



Our goal is to improve cost,  
quality and process efficiency

STAR, with over **40 years** of experience in developing technological and process innovations is recognized as a worldwide leader in technologies and solutions in the automotive glass industry.

STAR designs and manufactures **turn-key** customized systems for the specific needs of our customers. Our internal resources with highly refined competencies offer solutions for the cold end of the glass process to the production of automotive, laminated and vitro-ceramic glass.

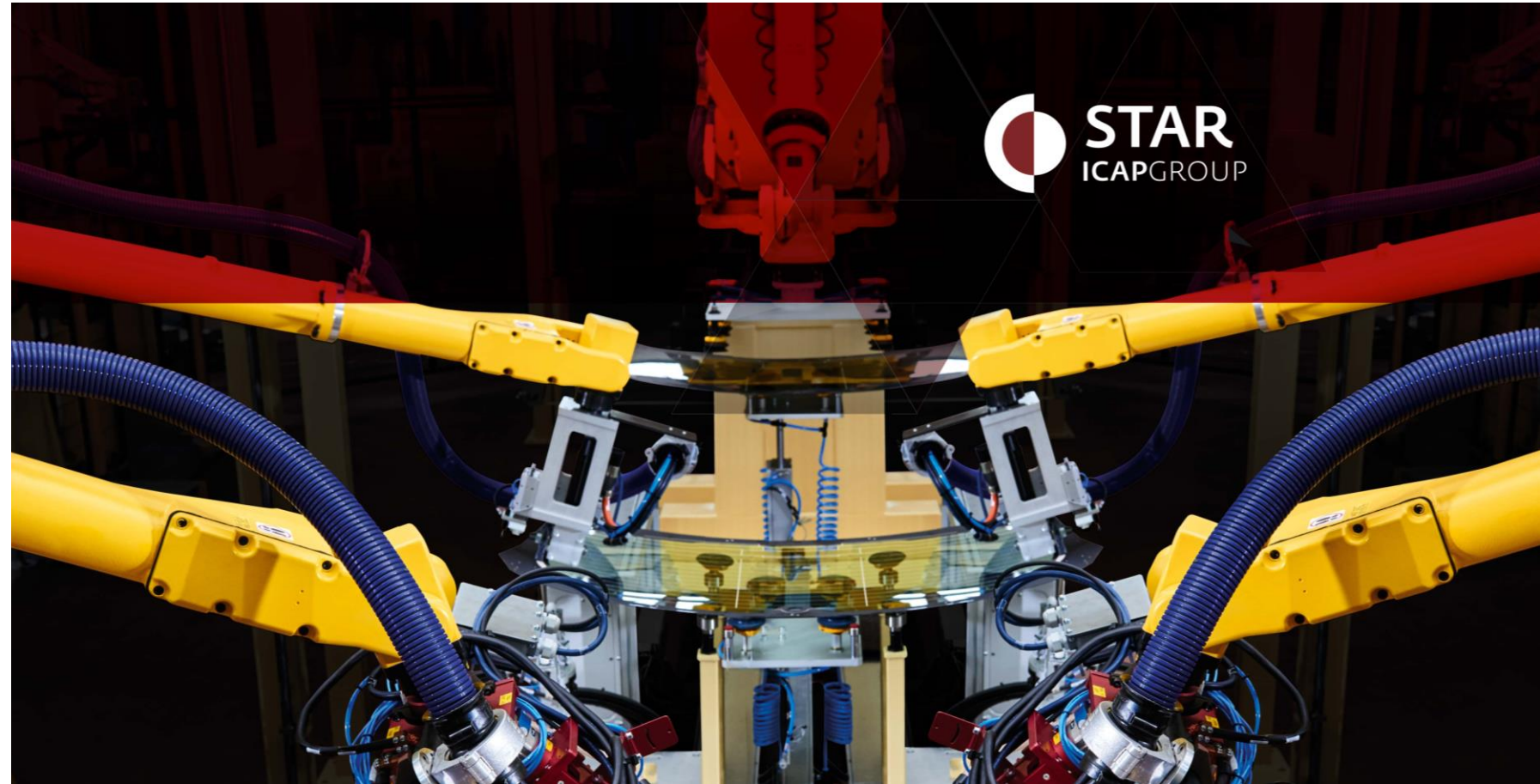
Our team of over **100 engineers and technicians** has extensive industrial knowledge which assures our customers receive the highest quality standards of excellence in designing, manufacturing and fully testing your equipment prior to shipment to your facility.

The glass industry is an ever-changing world, where the use of the latest technology allows us to excel, anticipating the customer's wishes: in this contest **innovation** is playing the most important role to achieve targets.

**SMACTORY** is an innovative ICAP Group, Industry 4.0 platform easily integrated into existing processes and capable of provide solutions across a multitude of industrial areas, including: Documentation In Context, Process Control, Down-time Management and Predictive Maintenance.

The essence of **Industry 4.0** has been driving STAR capabilities, which include: collaborative and self-adapting robot, 3D vision, remote control and service, machine-to-machine communication and data analytics. Industry 4.0 allows STAR to assist our customers to move from the conventional to smart factories, from human-driven to self-adaptive industrial processes.

STAR:  
brillant  
as Glass



STAR Latina (Italy)  
ICAPtrading Shanghai Co. Ltd Shanghai (China)  
ICAP NA Bellefontaine (OH, USA)

Celebrating  
Three Continents:  
EUROPE  
USA  
CHINA





As a member of the ICAPgroup, STAR today has offices in Italy, China, and the USA: we have provided over 1000 solutions for 35 automotive companies throughout the world.

#### PRE-PROCESS HANDLING

Robotic loading / unloading, conveying, stacking and intermediate batching.

#### SILK SCREEN PRINTING FOR AUTOMOTIVE GLASS

Turn-key solutions including IR and UV driers, conveyors, stackers, inspections, solutions for logo printing.

#### LEHR LOADING/UNLOADING

Anthropomorphic or gantry robots handling, stackers, vision driven process, tempered and laminated lehrs. Up to 2,5 seconds cycle.

#### AUTOMATIC WINDSHIELDS ASSEMBLY

Full automatic PVB peeling, glass matching, assembly, packing and PVB cutting.

#### SIDELITES LAMINATION LINES

Full integrated system including washing, drying, assembly, heating, finishing, autoclave loading and unloading conveyors.

#### IN LINE MIRROR BUTTON AND RAIN SENSOR APPLICATION

Robotics cells including feeding, handling, squaring. Different technologies such as PVB, 3M, Sotefa, PU, Raybond, UV.

#### PVB TRIMMING AFTER AUTOCLAVE

Multi-cutter head in closed loop controlled force and belt grinding finishing for exposed edge windshields.

#### AUTOCLAVE RACK PALLETIZING AND CONVEYING

Turn-key solution for rack circulation to and from autoclave, including buffering and logistic features.

#### SOLDERING AND ELECTRICAL CHECK

Heating and antenna connectors feeding and soldering in the most effective and quick process, including bus-bar cleaning, grid amperage, over-voltage and camera continuity check.

#### INSPECTION AND FINAL PACKING

Final inspection based on automatic robotized handling.

Data collection, Tracking and sorting, Packing in rack, detected by laser or vision. Curved glass shape check.

Automotive  
Glass  
Production

#### CLEANING AND PRIMING

Through felts, sponges, brushes, tips, depending on chemicals and product specification. Robotic application including wipe on -wipe off process. 100% vision check.

#### DIRECT GLAZING

Extrusion of complex shape section rods along glass perimeters. It includes handling, squaring and curing process.

#### PIN, SPACERS AND GROMMET APPLICATION

Robotic accurate, reliable and fast gluing of components by vision guidance. Feeding from reels or trays.

#### PU GLUING OF COMPONENTS

Mirror button, rain and humidity sensors, camera bracket. Vision guidance and vision quality check. Mono, bi-components chemicals. Plasma Treatment, hot melt pre-gluing.

#### BOTTOM PROFILE ROBOTIC APPLICATION

Flush and clamp profiles are fed and inserted by robot onto glass edge. Automatic removal of liner, vision guided picking, vision guided application and quality check.

#### TOP LACE AUTOMATIC APPLICATION

One or three sides lace profiles are loaded on a vacuum holder on dedicated fixtures. Full automatic application cycle, including glass load/unload and vision quality check.

#### INCAPSULATION PRESS TENDING

Robotic handling, vision squaring, spacers insertion, casting head cutting, glass priming and curing.

#### MANUAL ASSEMBLY TABLES AND TOOLINGS

Semi-automatic application of components, such as: mirror button, rain sensor, camera brackets, profiles, laces, pins, spacers, foam.

#### HOLDERS ASSEMBLY FOR DOOR GLASS

Glass handling and priming, vision driven process, PU dispensing, holders feeding and assembly, glass palletizing in racks.

#### SPECIAL PRODUCTS

Laser marking and Laser decoating.

Automotive  
Glass  
Value Add

#### FLOAT COLD END

On fly glass handling system, inspection and sorting. Glass stacked in the racks with extreme precision and repeatability by flexible grippers.

#### VITRO CERAMIC GLASS SHEET COLD END

Fully automatic high rate cooling, conveying, sorting, inspection. Complete automatic change over.

#### STACKING WITH PAPER INTERLAYER

Robotic palletizing provided with automatic dispensing of paper sheets cut inline at needed size and accurately located in between glass. Automatic paper roll change over.

#### LOADING AND UNLOADING OF TEMPERING FURNACES

Robotic and customized solutions for a reliable and accurate glass handling and positioning.

#### GLASS AND SOLAR MODULE HANDLING

Wide range of solutions to handle every size and every weight flexibly, efficiently and safely. Handling, loading, unloading and palletizing.

#### PACKING AND PALLETIZING

Robotic and flexible solutions to prepare and pack on pallet or rack allowing easy and ergonomic management of the working area.

#### HANDLING ACCESSORIES

Belt and rollers conveyors, vertical and horizontal accumulators, turning tables, lifters, squaring devices, tilters, flipping units, rotators, corner conveyors.

#### DRILLING MACHINES TENDING

Robotic picking, squaring and inspection of glass sheet to accurately feed and unload drilling units.

#### INTERMEDIATE PACKING WITH STRINGS

Robotic cells integrated with full automatic packing lines, including automatic feeding and removal of strings interlayers.

#### HANDLING AND PACKING

Float Glass, Laminated Glass, Insulating Glass, Coated Glass.

Home  
Appliance  
and Float  
Cold End