Míele

Top-class safety, cleanliness and material compatibility.
Lab washers.

Miele Professional. Immer Besser.

NEW 2019: PLW 6011 and PLW 6111
The new SlimLine lab washers

A systematic approach from Miele Professional

A clear decision in favour of Miele

In developing reprocessing solutions for laboratory glassware, Miele Professional has always placed its focus on close cooperation with the experts in industry, with research laboratories and with highly reputable glassware manufacturers. The result of this cooperation based on trust and innovation are machines and processes which convince discerning users all along the line.

Quality
Reproducible analyses require quality - quality in terms of laboratory glassware and its reprocessing. Miele's proverbial standards of quality can be relied on at all times: Sophisticated design and high-quality materials underline the first-class reputation of Miele Professional in laboratories. And this is equalled by the quality of service which has won Miele numerous awards over the years.

Performance
Lab washers from Miele Professional have a proven ability to stand up to the stresses and strains of everyday laboratory life. Their insatiable appetite for work, a wide range of accessories and practical processes ensures perfect results and a high throughput capacity each time round, even when reprocessing special loads. Valuable laboratory glassware is ready for re-use again within next to no time.

Efficiency
Profit daily from excellent efficiency: Machines from Miele Professional are thorough and fast, affording top-rate protection to materials in the process. Thanks to their high quality, they also require little maintenance and are highly durable, safeguarding your investments in many respects. The efficient use of water and chemicals also equates to low running costs.

Miele Professional is a decision in favour of top performance, quality and efficiency. High-quality machines which reliably meet the expectations of the discerning, day in and day out, underline the trust placed by commercial users in Miele: 97% of all clients* would buy from Miele again next time round.

Dependability

For four generations, Miele has carried a special responsibility as a family-run company towards its customers, its business partners and its employees as well as for its products, processes and natural resources.

- Product development with a clear focus on quality, durability and sustainability
- Innovations 'Made in Germany' which have set their stamp on the industry
- Award-winning ergonomics, functionality and product design
- Entire systems from a single supplier
- Lower operating costs over entire product life cycle (Total Cost of Ownership)
- Highly commended after-sales service offering blanket coverage and a fast response

55 YEARS **Laboratory Technology**

Contents

Compact lab washer

PG 8583, PG 8593, PG 8583 CD

Lab washers from Miele Professional represent a commercial-grade solution for laboratory glassware for analytical experiments. This approach is particularly gentle on materials and is recommended by leading manufacturers of laboratory glassware such as DWK Life Sciences.

Developed for perfect lab glass reprocessing: System4Lab

The systematic approach to cleaning, combining the gentle treatment of materials with cost efficiency in laboratories.
- **Washing and disinfection**
  Innovative lab washers with individually selectable features
- **Process chemicals**
  Tailored process chemicals for the thorough and gentle cleaning of all laboratory glassware
- **Process documentation**
  Intelligent documentation software for reproducible and uninterrupted process monitoring
- **Services**
  Miele guarantees the highest of standards in providing advice, financing, after-sales service and maintenance

System4 Lab

Product benefits

Competent and innovative

Miele **recommended by** DURAN WHEATON KIMBLE

- Intensive development work and close cooperation
- Trend-setting process development and product specifications

Greater capacity
- High capacity (e.g. up to 260 injector nozzles in combination with the modules for pipettes and laboratory glassware), achieved through optimised chamber dimensions and a completely redesigned range of load carriers, saves time, storage space and costs.
- Rear basket docking enables full use of space in load carriers. Laboratory glassware turnaround is increased and work is speeded up at peak hours.

Greater purity
- Excellent cleaning performance.
- Variable-speed pump for perfect spray pressure in all programme phases.
- Laser technology is used to weld the chamber sections to give a perfectly smooth, crevice-free finish for the ultimate in hygiene.
- No more heater elements in the wash chamber.
- Multi-stage filtration system is highly efficient in removing particulate soil from water in circulation.
- Spray pressure and spray arm monitoring detects any loss in pressure as well as load items preventing spray arm rotation.
- Conductivity monitoring ensures required water quality.

Greater flexibility
- A new, modular basket concept offers maximum flexibility and intuitive operation as modules can be used in different combinations and can easily be reconfigured.
- Wide range of combination options guarantees flexibility in catering for different loads.
- Reduction in number of load carriers needed saves both on investments and storage space.
- In addition to a broad selection of standard programmes, client-specific cycles ensure that reprocessing suits the type of soil and the type and quantity of laboratory glassware.

Overview of further product benefits

PG 8583, PG 8593, PG 8583 CD lab washers

Design and user interface

The modern design and the intuitive user interface make for the incredibly simple use of lab washers.

- The new control panel is the central design element and represents an intelligent combination of door handle and control panel. It consists of a single, flush stainless-steel surface with embedded 'touch-on-steel' controls.
- Inclined control panel for improved legibility.
- 3-line text display and intuitive user interface for hassle-free operation.
- Programmes catering for all types of glassware and soils and vacant programme slots for user-specific programmes.
- Freely assignable direct-access buttons and individually selectable programme names for fast access to routine tasks.
- Flush, smooth control panel and handle surfaces for simple wipe cleaning.

Ergonomics

An easily accessible salt container in the door and the AutoClose functions simplify the work of those operating these machines.

- The patented door salt container has a capacity of approx. 2 kg. Replenishing the salt no longer requires bending or stooping as the job can be performed standing upright. Similarly, there is no longer any need to remove heavy baskets and load carriers to access the salt container.
- AutoClose: Slight contact between the door and the machine is sufficient to automatically close the door. As a result, only a minimum of effort is required to reliably close and lock the door.

Highly efficient drying

Depending on the model, the new lab washers feature DryPlus hot-air drying or EcoDry to assist drying by releasing steam.

- EcoDry: The door of the PG 8581 opens automatically at the end of a programme once the temperature in the chamber drops below 70°C. This releases hot, moisture-laden air, allowing the load to dry and cool down faster.
- DryPlus hot-air drying on the PG 8593/PG 8583 CD represents an ideal solution when dealing with intricate and narrow-lumened laboratory glassware and equipment. An upstream Class H13/H14 HEPA filter ensures the reliable removal of particles from the air taken in for drying. The filter is easily accessible for servicing via a hatch in the machine toekick panel (PG 8593) or in the side unit (PG 8583 CD).

Hygienic chamber

A completely redesigned chamber on the new lab washers enables high standards of hygiene and purity for analytical experiments.

- Laser technology is used to weld the chamber sections to give a perfectly smooth, crevice-free finish offering no nooks or crannies where blood or soil can accumulate.
- The removal of heater elements from the chamber removes a further potential source of a build-up of contamination and eliminates the risk of damage to plastic items.
- Greater space in the chamber facilitates a higher capacity per cycle (e.g. 128 laboratory phials or 98 pipettes together with other laboratory glassware).

Rear basket docking system

The relocation of the docking system for upper and lower baskets and load carriers to the rear of the chamber guarantees a more streamlined water and air circuit and improves the use of resources.

- Shorter circulation paths help minimise pressure losses and reductions in water temperature.
- Automatically self-sealing valves when not in use ensure uniformly high spray pressure.
- Use of same docking system to supply load carriers with water and hot air for internal drying.

Optimised spray arms

The new spray arm design consistently improves on progress made on previous model series and ensures the ultimate in reprocessing reliability.

- Different nozzle forms ensure the forceful removal of persistent soil and the uniform wetting of wash loads.
- Full spray jet coverage thanks to new arrangement of nozzles on spray arms.
- Lower water consumption per cycle without any trade-off in terms of cleaning performance.
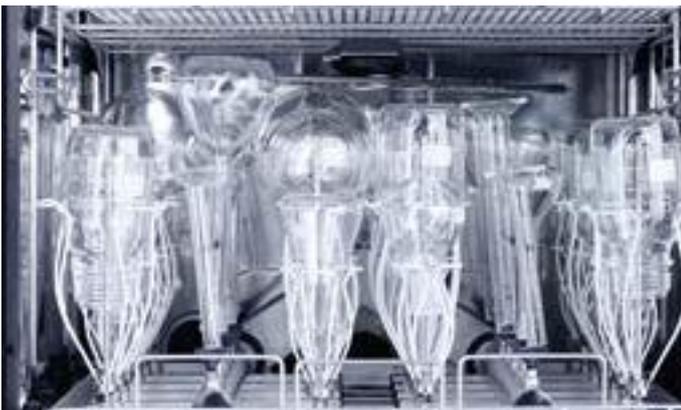
Safety through constant checks

The new lab washers feature spray pressure and spray arm monitoring and some models also monitor water conductivity. These advanced sensors make a considerable contribution towards ensuring the reliability of reprocessing.

- Blockages caused by protruding load items are immediately detected
- Spray pressure losses as a result, for example, of excessive foaming is reliably detected.
- Deviations from the selected conductivity level in the final rinse water are reliably detected.
- Thanks to integrated sensors, deviations from the programme parameters are immediately recognised, allowing rapid intervention on the part of users - Range 0 µS/cm - 1 mS/cm.

Appliance overview

PG 8583, PG 8593, PG 8583 CD

Lab washers (left to right)	PG 8583	PG 8593	PG 8583 CD
Width	600	600	900
Height, Depth [mm]	835 (820*), 600	835 (820*), 600	820*, 600**
Shortest cycle*** [mins.]	20	20	20
Capacity: Lab phials	128	128	128
Capacity: Pipettes	98	98	98
Capacity: Mixed load consisting of laboratory phials and pipettes	130	130	130
Capacity: Mixed load consisting of laboratory glassware and phials	260	260	260
Drying	EcoDry	DryPlus	DryPlus
Integrated dispenser pump (depending on version)****	1 or 2	1	2
Drawer for supply canisters (3 x 5 l or 2 x 10 l)	–	–	•
Electrical connection 3N AC 400 V, 50 Hz	•	•	•
Total rated load [kW]	9.3	9.3	9.3

* Undercounter units
** Free-standing unit with lid (optional) H 835, D 700 mm
*** Mini programme
**** Length of siphon: 333 mm für 5 l and 10 l canisters

Programmes, cycle times, consumption

PG 8583	Main wash					Drying	
	Cycle time	CW	HW	AD	Energy	Cycle time	Energy
	[mins.]	[l]	[l]	[l]	[kWh]	[mins.]	[kWh]
Universal	34	4.5	31.5	18.5	1.7	3	–
Standard	29	5.0	14.0	18.5	1.7	2	–
Intensive	36	4.5	23.5	27.5	1.9	3	–
Anorganica	38	5.0	24.0	27.5	1.8	2	–
Organica	40	–	37.0	18.5	2.0	3	–
Injector Plus	40	6.0	42.0	24.0	1.8	3	–
Pipettes	43	7.5	37.5	45.0	1.8	2	–
Plastics	34	36.0	–	18.5	1.5	–	–
Mini	20	–	19.0	9.5	2.3	–	–
Oils	41	–	47.0	18.5	1.9	3	–
Special 93°C-10'	53	11.9	29.6	14.0	3.4	3	–
De-min. rinse	6	–	–	10.0		–	–
Drain	4	10.0	–	–		–	–

PG 8593							
Universal	33	4.5	31.5	18.5	2.1	37	0.7
Standard	28	5.0	14.0	18.5	2.8	37	0.7
Intensive	35	4.5	23.5	27.5	2.3	37	0.7
Anorganica	36	5.0	24.0	27.5	2.4	37	0.7
Organica	38	–	37.0	18.5	1.8	37	0.7
Injector Plus	38	6.0	42.0	24.0	2.0	37	0.7
Pipettes	40	7.5	37.5	45.0	2.3	47	0.6
Plastics	33	36.0	–	18.5	1.6	52	0.7
Mini	18	–	19.0	9.5	2.3	37	0.7
Oils	39	–	47.0	18.5	1.6	37	0.7
Special 93°C-10'	51	11.9	29.6	14.0	1.5	79	1.4
De-min. rinse	6	–	–	10.0	1.6	–	–
Drain	4	10.0	–	–	3.0	–	–
Drying	–	–	–	–	–	40	0.7

PG 8583 CD							
Universal	33	4.5	31.5	18.5	2.1	37	0.7
Standard	28	5.0	14.0	18.5	2.8	37	0.7
Intensive	35	4.5	23.5	27.5	2.3	37	0.7
Anorganica	36	5.0	24.0	27.5	2.4	37	0.7
Organica	38	–	37.0	18.5	1.8	37	0.7
Injector Plus	38	6.0	42.0	24.0	2.0	37	0.7
Pipettes	40	7.5	37.5	45.0	2.3	47	0.6
Plastics	33	36.0	–	18.5	1.6	52	0.7
Mini	18	–	19.0	9.5	2.3	37	0.7
Oils	39	–	47.0	18.5	1.6	37	0.7
Special 93°C-10'	51	11.9	29.6	14.0	1.5	79	1.4
De-min. rinse	6	–	–	10.0	1.6	–	–
Drain	4	10.0	–	–	3.0	–	–
Drying	–	–	–	–	–	40	0.7

Heating: 8.5 kW (3N AC 400V 50Hz), connection to cold water (15°C), hot water (65°C) and demineralised water (15°C)

Innovative load carrier system

In the interests of the safety and retaining the value of laboratory glassware and equipment, Miele Professional offers a wide range of accessories, consisting of upper and lower baskets, load carriers and inserts for a variety of glassware types.

The load carrier system has undergone further optimisation in order to make loading even simpler. Thanks to EasyLoad, loading was never simpler!

EASYLOAD

Great efficiency and versatility

The new EasyLoad system utilises the available space in the chamber to a higher degree, allowing more laboratory glassware and equipment and other load items to be washed in each cycle. Another benefit accrues from the redesigned water and air circuit: Wash liquor and drying air is fed along a shorter and streamlined circuit and with minimal pressure losses on the way to the spray arms and injector nozzles. Optimum pressure conditions are also created by the automatically self-sealing docking valves when not occupied. The modular nature of the new load carriers represents a further product benefit, facilitating future extensions.
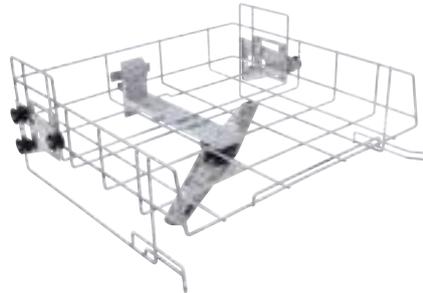
Overview of upper and lower baskets and load carriers
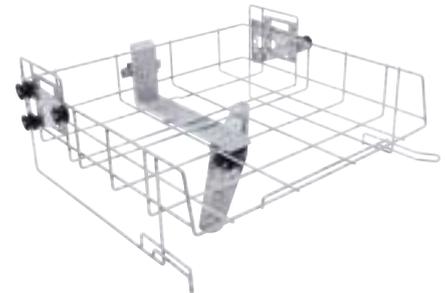
for PG 8583, PG 8593 and PG 8583 CD

A 100 upper basket for modules
- Upper basket with two docking pipes
- For the connection of up to two injector modules
- Automatically self-sealing docking valves
- H 141, W 528, D 525 mm
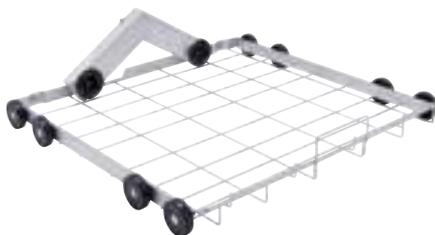- Loading dimensions H 235, W 485, D 435 mm

A 101 upper basket/open front
- Open front
- For various inserts
- Height-adjustable
- Built-in spray arm
- H 206, W 528, D 527 mm
- Loading dimensions H 160 +/- 30, W 475, D 443 mm

A 102 upper basket/open front
- Open front
- For various inserts
- Height-adjustable
- Built-in spray arm
- H 206, W 528, D 527 mm
- Loading dimensions H 205 +/- 30, W 475, D 443 mm

A 150 lower basket for modules
- Lower basket with two docking pipes
- For the connection of up to two injector modules
- Automatically self-sealing docking valves
- H 154, W 529, D 546 mm
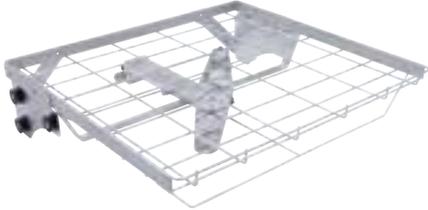- Loading dimensions H 235, (with A 100 upper basket) W 490, D 435 mm

A 151 lower basket/open front
- For various inserts
- H 88, W 529, D 110 mm
- Loading dimensions
  H with A 100: 235 mm
  H with A 101: 275 +/- 40 mm
  H with A 102: 230 +/- 30 mm
  H with A 103: 305 mm
  H without upper basket 495
  W 490, D 489 mm

A 202 load carrier
- For inserts on 2 levels
- Built-in spray arm
- Loading dimensions, lower level:
  H 95, W 519, D 485 mm or H 135, W 494, D 500 mm (with/without rack inserts)
- Loading dimensions, upper level: H 135, W 516, D 462
- 6 additional LuerLock connections
- H 223, W 529, D 542 mm

A 103 upper basket/open front
• Open front
• For various inserts
• Built-in spray arm
• Particularly suitable for the reprocessing of shallow
  loads in combination with A 202 load carrier.
• H 133, W 528, D 528 mm
• Loading dimensions H 95, W 505, D 472 mm

E 802 nozzle
• Applies to lab washer with powder dispensing
• For use with injector modules to rinse out powder
  residue from door dispenser
• H 187, W 30, D 15 mm

EasyLoad – Fast loading and highly efficient use of chamber space. The new loading system for cleaning laboratory glassware.

Miele reinvents loading: with EasyLoad

EASYLOAD

- New injector system for all common injector modules and a large number of further load carriers
- Optimum use of available vertical clearance
- Particularly fast and simple arrangement of load
- Thorough internal cleaning of glassware of all shapes and sizes
- Secure hold and exceptional material protection during wash cycle

EasyLoad means efficiency and a systematic approach to convenience:

- New injector nozzles (3 diameters, 6 lengths)
- New plastic holders and rests
- New injector modules (8, 18 or 32 injectors)
- New support frames (for 8, 18 or 32 injector positions)
- Available for PG 8583, PG 8583 CD, PG 8593 and PG 8536

The use of the new injector nozzles and rests without a support frame is possible in virtually all Miele lab load carriers.

Even if a nozzle tip rests against the base of a glass, the new injectors still guarantee thorough cleaning. The new rest surrounds the injectors in the module or basket, preventing lateral movement without wasting valuable height.
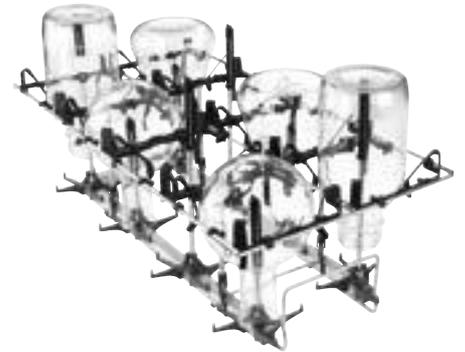
The new support frame provides additional hold. As and when required, it is placed on top of the injector module, providing a secure hold to even large items of laboratory glassware in a vertical and protected position.

System4 Lab

Injector modules for laboratory glassware

For use with A 100 upper basket and A 150 lower basket

EASYL**O**AD

A 300/3 module 2x4
- For laboratory glassware, e.g. Erlenmeyer flasks, round flasks, laboratory bottles, measuring flasks and measuring cylinders (250 - 1,000 ml)
- 4x A 840 injector nozzles, 4x A 841 injector nozzles
- H 228, W 208, D 479 mm

A 301/5 module 3x6
- For laboratory glassware, e.g. Erlenmeyer flasks, round flasks, laboratory bottles, measuring flasks and measuring cylinders (50 - 250 ml)
- 9x A 842 injector nozzles, 9x A 843 injector nozzles
- H 203, W 229, D 493 mm

A 302/3 module 4x8
- For laboratory glassware, e.g. Erlenmeyer flasks, round flasks, laboratory bottles, measuring flasks and measuring cylinders (25 - 100 ml)
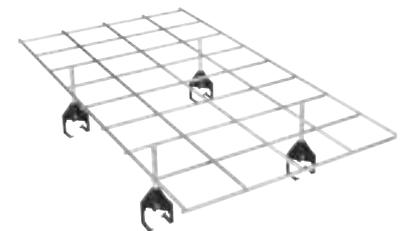- 16x A 844 injector nozzles, 16x A 845 injector nozzles
- H 143, W 240, D 477 mm

A 860 holder rack 2x4
For improved protection and centring of load items
- For use with A 300/3 und A 300/2 modules

A 861 holder rack 3x6
- For improved protection and centring of load items
- For use with A 301/5 und A 301/4 modules

A 862 holder rack 4x8
- For improved protection and centring of load items
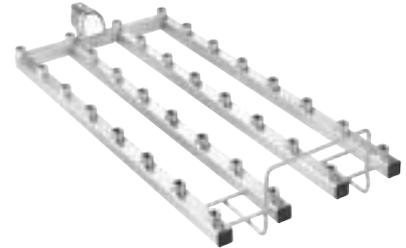- For use with A 302/3 und A 302/2 modules

A 300/2 module 2x4 (w/o nozzles)
- For laboratory glassware, e.g. Erlenmeyer flasks, round flasks, laboratory bottles, measuring flasks and measuring cylinders
- For up to 8 injector nozzles (particularly suitable for Ø 6 mm, e.g. A 840 or A 841, other diameters possible depending on application)
- H 73, W 133, D 475 mm
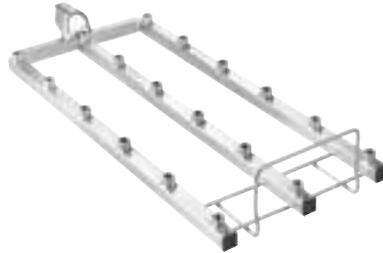
A 301/4 module 3x6 (w/o nozzles)
- For laboratory glassware, e.g. Erlenmeyer flasks, round flasks, laboratory bottles, measuring flasks and measuring cylinders
- For up to 18 injector nozzles (particularly suitable for Ø 4 mm, e.g. A 842 or A 843, other diameters possible depending on application)
- H 73, W 173, D 475 mm

A 302/2 module 4x8 (w/o nozzles)
- For laboratory glassware, e.g. Erlenmeyer flasks, round flasks, laboratory bottles, measuring flasks and measuring cylinders
- For up to 32 injector nozzles (particularly suitable for Ø 2.5 mm, e.g. A 844 or A 845, other diameters possible depending on application)
- H 73, W 195, D 475 mm

Injector nozzles

EASYLOAD

A 840 injector nozzle Ø 6x130 mm (1 off)
A 840/1 injector nozzle Ø 6 x 130 mm (5 off)
A 840/2 injector nozzle Ø 6 x 130 mm (10 off)
A 840/3 injector nozzle Ø 6 x 130 mm (20 off)

A 841 injector nozzle Ø 6 x 210 mm (1 off)
A 841/1 injector nozzle Ø 6 x 210 mm (5 off)
A 841/2 injector nozzle Ø 6 x 210 mm (10 off)
A 841/3 injector nozzle Ø 6 x 210 mm (20 off)

A 842 injector nozzle Ø 4 x 90 mm (1 off)
A 842/1 injector nozzle Ø 4 x 90 mm (5 off)
A 842/2 injector nozzle Ø 4 x 90 mm (10 off)
A 842/3 injector nozzle Ø 4 x 90 mm (20 off)

A 843 injector nozzle Ø 4 x 185 mm (1 off)
A 843/1 injector nozzle Ø 4 x 185 mm (5 off)
A 843/2 injector nozzle Ø 4 x 185 mm (10 off)
A 843/3 injector nozzle Ø 4 x 185 mm (20 off)

A 844 injector nozzle Ø 2.5 x 80 mm (1 off)
A 844/1 injector nozzle Ø 2.5 x 80 mm (5 off)
A 844/2 injector nozzle Ø 2.5 x 80 mm (10 off)
A 844/3 injector nozzle Ø 2.5 x 80 mm (20 off)

A 845 injector nozzle Ø 2.5 x 125 mm (1 off)
A 845/1 injector nozzle Ø 2.5 x 125 mm (5 off)
A 845/2 injector nozzle Ø 2.5 x 125 mm (10 off)
A 845/3 injector nozzle Ø 2.5 x 125 mm (20 off)

Compatibility with entire product range

In particular the nozzles of the EasyLoad system can be fitted on virtually all Miele lab washers:

EasyLoad components				
Lab washers		**Modules**	**Nozzles**	**Holder rack**
Current model series				
	PG 8583	•	•	•
	PG 8593	•	•	•
	PG 8583 CD	•	•	•
	PG 8536	-	•	-
Previous model series				
	G 7883	-	•	-
	G 7893	-	•	-
	G 7883 CD	-	•	-
	PG 8535	-	•	-
SlimLine				
	PLW 6111	-	-	-
Large machine series				
	G 7825	-*	•	-*
	PG 8527	-*	•	-*

*cf. separate brochure on large lab washers.

Combination options
Upper and lower baskets, modules

Basket	+	Module	+	A 100 upper basket	A 101 upper basket			A 102 upper basket			A 103 upper basket
					Position			Position			
					Bottom	centre	top	Bottom	centre	top	
A 150		A 300/3 or A 300/2 with EasyLoad nozzles		-	-	•	•	-	-	!	•
		A 301/5 or A 301/4 with EasyLoad nozzles		•	•	•	•	•	•	•	•
		A 302/3 or A 302/2 with EasyLoad nozzles		•	•	•	•	•	•	•	•
		A 301/4 module with SD-B nozzles		-	-	-	-	-	-	-	•
		A 303		-	-	-	-	-	-	-	-
		A 304		•	•	•	•	•	•	•	•
		A 306		-	-	-	-	-	-	-	-

Basket	+	Module	Loading recommendation
A 100		A 300/3 or A 300/2 with EasyLoad nozzles	-
		A 301/5 or A 301/4 with EasyLoad nozzles	•
		A 302/3 or A 302/2 with EasyLoad nozzles	•
		A 301/4 module with SD-B nozzles	-
		A 303	-
		A 304	•
		A 306	-

• Recommended combination
- – Combination not recommended
! Combination not possible

Injector modules and load carriers for pipettes, phials and measuring cylinders

For use with A 100 upper basket and A 150 lower basket

A 303 module for pipettes
- For e.g. 98 measuring and full pipettes
- Height of retaining frame 150 mm
- H 185, W 225, D 471 mm
- Vertical clearance without upper basket: 450 mm (with A 150 lower basket)
- 1 off, for use in A 150 lower basket
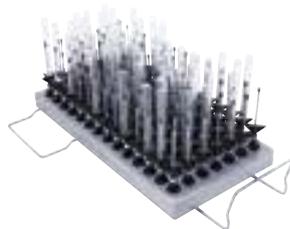
A 304 module for phials
- For 98 tubes, e.g. centrifuge tubes, phials, test tubes or autosampler tubes
- H 130, W 222, D 471 mm
- One each for A 100 upper basket or A 150 lower basket

A 306 module for measuring cylinders
- For laboratory glassware, in particular large measuring cylinders
- Capacity: four 1-2 l measuring cylinders, tall
- Contact surfaces plastic coated
- H 418, W 235, D 471 mm
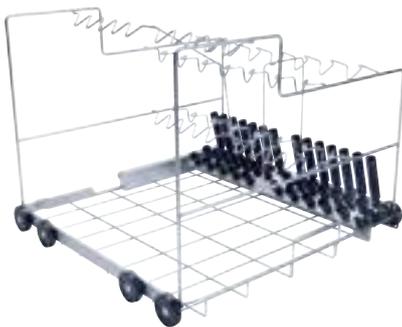
A 200 load carrier
- For 38 pipettes in 3 rows
- 1st row: 10 pipettes, max. 100 ml, Spacing 20 mm
- 2st row: 14 pipettes, max. 25 ml, Spacing 26 mm
- 3st row: 14 pipettes, max. 10 ml, Spacing 26 mm
- H 397, W 529, D 546 mm

Accessories for reprocessing with fully demineralised water

for PG 8583, PG 8593 and PG 8583 CD

PG 8595 Aqua Purificator
- Housing unit for 2 water demineralisation cartridges VE P 2000 / VE P 2800
- Compatible with PG 8583, PG 8593, PG 8583 CD
- Generally recommended quality for final rinse < 19 µS/cm
- H 835 (820), W 300, D 600 mm
- Freestanding unit, can be built under
- Outer panelling in stainless steel or white
- Condition as supplied: Empty housing unit. Cartridges and fittings must be ordered separately.

CM/1 ConductivityMeter
- Conductivity module for water demineralisation cartridges VE P 2000 and VE P 2800
- • Single-line display
- 10-point measurement in 0 - 199.9 µS/cm range: 1/3/5/10/15/20/50/75/100/199.9 µS/cm
- Optical and acoustic 'change cartridge' indicator
- Optical and acoustic fault indicator
- Wall bracket
- Connection to external LED (optional)
- Manual calibration on site
- H 110, W 125, D 52 mm
- Input: 110 - 240V, 50/60 Hz, 85 mA; Output: 9V, 400 mA, 3.6 VA
- Includes: Sensor cell with LED indicator and connection lead (length 1.0 m), 1 pressure hose 3/4" (length 1.94 m), 1 hose 3/4" (length 1.5 m)

LP 2800 demineralisation cartridge, empty
- Can be charged with 19 l of single-use resin

E 315 disposable resin
- 20 l homogenous, mixed-bed resins for LP 2800
- Box with 2 x 10 l bags, vacuum-sealed in plastic bags
- Replacement filter bag

E 316 refill set
- Plastic barrel with lid and funnel for 30 l of disposable resin

SK fast-action coupling for water demineralisation cartridges
- Conversion kit for simple replacement of cartridges consisting of:
  - 2 x VA adapters from ¾" to fast-action for direct connection to cartridge
  - 2 x fast-action couplings with ¾" PVC double nipple including gaskets for existing set of hoses.

UfZ conversion kit for spare cartridges
- If two cartridges are used, the 2 x VA ¾" connections can be screwed onto the second cartridge. This avoids the need to change fittings.

VE P 2800 water demineralisation cartridge, charged
- Pressure-proof stainless-steel cartridge
- Throughflow max. 800 l/h
- Delivery capacity can be monitored with conductivity module (ConductivityMeter CM/1)
- Complete with vent and pressure relief valve
- Pressure range 0.5 – 10 bar
- Contains 19 l of mixed, reactivatable resin
- Connection 3/4"
- Stainless-steel casing
- Dimensions: Ø 230 mm, H 570 mm +/- Hose connection radius (installation on either side of PG 8595 / PG 8596 possible)
- Max. supply temperature 40°C

VE P 2000 water demineralisation cartridge, charged
- Pressure-proof stainless-steel cartridge
- Throughflow max. 450 l/h
- Delivery capacity can be monitored with conductivity module (ConductivityMeter CM/1)
- Complete with vent and pressure relief valve
- Pressure range 0.5 – 10 bar
- Contains 12.5 l of mixed, reactivatable resin
- Connection 3/4"
- Stainless-steel casing
- Dimensions: Ø 230 mm, H 410 mm +/- hose connection radius
- Max. supply temperature 40°C

Capacity in litres between cartridge reactivation cycles

°d German hardness	5	10	15	20	25	30
µS/cm	150	300	450	600	750	900
VE P 2800	5,600	2,800	1,850	1,400	1,120	930
VE P 2000	4,000	2,000	1,330	1,000	800	660

1°d corresponds to approx. 30 µS/cm.
The information provided in this chart is intended as a guide only.

Dispensing accessories

for PG 8583, PG 8593 and PG 8583 CD

PG 8596 dispenser unit
- Housing unit for process chemicals and dispenser modules
- H 835 (820), W 300, D 600 mm
- Compatible with PG 8583, PG 8593
- Freestanding unit, can be built under
- Unit with removable door
- Outer panelling in stainless steel or white
- Interior dimensions: H 690 / 380 / 285 mm (top drawer removed / lower / upper drawer), W 250 mm, D 555 / 425 mm (without / with drip tray and dispenser modules)

2 levels:
Removable telescopic drawers with drip tray liners for canisters containing process chemicals
Canister sizes:
Accommodates a total of 6 x 5 l canisters (L 245 x W 145 x H 225 mm*).

Lower drawer offers space for larger canisters:
2 x 10 l, 140 x 193 x 307 mm
2 x 10 l, 223 x 203 x 321 mm
2 x 10 l, 229 x 193 x 323 mm
2 x 10 l, 194 x 204 x 353 mm
1 x 20 l, 289 x 233 x 396 mm
1 x 25 l, 288 x 234 x 456 mm

* Only possible with DOS K 85/1 dispenser unit with short siphon

DOS K 85/1 dispenser module
- For liquid alkaline detergents and chemical disinfectants, neutralising agent
- Peristaltic pump, adjustable via machine's electronic controls
- Integrated dispenser monitoring function ensuring high level of process security
- Short siphon (200 mm) for 5 l canister, incl. level fill monitoring
- Length of connection cable: 3.00 m
- Length of suction hose: 1.80 m

DOS K 85 dispenser module
- As DOS K 85/1
- But with long siphon (300 mm) for 5 l and 10 l canisters
- Option: Conversion kit, Part no. 5458034, for siphon (10-30 l containers) available from Spares.

Plinths and conversion kits

for PG 8583, PG 8593 and PG 8583 CD

UG 30-60/60-85 plinth
• For use on PG 8583 and PG 8593
• Stainless-steel plinth, bolted to machine
• H 300, W 600, D 600 mm

UG 30-90/60-85 plinth
• For use on PG 8583 and PG 8593 in combination with PG 8595 or PG 8596 (installation on either side of PG 8595 / PG 8596 possible)
• Stainless-steel plinth, bolted to machine
• H 300, W 900, D 600 mm

UG 30-90/70-85 plinth
• For use with PG 8583 CD
• Stainless-steel plinth, bolted to machine
• H 300, W 900, D 700 mm

UG 70-60/80
• For use on PG 8583 and PG 8593
• Stainless-steel box plinth with door, bolted to machine
• Fitted with floor tray, door with lock and key, bracket for conductivity meter and flowmeter, fixture for status LED in door frame
• Possible load configurations
2 new-generation dispenser modules (e.g. DOS K 85) 2 canisters for liquid products, max. 10 l, 2 full demineralisation cartridges (e.g. VE P 2800), 1 conductivity module
• H 700, W 600, D 550 mm

UBS 1 conversion kit
• For use of selected load carriers from G 78 series on PG 85 series
• For older load carriers with drying connection

UBS 2 conversion kit
• For use of selected upper baskets from G 78 series on PG 85 series
• For older injector units without drying unit connection

UBS 3 conversion kit
• For use of selected upper baskets from G 78 series on PG 85 series
• For older upper baskets without drying connection

Lab washers

PG 8536

Miele Professional has set innovative milestones for more than five decades and stands for the efficient and safe machine-based reprocessing of laboratory glassware. The PG 8536 lab washer excels by offering added value: greater cleaning performance, improved process security and better efficiency.

55 **Laboratory**
YEARS **Technology**

Product benefits

PerfectTouchControl –
Simple operation and cleaning
- Controls with flush, uninterrupted touch glass screen
- Reliable operation possible even when wearing gloves
- Chemical-proof surface is flush with machine front
- Simple and effective wet-wipe disinfection

Exclusive to Miele

PerfectPureSensor –
Residue-free rinsing
- Patented conductivity monitoring system
- Detection and removal of undesirable substance from process water (e.g. dissolved salts from alkaline or acidic process chemicals)
- Individually definable limits
- Low-maintenance and precise system thanks to contact-free conductivity monitoring
- Reliable documentation and reproduction of validated reprocessing results

Exclusive to Miele

PerfectFlowSensor –
Dispensing control
- Ultrasound volumetric control for highest process security
- Precise dispensing of liquid chemicals
- Measuring system independent of viscosity and ambient temperature
- Use of particularly durable bellows-type dispenser pumps

Competent and innovative

Miele recommended by **DURAN WHEATON KIMBLE**

- Intensive development work and close cooperation
- Trend-setting process development and product specifications

PerfectSpeedSensor –
Spray arm monitoring
- Precise speed control for safe reprocessing results
- Monitoring of all spray arms in machine and on baskets and load carriers
- Hygienic contact-free system with sensor outside chamber
- Safe reproduction of validated reprocessing results through early detection of excessive foaming or blockages

**Exclusive
to Miele**
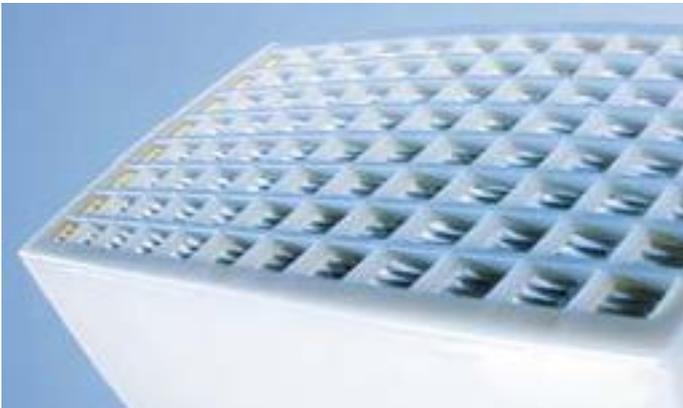
PerfectHEPA Drying
- Exceptional cleanliness, including during the drying phase, is guaranteed by PerfectHepaDrying.
- Highly temperature-resistant HEPA-grade Class 13 filters able to filter out more than 99.95% of particles.
- Upstream position at entrance to cabinet prevents unwanted particles entering with drying air
- Streamlined air flow: All parts of cabinet are reliably reached by stream of hot air

PerfectDoc
- Network interface for process documentation as standard feature
- PerfectDoc module: Connection to process documentation software and to a hospital's own network.
- Documentation of numerous parameters such as temperature over time
- Recording of complete process protocols including A0 values, dispenser quantities, spray arm speeds and conductivity
- Documentation via printer possible

**Exclusive
to Miele**

Appliance overview

PG 8536

Lab washers	PG 8536
Width [mm]	900
Height, Depth [mm]	1175, 700
Duration / VarioTD** [mins.]	41
Capacity: Lab phials	128
Capacity: Pipettes	98
+ other laboratory glassware	•
Drying	DryPlus
Integrated dispenser pump	2
Capacity of drawer for supply canisters, 5 l	4
Electrical connection 3N AC 400 V, 50 Hz	•
Total rated load [kW]	10.2

Programmes, cycle times, consumption

| PG 8536	Main wash					Drying	
LAB STANDARD	33	8.5	38.5	18	2.6	34.3	0.6
LAB UNIVERSAL	35	8.5	55	21	2.3	34.3	0.6
LAB INTENSIVE	43	8.5	40	48	2.7	34.3	0.6
LAB-PIPETTES	46	11.5	74.5	44	2.5	34.3	0.3
PLASTICS	38	62.5	-	20	2.5	44.6	0.4
ORGANICA	41	1	64	21	2.8	34.3	0.6
ANORGANICA	43	4	49	48	2.4	34.3	0.6
LAB-OIL	47	1	80.5	21	2.5	34.3	0.3
DES-VAR-TD	54	36.3	24.2	16	3.7	34.3	0.6
SPECIAL 93/10	48	22	25.5	15.5	3.97	39.3	0.7

* with 6-minute steam condensation pause (No. 48-50 4.33 mins.)

Heating: 9 kW (3N AC 400 V, 10.2 kW)

Connection to cold water (15°C), hot water (65°C), demineralised water (15°C) and steam condenser water supply (approx. 20°C)
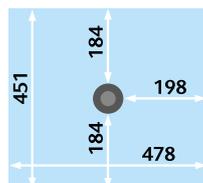
Upper and lower baskets

for PG 8536
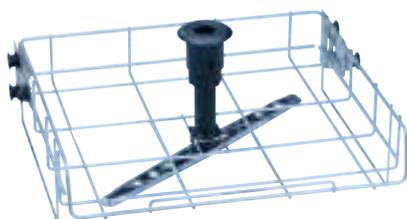
O 188/2 upper basket/open front
- Open front
- For various inserts
- Vertical clearance 165 mm
- Height adjustment range +/– 20 mm
- Built-in spray arm with magnetic tip for spray arm sensing
- H 215, W 531, D 475 mm

O 190/2 upper basket/open front
- As O 188/2
- Vertical clearance 215 mm
- Built-in spray arm with magnetic tip for spray arm sensing
- H 265, W 531, D 475 mm
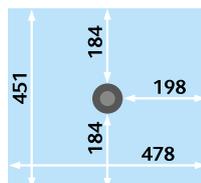
O 175 upper basket/injector unit with drying connector
- For narrow-necked laboratory glassware
- 33 injector nozzles
- Vertical clearance 170 mm*
- Connection for hot-air drying unit
- • H 250, W 531, D 475 mm, H with drying connection 412 mm
- Powder dispensing not possible

Supplied as standard with:
- 33 nozzles (E 351), Ø 4 x 160 mm
- • 33 clips for nozzles 4 x 160 mm (E 353)

* Clearance may be less, depending on type of laboratory glassware

O 184 upper basket/injector unit with drying connector
- For items such as centrifuge tubes, phials, test tubes for fraction collectors or autosampler tubes
- 96 injector nozzles
- Vertical clearance 170 mm
- Connection for hot-air drying unit
- H 260 (468 with drying connector), W 531, D 475 mm
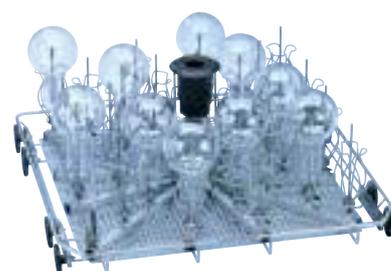- Powder dispensing not possible

Supplied as standard with:
- 96 nozzles, Ø 2.5 x 110 mm with plastic support

U 874/1 lower basket/open front
- Open front
- For various inserts
- Clearance heights in combination with upper basket:
  O 175 TA approx. 230 mm +/– 20 mm
  O 184 approx. 205 mm +/– 20 mm
  O 187 approx. 225 mm +/– 20 mm
  O 188/2 approx. 270 mm +/– 20 mm
  O 190/2 approx. 220 mm +/– 20 mm

U 175/1 lower basket/injector unit
- For narrow-necked glassware
- 33 injector nozzles
- Vertical clearance approx. 170 mm
- Only in conjunction with

  O 175/O 187/O 184 upper baskets
- H 250, W 531, D 475 mm

Supplied as standard with:
- 33 nozzles (E 351), Ø 4 x 160 mm
- 33 clips for nozzles (E 353), 4 x 160 mm
- 1 irrigation nozzle

32

O 187 upper basket/injector unit
- For narrow-necked laboratory glassware
- 34 injector nozzles
- Vertical clearance 170 mm*
- H 250, W 531, D 475 mm
- Powder dispensing not possible

Supplied as standard with:
- 34 nozzles (E 351), Ø 4 x 160 mm
- 34 clips for nozzles 4 x 160 mm (E 353)

* Clearance may be less, depending on type of laboratory
  glassware

U 184/1 lower basket/injector unit
- For items such as centrifuge tubes, phials, test
  tubes for fraction collectors or autosampler tubes
- 96 injector nozzles
- Only in conjunction with

  O 175/O 187/O 184 upper baskets
- Vertical clearance approx. 170 mm
- H 250, W 531, D 515 mm

Supplied as standard with:
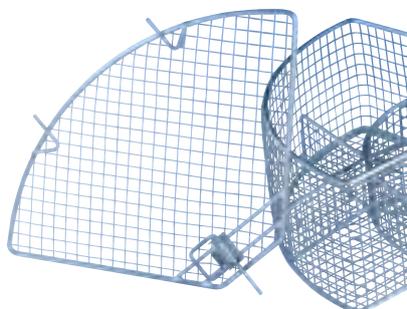- 96 nozzles 2.5 x 90 mm with plastic supports

Inserts for test tubes, funnels, beakers, wide-necked glassware

E 149 insert 1/4
- For 80 test tubes, max. 16 x 105 mm, incl. A 13 lid
- 80 compartments, 18 x 18 mm
- Mesh size on base 8 x 8 mm
- Lid available from Spares, Mat. no.: 05618390
- H 132 (152), W 200, D 320 mm

A 13 lid
- As replacement for E103, E104, E105 and E139 inserts
- Stainless steel
- 1 mm wire mesh
  8 mm mesh gauge
  4 mm all-round frame

E 103/1 insert 1/4
- For approx. 200 test tubes, max. 12 x 75 mm
- 6 compartments, incl. A 13 lid
- Mesh size 8 x 8 mm
- H 102 (122), W 200, D 320 mm

E 104/1 insert 1/4
- As E 103, but for test tubes, max. 12 x 105 mm, incl. A 13 lid
- Mesh size 8 x 8 mm
- H 132 (152), W 200, D 320 mm

E 105/1 insert 1/4
- As E 103, but for test tubes, max. 12 x 165 mm, incl. A 13 lid
- Mesh size 9 x 9 mm
- H 192 (212), W 200, D 320 mm

E 139/1 insert 1/4
- As E 103, but for test tubes, max. 12 x 200 mm, incl. A 13 lid
- Mesh size 9 x 9 mm
- H 223 (243), W 200, D 320 mm

AK 12 insert 1/2
- For funnels, beakers, wide-necked glassware, etc.
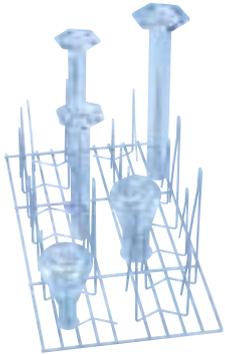- H 67/122, W 225, D 434 mm

A 14 lid 1/4
- For AK 12 insert
- Stainless steel
- 7 x 7 mm perforations, 3 mm ridge
- H 20, W 210, D 210 mm

Inserts for beakers, wide-necked glassware, measuring cylinders

for PG 8583, PG 8593, PG 8583 CD and PG 8536

E 106 insert 1/2 (illustrated)
- For wide-necked glassware, measuring cylinders, etc.
- 10 spring hooks, H 175 mm
- 16 spring hooks, H 105 mm, spacing approx. 60 mm
- H 186, W 220, D 445 mm

E 106/1 insert 1/2
- 26 small spring hooks, H 105 mm, spacing approx. 60 mm
- H 116, W 220, D 445 mm

E 106/2 insert 1/2
- 13 large spring hooks, H 175 mm, spacing approx. 85 mm
- H 186, W 220, D 445 mm

E 109 insert 1/2 (illustrated)
- For 21 beakers up to 250 ml
- 21 x 3 spikes
- H 155, W 230, D 460 mm

E 110 insert 1/2
- For 10 beakers, 250 ml to 600 ml
- 10 x 3 spikes
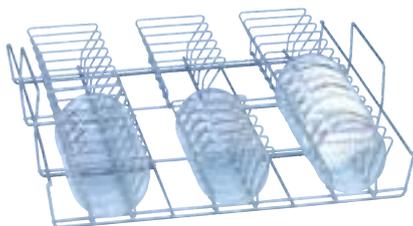- H 175, W 230, D 460 mm

E 111 insert 1/2
- For 8 beakers, 600 to 1,000 ml
- 8 x 3 spikes
- H 205, W 230, D 460 mm

E 144 insert 1/2
- For 18 beakers up to 250 ml
- 18 x 3 spikes
- H 131, W 200, D 445 mm

Inserts for Petri dishes, watch glasses, micro-titre plates, etc.

for PG 8583, PG 8593, PG 8583 CD and PG 8536

E 118 insert 1/1
- For 38 Petri half-dishes, 100 mm
- 38 holders, Height 70 mm
- Spacing approx. 26 mm
- H 120, W 460, D 445 mm

E 136 insert 1/1
- For 56 Petri half-dishes, 100 mm
- 56 holders, Height 70 mm
- Spacing approx. 26 mm
- H 145, W 485, D 445 mm

E 137 onsert 1/1 for E 136
- For 56 Petri half-dishes, 100 mm
- 56 holders, Height 70 mm
- Spacing approx. 26 mm
- H 95, W 485, D 445 mm

E 402 insert 1/2
- For 44 Petri dishes, 80-125 mm
- 23 supports, distance between supports 15 mm
- H 53, W 200, D 445 mm

E 403 insert 1/2
- For 105 Petri dishes, 50-60 mm
- 36 supports, distance between supports 9 mm
- H 35, W 200, D 445 mm

E 134 insert 1/2
• For 210 slides
• 210 compartments 26 x 11 mm
• Wire gauge 3 mm
• H 73, W 200, D 445 mm

E 494 insert 1/2
• For 5 micro-titre plates
• H 35, W 205, D 440 mm

Injector unit for pipettes

for PG 8536

E 404/1 injector unit
- For 38 pipettes in 3 rows:
  Row 1: 10 pipettes 100 ml (length up to 550 mm),
  Spacing 20 mm,
  Row 2: 14 pipettes 25 ml, Spacing 26 mm
  Row 3: 14 pipettes 10 ml, Spacing 26 mm
- Without holder for ML/2 magnetic strip
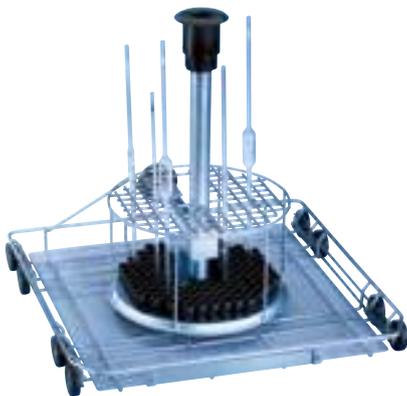 for automatic load carrier recognition/spray arm
  sensing

E 405/1 injector unit with drying connection
- As E 404/1
- Connection for hot-air drying unit
- With holder for ML/2 magnetic strip
  for automatic load carrier recognition/spray arm
  sensing

E 406 injector unit
- For 116 pipettes up to 450 mm
- Compartment size 16 x 16 mm
- Complete with retaining frame, height 150 mm
- Without holder for ML/2 magnetic strip for
  automatic load carrier recognition/spray arm
  sensing

E 408 injector unit with drying connection
- As E 406 but for 96 pipettes
- Connection for hot-air drying unit
- With holder for ML/2 magnetic strip for automatic
  load carrier recognition/spray arm sensing

Inserts for narrow-necked glassware

for PG 8536

E 355 injector unit 1/2
- For narrow-necked glassware
- 16 injector nozzles
- One half vacant for other inserts

Supplied as standard with:
- 7 x E 351 injector nozzles, Ø 4.0 x 160 mm
- 7 x E 353 clips for nozzles, 4.0 x 160 mm
- 9 x E 352 injector nozzles, Ø 6.0 x 220 mm
- 9 x E 354 clips for nozzles, 6.0 x 220 mm
- 1 x rinse nozzle for door powder dispenser

E 385 1/2 injector unit with drying connection
- As per E 355, but with connection for hot air drying unit
- 16 injector nozzles
- Holder for ML/2 magnetic strip for automatic load carrier recognition

Supplied as standard with:
- 7 x E 351 injector nozzles, Ø 4.0 x 160 mm
- 7 x E 353 clips for nozzles, 4.0 x 160 mm
- 9 x E 352 injector nozzles, Ø 6.0 x 220 mm
- 9 x E 354 clips for nozzles, 6.0 x 220 mm
- 1 x rinse nozzle for door powder dispenser

E 340 injector unit 1/2
- For narrow-necked glassware
- 19 injector nozzles
- One half vacant for other inserts

Supplied as standard with:
- 3/3/3 nozzles, Ø 4.0 x 140/160/180 mm
- 3/3/4 nozzles, Ø 6.0 x 200/220/240 mm
- 1 x rinse nozzle for door powder dispenser

E 408 injector unit with drying connection
As E 350 but with 32 nozzles/clips
- Connection for hot-air drying unit

Supplied as standard with:
- 14 x E 351 injector nozzles, Ø 4.0 x 160 mm
- 14 x E 353 clips for nozzles, 4.0 x 160 mm
- 18 x E 352 injector nozzles, Ø 6.0 x 220 mm
- 18 x E 354 clips for nozzles, 6.0 x 220 mm
- 1 x rinse nozzle for door powder dispenser

E 329 injector unit 1/1
- For narrow-necked glassware
- 39 injector nozzles

Supplied as standard with:
- 4/5 nozzles, Ø 2.5 x 90/110 mm
- 5/5/5 nozzles, Ø 4.0 x 140/160/180 mm
- 5/5/5 nozzles, Ø 6.0 x 200/220/240 mm
- 1 x rinse nozzle for door powder dispenser

E 414 1/1 injector unit with drying connection
As E 329, but with 37 nozzles
- Connection for hot-air drying unit
- With holder for ML/2 magnetic strip for automatic load carrier recognition/spray arm sensing

Supplied as standard with:
- 4/3 nozzles, Ø 2.5 x 90/110 mm
- 5/5/5 nozzles, Ø 4.0 x 140/160/180 mm
- 5/5/5 nozzles, Ø 6,0 x 200/220/240 mm
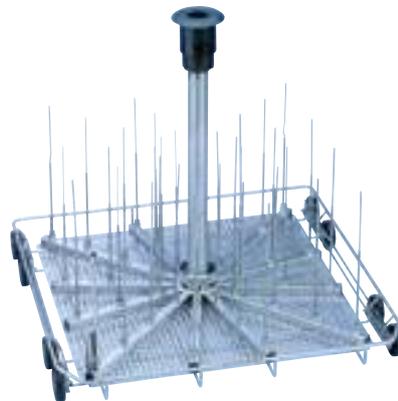- 1 x rinse nozzle for door powder dispenser

E 350 injector unit 1/1
- For narrow-necked glassware
- 33 injector nozzles

Supplied as standard with:
- 15 x E 351 injector nozzles, Ø 4.0 x 160 mm
- 15 x E 353 clips for nozzles, 4.0 x 160 mm
- 18 x E 352 injector nozzles, Ø 6.0 x 220 mm
- 18 x E 354 clips for nozzles, 6.0 x 220 mm
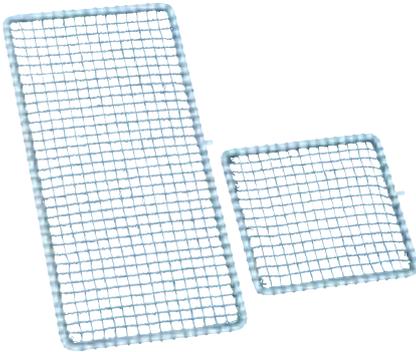- 1 x rinse nozzle for door powder dispenser

E 331 injector unit 1/1
- For butyrometers
- 39 injector nozzles

Supplied as standard with:
- 39 SD-B injector nozzles for butyrometers
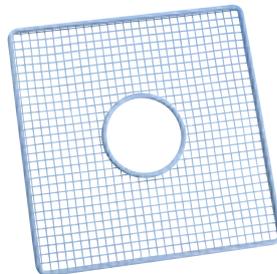- 1 x rinse nozzle for door powder dispenser

Accessories

A 2 cover net 1/2 (similar to photo)
• Plastic-coated metal frame with plastic netting
• For 1/2 inserts
• 216 x 456 mm

A 3 cover net 1/4 (similar to photo)
• Plastic-coated metal frame with plastic netting
• For 1/4 inserts
• 206 x 206 mm

A 5 cover
• Stainless-steel frame with plastic net (material quality PA 12)
• For O and U 184, E 747, E 947
• H 8, W 280, D 280 mm
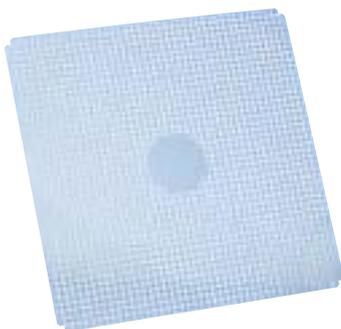
A 11/1 insert 1/1 underframe
• With perforations 7 x 7 mm
• For upper or lower basket
• Stainless steel
• W 429, D 429 mm

A 12/1 insert 1/2 underframe
• With perforations 7 x 7 mm
• For upper or lower basket
• Stainless steel
• W 429, D 224 mm

E 319/3 insert 1/1
• Surface filter for coarse soil
• Contains soiling e.g. labels from laboratory glassware, glass splinters etc.
• W 500, D 488 mm

E 336 irrigation sleeve
• Plastic, with screw fitting
• For pipettes (max. length 445 mm) in injector units
• Ø 11 mm
• Length 121 mm

E 351 injector nozzle
• For injector unit
• For combination with E 353
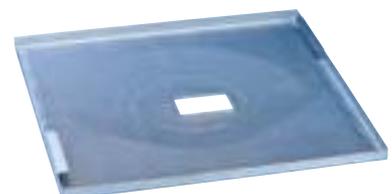• Ø 4 x 160 mm, screw thread

E 352 injector nozzle
• For injector unit
• For combination with E 354
• Ø 6 x 220 mm, screw thread

E 353 clip for nozzle
• For E 351 injector nozzle
• Height-adjustable
• Ø 4 x 160 mm

E 354 clip for nozzle
• For E 352 injector nozzle
• Height-adjustable
• Ø 6 x 220 mm

E 470 injector nozzle with clip
• For injector unit
• Ø 2.5 x 90 mm, screw thread

Injector nozzle with plastic support
ID 90
• Ø 2.5 x 90 mm
ID 110
• Ø 2.5 x 110 mm
ID 140
• Ø 4 x 140 mm
ID 160
• Ø 4 x 160 mm
ID 180
• Ø 4 x 180 mm
ID 200
• Ø 6 x 200 mm
ID 220
• Ø 6 x 220 mm
ID 240
• Ø 6 x 240 mm

SD-B injector nozzle for butyrometers
• For E 331 load carrier
• L 240 mm incl. thread, 4 x 140 mm plus welded, compressed nozzle, 1.5 x 100 mm

E 362 blanking screw
• M 8 x 1 thread, to seal connectors on load carriers

Transport trolleys, accessories

for PG 8536

ML/2 magnetic strip
- Magnetic strip for automatic load carrier recognition
- 5 magnets, configurable, 15 combination options

Retrofittable magnetic spray arm
- For spray arm sensing function with retrofittable magnetic spray arms on PG 8535, PG 8536 on baskets/inserts without magnetic spray arms.

MC/2 Mielcar, supply and disposal trolley
- For loading lab washers and handling baskets and inserts
- 2 levels (sloping towards centre)
- Rail handle and docking plate
- Docking height H 640–885 mm, infinitely adjustable
- 4 wheels, of which 2 are lockable
- H 1003, W 600, D 805 mm (with docking plate raised D 960 mm)

For use with PG 8536 and lab washers on 30 cm plinth

MT Mieltrans trolley
- Trolley for storing and transporting baskets and inserts
- 4 height-adjustable levels
- Loading dimensions W 549, D 599 mm
- Height-adjustment increments 102.5 mm
- 4 lockable wheels
- H 1985, W 616, D 662 mm

The new SlimLine lab washers – Compact dimensions, high capacity

With its new SlimLine lab washers, high-performance reprocessing methods, perfectly matching ProCare Lab process chemicals and practical accessories, Miele is offering a comprehensive and systematic solution to the reprocessing of laboratory glassware for analytical experiments. Going beyond standard approaches, Miele engineers together with users have come up with individualised solutions to tackle everyday laboratory challenges.

System4 Lab

Product benefit overview

SmartLoad – flexible use of chamber space

The new SlimLine lab washers from Miele Professional excel in terms of high performance on a small footprint. And what's more, the innovative SmartLoad system enables chamber space to be used particularly efficiently.

Models from the PLW 6111 series are able to accommodate up to 3 baskets on telescopic racks. These baskets dock onto the water circulation system at 4 different heights. This allows a wide range of load height combinations, starting with using the lowest rack level only for a maximum vertical clearance of 630 mm.

SmartLoad
3 racks
4 levels

SmartLoad
2 racks
3 levels

Compact machine dimensions combined with large chamber capacity
- Small footprint with width of only 650 mm
- 3 levels with injector nozzles
- Vertical clearance of up to 630 mm for large vessels
- 121 pipettes and 40 bottles (1 l) in a single cycle

Spotless results through combination of programme cycle and process chemicals
- ProCare Lab process chemicals for optimum results
- Thorough cleaning combined with the gentlest treatment of materials
- Detergents and neutralising agents in various canister sizes

Intelligent controls
- Controls with flush, uninterrupted touch glass screen
- All information visible at a glance thanks to 3.5" display
- Maximum of 40 programme slots (standard programmes and vacant programme slots)
- Simple and effective cleaning
- RS232 port for connecting to a printer or PC

Simple and efficient cleaning processes
- Chamber, spray arms and tank filters are made from high-grade stainless steel (DIN 1.4404/AISI 316L)
- Conductivity monitoring for high-level process security
- HEPA H14 fine filter for germ-free drying air
- Built-in water softener*
- Heated boiler for shorter cycle times*

* depending on model

Visual monitoring of chamber
- Process control thanks to full glass door
- Integrated chamber lighting
- Automatic door lock

Wide range of load carriers
- Range specifically designed for laboratory use
- Maximum flexibility combined with intuitive use
- Wide range of standard and configurable loading options
- Possibility to reprocess even the smallest items of laboratory glassware through to very large containers (up to 50 l)

The new SlimLine lab washers

PLW 6011

SmartLoad
2 racks
3 levels

SlimLine lab washer	PLW 6011
External dimensions [Width x Height x Depth mm]	650, 1685, 660
Chamber dimensions [Width x Height x Depth mm]	540, 540, 585
Usable volume [l]	170
Load concept	Rack system with max. 2 levels and 3 different positions
Programmes	40 programme positions
Programme selection	Touch on Glass

Features	
Single-door model	•
Glass door, bottom-hinged, chamber lighting	•
Electric heating	•
Hot-air drying, incl. HEPA H14 filter	•
Steam condenser	•
Integrated dispenser pumps	2
Drain pump	•
Water connections	HW, CW, de-mineralised water
Electrical connection 3N AC 400 V, 50 Hz	•
Total rated load [kW]	8.25
Conductivity meter	model-dependent
Water softener	model-dependent
Sampling tap	model-dependent
USB port	model-dependent

Load capacity	
100 ml laboratory bottles	84
250 ml laboratory bottles	84
1000 ml laboratory bottles	20
Phials	312
Pipettes	121

The new SlimLine lab washers

PLW 6111

SmartLoad
3 racks
4 levels

| SlimLine lab washer	PLW 6111
External dimensions [Width x Height x Depth mm]	650, 1840, 687
Chamber dimensions [Width x Height x Depth mm]	540, 690, 585
Usable volume [l]	218
Load concept	Rack system with max. 3 levels and 4 different positions
Programmes	40 programme positions
Programme selection	Touch on Glass

Features	
Single-door model	•
Glass door, bottom-hinged, chamber lighting	•
Electric heating	•
Hot-air drying, incl. HEPA H14 filter	•
Steam condenser	•
Integrated dispenser pumps	2
Drain pump	•
Water connections	HW, CW, de-mineralised water
Electrical connection 3N AC 400 V, 50 Hz	•
Total rated load [kW]	8.25
Conductivity meter	model-dependent
Water softener	model-dependent
Sampling tap	model-dependent
USB port	model-dependent

Load capacity	
100 ml laboratory bottles	126
250 ml laboratory bottles	84
1000 ml laboratory bottles	40
Phials	468
Pipettes	121

Standard baskets
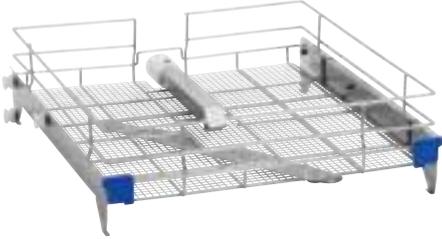
APLW 000 upper basket
- For laboratory glassware, e.g. beakers
- Useable surface: 485 x 525 mm
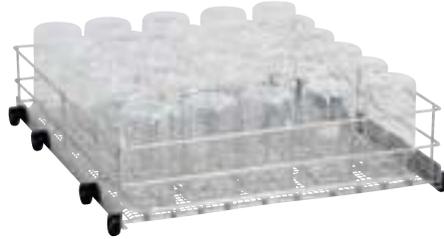
APLW 001 load carrier
- For laboratory glassware, e.g. beakers
- Useable surface: 490 x 540 mm

Inserts
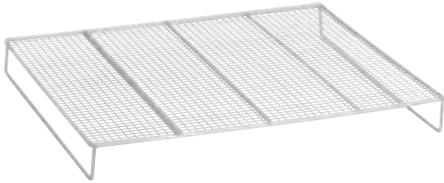
APLW 033 top frame
• Vertical clearance reduced by 50 mm
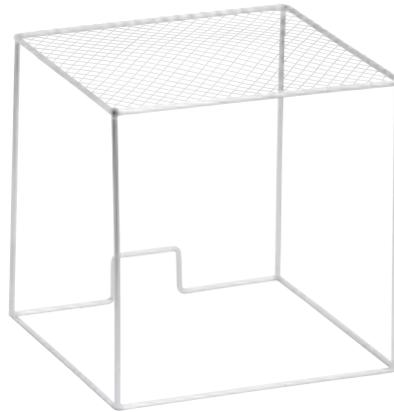
APLW 034 cover
• Cover for light-weight laboratory glassware, e.g. test tubes
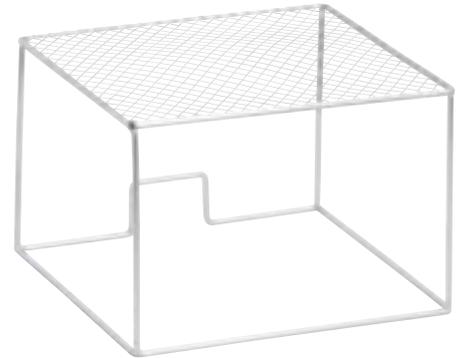
APLW 035 cover
• Cover for light-weight laboratory glassware, e.g. test tubes

APLW 036 cover
• Basket cover
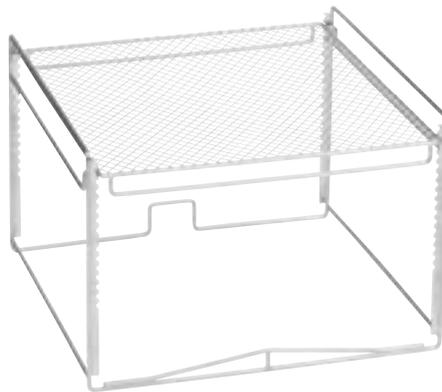
APLW 037 protective grid
• Adjustable protective cover for the safe reprocessing of test tubes

APLW 038 insert
• Insert with spring hook for laboratory glassware
• 14 spring hooks, 175 mm
• 14 spring hooks, 105 mm

Inserts
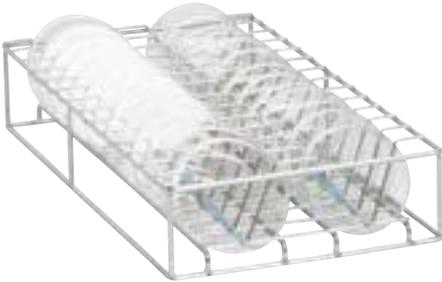
APLW 039 insert
• For Petri dishes
• 26 items

APLW 040 insert
• For test tubes
• Height 115 mm

APLW 041 insert
• For test tubes
• Height 145 mm

APLW 042 insert
• For test tubes
• Height 215 mm
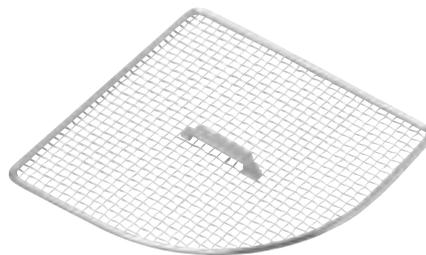
APLW 043 lid
• Cover for APLW 040, APLW 041 and APLW 042
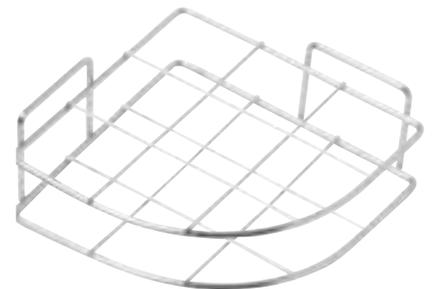
APLW 044 insert
• For test tubes
• Separator for APLW 040, APLW 041 and APLW 042

Pre-configured baskets
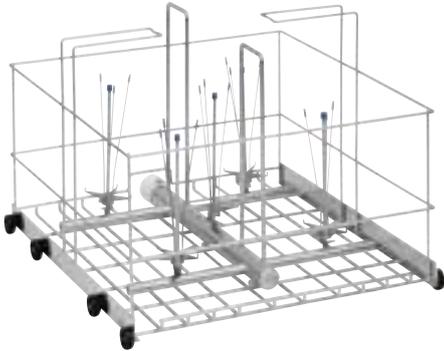
APLW 002 load carrier
• For bottles (5 and 10 l), large Erlenmeyer flasks
• Up to 4 items, Ø max mm 240
• Up to 5 items, Ø max mm 190
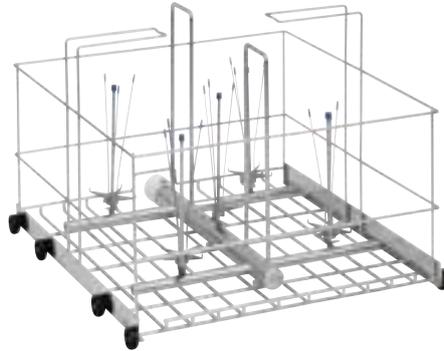
APLW 003 load carrier
• For bottles (up to 20 l), large Erlenmeyer flasks
• Up to 2 items, Ø max. mm 280

APLW 004 load carrier
• For bottles, max. 50 l

APLW 005 load carrier
• For pipettes (max. 56)
• Max. pipette length: 760 mm on PLW 6111
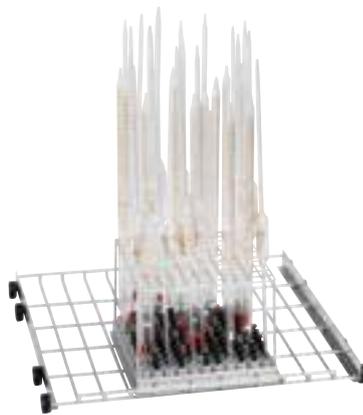
APLW 006 load carrier
• For pipettes (max. 121)
• Max. pipette length: 470 mm on PLW 6011
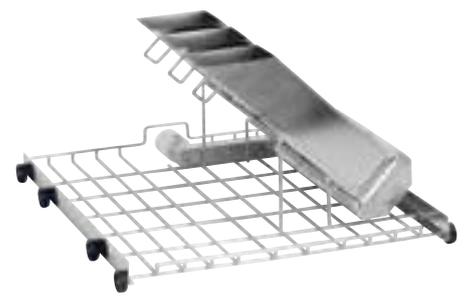
APLW 008 load carrier
• For pipettes (reprocessing in 3 cartridges)

APLW 007 load carrier
• For pipettes (reprocessing in 2 cartridges)
• Max. pipette length 520 mm

Upper and lower baskets with configurable nozzles

Basket layouts
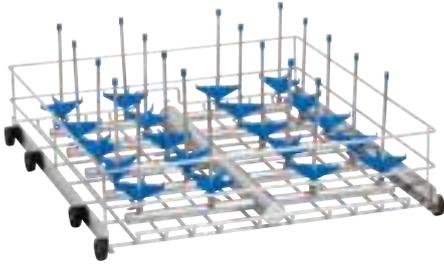
Basket layout 1
Fig. shows example of APLW 030 lower basket
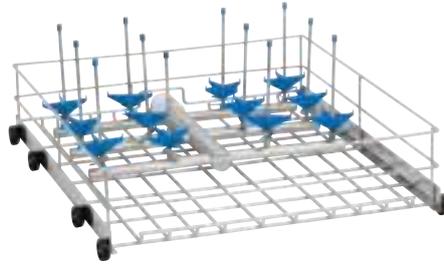
Basket layout 2
Fig. shows example of APLW 026 lower basket
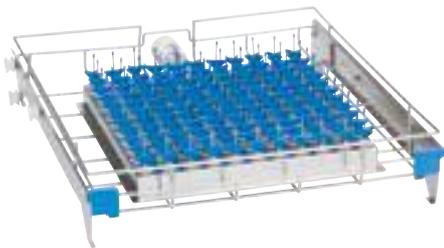
Basket layout 4
Fig. shows example of APLW 019 upper basket
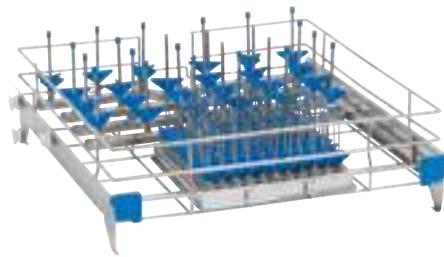
Basket layout 3
Fig. shows example of APLW 018 upper basket

Upper and lower baskets, with pre-fitted nozzles

Basket versions

Upper basket	Ø max. mm	Max. height mm	No. of nozzles	Basket layout	Note
APLW 013/1	70	160	42	2	With 42x APLW 051
APLW 013/2	70	200 - 300	10 + 32	2	With 32x APLW 051 + 10x APLW 055
APLW 014/1	100	230	20	1	With 20x APLW 055
APLW 018/1	20 + 75	160	24 + 121	3	With 121x APLW 048 + 24x APLW 051
APLW 019/1	25	90	121	4	With 121x APLW 047

Lower basket	Ø max. mm	Max. height mm	No. of nozzles	Basket layout	Note
APLW 020/1	25	140	121	4	With 121x APLW 047
APLW 024/1	70	230	42	1	With 42x APLW 052
APLW 024/2	70	200 - 300	42	1	With 10x APLW 055 + 32x APLW 051
APLW 024/3	70	180 - 280	42	1	With 12x APLW 067 + 30x APLW 066
APLW 025/1	70	200 - 300	24	2	With 12x APLW 056 + 12x APLW 052
APLW 026/1	100	300	20	1	With 20x APLW 056
APLW 30/1	100	180 - 280	12	2	With 6x APLW 067 + 6x APLW 066
APLW 032/1	20 + 75	160 - 300	24 + 121	3	With 121x APLW 048 + 24x APLW 056

Upper and lower baskets, empty, freely configurable with nozzles

Basket versions

Upper basket	Ø max. mm	No. of nozzles	Basket layout	Note
APLW 010	32	156	1	only for 2.5 mm Ø nozzles
APLW 011	40	110	1	only for 2.5 mm Ø nozzles
APLW 012	35	84	1	only for 2.5 mm Ø nozzles
APLW 013	70	42	1	
APLW 014	100	20	1	
APLW 015	110	16	1	
APLW 016	75	27	1	
APLW 017	20	121	2	200x490 mm grid
APLW 018	75	24+121	3	See also APLW 035, APLW 034, APLW 036
APLW 019	25	121	4	only for 2.5 mm Ø nozzles

Lower basket	Ø max. mm	No. of nozzles	Basket layout	Note
APLW 020	25	121	4	only for 2.5 mm Ø nozzles
APLW 021	40	110	1	only for 2.5 mm Ø nozzles
APLW 022	52	70	1	only for 2.5 mm Ø nozzles
APLW 023	60	56	1	only for 2.5 mm Ø nozzles
APLW 024	70	42	1	
APLW 025	70	24	2	230 x 490 mm usable space
APLW 026	100	20	1	
APLW 027	110	16	1	
APLW 028	75	27	1	
APLW 029	130	12	1	
APLW 030	100	12	2	220x490 mm grid
APLW 031	160	9	1	
APLW 032	75	24+121	3	See also APLW 035, APLW 034, APLW 036

Injector nozzles for configuration of baskets

Nozzle type 1
- Standard support, Ø 4 mm for test tubes, low-capacity measuring cylinders, centrifuge tubes
- Fig. shows example of APLW 045

Nozzle type 2
- Standard support, Ø 5 mm for narrow-necked glasses, measuring cylinders
- Fig. shows example of APLW 050

Nozzle type 3
- Standard support, Ø 10 mm for narrow-necked glasses, measuring cylinders
- Fig. shows example of APLW 053

Nozzle type 4
- Flexible support, interior Ø 10 mm for Erlenmeyer flasks, wide- and narrow-necked glasses, measuring cylinders, Imhoff flasks
- Fig. shows example of APLW 058

Nozzle type 5
- Rigid support, interior, Ø 10 mm for wide-necked bottles, Erlenmeyer flasks
- Fig. shows example of APLW 061

Nozzle type 6
- Rigid support, exterior Ø 10 mm for Erlenmeyer flasks, wide- and narrow-necked glasses, measuring cylinders, Imhoff flasks
- Fig. shows example of APLW 066

Nozzle type 7
- Rigid support, Ø 17 mm for Erlenmeyer flasks, laboratory bottles, funnels, measuring cylinders
- Fig. shows example of APLW 069

Depending on the form and size of loads, injector nozzles should be chosen to give a gap between the tip of the nozzle and the base of the glass of between 10 and 90 mm.
Various nozzles can be supplied with a spring clip for height adjustment. By adjusting the spring clip, it is possible to reprocess laboratory glassware in a variety of sizes.

When selecting injector nozzles, the following dimensions apply: Gap D must be less than the max. permissible loading height for the respective rack level, measured from the injector base to the bottom of the item of glassware.
Gap E must be adjusted to the height of the item of glassware, measured from the support to the tip of the nozzle.
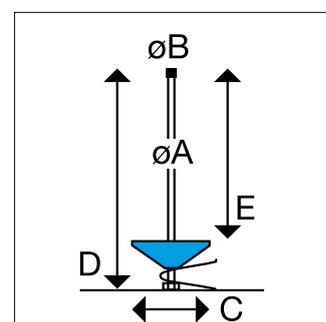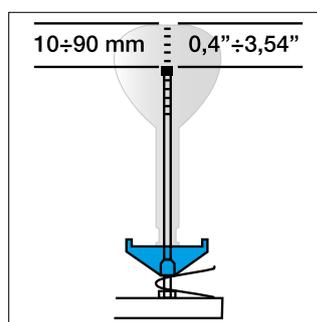
	Ø A mm	Ø B mm	C mm	D mm	E mm	Model	Clamp
Nozzle type 1	Standard support, Ø 4 mm for test tubes, low-capacity measuring cylinders, centrifuge tubes						
APLW 045	2.5	4	15	80	75	1	No
APLW 046	2.5	4	15	80	80	1	Yes
APLW 048	2.5	4	32	80	80	2	No
APLW 047	2.5	4	32	50	50	2	No
APLW 049	2.5	4	15	80	80	2	No
Nozzle type 2	Standard support, Ø 5 mm for narrow-necked glasses, measuring cylinders						
APLW 050	4	5	54	75	50	2	No
APLW 051	4	5	54	110	80	3	Yes
APLW 052	4	5	54	175	130	3	Yes
Nozzle type 3	Standard support, Ø 10 mm for narrow-necked glasses, measuring cylinders						
APLW 053	6	10	75	115	85	2	No
APLW 054	6	10	75	135	95	3	Yes
APLW 055	6	10	75	175	130	3	Yes
APLW 056	6	10	75	225	185	3	Yes
APLW 057	6	10	75	275	235	3	Yes
Nozzle type 4	Flexible support, interior Ø 10 mm for Erlenmeyer flasks, wide- and narrow-necked glasses, measuring cylinders, Imhoff flasks						
APLW 058	6	10	75	135	105	2	No
APLW 059	6	10	75	225	185	3	Yes
APLW 060	6	10	75	275	235	3	Yes
Nozzle type 5	Rigid support, interior, Ø 10 mm for wide-necked bottles, Erlenmeyer flasks						
APLW 061	6	10	75	115	85	2	No
APLW 062	6	10	75	135	95	3	Yes
APLW 063	6	10	75	175	130	3	Yes
APLW 064	6	10	75	225	185	3	Yes
APLW 065	6	10	75	275	235	3	Yes
Nozzle type 6	Rigid support, exterior Ø 10 mm for Erlenmeyer flasks, wide- and narrow-necked glasses, measuring cylinders, Imhoff flasks						
APLW 066	6	10	Flexible	175			No
APLW 067	6	10	Flexible	175			Yes
APLW 068	6	10	Flexible	275			No
Nozzle type 7	Rigid support, Ø 17 mm for Erlenmeyer flasks, laboratory bottles, funnels, measuring cylinders						
APLW 069	8	17	87	255	235		No
APLW 070	8	17	87	320	300		No
APLW 071	8	17	105	320	300		No

Injector nozzle accessories

APLW 080 holder
• Ø 6 mm
• Height: 140 mm

APLW 081 holder
• Ø 6 mm
• Height: 186 mm

APLW 083 bottle support
• Securing of load
• Ø 6 mm
• Height: 130 mm

APLW 082 bottle support
• Securing of load
• Ø 6 mm
• Height: 200 mm

APLW 093 irrigation sleeve
• Pipette holder with silicone liner (max. Ø 11 mm)

APLW 084 bottle neck holder
• Ø 28 mm
• for injector, Ø 6 mm

APLW 085 bottle neck holder
• Ø 33 mm
• for injector, Ø 6 mm

APLW 086 bottle neck holder
• Ø 45 mm
• for injector, Ø 6 mm

APLW 079 support
• Star support
• Ø 75 mm for injector, Ø 6 mm

APLW 078 nozzle cap
• Cap
• Ø 10 mm for injector, Ø 6 mm

APLW 088 holder
• Ø 105 mm H = 290 mm
• for injector, Ø 8 mm

APLW 090 holder
• Holder for pipettes
• Ø 20 mm
• Height: 21 mm

APLW 092 blanking stopper
• Seal

APLW 091 holder
• Holder for pipettes
• Ø 25 mm
• Height: 13 mm

APLW 073 support
• Star support
• Ø 32 mm for injector, Ø 2.5 mm

APLW 074 support
• Conical support
• Ø 15 mm for injector, Ø 2.5 mm

APLW 075 nozzle cap
• Cap
• Ø 4 mm for injector, Ø 2.5 mm

APLW 076 support
• Star support
• Ø 54 mm for injector, Ø 4 mm

APLW 077 nozzle cap
• Cap
• Ø 5 mm for injector nozzle, Ø 4 mm

APLW 087 support
• Stainless steel support
• Ø 87 mm
• for injector, Ø 8 mm

APLW 089 adapter
• Adapter
• Ø 6 mm adapter nipple
• for nozzle, Ø 8 mm

APLW 072 blanking screw
• For sealing nozzle connectors not in use

Process documentation

Systematic and flexible

Miele Professional offers a flexible and holistic approach to the documentation of laboratory glassware reprocessing. The system comprises the DataDiary documentation app and Segosoft Miele Edition documentation software as well as tailored communication modules and accessories. The documentation of reprocessing, including all relevant parameters, represents a clear quality benefit – and offers a wide range of opportunities to optimise both processes and costs.

Comprehensive
- The easy-to-use app-based DataDiary with wireless data transfer and user-related approvals for the latest generation of Miele lab washers.
- The user-friendly Segosoft Miele Edition allows full traceability and secure documentation of washing and disinfection, sterilisation as well as all other processing stages not involving lab washers (inspection, heat-seal pouching, approvals).
- Automatic recording of process protocols, routine checks and maintenance work
- Digital and conventional records
- Legally compliant documentation

Flexible
- Depending on the requirements of the installation location, documentation can be performed using two different communication modules.
- RS 232 module: Basic solution for small installations, connection of the APH 500 PRT 100 and APH 510 PRT 110 protocol printers and connection of Segosoft Miele Edition via USB.
- Ethernet module: Standard communication module with extended functionalities (auto-configuration, graphic protocols, update-enabled) and hence particularly suited to direct connection to a PC or a network.

System4 Lab

Process documentation

App-based solution

DATADIARY

Process documentation goes wireless: DataDiary – Simple, economic, safe

To assist with the reprocessing of laboratory glassware, Miele Professional is now offering a particularly time-saving solution based on an app. This receives cycle data automatically from a machine, allowing the approval of individual cycles at a tablet PC – without a cable, USB flash memory or any other intermediate steps. This Plug & Play solution is called DataDiary, an easy-to-use app-based process documentation system from Miele Professional which now extends the existing range.

DataDiary offers:
- Simple Plug & Play solution for PG 8583, PG 8583 CD and PG 8593 lab washers.
- Safe, wireless data transfer via WLAN (WPA2) between Miele machine and tablet
- WLAN link is simple to install with SSID (Service Set Identifier) and password
- Protocolling in PDF format
- User authentication using NFC tag or user ID/PIN
- Modern user interface for Android and Apple devices with a minimum screen size of 7" (min. 1280 x 800 Px)
- App for Android™ 6 and iOS® 10 (for iPad) operating systems
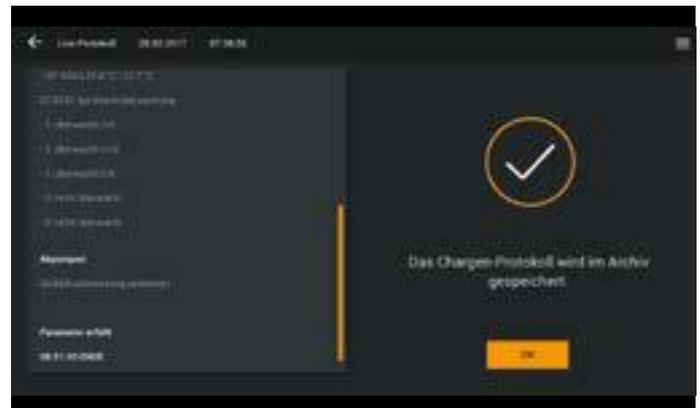
DataDiary	DataDiary ID
Scope:	Scope:
• XKM 3100 W CDS (WLAN communication module) • 5 NFC chipcards • Installation and operating instructions	• 5 NFC chipcards for DataDiary
Data transmission	
• Direct wireless link between machine and tablet PC	
Machine compatibility	
• Miele PG 8583, PG 8583 CD and PG 8593 lab washers	

Process documentation

Opportunities offered by applications

Direct link to a PC

The lab washer is connected directly to a computer running Segosoft Miele Edition. In this case, the PC can be installed in the laboratory or in a neighbouring room.
- Short distances and simple handling by approving loads on-site.
- Most flexible approach to connecting two or more units in hygiene room.
- Automatic data transfer from machine to software.

Network connection

The lab washer is linked up to the in-house computer network via an Ethernet module or a network converter. This allows data to be processed on a central PC.
- Use of existing computer for documentation
- Automatic data transfer from machine to software

Documentation via USB

Process data is saved to a USB flash memory connected to a lab washer via the RS232 communication module. Data can later be read out on a PC using the Segosoft Miele Edition for further processing.
- Reduced investment in computer and network infrastructure
- Use of existing computer

Segosoft Miele Edition 7

Apart from the Ethernet module, no further hardware is required to connect a PG 85x3 lab washer to the Segosoft Miele Edition 7, (e.g. converters or adapters, etc.). Alongside the online activation of licences and automatic configuration of software for fast and simple commissioning, automatic signature updates are also possible during operation.
- Documentation in PDF/A1 format

- Long-term archiving according to ISO 19005-1:2005
- Level of security certified by BSI (German Office of Data Security)
- ServiceCard for compliant operation of software

XKM RS232 10 Med
- RS 232 module
- Basic USB solution for printer connection
- Memory for up to 25 short/long protocols, no graphic protocols

XKM 3000 L Med
- Ethernet module
- Universal solution for PC and network connection
- Extended functionalities (updates)
- Ring buffer for up to 30 process protocols and 2 graphic protocols

Comparison of documentation options	Direct PC connection	Network connection	Documentation via USB	Printer
Documentation: Process protocol	•	•	•	•
Documentation: Temperature/pressure charts (depending on machine)	•	•	–	–
Documentation: Routine checks	•	•	•	–
Documentation: Maintenance	•	•	•	–
Advanced digital signature with reference to user	•	•	•	–
Manual approval with signature	–	–	–	•
Digital approval with user name/password	•	•	•	–
Convenience of short distances within laboratory	+++	++	++	+++
Paperless filing	•	•	•	–
Data backup function	•	•	•	–
Legal security	•	•	•	•
Initial outlay	+++	+++	++++	+
Medical product	•	•	•	–
ServiceCard	•	•	•	–

• = available – = not available + = evaluation scale

Process documentation

Components and accessories

APS 101 Sego – Segosoft Miele Edition
• Process documentation software for use in direct PC connections or network connections

Scope
• Software download*, Comfort Plus software package, PDF installation instructions, licence card for 1 machine

Max. number of connections
• Serial connection: 4 machines
• Network connection: Any number of machines

Data transmission
• Direct connection of machine and PC or machine and laboratory network

Machine compatibility
• Miele lab washers
• Machines from other manufacturers on request

APS 200 Sego – Segosoft Miele USB Edition
• Process documentation software for data transfer using USB flash memory

Scope
• Complete package for 1 machine: Software CD*, ComfortPlus software package, installation instructions, USB data logger module incl. 230 V converter, 1.4 m supply lead, serial interface cable for connecting machine and data logger (cable length: 3 m), USB flash memory
• Dimensions of data logger H 31, L 90, W 109 mm

Machine compatibility
• Miele Professional lab washer with TouchControl (PG 8583, PG 8593, PG 8583 CD)

Connection cable TYP 1 (APH 301)
• 3 m serial connection cable

For use on:
• PC direct connection via serial interface
• Network connection via serial interface with Net500 network converter

Connection cable TYP 2 (APH 302)
• 3 m serial connection cable

For use on:
• PC direct connection via serial interface
• Network connection via serial interface with Net500 network converter

* System requirements for all software systems
• CPU rate of at least 1.6 GHz, 2,0 GHz or higher recommended
• SVGA graphics with 1024 x 768 Px, 17" monitor or larger, recommended HD 1920 x 1080 Px
• Memory at least 2 GB, 4 GB recommended
• 1 GB free memory, 10 GB or higher recommended
• Min. 2 USB ports, 3 recommended, network interface, Internet access
• Operating systems: Windows 7 Professional SP1, Windows 8.1, Windows 10
• Adobe Acrobat Reader, Version 11.08 or higher

Additional services mandated by Miele Service Partner:
• ServiceCard scope
• Update of digital signature extending legal validity (BSI-compliant)
• Telephone support, e-mail, remote maintenance
• Flat annual fee per surgery/hospital computer € 215 (due when software is activated)
• Guarantees compliant operation of software
• Configuration management and traceability

Software download
* https://www.miele.de/professional/service-und-support-52.htm

Bundesamt für Sicherheit in der Informationstechnik

Deutsches IT-Sicherheitszertifikat

Zertifikat Nummer: **BSI-DSZ-CC-0930-2014**

bis EAL 4

APH 110 Net500 – Net500 network converter
- Connection of machines with serial interface to a laboratory network
- Converts serial data (RS 232) to network protocol (TCP/IP)

Scope
- Transformer/rectifier unit
- Supply lead length 1.4 m
- L 31, W 90, H 109 mm

Connection cable for Net500
- Machine-side: Serial connection cable (TYPE 1 or 2, depending on machine type) for connection between machine and Net500
- Network-side: Network cable (TYPE 6 or 7, depending on required length) for connection between Net500 and laboratory network

Network cable Type 6 (APH 406), Type 7 (APH 407)
- For network connection
 For use on:
- For connection of Net500 network converter to laboratory network
- Connection of one machine with network interface to laboratory network
- Network cable 3 m Type 6 (APH 406)
- Network cable 5 m Type 7 (APH 407)

Network cable Type 8 (APH 408), Type 9 (APH 409)
- Direct PC connection
- Connection of machine with network interface to PC network cable, crossover, 3 m, Type 8 (APH 408)
- Network cable, crossover, 5 m, Type 9 (APH 409)

Extension cable Type 3-5
- For connection cable Type 1/2
- Serial extension cable, 3 m, Type 3 (APH 303)
- Serial extension cable, 5 m, Type 4 (APH 304)
- Serial extension cable, 10 m, Type 5 (APH 305)

Machine compatibility
- For use with all models with serial interface

APH 500 - PRT100 - Protocol printer
- Printer for printing process protocols
- Ink-jet printer with indelible ink

Machine compatibility
- All Miele lab washers
- PG 8583, PG 8593 and PG 8583 CD only in combination with XKM RS232 10 Med serial communication module

APH 530 – Printer cable for PRT 100 printer
- Printer cable length 15 m (cable not supplied with printer)

Cartridges, paper rolls
- APH 590 – Printer cartridge for PRT 100
- APH 591 – Paper rolls, 5 off, for PRT 100

APH 510 - PRT110 - Protocol printer
- Printer for printing process protocols

Machine compatibility
- All Miele lab washers
- PG 8583, PG 8593 and PG 8583 CD only in combination with XKM RS232 10 Med serial communication module

APH 530 – Printer cable for PRT 110 printer
- Printer cable length 15 m (cable not supplied with printer)
  cartridges, paper rolls
- APH 592 – Black ink ribbon for PRT 110
- APH 591 – Paper rolls, 5 off, for PRT 110

Available from mid-2019.

APH 100 - Serial Industrial Converter
- For serial connection of up to 2 Miele Professional lab washers
- USB connection between Serial Industrial Converter and PC
- Galvanic separation of all connections
- L 31, W 90, H 109 mm

Scope
- Transformer/rectifier unit
- Supply lead length 1.4 m
- USB cable 0.5 m

Machine compatibility
- Miele lab washers G 7883, G 7893, G 7883 CD, PLW 6011, PLW 6111
- Machines from other manufacturers on request

NetBox.2

Process documentation system

The NetBox2 is a complete documentation system including pre-configured software. The system is connected via an interface to the lab washer and gathers relevant data from the current cycle. In normal mode, documentation is fully automatic without any intervention on the part of the user. This results in an increase in operational security as the NetBox.2 provides a good level of protection against user errors.

Once collated, process data remains in memory; the NetBox has the capacity to save up to 10,000 batch protocols. Later, data can be saved to a network or a storage device.

In network mode, the unit can be monitored and operated via a PC interface. A flat-screen monitor is also available as an optional extra to plot time/temperature curves. A further optional extra is a barcode scanner or RFID transponder to facilitate the fast and simple identification of loads. The user can also approve or lock batches, depending on process cycles.

Effective process documentation system requirements
- Complete system with high level of process security, including pre-installed and configurable software
- Manipulation-safe
- Simple operation without knowledge of PCs
- Extremely simple installation
- Process visualisation
- Batch-related documentation
- Documented batch approval
- Optional long-term archiving as XML files
- Touch screen controls
- User interface
- Machine status monitor
- Archiving of cycle data
- Transfer of load/approval data to EuroSDS©
- Provision of load / approval data for external documentation systems
- Web interface

System components
- NetBox2 with mouse/barcode scanner (wired) as well as cables for connection to lab washers

Optional
- Flat screen for visualisation of process data and loads
- Barcode scanner (Bluetooth model) for optimum programme control and simple load data acquisition
- Transponder as alternative to barcode system
- Ethernet switch with 4 ports
- Network cable
- Memory extension for up to 100,000 cycles

Commissioning
- The NetBox2 is connected by a Miele Service technician. An IT employee should be present to oversee integration into an on-site network.

Process chemicals

ProCare Lab

Miele Professional has designed a comprehensive and systematic approach to the thorough and effective reprocessing of laboratory glassware and utensils. Alongside lab washers and tailored programmes, this system also comprises process chemicals - a critical factor in both cleaning and disinfection. Geared meticulously to the requirements of individual programme phases, specially formulated detergents and neutralising agents guarantee thorough, fast and gentle process cycles.

System4 Lab

Quality from Miele Professional:

Process chemicals for the perfect reprocessing of laboratory glassware and equipment

ProCare Lab process chemicals are ideally suited to a multitude of applications, ensuring the trace-free removal of a wide range of soils in lab washers. At the same time, the process takes extreme care of loads. That is why Miele Professional is recommended by leading manufacturers of laboratory glassware.

The new ProCare Lab process chemicals have undergone extensive laboratory tests to ensure that they match the performance of high-performance lab washers from Miele Professional. Consequently, users profit highly from immaculate reprocessing for their analytical experiments, benefit from the value of their equipment being maintained and from fast glassware turnaround times.

A broad range of powder and liquid detergents is available to cover the various relevant applications. The packaging of the various products is colour-coded in order to reduce the risk of mix-ups. Even in the hustle and bustle of laboratory life, fast and error-free reprocessing is guaranteed.

System4 Lab

ProCare Lab 11 MA
- Mildly alkaline detergent
- Powder
- Container size 10 kg

ProCare Lab 11 AP
- Alkaline detergent
- Powder
- Container size 10 kg

ProCare Lab 10 MA
- Alkaline detergent
- Liquid
- Container sizes 5 l, 10 l

ProCare Lab 10 AP
- Alkaline detergent
- Liquid
- Container sizes 5 l, 10 l

ProCare Lab 10 AT
- Alkaline detergent
- Liquid
- Container sizes 5 l, 10 l

ProCare Lab 10 AO*
- Alkaline detergent
- Liquid
- Container sizes: 5 l

ProCare Lab 30 C
- Acidic neutralising agent based on citric acid
- Liquid
- Container sizes 5 l, 10 l

ProCare Lab 30 P
- Acidic neutralising agent based on phosphoric acid
- Liquid
- Container sizes 5 l, 12 kg

ProCare Lab Universal 61
- Coarse special salt
- Container size 6 kg

Canister key
- Simplifies the opening of firmly tightened safety caps

*Note: When using detergents with active chlorine, increased wear of organic materials such as plastics and elastomers in the lab washer is to be expected. A temperature of 75°C should therefore not be exceeded in main wash cycles when using detergents containing higher concentrations of chlorine. In order to prevent such wear and tear, Miele recommends that machines be serviced annually or after 1000 operating hours. A failure to perform regular maintenance may invalidate guarantee and warranty claims. Please contact Miele Service or request an offer for a maintenance contract.

ProCare Lab

Properties

Product	Container size	Properties	Ingredients	pH range
Main wash				
● ProCare Lab 11 MA	10 kg	Powder, mildly alkaline Foam-retardant action Free from: Oxidative agents	Phosphates Silicates Tensides	11.7-11.9 [1]
● ProCare Lab 11 AP	10 kg	Powder, alkaline Oxidative Free from: Phosphates,	Oxygen bleach Tensides	11.5-11.7 [1]
● ProCare Lab 10 MA	5 l, 10 l	Liquid, alkaline Free from: Tensides and oxidative agents	Alkali hydroxide Phosphates Silicates	11.6-11.8 [2]
● ProCare Lab 10 AP	5 l, 10 l	Liquid, alkaline Free from: Tensides, Phosphates and oxidative agents	Alkali hydroxide Polycarboxylates	12.5-12.7 [2]
● ProCare Lab 10 AT	5 l, 10 l	Liquid, alkaline contains tensides Free from: Phosphates, silicates and oxidative agents	Alkali hydroxide Polycarboxylates Tensides	12.2-12.5 [2]
● ProCare Lab 10 AO*	5 l	Liquid, alkaline Oxidative Free from: Tensides,	Alkali hydroxide Phosphates Chlorine bleach	11.8-12.1 [2]
Neutralisation				
● ProCare Lab 30 C	5 l, 10 l	Liquid Acidic (based on citric acid) Free from: Tensides and phosphates	Citric acid	2.9 -2.5 [3]
● ProCare Lab 30 P	5 l, 12 kg	Liquid Acidic (based on phosphoric acid) Free from: Tensides,	Phosphoric acid	2.2-1.9 [4]
Reactivating				
● ProCare Lab Universal 61	6 kg	Coarse special salt for reactivation of built-in water softener		

[1] pH value (determined using fully demineralised water at 20°C) 2 to 4 g/l
[2] pH value (determined using fully demineralised water at 20°C) 2 to 4 g/l
[3] pH value (determined using fully demineralised water at 20°C) 1 to 4 g/l
[4] pH value (determined using fully demineralised water at 20°C) 1 to 3 g/l

ProCare Lab

Applications

Product	Main applications	Contamination	Material compatibility
Main wash			
● ProCare Lab 11 MA	Medical, biological and chemical laboratories	Blood, protein, food residue	**Suitable for:** Stainless-steel, laboratory glassware, ceramics, plastics** (PE, PP, PVDF, PTFE) **Conditionally suitable for:** Non-anodised aluminium and non-ferrous metals (preliminary checks required) **Not suitable for:** Anodised aluminium
● ProCare Lab 11 AP	Water laboratories, serological institutes, laboratories in phosphate industry	Inorganic and organic soils	**Suitable for:** Stainless-steel, laboratory glassware, ceramics, plastics** (PE, PP, PVDF, PTFE) **Not suitable for:** Light alloys and non-ferrous metals, aluminium, anodised aluminium
● ProCare Lab 10 MA	Medical, biological and chemical laboratories	Blood, protein, Nutrient residues	**Suitable for:** Stainless-steel, laboratory glassware, ceramics, plastics** (PE, PP, PVDF, PTFE) **Conditionally suitable for:** Non-anodised aluminium and non-ferrous metals (preliminary checks required) **Not suitable for:** Anodised aluminium
● ProCare Lab 10 AP	Medical, biological, micro-biological and chemical laboratories, water laboratories, phosphate industry, laboratories in food processing, cosmetics, pharmaceutical, mineral oil and other industries	Stubborn or dried-on residues	**Suitable for:** Stainless-steel, laboratory glassware, ceramics, plastics** (PE, PP, PVDF, PTFE) **Not suitable for:** Light alloys and non-ferrous metals, aluminium, anodised aluminium
● ProCare Lab 10 AT	Laboratories in food, cosmetics, pharmaceutical, mineral oils and other industries	Stubborn residues such as oils, greases, paraffins, resins, organic dyes	**Suitable for:** Stainless-steel, laboratory glassware, ceramics, plastics** (PE, PP, PVDF, PTFE) **Not suitable for:** Light alloys and non-ferrous metals, aluminium, anodised aluminium
● ProCare Lab 10 AO*	Micro-biological, virological, nuclear medical laboratories, food industry, paints and coatings	Nutrient residues, blood, protein, radioactive contamination, residues of tissue and cell cultures	**Suitable for:** Stainless-steel, laboratory glassware, ceramics, plastics** (PE, PP, PVDF, PTFE) **Not suitable for:** Light alloys and non-ferrous metals, aluminium, anodised aluminium
Neutralisation			
● ProCare Lab 30 C	Medical, biological, micro-biological and chemical laboratories, water laboratories, phosphate industry, laboratories in food processing, cosmetics, pharmaceutical, mineral oil and other industries	Residues soluble in acids	**Suitable for:** Stainless steel, laboratory glassware, ceramics, plastics*** (PE, PP, PVDF, PTFE); additionally suitable for the neutralisation of non-anodised aluminium **Not suitable for:** Alloys and non-ferrous metals, chrome- and nickel-plated parts, anodised aluminium; not suitable for acidic pre-washing of non-anodised aluminium
● ProCare Lab 30 P	Medical, biological, micro-biological and chemical laboratories, laboratories in the food, cosmetics, pharmaceutical, mineral oil and other industries	Removes limescale and other soils soluble in acids	**Suitable for:** Stainless-steel, laboratory glassware, ceramics, plastics*** (PE, PP, PVDF, PTFE) **Not suitable for:** Light alloys and non-ferrous metals, chrome- and nickel-plated parts, anodised aluminium, aluminium
Reactivating			
● ProCare Lab Universal 61	ProCare Universal 61 prevents scaling and protects loads		

*Note: When using detergents with active chlorine, increased wear of organic materials such as plastics and elastomers in the lab washer is to be expected. A temperature of 75°C should therefore not be exceeded in main wash cycles when using detergents containing higher concentrations of chlorine. In order to prevent such wear and tear, Miele recommends that machines be serviced annually or after 1000 operating hours. A failure to perform regular maintenance may invalidate guarantee and warranty claims. Please contact Miele Service or request an offer for a maintenance contract.

** Plastics suitable for alkaline machine-based wash according to manufacturer.

*** Plastics suitable for acidic machine-based wash according to manufacturer

System4 Lab

Service excellence

Support is always available to you.

Miele Professional is synonymous with exceptional quality – not least when it comes to service. Blanket service coverage enables a response within 24 hours. And, thanks to on-board spares, first service visits result in around 90% first-time fixes. Miele's own service operation has repeatedly been awarded top marks for its service excellence.

Kundenmonitor®
Deutschland

TESTSIEGER

Seit vielen Jahren!

Miele
IMMER BESSER

System4 Lab

Service excellence

Maintenance and service contracts

Miele service contracts

Preventative maintenance
- Inspection
- Maintenance
- incl. high-mortality parts

Full-service maintenance contract
- Inspection
- Maintenance
- incl. repairs

Machine qualification

IQ / OQ
- Installation Qualification
- Operation Qualification

Annual maintenance/calibration
- Maintenance
- Calibration of measuring systems

Comprehensive service from the very start
Even before a machine is installed, Miele's sales force is available to provide dentists with in-depth advice. Experienced experts assist in selecting the most suitable machines and configurations to suit individual needs. On request, feasibility calculations can be provided, along with tailored financing packages.

Miele also offers a series of process checks performed at various times throughout a machine's life cycle. Specially trained medical product technicians carry out process tests in accordance with legal and standards requirements as well as country-specific recommendations.

Service to meet professional expectations
Highly qualified service engineers oversee the delivery and commissioning of machines and are available to perform various routine checks during the course of the machine's life time. This prevents faults occurring in the first place and offers an opportunity to optimise operating parameters on an ongoing basis. A further advantage: Regular checks and maintenance safeguards investments.
- First-class service with a network of technicians assigned to medical products and lab washers (over 220 in Germany alone)
- Short response times and on-site servicing within 24 hours
- 90% of service calls result in first-time fixes
- Reliable spares service, key functional parts available for 15 years after series production ceases.

Customised service contracts and inspections
Miele Professional offers laboratories of all sizes tailored service contracts. In honouring these contracts, Miele service engineers regularly assess and evaluate the condition of machines. Depending on the contract concluded, this comprises an analysis of functionality and safety with respect to all key components, including replacement as and when necessary. Scheduled inspection and maintenance prevents breakdowns from happening in the first place, increases the life expectancy of machines and contributes towards safeguarding investments. This offer from Miele Service includes a whole range of performance and process checks which are performed at various points throughout the life of products.

Miele Professional

Top-notch quality and service

Decades of experience, an unerring pursuit of quality and the power of innovation means that Miele sets the benchmark. High-performance lab washers from Miele Professional are recommended by leading manufacturers of laboratory glassware. In combination with accessories specific to models and applications, machines from Miele Professional facilitate the fast and simple reprocessing of all types of glassware.

Performance
- Thorough yet gentle reprocessing with dependable results
- Process control perfectly matches machines and laboratory glassware
- All-in system from one single supplier consisting of perfectly matching components (machines, chemicals, software, service)

Quality and economic operation
- Highest-quality materials and workmanship
- Superior product longevity and reduced need for maintenance
- Short cycle times and sparing use of resources

Safety and convenience
- Ergonomic controls simplify everyday laboratory work
- Convenient navigation avoids mistakes on the part of the user
- Large-scale, easy-to-read text display
- Fully automatic protocolling and documentation of reprocessing

Service
- Excellent Miele in-house service operation offering blanket coverage.
- Comprehensive advisory services covering planning, requirement assessment and financing.
- Customised service contracts guaranteeing functional safety and preserving values.

55 YEARS Laboratory Technology

Immer besser
Since 1899, Miele - a family-run company
- has subscribed to a clear corporate
philosophy condensed into the two words
'Forever better'. This overarching claim is the
foundation of Miele's proverbial quality and
sustainability and the power of innovation of
a brand 'Made in Germany'. A brand promise
which gives commercial users the certainty of
having chosen the right product.

Award-winning
Uncompromising product reliability and
service dependability is the reason why
customers have repeatedly voted Miele the
best and most trustworthy brand. Coveted
awards such as the MX Award, the iF and
reddot Design Awards and the German
Sustainability Prize confirm the distinguished
position Miele enjoys with respect to design,
quality management and the sparing use of
resources.

Proficient
Miele Professional has been developing and
manufacturing a broad range of high-quality
laundry machines, dishwashers, washer-
disinfectors and sterilisers for decades.
Carefully selected accessories, comprehensive
advisory services, and a Miele service
operation which guarantees fast response
times ensure that machines perform to
perfection and offer the ultimate in capacity
and efficiency.

Miele Professional on the web
- For detailed information on technical data,
  features and accessories
- Brochures on all product groups and
  applications available as downloads
- Detailed information, instructions
  and product presentations on Miele
  Professional's YouTube channel