

# SONDERHOFF DM 402/403/404

Low pressure mixing and dosing system for two to four components



# The reference class – modular and tailor-made for your individual seal

The SONDERHOFF DM 402/403/404 is a high-performance mixing and dosing system for two to four components for the semi- and fully automatic application of sealing foams, adhesives and potting compounds to various parts. This machine precisely processes liquid, medium and high viscosity compounds such as polyurethanes, silicones, epoxy resins or other polymeric reactive materials.

## Processing with maximum comfort

The mixing and dosing systems of the SONDERHOFF DM 402/403/404 series are designed in such a way that you as an operator can easily and safely fulfil the most diverse tasks. The standard operation is carried out via the easy to handle, multifunctional mobile panel SONDERHOFF MP with integrated 6.5" touch screen. Even more convenient is the additional 15" touch screen user interface SONDERHOFF CONTROL II, which is offered as an optional extra.

The fully automatic production sequence of the mixing and dosing machine is ensured by preset ability and control of all machine and process parameters. The use of the mobile panel SONDERHOFF MP simplifies the contour programming for the processed parts. Due to its modular design, the machine is easily accessible, so that cleaning and maintenance work can be carried out quickly and easily.

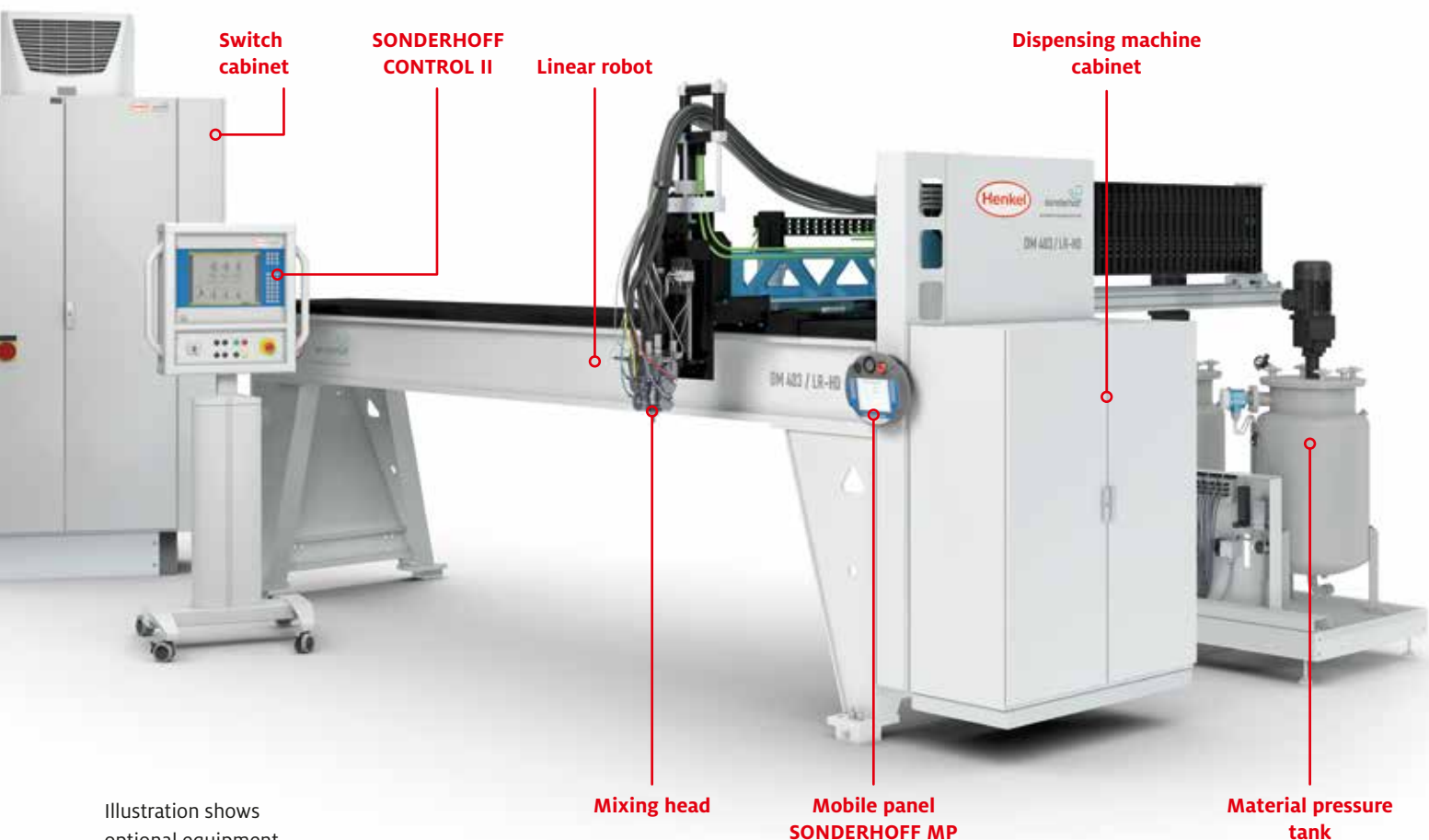


Illustration shows optional equipment

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### Quality at the highest level.

The materials used are processed with consistently high production quality. The use of modern sensor and actuator technology is a further guarantee for safe machine and process control. The automatic logging of all setup, material and process data enables the tracking of any preceding production sequence at any time. A comprehensive service concept will help to gain continuously high machine availability. It is based above all on the basic idea of preventive and planned maintenance.

### Flexible today and tomorrow

Whoever purchases a SONDERHOFF mixing and dosing system is already equipped for tomorrow's tasks. This means that different constructions with new geometries and materials can be processed even under changing circumstances. The 3-component version SONDERHOFF DM 403 allows to process two different material systems with the same B-components simultaneously. The SONDERHOFF DM 404 extends the processing possibilities by a further component: Thus two material systems with different B-components or 3 material systems with the same B-component can be processed. Whatever the use is – either as a unit in a fully automated production line or as a stand-alone system – each machine from the SONDERHOFF DM 402/403/404 series can be integrated into your production concept due to its modular design.

### High Tech – always one step ahead

The SONDERHOFF MK 400 or MK 425 precision mixing head is part of the basic equipment. Optionally, one of the further developed SONDERHOFF MK 600, MK 625 or MK 650 precision mixing heads can be used. Both mixing head series offer qualitative, ecological and economic advantages due to high-pressure water rinsing for cleaning the mixing chamber. Ecological high-pressure water rinsing is the essential feature of environmentally friendly processing of two-component reactive materials. The mixing ratio is infinitely variable from 1 : 100 to 100 : 1. The application rate ranges from 0.05 to 100 g/s depending on the machine configuration.

Material viscosities from 1 to 2,000,000 mPas can be processed. The air load measuring and control unit SONDERHOFF LBM-3 ensures consistent quality of the material components. In combination with pressure-controlled recirculation technology, a precise material output quantity will be achieved. The nozzle lock system SONDERHOFF STOP-DROP DVS-3 prevents dripping and allows an accurate dimension of gaskets particularly in the coupling area. The control of the SONDERHOFF DM 402/403/404 is based on future-oriented industrial PC technology using a real-time operating and bus system. Due to this system, no mechanical parts like hard discs or fans are required anymore. All system and program data are stored on CompactFlash memory cards. The networking and connection of external devices can be easily carried out by plug & play. Using onboard and remote diagnostics, our service is available to you worldwide.

Modular design, innovative technology and process-reliable sequences will promote the profitability of your investment.

#### Basic equipment:

SONDERHOFF MK 400 with high-pressure water rinsing



#### Optionally available:

SONDERHOFF MK 600 with high-pressure water rinsing



#### Basic equipment:

Multifunctional mobile panel SONDERHOFF MP (6.5")



#### Optionally available:

Control panel SONDERHOFF CONTROL II (15")



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## Technical data

### CONTROL CONCEPT

- › Multifunctional mobile panel SONDERHOFF MP with integrated 6.5" touch screen
- › Self-explaining operator guide with programming buttons, function and touch keys
- › Modular IPC control fitted in the electrical switch cabinet with Powerlink
- › EMERGENCY STOP deactivation with approved safety concept; real-time bus system
- › Pluggable switch cabinet
- › Preselection of set-up / standby / manual / automatic modes
- › Recipe management
- › Operator password protection with four selectable levels
- › Programmable pot life monitoring, dosing quantity preselection, automatic rinsing and material conditioning (air loading, stirring etc.)
- › Automatic and spontaneously available material feed adjustment by pressure control
- › Monitoring of the component pressure using the digital display
- › Timer with automatic switch-on function
- › Open periphery interface
- › Central control of additional periphery / automation possible
- › Data backup via USB stick, serial interface or LAN
- › Data for operating system and system programs stored on Compact Flash

### DRIVE TECHNOLOGY

Speed-controlled servo gear motor with speed display and adjustment through the display

	Pumps	Mixing head
Drive power	0.94 kW	0.94 (alternatively 1.13) kW
Drive speeds	1 – 250 rpm	1 – 4,500 (alternatively 1 – 6,000) rpm

### PRECISION GEAR PUMPS (SELECTED)

- › Size: 0.05 / 0.1 / 0.2 / 0.3 / 0.6 / 1.2 / 3.0 / 6.0 / 12.0 / 20.0 ccm/R
- › Special pumps on request

### HOSE PACKAGE

- › Length according to customer requirements with all electrical and pneumatic connections
- › A-component: textile-reinforced polyamide high-pressure hose
- › B-component: steel-reinforced PTFE high-pressure hose

### PNEUMATICS

- › Pneumatics with filter pressure reducer, maintenance unit with pressure monitoring and valve connection plate to control the pneumatic loads

### CONNECTIONS

- › Electricity: according to EN 60 204-1
- › Electrical power supply: 3 x 400 V, 50 Hz or 60 Hz, or in country-specific voltage
- › Rated power: approx. 10 kVA
- › Ø Consumption: approx. 4 kVA
- › Compressed air connection value: approx. 150 L/min. at 6 – 7 bar
- › Water connection value: approx. 13 L/min. at min. 4 bar

### DIMENSIONS

- › Platform incl. material pressure tank (per component): W/H/D 625 x 1,500 x 860 mm, approx. 85 kg
- › Dosing unit/dispensing machine cabinet: W/H/D 1,210 x 1,400 x 510 mm (without frame, feet or carrying eyes), approx. 300 kg
- › Switch cabinet: W/H/D 1,210 x 2,650 x 510 mm, approx. 350 – 450 kg

### GENERAL

- › Chassis: modular hybrid construction, painted RAL 7035
- › Container platform: Galvanized grating, with adjustable leveling feet and drip pan, separately standing
- › Mixing ratio: from 100 : 1 to 1 : 100, infinitely variable
- › Output quantity: from 0.05 to 100.0 g/s, other output quantities on request
- › Viscosity processing range: from 1 to 2,000,000 mPas, other viscosities on request

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## Options

### CONTROL

- › Deactivation through safety door with interlocking (optional when a safety fence is delivered)
- › Free-standing control panel with display elements and operating keys, visualization via a 15" touch screen
- › Display languages are available in German, English, French, Spanish, Italian, Chinese
- › Other country-specific languages possible
- › Strand identification
- › Switch cabinet lighting
- › Operating hours counter
- › Remote maintenance via modem or TCP/IP
- › Voltage adaptation to different power-supply ratings, 60 Hz version
- › Air conditioning unit for switch cabinet temperature control

### QUALITY ASSURANCE

- › Air load measuring and control unit SONDERHOFF LBM-3
- › Set-up and alarm logging, process data logging
- › Additional quality assurance devices are adaptable according to customer requirements

### MATERIAL PREPARATION

- › Material pressure tank with capacitive minimum fill level sensors, safety pressure valve (TÜV type approved), overflow protection (only when using a refill station) and shut-off ball valve, with compressed air fittings and compressed air reducer valves for pre-pressure control of the tank pressures
- › Material pressure tank, single-walled, galvanized steel in 24 L or 44 L
- › Material pressure tank, single-walled, stainless steel in 24 L or 44 L
- › Material pressure tank, double-walled, stainless steel in 24 L, 44 L or 90 L
- › Wire mesh filter cartridges and plate disc filter
- › Three-phase agitator with 22 rpm or alternatively 99 rpm
- › Electric heating for single-walled containers
- › Temperature control for double-walled containers
- › Automatic air loading
- › Manual vacuum degassing
- › Prepared to control an automatic refilling unit
- › Material supply by refilling units for containers from 20 to 1,000 liters

### HOSE PACKAGE

- › Recirculation hose package
- › Electrically heated hoses with steel-reinforced PTFE high-pressure hose core
- › Double-walled medium heated hose with PTFE high-pressure hose core

### MIXING HEAD VARIANTS

- › SONDERHOFF MK 20 with feed lines and static mixing
- › SONDERHOFF MK 400 / MK 425 with feed lines and high-pressure water or component rinsing
- › SONDERHOFF MK 400 / MK 425 with recirculation and high-pressure water or component rinsing
- › SONDERHOFF MK 600 / MK 625 / MK 650 with recirculation and high-pressure water or component rinsing

### GENERAL

- › Material supply monitoring for component pumps
- › Compressed air dryer MDK 6
- › Rinsing and filling shot container
- › Spare parts packages
- › Protective fence after clarification of agreed scope of delivery and statutory provisions
- › Transport, setup and instruction

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