

CeraFLOW[®] Duo / Mono

The most flexible foam dispensing system by CeraCon

CeraCon

More than you expect.

EN



Sealing systems

Enjoy Foaming Now

Made by CeraCon

As easy as whipping cream – a similar fundamental principle is used for the **CeraFLOW®** foam dispensing technology, with which different single-component sealing materials (polyurethanes and silicones) can be foamed. Our **CeraPUR®** material range has been specially developed for use with the **CeraFLOW®** machine technology and can therefore be processed particularly effectively.

The single-component process without a chemical reaction makes it possible: The sealing material and compressed air are homogenised, while shearing forces enable the creation

of the uniform, very fine, predominantly closed-cell foam. By changing the proportion of the air, the softness of the foam can be continuously adjusted, the curing of which only takes place after dispensing. As a result, the material can remain in the machine for a very long time without undergoing any reaction.

CeraFLOW® machine systems are mainly suitable for use with the FIPFG method (Formed In-Place Foam Gasket), in which the foam is directly applied to the component to be sealed by means of a robot-controlled valve, for example.

The CeraCon foam sealing system consists of a single-component sealing material (e.g. CeraPUR®), which is pumped into the CeraFLOW®-machine, where it is mixed with compressed air and discharged, for example, via a robot-guided dispensing valve.



CeraFLOW®

Schematic principle

The non-aerated raw mixture is pumped out of the supply container into a piston pump in order to produce a constant volume flow rate.

With the aid of a pulse valve, individual gas bubbles of process air are injected into this material stream under high pressure. The air-material mixture is now finely dispersed in a homogenisation unit and introduced into (a) further dispensing cylinder(s). From there, the foam is then precisely metered out via a valve.

CeraFLOW® Duo – Continuous dispensing without interruptions

Continuous operation is ensured through the use of two dispensing cylinders. While one piston meters out the material, the material is processed for the second piston. Even if the system operates only with one dispensing cylinder, it nevertheless has an availability level of at least 70 % – which makes it ideal for use in large-scale production.

Advantages and benefits

Smart process control

Automatic adjustment and control of the foaming degree

The desired foam softness (degree of foaming) can be entered and controlled by the system to this target value within narrow tolerances.

Automatic dispensing pressure control

Long-term dispensing pressure fluctuations, e.g. through changes in the ambient temperature and therefore the viscosity of the material, are automatically compensated.

The highly developed sensor and control technology also enable the detection of complex conditions and their associated derivation of instructions for action, e.g. preventive maintenance.

Flexible operating panel

The operating panel with integrated 12" touch screen is height-adjustable. The usual signal tower is integrated in the head of the panel as an elegant LED bar and displays the system's different operating states.

Software

All functions of the system can be operated intuitively via the completely redesigned, multi-level user interface. All messages and instructions are displayed clearly and logically structured.

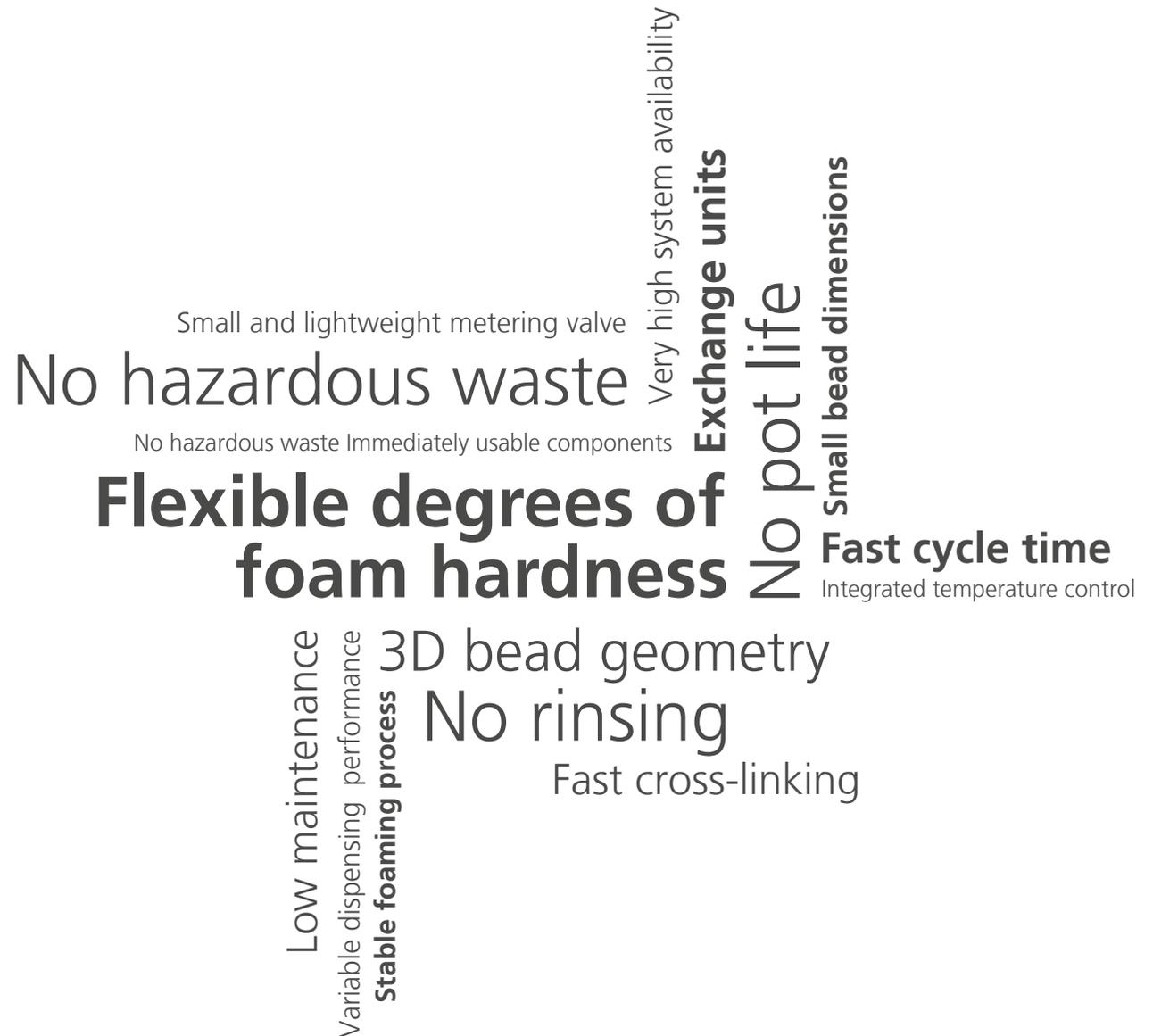


Ready for Industry 4.0

All process parameters and their related change history can be read out online via configurable interfaces, on request also by remote maintenance. For complete traceability, all events are stored in an internal memory, also user-specific if required.

Mobile equipment rack

All mechanical units are mounted on a mobile roller carrier with mostly pluggable connections for quick replacement. Handling is possible without a lift truck thanks to new roller shutter doors, even with very little space around the system.



Basic components

CeraFLOW® Duo

- Pneumatic high-pressure compressor with electronic control valves, throttle and safety valve to provide the process air for foaming
- One servomotor-driven piston pump for material preparation with two pneumatic ball valves
- Precision pulse valve with metal-to-metal seal seat and mechanical fine adjustment of the needle stroke to inject the process air under high pressure
- Homogenisation unit for the production of a uniform gas-liquid dispersion
- Two servomotor-driven precision piston pumps for material application with pressure sensors
- Electronically controlled temperature control with water circulation for dispensing components, material line and valve
- Mobile unit carrier for the easy removal of all material-bearing components for servicing work
- 7 m flexible high-pressure line made of diffusion-tight high-performance fluoropolymer with protective hose
- Dispensing valve with precision needle valve with metal-metal seal, electr. stroke adjustment and pressure sensor
- Machine control via Siemens PLC S7-300 with TP1200 Comfort Panel with 12" display, LENZE servo controller, FESTO pneumatic components

CeraFLOW® Mono

As for CeraFLOW® Duo, unless stated otherwise

- One servomotor-driven precision piston pump

CeraFLOW[®] Duo / Mono

Technical Data



CeraFLOW[®] Duo

Foaming ratio: from unfoamed to 5-fold volume (continuously variable)

Dispensing range: 0.15 – 10.0 g / sec.

Continuously applicable bead length: ²⁾ ∞

Max. dispensing capacity with continuous operation [g / sec.] 2.0

Dimensions (W x D x H): approx. 1,850 x 900 x 1,925 mm

Weight: approx. 750 kg

Electrical connection / power: 3x 400V, 50 / 60 Hz, approx. 4 KW

Compressed air: 5 – 8 bar, approx. 40 l / min.

As for CeraFLOW[®] Duo, unless stated otherwise

CeraFLOW[®] Mono

Weight: approx. 700 kg

Continuously applicable bead length: ²⁾ 33.4 m

Max. dispensing capacity with continuous operation – ¹⁾

¹⁾ can be upgraded to continuous dispensing

²⁾ for a bead dimension of 4 x 2 mm (W x H)

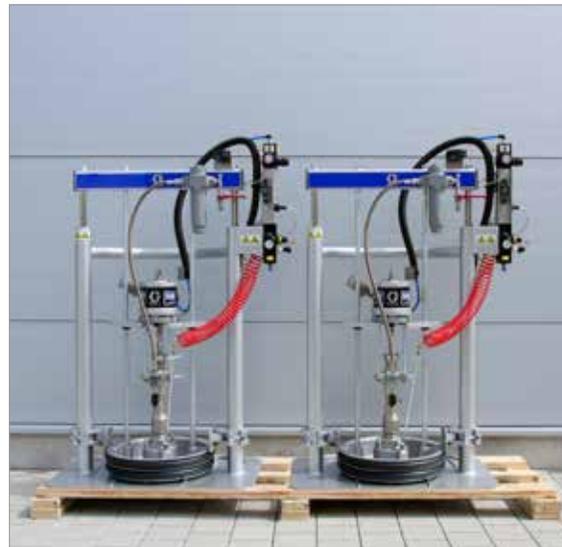
Options

Barrel pumps

The single-component sealing materials are made available in 20 kg or 200 kg drum containers. The polyurethane compound is introduced into the machine by means of a follower plate pump that corresponds to the size of the container. For uninterrupted production, two pumps can also be combined by switching over the supply.



Barrel pump for receiving 20 kg material drum containers



Double barrel station for receiving 2x 200 kg material drum containers

Quick-change exchange units

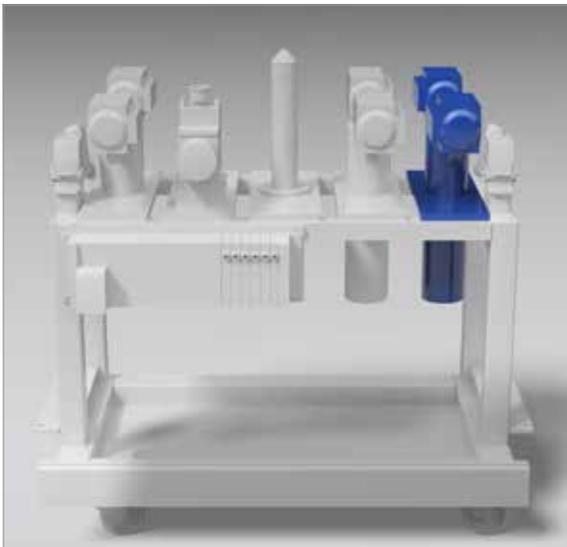
For the further optimisation of the low maintenance requirement, pluggable quick-change exchange units enable the immediate resumption of production.



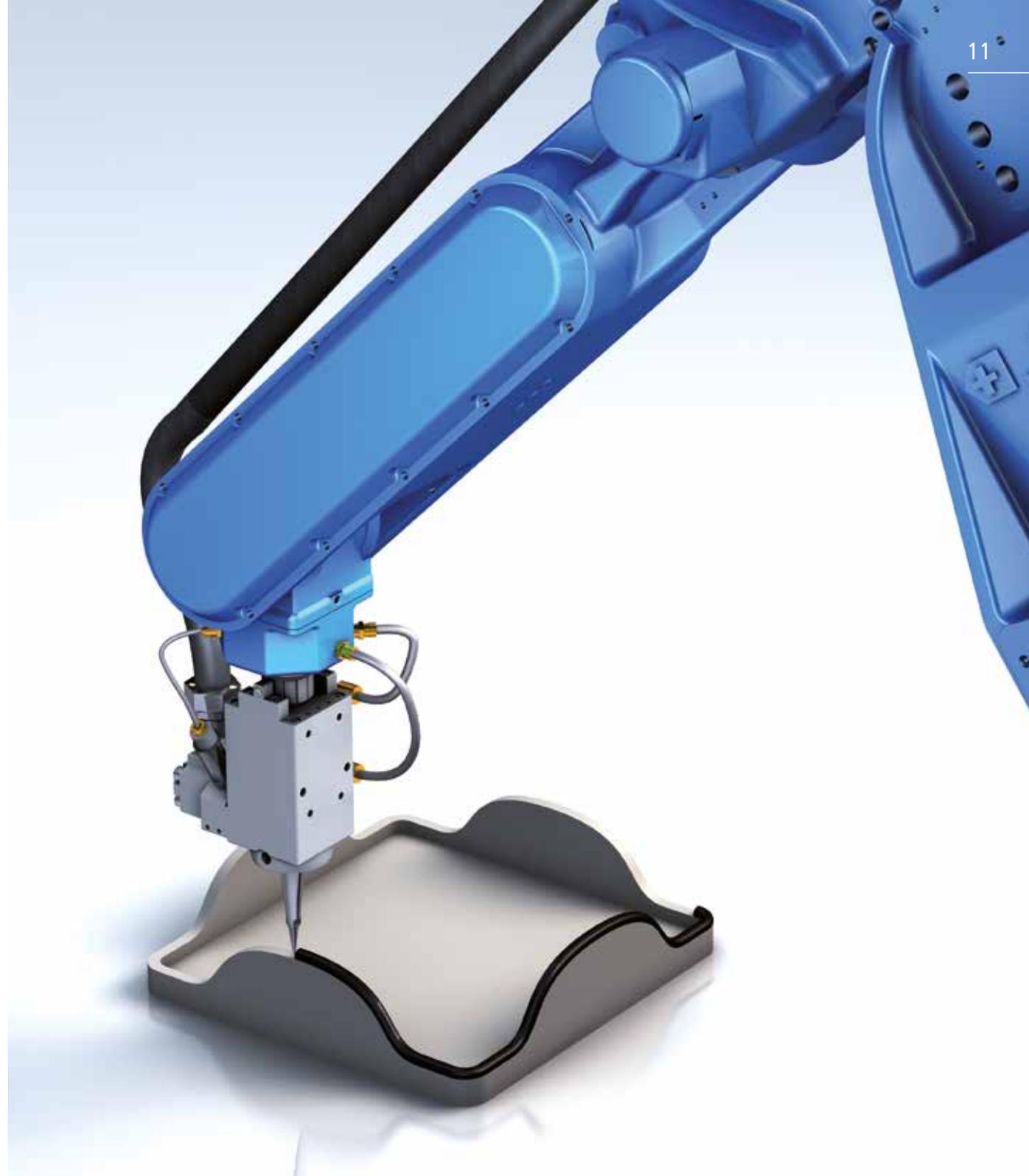
Material preparation and dispensing system on a rollable equipment rack

Upgrade kit for dispensing cylinders

The Cera**FLOW**® Mono model is equipped with only one dispensing cylinder as standard and can be subsequently upgraded. This enables continuous foam dispensing. In addition to the second dispensing cylinder, the upgrade kit consists of a further servo-motor drive that includes an electronic controller.



Cera**FLOW**® Mono turns into a Duo – made possible by the optional upgrade kit.





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Thermal systems

Subject to
modifications and errors.