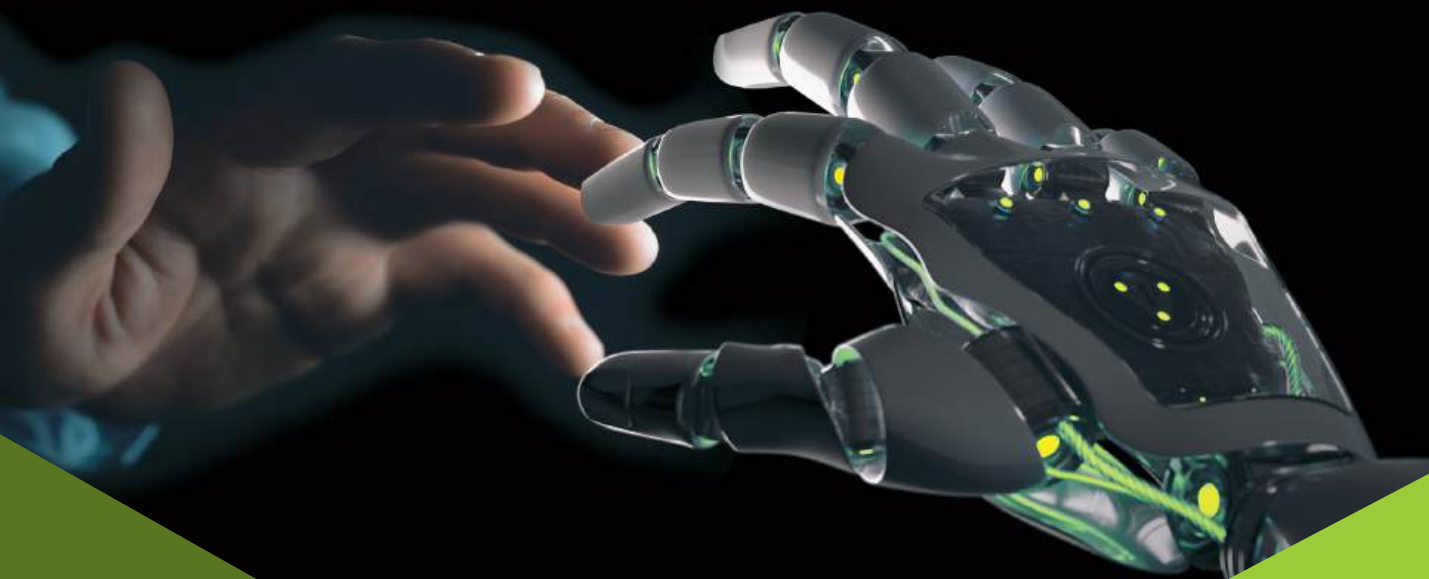




AUTOMATION

SOLUTIONS

AUTOMATIC MACHINES
A-WR & i-AL Systems
ROBOTIC SOLUTIONS
AR ASSISTANCE
IoT



LATTUADA
+ADDING VALUE

LATTUADA...
ADDING VALUE SINCE 1978

ADDING VALUE

THE INESTIMABLE VALUE OF GIVING AND RECEIVING

THE VALUE RECEIVED

Every person who has trusted Lattuada has enriched its story.
Each glass (or stone) processing solution completed and
put into production has added even more experience and drive.

THE VALUE OFFERED

Building on many years of market knowledge and a vast portfolio of successful
projects, Lattuada continues to invest in development, research and training.
With continually updated internal and external feedback,
it strives to offer more quality, more solutions, more technology.

ADDING + VALUE

A SYNERGY OF VALUES CALLED A COMPANY

Quality and personalisation

Are the hallmark of Lattuada's design. Attention to every detail is pursued within a customised production process, with care and attention.

Flexibility and assistance

Maximum willingness to listen and develop the client's requests. Guarantee of follow-up and further customisation throughout the machine life cycle.

History and experience

Since 1978, day after day, milestone after milestone, Lattuada has continued to grow in its problem-solving capacity and in guaranteeing progressive know-how to all its customers.

Internationality and italianity

Made in Italy represents worldwide excellence in the glass sector. The sense of belonging coexists with the pride of constantly interacting with an international audience.

Innovation and substance

Proposing new solutions is part of Lattuada's DNA. Simplification, training and constant support are the pluses offered to combine technology and user-friendliness.

Eco-Sustainability and territory

Starting from the Italian headquarters, concrete actions for the environment have been undertaken for years. Likewise, Lattuada's solutions will be increasingly 'green'.

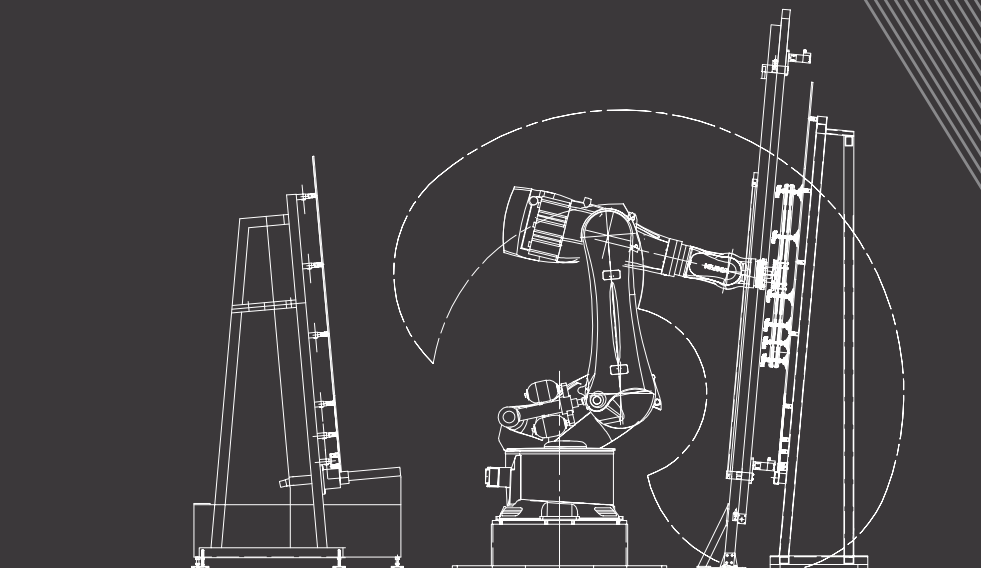
AUTOMATIC MACHINES
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AUTO MATION SOLUTIONS

EVERY CUSTOMER
IS UNIQUE TO US...
AS UNIQUE AS
OUR SOLUTIONS

Robotics, A-WR & i-AL Systems, Augmented Reality
and IoT: a beating heart of innovation and technology
revolutionising glass and stone processing.

Lattuada brings companies
into the world of Industry 4.0, by making
every machine a concentrate of precision,
productivity and automation.



KNOW-HOW

We are your partner in automation.

For more than 10 years we have dedicated internal resources and major investments in designing and building solutions that integrate robots and automation to support our glass processing machines. Thanks to synergies with integrators with a decade of experience, we are in a position to offer up to date and world-class know-how and skills.



CONSULTANCY

Beyond the offer, consultancy.

A single global consultant partner for your current and future needs. Thanks to a powerful simulation software, we can key in standard production data and values of your workday and compare them with those obtained from a presumed use of robots. This way, you can notice the difference and thus make the decision that best fits your efficiency and productivity boost needs.



ASSISTANCE

Training and technical support, wherever you are.

Our teams are ready to give you appropriate training and technical support you may need, through our hotlines. Whether regarding the machine or the applications, you have a far-reaching network of agents and dealers at your disposal in every corner of the globe. As concerns robots, they require minimum maintenance considering their high and constant performance.



SKILLS

One application, one solution.

Thanks to world-class collaborations and supplies, our solutions gain in effectiveness and efficiency year by year. This contributes towards developing know-how and skills assets like few others can worldwide, keeping one guaranteed focus: building applications that are not only easy to implement and use, but that can also keep production performance constant over time.



SMARTNESS

Customised and smart machines.

Our machines have always been custom-built. With forty years of experience in the industry, we - at Adelio Lattuada - can modify configuration to meet your production needs. But that alone is not enough. We are committed towards making machines more automated and smarter by installing state of the art devices and sensors.



INTEGRATION

More targeted than ever before.

The more machines are integrated with each other through specially studied software, the greater their efficiency and productivity. We are working on getting rid of repetitive manuals and combining control operations: we aim at creating a system where machines can communicate with each other and can make autonomous decisions to maintain high production and safety level, eliminating errors.



**A PERFECT SYNERGY
WITH TECHNOLOGY**

ROBOTS

**New integrated, flexible and customised
solutions with the following advantages**

01

CUSTOMISABLE SUCTION CUPS

vacuum with Venturi system
OPTION: energy-efficient vacuum
smart modules with NFC technology (*)

02

HIGH FLEXIBILITY

side by side processing of glasses
of different sizes with minimum
distance between them

03

AUTOMATIC MEASUREMENT OF GLASS

pre-setting glass size
is not required

04

EASE OF USE

straight-line edging machines
with standard maintenance

05

AUTOMATIC SPEED ADJUSTMENT

depending on the sizes of the glass

06

LOWER COSTS

only one operator is required

07

INCREASED PRODUCTIVITY / PERFORMANCE

thanks to the high speed
of this system

08

FULLY AUTOMATION OF MACHINES

reducing the need to access to the area, safety and
productivity increase (possibility of remote control)

09

POSSIBILITY OF INTEGRATION / EXPANSION / MODULARITY

with other machines

10

CONTINUITY ASSURED

thanks to low maintenance required by Lattuada/Knittel
machines (possibility of video monitoring and remote
assistance, including via Whatsapp)

11

SAFETY

plausibility check of loaded pieces.
Special sensors able to read all types of glasses
Measurement and compensation of unloading position
(glasses loaded on rack without "ZERO" position)

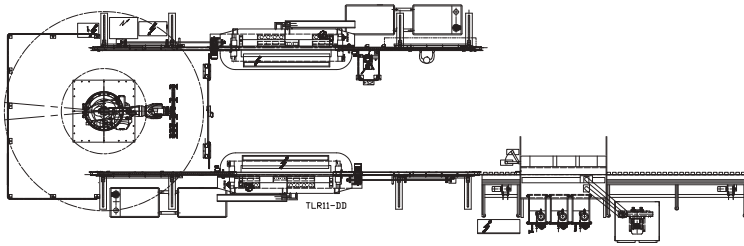


ENERGY EFFICIENCY:

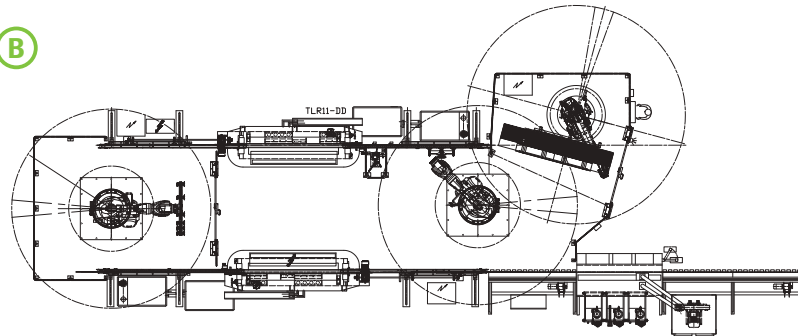
(*) OPTIONAL:

ENERGY-EFFICIENT
ENERGY-EFFICIENT VACUUM SMART
MODULES WITH NFC TECHNOLOGY
OPTIMIZED ROUTE AND
PATH PLANNING
TASK-OPTIMIZED ROBOT SIZING
EFFICIENT CELL PLANNING
OPTIMIZED GEARBOXES AND
HIGH-EFFICIENCY MOTORS

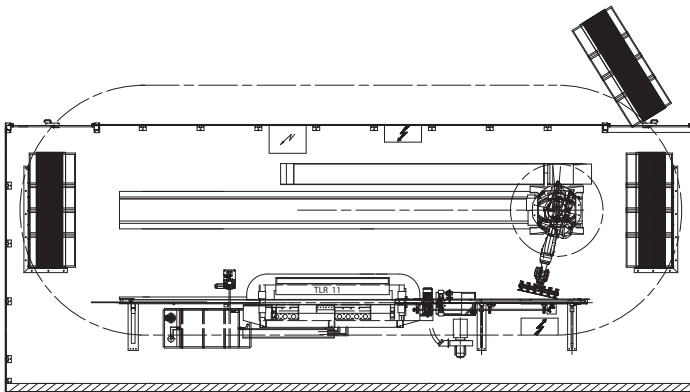
A



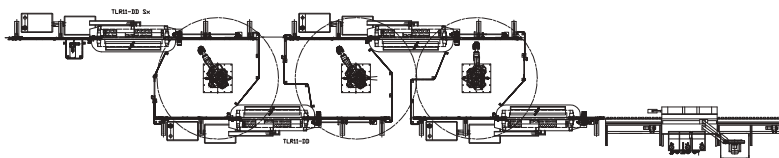
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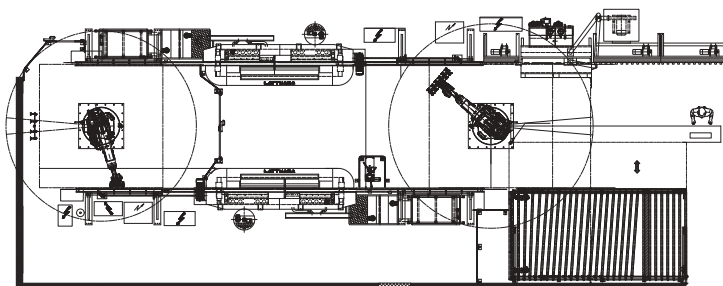
C



D



E



DIFFERENT CONFIGURATIONS AVAILABLE FOR THE IMPLEMENTATION IN SEVERAL APPLICATIONS:

some examples, the lines can then be completed with several additional modules that can be implemented (or applications) in the future

A 2 EDGERS AND 1 ROBOT
The most sold

B 2 EDGERS AND 2/3 ROBOTS
For fully automated cells

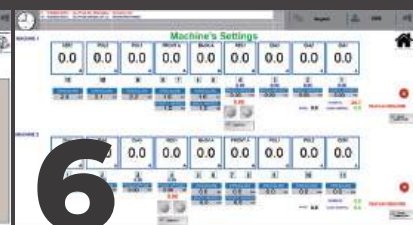
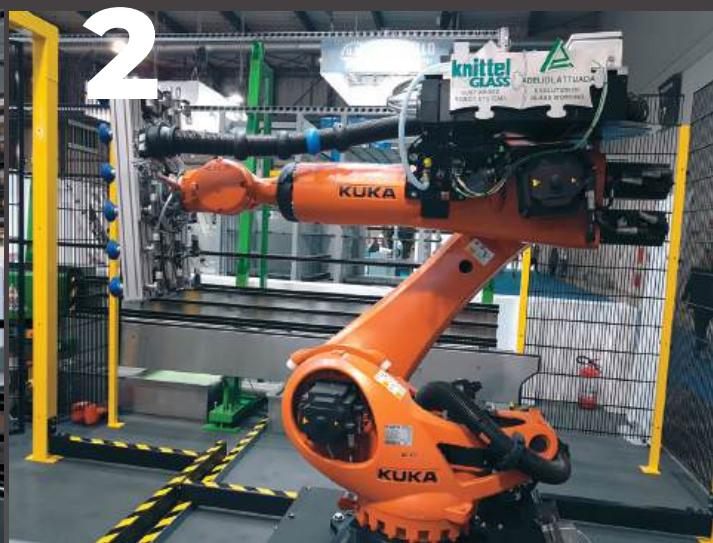
C 1 EDGER AND 1 ROBOT
Fully automated cell in a reduced space

D 4 EDGERS AND 3 ROBOTS
Special solutions

E INTEGRATION
With washers, CNCs, double-edgers, cutting, tempering or IG lines, etc.

In partnership with:





- 1 **Customizable suction cups**
(vacuum with Venturi system)
- 2 **Experienced partnership:**
since 2000, **Knittel** has been providing
robotic applications in the glass industry
- 3 **Glass measuring** system
- 4-5-6-7 **22" Touch-screen panel**
for complete line management
- 8 **Swiveling loading/unloading platform**
- 9 **Solution with 1 edging machine and
1 robot that moves glasses:** it is not fixed to the ground,
but moves at very high speed on a dedicated track

ROBOTIC SOLUTIONS

LATTUADA-KNITTEL
ROBOTIC SOLUTIONS
+ ADDED VALUES



AUTOMATIC MACHINES

A-WR SYSTEM

The exclusive A-WR system introduces a completely automatic wheels setting management, which includes:

- 01.** Automatic pre-setting "ZERO" procedure of diamond and resin wheels, without glass in less than one minute
 - 02.** Automatic recover of the polishing wheels' wear, automatic tool increment based on predetermined parameters
 - 03.** Automatic positioning for the wheel's replacement
 - 04.** Jog increase/decrease of the spindle position (accuracy 0.01 mm)
 - 05.** Automatic positioning on setpoint
 - 06.** Automatic backlash recovery
 - 07.** Automatic spindle cleaning procedure
 - 08.** Wheels wear warning
 - 09.** Spindle's problems warning
 - 10.** Manual unlocking for any situation
 - 11.** Motorized adjustable inlet conveyor
 - 12.** Digital ammeters and automatic alert system for the polishing wheels wear
 - 13.** Automatic detecting and compensating procedure of the inlet conveyor belt wear
 - 14.** Inlet conveyor alignment control procedure
 - 15.** Automatic adjustment of processing parameters according to glass thickness
 - 16.** Precision resin tool absorption detection system (for remote control) and independent rotation speed adjustment
- OPTIONAL:** thickness control sensor or automatic thickness detection and positioning sensor

SOLUTIONS FOR AUTOMATING ACTIVITIES AND INCREASING PRODUCTION FLEXIBILITY



ADVANTAGES OF THE LATTUADA A-WR SYSTEM

01. WHEELS SETTING IN LESS THAN 1 MINUTE, INSTEAD OF AN AVERAGE 20/30 MINUTES MANUAL SETTING
02. HOMOGENEOUS WHEELS SETTING REGARDLESS OF THE WORK SHIFT AND THE OPERATOR ON THE MACHINE
03. EXTREMELY SIMPLE TO USE, NO SAMPLE GLASS NEEDED
04. HOMOGENEOUS WHEELS WEAR AND CONSISTENT PROCESSING QUALITY
05. INCREASED SPINDLES CLEANING THANKS TO THE AUTOMATIC CLEANING FUNCTION
06. REDUCED EXIT CONVEYOR BELT WEAR OR DAMAGING DUE TO AN INCORRECT WHEELS "ZERO" SETTING
07. EARLY WARNING ON POTENTIAL MAINTENANCE ISSUES
08. MORE QUALITY, MORE PRODUCTIVITY, LESS MAINTENANCE, LESS ERRORS...MORE MARGINALITY
09. REMOTE CONTROL, EASY INTEGRATION INTO AUTOMATIC CYCLES





THE MAIN ADVANTAGES OF
i-AL LATTUADA ARE

AUTOMATIC MACHINES

i-AL

Full automation
of glass processing

i-AL IS A COMPREHENSIVE PACK OF MECHANICAL, ELECTRONIC AND SOFTWARE SYSTEMS ESPECIALLY DESIGNED TO DELIVER THE MAXIMUM POSSIBLE AUTOMATION IN GLASS PROCESSING AND A FULL INTEGRATION WITH YOUR ENTIRE PRODUCTION SYSTEM

i-AL PACK INCLUDES:

- 01.** Digital ammeters displayed on the touch-screen panel
- 02.** Motorized glass removal setting with portable push-button panel
- 03.** Automatic management of all processing parameters
- 04.** Proportional valves for pressure regulation of the polishing spindles
- 05.** Glass length measurement
- OPTIONAL:** thickness control sensor or automatic thickness detection and positioning sensor

01. REDUCED MACHINE SET-UP TIME

02. CONSTANT QUALITY AND PRODUCTIVITY THROUGHOUT THE SHIFT OR DAY, REGARDLESS OF DIFFERENT OPERATOR'S SKILLS

03. EARLY WARNING ON POTENTIAL MAINTENANCE STOPS

04. REMOTE CONTROL, EASY INTEGRATION INTO AUTOMATIC CYCLES

05. MORE QUALITY, MORE PRODUCTIVITY, LESS MAINTENANCE, LESS ERRORS... MORE MARGINALITY



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