

# G 7827 & G 7828 Large Capacity Laboratory Glassware Washers

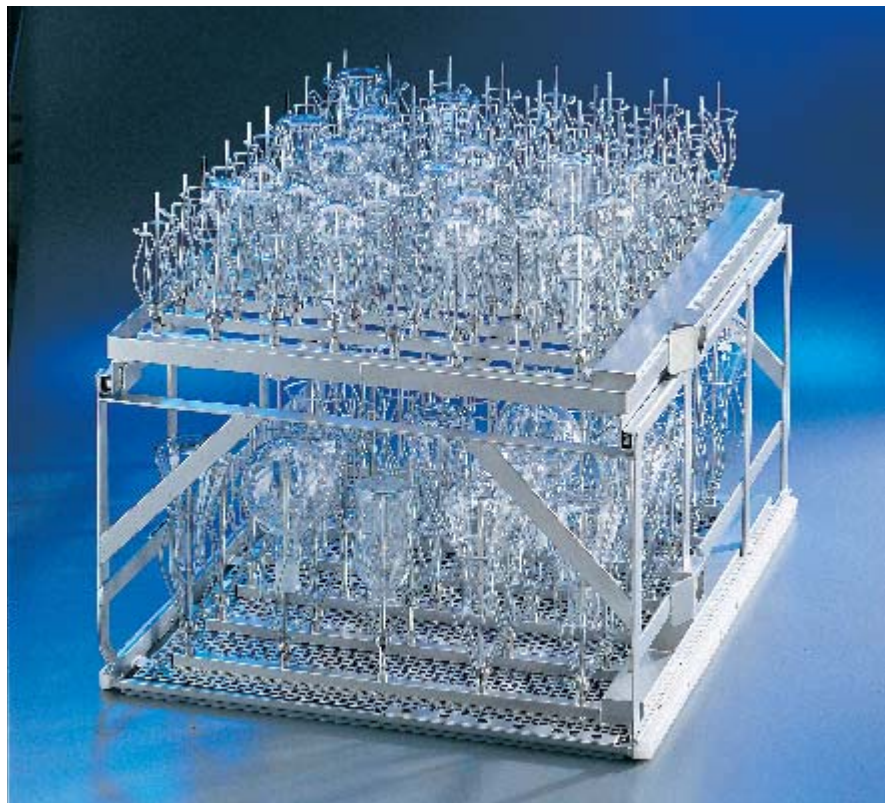
**Miele**  
PROFESSIONAL



# Introducing Miele Large Capacity Laboratory Glassware Washers

Miele USA is proud to introduce the G 7827 and G 7828 Large Capacity Laboratory Glassware Washing Systems. For over 100 years Miele has been a leading innovator in cleaning technology. Now the same outstanding quality that researchers have come to rely on in undercounter models is available in large capacity systems. These washers, which are field-proven in research facilities and hospitals throughout Europe, are now available in the USA.

Research organizations today often require high-volume cleaning of laboratory glassware. This is typically done in a centralized wash area apart from the laboratory. Researchers place their glassware on a cart, and glassware cleaning personnel transfer the glassware to the centralized location, clean and dry the items in an automated system, then return the glassware to the laboratory for re-use. The G 7827 and G 7828 are ideal for this type of cleaning process. The large chamber capacity also makes these washers ideal for cleaning over-sized items such as carboys, tall graduated cylinders, and large bottles.





# Modular Concept

The Miele Large Capacity Glassware Washer concept includes several parts, allowing the washer to be configured for your particular needs.

## The Washer

Two washer versions are available. The G 7827 is a single-door model ideal for most glassware cleaning applications. The G 7828 includes an interlocking rear door for pass through applications. Both models are designed to be convertible for steam or electric heating.

## The Drying Enclosure

The G 7827 and G 7828 are supplied with a top cabinet featuring service doors on front and back, with key locks, and air vents. This kit serves as an enclosure for the drying unit and steam condenser options. Dimensions are: 759h x 1150w x 765d mm



The G 7827



## The Base

This base/stand includes cut-outs for plumbing, steam and electrical connections. To ensure that your facility is properly prepared for the installation of the washer a template of this base is available from Miele. The base is included with every washer.



The G 7827 with Drying Option



The G 7828 clean side with Drying Unit and Steam Condenser options.



The G 7827 with Drying Option and Drying Enclosure.

## Options

### The Drying Unit

In the past, many laboratories have relied upon separate drying ovens for thorough drying of glassware. This method involves more handling of glassware, requires more floor space, and is usually more costly. With the Miele drying unit option, effective drying takes place within the wash chamber quickly and efficiently. HEPA-filtered forced hot air (up to 115°C) is blown throughout the chamber and through direct injectors for thorough drying of glassware interiors. This unit fits within the Drying Enclosure and can be connected to a building ventilation system.

### Steam Condenser

If connection of the washer to a building ventilation system is not possible, an optional steam condenser is available. This enables steam to be condensed and sent to the drain. This is a water-cooled system that can be connected to the cold water supply or to an on-site water cooling circuit. This unit also fits within the Drying Enclosure provided.

# Features for efficiency and cleaning effectiveness

## Dispensing Systems

Four liquid dispensing systems are included for automatic dosing of detergent, acid neutralizing agent, rinse aid, or other additives. For most glassware washing applications Miele recommends the use of a neodisher® brand detergent and a mild acid neutralizing agent to restore the proper pH balance to your glassware. Four 10 liter detergent/additive containers are located in the base of the washer for convenient storage, and are connected to independent bellows-type pumps for precise dosing. Each siphon tube is color-coded for operator convenience and safety. By having four dispensing systems available, several detergents can be ready-to-use for multiple cleaning requirements.

## Powerful Circulation Pumps

As always, Miele has designed these washers with pumps that provide a high circulation rate, combined with gentle spray pressure. This ensures that glassware will be thoroughly cleaned, but not damaged. Water is delivered to the chamber through the upper and lower spray arms (400 liters per minute), and through direct injection units (600 liters per minute). A total of 1000 liters of water per minute is recirculated for extremely effective mechanical cleaning action. This is accomplished while using a mere 35 liters (9 gal.) of water per fill.

## Fresh Water and Boiler System

The system includes water inlet valves for hot tap water, cold tap water and DI water. Between each cleaning stage (pre-wash, wash, rinse or final rinse) water is drained and fresh water is introduced for the next stage. Each fill is typically 35 liters (fills are adjustable from 25 to 55 liters) for economical water consumption. In addition, the Miele system includes a 30 liter boiler for pre-heating of DI water prior to the final rinse. These features help to ensure analytical cleaning results every time.

## Hot Wash and Rinse Water

It is well known that hotter water generally provides for better washing and rinsing results. For this reason water temperatures are adjustable up to 95°C. Independent control of wash and rinse water temperature provides for maximum flexibility in wash program design to meet special cleaning requirements.

## Triple Filter System

A triple filter system ensures that only clean water is introduced into the wash chamber. This system includes:

- Filters on all water inlet hoses to retain even the smallest particles before they enter the washer
- Filters in the base of wash chamber to capture residue so that it is not recirculated
- Filters upstream of circulation pumps to extend pump life

## Environmentally Friendly

All Miele products are designed with the environment in mind.

Water consumption – typically 9 gallons per fill, this washer utilizes less water than many other brands in its capacity range. This means you will spend less on purified water while conserving one of the earth's vital resources.

Detergent consumption – Low water consumption and high circulation rate enable these models to consume minimal detergent amounts. The detergent volume used varies depending upon the wash program, but typically ranges from 50 to 200 ml (2–8 fl. ounces) per cycle.

## Electrical Efficiency

Low water consumption means that less energy is required to heat the water up to washing temperature. Double wall construction and thorough insulation also minimizes heat loss, conserving electricity.

## Basket Recognition System

Many laboratories today are concerned with standard operating procedures or validation of processes. For this reason, equipment must be designed with features that minimize potential operator error. The Miele Basket Recognition System is a unique feature that allows only one predetermined wash routine to be run with a given mobile unit insert. This enables you to be absolutely confident that only the proper wash routine is being utilized. In order for the Basket Recognition System to be used, the user access switch is set to "C", and the magnetic coding strip is set to match the corresponding predetermined wash program (a description of this simple process is outlined in the operation manual). When the mobile insert is rolled into the wash chamber, the washer automatically reads the magnetic coding strip and indicates that the wash program is ready to start. The user must simply press the door close button and the start button. If one laboratory within the facility requires a different washing protocol than another, a mobile unit could be designated specifically for that lab and set to run only the wash program needed for that application.

# Chamber Details



## Inner Cabinet

- 675 x 650 x 800 mm (H x W x D) (Approx. 26.5 x 25.5 x 31.5)
- Electric vertical-lift door
- G 7828 includes interlocking rear door
- Inner cabinet and spray arms made of high-quality 304 stainless steel
- Concealed heating elements for operator safety
- Upper and lower spray arms for thorough water coverage



## Triple Filtration

- 1 filter in cabinet, 2 upstream of circulation pumps to ensure long pump-life
- Basket guides with stainless steel rollers



## Coupling System

- 2 direct coupling systems for various mobile injector units, one for direct injection cleaning, and one for forced hot air drying

# Profitronic Controls



Miele's Profitronic Control System combines simple operation with full programmability. Among the systems many features are:

- 11 Standard wash programs for laboratory glassware
- 8 utility programs
- Ability to store up to 45 additional custom programs
- Full program control for time, temperature, detergent/neutralizer dosing, and drying
- 4-line full-text navigation display, with selection of six languages including English and Spanish
- Direct or PC/laptop-controlled program compilation
- Service-friendly access to electronic components
- Printer option for documentation of process parameters
- RS 232 interface

A user access switch allows four user access levels to be selected.

- A. Only pre-set programs are accessible
- B. All programs are accessible
- C. Automatic mobile unit sensor system
- D. Full program range, including programming options





Miele meets the need for standardized cleaning performance by developing machine-based treatment methods and processes which provide repeatable and validatable results under practical working conditions. Essential prerequisites for such a system are:

- Monitoring and control of temperature and time
- Monitoring and control of water intake
- Monitoring and control of the detergent dispensing system

#### **Profitronic Controls**

Pull-out control panel for easy service access to electronic components

#### **Display on the clean side of the G 7828**

A full text display is provided on the rear of the G 7828 including a push button to open the interlocking vertical lift door.



#### **Printer Module**

The optional printer module can be provided in order to document the process parameters. This RS-232 serial interface records the following data:

- Date and machine number
- Programs number, name, start and end times
- Detergent concentration, temperature, pumps 1–4
- Desired temperatures reached (cleaning/drying), including precise time
- All faults (e.g. “water intake failure”)
- Manual intervention (start, stop, power outage)

# Accessories



## E 975 Mobile unit

- With 2 levels
- 427 x 640 x 790 mm (H x W x D)
- Built-in spray arm
- Magnetic coding strip for automatic sensing of a specific wash routine
- Clearance:
  - Lower level:
    - H 310, W 592, D 780
  - Upper level:
    - H 290, W 592, D 780
- Article No. 69597501



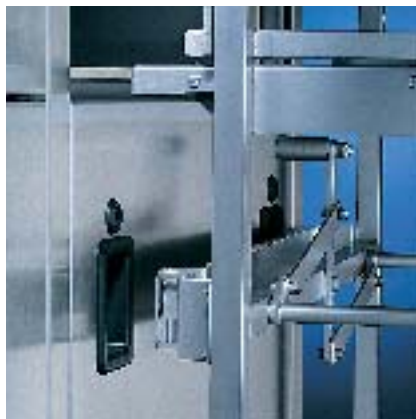
## E 935 Mobile unit

- With 3 levels for various inserts
- 524 x 640 x 790 mm (H x W x D)
- 2 built-in spray arms
- Magnetic coding strip for automatic sensing of a specific wash routine
- Clearance (level 1 = lower level):
  - Level 1 = H 200, W 585, D 775
  - Level 2 = H 200, W 590, D 775
  - Level 3 = H 163, W 590, D 775
- Article No. 69593501



## E 900 Mobile unit

- With 5 levels for various inserts
- 605 x 640 x 790 mm (H x W x D)
- 4 built-in spray arms
- Magnetic coding strip for automatic sensing of a specific wash routine
- Clearance (level 1 = lower level):
  - Level 1 = H 95, W 593, D 790
  - Level 2 = H 95, W 593, D 790
  - Level 3 = H 95, W 593, D 790
  - Level 4 = H 95, W 593, D 790
  - Level 5 = H 82, W 593, D 790
- Article No. 69590001



## Transfer Cart

The Miele transfer cart can be docked and coupled to the washer for safe and easy transfer of baskets to and from the washer. The cart includes rollers so that baskets slide effortlessly into the washer, a locking mechanism to secure the basket to the cart, and large locking wheels for mobility and safety. Article No. 69200103

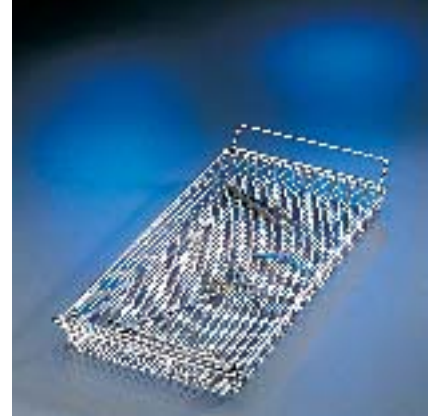


**E 930 Insert for large items**

- 289 x 586 x 752 mm (H x W x D)
- With 36 holders, 280 mm
- Article No. 69593001  
(without illustration)

**E 398 Insert for various items**

- Holds plates or other flat items
- 100 x 520 x 620 mm (H x W x D)
- 40 holders, 60 mm
- Distance between holders: 22 mm
- Article No. 69539801



**E 142 Mesh tray insert**

- For holding small items
- Three fit on each level of mobile units
- 45/55 x 255 x 480 mm (H x W x D)
- Handles for easy loading
- Article No. 69514201



**E 143 Mesh tray insert**

- For holding small items
- Six fit on each level of mobile units
- 45/55 x 255 x 480 mm (H x W x D)
- Handles for easy loading
- Article No. 69514301

**Note:**

The baskets and inserts shown in this brochure represent some of the accessories available today. Miele is constantly updating and expanding our accessory offering. For information regarding inserts for your application contact Miele at **1-800-843-7231**.

# Direct Injection Baskets



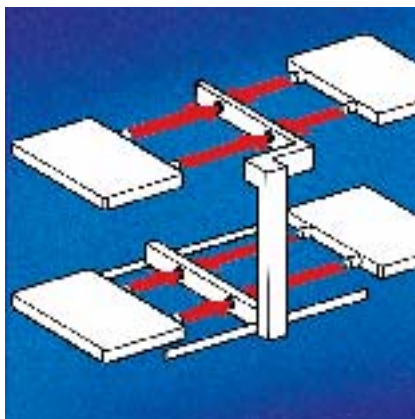
## E 940 Mobile injector unit

- With two levels for direct injection washing and drying of narrow-necked laboratory glassware
- Upper level can be removed for single-level cleaning of tall items
- Magnetic coding strip for automatic sensing of a specific wash routine
- Connection for forced air drying through injectors
- 565 x 640 x 790 mm (H x W x D)
- 115 injectors with clips are removable for custom configuration of the basket
- Lower level:
  - 35 injectors (E 352), 6 x 220 mm
  - 35 clips (E 354)
- Upper level:
  - 80 injectors (E 351), 4 x 160 mm
  - 80 clips (E 353)
- Article No. 69594001



## E 941 Modular mobile injector unit

- With two levels for modular inserts
- For direct injection cleaning, standard cleaning, or a combination of both in a single load
- For single or dual level cleaning
- 421 x 619 x 790 mm (H x W x D)
- 2 modular inserts can be accommodated on each level
- Magnetic coding strip for automatic sensing of a specific wash routine
- Connection for forced air drying through injectors
- Article No. 69594101



*The E 941 modular insert is user-configurable. A variety of standard or direct injection racks can be utilized with the E 941 to accommodate a wide variety of wash loads.*



## E 942 Modular injector insert

- Injector unit for 116 pipettes
- For use with E 941
- Forced air drying through injectors
- Each section is 16 x 16 mm
- 279 x 558 x 352 mm (H x W x D)
- Support frame can hold additional wide-mouth glassware
- Article No. 69594201



**E 943 Modular injector insert**

- Injector unit for narrow-necked laboratory glassware, 100-500 ml
- For use with E 941
- Forced air drying through injectors
- Injectors are removable for custom configuration
- 190 x 558 x 352 mm (H x W x D)
- 32 injectors (E 351) 4 x 160 mm
- 32 clips (E 353)
- Article No. 69594301



**E 944 Modular injector insert**

- Injector unit for narrow-necked laboratory glassware, 500-1000 ml
- For use with E 941
- Forced air drying through injectors
- 250 x 558 x 352 mm (H x W x D)
- Injectors are removable for custom configuration
- 15 injectors (E 352), 6 x 220 mm
- 15 clips (E 354)
- Article No. 69594401



**E 945 Modular insert**

- Support frame for use with E 941
- For holding inserts or wide-mouth glassware
- Article No. 69594501

# Water Softener



It is common knowledge that soft water provides better cleaning than hard water. Soft water is also gentler on your washer, eliminates scaling and enables your detergent to work at peak efficiency.

The AquaSoft System operates as a level-controlled twin-tank water softener, consisting of two cartridges filled with cation exchange resin and a salt reservoir. The resin contains sodium ions. When hard water flows over the resin, the resin attracts calcium and magnesium and at the same time discharges its sodium load. The second cartridge is not in operation at this time. When the supply of one cartridge is depleted, a switch to the second cartridge is activated by the hardness range selector. At the same time reactivation of the spent resin in the first cartridge begins. Brine is taken from the salt reservoir which is regularly replenished with pellets of coarse salt. When first filled, approximately 29 kg of salt is required. Subsequent refills require approximately 25 kg. This ensures that the system is always ready for operation.

## **G 7797 Aqua Soft System**

- Large capacity water softener for a continuous supply of softened water for supply hardness ranges up to 720 ppm (calcium carbonate)
- 850 x 300 x 600 mm (H x W x D)
- Non return valve must be fitted on site
- Two pressure hoses, with 3/4" female thread. One for connection between hot/cold water supply (max. 65°C, pressure between 45–103 psi) and Aqua Soft System, one for connection between Aqua Soft System and washer
- Two drain hoses, (approx. 5 ft long, max. drain height 40 cm), one for reactivation, one for overflow from salt reservoir  
Initial activation requires 29 kg of salt, refills require 25 kg.
- Article No. 62779702

# Specifications

## Controls

Electronic Profitronic controls with user navigation

6 fixed languages (English, Spanish, German, French, Italian, Dutch)

8 service and 11 standard programs

Space for 45 custom programs

Display warns of faults, malfunctioning and the need for maintenance

RS 232 serial interface

## Water supply

1 inlet valve for cold water; supply pressure: 30-147 PSI, 15 l/min (3.9 gal./min).

1 inlet valve for hot water (50-70°C); supply pressure: 30-147PSI, 15 l/min (3.9 gal./min).

1 inlet valve for purified water; supply pressure: 30-147 PSI, 15 l/min (3.9 gal./min)

3 inlet hoses, approx 5 ft. long, 1/2" ID with 3/4" male hose thread ends

50 mm (2") drain valve, for connection to on-site floor drain

## Optional Drying Unit

For internal and external drying of the load:

EU 4-class preliminary filter, filter rating 95% (Ashrae standard 52-68), filter life 200 hours

Four S-class HEPA particulate filters, filter rating 99.992%, filter life 500 hours

Drying temperature programmable between 60 and 115°C

Drying time programmable from 3 to 240 minutes

## Dispenser systems:

Four bellows pumps for liquid detergents and neutralizing agents, each with 10 liter cannister

Color coded for operator convenience and safety

Ready for direct connection to detergent containers

Detergent amounts and selection of detergents is easily set from the control panel

## Electrical Connection

Unit is convertible for steam or electric heating.

Hook-up requirements are as follows:

Using electric only:

208 V, 3 Phase, 60 Hz, 60 A

Using steam and electric:

Steam pressure required:

36-145 psi

Compressed air pressure required:

85-170 psi

Unit without drying option:

208 V, 3 Phase, 60 Hz, 20 A

Unit with drying option:

208 V, 3 Phase, 60 Hz, 30 A

## Dimensions and weight

Height without drying unit and cabinet:

H 1660 mm (65<sup>3</sup>/<sub>8</sub>"

Height with drying unit and cabinet:

2420 mm (95<sup>5</sup>/<sub>16</sub>"

Required ceiling Height:

2500 mm (98<sup>1</sup>/<sub>2</sub>"

Exterior Dimensions, H x W x D:

2420 x 1150 x 870 mm

(95<sup>5</sup>/<sub>16</sub> x 45<sup>5</sup>/<sub>16</sub> x 34<sup>1</sup>/<sub>4</sub>"

Chamber Dimensions, H x W x D:

675 x 650 x 800 mm

(26<sup>1</sup>/<sub>2</sub> x 25<sup>1</sup>/<sub>2</sub> x 31<sup>1</sup>/<sub>2</sub>"

Weight (empty):

approx. 550 kg (1,216 lbs)

Weight (loaded):

approx. 800 kg (1,768 lbs)

## Note:

Hook-up of water, steam and electrical connections can be made through a knock-out in the washer base, or through the top of the Drying Enclosure. The drain connection can be made directly beneath the machine or through a knock-out in the rear of the base.

*For complete specifications, site requirements and consumption data, contact Miele at 1-800-843-7231*

**Miele Appliances, Inc.  
National Headquarters**

9 Independence Way  
Princeton, NJ 08540  
Telephone: (609) 419-9898  
(800) 843-7231  
Fax: (609) 419-4241  
Internet: <http://www.mieleusa.com>  
E-Mail: [products@mieleusa.com](mailto:products@mieleusa.com)



**Midwest Regional Headquarters**

3100 West Dundee Road  
Suite 901  
Northbrook, IL 60062  
Telephone: (847) 714-9433  
Fax: (847) 714-9434

**Southeast Regional Headquarters**

6400 Congress Avenue  
Suite 1700  
Boca Raton, FL 33487  
Telephone: (561) 995-8030  
Fax: (561) 995-8083

**Western Regional Headquarters**

680 Eighth St.  
Suite 168  
San Francisco, CA 94603  
Telephone: (415) 241-6820  
Fax: (415) 241-6822

**Southern California Showroom**

189 North Robertson Blvd.  
Beverly Hills, CA 90211  
Telephone: (310) 855-9470  
Fax: (310) 358-0238

**International Headquarters:**

**Miele & Cie.;**  
**33325 Gütersloh**  
**Federal Republic of Germany**

**International Sales Companies**

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