



HPE

AND CHEMICALS

HIGH
PRESSURE
POLYURETHANE
EQUIPMENT

POLYURETHANE
SYSTEMS

EURO
POLIURETANI



EURO
SERIE



EURO
COMPACT



HPE

HIGH
PRESSURE
POLYURETHANE
EQUIPMENT



The high-pressure models of the **HPE range** - **HPE Serie, HPE Compact, HPE A and HPE Pentano**- represent the top of the line among polyurethane two-component foaming machines designed, manufactured and marketed by Europoliuretani.

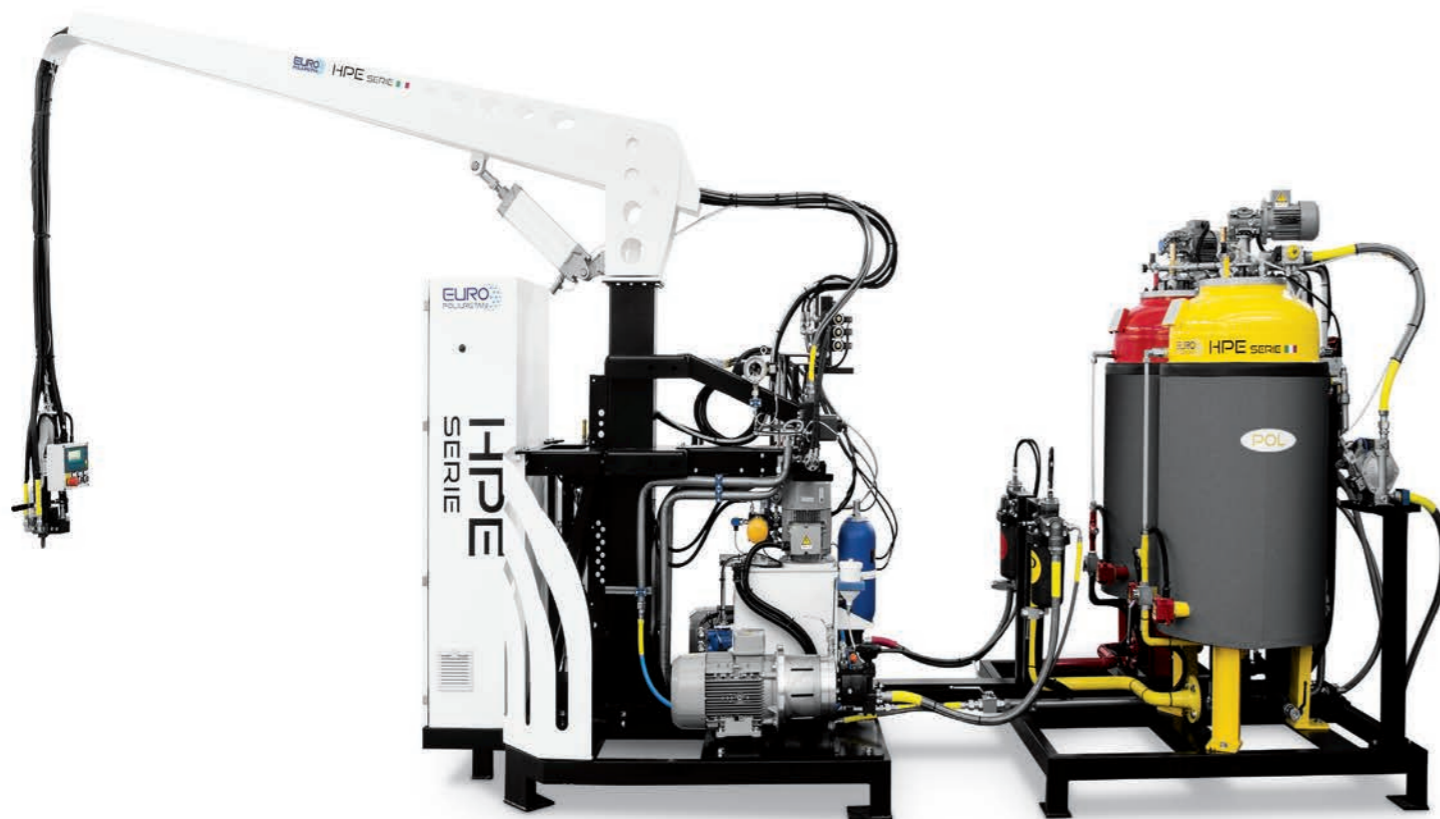
Versatility, ease of use, meticulous engineering design and the selection of premium-quality materials make the **HPE** range extremely reliable and suitable for any polyurethane foaming application.

The range is available in different configurations, varying in tank types, pump systems, accessories and operating capacities (kg/min), allowing the system to be precisely tailored to specific production requirements.



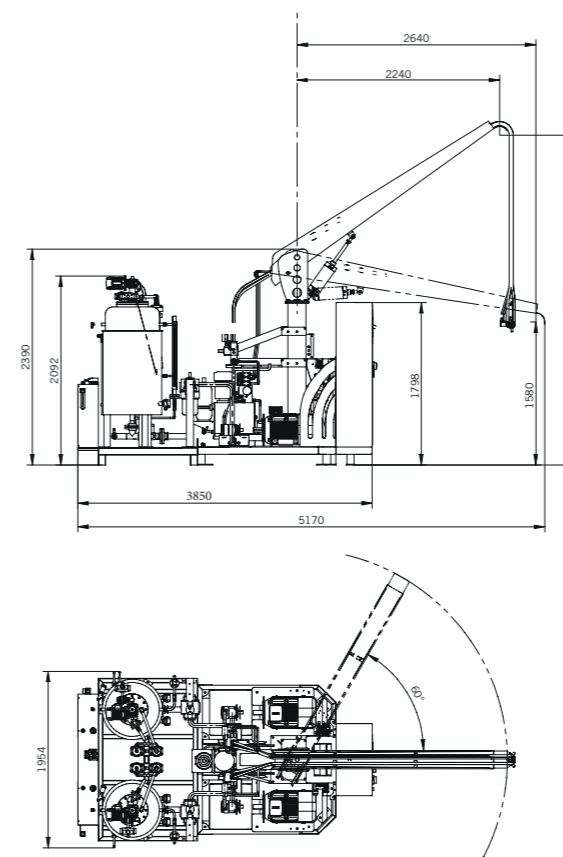
The **HPE SERIE** system is designed to ensure maximum application versatility, allowing the use of a wide range of two-component polyurethane systems. It is an ideal solution to meet diverse foaming requirements across multiple industrial sectors, including refrigeration, insulation, marine, automotive, construction, furniture and technical components.

The HPE Serie is available with 150 or 250 liter tanks, selectable according to the specific processing requirements and production volumes. This configuration is particularly suitable for high-volume foaming applications (approximately 15–20 kg per single shot) with frequent production cycles. A careful evaluation of process parameters allows the most suitable tank configuration to be selected, optimizing efficiency and operational continuity. In both configurations, the tanks are pressurized, PED-certified and equipped with piston pumps, ensuring reliability, precise metering and long-term process stability.



TECHNICAL FEATURES

HPE Serie machines are built on a robust carbon steel frame designed to ensure structural strength and long-term durability, even in demanding production environments. Every component is selected according to the highest quality standards, using internationally recognized leading brands, including: SIEMENS for PLCs, electric motors and electromechanical components; REXROTH, RHL and BUCHER for pumping and hydraulic systems; WIKA, KELLER and PEPPERL + FUCHS for sensors and control systems.



The large chemical component tanks are equipped with:

- double-wall jacket
- heating and cooling systems
- AISI 304 stainless steel heat exchangers
- level control system

To ensure maximum installation flexibility, the tanks are mounted on an independent frame and can be positioned either adjacent to the machine or separately, depending on the production layout.

The standard configuration also includes a pivoting support arm for the chemical lines, designed to improve organization, safety and hose management. Alternative support solutions can be developed upon request, according to specific customer requirements.

Dual flow rate gear pumps

For applications requiring foaming processes with significantly different flow rates, not always within the standard minimum–maximum range (see table on page 5), the system can be configured with dual-flow gear pumps.

This solution allows the operating range of the machine to be expanded, enabling it to adapt to different production processes without compromising precision, process stability or foam quality.

STANDARD MODELS	CAPACITY min/max g/sec with 1:1 ratio	FIXED DISPLACEMENT CAPACITY L/min. with 1:1 ratio	VARIABLE DISPLACEMENT CAPACITY L/min. with 1:1 ratio	MOTOR POWER Paired motors KW.	INSTALLED NOMINAL POWER KW.	TANK CAPACITY L.
HPE P15	190 - 300	10 - 15,5*	Reduction up to -50%	11	24	150/250
HPE P 30 - 45	400 - 550	21 - 30*	Reduction up to -50%	15	28	150/250
HPE P 60 - 80	1150 - 1650	60 - 86*	Reduction up to -50%	30	43	150/250
HPE P150	2200 - 3150	115 - 165*	Reduction up to -50%	74	86	150/250

Data refer to materials with an average viscosity of 1000 cps and a temperature of 24°C, with a specific weight of 1.15 kg/l. Other models with higher capacities are available upon request.

*Depends on the displacement of the installed pump. Upon request, component ratios can be configured from 1:5 up to 5:1.

The **HPE COMPACT** represents the most requested configuration within the HPE range, thanks to the perfect balance between performance, flexibility and compact design. Equipped with 80-liter tanks, it is the ideal solution for:

- small to medium foam shots, including repeated cycles
- long foam shots without frequent cycles

while always ensuring process stability and production continuity.

Another key advantage is its reduced overall footprint. The tanks are installed on a compact frame, making the machine easy to move within the plant and allowing it to adapt easily to limited production spaces or flexible layouts.

TECHNICAL FEATURES

The build quality is ensured through the use of components from internationally recognized leading brands, including Siemens (PLCs, electric motors and electromechanical components), Bosch Rexroth, Bucher Hydraulics and RHL for the hydraulic system, as well as WIKA, Keller and Pepperl+Fuchs for sensors and instrumentation.

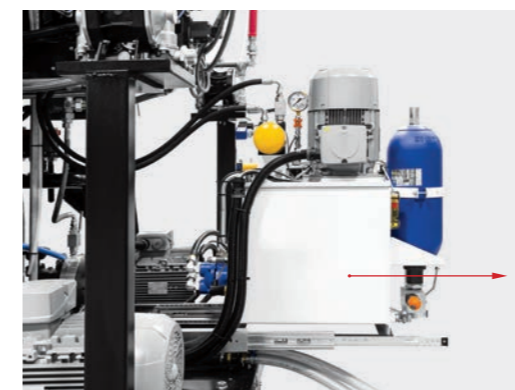
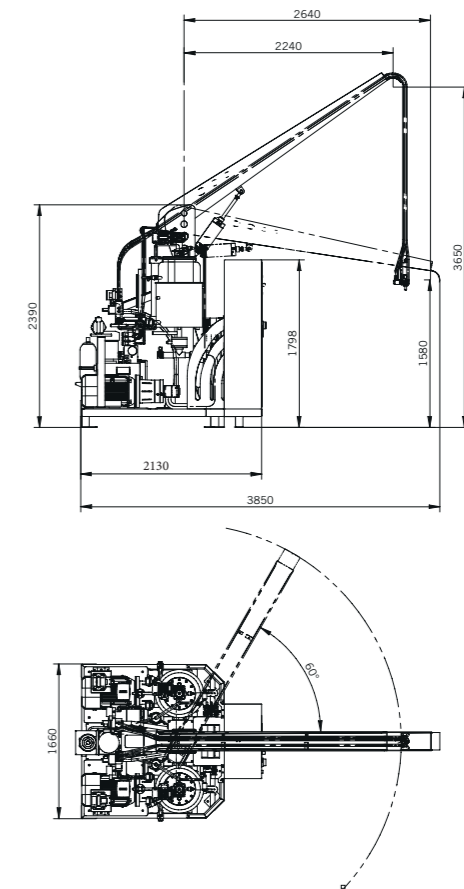
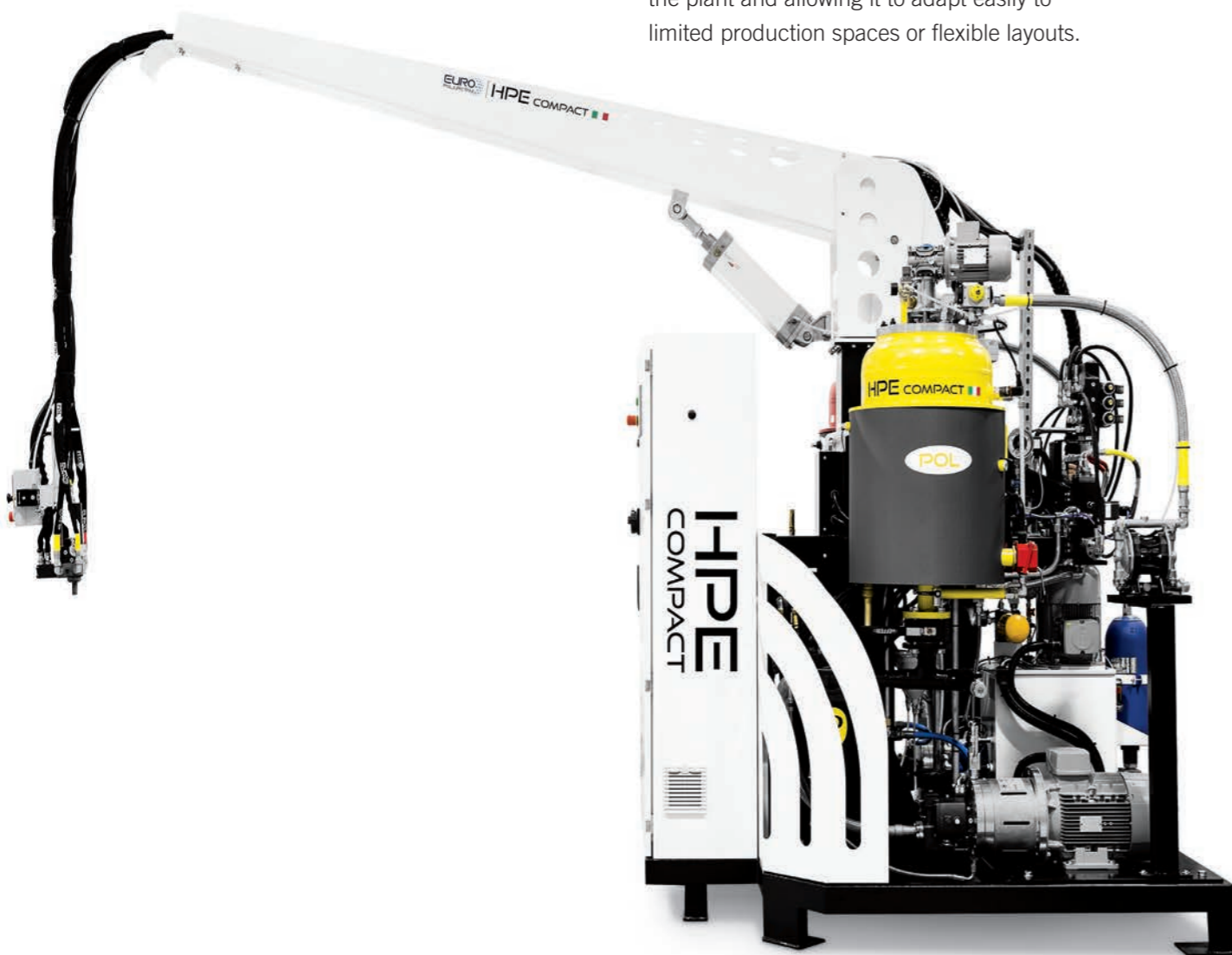
The tanks, pressurized and PED-certified, are paired with high-precision piston pumps.

The relatively small tank capacity provides a practical operational advantage: the reduced volume of isocyanate and polyol to be heated or cooled allows the machine to become operational much faster compared to configurations with larger tanks.

Particular attention has also been given to serviceability. All components are easily accessible to the operator; in particular, the hydraulic power unit, mounted on sliding extraction guides, can be quickly pulled out, simplifying inspection and routine maintenance operations (see figure on page 7).

The standard configuration also includes the installation of a pivoting support arm for the chemical lines, designed to improve ergonomics and hose management (as shown in the figure on page 6).

Upon request, customized support solutions are available, designed and manufactured according to the specific requirements of the customer.



Centralina oleodinamica estraibile per facilitare la manutenzione

STANDARD MODELS	CAPACITY min/max g/sec with 1:1 ratio	FIXED DISPLACEMENT CAPACITY L/min. with 1:1 ratio	VARIABLE DISPLACEMENT CAPACITY L/min. with 1:1 ratio	MOTOR POWER Paired motors KW.	INSTALLED NOMINAL POWER KW.	TANK CAPACITY L.
HPE P15	190 - 300	10 - 15,5*	Reduction up to -50%	11	24	80
HPE P 30 - 45	400 - 550	21 - 30*	Reduction up to -50%	15	28	80
HPE P 60 - 80	1150 - 1650	60 - 86*	Reduction up to -50%	30	43	80

Data refer to materials with an average viscosity of 1000 cps and a temperature of 24°C, with a specific weight of 1.15 kg/l. Other models with higher capacities are available upon request.

*Depends on the displacement of the installed pump. Upon request, component ratios can be configured from 1:5 up to 5:1.

The **HPE A-30** system is the model developed by Europoliuretani for applications requiring small to medium output rates for two-component polyurethane foaming.

Within the range of systems manufactured by the company, this model shares some similarities with the HPE Compact; however, thanks to specific technical solutions, it retains the main functionalities of the system while being more economically accessible and featuring an even more compact footprint.

TECHNICAL FEATURES

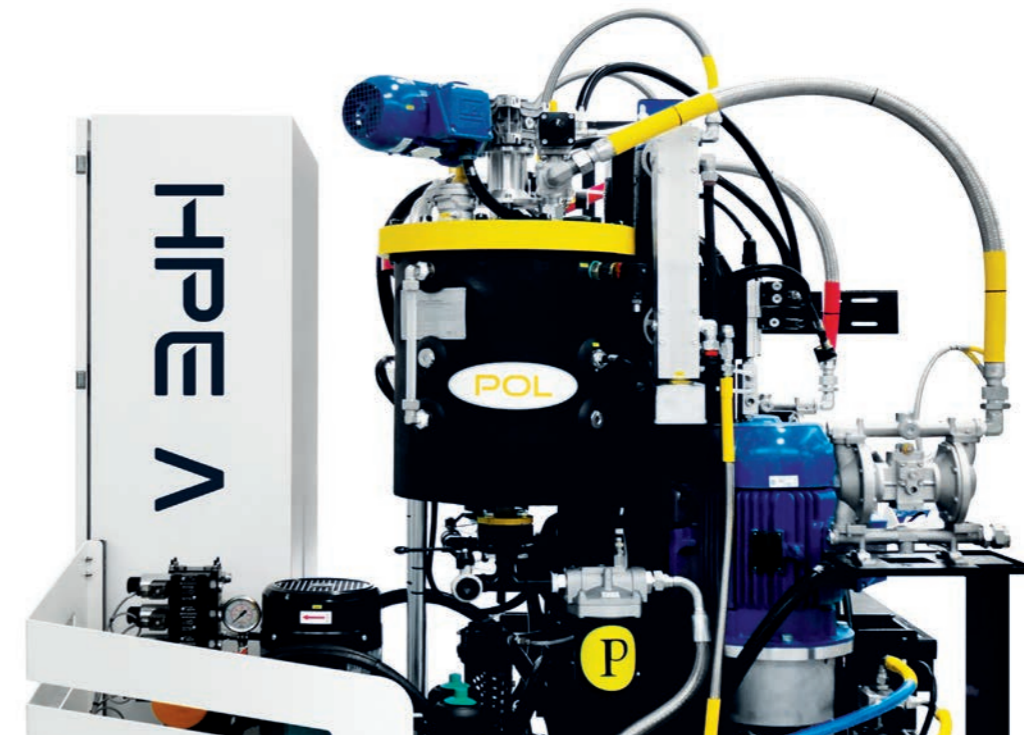
This type of machine has been designed with the attention to detail that distinguishes the company: from its compact dimensions to the easy access to components, as well as the simplicity of operation ensured by clear and intuitive software interfaces.

Main features:

- 30-liter tanks for component A and B, certified for 4 bar operating pressure.
- Dedicated heat exchangers on each tank, equipped with a 2 kW electric heater, ensuring proper temperature control of the chemical components.
- Gear pumps for precise and consistent metering (piston pumps available upon request).
- Possibility to integrate a jib arm (optional) to support and handle the mixing head.
- Supplied with 6 m of heated hose bundle and EPL 14.10 mixing head.

HPE A- 30 MODEL	with a 5 cc/rev pump	with a 10 cc/rev pump
CAPACITY min/max g./sec. with 1:1 ratio	190 - 300	400-550
FIXED DISPLACEMENT CAPACITY L/min. with 1:1 ratio	10-15,5*	21-30*
MOTOR POWER Paired motors KW.	11	15
INSTALLED NOMINAL POWER KW.	24	28
TANK CAPACITY L.	30	30

Data refer to materials with an average viscosity of 1000 cps, at a temperature of 24°C and with a specific gravity of 1.15 kg/l.



The **HPE PENTANO** model is a high-pressure system designed for two-component polyurethane foaming using **pentane** as the blowing agent.

Given the highly flammable nature of pentane, the system design is not limited to production performance alone. Every construction detail is developed according to an engineering approach focused on:

- safety
- full regulatory compliance
- rigorous control of risks associated with flammable atmospheres.

TECHNICAL FEATURES

This type of machine has been designed to meet the highest technical standards required for ATEX Zone 2/G classified areas, ensuring operational continuity, reliability and maximum protection for both operators and the production facility. Every design choice — from the electrical configuration to the mechanical layout, from the sensor systems to the control system — is aimed at preventing and mitigating risks associated with the presence of flammable atmospheres.

The system can be configured with 80-liter chemical tanks (PED Category III) or 250-liter tanks (PED Category IV), providing flexibility according to production volumes and specific application requirements.

Main features and safety:

- Electrical equipment with ATEX II 2G/3G marking
- Wiring compliant with EN 60079-10-1 standard
- Pressure, flow and temperature sensors in ATEX execution
- Certified enclosures and wiring

The metering and mixing system uses piston pumps with certified seals and mixing heads made of special steels, ensuring chemical resistance, precision and long-term durability even under demanding operating conditions.

The tanks, manufactured in AISI 304 stainless steel, are equipped with a double-wall jacket and heat exchangers, also made of AISI 304 stainless steel, to ensure proper temperature control of the components while maintaining stable rheological properties of the polyurethane system.

The quality of the system is further ensured by the use of components from internationally recognized brands such as SIEMENS, REXROTH, BOSCH, KELLER and PEPPERL+FUCHS, synonymous with reliability and high industrial standards.

Regulatory Compliance:

The HPE PENTANO model is designed and manufactured in compliance with the main European Directives:

- 2006/42/EC – Machinery Directive
- 2014/30/EU – Electromagnetic Compatibility Directive
- 2014/35/EU – Low Voltage Directive
- 2014/34/EU – ATEX Directive (Equipment intended for use in explosive atmospheres)



STANDARD MODELS	CAPACITY min/max g/sec with 1:1 ratio	FIXED DISPLACEMENT CAPACITY L/min. with 1:1 ratio	VARIABLE DISPLACEMENT CAPACITY L/min. with 1:1 ratio	MOTOR POWER Paired motors KW.	INSTALLED NOMINAL POWER KW.	TANK CAPACITY L.
HPE P15	190 - 300	10 - 15,5*	Reduction up to -50%	11	24	80
HPE P 30 - 45	400 - 550	21 - 30*	Reduction up to -50%	15	28	80
HPE P 60 - 80	1150 - 1650	60 - 86*	Reduction up to -50%	30	43	80

Data refer to materials with an average viscosity of 1000 cps and a temperature of 24°C, with a specific weight of 1.15 kg/l. Other models with higher capacities are available upon request.

*Depends on the displacement of the installed pump. Upon request, component ratios can be configured from 1:5 up to 5:1.



Mixing head with 4" LCD control panel

MIXING HEAD

The EPL series high-pressure mixing head is built with the well-known "L-chamber" system, ensuring high-quality and repeatable foaming.

The mixing head can be installed in either vertical or horizontal configuration, allowing injection to be carried out in both open-mold and closed-mold applications. Component calibration is performed directly on the mixing head by adjusting the injection nozzles.

The system consists of two cylindrical chambers:

- the mixing chamber, where the two components are injected at high speed and mixed
- the discharge chamber, through which the reacting polyurethane is conveyed into the mold

The mixing head is also equipped with an innovative patented forced lubrication system designed to prevent possible blockages and ensure continuous operation. Different types of mixing heads can be installed depending on the required output rate and the type of material to be dispensed.



EPL2 (double drawer for 4 components)

EPL INJECTION HEAD

MODEL	FLOW RATE gr./sec.
EPL 10.08	50 ÷ 260
EPL 12.10	90 ÷ 300
EPL 14.10	90 ÷ 600
EPL 18.12	180 ÷ 1100
EPL 24.15	280 ÷ 2000

Ratio 1:1 - Viscosity max 1000 cps

CONTROL PANELS

The HPE line is equipped as standard with a SIEMENS S7-1200 PLC electronic control system and a 4" touchscreen interface panel with an intuitive graphical layout, positioned on the mixing head. Through this interface, the various operating parameters can be easily set and monitored:

- component temperatures
- pressures of components A and B
- actual A:B component ratio during foaming
- quantity of product dispensed (kg)
- program number (100 standard memory slots)
- output rate setting (kg/min)
- alarm notifications indicating how and where to intervene.

Among the available options, and as an alternative to the standard 4" touchscreen interface, it is possible to install a 12" touchscreen panel mounted on the electrical cabinet. This panel features an advanced and easy-to-read graphical interface, including a system layout diagram and visualization of the installed sensors.

The control keypad includes the foaming start button, the emergency stop button, the program increment/decrement keys (memory slots), and the up-down button for moving the chemical line support arm.



12" touch screen interface panel

SYSTEM INTEGRATIONS (OPTIONAL)

LOADING PUMPS, required to fill and maintain the correct product level inside the pressurized tanks.

MAGNETIC COUPLINGS FOR ISO AND POL, installed between the pump and the motor, preventing leaks from the drive shaft and the typical seepage of the pump, particularly when pressurized tanks are used.

FLOW METERS (flow control devices), ensuring the correct stoichiometric ratio between the components even in case of pump wear.

TANK AGITATORS, keeping the products inside the two tanks properly mixed and accelerating the temperature stabilization of the components.



Tank mixer

REMOTE ASSISTANCE: through an ASEM router, enabling technical support, new programming updates or simple system checks via Internet modem.

DATA PRINTER, providing label printouts of:

- set weight
- actual dispensed weight
- component ratio used
- date
- part and/or customer identification

BARCODE READER, which automatically calculates the quantity to be dispensed by reading a barcode.

WE ARE A SYSTEM HOUSE

Rigid polyurethane foam is today one of the most high-performance insulating materials available on the market. Thanks to its closed-cell structure, it ensures low thermal conductivity values, high compressive strength and excellent adhesion to the most common industrial substrates.

Our rigid polyurethane foams are the result of over twenty-five years of experience in the formulation and engineering of high-performance polyurethane systems.

We design and produce polyurethane systems (polyol-isocyanate) developed to guarantee excellent mechanical properties, dimensional stability and superior thermal performance, adapting to a wide range of application requirements.



SUSTAINABLE R&D

Innovation and environmental responsibility are no longer abstract concepts, but concrete challenges that require bold choices and advanced chemical expertise. Traditional polyurethane systems have long been under scrutiny for their environmental impact and for the presence, in some formulations, of critical substances such as halogenated compounds, chlorine, bromine and PFAS (per- and polyfluoroalkyl substances), known for their persistence and tendency to bioaccumulate.

At Europoliuretani, we have chosen to transform this complexity into an opportunity by initiating a structured path toward more sustainable and responsible formulations, helping guide the entire industry toward higher standards in terms of safety and environmental protection.

In our Research & Development laboratories, we have also developed new formulations:

- water-based
- HFO-free and therefore PFAS-free
- completely halogen-free

We have adopted alternative chemical strategies to ensure high fire-reaction performance while maintaining a more sustainable environmental profile and providing greater protection for operators' health.

This commitment is concretely reflected in:

- the use of polyols derived from recycled PET, mainly obtained from the recovery of post-consumer bottles.
- the introduction of phosphorus-based molecules as high-performance flame retardants, replacing traditional halogenated systems.

The result is a new generation of polyurethane systems capable of significantly reducing environmental impact, promoting resource reuse and improving safety conditions in production environments.

Quality, efficiency and durability remain central elements of our design philosophy.

For us, sustainable innovation is not a compromise — it is a technical evolution that improves the product.

ADVANTAGES

A more sustainable future

Our polyurethane systems, such as halogen-free solutions, represent a step forward compared to traditional systems thanks to their greener characteristics.

Advanced safety

By eliminating toxic elements, a safer working environment is created for operators who handle these products.

Reduced CO2 emissions

Compared to traditional petroleum-derived polyols, the use of PET-based or bio-based polyols leads to lower CO2 emissions during the production process.

High performance and durability

The materials used feature a molecular structure that provides excellent mechanical and thermal properties.

Compliance with CAM Minimum Environmental Criteria

PET-based polyols fully comply with the Minimum Environmental Criteria (CAM) requirements..



FROM REQUEST TO FORMULATION

HOW A CUSTOM POLYURETHANE SYSTEM IS DEVELOPED

At Europoliuretani, every polyurethane system begins with an in-depth technical analysis of the customer's production process.

We carefully study the final application, the geometry of the component, the required densities, the expected mechanical performance, fire reaction requirements and the environmental conditions of use. We also evaluate process variables and sustainability goals, allowing us to develop a formulation that is not only high-performing but also perfectly integrated into the production cycle, ensuring efficiency, stability and long-term operational continuity.

In the Research & Development laboratory, new polyurethane formulations are developed and laboratory tests are carried out to verify their feasibility. During these tests, all relevant data are measured and recorded, with close monitoring of key parameters and evaluation of the main material characteristics. The results obtained are compared with the expected values to verify their consistency with the required objectives. The data collected during these activities make it possible to optimize the formulation and confirm the validity of the new polyurethane system.

Once validated in the laboratory, the formulation is tested on a pilot plant and subsequently transferred to industrial-scale production. During this phase, our technicians support the customer directly on the production line, assisting with the fine-tuning of process parameters and optimizing temperatures, pressures, mixing ratios and cycle times to achieve maximum repeatability and the highest quality of the final product.

The result is a polyurethane system specifically engineered to enhance performance, productivity and long-term reliability.



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