New products and features

Under counter Laboratory Washers

New products and features
Undercounter Laboratory Washers

Agenda

- **Particular fortes.**
- **New Laboratory Washers and product features**
  - Overview
  - Details
- **Model versions**
- **Accessories**
- **New load carriers**
  - Basic principles and cross-product features
  - Special features and benefits of new load carriers in detail
- **Communication modules**

Particular fortes

Greater performance	■ **Improved cleaning performance** – Variable-speed pump, rear basket docking ■ **Intelligent drying** – New steam condenser, AutoOpen
Greater safety	■ **Excellent reprocessing** – Monitoring of spray pressure, spray arm rotation and conductivity ■ **Hygienic reprocessing** – Laser-welded, crevice-free chamber ■ **Reduced downtimes** – Remote Vision
More convenience	■ **Improved ergonomics** – Door salt container ■ **Optimised workflow** – AutoOpen, direct-access buttons ■ **Fast commissioning** – Ethernet module

Particular fortes

Improved efficiency	■ **Reduced resources combined with shorter cycles and higher capacity** – Application-specific programmes, variable-speed pump, smart drying ■ **Reduced glass breakage** – Specially designed modules
Greater capacity	■ **Time savings** – More laboratory glassware per cycle ■ **Reduced need for storage space** – Modular accessory combinations ■ **Lower investments** – Fewer accessories necessary

Particular fortes

Greater purity	■ **No manual post-cleaning** – Variable speed pump, optimised programmes ■ **Hygienic reprocessing** – Heater elements integrated into pump, laser-welded chamber ■ **No deadlegs or water residue** – Specially designed modules
Greater flexibility	■ **Maximum flexibility combined with intuitive use** – Modular accessory system ■ **Procurement cost and space savings** – More combinations with fewer accessories ■ **Optimised programmes** – Wide range of options, user-specific programmes

New Laboratory Washers and product features

Models

Current models	New models
G 7804	PG 8504
G 7883	PG 8583
G 7893	PG 8593
G 7883 CD	PG 8583 CD

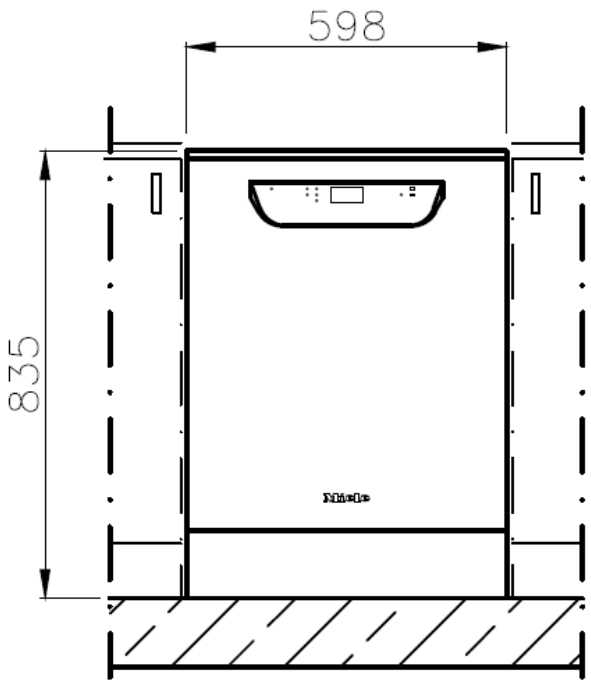
New Laboratory Washers and product features

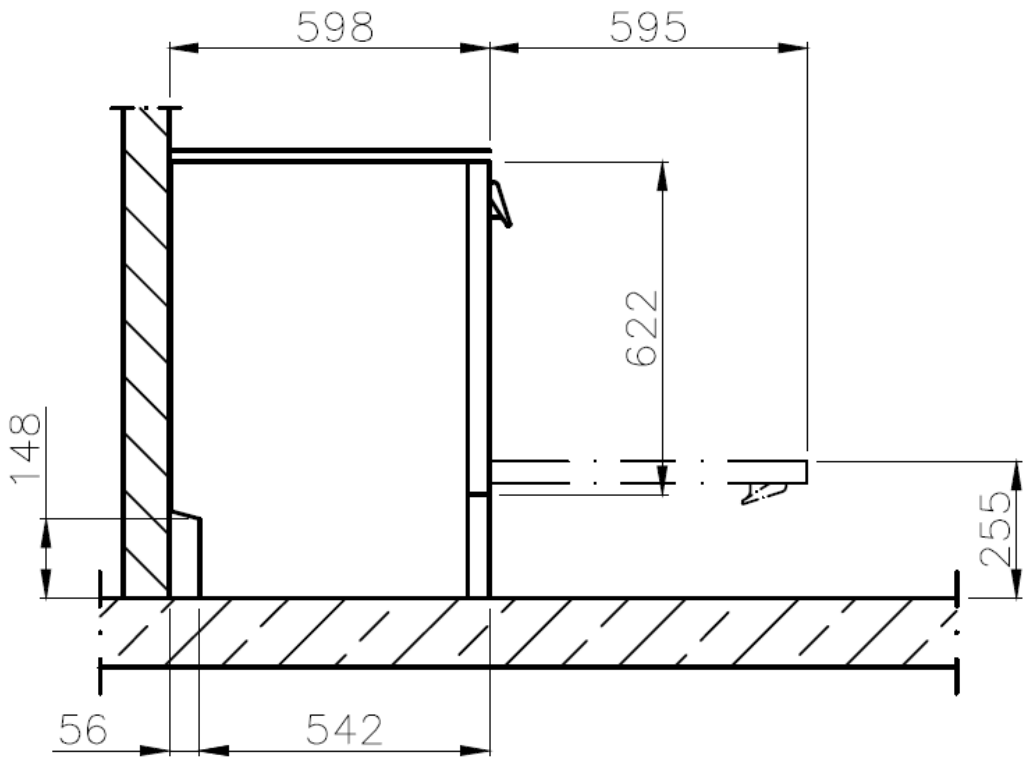
Dimensions

- **60 cm: PG 85/04/83/93**
  - Freestanding unit with lid
- **90 cm: PG 8583 CD**
  - Undercounter unit without lid
  - Lid (depth 700 mm) can be purchased as retrofit kit
- **Lid: 15 mm v. 30 mm**
- **External dimensions:**
  - HxWxD: 835x600x600 mm
  - HxWxD: 820x900x600 mm

New Laboratory Washers and product features

Dimensions





New Laboratory Washers and product features

Design and control panel

Modern, uncluttered design
User convenience

- Controls integrated into door handle
- Touch-on-steel controls

New Laboratory Washers and product features

Intuitive controls

Design and control panel

- Inclined controls and 3-line text display for good readability
- Display of programme and status
- Choice between display of parameters such as actual temperature or A0 value

New Laboratory Washers and product features

Door salt container

- Ergonomic refilling without having to stoop
- No need to first remove heavy baskets
- Capacity approx. 2 kg

Improved ergonomics and user friendliness

New Laboratory Washers and product features

Cleaning performance

- Improved cleaning performance
  - Rear basket docking on upper and lower levels
    - Optimized water circuit
    - Higher spray pressures
    - Automatically self-sealing valves when not in use
  - New spray arm design – improved spray water pattern
  - Variable-speed pump with integrated heater elements
    - Hygienic cabinet
    - Lower temperature losses

New Laboratory Washers and product features

Process security

- Greater security through monitoring of programme cycles
  - Spray pressure monitoring
    - Avoidance of poor cleaning results through monitoring spray pressure
  - Spray arm monitoring
    - Detects blockages caused by load or excessive foaming
  - Conductivity monitoring
    - Easily accessible module in sump
    - Regular cleaning and rinsing of sensor

New washer-disinfectors and product features

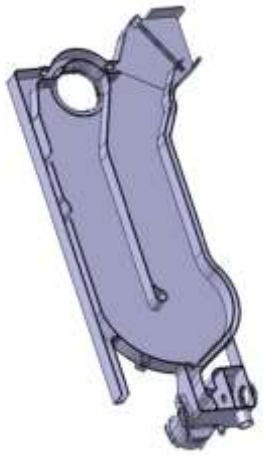
Hygiene

- Easy surface cleaning
  - Minimum gaps and lack of protruding buttons facilitate easy surface cleaning
- More hygienic chamber
  - Laser-welded crevice-free cabinet
  - No nooks or crevices where dirt can collect
  - Heater elements integrated into pump

New Laboratory Washers and product features

Economy

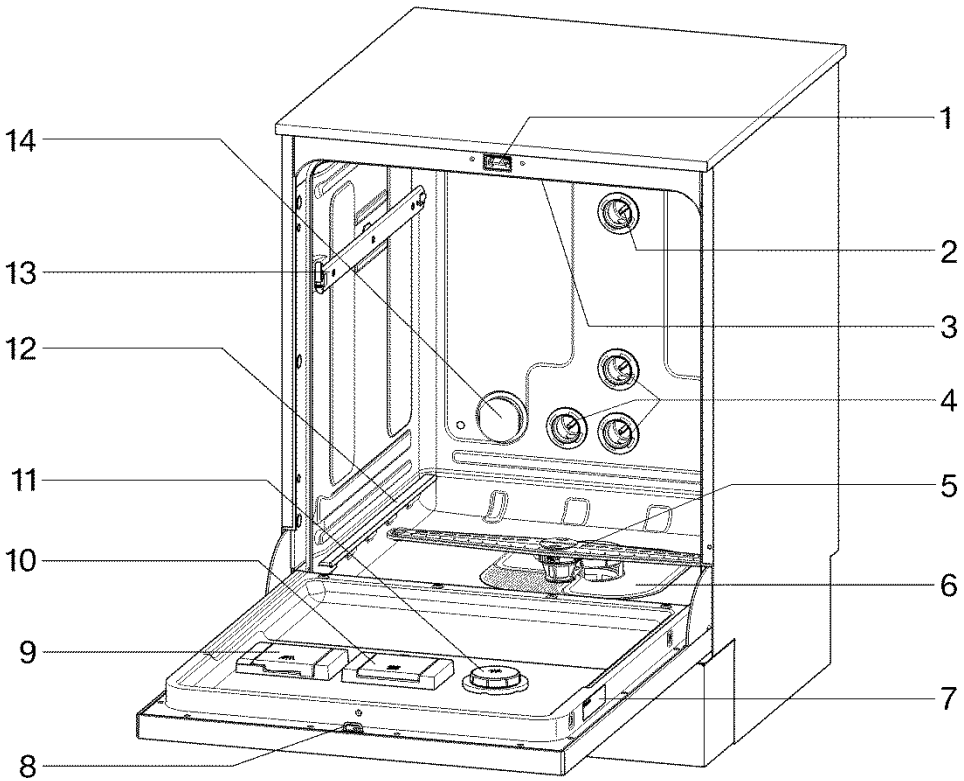
- Improved drying performance
- Reduced use of resources in combination with improved performance
  - New steam condenser replaces both previous steam condensers used on G 78xx series
  - New optimised programmes



- Universal
- Standard
- Intensive
- Anorganica
- ORGANICA
- **Injector Plus**
- Pipettes
- Plastics
- **Mini**
- Oils
- Special 93°C-10'

New Laboratory Washers and product features

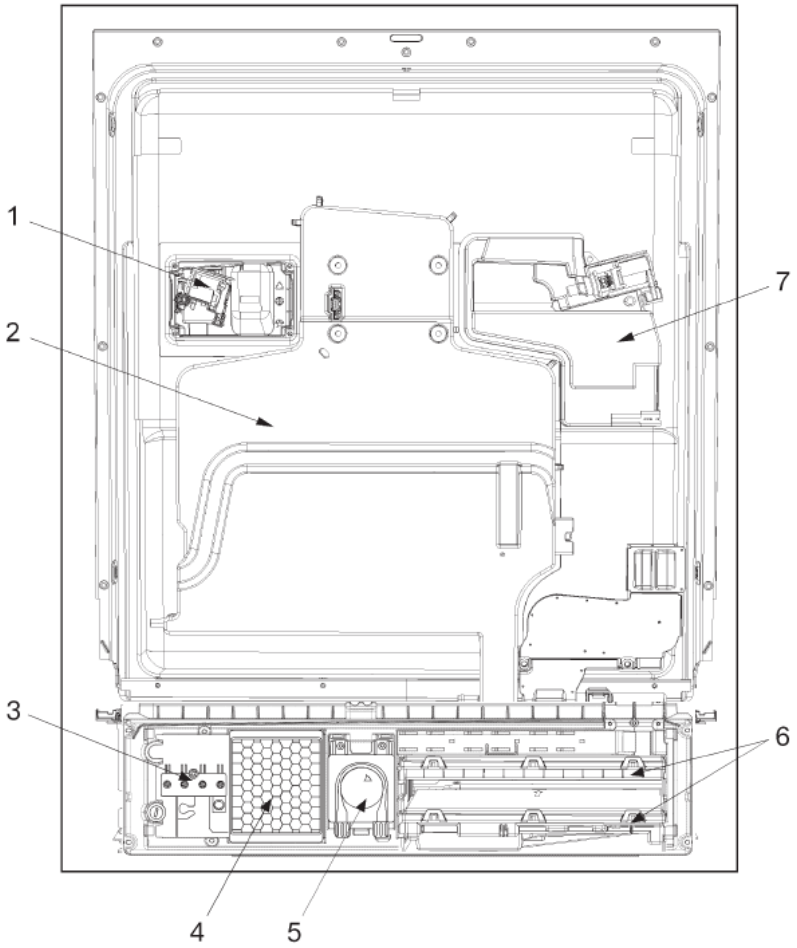
Front view



1. Door lock
2. Runner for upper basket
3. Upper spray arm (not visible)
4. Mobile unit docking points and external drying
5. Bottom spray arm
6. Filter combination
7. Data plate
8. Door catch
9. Powder detergent compartment
10. Salt reservoir
11. Surfactant reservoir
12. Runner for lower basket
13. Runner for upper basket
14. Dispenser connection

New Laboratory Washers and product features

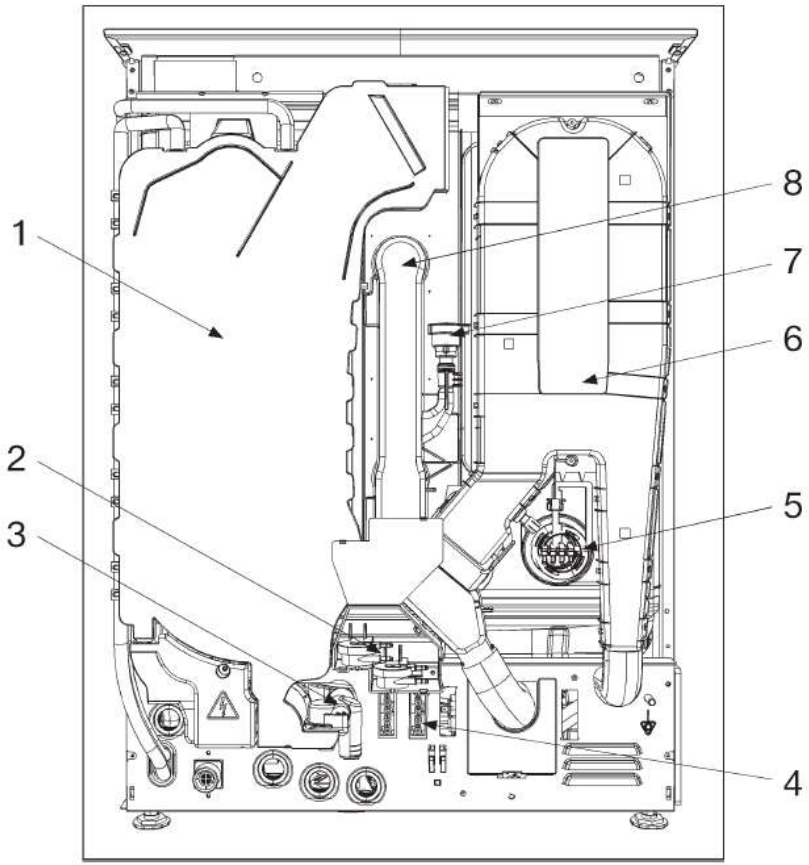
Front view



1. Powder detergent compartment
2. Door salt container
3. Electrical connection
4. HEPA filter (PG 8591-93)
5. Dispenser pump
6. Control modules
7. Liquid dispenser

New Laboratory Washers and product features

Rear of machine



1. Steam condenser
2. Flow control - External dispensing
3. Non-return valve
4. Socket for dispenser module
5. Dispenser connection
6. Heater bank (on models with drying unit)
7. Analog pressure sensor
8. Basket docking system

New Laboratory Washers and product features

Improved cleaning performance

Cabinet and principle of cleaning

- More hygienic chamber
- Rear basket docking on upper and lower levels
- New spray arm design - Improved jet pattern
- Variable-speed pump with integrated heater elements

New Laboratory Washers and product features

Hygienic reprocessing

Cabinet and principle of cleaning

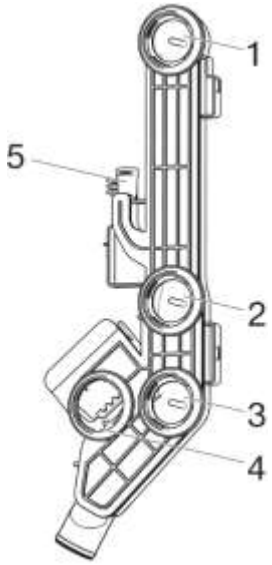
- **Hygienic cabinet**
  - Laser-welded crevice-free cabinet
  - Very smooth welds allowing easy removal of soil
  - On the G 78xx generation, blood was able to penetrate deep into roller-welded seams, creating a reservoir of contamination which released tiny quantities in each subsequent cycle.
  - Heater elements integrated into pump

New Laboratory Washers and product features

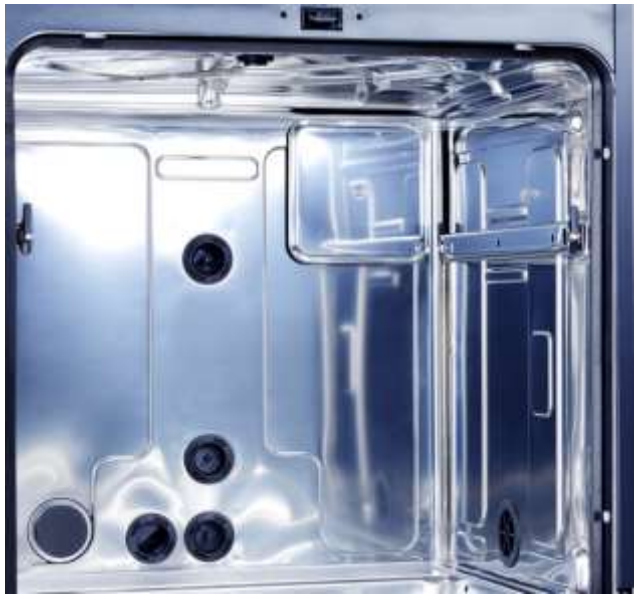
Cabinet and principle of cleaning

Improved cleaning performance

- **Rear basket docking on upper and lower levels**
  - Optimised water circuit
  - Higher spray pressure
  - Automatic valve seal when not occupied



1. **Upper basket docking system**
2. **Middle basket docking system**
3. **Lower basket docking system**
4. **Drying air inlet from drying unit**
5. **Pressure sensor connection**



New Laboratory Washers and product features

Improved cleaning performance

Cabinet and principle of cleaning

- **New spray arm design – improved spray water pattern**
  - Perfect wetting of all parts of cabinet through combination of various nozzles producing fan-shaped jets of water
  - Simple round perforations produce hard jet of water to remove stubborn soiling

New Laboratory Washers and product features

Variable-speed (BLPM*) pump with integrated heater elements

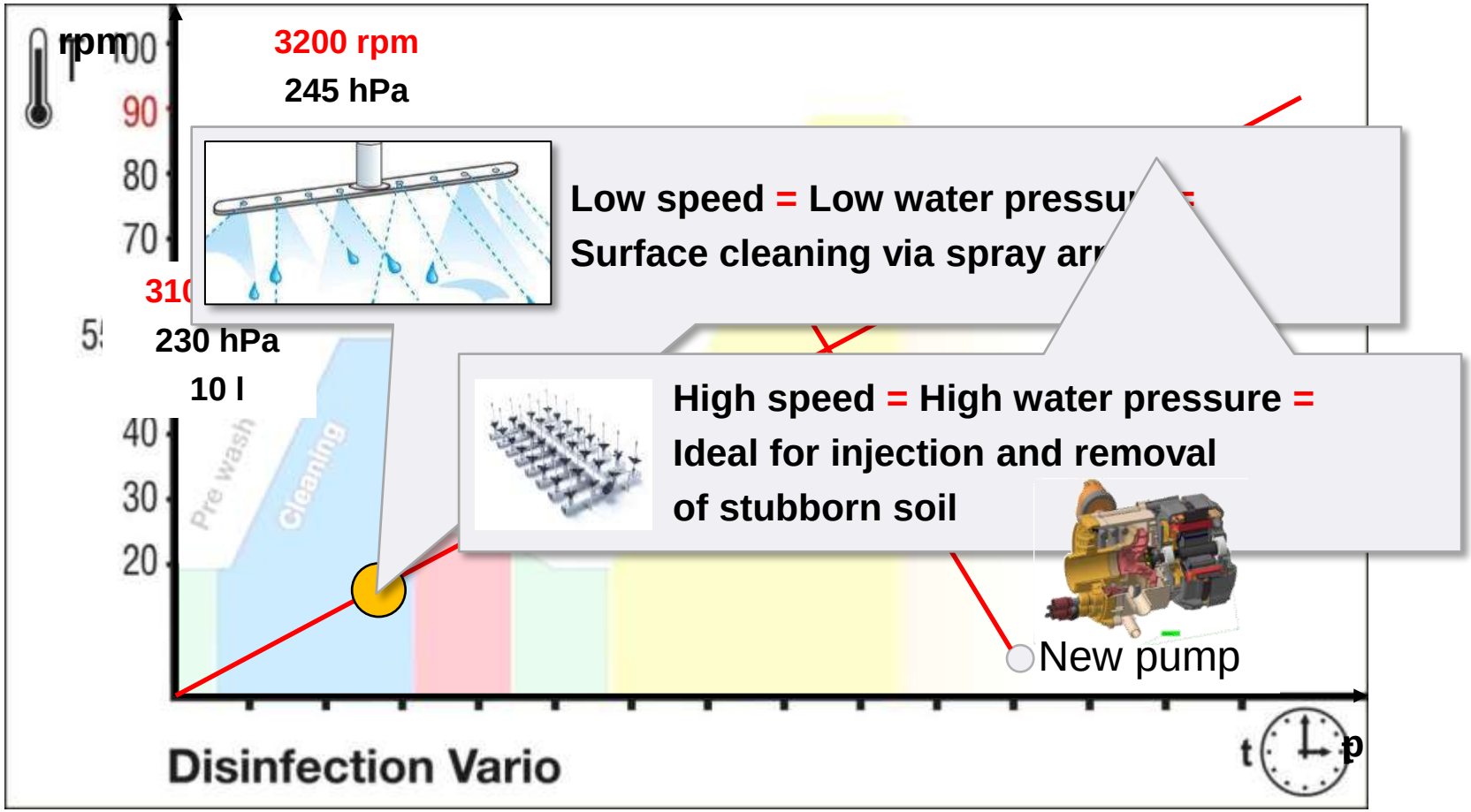
Improved cleaning performance

- G 78xx pump: Constant throughput at 2800 rpm
- PG 85xx pump: Speed variable
  - 2700 rpm (neutralization)
  - Injector Plus: 3400 rpm (washing)

*Brushless permanent magnet motor

New Laboratory Washers and product features

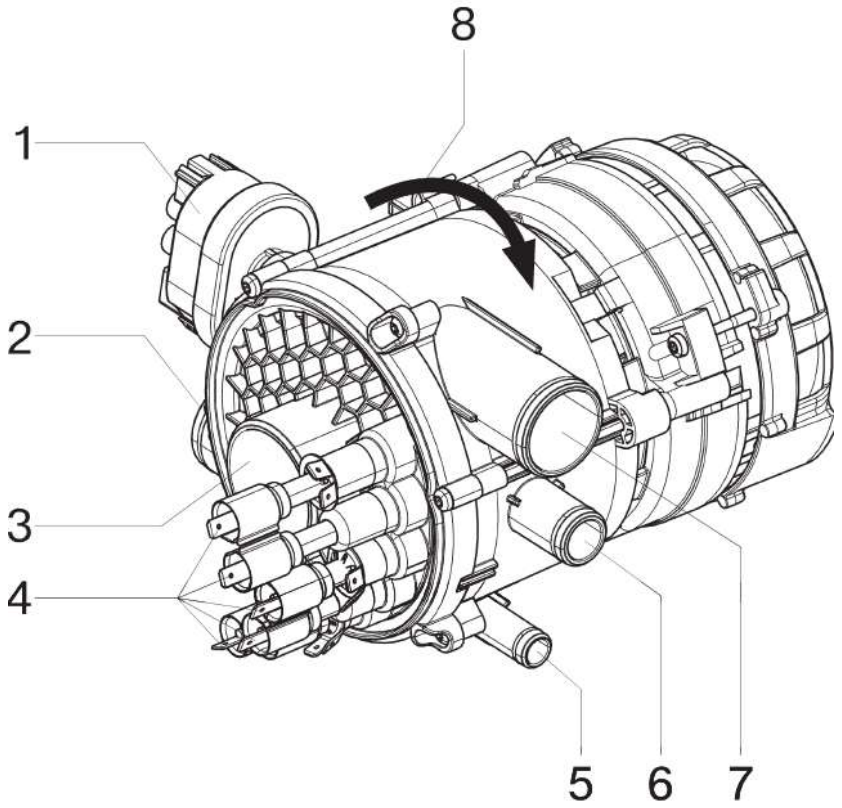
Variable-speed pump - Principle of operation



New Laboratory Washers and product features

Variable-speed pump with integrated heater elements

1. Double heater pressure switch
2. Pressure port for bottom spray arm
3. Suction-side connection
4. Heater element
5. Residual water drainage connection
6. Pressure port for top spray arm
7. Pressure port for basket docking system
8. Direction of impeller rotation



New Laboratory Washers and product features

Variable-speed pump with integrated heater elements

New Laboratory Washers and product features

Door salt container and water softener

- Separate salt container and water softener
- Protects potable water supply against contamination:
  DIN EN 1717 compliant

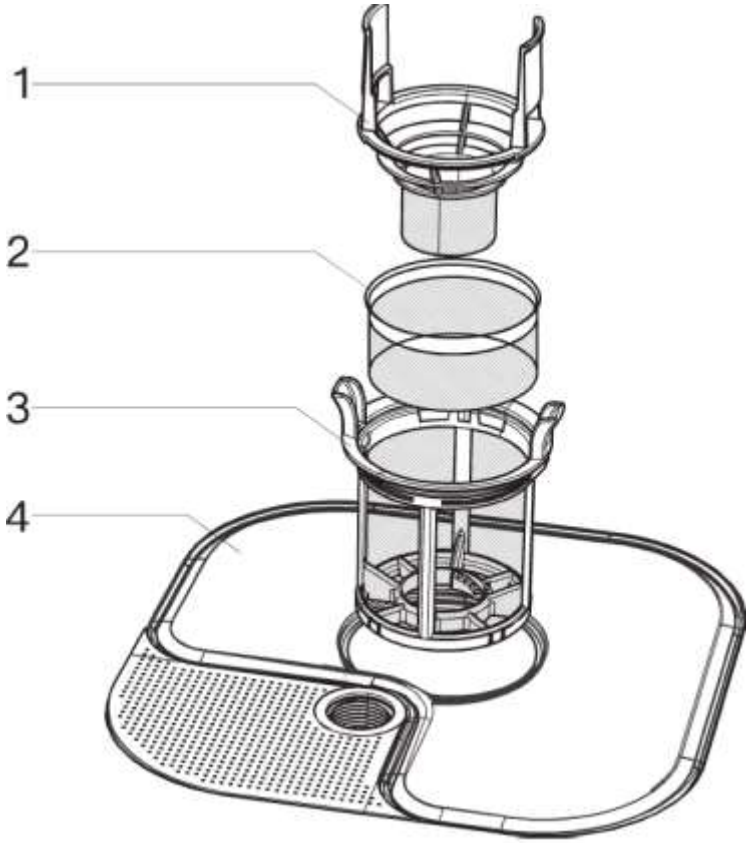
Water softeners

Salt container

New Laboratory Washers and product features

Filter combination in chamber

1. Coarse filter
2. Glass splinter filter
3. Micro-fine filter
4. Large surface filter

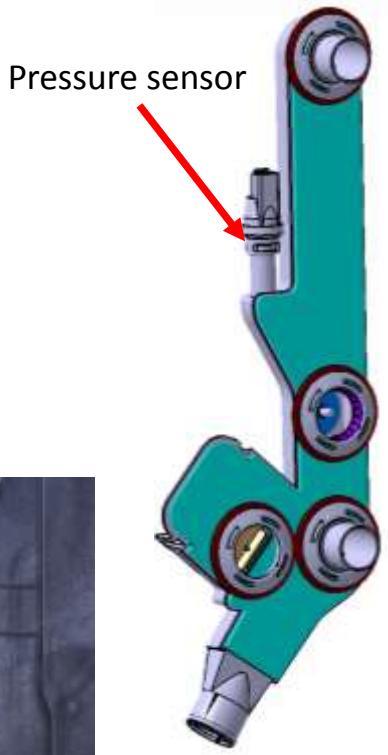


New Laboratory Washers and product features

Process security

Spray pressure monitoring

- Reasons for drop in spray pressure: poor docking, leaking adapter, foam
- User benefits: Avoids poor cleaning results through monitoring spray pressure
- Activated ex works
- Spray pressure sensor can be deactivated globally by Service
- Target value delta: Warning/Programme abort
- Protocol parameter:
  - Min/max. spray pressure in appropriate programme blocks
  - Ethernet: Spray pressure chart



New Laboratory Washers and product features

Process security

Spray arm monitoring

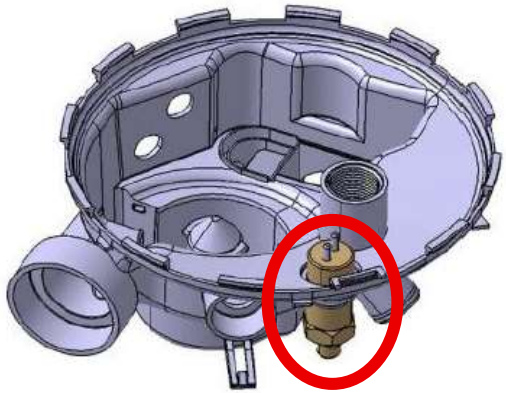
- Detects blockages caused by load or excessive foaming
- A minimum of impulses from the sensor must be received in a defined interval/range
- The precise spray arm speed does not appear in the display
- Can be activated/deactivated

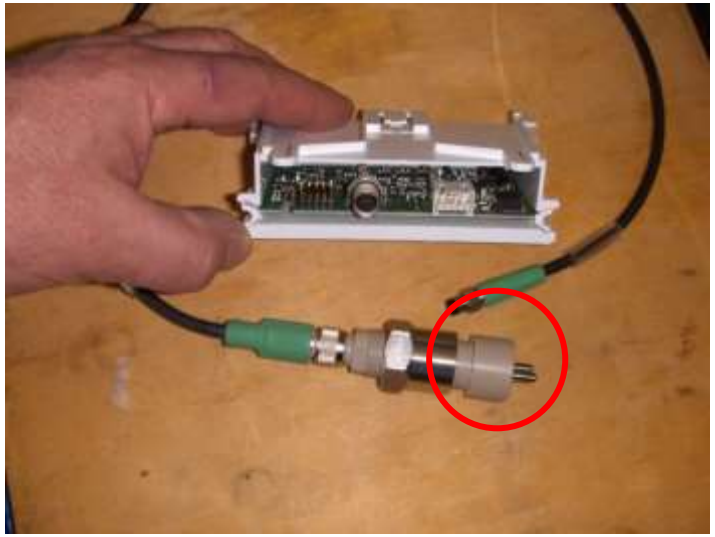
New Laboratory Washers and product features

Process security

Conductivity monitoring

- Easily accessible module in sump
- Constant cleaning and rinsing of sensor
- Conductivity measured at the beginning and the end of a block
- Comparison with selected limiting values (selectable for water intake and drainage)
- Programme abort if required conductivity is not reached (no. of rinse block repeats (0-2) selectable)
- In standard programmes: Conductivity only in final rinse
- Laboratory: Can be activated/deactivated in individual programme blocks
- Sensor ranges:
  - 0.5 .. 100 µS/cm, +/-2 µS/cm
  - 100 .. 1000 µS/cm 5%

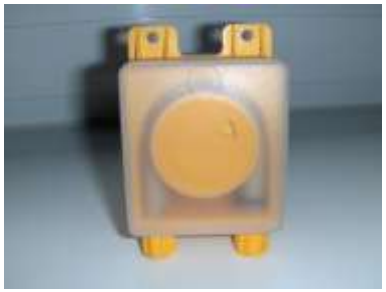




New Laboratory Washers and product features

Dispensing

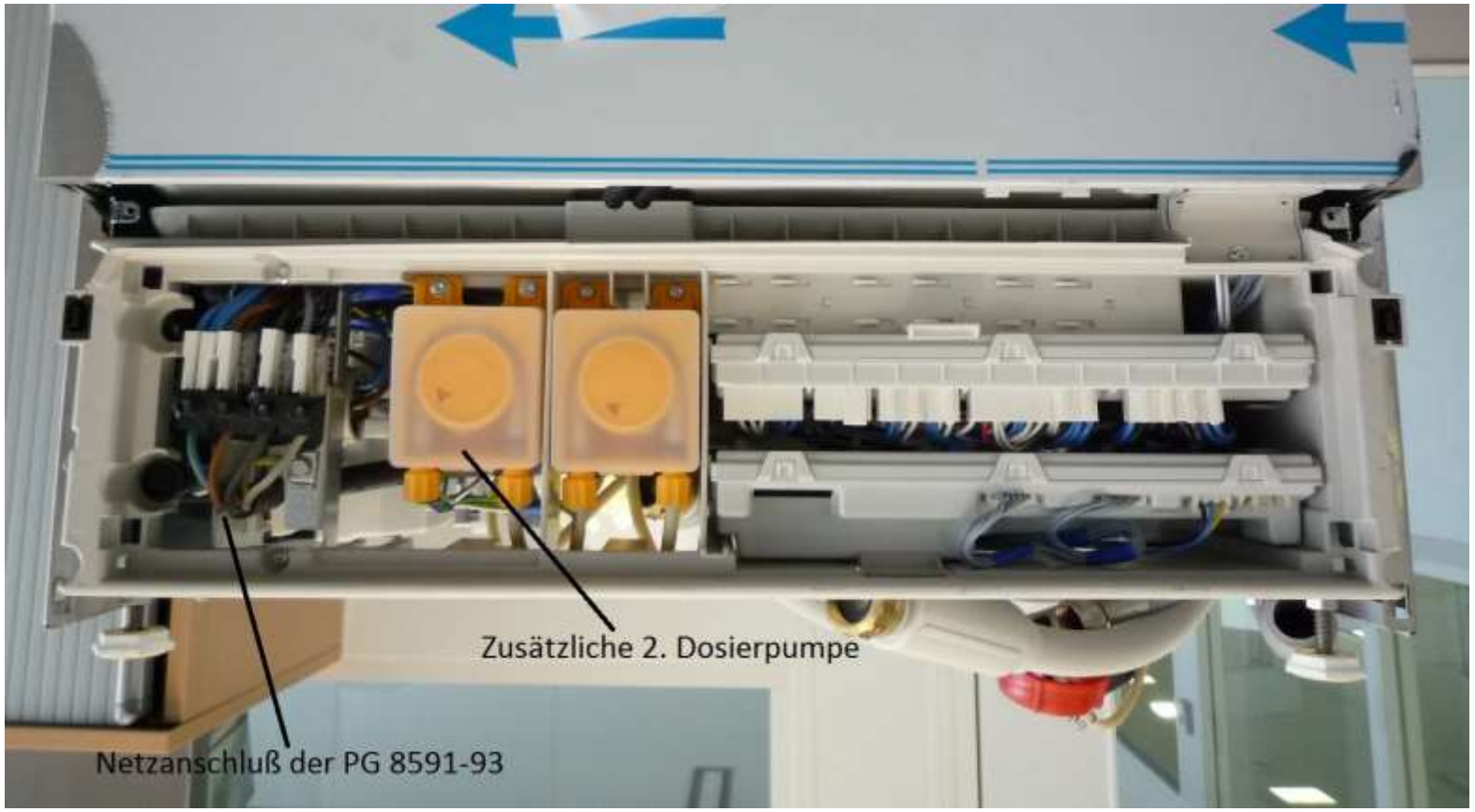
Integrated dispenser pump



- Suitable for acidic, alkaline and pH-neutral products
- Neutralising agent or detergent
- Delivery approx. 60 ml/min
- Additional flow control (flowmeter integrated into machine)
- Same pump as in new DOS K 85 module

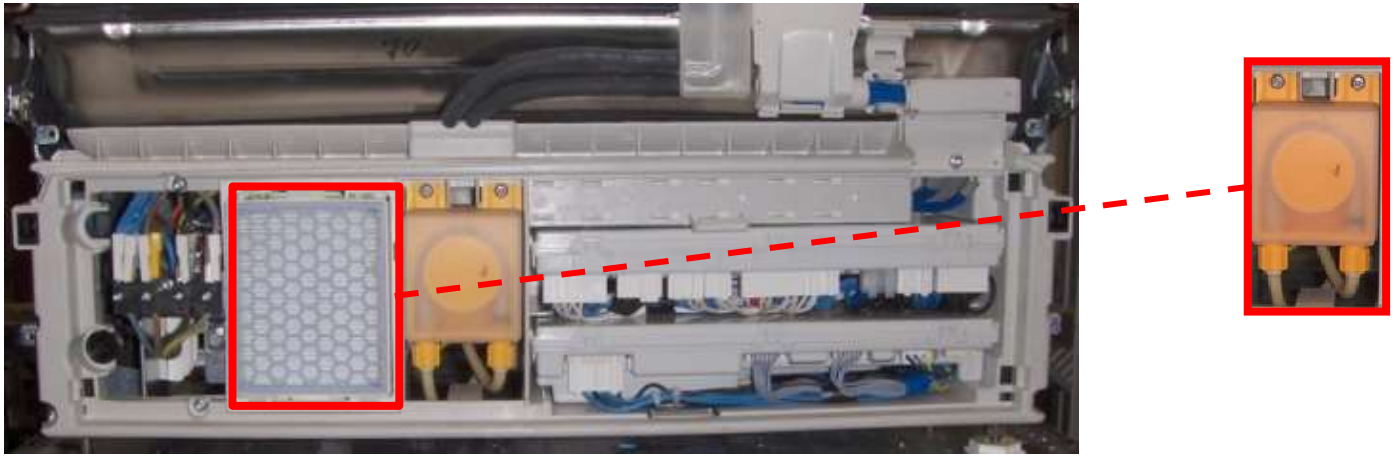
New Laboratory Washers and product features

Second integrated dispenser pump on **PG 8581/82/83** possible **(version available ex works, not retrofittable)**



New Laboratory Washers and product features

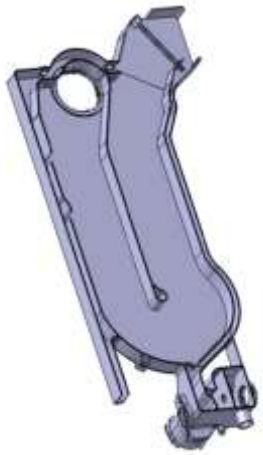
Second integrated pump not possible on **PG 8593**



New Laboratory Washers and product features

Steam condensation and drying

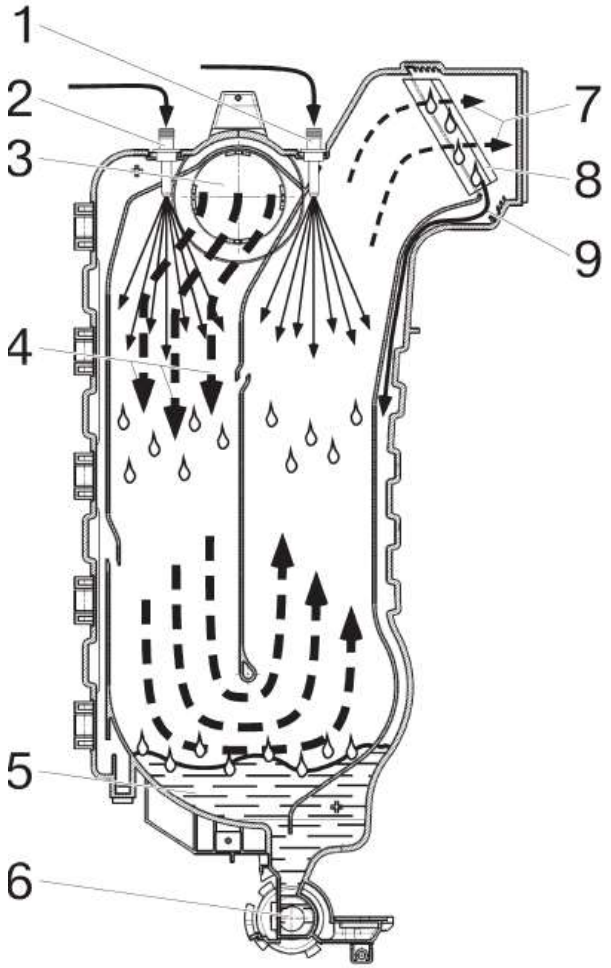
- New aerosol steam condenser replaces both previous steam condensers on G 78xx series
- Larger cross-sections in steam condenser enable high fluid flow rates and improve drying performance (PG 8591/92/93 with integrated fan)
- Infinitely adjustable fan allows fast and precise removal of moisture-laden air by steam condenser (PG 8593)



New Laboratory Washers and product features

Steam condensation and drying

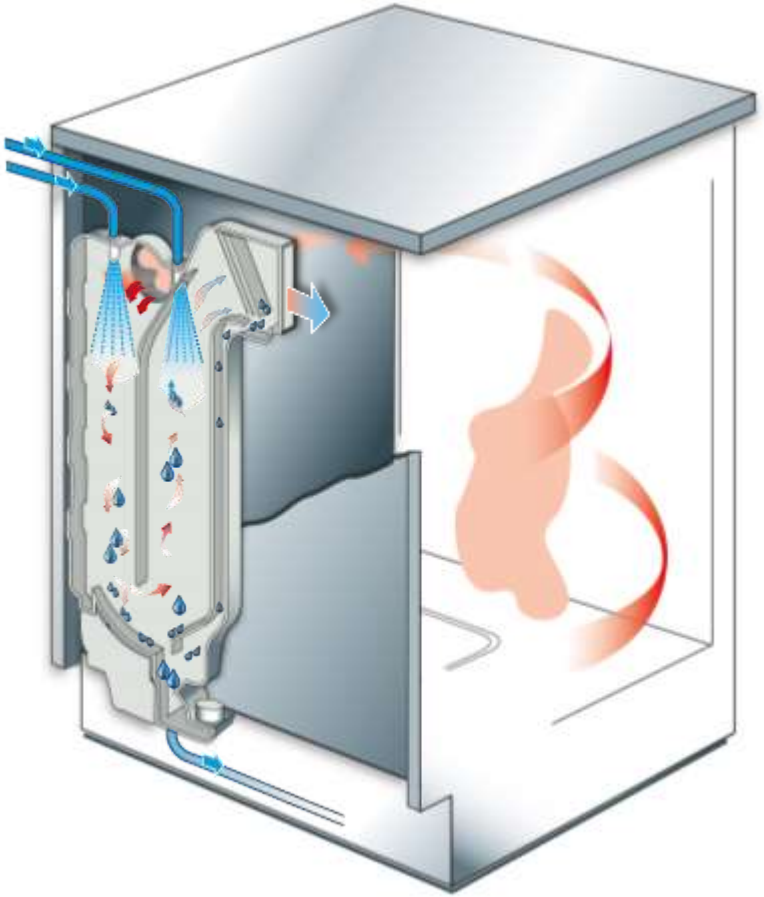
1. Cold water nozzle
2. Cold water nozzle
3. Entrance to steam condenser from cabinet
4. Vapours from cabinet
5. Condensate
6. Drain pump
7. Hot air discharge
8. Droplet separator
9. Condensate drainage - Aerosol separator



New Laboratory Washers and product features

Principle of operation - Steam condenser

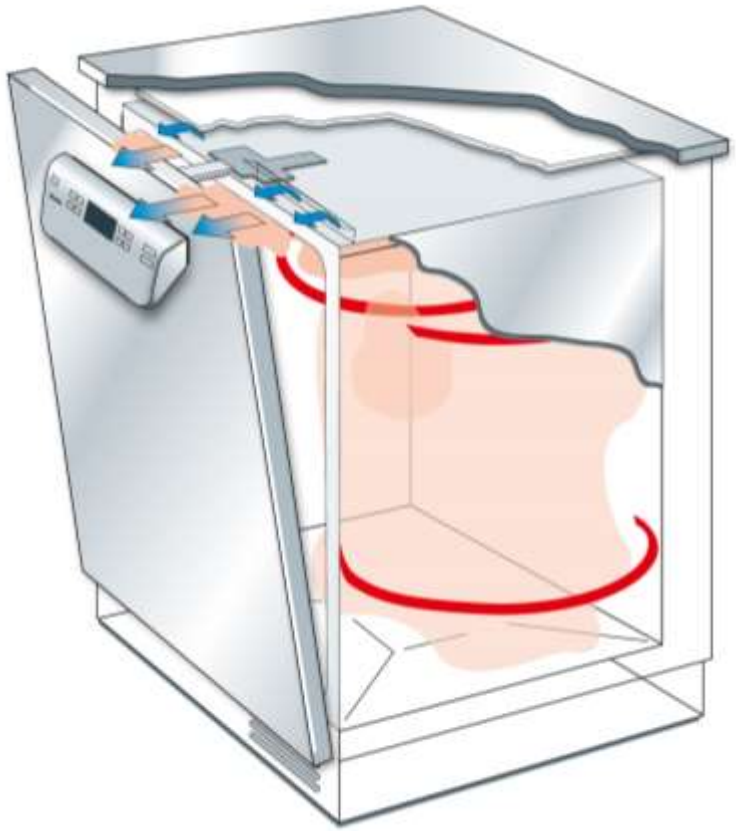
- Hot, moisture-laden air from cabinet passed through opening in rear panel to condenser behind cabinet
- Contact with aerosol causes steam to condense
- Above 75°C (steam temperature), a second nozzle is used to increase the aerosol quantity
- Water is drained off.



New Laboratory Washers and product features

AutoOpen

- Improved ergonomics and user friendliness
  - AutoOpen
    - Door opens automatically at end of programme cycle (temp. < 70°C)
    - Assisted drying
    - No need for supervision by staff
    - NOT AVAILABLE ON MODEL PG8504



New Laboratory Washers and product features

AutoClose / EasyOpen (Not available on PG8504)

AutoClose

- Automatic door closure before start of programme
- Door locked electrically during programme cycle
  - Door closure feature offering high measure of safety

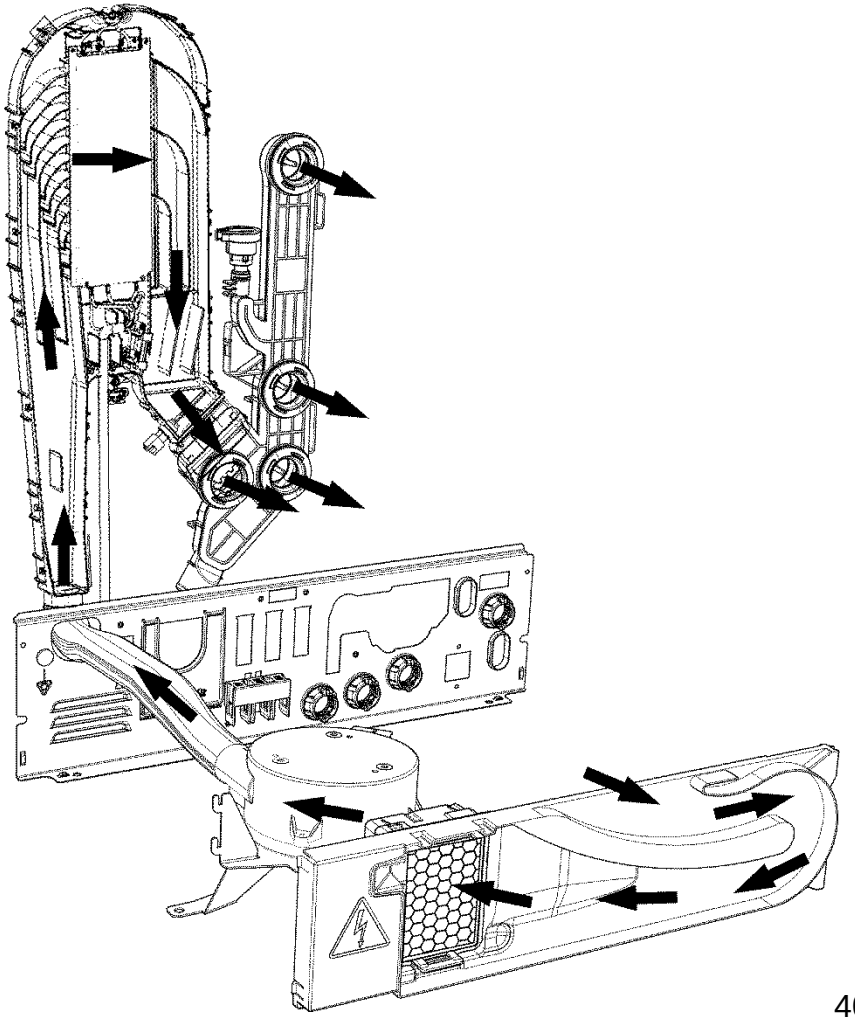
EasyOpen

- Separate 'Door' button not required
  - Easy manual door opening and closing
    - Allows items to be added to load without having to press 'Door' button

New Laboratory Washers and product features

PG 8593 drying unit

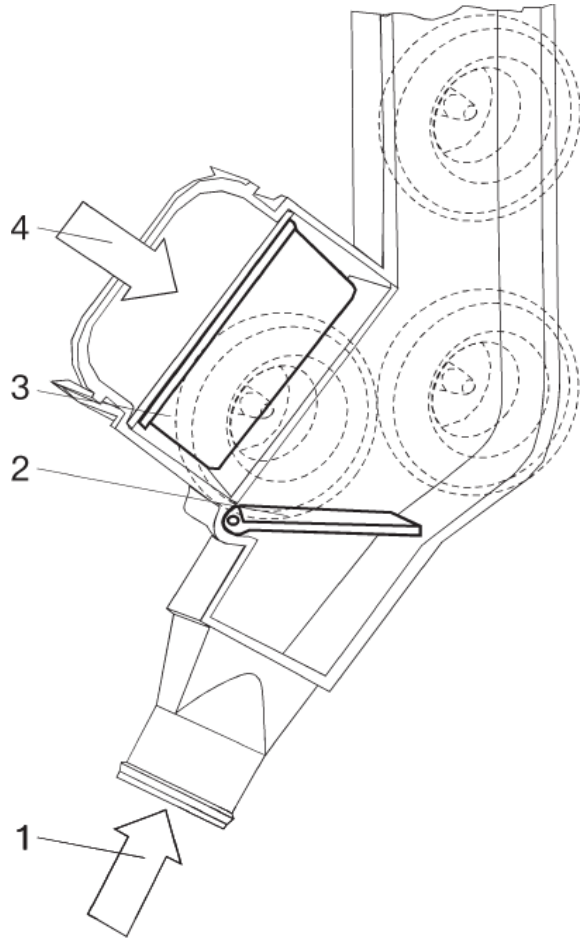
- Intake air is deflected for noise reduction
- HEPA filter H13
- Easily accessible via a hatch in the plinth
- Filter life: 200 h *(G 7892: 100 h)*
- Air throughput: 70 m³/h *(G 7892: 47 m³/h)*



New Laboratory Washers and product features

Basket docking system

1. Water entry port
2. Drying air baffle
3. Water baffle
4. Drying air entry port



New Laboratory Washers and product features

Programmes Laboratory

Programme slot	PG 8504	PG 8583	PG 8593	PG 8583 CD
1	Short	Universal	Universal	Universal
2	Medium	Standard	Standard	Standard
3	Long	Intensive	Intensive	Intensive
4	Demin. rinse	Anorganica	Anorganica	Anorganica
5	Rinse	Organica	Organica	Organica
6	Drain	Injector Plus	Injector Plus	Injector Plus
7		Pipettes	Pipettes	Pipettes
8		Plastics	Plastics	Plastics
9		Mini	Mini	Mini
10		Oils	Oils	Oils
11		Special 93°C-10'	Special 93°C-10'	Special 93°C-10'
12		Demin. rinse	Demin. rinse	Demin. rinse
13		Rinse	Rinse	Rinse
14		Drain	Drain	Drain
15			Drying	Drying

New Laboratory Washers and product features

Programmes Laboratory

- **Injector Plus**

  Reprocessing of 4 injector modules per cycle is possible due to optimised water circuit via the rear-panel docking system and sufficiently high water pressure enabled by the variable-speed pump

- **Mini**

  Low consumption data

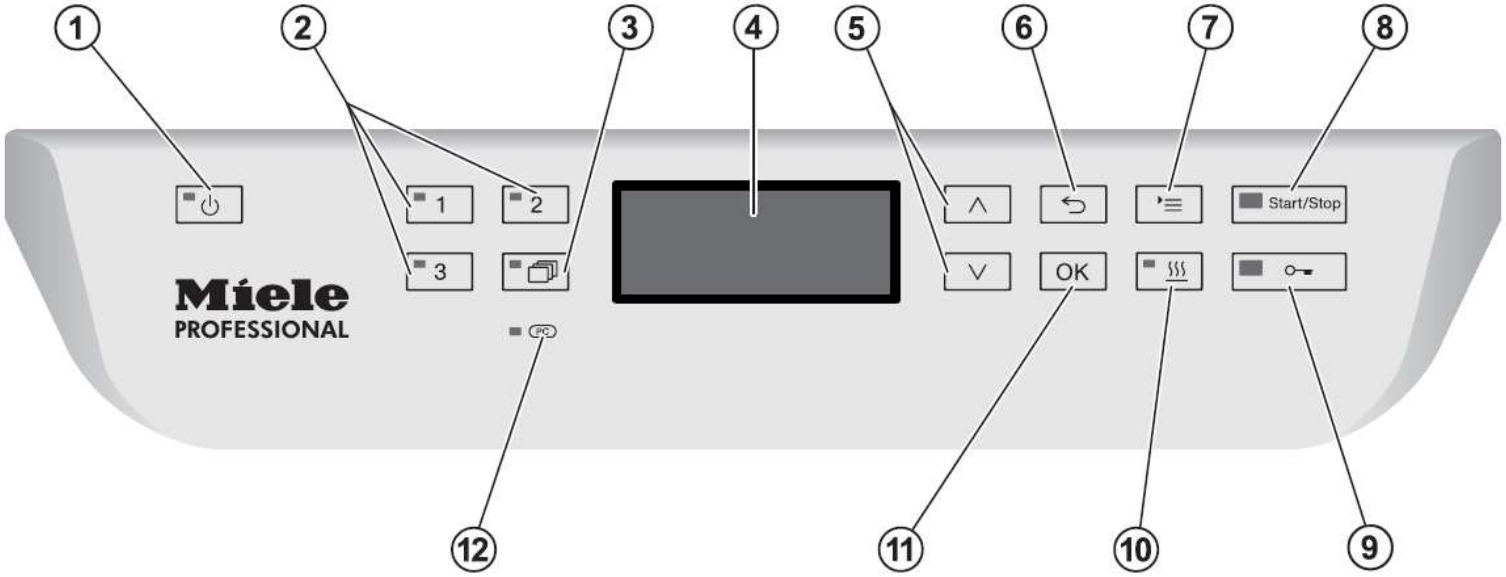
  Water savings of approx. 45% in comparison to the Universal programme

  Lower energy consumption and shorter cycle time

  Suitable for reprocessing slightly soiled loads, whereby the glasses concerned would have to be for example wide-necked and easily accessible to spray water (combination of upper and lower baskets with appropriate inserts) or the number of injector modules per cycle limited to two

New Laboratory Washers and product features

Fascia panel and controls



1. On/Off button
2. Buttons 1 - 3 (programme selector buttons)
3. Further programmes button
3. 3-line display
5. Navigation buttons
6. Back or quit button
   - Does not abort programmes
7. Settings
8. Start/Stop button
9. Door release button
10. Drying
11. OK (confirmation) button
12. Service interface

New Laboratory Washers and product features

Overview of menu levels

Settings	Further Settings	Service	Programming

New Laboratory Washers and product features

Settings

- Delay start
- Drying
- DOS venting
- Filter replacement
- Time language
- Date
- Time
- Volume

Further settings

- Code
- Log book
- Protocol
- Temperature unit
- Programme setting
- Air cooldown
- Release programme
- Move programme
- Dispenser system
- Test programme
- Automatic door opening
- Interface
- Water hardness
- Display view
- Display
- Switch off after
- Factory default
- Software version

New Laboratory Washers and product features

Service

- Software version
- Fault memory
- Component check
- Switch test
- Operating hours
- User interface
- DOS feed

Programming

- Programme setting
- High elevation
- Demo programme
- Code: Further settings
- Lock programme
- Interruption permitted
- Dispensing systems
- Spray pressure sensor
- Conductivity sensor
- Residual water
- Water connections
- De-min water ring line
- Mains water supply blending
- NTC offset
- Interface: RS 232
- Serial number
- Machine no.
- Cycle number
- Service telephone

New Laboratory Washers and product features

Menu operation

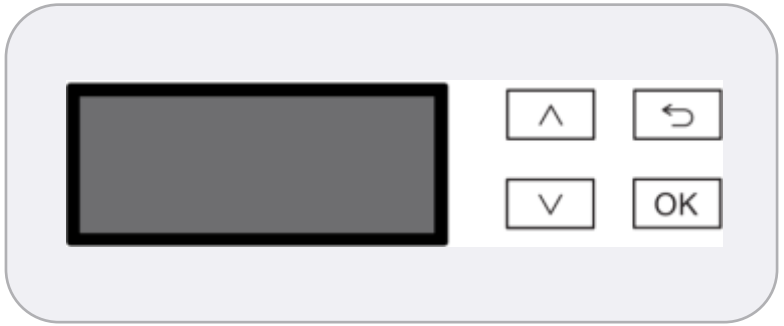
- **Modification of parameters**

^ Up/down buttons, also increments highlighted value

v Up/down buttons, also reduces highlighted value

⮌ 'Quit' or 'Back'

OK OK button (confirms entries)



New Laboratory Washers and product features

Display and menu controls

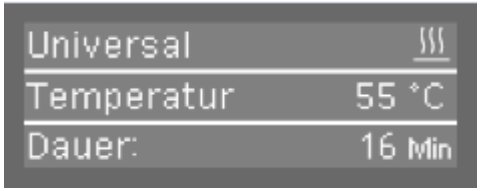
- **Settings and options via display**
  - Programme
  - Delay start
  - 'Settings' menu

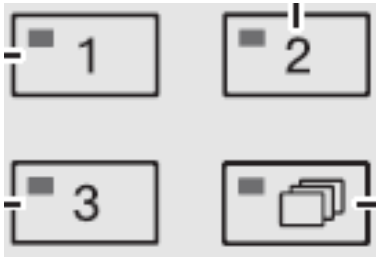
- **Indicators in display during programme cycle**
  - 1. line: Programme name
  - 2. line: Actual temperature / Programme phase / A_0 value / Batch number / Conductivity
  - 3. line: Remaining time / Start at / Duration / End

New Laboratory Washers and product features

Programme sequence

- **Switching on**
  - On/Off button
    - Last programme selected shown
- **Select programme via 3 direct-access buttons**
  - Assignment can be changed via 'Further settings'
- **Select programme via programme list**
  - Further programmes button
    - Selection menu appears
  - Select programme with ∧ ∨ and confirm with OK





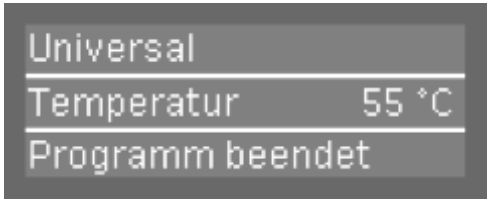
New Laboratory Washers and product features

Programme sequence

- **Start programme**
  - Start/Stop button

- **Programme sequence indicator**
  - Programme name indicated
  - Block target temperature indicated; to switch to actual temperature press ∧ ∨
  - Countdown indicator

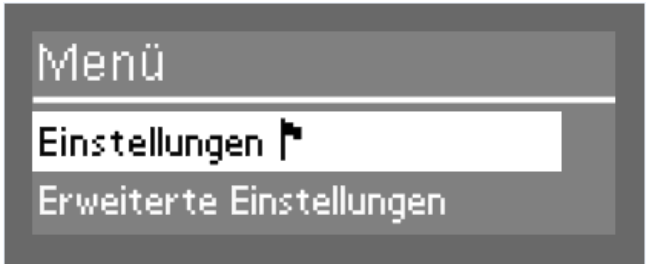
- **End of programme** (depends on model/programme)
  - 'Door' button flashes
  - Door opens automatically



New Laboratory Washers and product features

Settings menu

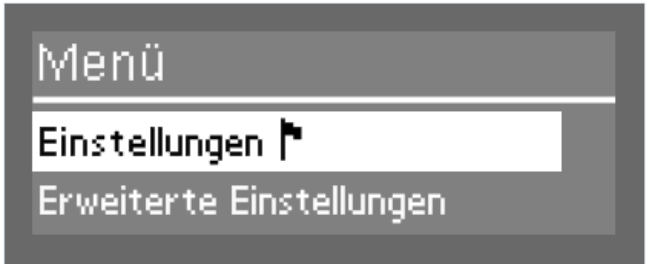
- Delay start
  - Activation/deactivation of delay start
- Drying
  - Permanent activation/deactivation of drying
- Dispenser venting
  - Priming and venting of dispenser systems
- Language
  - Select language
- Date
  - Selection of date and date format.
- Time of day
  - Selection of time of day and time format
- Volume
  - Volume selection for button confirmation and ringtones



New Laboratory Washers and product features

Further settings menu

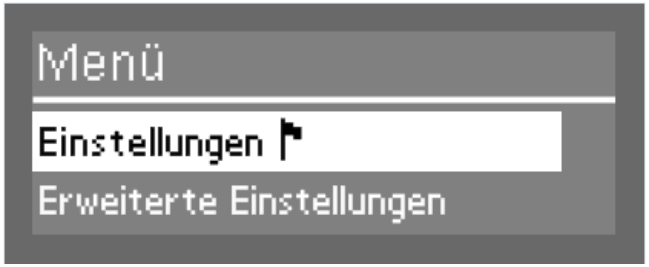
- Code
  - PIN code assignment for settings
- Log book
  - Operating hours display
- Temperature unit
  - °C or °F
- Move programme
  - Assignment of programmes to direct-access buttons
- Additional functions
  - Programme parameters such as water intake, interim rinses, temperatures and holding times as well as cleaning agent concentration levels
- Release programme
  - Determines visibility of individual programmes on user level



New Laboratory Washers and product features

Further settings menu

- Water hardness
  - Selection of water hardness
- Display view
  - Selection of target or actual temperature
- Display
  - Contrast and brightness
- Switch off after
  - Activate/deactivate automatic switch-off
- Standard setting
  - Reset to default settings
- Software version
  - Display software version



Accessories

DOS module DOS K 85

- Dispenser modules from the G 78xx series are not compatible with the PG 85xx series
- Service-friendly design: Two screws to open casing to replace pump hose without tools
- Dispenser monitoring via flowmeter
- One module for Laboratory

Variant	Material number	Article number	ELP [€]
DOS K 85	9961070	69.7470.50 D	399,00
DOS K 85/1	9961080	69.7470.51 D	399,00

Accessories

Side units

- PG 8595 Side unit Aqua Purificator (AE and AW)
- PG 8596 Side unit DOS (AE and AW)

Miele PROFESSIONAL

PG 8583 CD

PG 8583 CD

Accessories

Plinths

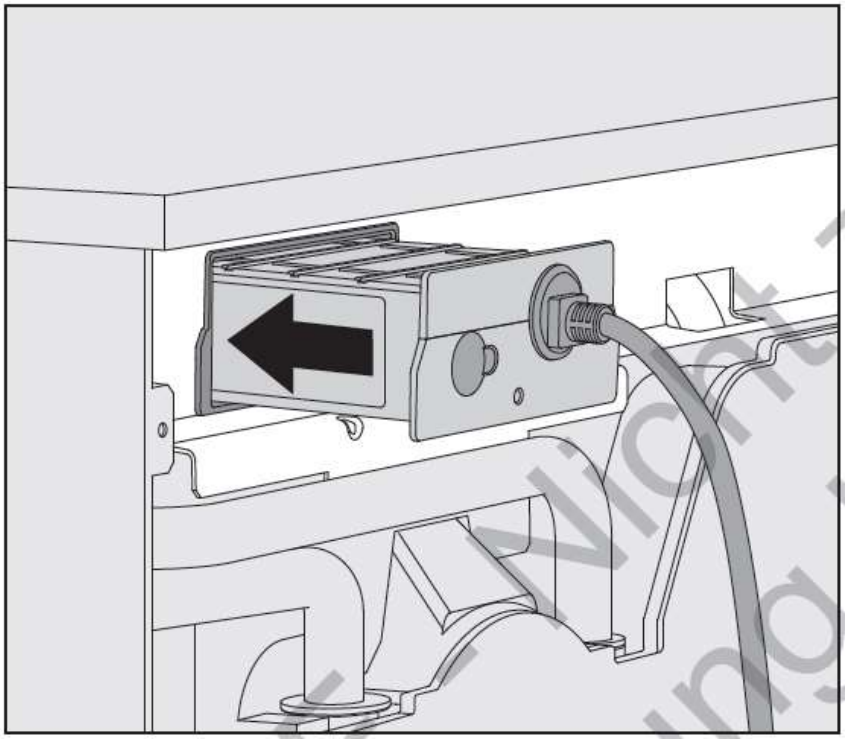
- Plinths closed
  - HxWxD: 300x600x600 mm
  - HxWxD 300x900x600 mm
  - HxWxD: 300x900x700 mm

- Plinth closed, with door

Communication modules and process documentation

Frank Heutger

Installation of communication modules



- Pre-fitted communication slot on rear of machines on all PG 8562 - PG 8583 CD model versions (except PG 8504)
- Machine supplied as standard without interface module

The module does not have a separate On/Off switch. It is switched on and off together with the machine.

Benefits of communication slot and modules

Feature	Keyword / Software quality feature	Description of user benefit
Interchangeable communication modules	Flexibility	Adapts to user requirements
Allows introduction of other interfaces	Adjustable, transferable	Future-proof, secures investments

Available communication module

Ethernet module

- For process documentation using software

- XKM 3000 L Med
- Mat. no. 09902230
- Art. no. 68822101D
- ELP € 150

RS 232 module

- For process documentation via printer

- XKM RS 232 10 Med
- Mat. no. 09960330
- Art. no. 68822001D
- ELP € 99 *

Connection options | Scenario 1

Connection of serial PRT 100 protocol printer

PG 85xx

+

XKM RS232 10 Med

+

PRT 100

- **3, 5 or 10 m extension cables can be used up to a total length of 15 m**

Connection options | Scenario 2

USB connection

PG 85xx

+

XKM RS232 10 Med

+

Segosoft Miele Edition USB-Lösung

+

PC mit Segosoft Miele Edition USB-Lösung

Connection options | Scenario 3

Direct SegoSoft connection

PG 85xx

+

XKM 3000 L Med

+

PC mit Segosoft Miele Edition

- **No further hardware necessary (e.g. converter)**
- **Cable extension possible using crossover cable and coupling (Mat. no. 7076891, via Spares)**

Connection options | Scenario 4

SegoSoft connection via network


PG 85xx

+


XKM 3000 L Med

+


Netzwerk Switch
oder Netzwerkdose

+


Netzwerkkabel
für PC

+


PC mit Segosoft Miele Edition

- **Network switch is optional**
- **Instead a network box is generally used**

- **Cable extension using network cable and coupling possible (Mat. no. 7076891, via Spares)**