



# PERFORMANCES DRIVING to the FUTURE

when excellence is needed

for Home Appliance Glass Makers

The home appliance division provides silk screen printing solutions for a sector where printing speed is essential.

**CUGHER**

[www.cugher.com](http://www.cugher.com)  
[info@cugher.com](mailto:info@cugher.com)

PERFORMANCES  
DRIVING to the  
FUTURE

With Cugher  
we've been looking to the future since 1967.

Cugher systems were among the first in the world to automate the flat glass screen printing process.

That's why choosing **Cugher machinery or equipment means having foresight**: because the ongoing research driving every project enables the company to develop and implement **cutting-edge solutions designed to endure over time.**

Automotive | Home appliance | Building & Interior Design | Solar





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WHO  
WE ARE

# Experts in flat glass processing

Since its foundation in 1967, Cugher has been investing resources to develop its engineering expertise, quickly becoming the first company in the world to automate the **screen-printing process on flat glass**. This technology has strengthened over the time in becoming the leading activity of the company. Cugher, through its knowledge of the best processes for printing, transporting, and controlling glass interfaces with international manufacturers, offering both **complete** and **stand-alone machines** for various sectors. Cugher is currently a reliable partner for any project involving screen printing and handling during the production of numerous glass component in the **home appliance industry**.

1967

CUGHER  
FOUNDATION

Screen printing  
Technology

2000

FOCUS  
ON FLAT GLASS

New Business  
Strategy

2005

AUTOMOTIVE  
CORE BUSINESS

Industrial automated  
plants international  
presence

2012

ALBAMACHINERY  
FOUNDATION

Production  
site

2021

GLOBAL  
RECOGNIZED PRESENCE

Customized solution  
R&D and Innovation

# | A customized method for ad hoc projects

**Not every project is standard:** every production process requires an in-depth study to meet the customer demands. This principle is at the core of Cugher's organization, which stands out for its flexible engineering capable of suggesting and readapting each product to meet the standards required by each individual production. **Continuous dialogue, exchange of know-how, and high customization** are the foundation of the Cugher Method, aiming to reach maximum customer satisfaction at every stage, from the elaboration of initial specifications to installation and after-sales service.

## THE CUGHER METHOD





# We understand the needs and have the **right solution**

Like every specific industry, glass processing for home appliance sector also has precise specifications. Cugher meets these requirements through a range of solutions specially designed through numerous experiences with many manufacturers, from small glassworks to **large multinational companies**.

## HOME APPLIANCE INDUSTRY

- Square and rectangular glass panels
- Fast printing process
- Quick format changeover
- Synchronized glass transportation
- Quality verification
- Easy use



## CUGHER'S RESPONSE

- Various format configurations for each machinery
- Fast cycle times (less than 6 seconds) and high productivity
- Speed self-learning system for glass type
- In-house software for coordinating the entire line
- Automatic control systems
- Process automation and easy maintenance



DISCOVER MORE





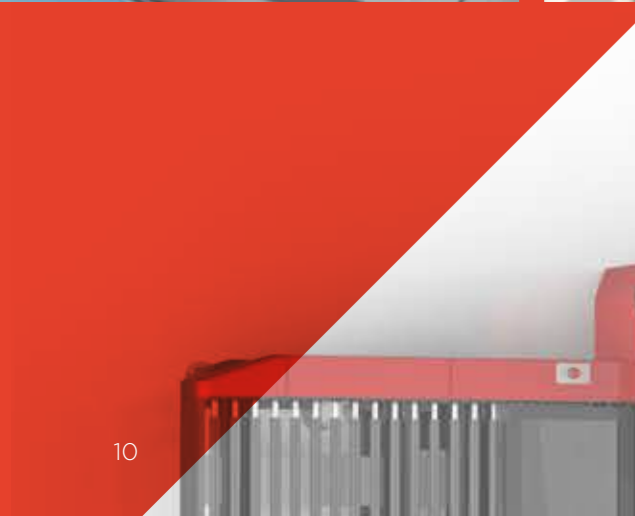
# Cugher Home Appliance

A wide range of products supports the development **of complex and automated production lines, stand-alone machinery, or seamlessly integrable with other solutions:**

## RANGE OF PRODUCTS



- Screen printing machines
- IR & UV ovens
- Handling systems
- Robots
- Vision systems and quality control
- Order manager and industry 4.0



2020

HOME APPLIANCE  
GAMMA CUGHER



# Screen printing machines

## Fast Series

As its name suggests, this screen-printing machine is extremely fast and ensures excellent results in terms of cycle time and format changeover.

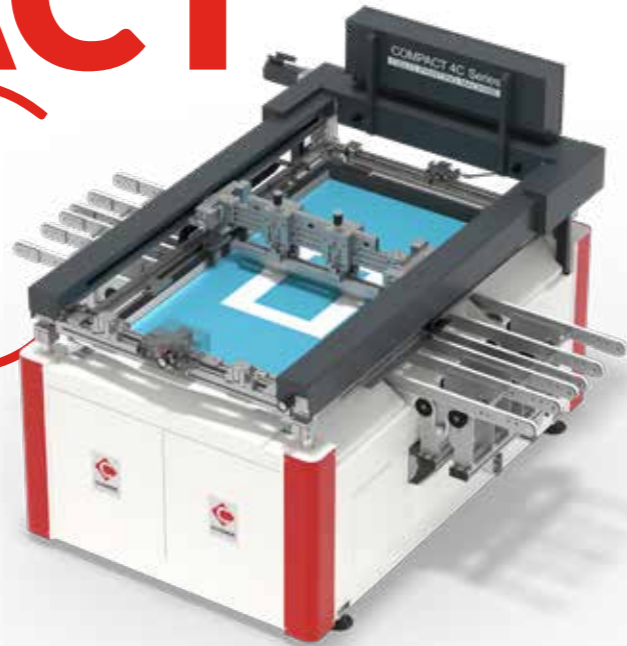
- The Fast Series machine can process both small and large glass formats, from a **minimum of 200x200 mm** to a **maximum of 2000x1300 mm**.

The cycle time can go down to less than **7 seconds**, achieving a **production rate of more than 500 pcs/h**, depending on the size of the glass sheet. The machine is equipped with a pre-aligner in the input conveyor and a belt system that transports the glass to the printing table, where it is directly centered by adjustable pins.



# COMPACT

## 4C



### Compact Series

- This **latest model of screen-printing machine**, an evolution of the established Compact series, is equipped with 4 columns instead of 2 to support a wider printing head. It can process larger glass sizes while ensuring excellent precision and printing speed. This specific structure of the machinery offers, in addition to the basic Compact, the frame washing function with registration retention during extraction and is prepared to accommodate the Edge-to-Edge system for printing up to the edge.

# Screen printing machines

### Serie Compact

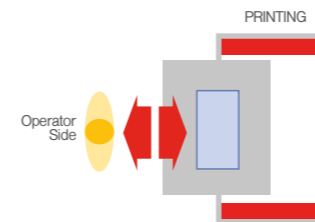
Small and convenient, the Compact screen-printing machine has the flexibility to be used in a complete line or as a stand-alone machine, processing small to medium-sized glass very quickly.

- The minimum glass size can be as small as **100x35 mm**, while the maximum size is **1300x700 mm**, achieving cycle times below 5 seconds and **productivity of 750 pcs/h** with some formats.



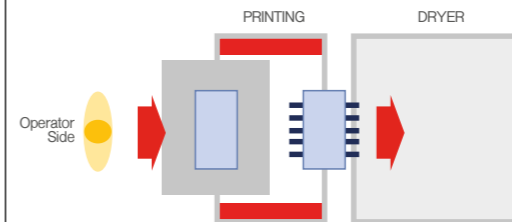
### Stand Alone

Manual loading and unloading, on the operator side, with extractable printing table.



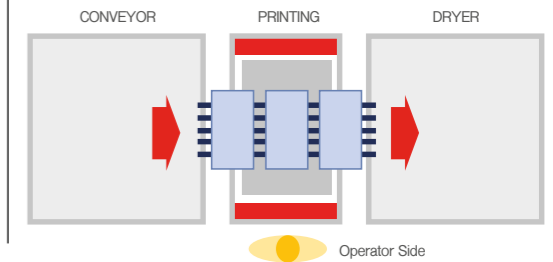
### Semi-Automatic

Manual loading and unloading of the glass, on the operator side, with extractable printing table. Automatic rear discharge with transport belts.



### Full-Automatic

Automatic glass loading and unloading by a belt transportation system.





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# Cugher screen printing advantages



- Rotation of the print carriage for quick change and cleaning of the squeegee and scraper
- Pneumatic locking of squeegee and scraper
- Pneumatic frame locking with extraction for cleaning without loss of registration
- Motorized automatic peel off
- Digital proportional valves
- Motorized frame movements
- Drip prevention system
- Automatic frame registration system
- Parameter adjustment from operator panel
- Easy maintenance





# Dryers

For screen printing and digital printing

Cugher dryers are designed to achieve the best energy standards and are integrated, in line with printing machines, for ink drying. Dryers allows **identifying the correct configuration of hot and cold modules** for each plant and obtaining different temperatures for each module to ensure higher productivity.

## IR

- IR technology combines the action of infrared lamps with air knives to distribute heat and achieve rapid ink drying.
- Air recirculation can be set according to the ink thickness, along with the temperature of each module and the speed of the conveyor belt or rollers.
- Cugher ovens allow drying inks with thicknesses of 20/30  $\mu\text{m}$ , typical of screen printing, but also thicknesses of 60-100  $\mu\text{m}$ , common in digital printing, meeting the production targets of each customer.

## UV

UV technology dryers for ink polymerization are equipped with **anti-reflection screens** positioned at the entrance and exit of the dryer to protect operators from UV radiation. The digital control system of the lamps **allows saving energy and increasing machinery productivity.**

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# Cugher dryer advantages



- Smoke extraction
- Option to replace fans during production
- Fan rotation control kit
- Dryer opening on two or four columns

## Combined IR and UV Dryer

There are combined IR and UV solutions where each system can be activated separately. These dryers consist of 3 sections: the first IR with hot modules, the second UV, and the third IR with cold modules. When using the UV mode, the first and third sections act as conveyors, while when the IR mode is active, the second section serves as a transporter.



# Handling systems

A wide range of handling systems allows for glass transportation in all directions and its storage within the facility.

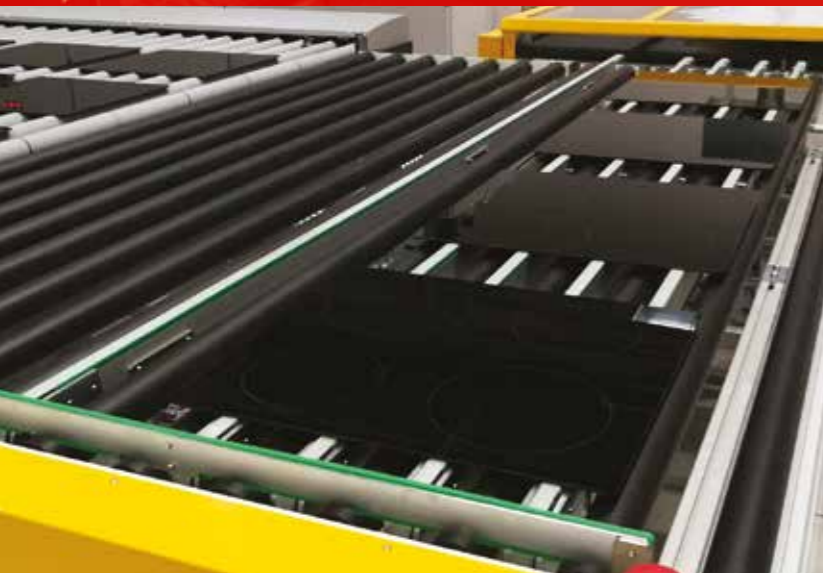
- The machinery is perfectly synchronized with the line productivity, and the glass movement occurs through a minimal contact surface, while ensuring maximum adherence. The special design of the machinery guarantees safety and minimal maintenance.



INSPECTION



ACCUMULATORS



CONVEYOR



SPECIAL SYSTEMS



# Vision systems and quality control

## Glass Quality Control

- Installed after washing, the glass quality control **checks for any glass irregularities**, such as scratches, breakages, air bubbles, or water droplets, applying tolerance levels required by production, which can be preset with different thresholds in different areas of the glass.

## Printing Quality Control

- Following printing, the system recognizes any imperfections by referencing predefined parameters and displaying detected defects directly on the glass's video image. If the errors are attributable to incorrect frame positioning, **the system also allows for automatic correction of the position** (within certain limits) **without interrupting production**.

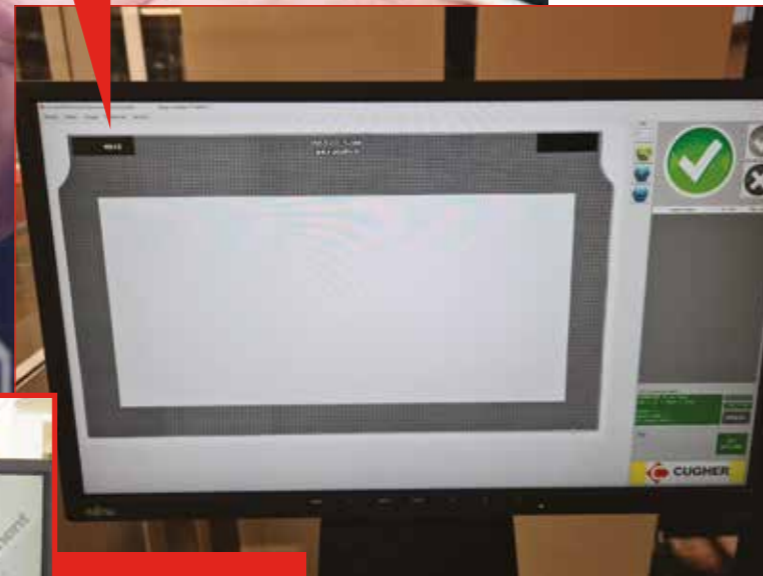


## Automatic Frame Adjustment

- The screen frame is autonomously positioned by cameras and servo motors installed below the printing table, significantly **reducing format changeover times** to simply inserting the frame quickly.

## Frame Breakage Detection

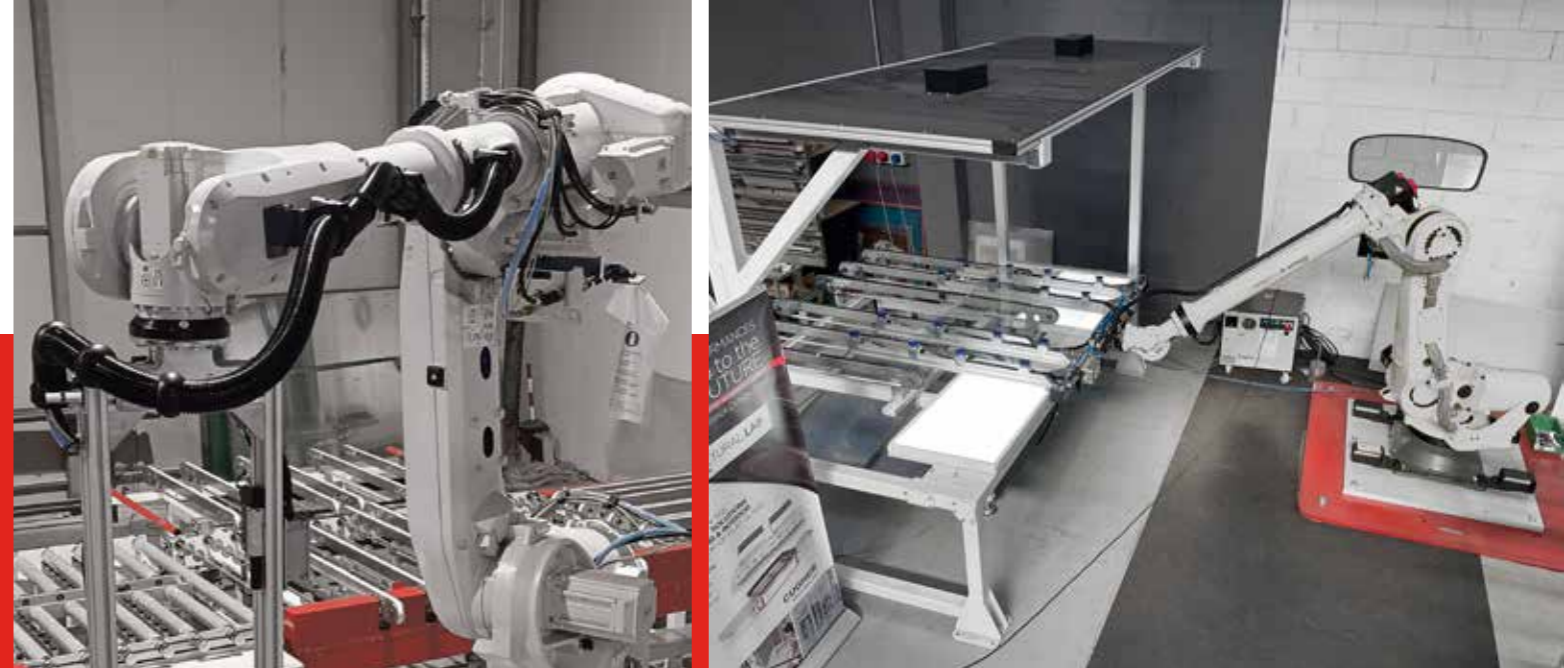
Positioned immediately after printing, the system **checks for ink spots on the underside of the glass, resulting from frame breakage**. Equipped with cameras and a contrast roller, the system prevents ink contamination of the line.



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# Industrial Robots



Cugher's specialization in industrial automation has led to the development of turnkey solutions and/or the integration of automated robotic solutions to increase efficiency and reduce process costs for each plant. The company employs anthropomorphic robots with up to 6 axes, providing great flexibility in operations by studying and designing the manipulation tool placed at the end of the robotic arm and all the surrounding handling based on the operation required by the specifications of the production line.

## Cugher implements two families of solutions in its projects:

- **Robotic islands for material handling:** set of machines organized within an automatic workspace, including robot manipulators controlled automatically for loading/unloading and palletizing, ensuring the continuity of operations. Productivity significantly increases through robotic islands, and each island can be quickly reconfigured if the company needs to change the type of processing.
- **Robotic system combined with vision systems:** the robot collaborates with the vision system, which sends real-time information to make different adjustments each time and ensure a consistent quality standard. This combination is effective when automatic handling is not always precise, while processing requires extremely accurate positioning.



# Order manager and industry 4.0

The software programming of Cugher plants is done in-house **to ensure the correct configuration of the line according to each specification** and to always be competent and available for any future needs.

- The machinery within the line is perfectly synchronized with each other and integrated with any third-party machines, allowing for a completely automatic and controlled system.
- Cugher is able to perfectly meet the demands of Industry 4.0, for interconnected production and real-time data exchange with other information systems, making the line highly flexible and increasing its productivity.

**Plus**  
dell'order  
manager



- Increased flexibility in production
- Higher productivity, shorter setup times, reduced errors, and machine downtime
- Improved quality and reduced waste through sensors that instantly monitor production



# Always there with **HELP DESK**

Cugher's after-sales support service is designed to ensure continuous presence of experts and **timely specialized interventions** in case of any unforeseen circumstances. Cugher is aware that attending to the customer's needs throughout the machine's durability is the key to a lasting trust relationship.

**Yes,  
we help!**



## Fast and punctual **support**

- Dedicated team of experts
- Ticketing system to track all requests
- Direct line from Monday to Saturday, 7.00 - 24.00
- On-site assistance if necessary
- Custom service contracts for every need

**We'll fix it fast**

[helpdesk@cugher.com](mailto:helpdesk@cugher.com)







Request your specialized consultation from Cugher for your **Home appliance!**

**CUGHER GLASS Srl**  
Via Giuseppe di Vittorio, 70  
20026 - Novate Milanese (MI) Italy

Phone +39 02 66 20 77 62  
info@cugher.com

[www.cugher.com](http://www.cugher.com)



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DIFFERENCE FOR THE ENVIRONMENT!**

