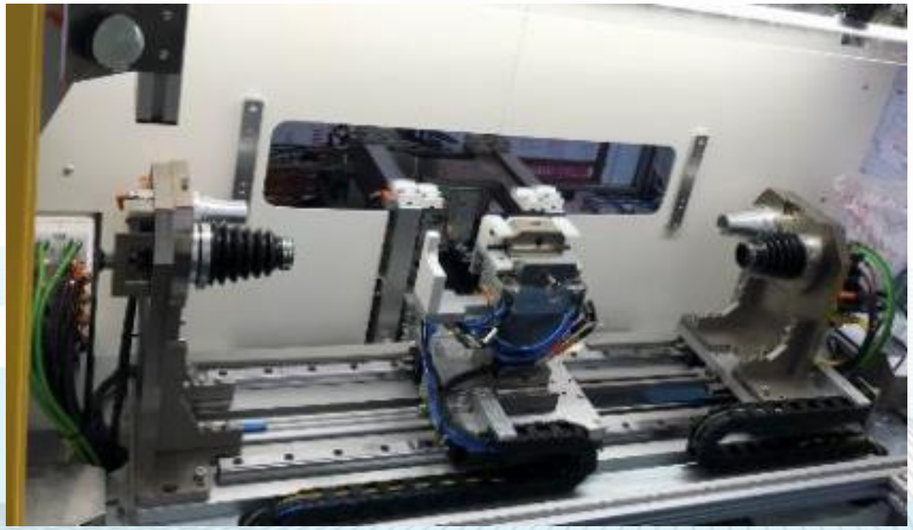




Assembly - Half-Shafts

Main Characteristics:

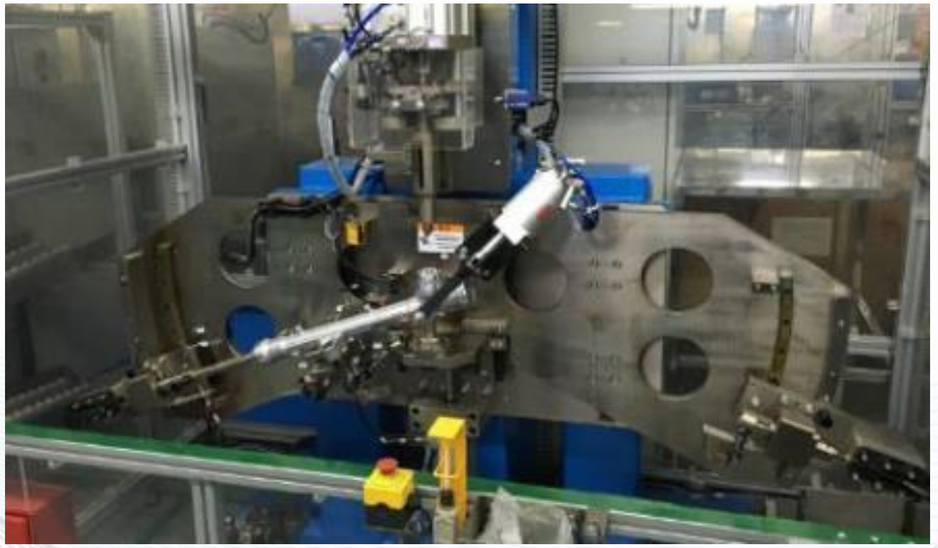
- Electric press with position and effort control
- Rotating system for part centering
- Grease application system
- Auto unload system for NON OK parts
- Traceability of product
- Vision system for parts controlling
- Rust preventive treatment



Assembly - Electric Steering

Main Characteristics:

- Electric press with position and effort control
- Rotating system for part centering
- Grease application system
- Auto unload system for Non OK parts
- Traceability of the product
- Vision System for parts controlling



Assembly - Electric Steering Column

Bearing & Roll Press

Jacket Assembly

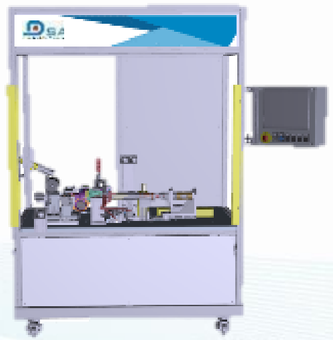
Rake Mech Assembly to Lower

Main Characteristics:

- Electric press with position and effort control
- Rotating system for part centering
- Grease application system
- Traceability of product
- Vision system for parts controlling

Grease & Stroke

Assemble Column Assembly



Rake & Telescope Test

Lever Effort Setting

Assembly Tip Seal & Filter

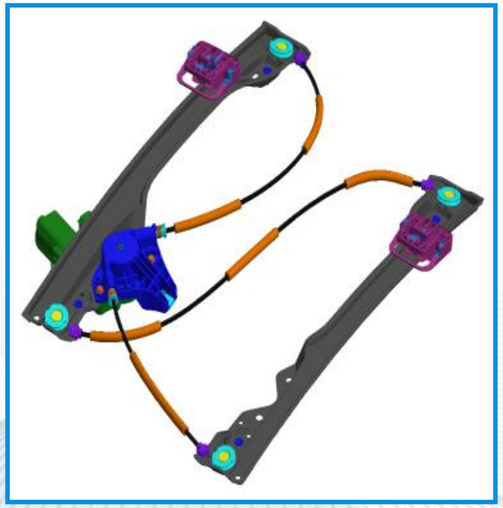
Main Characteristics:

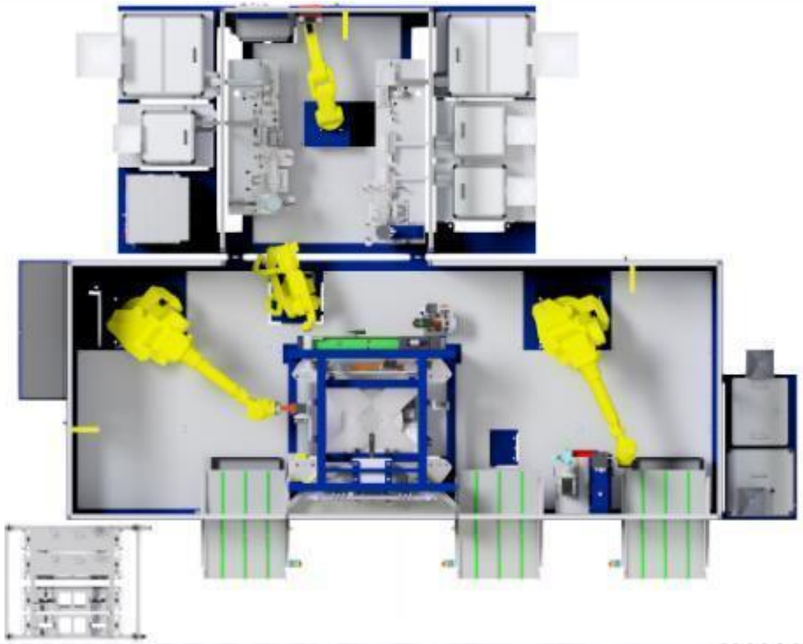
- Automatic loading of components.
- Automatic loading of components parts handled by robot
- Seal insertion + sizing with electrical press
- Automatic filter feeder
- Vision system product traceability

Assembly Window Regulator

Main Characteristics:

- Automatic detection of elements
- Robot for automatic screwing
- Robot for automatic crimping
- Interchangeable nests
- Error proofing system or Poka-Yoke

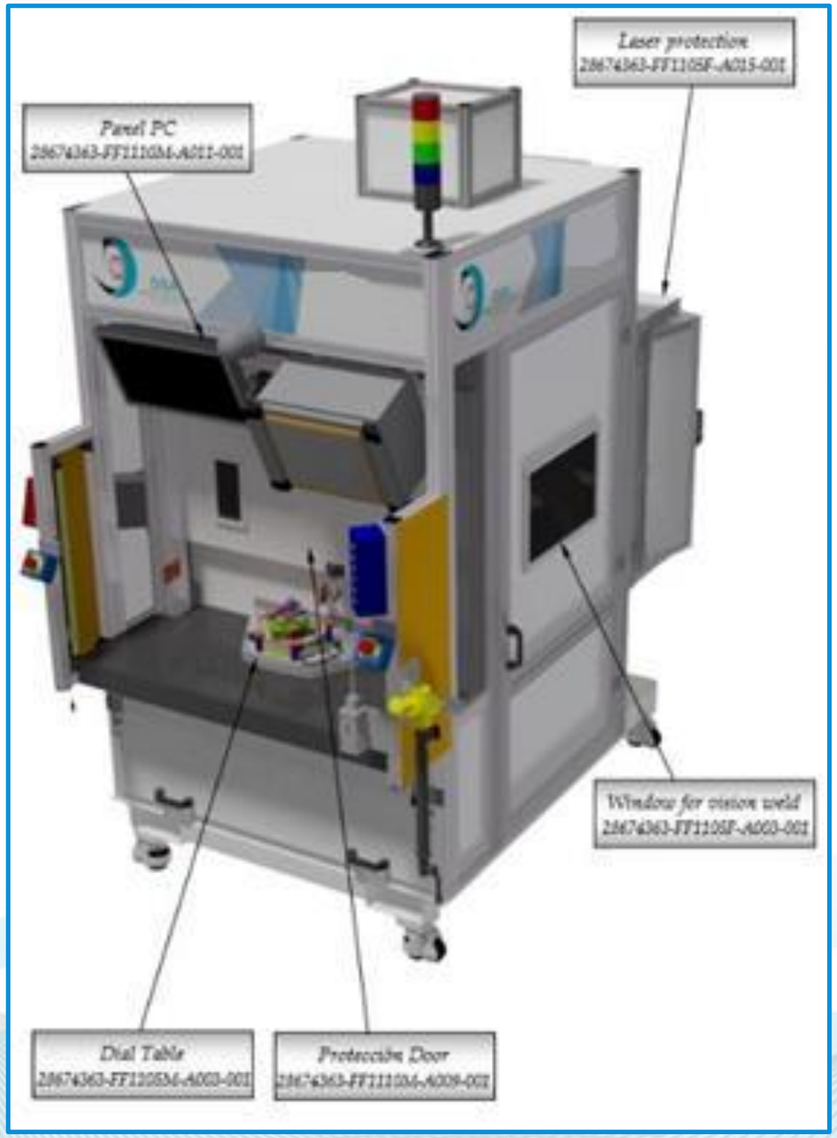


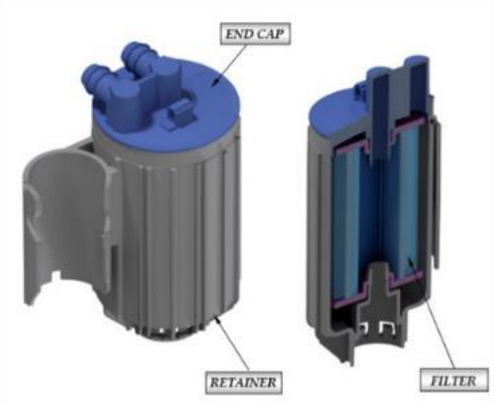


DSA
Assembly & Test Technology

Special Machines & Lines for Assembly & Welding

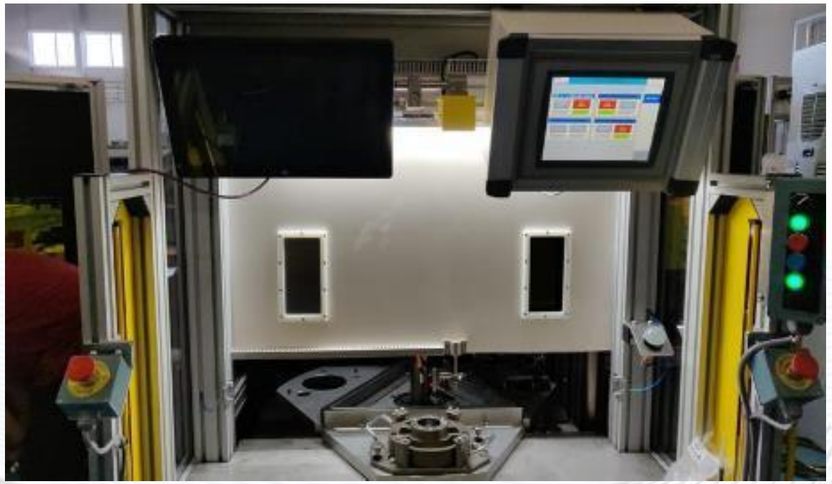
Assembly & Welding Line - Plastic Filter





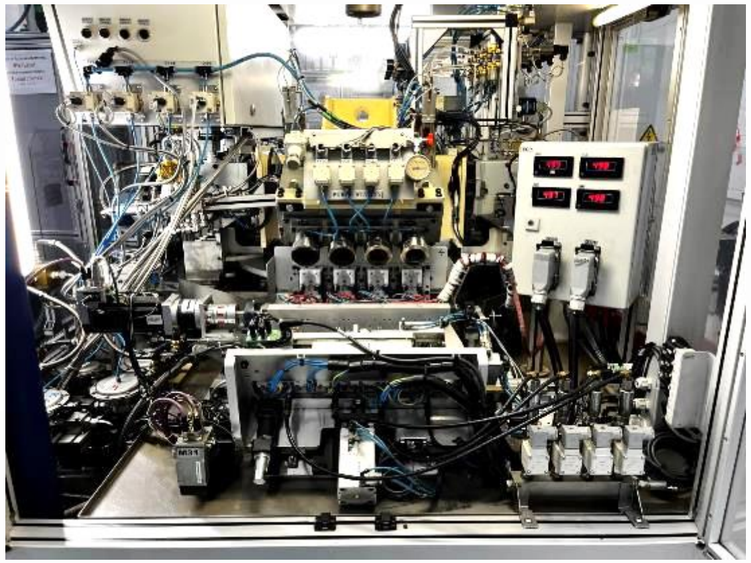
Main Characteristics:

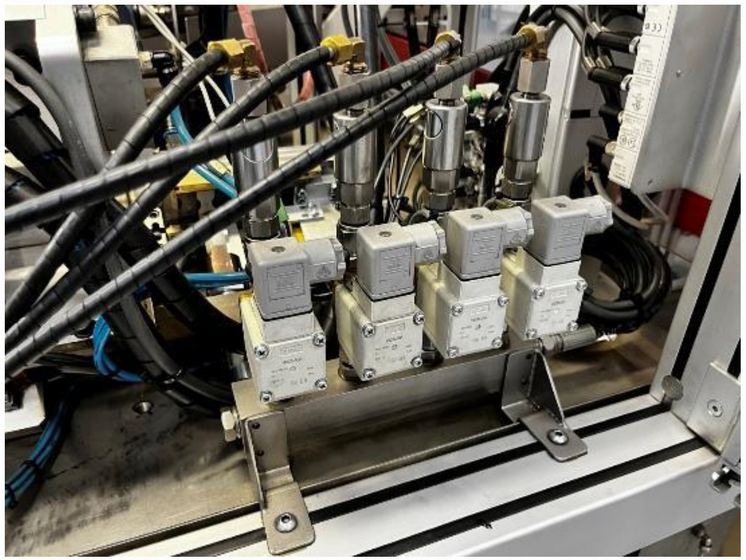
- Dial table with three positions
- Error proofing systems Poka-Yoke.
- Laser Fiber Welding System for welding of the end cap.
- Laser weld with adjustment in angle and position.
- Two Laser system
- Capacity for weld a biggest variant of products

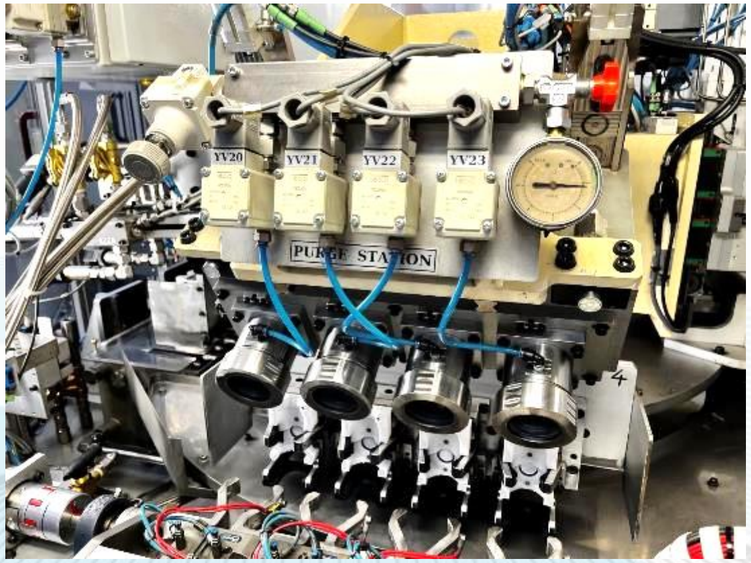


Assembly & Welding Line - Plastic Filter

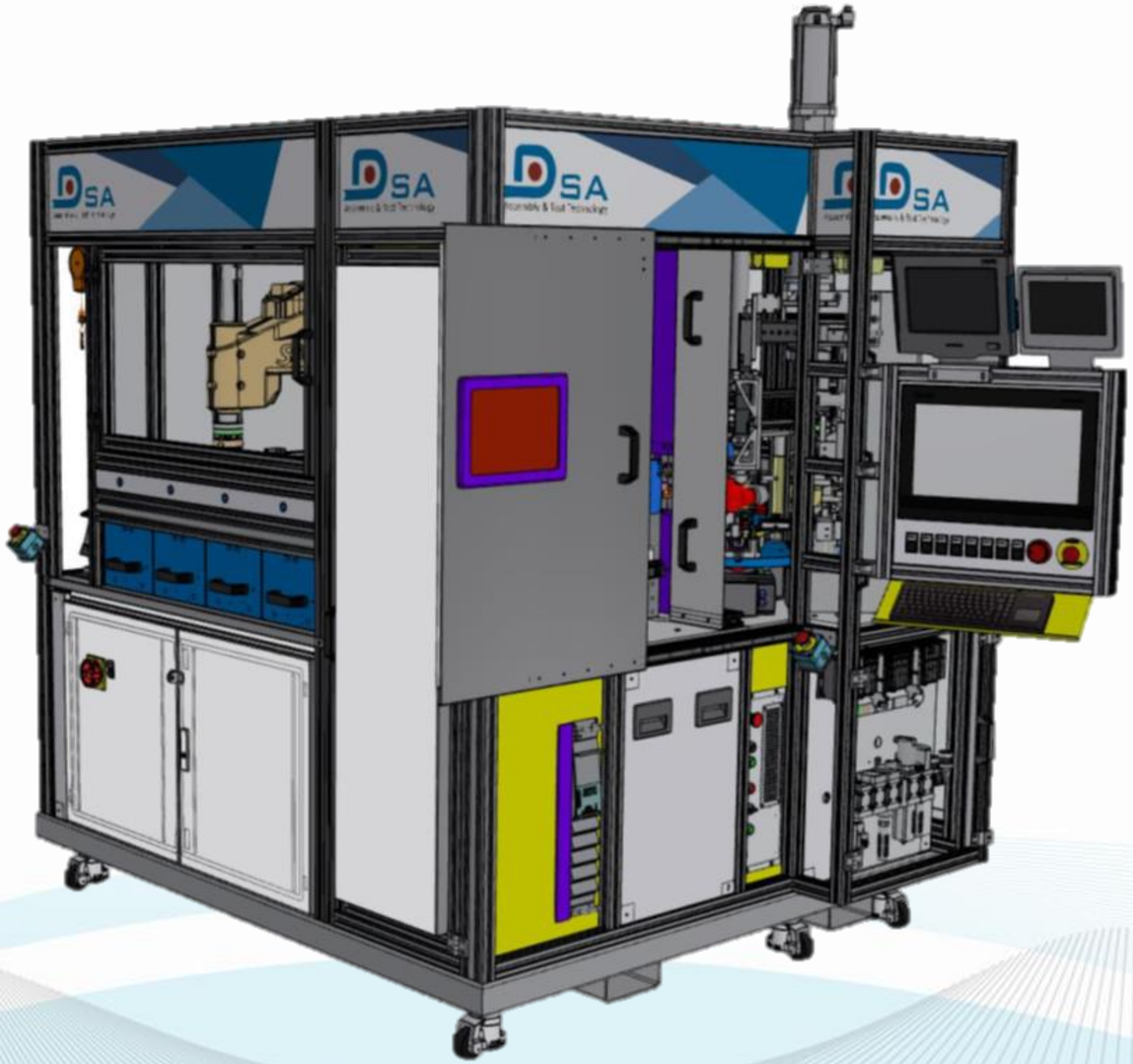
Assembly & Welding Line - Plastic Filter





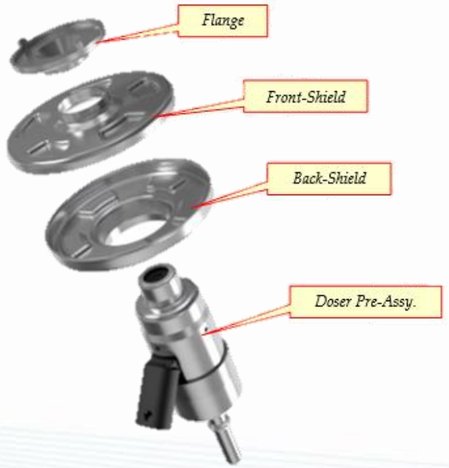


Assembly & Welding - SCR-AC



Main Characteristics:

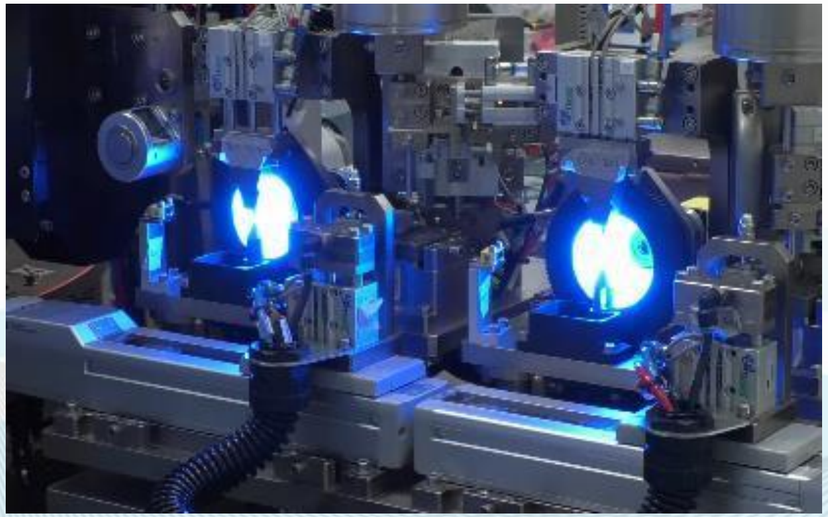
- Scara robot to manipulate the elements
- Error proofing systems Poka-Yoke
- IPG Laser Welding System with Rotating Nest
- Promess Press system

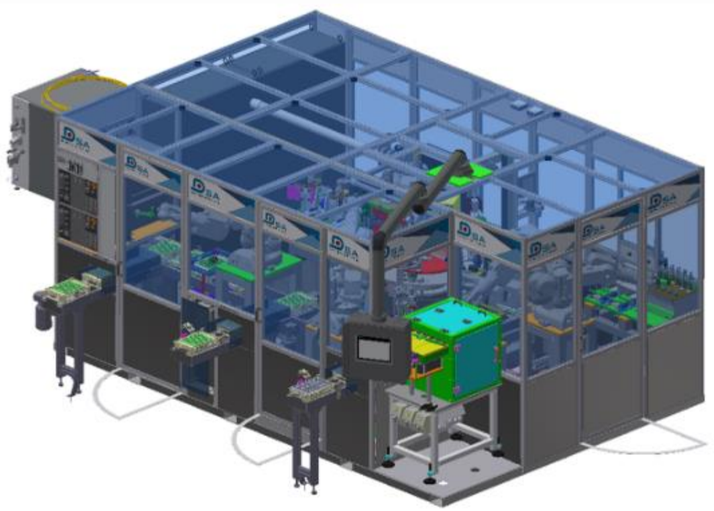


Assembly & Welding - Pintle Ball Armature

Main Characteristics:

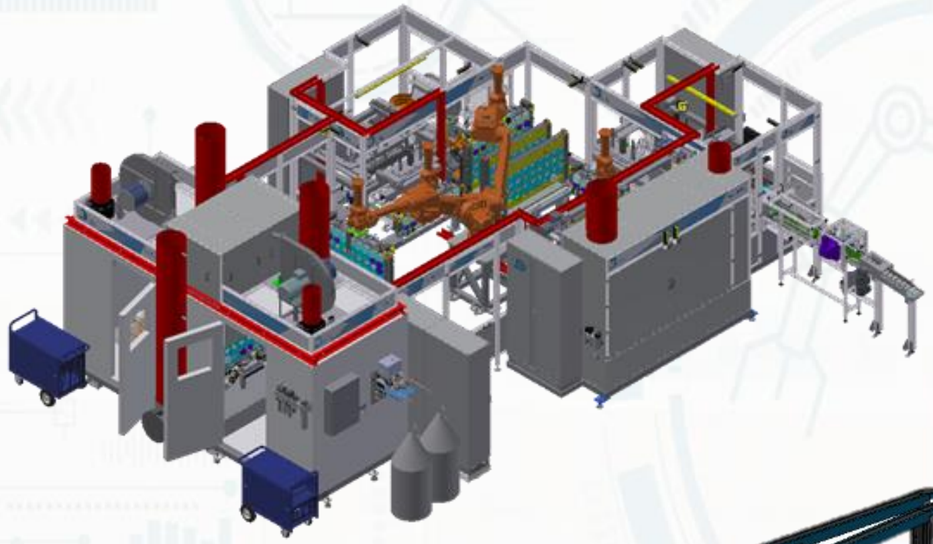
- Automatic feeding and recognition of pintles
- Automatic loading / unloading of incoming components and finished assemblies by Robots (4 robots working simultaneously)
- Error proofing systems Poka-Yoke
- IPG Laser Welding System for welding of oriented balls to the pintles
- Vision System for Weld Quality check and roundness inspection
- Vision System Inspection of Coating location and quality high technology
- Clean Room Environment

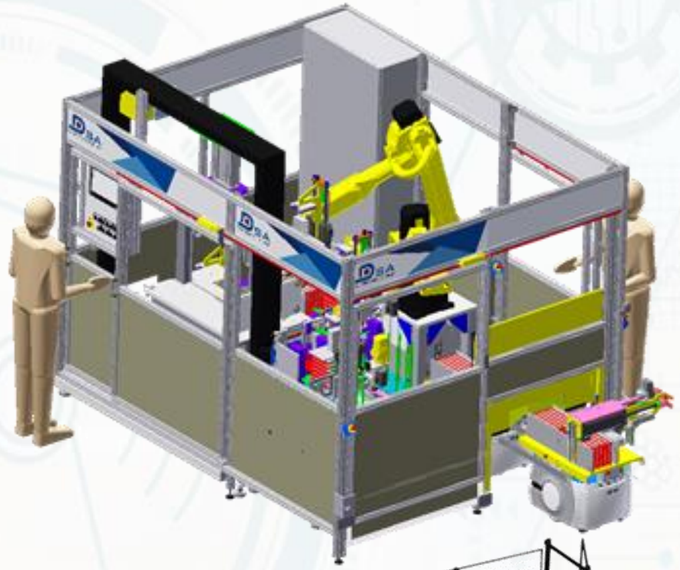


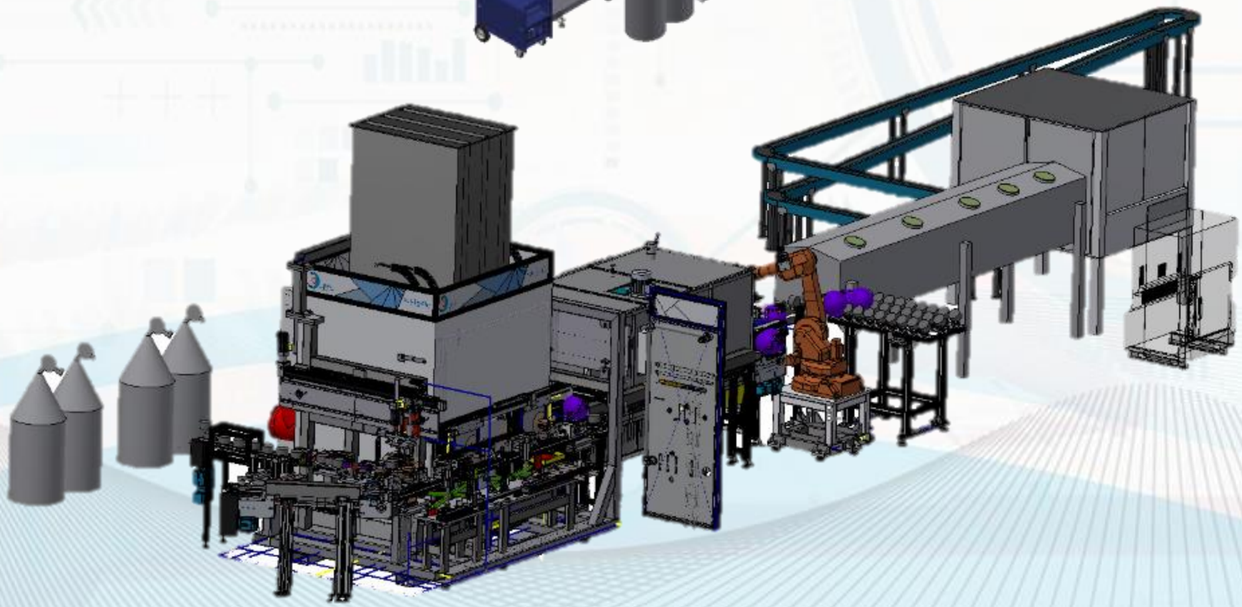


DSA
Assembly & Test Technology

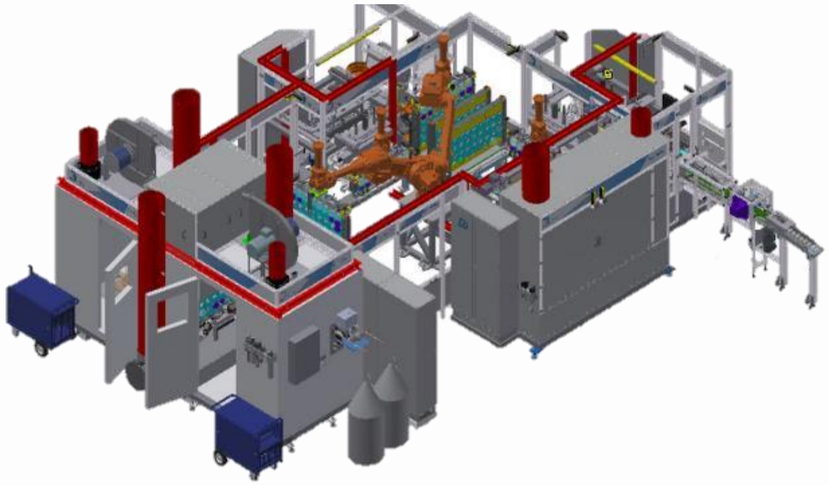
Special Machines & Lines for Electronics







Assembly - Thermal ARC Spray Capacitor



Automatic unload parts

Main Characteristics:

- Fully automatic cell
- Robot for loading of parts
- XYZ electric Cartesians for auxiliary operations & unload.
- Automatic cleaning of the pallets
- Infrared sensors for parts temperature measurement.
- Dial table & specific pallet
- Thermal arc spray system over XY electric cartesian working in closed loop with rotation and displacement axis moving the part.
- Noise control

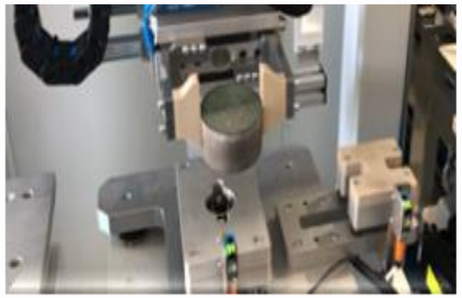
Automatic feeder & plug assembly

Manipulate robot with vacum gripper

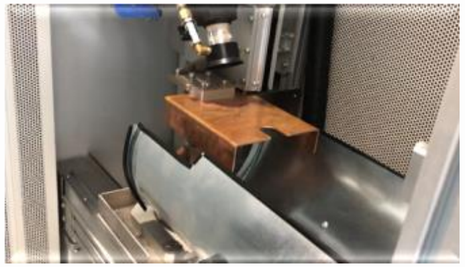
Special pallet & dial table

Automatic pallet cleaning

Assembly - Thermal ARC Spray Varistors



Coating Thickness Measurement

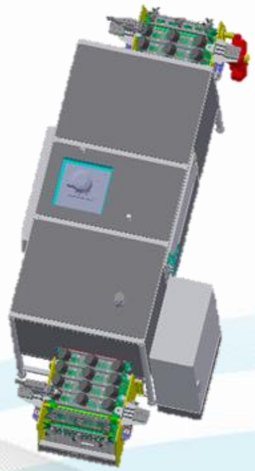


Thermal Arc Spraying

Automated Load with Robot

Main Characteristics:

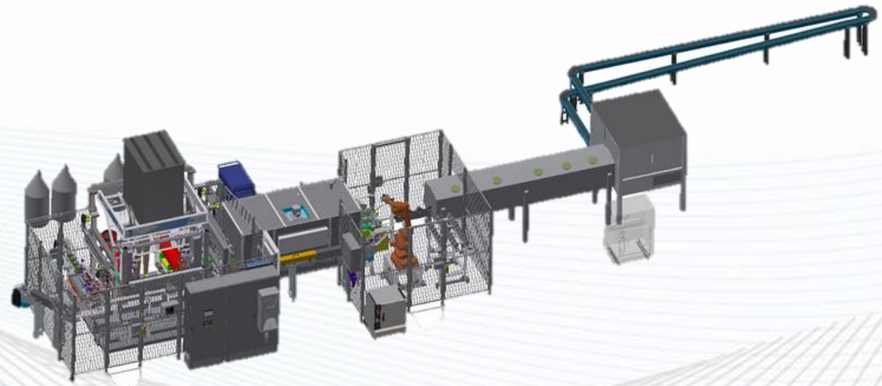
- Fully automatic cell
- Robot for loading of parts
- XYZ electric Cartesians for auxiliary operations & unload
- Infrared sensors for parts temperature measurement
- Electromagnetic measurement of coating thickness
- Thermal arc spray system over XY electric cartesian working in closed loop with rotation and displacement axis moving the part
- Integrated oven for heating of parts to a controlled range of temperature.
- Noise control



Preheating Oven with Final Temperature Control

Walking Bean for Parts Transferring

Cooling & Temperature Control

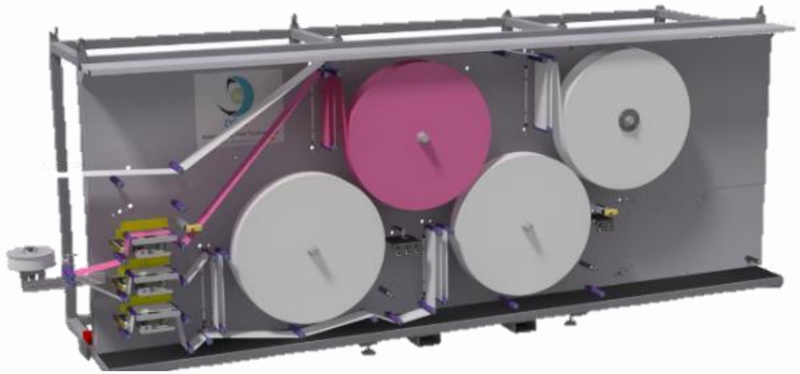


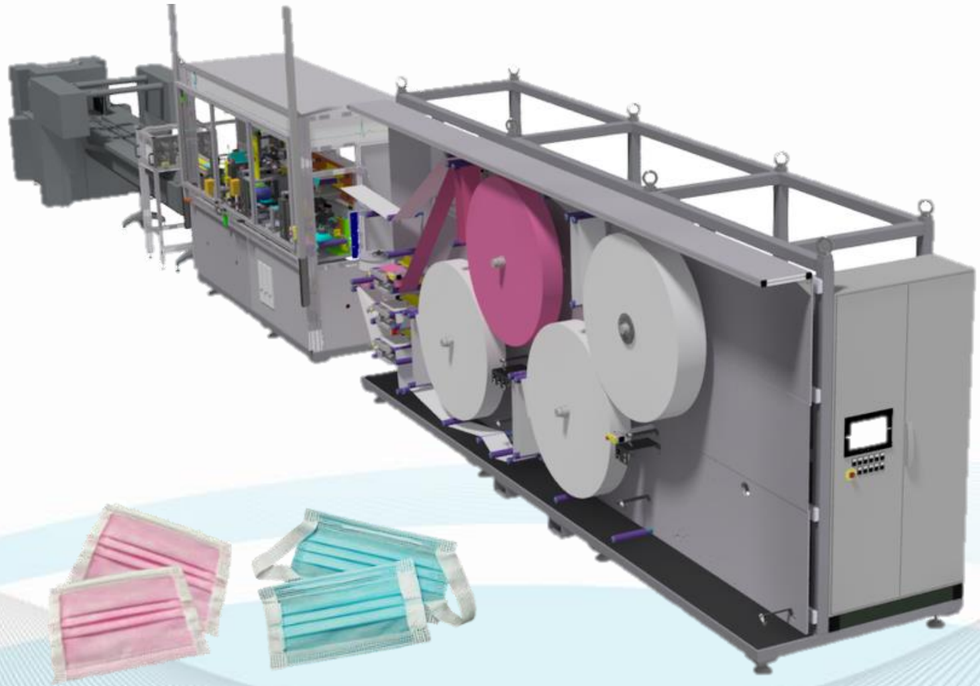
Special Machines & Lines for Medical Sector

FACE MASK
MANUFACTURING LINE

SYRINGE MARKING
MACHINE

Surgical Face Mask





Main Characteristics:

- Machine protection and fairing following the European regulation.
- Ultrasounds systems made in Europe
- Electric and pneumatic components with international first level brands and capacity of worldwide spare parts distribution
- High quality components avoiding fast breakdowns
- Possibility to integrate a vision system to control the product quality and reject it automatically if is defective
- Possibility to integrate an automatic film at the machine output
- Technical Service guaranteed for the equipment set up and after sale maintenance

UNE-EN 14683:2019+AC:2019

Six models of masks will be manufactured:

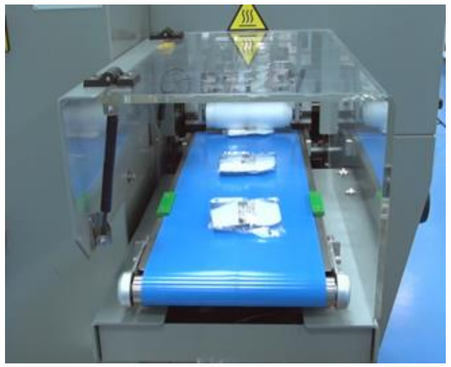
- **AQ01- Adult Size 180mmx95mm Color Blue**
- **AQ02- Adult Size 180mmx95mm Color Pink**
- **AQ03- Medium Size 160mmx95mm Color Blue**
- **AQ04- Medium Size 160mmx95mm Color Pink**
- **AQ05- Child Size 140mmx95mm Color Blue**
- **AQ06- Child Size 140mmx95mm Color Pink**

Surgical Face Mask

UNE-EN 149:2001+A1:2009

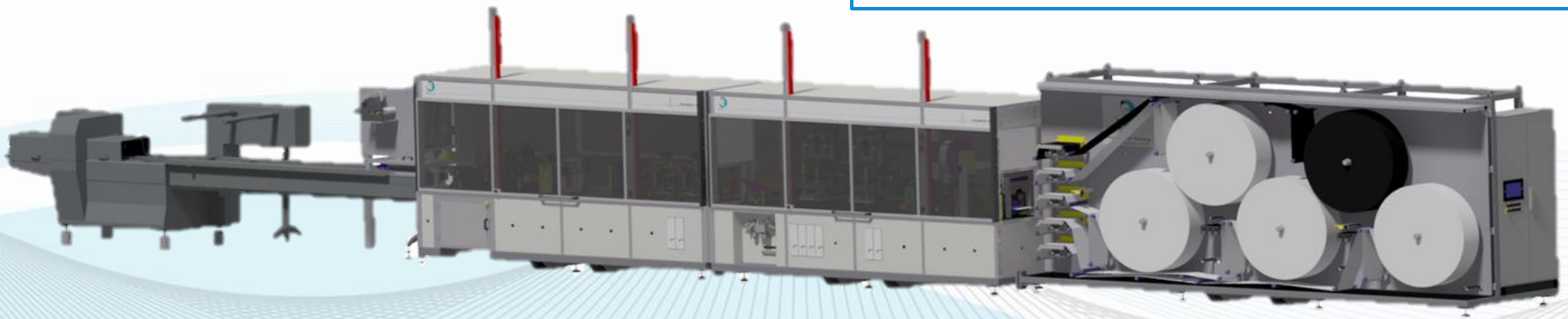
Two models of masks will be manufactured:

- **AQ21: Non-Reusable Self-Filtering Mask Type FFP2 Exterior color White**
- **AQ22: Non-Reusable Self-Filtering Mask Type FFP2 Exterior color Black**

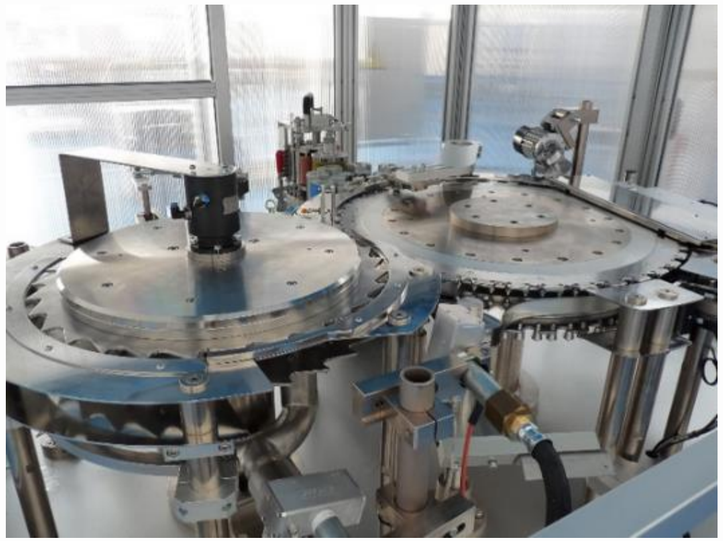


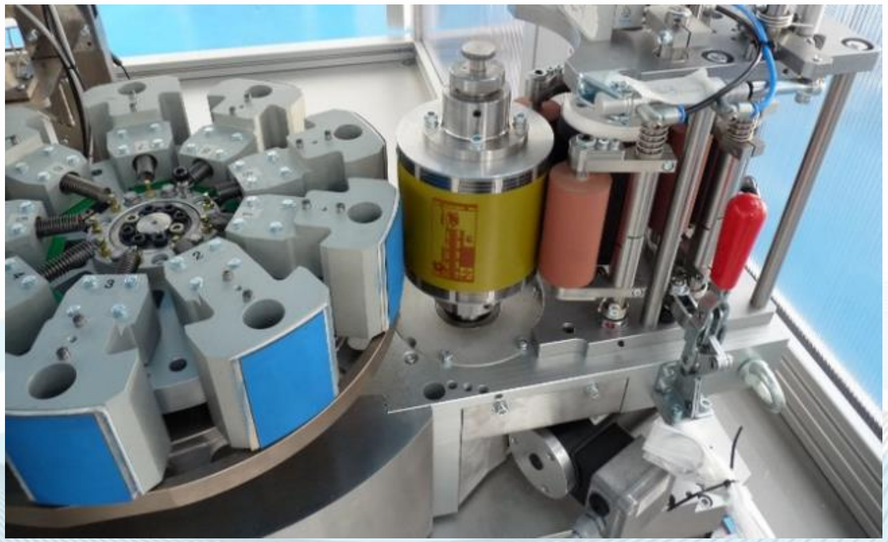
Main Characteristics:

- Machine protection and fairing following the European regulation
- Ultrasounds systems made in Europe
- Technical Service guaranteed for the equipment set up and after sale maintenance
- Control by PLC, including the machine complete software and operation parameters, to regulate and synchronize motors and to adjust the working parameters
- Possibility to integrate a vision system to control the product quality and reject it automatically if is defective
- Possibility to integrate an automatic film packing equipment at the machine output



Marking Machine 30/50 ml Syringe

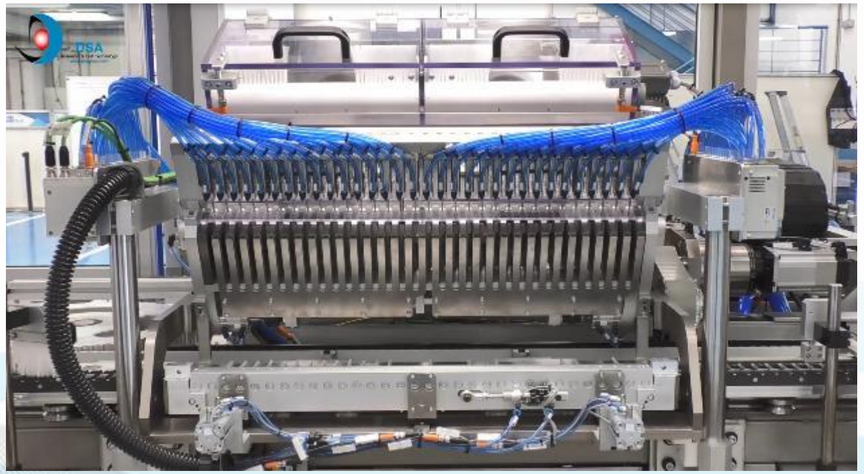


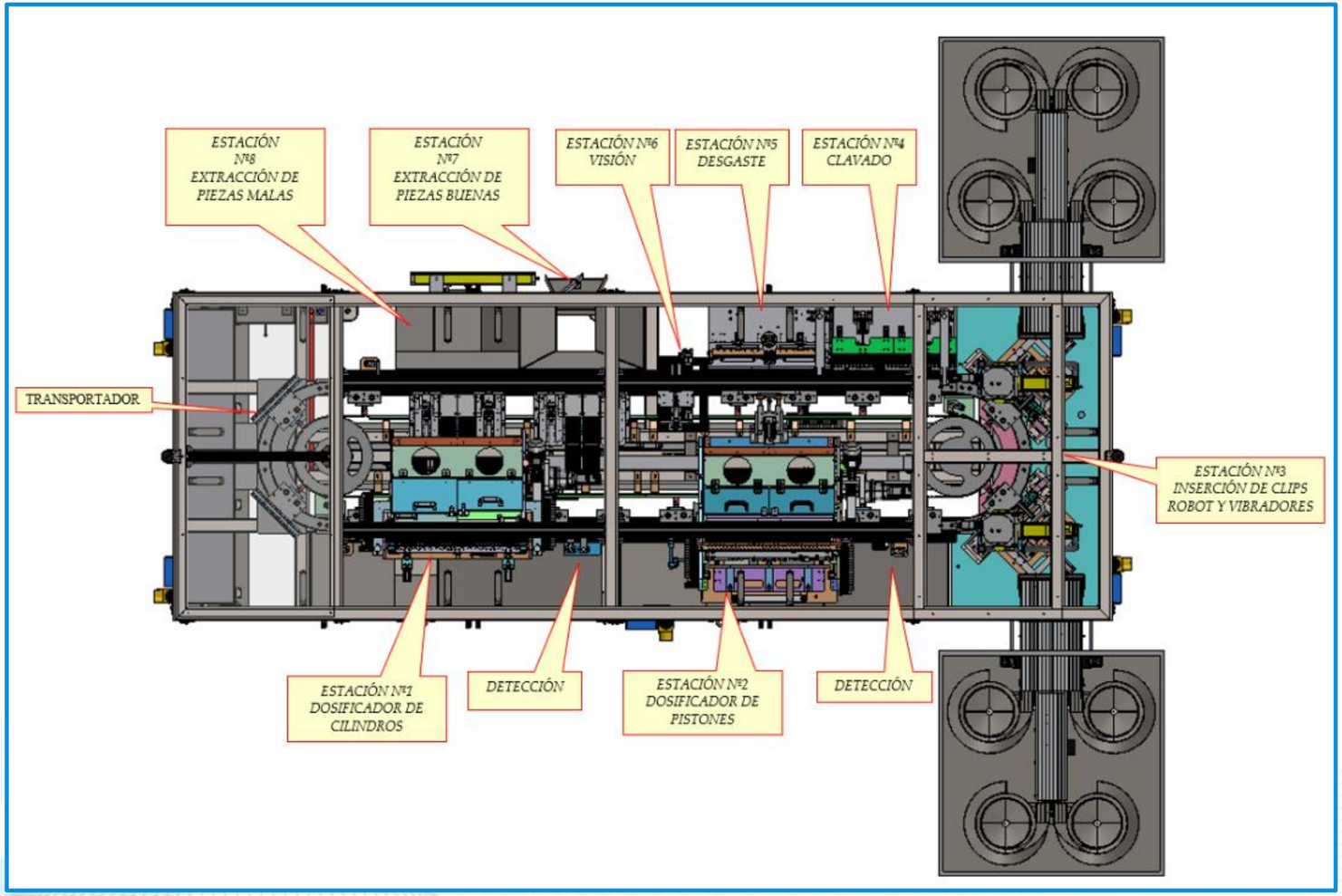


Main Characteristics:

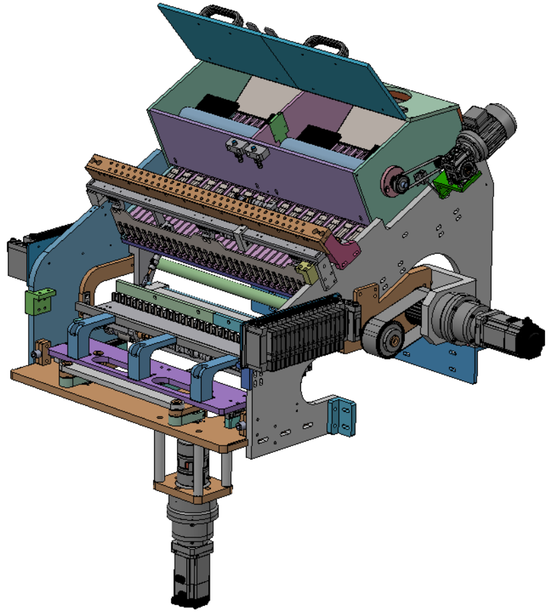
- Syringe marking Machine
- Turning table loads syringes at high speed
- Machine ready for clean room,
- Poka-yoke system

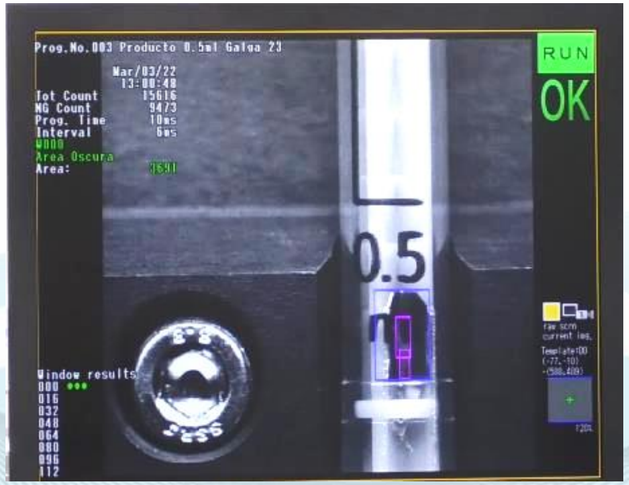
Assembly Machine 0,5 ml Syringe





Machine 0,5 ml Syringe





Special Machines & Lines for Test

FUNCTIONAL TEST MACHINES

BANK EXTRACTION

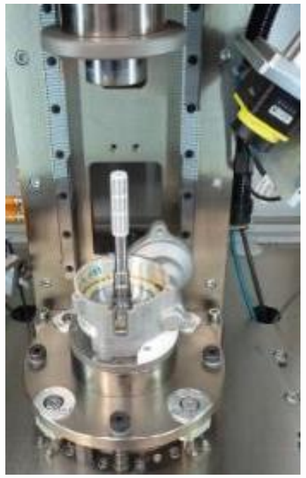
UV LEAKING TEST MACHINE

Assembly & Test Elec. Steering System

Final Assembly Backdrive Test

Final Function and Friction Test

Manual Noise Test Under Brake Load



Shaft Bearing Lash Adjustment

Worm Zoning Station

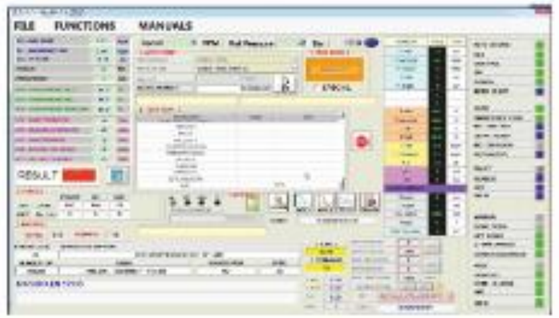
Main Characteristics:

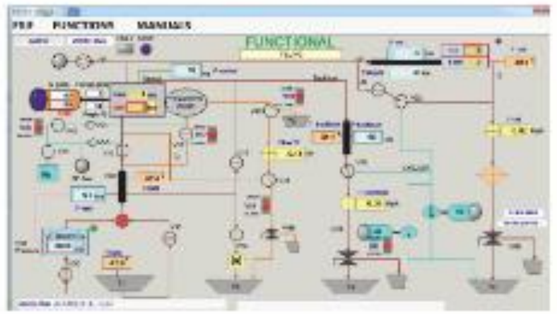
- Back Drive/Final Function/Noise Testing
- Lash Adjust with 0,002 mm Precision
- Rotating system for test sequence
- Electric press with position and effort control
- Load Cell and Torque cell Data acquisition
- Traceability of product
- Vision System for parts controlling

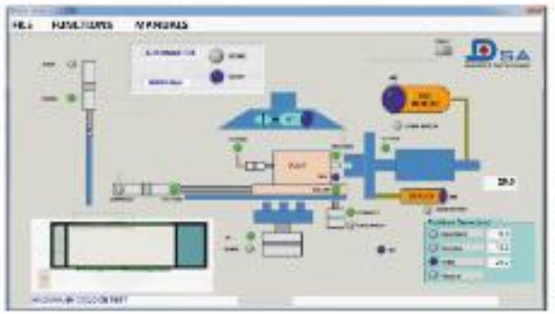
Fuel Pump Final Function Test

Main Characteristics:

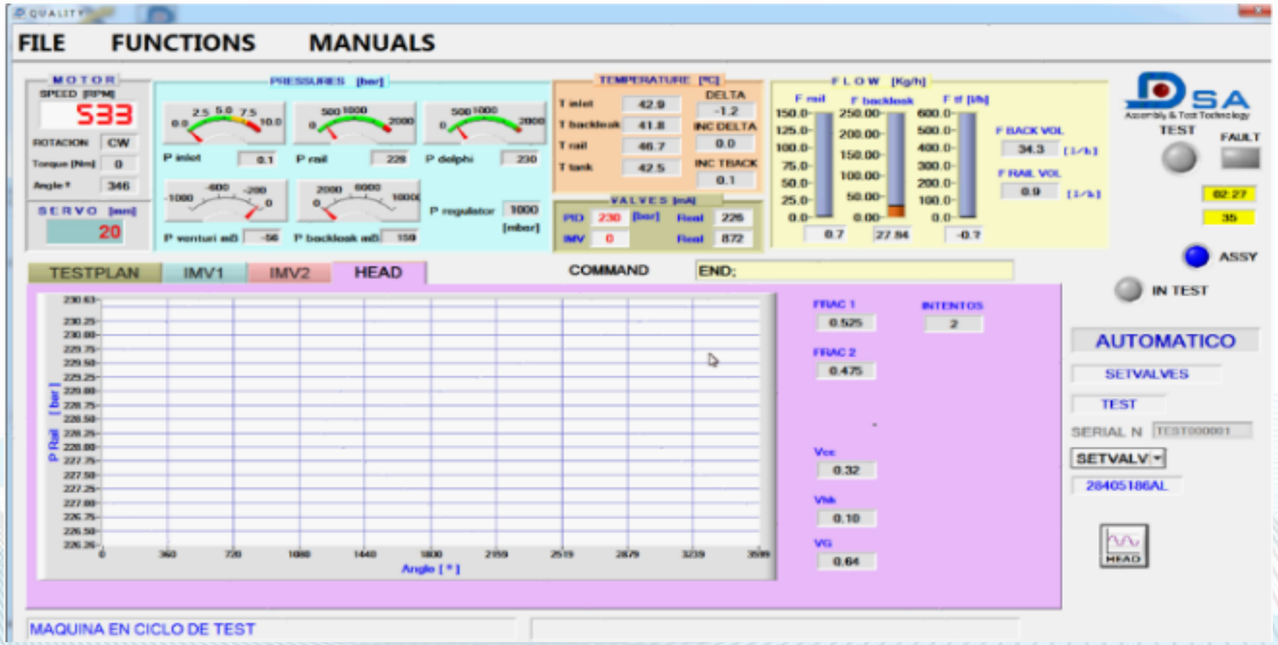
- Functional Test of Diesel Pump
- Simulates the operation of an automobile by a servomotor 6000rpm and common rail
- Verifies the operation of start-stop system for fuel saving
- Traceability of product







Assembly & Test Extraction Bench



Assembly & Test UV Leak M.

Main Characteristics:

- Test machine for control of leaks in pumps
- Components loaded semi automatically
- Led Illumination integrated
- Placement of components controlled
- Vision system for parts OK/NO OK detection
- Error proofing and Poka-Yoke integration
- Generation of images of the process (360°)
- Traceability of the product

AMSX

Advanced Mechanical Systems

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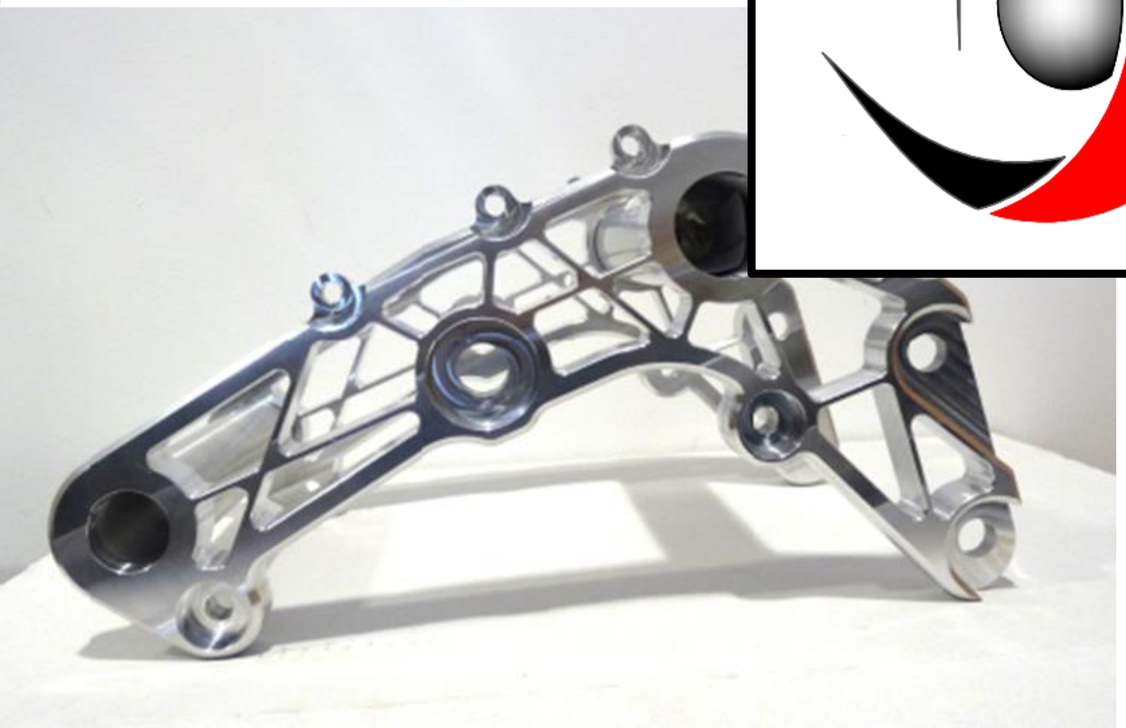
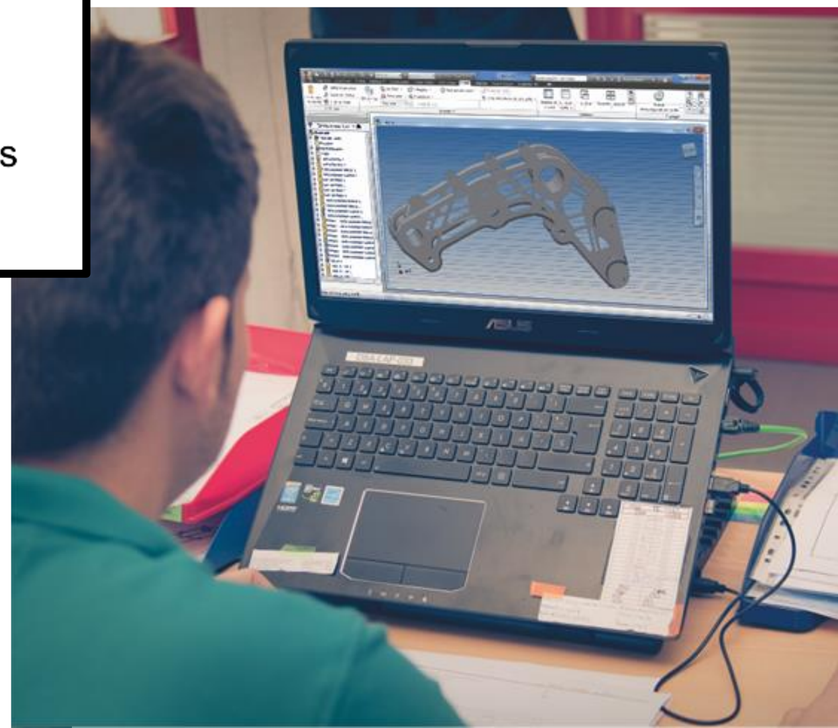




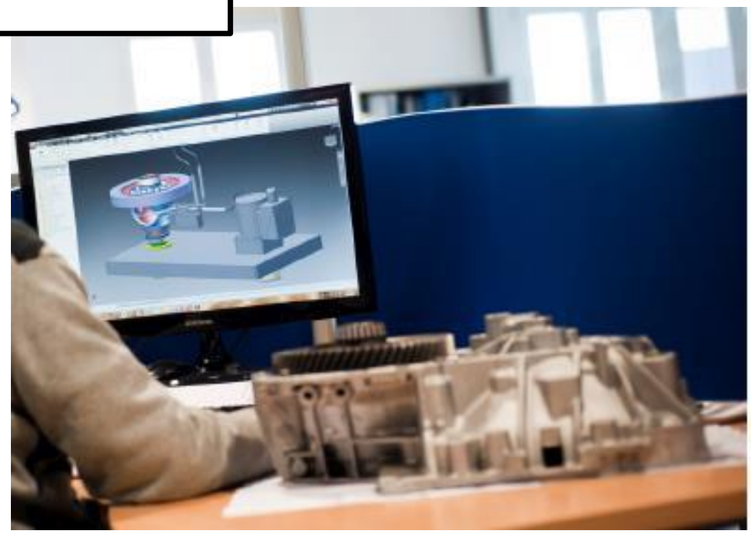
AMSX
Advanced Mechanical Systems

- Manufacture of prototypes, small and medium series of parts in all types of materials.
- Integral management of industrialization projects.
- Development of tooling projects.
- Design, manufacturing, assembly and dimensional control.

Resources

- Engineering & Design
- CAD-CAM Programming
- CNC Machining
- Industrial Tooling
- Dimensional Control & Validation
- After-Sales Services

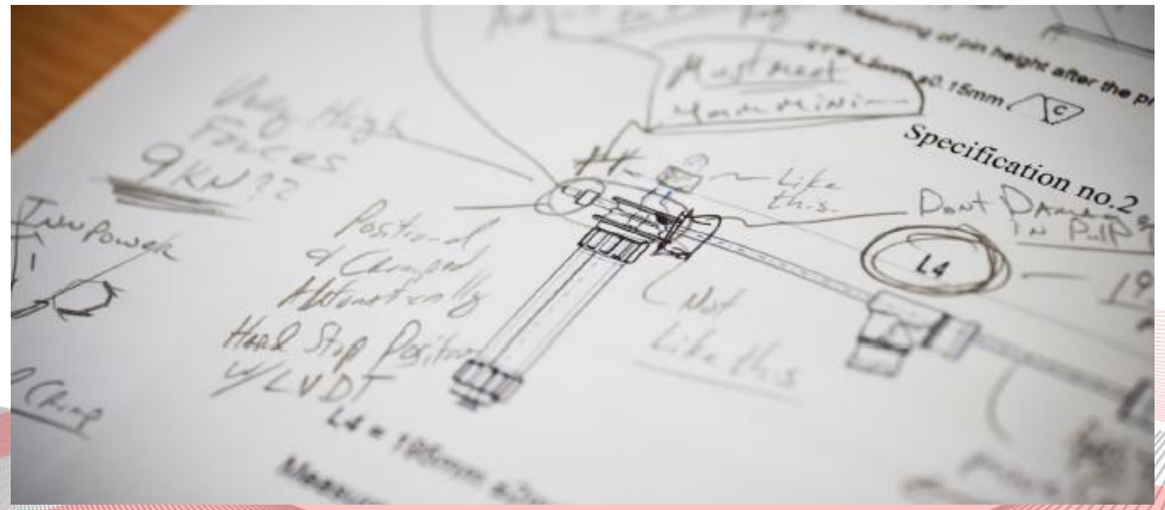
Engineering

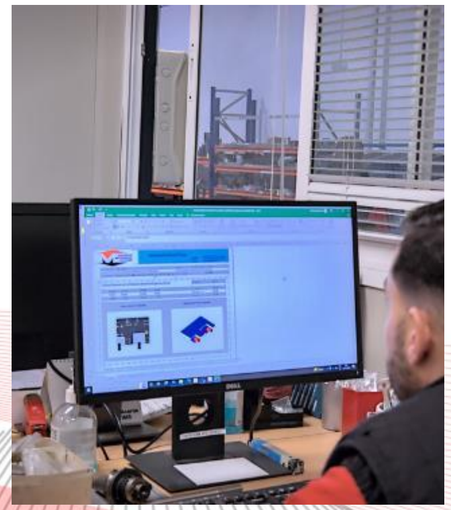


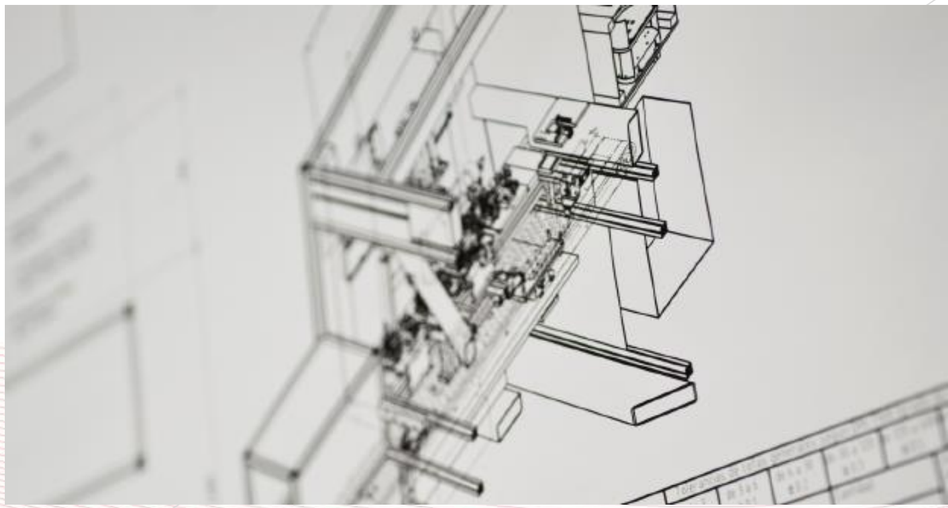
AMSX have the technical means to offer a comprehensive solution.

AMSX use the most widespread design tools on the market, such as, Inventor, Catia, AutoCAD... for tooling design.

CAM programming is done with GibbsCAM for 3 and 5 axis lathes and machining centers.







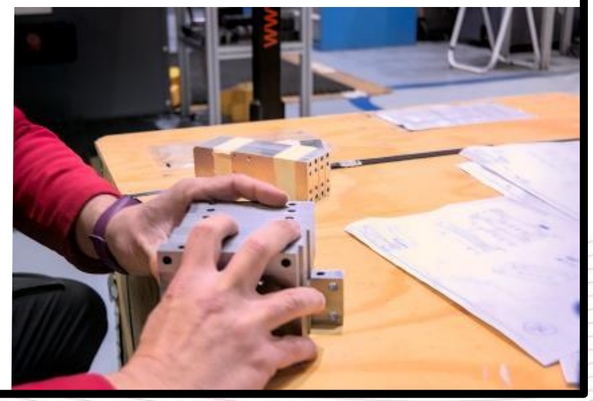
Machining




AMSX has a Machining Centers with a large number of machines with latest technologies and production resources. As well as, an integral traceability throughout the process.

- 3, 4 & 5 – Axis CNCs Machining Centers
- CNC Lathes
- Surface grinding



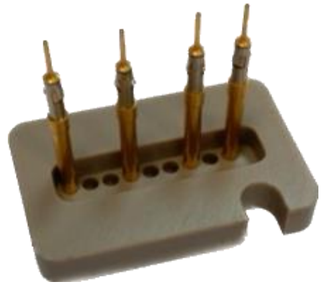



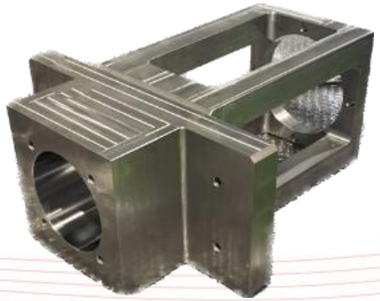
Machining

A highly qualified and constantly improving team, together with the most advanced technological means, result in high added value machining. Where quality, precision and processes are the keys to success, in order to satisfy the needs of our customers.

AMSX has the necessary resources to manufacture a wide variety of products in different materials:

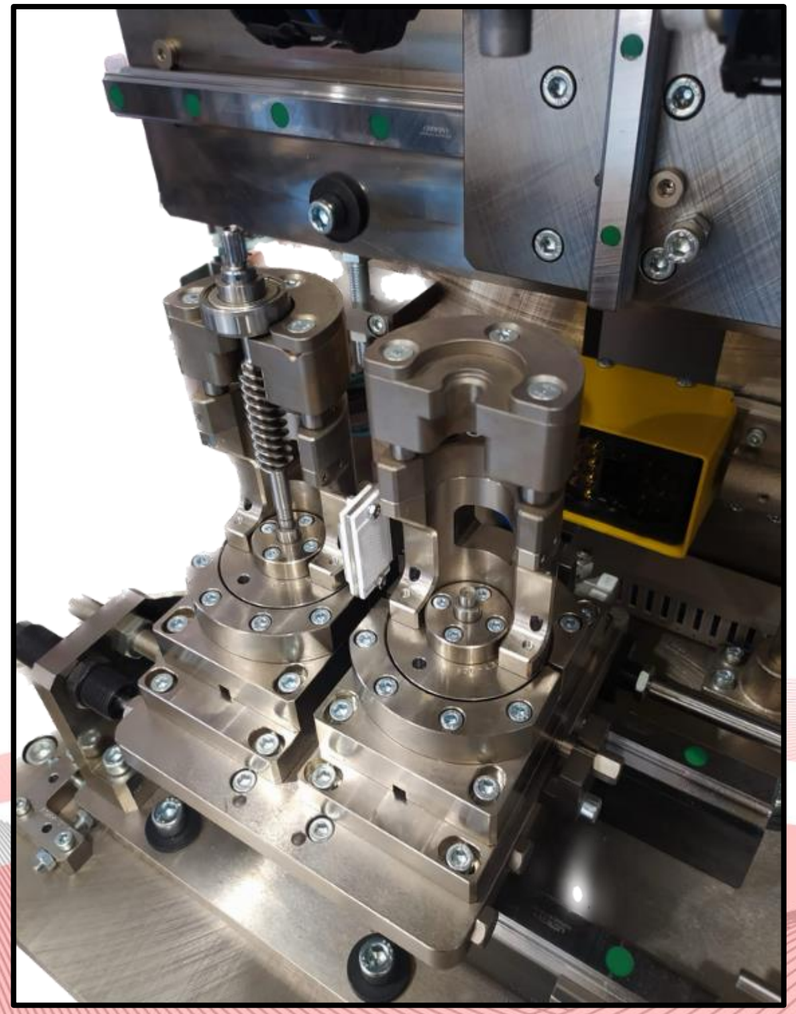
- Carbon steels
- Pre-treated steels
- Stainless steels
- Aluminum
- Technical plastics
- And others

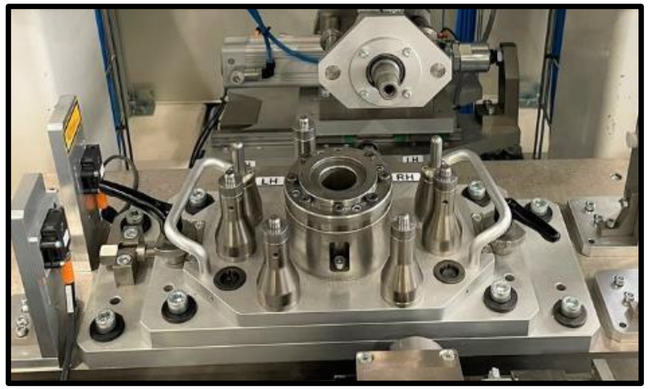




Tooling Manufacturing

Experts in the development of tooling projects, both in the design and manufacture, as well as in the assembly and dimensional control of these and their set-up at the customer's facilities.





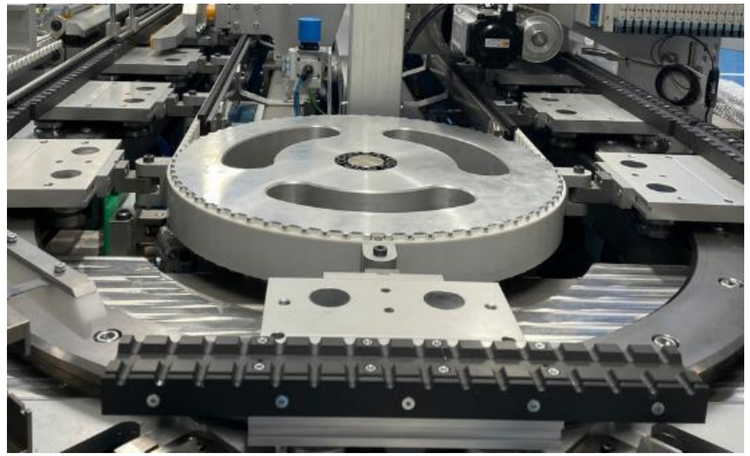
Tooling Manufacturing

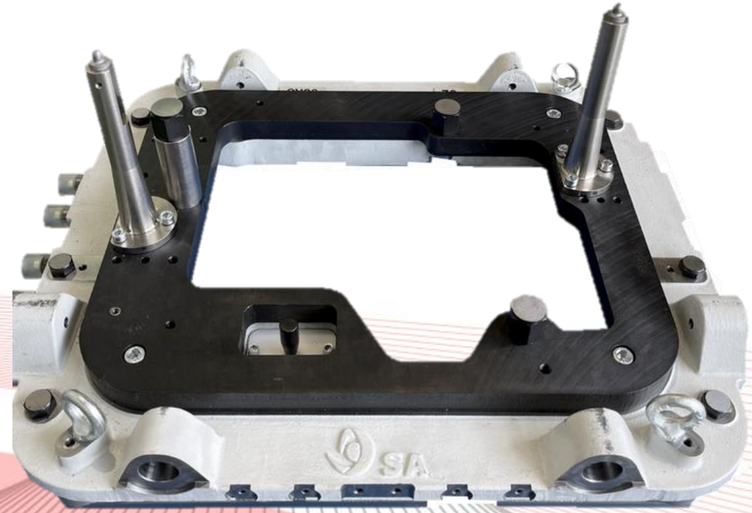
Assembly at AMSX centers

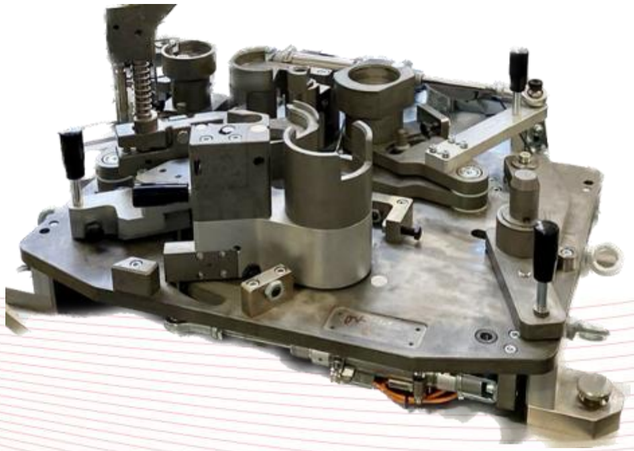
Implementation at the customer's facilities

AMSX has a long experience in manufacturing production equipment and machinery for others, with a team specialized in the realization of precision assemblies.

AMSX has technical specialists in mechanical and electrical for the realization of subassemblies assemblies.



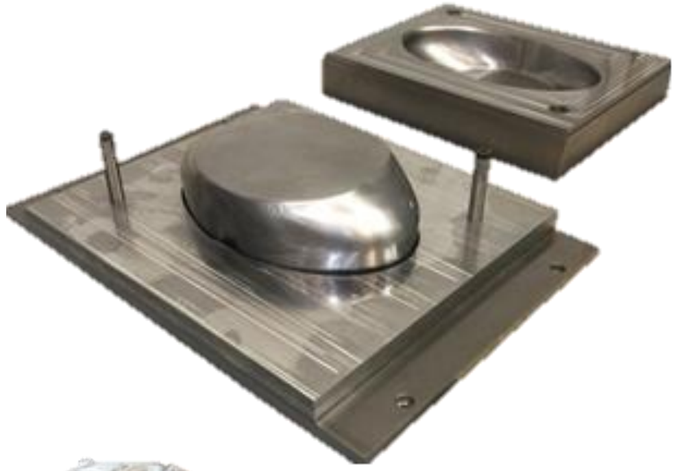




Aeronautic Tooling

AMSX offers comprehensive management of complex turn-key solutions.

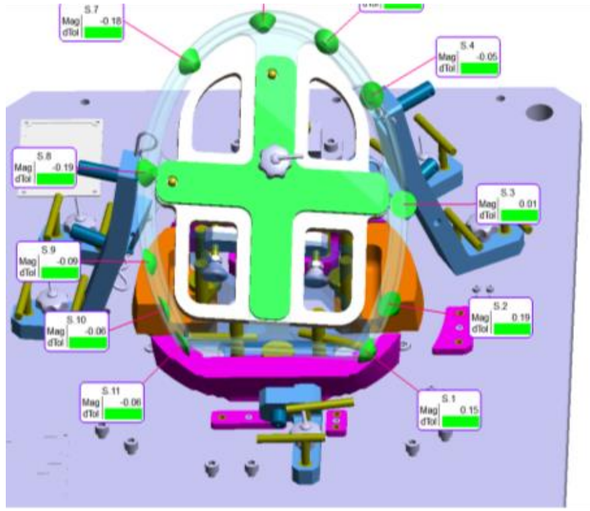
- Benders for Hydroforming Presses
- Autoclave bonding tools (PEAU)
- Welding tools (SDAG)
- Hot forming tools (CFCA, CFSP)
- Drilling and scribing jigs (TLPL, TRTL)
- Miscellaneous jigs (PLDF, PLAX, PLFQ, PLMK)
- Embossing tools (EMOO)
- Various gauges (CLPU, CLFA, CLCO)
- Numerical control milling tools (FRCN)
- Various supports (SPOO, SPFG)
- Drawing tools (ESCH, ESPE)

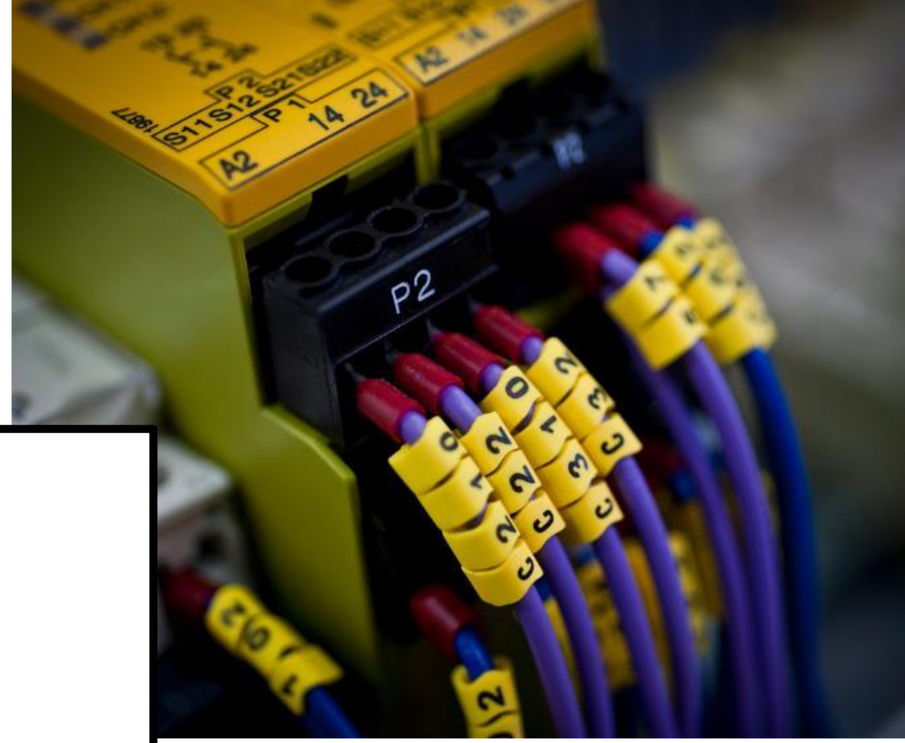


Verification

Strict control of the precision and tolerances of the production process.

- AMSX have inspection and three-dimensional measuring equipment for precise measurement and verification, with corresponding dimensional reports.
- Quality management system in accordance with international standards ISO 9100, ISO 14001 and ISO 9001.





DES

Digital & Energy Systems

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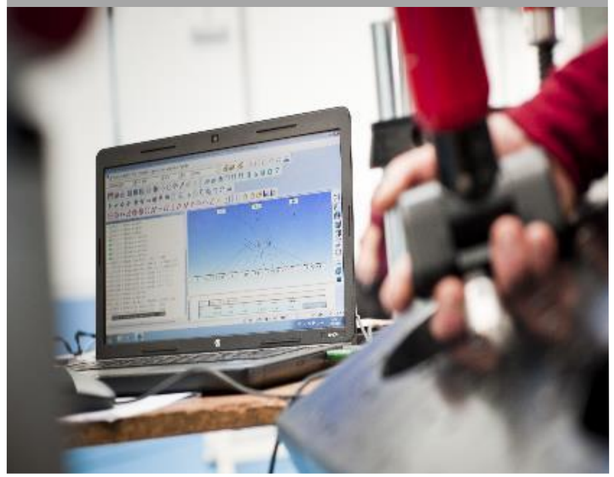
Electrical Cabinets

1. EPLAN Pro-Panel Designing / See Electrical

2. Programming, control, communication and HMI



3. Manufacturing by CNC machining systems

4. Distribution & Assembly

5. Verification and testing acc. to specificacions

6. Final Testing and Validation in Customer Site

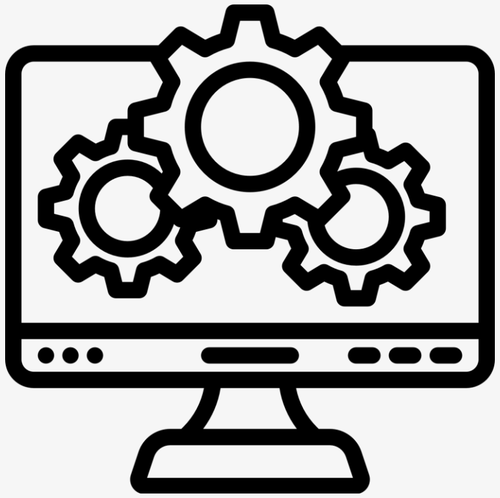
Electrical Cabinets

DES has the infrastructure and the means for the design and integral manufacture of electrical cabinets and its implementation in the customer's premises.

Electrical Cabinets

AMSX is an expert in the design and manufacture of electric cabinets

AMSX is certified for design, manufacture and certification under American UL standards, for the manufacture of ATEX certified cabinet and CE.

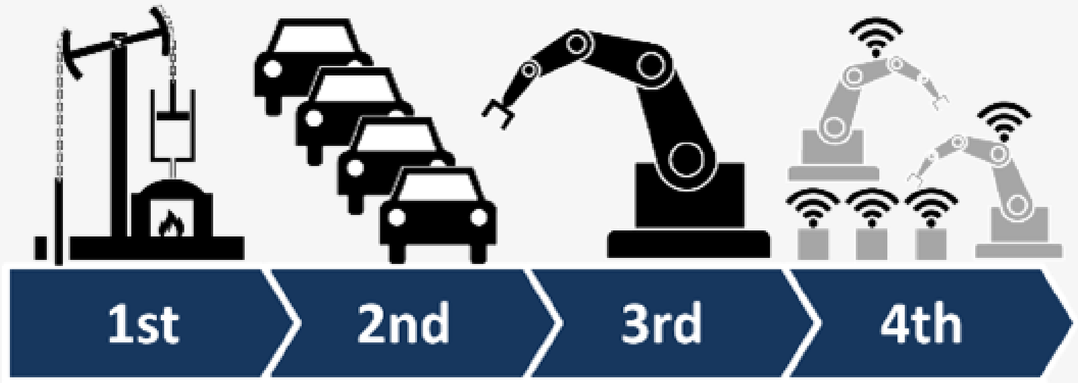


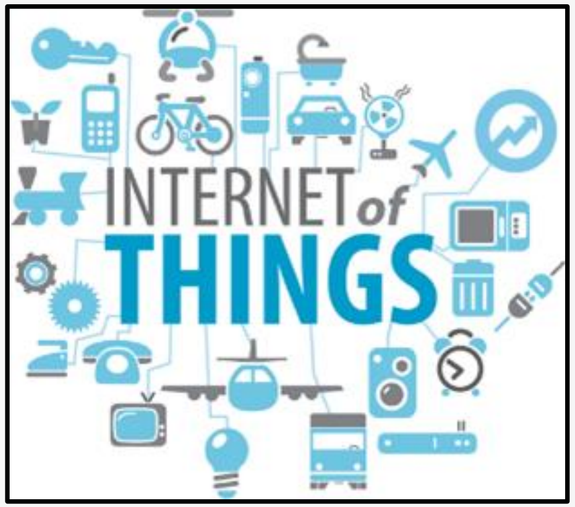
Flow Control 4.0

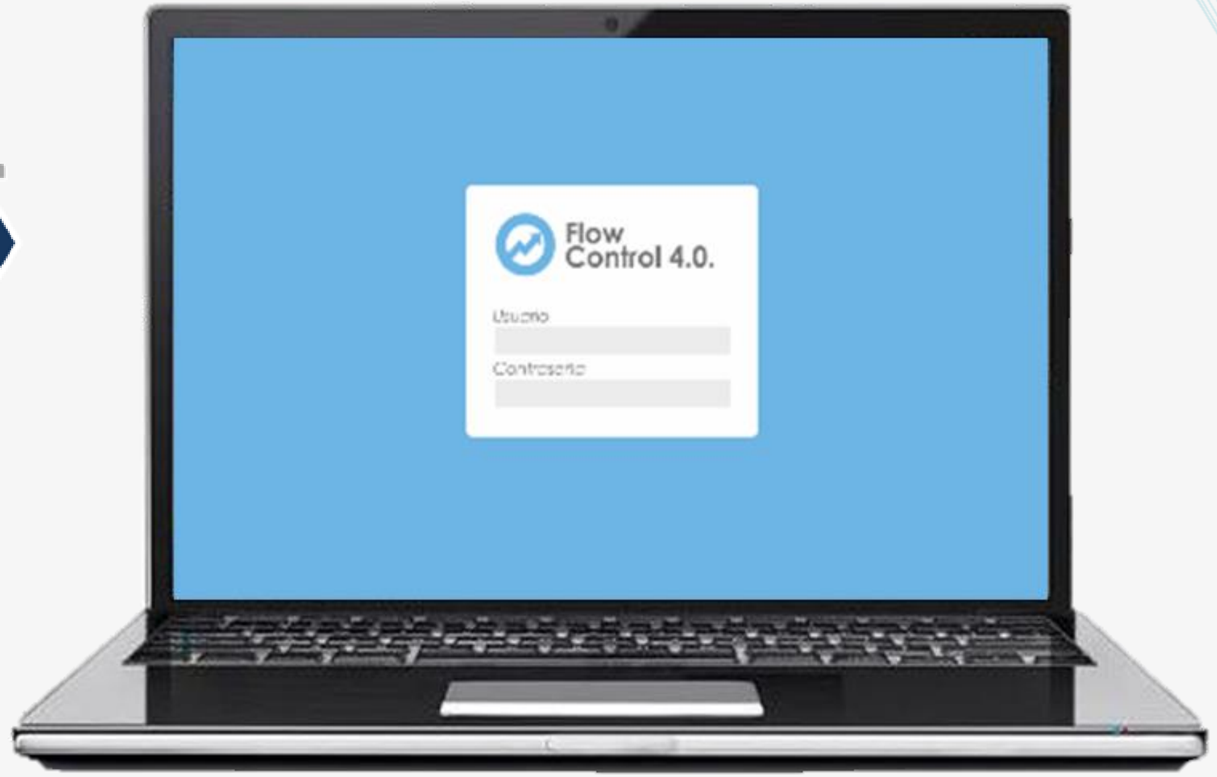
Flow Control 4.0

Software Development

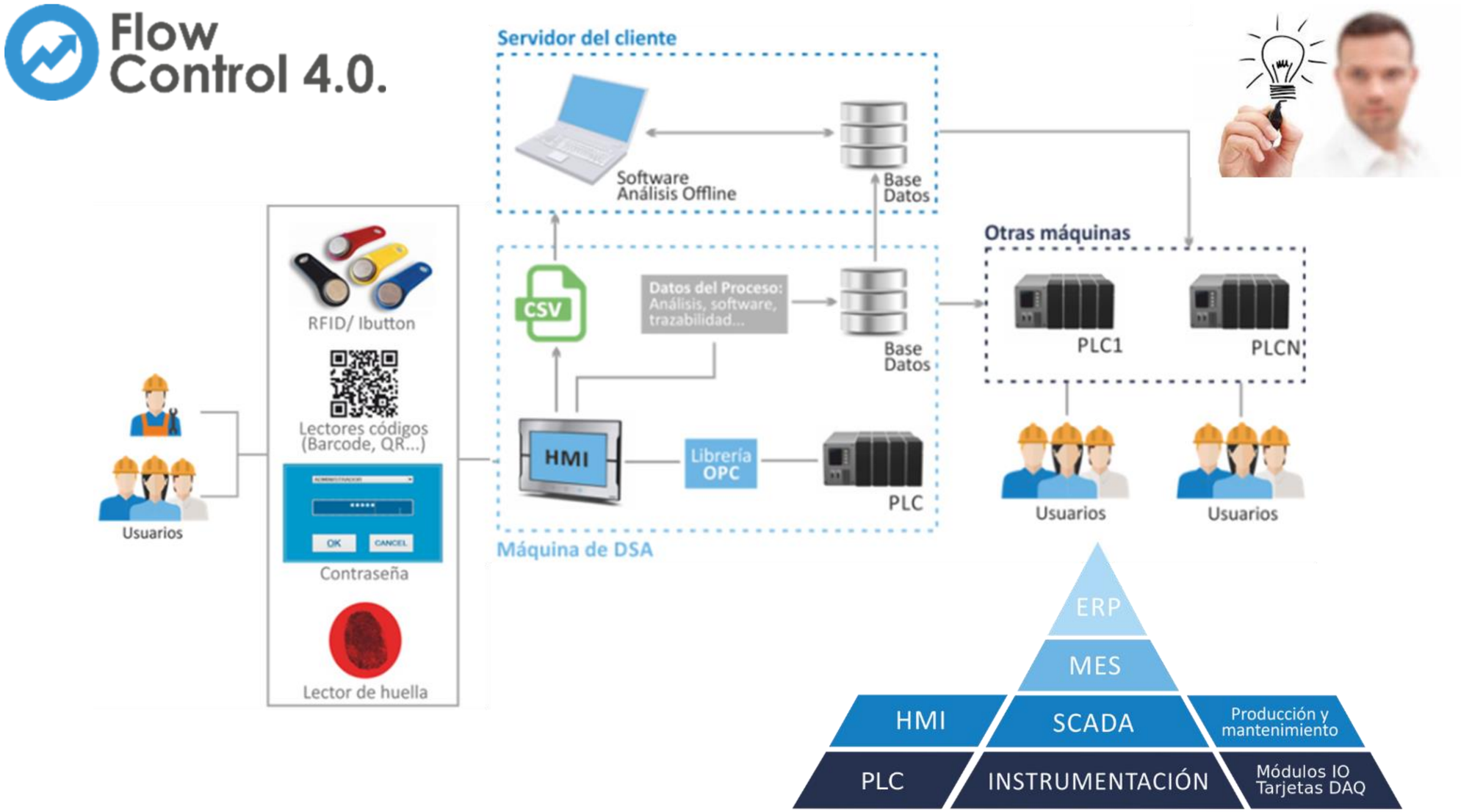
Flow Control 4.0







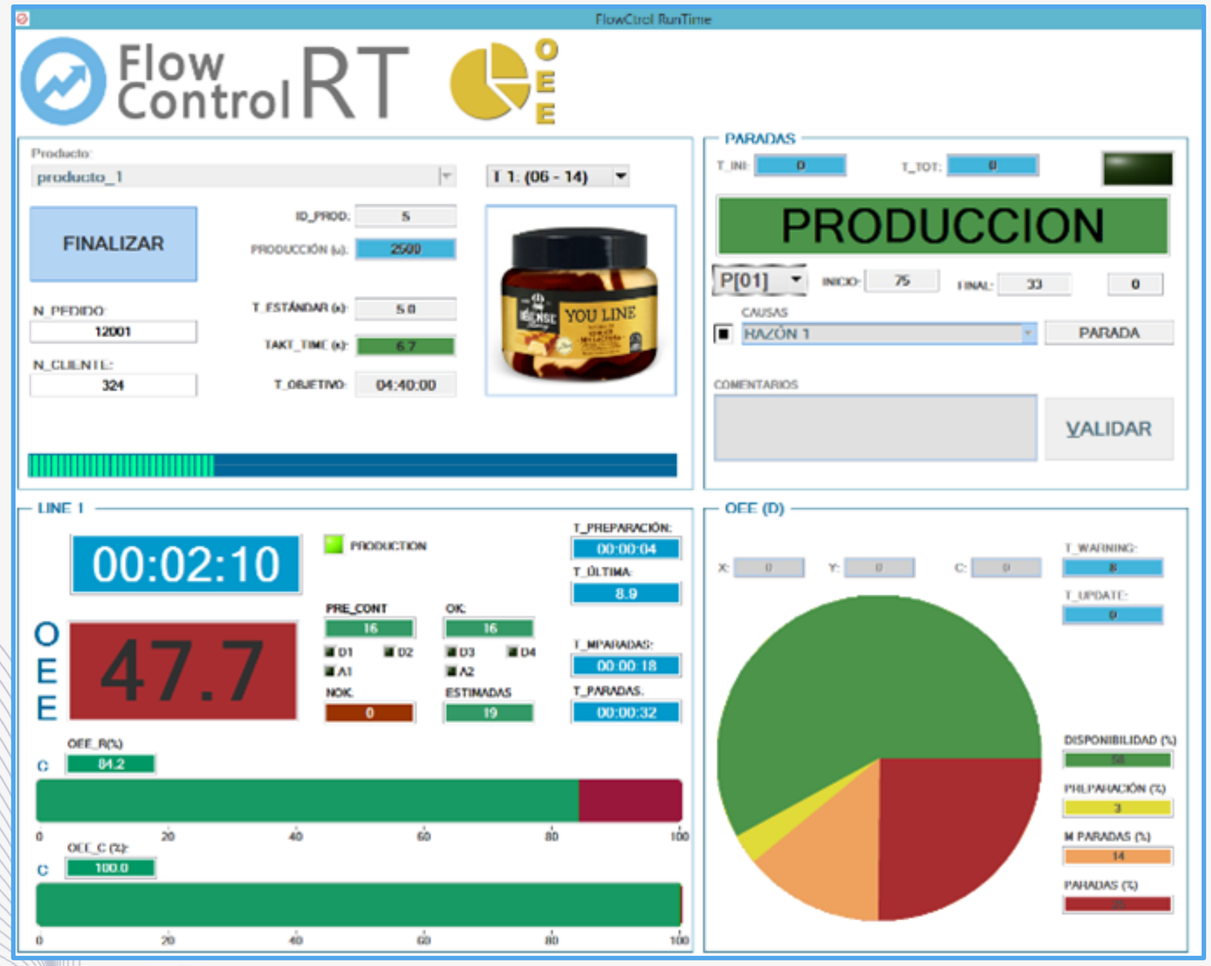
Integration Architecture



Tools

- Communication System
- Monitoring and Process Control
- Artificial Vision
- Report Making
- BB.DD. Management
- Users Management
- Traceability
- Productive Efficiency

Monitoring and Process Control



Availability

- Included in the cycle start
- Operator login HMI
- Selection of model to be produced
- Total quantity to be produced
- Lot quantity
- Start monitoring with ready machine
- Preparation time until first part Ok
- Machine time cycle
- Station defects (messages rescued from HMI)
- Waiting for operator load (time accumulator)
- Machine time stopped
- Machine in manual mode

Performance

- Monitors within availability parts made Vs cycle time

Quality

- Ok Vs Parts NOk Preparation time until first part OK

Run Time System Module

Real Time Values

- CPM modules deployed in the plan
- Connection to process PLCs through OPC libraries
- Duplication of signals in the field via hardware modules
- Data acquisition cards deployed as plan peripherals

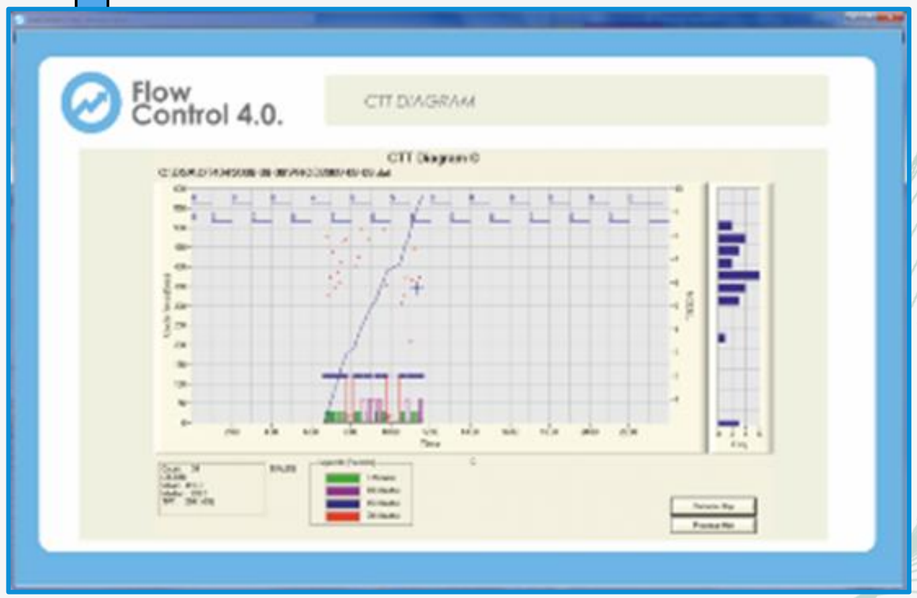
FlowControl 4.0's RTS module allows you to control a virtual machine state that provides services for the processes of programs running in the plant. This process virtualization is carried out through status screens where the different flows can be mapped as well as the real time value of the different virtualized variables.

Manufacturing Execution System

- The MES module of FlowControl 4.0. takes all variables to a database and processes those data.
- FlowControl can be integrated into run operation systems and ERP systems.
- Flowcontrol can be the system interface between ERP and plant control devices.

Transfer results to a multitude of formats and devices

Treatment of values for study and control



Pilot Project - Oxidation

Flow Control 4.0.

OPERATIONS

Load Operations.
Addition Operations.
Monitoring.
Control Operations.
Download Operations.

Standarization of the flow of operations

Data architecture

Flow Control 4.0

Field instruments

Muchas gracias

شكرا جزيلا

Bardzo dziękuję

太感謝了

どうもありがとう

Vielen Dank für Ihre Aufmerksamkeit

Merci beaucoup

Thank you very much