



LASE group

Labor Aiding Systems Europe

**TURNKEY SOLUTIONS
IN AUTOMATION FOR
THE AUTOMOTIVE INDUSTRY**





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WELCOME TO LASE

4

**TURNKEY AUTOMATION SUPPLIER
FOR THE AUTOMOTIVE INDUSTRY**



Since its start in 2001, LASE group has been known as an innovative automations company for the automotive industry. Our turnkey automation projects for OEM's as well as Tier I and II suppliers, are made especially for automotive interior systems, outside plastics, drivetrains & axles and fuel systems. We offer custom-made solutions for your automation needs, while keeping the production process at the centre of attention. At LASE group we manufacture your required production lines, automation systems and robot cells.

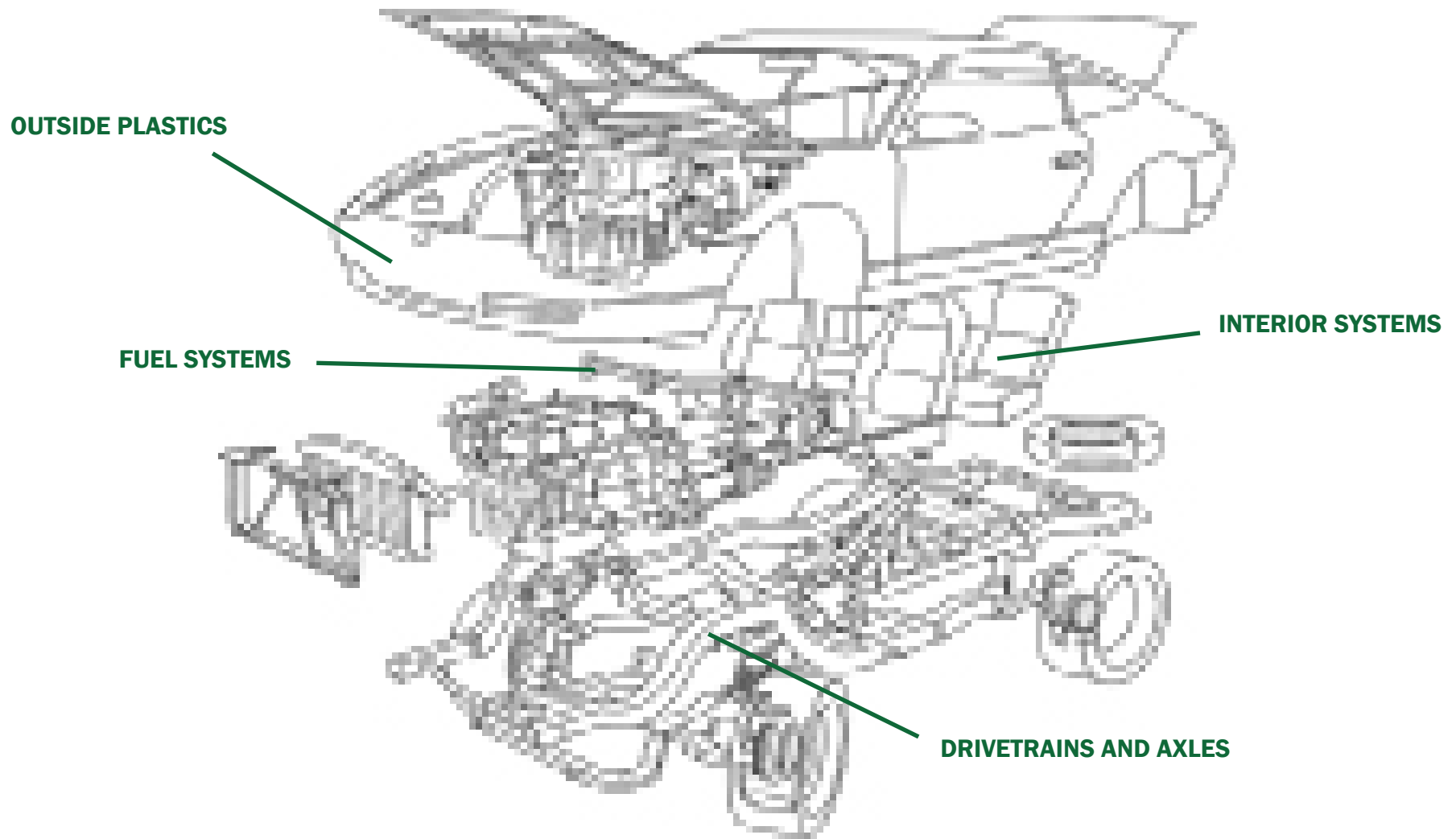
KNOWN THROUGHOUT THE WORLD



KNOWN THROUGHOUT THE WORLD

- **ONE PRODUCTION FACILITY IN BELGIUM**
- **MANY CLIENTS WORLDWIDE**
- **INSTALLATIONS IN DIFFERENT COUNTRIES**

CORE BUSINESS AUTOMATION FOR



CORE BUSINESS AUTOMATION FOR

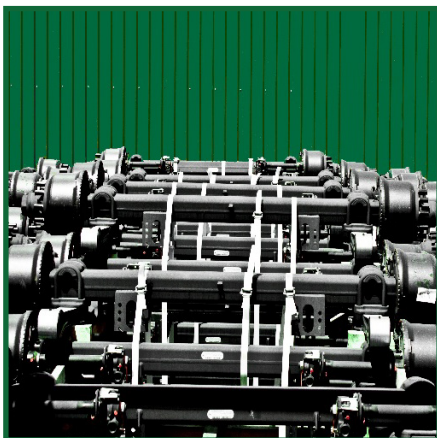
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**INTERIOR SYSTEMS**

- Seating systems
- Door panels
- Carpet
- IP systems

**OUTSIDE PLASTICS**

- Bumpers
- Spoilers
- Valances

**DRIVETRAINS AND AXLES**

- Assembly of drivetrains
- Front strut assembly
- Brakedisc/caliper assembly
- Front torsion bar assembly
- Steering gear assembly

**FUEL SYSTEMS**

- Pump assembly systems
- Leak testers
- Cooling moulds
- Strap assembly systems
- EOL testers

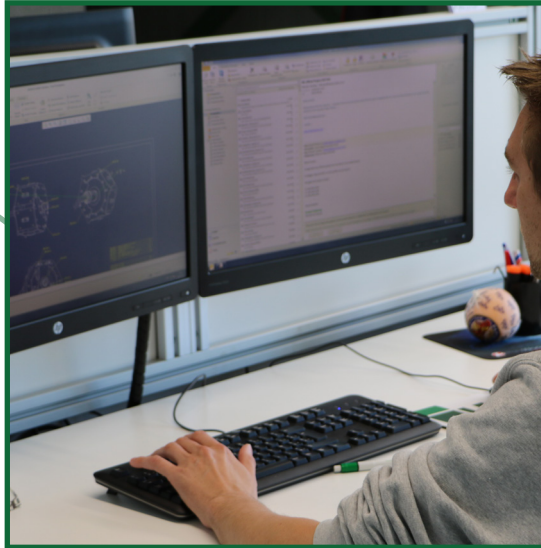
PROJECT FLOW

REQUIREMENT DEFINITION



First of all, we listen to your specific automation needs. We think along together with you to make your production line, your automation system, your robot cell as uncomplicated, ergonomically and user-friendly as possible.

DESIGN PROCESS



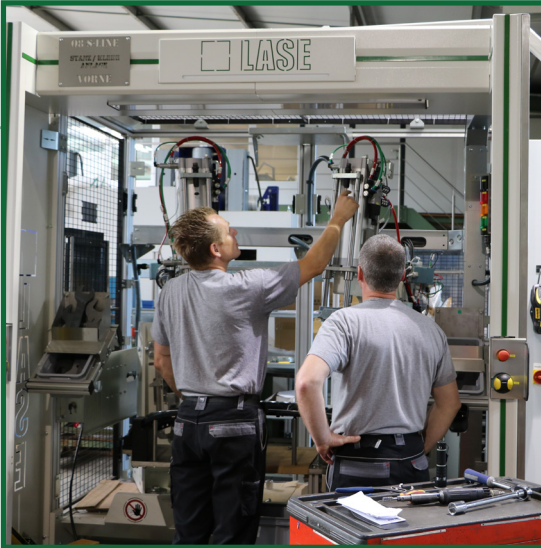
According to your requirements and the received CAD data, we design your installation in 3D.

PRODUCTION



Once our 3D design has been approved by you, we start producing all parts for your machine in-house thanks to our well-equipped toolshop.

ASSEMBLY



Based on the technical drawings, our assembly experts assemble all the produced parts into your automation machine.

QUALITY CONTROL



Thanks to our 3D scanner, we are able to check if our machine completely meets up with the requirements received from your CAD data. That way we are able to guarantee you an automation system where the car part fits in perfectly.

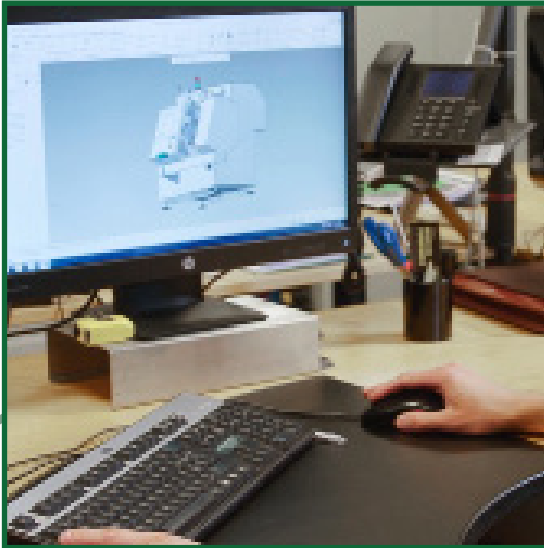
INSTALLATION, INTEGRATION AND TRAINING



When the installation is completely built and tested at LASE group, we transport the machine worldwide to your plant, we install it over there and we train your employees to work with it.

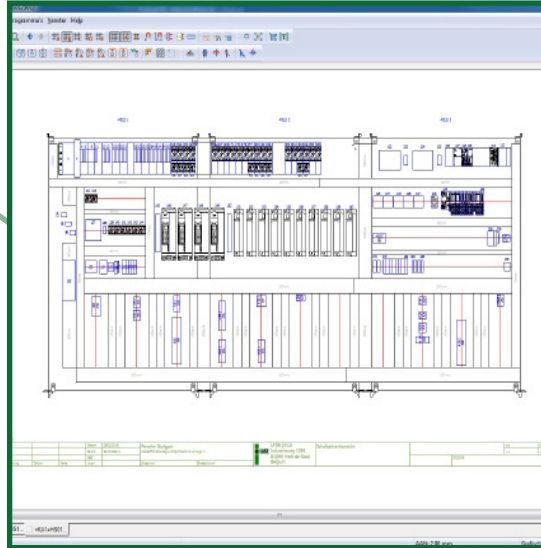
STUDY AND DESIGN

MECHANICAL ENGINEERING



- Mechanical design in 3D.
- Pneumatical scheme design.
- Writing machine manuals.
- Eight Creo CAD stations.

ELECTRICAL ENGINEERING



- Electrical scheme design.
- Choosing the right hardware components for machine automation.
- Two EPLAN stations.
- One SEE electrical station.

SOFTWARE AND CONTROLS



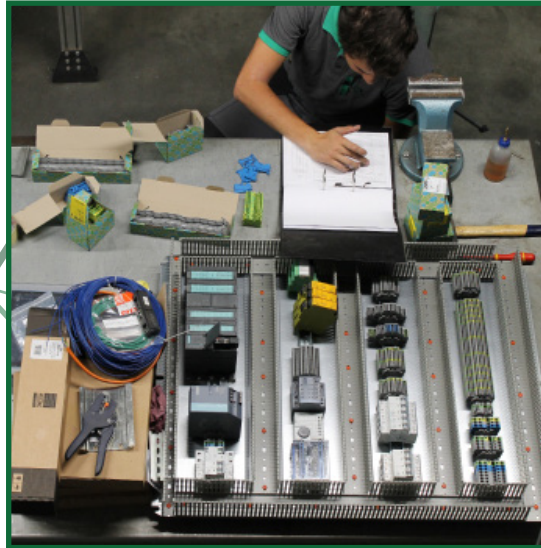
- PC and PLC programming.
- Robot integration: ABB, Fanuc, Kuka, Mitsubishi, Yaskawa.
- Programming in LASE group and on site with clients.
- Different PLC types: Siemens, Mitsubishi, SEW, Telemecanique, Omron, Allen Bradley, Phoenix, Wago.

PARTS PRODUCTION



- All in-house.
- Tool & die.
- Sheet metal.

PANEL BUILDING



- Building electrical enclosures according to electrical schemes.
- Building electrical components: grips, rails, cable trays, wiring and labeling.

ASSEMBLY



- Assembling machine parts into machine.

WELL EQUIPPED TOOLSHOP



WELL EQUIPPED TOOLSHOP

LASE group has a state-of-the-art toolshop at its disposal with the most diverse high-tech machines for CNC turning and milling, laser and waterjet cutting, sheet bending and more. At LASE group we can cut steel, aluminium, stone and wood up to 200 mm thickness. Even large parts are being coated in house.

This means that all parts of your automation system are manufactured in house, in a quality controlled environment. We do not subcontract work to third party companies and only integrate renowned standard components into our systems.

SHEET CUTTING



SHEET CUTTING

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	LVD MVS-E
Max. shearing capacity	45 kg/mm, max. 6 mm
Materials	mild steel aluminium steel stainless steel
Cutting length	3100 mm



SHEET BENDING



SHEET BENDING

DURMA AD-S 40220

Bending length

4000 mm

Bending force

220 ton



LASER CUTTING



LASER CUTTING

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	SUPER TURBO-X 510 MK II
Laser continuous rated output	2,5 kW
Max. cutting size	1500 x 3000 mm
Positioning accuracy (X, Y)	± 0,01 mm, 500 mm
Positioning accuracy (Z)	± 0,01 mm, 100 mm
Thickness	aluminium: 5 mm stainless steel: 8 mm construction steel: 20 mm



AUTOGENOUS AND PLASMA CUTTING



AUTOGENOUS AND PLASMA CUTTING

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MASTERCUT-X 6001.20PG

Working length	6000 mm
Working width	2500 mm
Pipe cutting	Ø 30 to 300 mm
Bidirectional repeatability	0,05 mm/m
Autogenous	30 to 150 mm
Plasma	2 to 50 mm



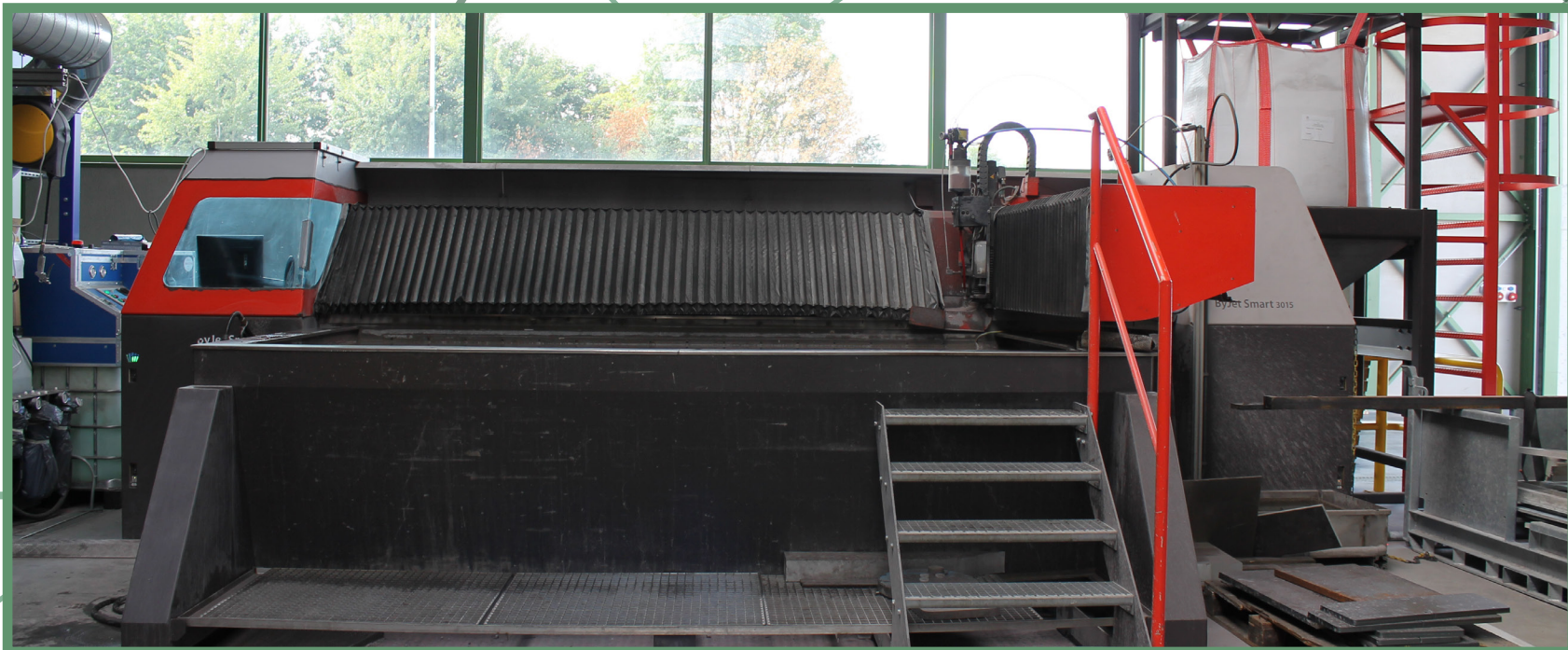
WATERJET CUTTING



WATERJET CUTTING

25

	BYJET SMART 3015
Cutting area	1500 x 3000 mm
Cutting thickness	1 to 200 mm
Materials	aluminium, plastics, stainless steel, high grade steel alloy, wood and stone
Pump motor	36 HP
Pump pressure	3600 bar



SURFACE BRUSHING



SURFACE BRUSHING

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TIMESAVERS 42 RB RANGE

Machine widths	1350 mm
Number of brushes	8
Bed opening	0 to 100 mm
Feed speed	0,6 to 8 m/min
Main drive motor	up to 30 kW
Max. radius on part	2 mm



WELDING



WELDING TABLES

4000 x 2500 mm

3000 x 2000 mm

2400 x 1200 mm

5 x MIG WELDING DEVICES

welding steel

construction steel

up to 450 A

3 x TIG WELDING DEVICES

welding aluminium,

stainless steel,

high grade steel alloy

up to 400 A



METAL COATING



METAL COATING

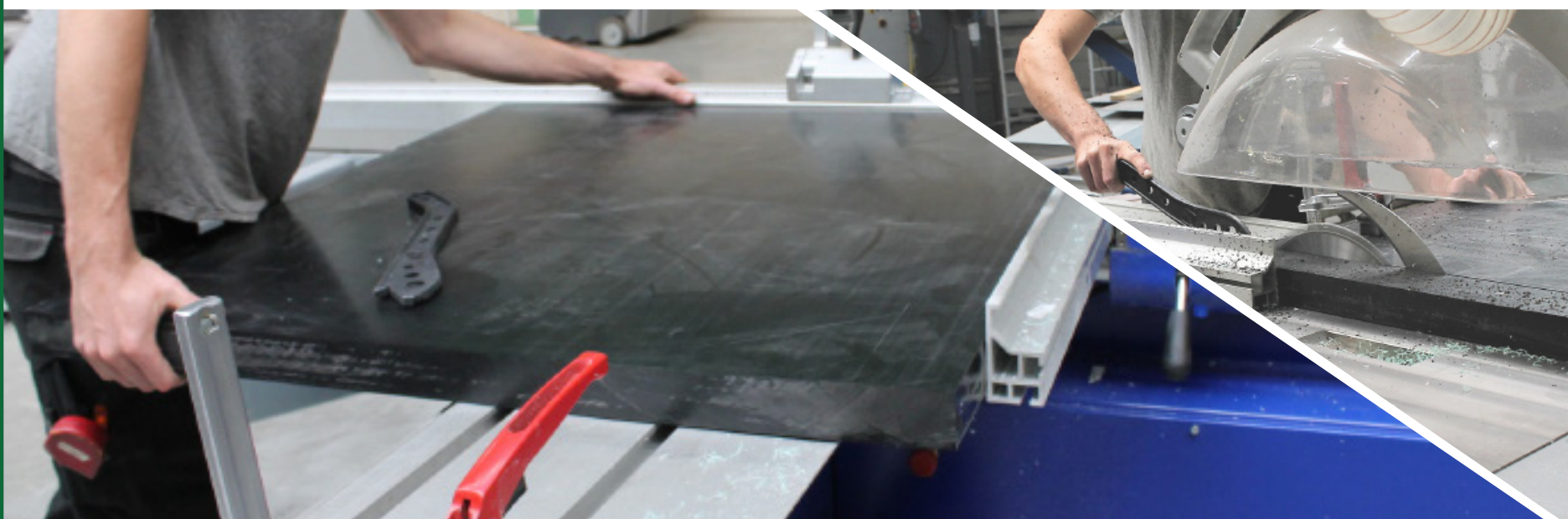
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COATING BOOTH

Area 5000 x 10000 mm
Materials metal parts and assembled products



SHEET SAWING



SHEET SAWING

33

FORMAT 4 KAPPA 550

Motor	10 kW
Sawing size	1500 x 3000 mm
Sawing height	max. 202 mm
Soft materials	aluminium, EPP foam, plastics, SIKA block and wood



PROFILE AND STEEL SAWING



PROFILE AND STEEL SAWING

35

	2 x FMB PEGASUS	KALTENBACH SKL 450E
Cut ability	500 x 320 mm, Ø 320 mm	Ø 160 mm
Materials	all	non ferrous metals, Bosch-item profiles



DRILLING/TAPPING



DRILLING/TAPPING

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	CMA	BENCH AND COLUMN TYPE DRILLING MACHINES	RADIANT DRILLING MACHINE
Capacity	M2 to M32	Ø 1 to 40 mm	Ø 1 to 32 mm
Speed	140 to 500 rpm	37 to 3600 rpm	up to 3200 rpm



CNC MILLING



Mazak
VTC-800/305A

CNC MILLING

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	2 x MAZAK VCN 530C 4 x MAZAK VCN 510C	1 x MAZAK VTC 800/30SR	1 x MAZAK VTC 300
Travel (X, Y, Z)	1050, 530, 510 mm	3000, 800, 720 mm	1760, 760, 700 mm
Spindle	12000 rpm	18000 rpm	12000 rpm
Tool storage capacity	30	48	30



CNC TURNING



CNC TURNING

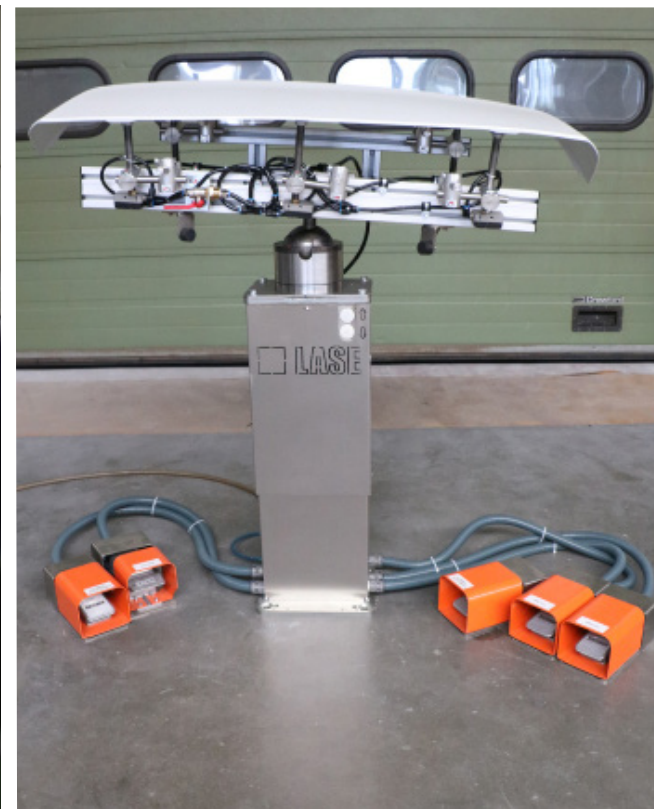
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MAZAK NEXUS 250-II M

Universal	1000 U
Max. machining diameter	Ø 450 mm
Max. machining length	1047 mm
Spindle	5000 rpm
Tool storage capacity	12



ASSEMBLY AREA



ASSEMBLY AREA

LASE group also has a whole area where we assemble all the produced parts from our toolshop into your requested automation machine. Once your system has been built and tested in-house, it is delivered to your plant, anywhere around the world. All our turnkey solutions are ready to use (plug and play) and manufactured to the highest quality standards.

Our specialists will arrive on site to set up the system and train your staff thoroughly and effectively.

3D SCANNING



FARO DESIGN SCANARM

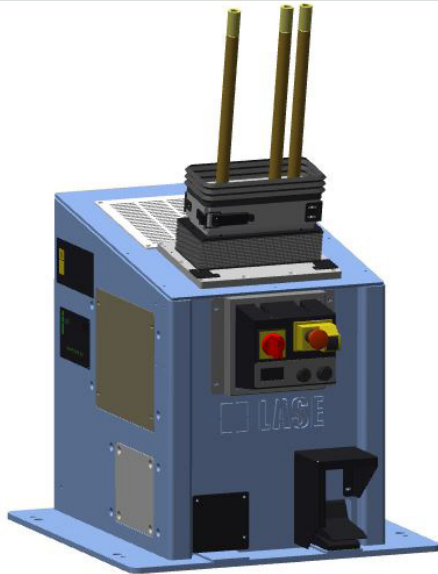
Workload	1,8 to 3,7 m
Precision	0,024 to 0,064 mm
Frame rate	600000 points per second
Software	PolyWorks



INTERIOR SYSTEMS SEATING SYSTEMS

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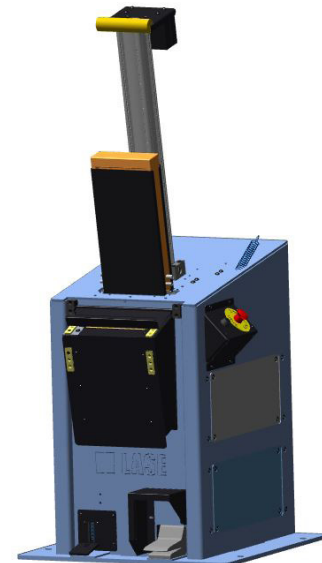
VACUUM HEADREST FIXTURES



- Standard column fixture.
- Functions with foot pedals (vacuum on/off, up/down).
- Bagless and polybag systems.
- Product specific details.
- Various options.

HEADREST/ARMREST CHUTE STUFFERS

- Standard column fixture.
- Functions with foot pedals (clamp/unclamp, up/down).
- Product specific chutes.
- Various options.



SEATING SYSTEMS INTERIOR SYSTEMS

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COLUMN WITH BALL JOINTS



- Standard column fixture.
- Functions with foot pedals (clamp/unclamp, rotate and tilt, up/down).
- Product specific details.
- Various options: rotation, tilt, height adjustment, quick change details, knee joint pivot.

- Standard column fixture.
- Functions with foot pedals (clamp/unclamp, rotate and tilt, up/down).
- Product specific details.
- Various options: rotation, tilt, height adjustment, quick change details, knee joint pivot.

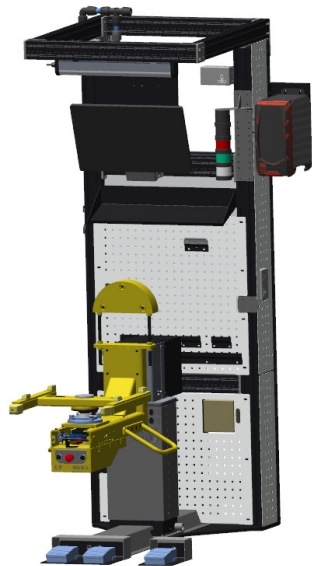
ISLAND FIXTURES



INTERIOR SYSTEMS SEATING SYSTEMS

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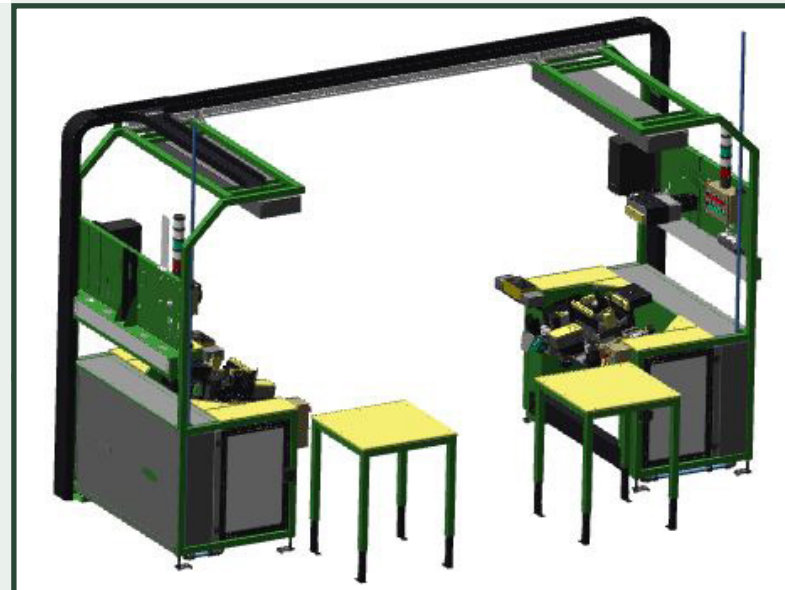
SP 200



- Standard column fixture.
- L-frame with H product detail.
- Functions with foot pedals (clamp/unclamp, rotate and tilt, up/down).
- Product specific details.
- Various options.

- Standard box structure fixture.
- Table top detail.
- Assembly of springs, airbag, hinges, locks, retractors, spring matts, motors, etc.
- Product specific details.
- Various options.

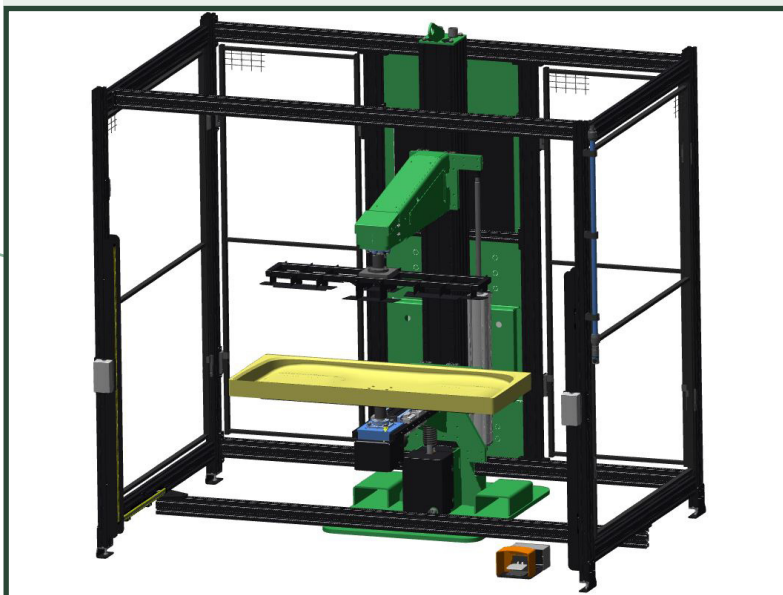
METAL ASSEMBLY FIXTURES



SEATING SYSTEMS INTERIOR SYSTEMS

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COMPRESSION FIXTURES



- Standard column fixture.
- Large double L-Frame structure with bent stainless steel product detail.
- Functions with foot pedals (press, rotate, up/down).
- Product specific details.
- Various options.

- Standard L-frame fixture.
- Stanchion system to hold covers.
- Front seat back assembly only.
- Functions with foot pedal and 2HC (rotate, up/down).
- Product specific details.
- Various options.

SKINNING FIXTURES (OFF- AND ONLINE)



INTERIOR SYSTEMS SEATING SYSTEMS

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SEATING ASSEMBLY LINES



- Standard power and free conveyor with stoppers.
- Over/under or single level oval layouts.
- Transfer, lifts, test systems integrated.
- Overhead system with source feeds.
- Automated handling at the end of the line.
- Various options.

END OF LINE TEST STATIONS

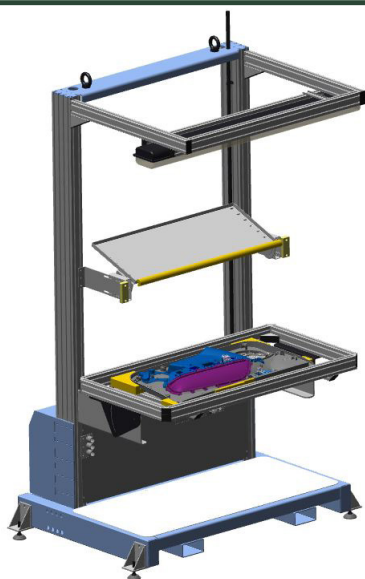


- Standard online electrical and functional test station.
- Various test cycles and functions capable.
- Standard multi connector attached to ECU test connector.
- With lift out in station.
- Various options.

INTERIOR TRIM INTERIOR SYSTEMS

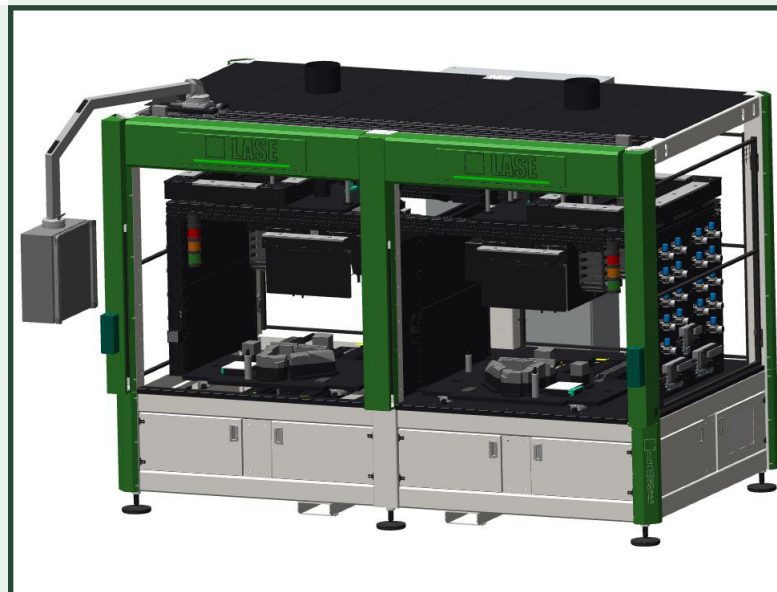
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ASSEMBLY FIXTURES



- Standard column fixture.
- Functions with foot pedals (clamp/unclamp, rotate and tilt, up/down).
- Product specific details.
- Various options.

WELDING FIXTURES



- Standard automated weld machine.
- Standard frame with all system integrated.
- Vacuum and pneumatic clamping.
- Dynamic detail table with integrated welding
- Precision made US parts and equipment (Weber US).

INTERIOR SYSTEMS INTERIOR TRIM

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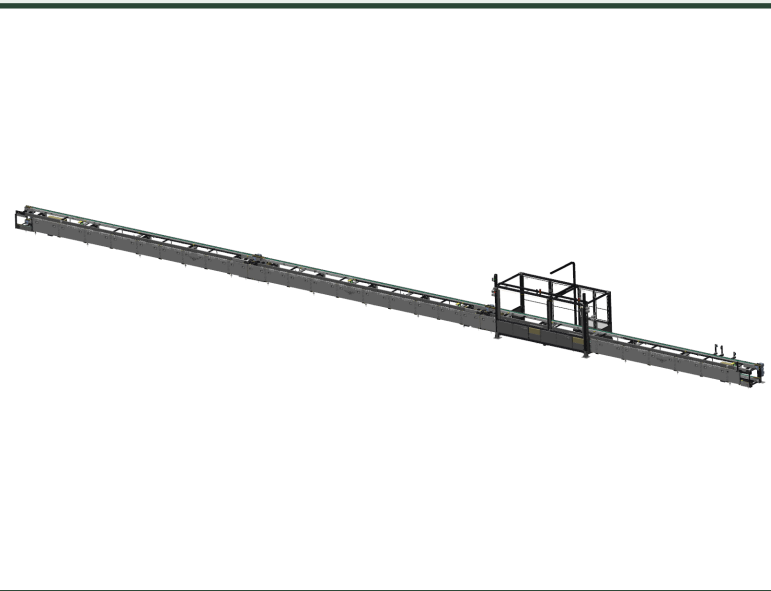
WELDING LINES



- Standard power and free conveyor with stoppers.
- Single level oval layout.
- Transfer, test systems integrated.
- Overhead system with source feeds.
- Robotic welding with up to three robots in series.
- Precision made US parts and equipment (Weber US).
- Various options.
- Automated handling at the end of the line.

END OF LINE TEST STATIONS (OFF- AND ONLINE)

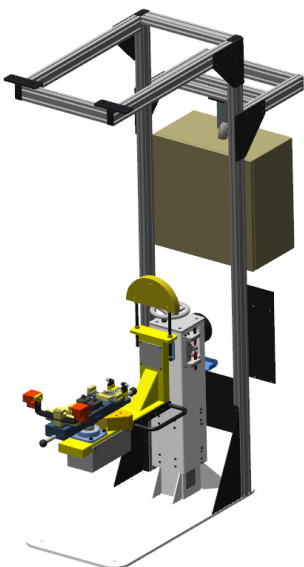
- Standard electrical and functional test station.
- Various test cycles and functions capable.
- Standard multi connector attached to ECU test connector.
- Passive and active test cycles possible.
- Various options.



INSTRUMENT PANELS INTERIOR SYSTEMS

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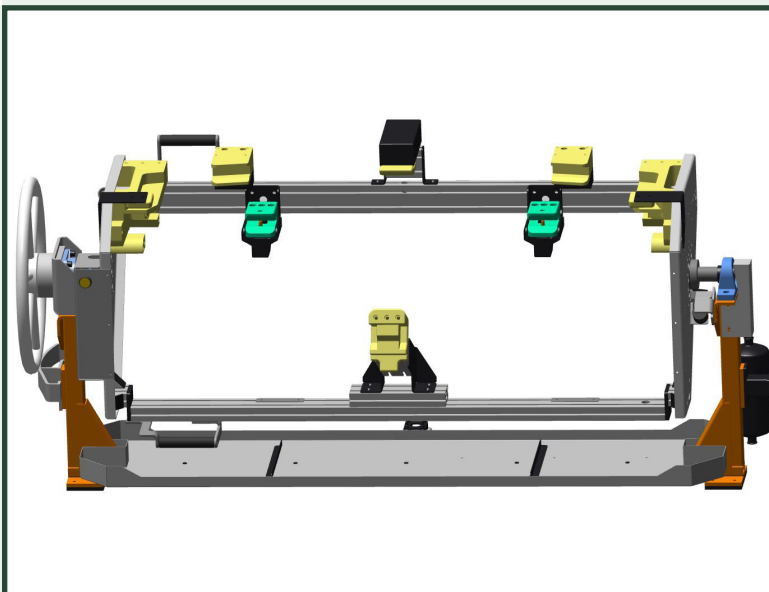
ASSEMBLY FIXTURES



- Standard column fixture.
- Functions with foot pedals (clamp/unclamp, rotate and tilt, up/down).
- Product specific details.
- Various options.

- Standard power and free conveyor with stoppers.
- Over/under, monorail, or single level oval layouts possible.
- Transfer, lifts, test systems integrated.
- Overhead system with source feeds.
- Automated handling at the end of the line.
- Various options.

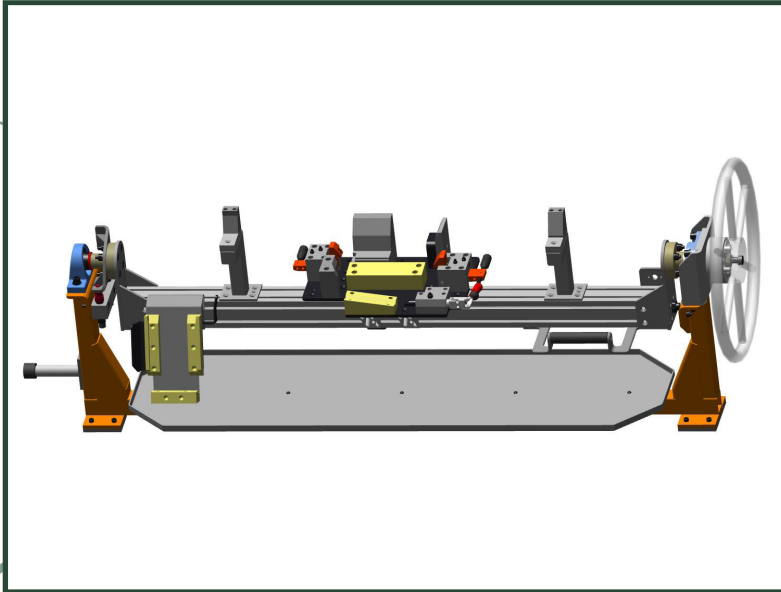
ASSEMBLY LINES



INTERIOR SYSTEMS INSTRUMENT PANELS

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SUBASSEMBLY LINES



a. Steering column line

- Standard power and free conveyor with stoppers.
- Over/under, monorail, or single level oval layouts possible.
- Transfer, lifts, test systems integrated.
- Overhead system with source feeds.
- Automated handling at the end of the line.
- Various options.

b. HVAC line

- Standard power and free conveyor with stoppers.
- Over/under, monorail, or single level oval layouts possible.
- Transfer, lifts, test systems integrated.
- Overhead system with source feeds.
- Automated handling at the end of the line.
- Various options.

- Standard electrical and functional test station.
- Various test cycles and functions capable.
- Standard multi connector attached to ECU test connector.
- Passive and active test cycles possible.
- Various options.

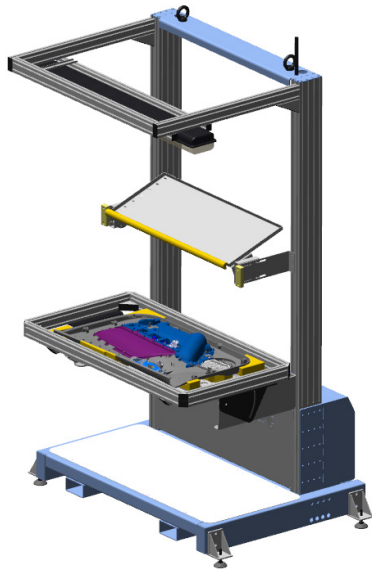
END OF LINE TEST STATIONS (OFF- AND ONLINE)



OTHERS INTERIOR SYSTEMS

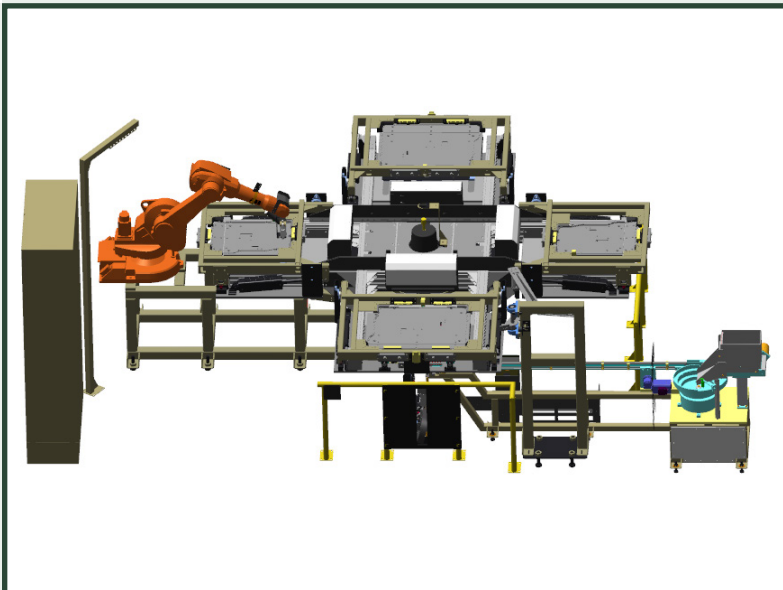
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HEADLINE ASSEMBLY FIXTURES



- Standard automated headline assembly system.
- Standard frame with all systems integrated.
- Vacuum and pneumatic clamping.
- Dynamic detail table with integrated glueing.
- Various test functions and poka yokes.
- Integrated transfer system with lift out option.
- Various options.

CARPET ASSEMBLY FIXTURES

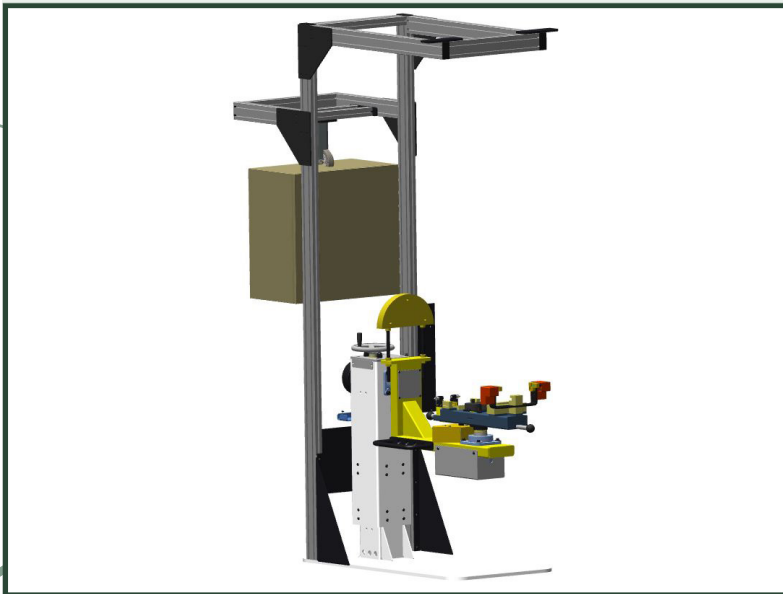


- Standard automated carpet assembly system.
- Standard frame with all systems integrated.
- Vacuum and pneumatic clamping.
- Dynamic detail table with integrated automated assembly units.
- Various test functions and poka yokes.
- Integrated transfer system with lift out option.
- Various options.

INTERIOR SYSTEMS OTHERS

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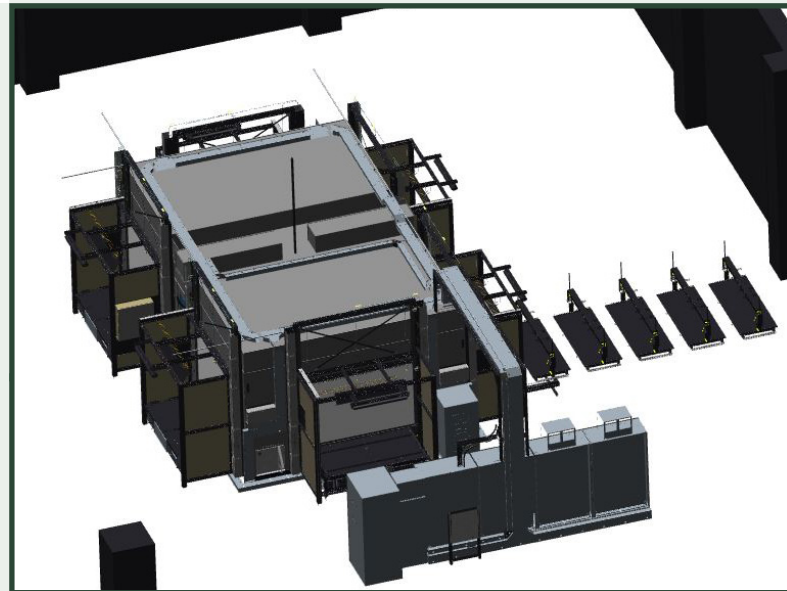
CONSOLE ASSEMBLY FIXTURES



- Standard column fixture.
- Functions with foot pedals (clamp/unclamp, rotate and tilt, up/down).
- Product specific details.
- Various options.

AUTOMATED SPRAY BOOTHS

- Standard automated robotic glueing cell.
- Completely enclosed system with up to six load stations.
- Glue mixing unit with Graco pump based system.
- Standard paint robot with spray nozzle.
- Fume extraction units for all ATEX levels.
- Completely teflon coated cell on inside.
- Various options.



OTHERS INTERIOR SYSTEMS

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MASKING FIXTURES



- Standard product detail holding fixtures with masking covers.
- 3D milled surfaces, Teflon coated.
- Pivot arm with standard base carrier to allow quick exchange.
- Also available as back up solution where trolley is used as base.

- Standard glue cell masking details and carriers.
- Product specific details with integrated cover masks.
- All parts 3D milled out of aluminium or steel.
- All detail parts are teflon coated.

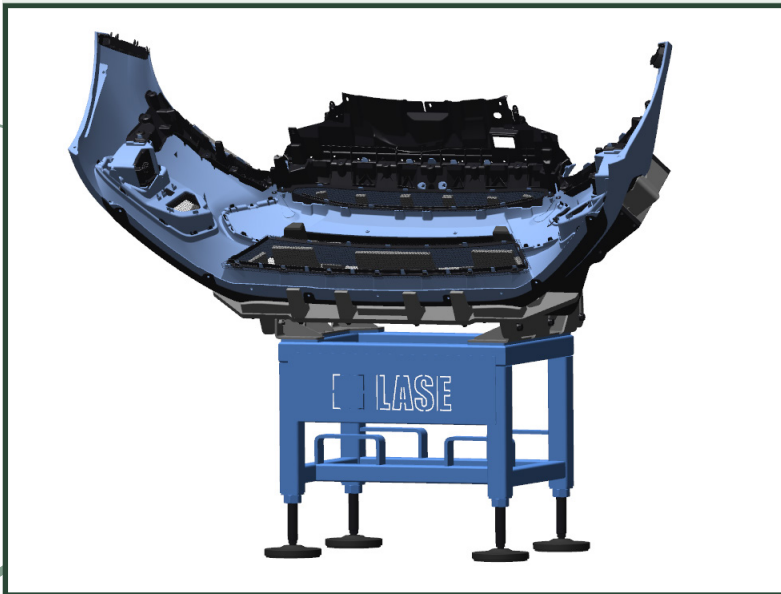
MASKING CARRIERS



OUTSIDE PLASTICS BUMPERS, SPOILERS AND VALANCES

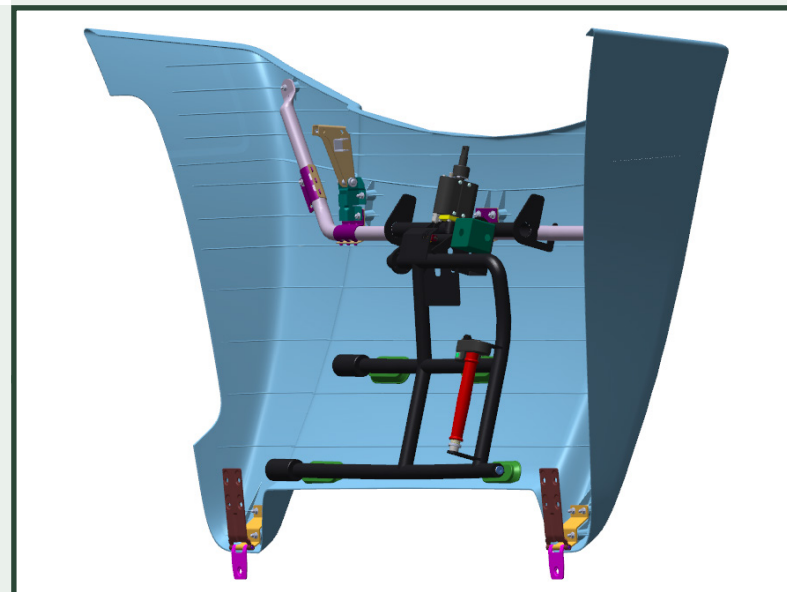
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BUMPER ASSEMBLY FIXTURES



- Standard manual assembly fixture for bumpers.
- For inside or outside assembly.
- Standard base frame with height adjustable feet.
- Holding detail with multiple, adjustable holding pads and blocks.
- Quick exchange detail as an option.

MANUAL ASSEMBLY FIXTURES

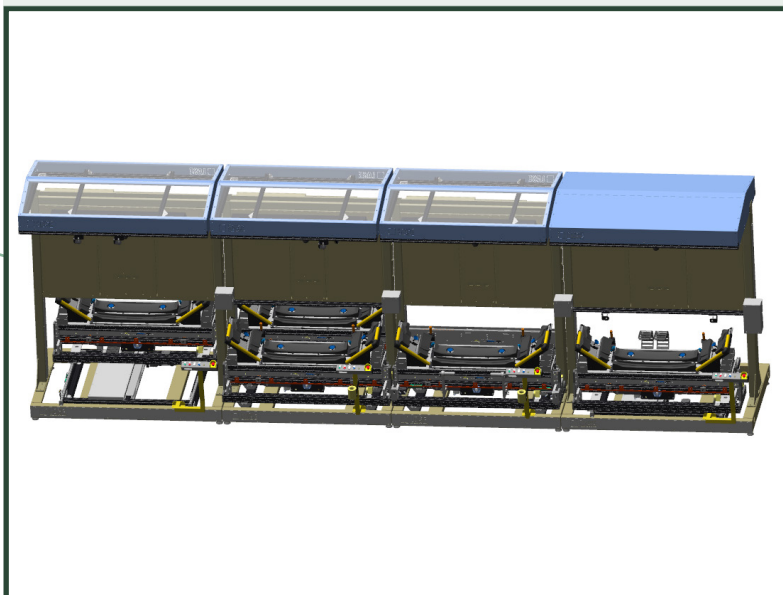


- Standard column fixture available for all plastic car parts.
- Functions with foot pedals (rotation, clamping, tilt).
- Product specific details for A or B surface.
- Various options.

OUTSIDE PLASTICS BUMPERS, SPOILERS AND VALANCES

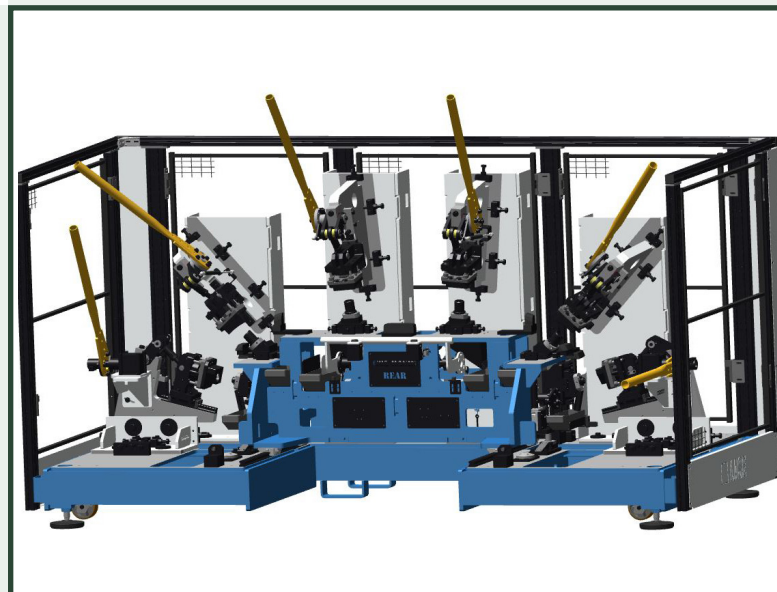
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BUMPER ASSEMBLY LINES



- Standard monorail conveyor system with carriers and modules.
- System has high flexibility and expandability due to individual modules which are combined to create line.
- Carriers to have common details for variants with option on quick exchange blocks to expand on variants.
- Each module to include conveyor section, stopper, OPD screen, network connection via ET200 CPU module, valve block and Profinet modules.
- Amount of stations to be defined by process and product.

MANUAL PUNCH FIXTURES

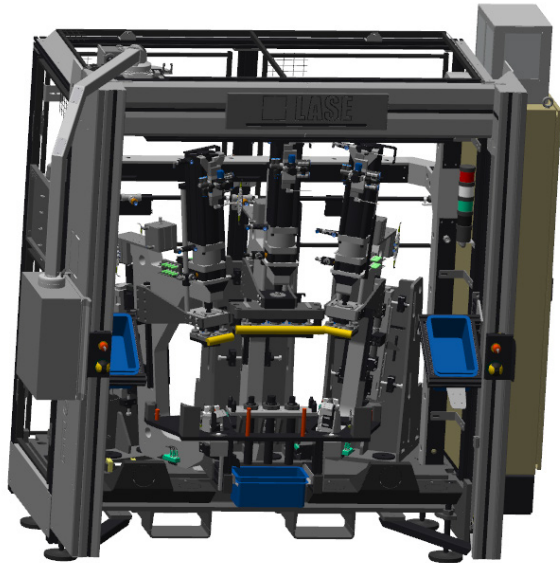


- Lever action manual punching.
- Hydraulic punching with hand pump.
- Punch C-frames and detail table with dies.
- Various setups possible.
- Low force, ergonomic.
- High repeatability.
- Low cost solution for low volume production.

OUTSIDE PLASTICS BUMPERS, SPOILERS AND VALANCES

60

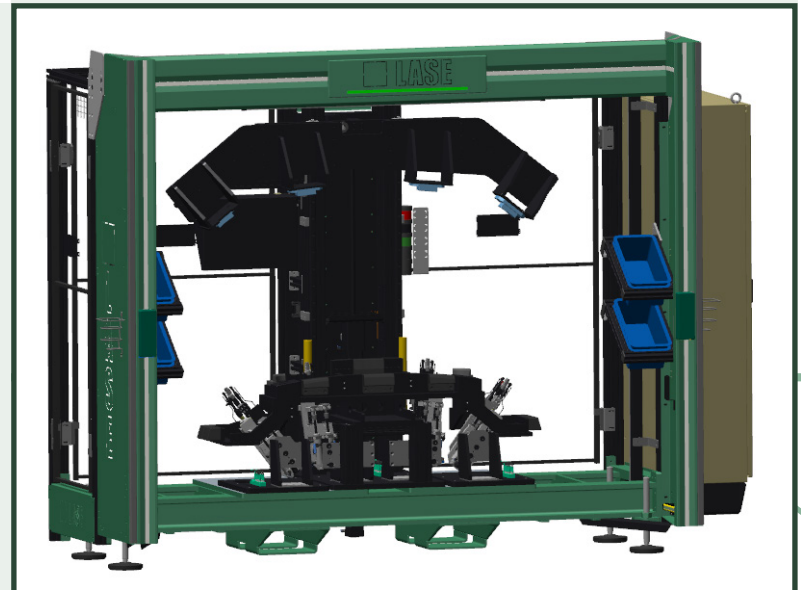
AUTOMATIC PUNCH/GLUEING FIXTURES



- Standard automated punch and glue machine.
- Standard frame with all systems integrated.
- Vacuum and pneumatic clamping.
- C-frames with punch and die.
- Dynamic detail table with integrated glueing.
- Punch and glue in one shot.

AUTOMATIC US WELDING FIXTURES

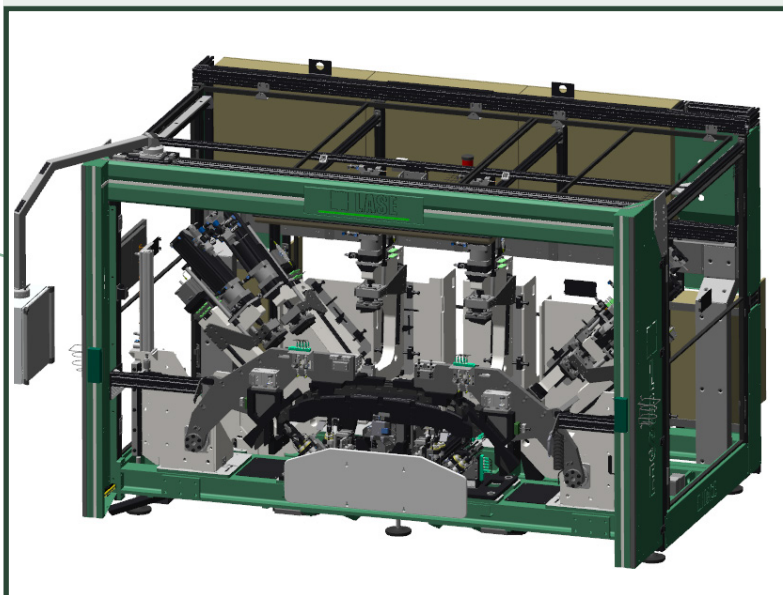
- Standard automated welding machine.
- Standard frame with all systems integrated.
- Vacuum and pneumatic clamping.
- Dynamic detail table with integrated welding.
- Precision made US parts and equipment (Weber 35 kHz US technology).
- 3D sonotrodes made out of Titanium.



OUTSIDE PLASTICS BUMPERS, SPOILERS AND VALANCES

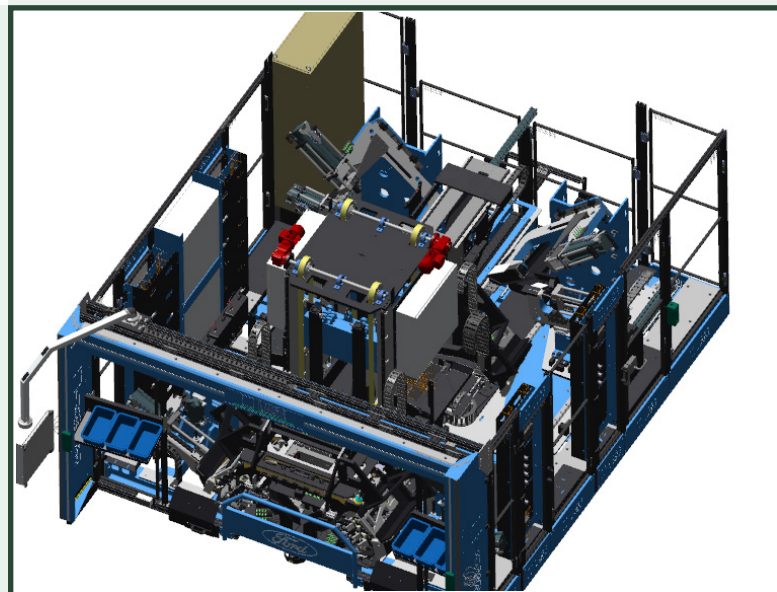
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AUTOMATIC PUNCH/US WELDING FIXTURES



- Standard automated punch and welding machine.
- Standard frame with all systems integrated.
- Vacuum and pneumatic clamping.
- C-frames with punch and die.
- Dynamic detail table with integrated welding.
- Precision made US parts and equipment (Weber 35 kHz US technology).

AUTOMATIC PUNCH/WELDING FIXTURES WITH TURNTABLE

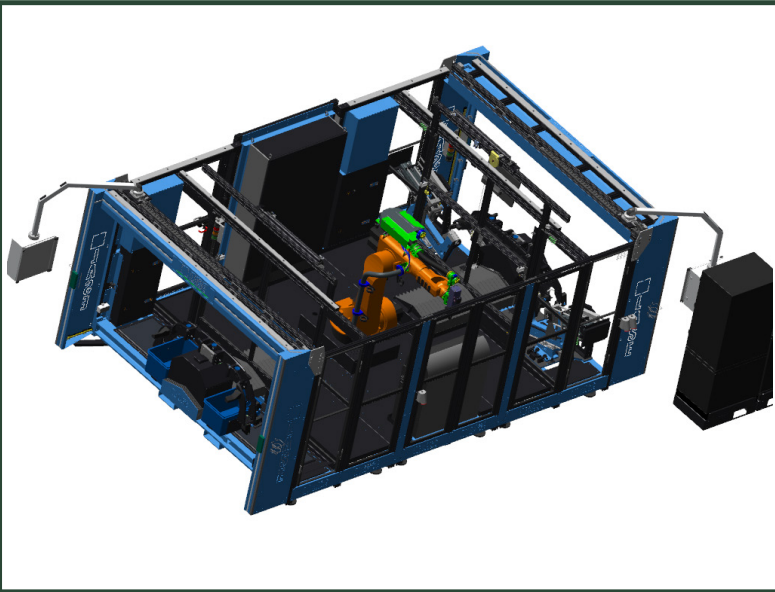


- Processing two bumpers at the same time.
- Standard automated punch and weld machine.
- Standard frame with all systems integrated.
- Vacuum and pneumatic clamping.
- C-frames with punch and die.
- Dynamic detail table with integrated welding.
- Precision made US parts and equipment (Weber 35 kHz US technology).
- Turntable column with duplicated details.

OUTSIDE PLASTICS BUMPERS, SPOILERS AND VALANCES

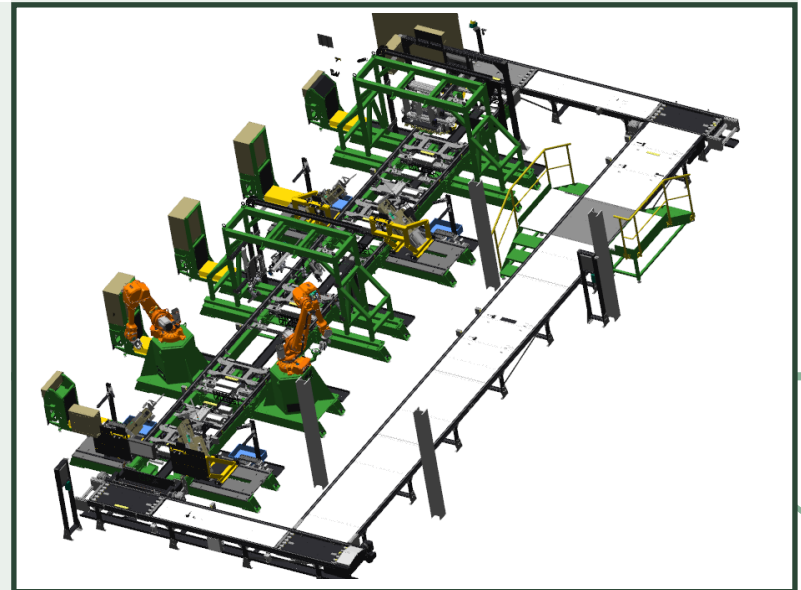
62

AUTOMATIC MILLING SYSTEMS



- Standard automated robotic milling center.
- Standard frame with all systems integrated.
- Vacuum and pneumatic clamping.
- Vacuum details with scrap extraction.
- Dynamic detail table with integrated quick change details.

MULTIFUNCTIONAL SYSTEMS

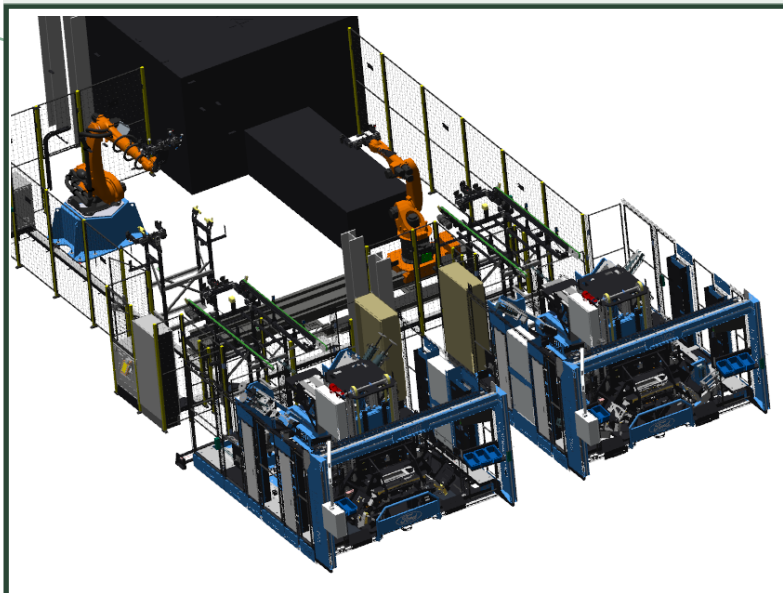


- Standard automated high volume punch, weld, glue and screw system.
- Standard frame with all systems integrated.
- Vacuum and pneumatic clamping.
- C-frames with punch and die.
- Robot punching, welding and screwing.
- Dynamic detail table with integrated welding.
- Precision made US parts and equipment (Weber 35 kHz US technology).

OUTSIDE PLASTICS BUMPERS, SPOILERS AND VALANCES

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AUTOMATIC PART HANDLING SYSTEMS

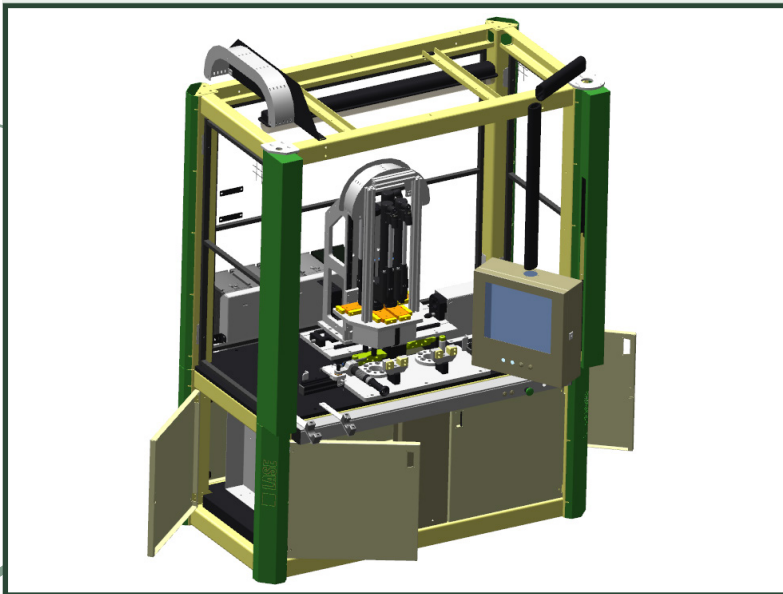


- Automated robot sequence system.
- Robot on high speed trac with gripper.
- In sequence placements of product.

DRIVETRAINS AND AXLES

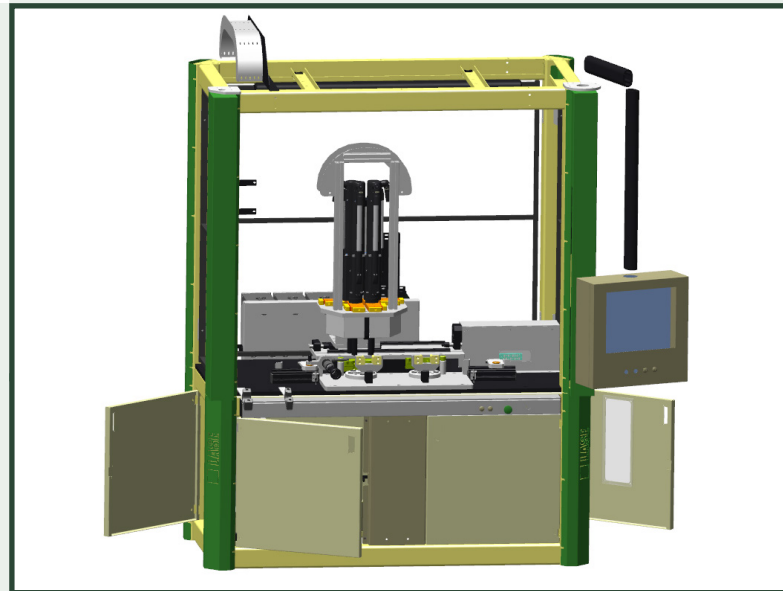
64

FRONT STRUT ASSEMBLY SYSTEMS



- Standard machine design with compression and measurement.
- Kistler and Atlas Copco system to verify nut assembly.
- Vertical assembly for various variants.

BREAK CLIPPER ASSEMBLY SYSTEMS

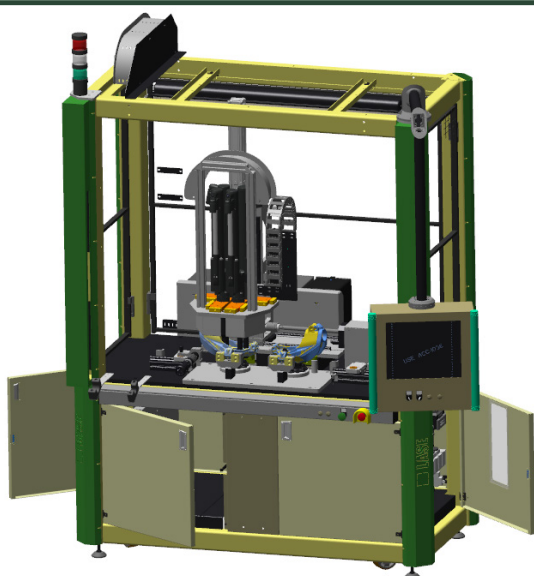


- Standard machine design with clamping, press and measurement.
- Kistler system to verify press fitting assembly.
- Horizontal assembly for various variants.

DRIVETRAINS AND AXLES

65

FRONT SPRING ASSEMBLY SYSTEMS



- Standard machine design with compression and measurement.
- Kistler system to spring assembly.
- Vertical assembly for various variants.

FRONT TORSION BAR ASSEMBLY SYSTEMS

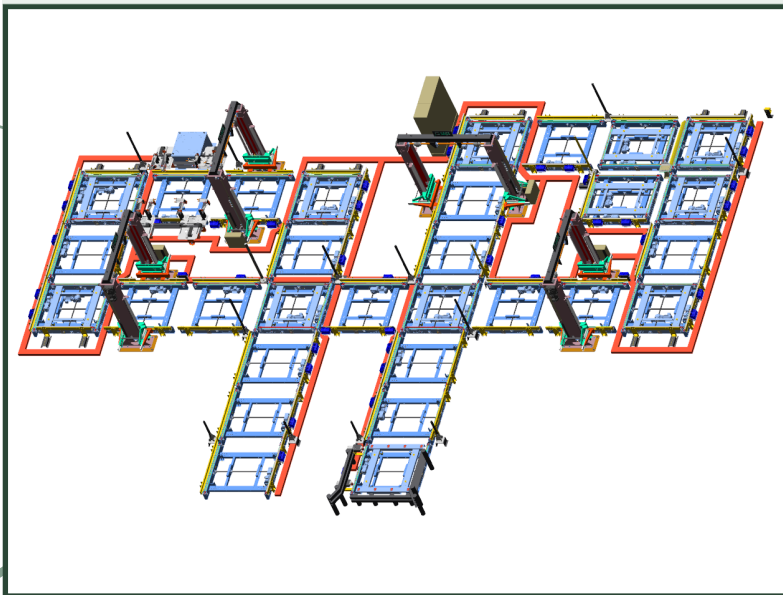


- Standard machine design with compression and measurement.
- Poka yoke system for assembly and verification.
- Horizontal assembly for various variants.
- Integrated checking tool to verify position and final assembly length.

DRIVETRAINS AND AXLES

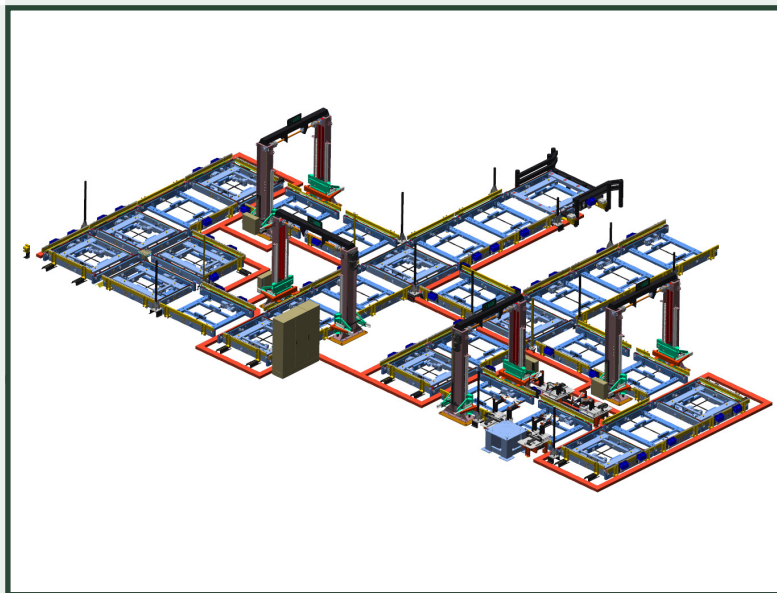
66

FRONT AXLE LOGISTICS SYSTEMS

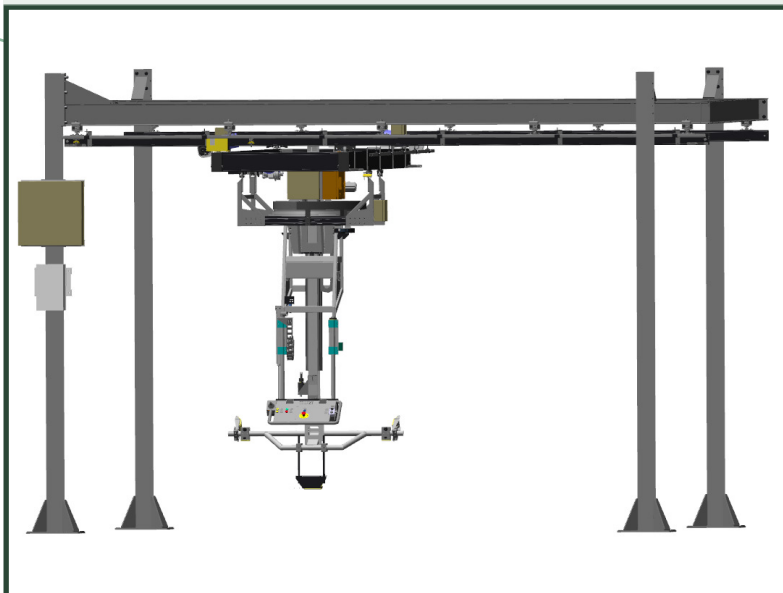


- Standard machine design with compression and measurement.
- Poka yoke system for assembly and verification.
- Horizontal assembly for various variants.
- Integrated checking tool to verify position and final assembly position.

REAR AXLE ASSEMBLY SYSTEMS



- Standard machine design with compression and measurement.
- Poka yoke system for assembly and verification.
- Horizontal assembly for various variants.
- Integrated checking tool to verify position and final assembly position.

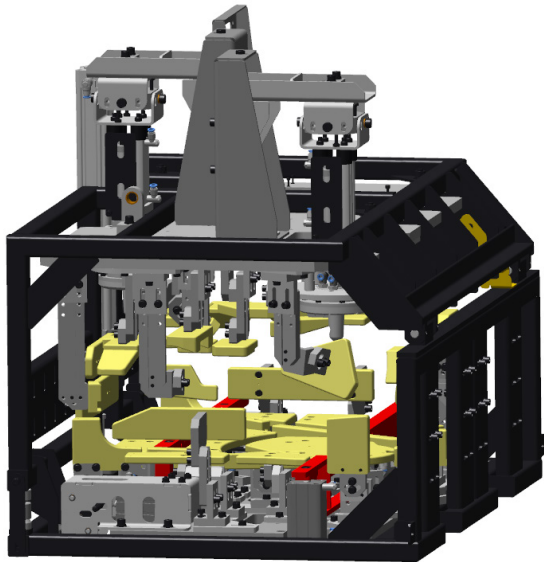
HANDLING AIDS/LIFT ASSISTORS

- Standard portal or column based manipulators.
- Specific mechanical and pneumatic grippers.
- Poka yoke for correct positioning.
- Fail safe on process to assure no drops.

FUEL SYSTEMS

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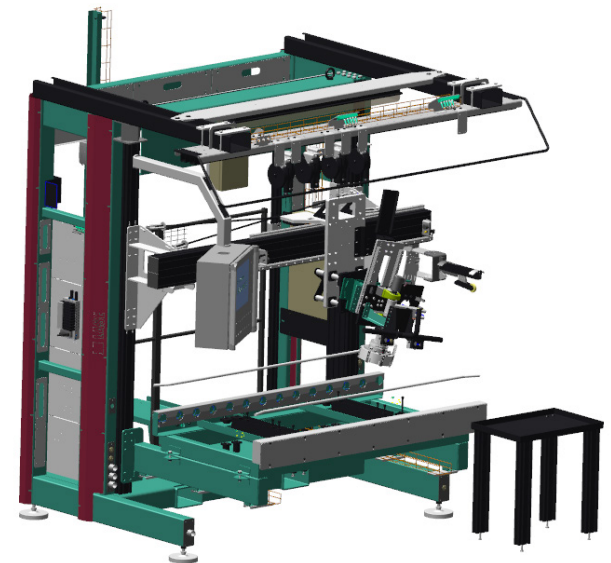
COOLING MOULDS



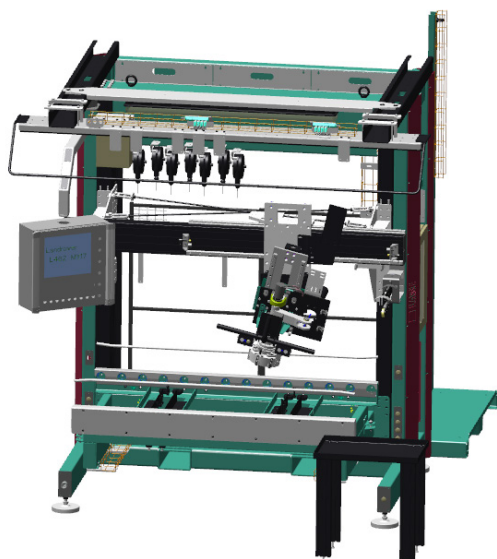
- 3D milled details.
- Integrated setup for all types of fuel tanks.

PUMP FIT STATIONS

- Standard machine design with transfer and tilt.
- Function test for installed parts.
- Assembly tooling for locking ring and leak test.

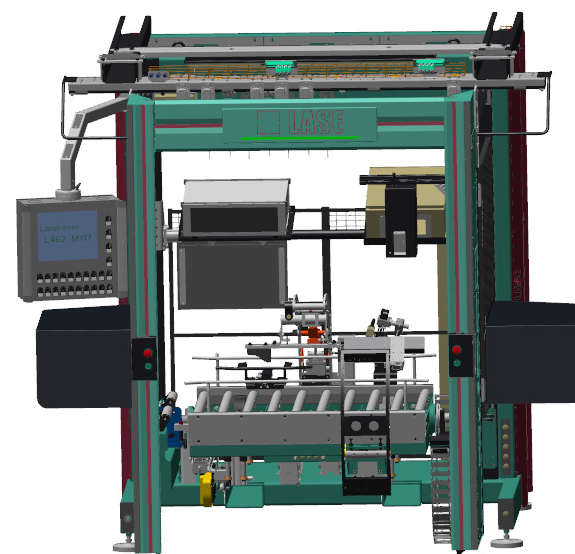


PUMP CLOSING STATIONS



- Standard machine design with transfer, clamping and tilt.
- Function test for installed parts.
- Assembly tooling for close out.

PUMP TEST STATIONS

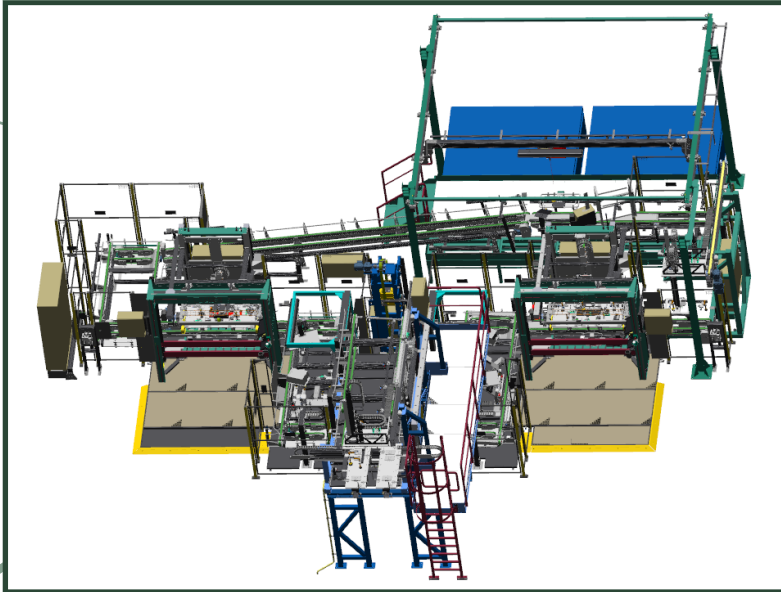


- Standard machine design with transfer, clamping and tilt.
- Function test for installed parts.
- Test tooling for leak, connector and function integrated.

FUEL SYSTEMS

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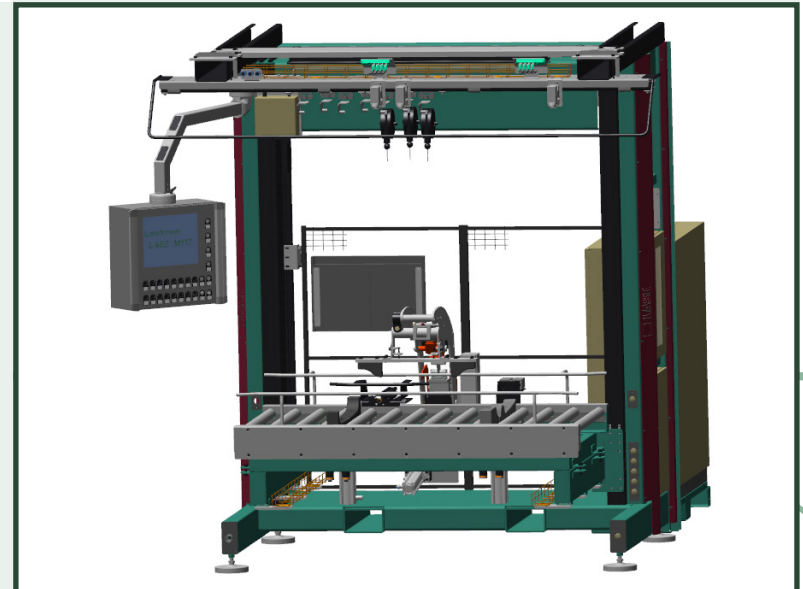
STRAP ASSEMBLY FIXTURES



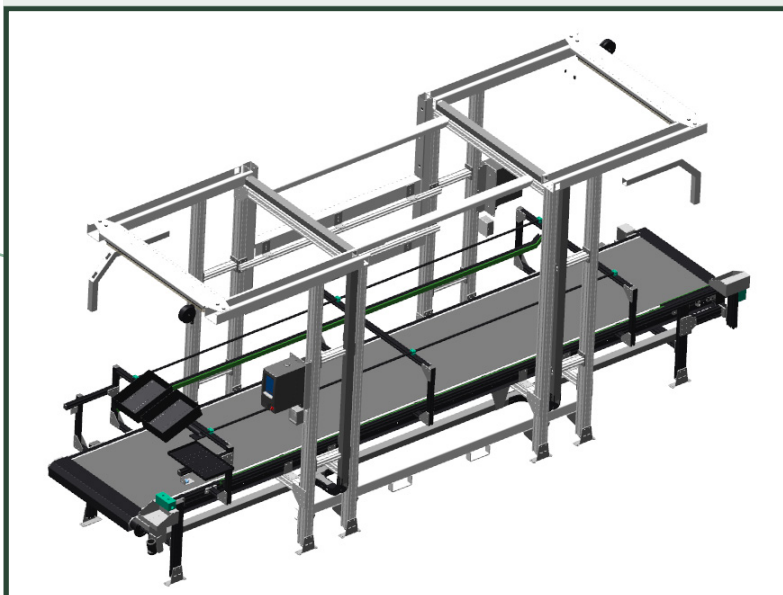
- Standard machine design with transfer and clamping.
- Function test for installed parts.
- Test tooling for leak, connector and function integrated.

- Standard end of line tester for function and electrical tests.
- Industrial connectors for all connections.
- Vacuum and pressure tests integrated.

END OF LINE TESTERS



CRADLE ASSEMBLY SYSTEMS



- Standard machine design with transfer, clamping and tilt.
- Assembly tooling for cradle assembly integrated on structure.

- Standard machine design with transfer, clamping and tilt.
- Function test for installed parts.
- Swage tooling for attaching hoses integrated on rail.

SWAGE STATIONS



FUEL SYSTEMS

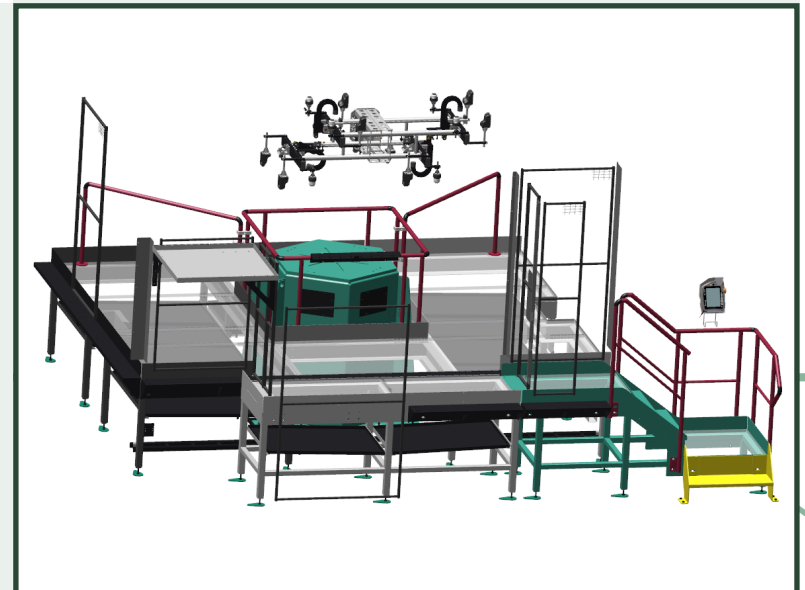
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PROFILE CHECKERS AND OVERCHECKERS



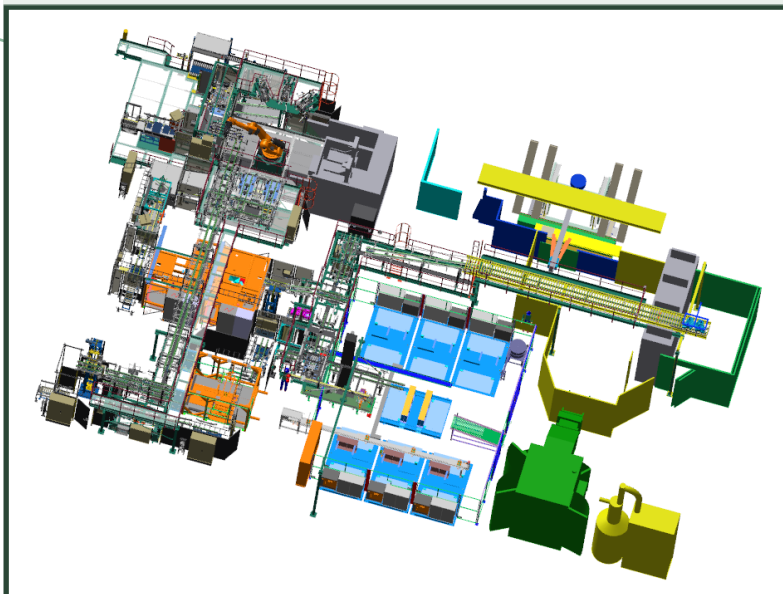
- Standard machine design with transfer, clamping and tilt.
- Function test for installed parts.
- Camera based verification system for profiles.

TANK HANDLING SYSTEMS



- Standard portal and column based manipulator.
- Vacuum suction cup gripper with part presence.
- Various radius and gripper standards.

COMPLETE PRODUCTION ASSEMBLY LAY-OUT



- Standard fuel system assembly line.
- Integrated into system are following stations (not limited to):
 - a. Pump assembly (fitting, closing, test) in separate stations
 - b. FDR assembly
 - c. Strap assembly
 - d. EOLT
- Each station is connected with the other over belt conveyors or lifts, transfers.
- Quality checks on each station, including tumble test and hose line acoustic connection test.
- Leak test station included upon request.

REFERENCES

Mubea



bosal



BENTLEY

PORSCHE

TENNECO



faurecia



RENAULT



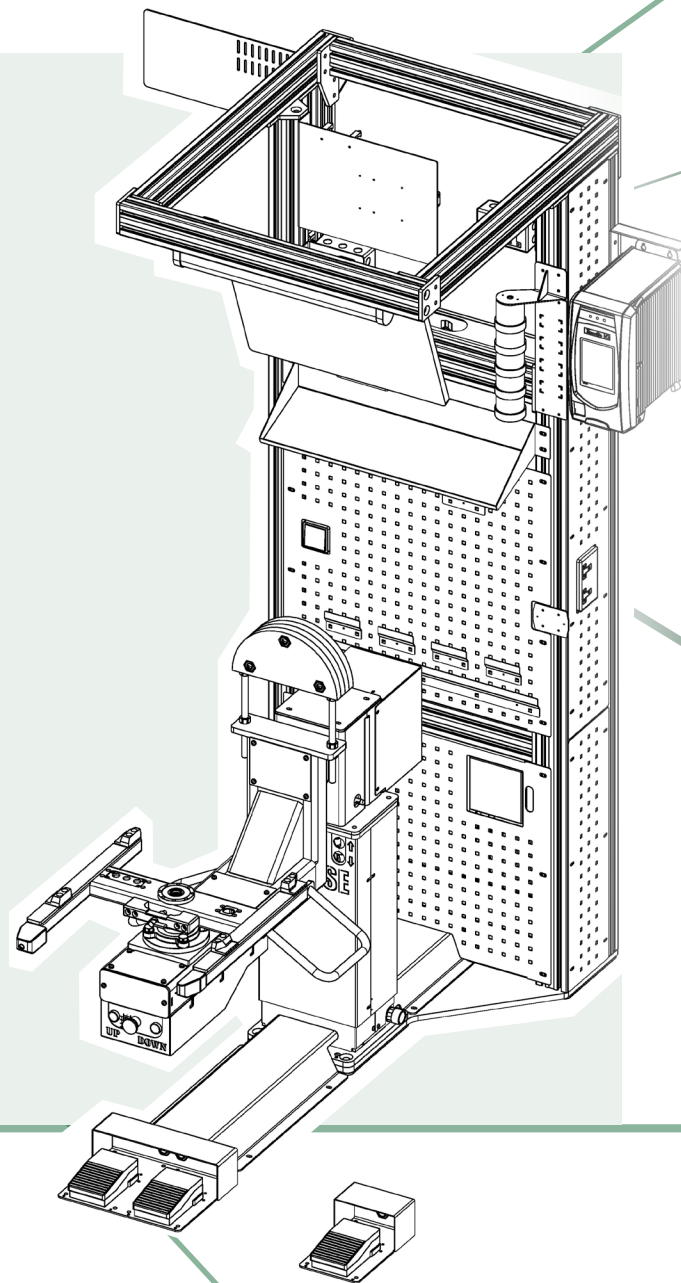
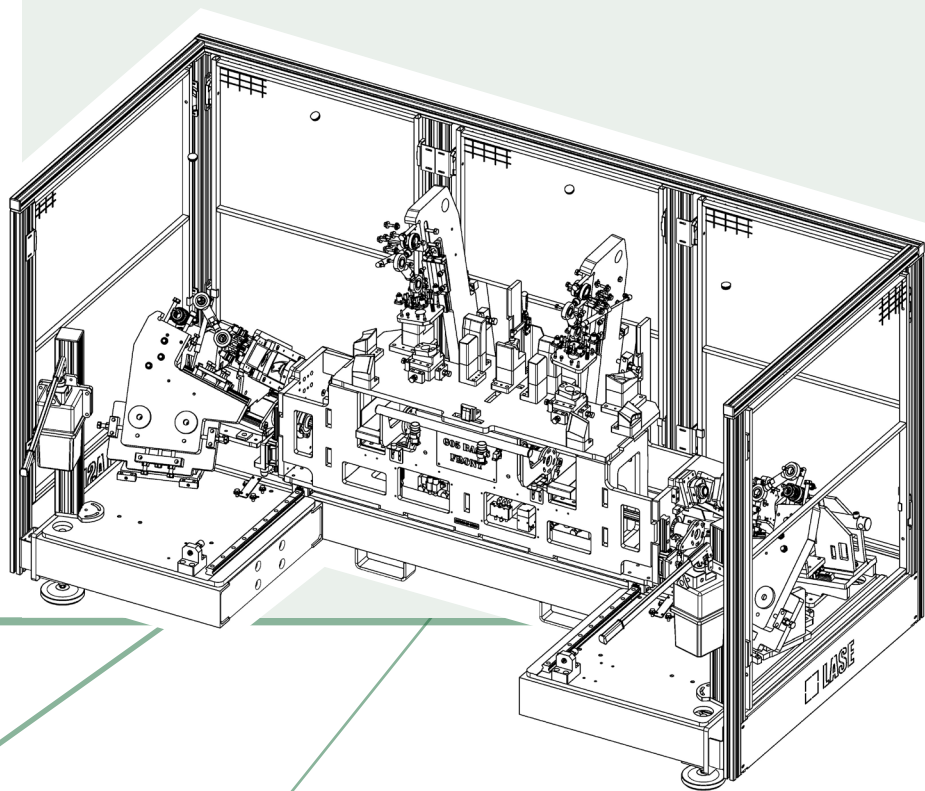
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MORE THAN JUST MACHINES

From process to production



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