GASKET LP

POLYURETHANE
SYSTEMS FOR
SEALING GASKETS

EURO POLIURETANI

ABOUT US

EUROPOLIURETANI

We are an Italian company with over 25 years of experience in polyurethane technology.
Our strength lies in a dual and integrated expertise: **chemistry and mechanical engineering**, both developed in-house to deliver tailored solutions.

We design and manufacture polyurethane systems as a chemical system house, and we develop automated production equipment internally, combining chemical and mechanical expertise into a single integrated solution. We have a deep understanding of both worlds: the chemical formulation, which determines the performance of the final product, and the mechanical engineering of the equipment, which ensures precise, stable and repeatable application over time.

For this reason, we provide a dedicated, reliable and optimized solution, supporting our customers from the initial concept through to after-sales service.

CHEMISTRY AND ENGINEERING
ONE PARTNER.
ONE COMPLETE SOLUTION.

OUR DEVELOPMENT PROCESS

From Analysis to Operational Continuity

Every project begins with a structured methodology designed to reduce risks, time and inefficiencies, while ensuring reliable and measurable results.

1. Needs Analysis

We analyze your production process, application sector, volumes, critical points and objectives. We study how you operate today and how you want to operate tomorrow.

2. Design

We design the most suitable solution and present it to the customer with full transparency, defining every detail together before the production phase begins.

3. Chemical system development

We develop or customize the most suitable polyurethane system for your sector and application. Performance, reaction times, resistance and density are carefully calibrated according to your actual production conditions.

4. Equipment development

We design and manufacture the equipment in-house, ensuring perfect compatibility with the developed chemical system. Chemistry and engineering are conceived together to guarantee process stability and consistent product quality.

5. Technical dedicated support

Each customer has direct access to a dedicated technical support line. We provide rapid assistance on-site, remotely, or through advanced digital systems to minimize machine downtime.

6. Predictive maintenance

We monitor equipment performance to prevent anomalies, optimize efficiency and anticipate maintenance interventions, avoiding unexpected downtime.

7. Spare parts and revamping

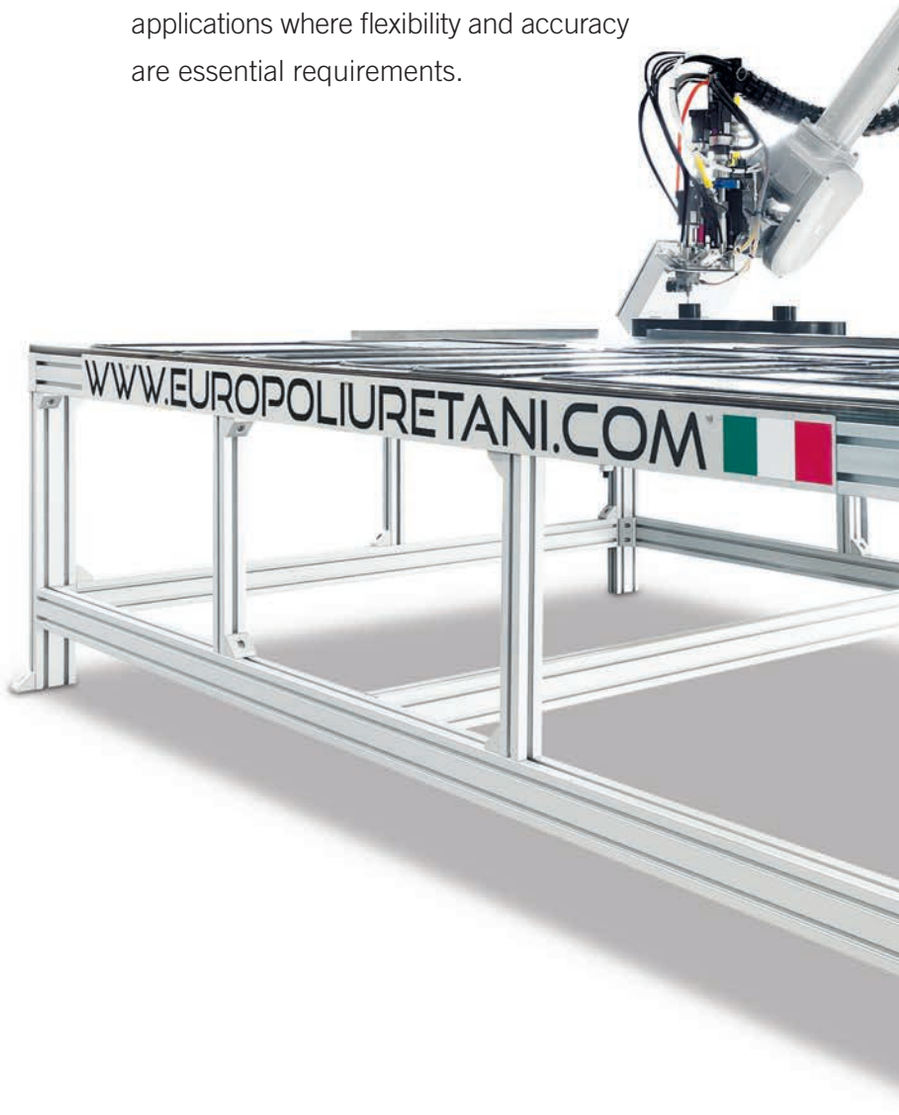
We ensure long-term operational continuity through original spare parts, equipment overhauls and revamping services, extending the system's lifecycle and maintaining maximum efficiency.

GASKET LP

THE SYSTEM

The low-pressure GASKET LP MODEL A dispensing unit ensures accurate and consistent dosing of the components, while the 6-axis anthropomorphic robot provides high flexibility and articulated movements.

Designed to guarantee high dispensing precision even on components with complex geometries, varying heights and different dimensions.
The combination of smooth movements, high repeatability and full path control makes the robot the ideal solution for applications where flexibility and accuracy are essential requirements.



MODEL A - ANTHROPOMORPHIC

KEY FEATURES

6-axis anthropomorphic robot
Two-component mixing head
Separate single working table
System management software
24” user interface display for system control

COMPONENTS

Storage tanks
Hydraulic power unit
Component temperature control unit
Pressurized tanks for washing liquid
Two safety photoelectric barriers
Two high-precision progressive cavity dosing pumps

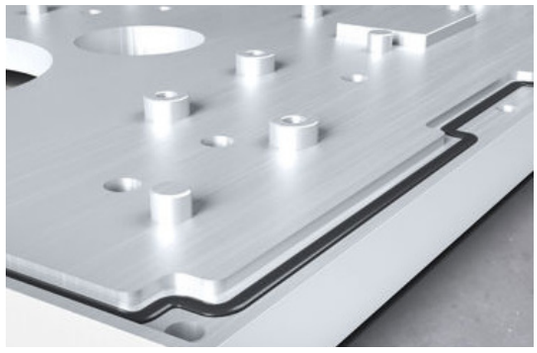
Diaphragm pump for extracting the hardener (Component A) from 50 or 200-liter containers

Pneumatic pump with follower plate for extracting the polyol (Component B) from 20 or 200-liter pails, suitable for thixotropic products

GASKET LP

The polyurethane gasket dispensing and mixing system developed by Europoliuretani is the result of a design focused on simplifying the production cycle, making it reliable, repeatable and easy for the operator to manage.

The Gasket LP dispensing machine, based on FIPFG (Formed-In-Place Foam Gasket) technology, allows the production of continuous gaskets applied directly onto the component, without joints and with consistent quality over time. This technology is particularly suitable for complex geometries and intricate shapes.



OPTIONAL

Advanced DWG software and hardware for automatic import of CAD files and path definition

Custom-designed working tables
Multiple working tables
Special application automation systems
Integration of safety systems

Pneumatic pump with follower plate for extracting Polyol (Component B) from 200-liter drum

MODEL A - ANTHROPOMORPHIC

The process involves the precise mixing of the two main components – isocyanate and polyol – directly inside the mixing head, ensuring consistent dosing and a uniform gasket application along the entire perimeter of the component.

GASKET LP

The C-READY system is the standard version of the GASKET LP **Cartesian** line, designed for the production of two-component polyurethane gaskets applied directly onto the component using FIPFG (Formed-In-Place Foam Gasket) technology.

It is a complete dispensing and mixing system, developed as a pre-configured solution in which every component — the dosing unit, control software, materials, working table and mechanical structure — operates in perfect synergy to ensure high application precision and process reliability.

The C-READY version has been designed to provide fast availability and easy installation, while maintaining the technological standards of the GASKET LP line.

THE SYSTEM

The low-pressure GASKET LP C-READY dispensing unit ensures accurate and consistent dosing of the components, while the 3-axis Cartesian robot (X-Y-Z) enables coordinated and repeatable movements along the gasket application path.

The control software manages and integrates the entire process through a single interface, supported by a centralized electrical cabinet that controls all machine parameters.

The system is completed with safety devices compliant with industrial standards, ensuring protected and reliable operation under all working conditions.

MODEL C - READY

MODEL C-READY

Pre-configured and fully tested configuration

The GASKET LP CARTESIAN READY model stands out for its fully pre-assembled monoblock structural configuration, entirely assembled at the factory.

C-READY transport as a fully assembled system

The C-READY system is shipped as a fully integrated unit, already wired, tested and configured. The entire system — dispensing unit, Cartesian robot, electrical cabinet and auxiliary components — is delivered complete on a truck, without the need for structural disassembly.

Fast Installation and Start-Up

Upon arrival on site, installation is limited to positioning the system, connecting utilities and performing final functional checks. Within a short time, the system is ready for operation, eliminating reassembly time, mechanical realignment and recalibration typically required with modular configurations.

Short Delivery Times

A solution designed to reduce delivery times thanks to the standardization of the system.

GASKET LP

OPTIONAL

Advanced DWG software and hardware for automatic import of CAD files and automatic path definition

Special application automation systems
Integration of safety systems

Pneumatic pump with follower plate for extracting Polyol (Component B) from 200-liter drum

MODEL C - READY

C-READY CONFIGURATION

3-axis Cartesian robot
Integrated single working table (3000 × 1450 mm)
Two-component mixing head
Control software

15” touch-screen user interface for system management

Storage tanks
Hydraulic power unit
Component temperature control unit
Pressurized tank for washing liquid
Two safety photoelectric barriers
Two high-precision progressive cavity dosing pumps

Diaphragm pump for extracting the hardener (Component A) from 50 or 200-liter containers

Pneumatic pump with follower plate for extracting Polyol (Component B) from 20-liter pails

STANDARD FEATURES

Axis Material	Structural aluminum profiles
Axis support and worktable structure material	Painted steel
Installed power (robot + dispensing unit)	7,5KW
Power supply	400 VAC – 50 Hz – 3F + T
Motors	Brushless
Mini tank capacity	2 liters (A+B)
Helical dosing pumps	ISO: 0.3 cc/rev POL: 1 cc/rev
System flow rate	0,5 – 4 g/sec
Movement system	High-reliability toothed belt drive

GASKET LP

The GASKET LP in the C-EXTENDED version is the configuration of the GASKET LP line designed to offer maximum flexibility.

It consists of a low-pressure dispensing system combined with a **Cartesian system**, developed for the production of two-component polyurethane gaskets applied directly onto the component using FIPFG (Formed-In-Place Foam Gasket) technology.

While the C-READY configuration is standardized, The C-EXTENDED version is custom-designed to adapt the system to specific production conditions, optimizing line layout, operational workflows, ergonomics and production capacity.

The GASKET LP C-EXTENDED is the ideal solution for applications requiring greater design freedom, special configurations or dedicated integrations within existing industrial processes.

THE SYSTEM

In the GASKET LP C-EXTENDED, the low-pressure dispensing technology ensures stable and precise delivery of the two components, maintaining a consistent mixing ratio throughout the production cycle. The three-axis Cartesian motion system (X-Y-Z) guarantees controlled trajectories and high repeatability.

Operational management is handled by dedicated software that supervises process parameters, recipes and diagnostics through a single interface, while the integrated electrical cabinet coordinates and controls all machine functions.

MODEL C - EXTENDED

MODEL C- EXTENDED

High level of customization

The system is configured during the design phase according to the customer's application requirements (worktable dimensions, rotating tables, additional axes, supplementary tanks, dedicated handling systems and special automation solutions).

Sectional structure for transport

The system is divided into several sections during shipment to facilitate transport, logistics and access within production facilities.

Structured Installation and Commissioning Process

The system is reassembled and commissioned directly at the customer's facility by specialized technicians, ensuring proper integration into the production process.

GASKET LP

OPTIONAL

Advanced DWG software and hardware for automatic import of CAD files and automatic path definition

Custom working table
Double working table
Special application automation systems
Integration of safety systems

Pneumatic pump with follower plate for extracting Polyol (Component B) from 200-liter drums

MODEL C - EXTENDED

STANDARD CONFIGURATION

3-axis Cartesian robot
Integrated single working table (3000 × 1500 mm)
Two-component mixing head
Control software
24” user interface display for system management
Storage tanks

Hydraulic power unit
Component temperature control unit
Pressurized tank for washing liquid
Two safety photoelectric barriers
Two high-precision progressive cavity dosing pumps

Diaphragm pump for extracting the hardener (Component A) from 50 or 200-liter containers

Pneumatic pump with follower plate for extracting Polyol (Component B) from 20-liter pails

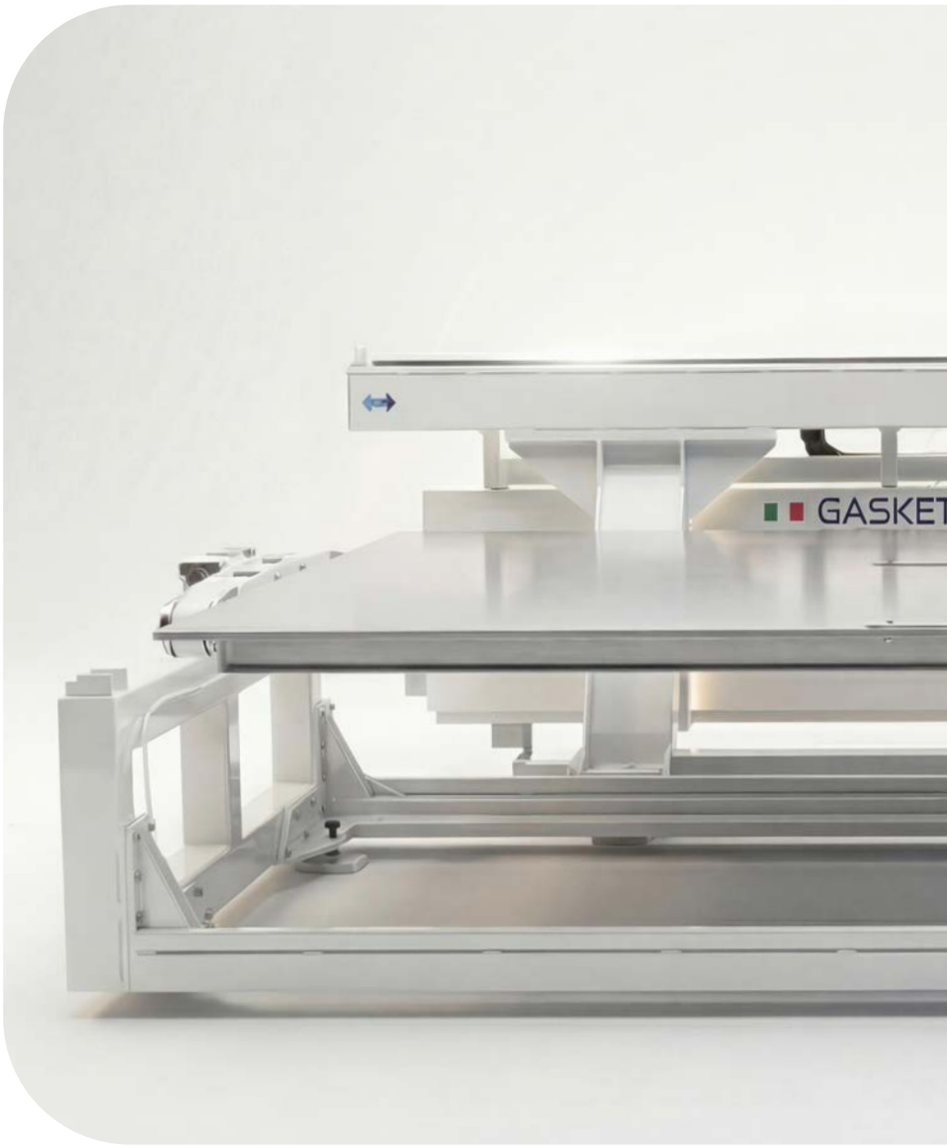
STANDARD FEATURES

Axis support structure	Painted steel
Axis structure	Structural aluminum profiles
Installed power (robot + dispensing unit)	25,5 KW
Power supply	400 VAC – 50 Hz – 3F + T
Motors	Brushless
Mini tank capacity	2 liters (A+B)
Helical dosing pumps	ISO: 0,3 cc/giro POL: 1 cc/giro
System flow rate	0,5 – 4 gr/sec
Movement system	High-precision rack-and-pinion drive

GASKET LP

The true strength of the GASKET LP C-EXTENDED version lies in its design flexibility, allowing the system to be configured according to the customer's actual production requirements.

The image shows an example of a C-EXTENDED configuration, consisting of a system with a Cartesian motion system and a double rotating table.

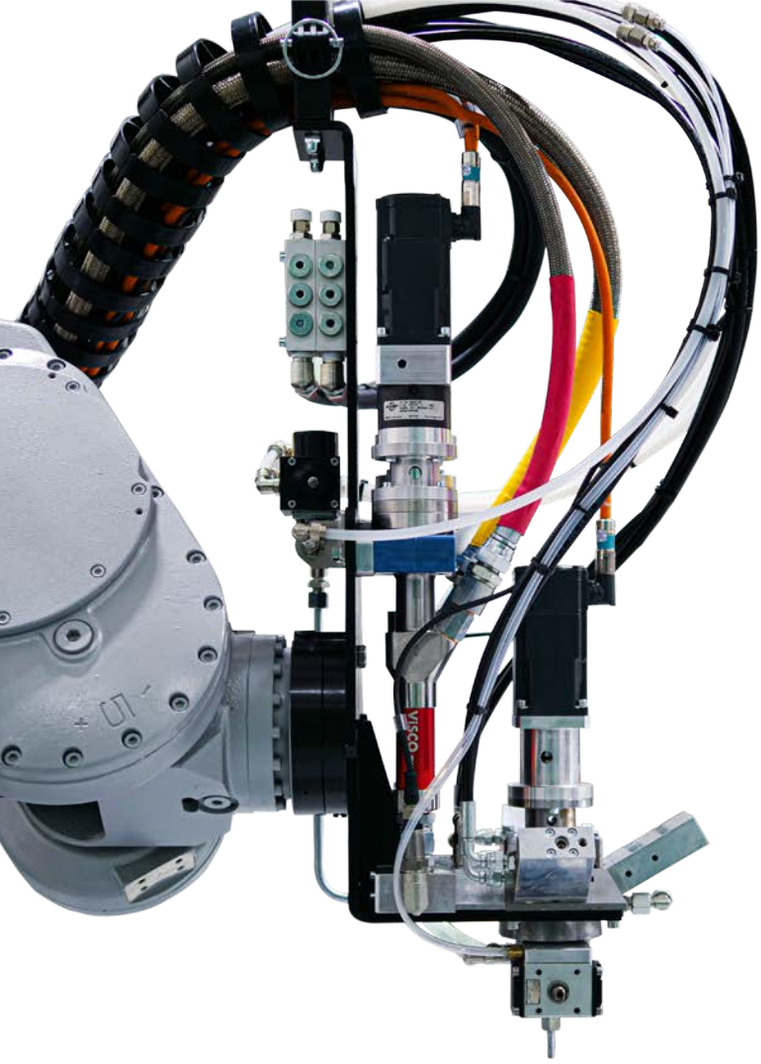


Watch the video

C - EXTENDED
EXAMPLE CONFIGURATION

This solution allows cycle times to be optimized and ensures greater operational continuity: while one table is in the gasket application phase, the other can be used for loading and unloading the components.

The result is a smoother, faster and more efficient production process. The C-EXTENDED version is built precisely on this concept: offering a custom-engineered system capable of adapting to each customer's specific production, layout and automation requirements.



GASKET LP

MIXING HEAD

The mixing head is the core of the system. It is a compact unit equipped with a high-technology dynamic mixing system that ensures high efficiency at low pressure.

Thanks to the low-pressure mechanical mixing system, the components are simultaneously introduced into the mixing chamber and blended by a variable-speed agitator, ensuring consistent homogeneity of the dispensed product. The controlled opening and closing valves guarantee cycle repeatability, while the automatic pre-shot and cleaning system keeps the mixing chamber clean and ready for the next cycle.

The result is a uniform gasket, free from defects and with consistent mechanical properties over time. The main benefits include: stable foam quality, reduced waste, lower maintenance requirements, safe restart even after machine downtime, and maximum operational reliability.

Key features

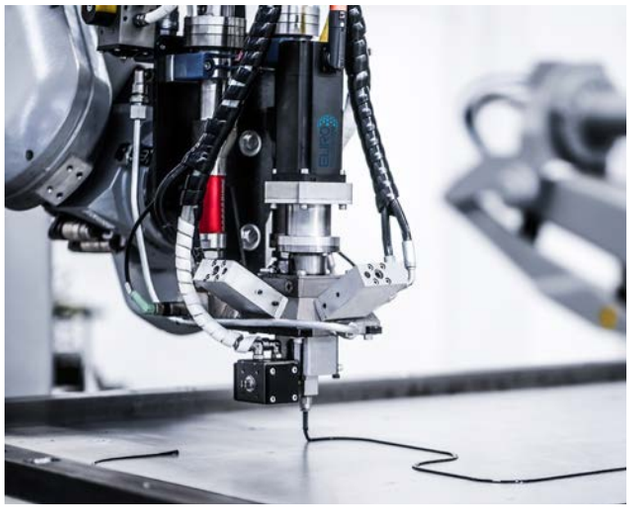
• Advanced technology: by eliminating nozzles in the mixing process and introducing an innovative automatic cleaning system, any risk of clogging has been eliminated.

• Integrated heating and cooling circuit for proper temperature control and component conditioning.

• Brushless motors, quiet, high-performance and compact, allow the system to operate smoothly without perceptible noise during dispensing.

• Dosing pumps positioned close to the mixing head ensure maximum dosing accuracy and prevent pressure losses.

• Variable flow rates: from 0.5 g/sec to 5 g/sec.



GASKET LP FEATURES

POLYURETHANE SYSTEMS FOR SEALING GASKETS

CARTESIAN	ANTHROPOMORPHIC
The work surface is integral with the system	Separate, movable work surface
Work surface of any size	Limited maximum size
Linear work tables	Linear, simultaneous and/or rotary work tables
3 standard axes	6 standard axes
Limited subsequent automations	Maximum flexibility for subsequent automation
Robot with limited versatility	Highly versatile robot
Simple and intuitive management software	Simple and intuitive management software
Intuitive and customisable user interface	Intuitive and customisable user interface
Extremely accurate dosing	Extremely accurate dosing

ELIMINATION OF THE NUCLEATION AND MATERIAL RECIRCULATION PROCESS

A significant technical choice that breaks with traditional approaches to introduce a simpler, more stable and more efficient system, while ensuring excellent mixing of the components. In conventional systems, continuous recirculation — with air introduced into the circuit — was considered necessary to maintain mixture homogeneity. The polyol component was continuously circulated from the tank to the dispensing head, even when the machine was not in the application phase, generating additional energy consumption and process variables.

Key benefits:

Improved foam gasket stability

The elimination of recirculation and nucleation makes it possible to obtain a more stable and uniform dispensed polyurethane, reducing interference with the chemical and physical properties of the mixture.

Reduced energy consumption

The advantage is also evident from an energy efficiency perspective. Energy consumption occurs only during the application phase.

Easy system operation

The result is a simpler, higher-performance and more sustainable system.
An advanced technology that simplifies the process, improves quality and optimizes operating costs.

Reduced need for corrective interventions

Fewer variables mean greater process control and reduced need for corrective interventions by the operator.

Increased system reliability

System reliability also benefits from this approach: the absence of continuous flows reduces wear on stressed components and extends the service life of the mixing head, the central element of the entire system.

THE POWER OF SOFTWARE

The software is the operational core of the entire system. For this reason, we have developed a management system designed to maximize efficiency, clarity and ease of use.

Interface

The interface has been designed to provide an intuitive and immediate user experience: clear commands, logical navigation and easily accessible parameters allow operators to manage the process quickly and accurately, significantly reducing the risk of errors. Even less experienced personnel can operate the system safely.

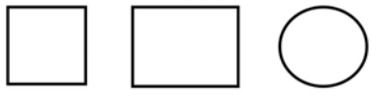
To support daily operations, the software also includes a dedicated section with practical and concise video tutorials, designed to show step by step how to use the main functions. This accelerates training and enhances the full potential of the system.

The result is a system that makes work simpler, safer and more efficient.

STANDARD SOFTWARE

Included in the system

The control software is designed for simple geometries such as circular or rectangular shapes.



It is sufficient to position the component at the predefined zero point on the working table, enter the dimensions and/or recall the memory slot associated with that component (with the parameters already stored), and press START. The working cycle will then begin. Components with the same dimensions, placed next to each other, can be gasketed continuously in sequence without interrupting the dispensing cycle.

DWG SOFTWARE

Among the most advanced in its class

Software and hardware designed for easy operation by any operator thanks to their simplicity. Whether for simple or complex geometries, the software ensures a smoother, faster and more automated process. Through a 2D technical drawing, by defining the start and end points of the dispensing path, the advanced software automatically identifies the trajectory and sends the information to the robot, which then begins the application process. In the case of complex surfaces, the software controls the robot to perform more demanding operations, such as applying the gasket on different levels or varying heights.

CHEMICALS

OUR FOAMED GASKETS

As a System House, we design and produce custom polyurethane foam gasket systems tailored to the specific application sector and product.

The polyurethane foam gasket systems we develop are the result of advanced technical research and rigorous quality control, designed to ensure high and consistent performance over time. Our formulations provide high mechanical resistance and long-term stability, even under demanding operating conditions.

Internal testing, particularly toughness, resistance and aging tests, has shown excellent and reliable results, confirming that our polyurethane systems maintain elasticity, adhesion and functional performance over time for demanding industrial applications.

KEY FEATURES

A benchmark choice for product quality.

Gasketing type	polyurethane systems
Rheological properties	Thixotropic or non-thixotropic (Groove application)
Color	Grey, black and blue (other colors on request)
Free expansion density	from 200 to 400 kg/m3
Thermal resistance	from -40°C to 120°C
Compression test	0.85 to 1.99% (UL50E Sec. 8.13.3, 8.13.3.3)
Hardness	50-70 (Shore00)
Tensile strength	>0.25 N/mm2
Fire reaction	V0 according to UL94:2013 test standard
Certifications	UL50E – ISO846 Method A and Method C
Water permeability	<0,5% by mass

Always Focused on Quality

The foam produced with our polyurethane systems features an open-cell structure, while maintaining a compact outer skin layer that ensures very low water absorption.

- Non-toxic
- Plasticizer-free
- Resistant to oil, dust, detergents and humidity
- Hypoallergenic
- Halogenated hydrocarbon-free
- Antibacterial

Via Castellana 68
35010 Trebaseleghe
Padova - Italy

T +39 049 9386521
F +39 049 9386910

info@europoliuretani.com

europoliuretani.com