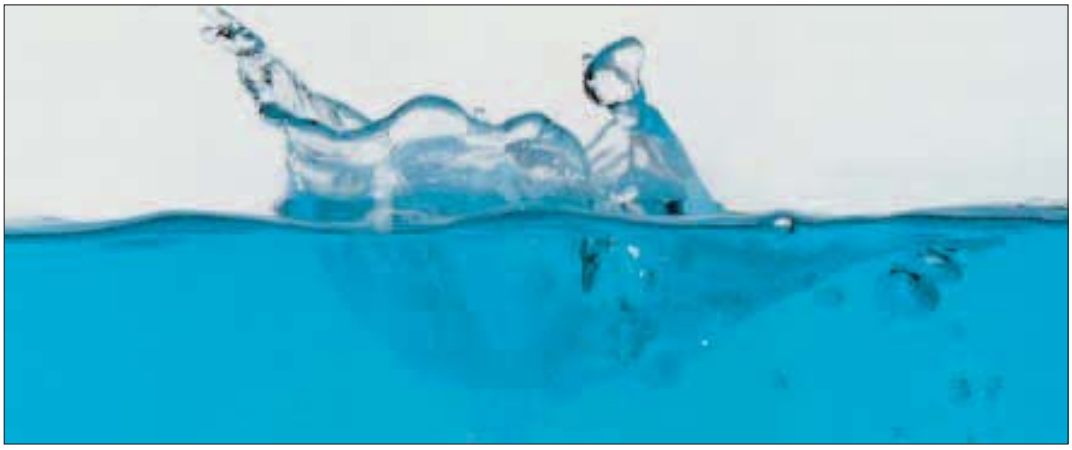
Water treatment



Let's talk about wa

Today's catering industry aims to present its customers with quality and style. In one word: perfection. Meticulously clean, sparkling crockery is vital to this perfection and Winterhalter's advanced wash technology will ensure it is achieved in the most professional way: beginning with water, the prime component for a perfect wash result. So before we talk about dishwashing, let's talk about water; more precisely, about water treatment.

The quest of finding the correct form of water treatment depends greatly upon the degree of hardness of the supplied water and the wash result required.

Filtering, water softening, semi demineralisation or full demineralisation are the options open.

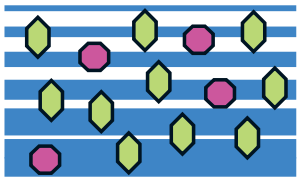
Filtering merely removes particles of solid matter from the water. Water softening is the removal of calcium and magnesium which reduces the build up of scale on both crockery and machine. It also contributes to reduced cleaning costs. Softened water, however, does not totally guarantee sparkling glasses as the residual salt content may cause smearing to the glass surface.

ater before we talk about dishes

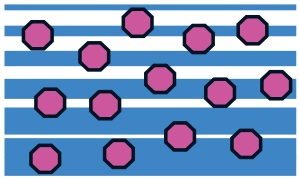
A guarantee for sparkling results can only be provided through demineralisation – semi or full demineralisation depending on the water supply. During semi demineralisation the salt content of the water is reduced. Result: Under normal conditions almost no scale deposits on crockery, glasses and machine and reduction in cleaning costs. Full demineralisation means the total removal of salt deposit guaranteeing an excellent wash result.

Because there are no cylinders to exchange as is the case with TE and VE units, the pay back period of the RoMatik reverse osmosis system is brought to a minimum.

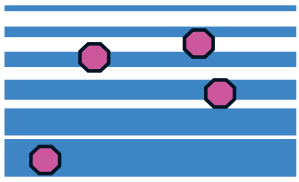
A pleasant side effect: Washing with treated water means environment friendly washing.



Untreated water



Softened water



Semi demineralised water

Fully demineralised water

Water contains minerals. The more minerals, the poorer the wash result. Winterhalter provides the correct answer: from water softening, via semi demineralisation to full demineralisation.

Whilst minerals which cause hardness are exchanged for „non hardening“ minerals during the water softening process, demineralisers will either partly or fully extract those minerals which influence the wash result.

After washing, it's all quite clear

Water Softener MonoMatik 1x4 and DuoMatik II

With hard and very hard water, water softening is of paramount importance. It is the preliminary requirement to good wash results and a contributory factor to the care and maintenance of dishwashing machines.

Winterhalter has therefore included Softener Models MonoMatik 1x4 and Duomatik II in its product range. The ion exchange in the cartridges binds the calcium and magnesium ions which cause hardness in the water and in turn releases non-hardening sodium ions.

Regeneration on the MonoMatik 1x4 is controlled by an adjustable control clock. The control head on the DuoMatik II regulates the softening and regenerating process by means of programme discs which are specially suited to the water hardness. No electrical supply is required as the softener is driven by the flow of water passing through the valve.

Winterhalter Glasklar TE 15/TE 20

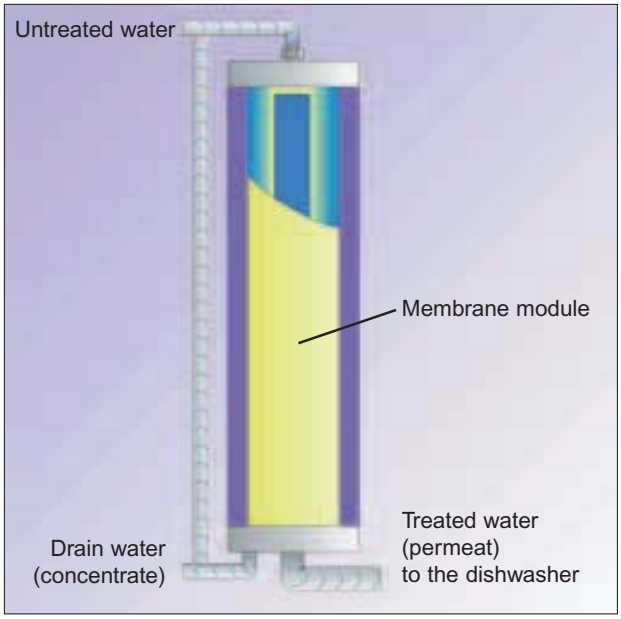
The use of a semi-demineraliser is recommended when good quality results are expected. It functions on the principle of ion exchange. By binding calcium/magnesium ions and emiting oxygen ions, carbonate hardness is exchanged for free carbon dioxide. The ion exchanger can be regenerated and is therefore reusable.

Winterhalter Super Glasklar VE 15/VE 20

When ultimate wash results are expected, the use of a full-demineraliser VE 15 or VE 20 is recommended. Both units with 15 or 20 litres cartriges produce demineralised water of a quality almost equivalent to distilled water.

The result is superb: even with extremely hard water, no deposits accumulate on glasses, crockery or utensils. A continuous twinkle is guaranteed.

Winterhalter RoMatik Reverse Osmosis Unit



RoMatik reverse osmosis unit for perfect dishwashing results

When the condition of the water poses problems, especially if its salt content is extraordinarily high, you will find the reverse osmosis units of the RoMatik series to be quite compact and efficient. These reverse osmosis units work extremely economically, especially when a very large number of cycles are run per day in one machine or, for instance, when two or more dishwashers are connected to the RoMatik 160, 210 or 420. What makes this possible is the integrated tank with 30 or 80 litres of storage room.

Thanks to a salt retention rate of up to 98 %, the quality of the treated water is comparable to that of the "Super Glasklar" full demineralisation cartridge. Wherever sparkling dishwashing results at low operating costs and with no need for polishing are required, the RoMatik units are the best alternative to conventional ion exchangers.

RoMatik 150 *
What makes the RoMatik 150 so special is that this unit can run without preliminary softening and its compact design lets it fit into nearly every counter. For users, this lowers investment costs and saves space. The integrated display on the front of the unit indicates its function and status. The sediment filter, as well as the activated charcoal filter, must be replaced through the easily accessible service flap on the front at regular intervals, depending on the amount of water used and its quality.

RoMatik 160, 210 and 420
The RoMatik Series 160, 210 and 420 also boast a compact design and are thus laid out to be positioned under an inlet table or a drain top, for instance. Even then, the systems remain movable thanks to their integrated rollers.
The RoMatik 160 can likewise be run without preliminary softening. The RoMatik 210, as well as the RoMatik 420, may only be run with pre-softened water. This is the only way to achieve the incredibly high system yield rate of up to 80 % and keep the membranes from wearing out prematurely.

* **Microprocessor control RoMatik 150:** Supervision of the filter capacity, Supervision of the conductivity, with indication, fully automatic water stop in case of leakage, automatic self-cleaning of the membrane, automatic rinse every 12 hours, automatic switch off for low pressure and lack of water, drain water recovery.

Simple to install, easy to operate – all inclusive.

Regular regeneration of the DuoMatik II is ensured by a programme disc. Whilst one cartridge is being regenerated, the second cartridge continues to provide softened water. Each regeneration process requires only approx. 300 g regeneration salt.

The control clock on the MonoMatik programmes the required time for regeneration. According to customer requirements, the automatic programme can operate, as an example, at night or on non functioning days when no softened water is needed. The only provision to be made is to fill the container with sufficient regeneration salt.

To give greater movability, both MonoMatik 1x4 and DuoMatik II are fitted with castors. Should a lower installation height be required, simply remove the castors.

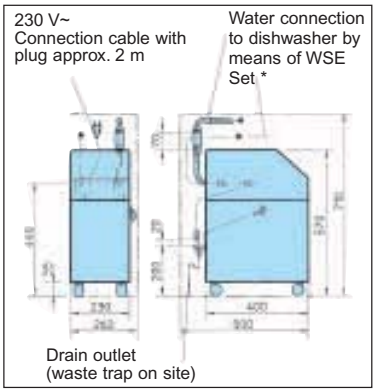
All semi and full demineralisation units are fitted with clearly marked inlet and outlet connections. Fast and efficient exchange is guaranteed through standard installation equipment such as connection hose and coupling nuts.

Due to the clearly arranged indicator lights on the front cover, the actual operation of the RoMatik 150 is visible at any time.

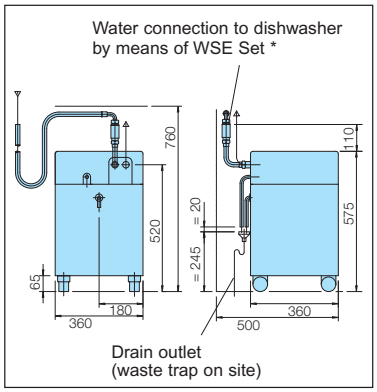
The two easily accessible filters (sediment and carbon) protect the reverse osmosis membrane (which is the heart of the unit) from soiling or any possible damage.

LINE DRAWINGS

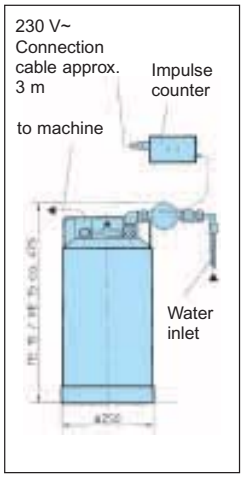
MonoMatik 1x4



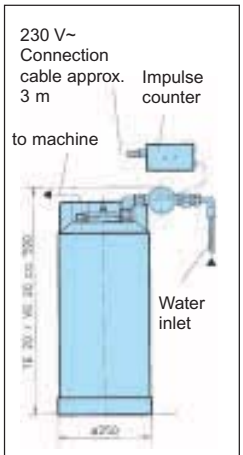
DuoMatik II



TE 15/VE 15



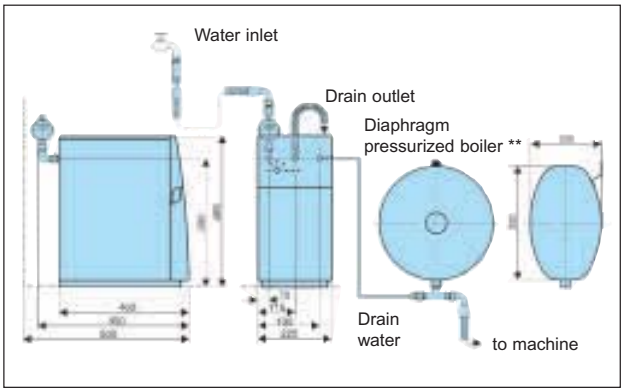
TE 20/VE 20



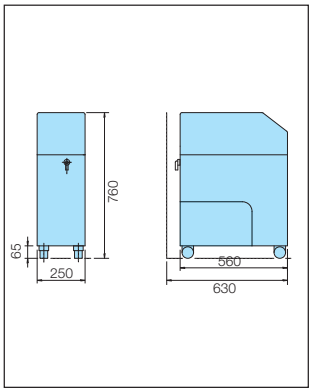
The installation height can be reduced by removing the castors and the vertical installation of the anti syphone valve by at least 70 mm (Monomatik) and by at least 110 mm (DuoMatik) above the upper edge of the water softener.

*** WSE Set MonoMatik/DuoMatik:**
To run the system in conformance with DVGW (German union of gas and water industries) or DIN (German Industrial Standards), a WSE Set MonoMatik or DuoMatik is required. The set consists of a high-pressure safety combination in conformance with DIN EN 1717 with check valve and anti-vacuum device (model C) and likewise conforms to DIN 1988-4. Adhere to national installation and operating instructions!

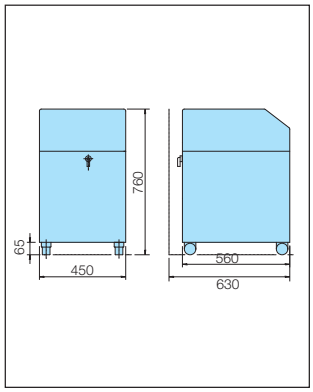
RoMatik 150



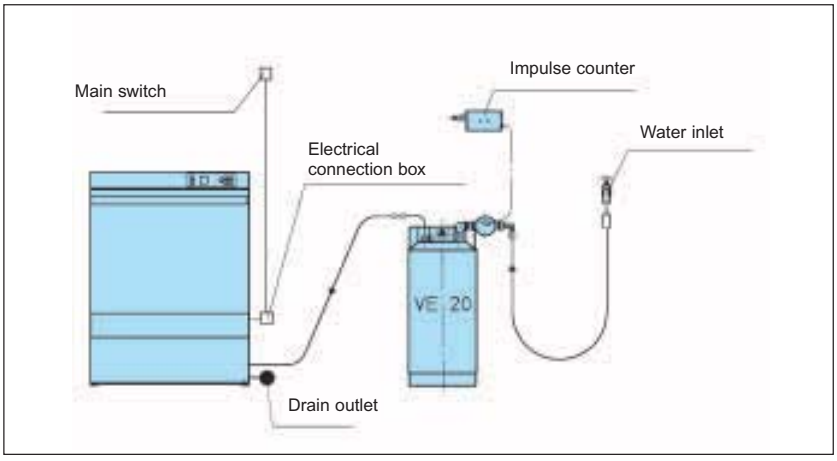
RoMatik 160



RoMatik 210/420



** Required for machines with pressurized boiler



Installation example with Glasswasher:
Full demineraliser Super Glasklar VE 20 is installed between water inlet and glass-washing unit. The impulse counter, fitted as standard, will indicate cartridge capacity exhaustion. Starting in January 2002, the pulse counter will not be required for dishwashers with electronic control.
The machines of the new generation all indicate the status of regeneration at the control panel. One phone call suffices and Winterhalter Service will exchange the cadridge upon request.

TECHNICAL DATA

	TE 15 / TE 20	VE 15 / VE 20	MonoMatik 1x4	DuoMatik II
Capacity	Capacity at 10 °dH carbonate hardness: TE 15: 14.000 l* TE 20: 18.000 l*	Capacity at 10 °dH total hardness: VE 15: 4.000 l* VE 20: 5.500 l*	Capacity at 10 °dH total hardness: 800 l* Through flow capacity 15l/min. continuous	Continuous soft water 22 l/min. extraction possible; application for up to max. 32 °dH** total hardness
Material	Cartridge in chrome nickel steel	Cartridge in chrome nickel steel	Cartridge in fibre glass Salt container and lid in plastic	Cartridge in fibre glass Salt container and lid in plastic
Water inlet with connecting hose G 3/4”	2,0 m	2,0 m	2,0 m	2,0 m
Incoming temperature	max. 60 °C	max. 60 °C	max. 50 °C	max. 60 °C
Control	Impulse counter	Impulse counter	-	-
Method of operation	Mains power supply 230 V	Mains power supply 230 V	Mains power supply 230 V Regeneration programme	Regeneration programme automatically controlled by water hardness indicator discs and water through flow
Length of connection cable	5,0 m	5,0 m	-	-
Dimensions	TE 15: height 475 mm Ø 250 mm TE 20: height 590 mm Ø 250 mm	VE 15: height 475 mm Ø 250 mm VE 20: height 590 mm Ø 250 mm	Height 650 mm Width 260 mm Installation depth 500 mm	Height 790 mm Width 360 mm Installation depth 500 mm
Weight (incl. resin)	TE 15: 15,0 kg TE 20: 21,0 kg	VE 15: 15,0 kg VE 20: 21,0 kg	12,0 kg	21,0 kg

* Theoretical capacity. Depending on the mineral content of the supply water, it could be up to 25 % lower.
** From 33-40 °dH on request

	RoMatik 150	RoMatik 160	RoMatik 210	RoMatik 420
Inlet temperature	max. + 30 °C	max. + 25 °C	max. + 25 °C	max. + 25 °C
Permeat power with 15°C inlet temperature	max. 150 l/h	max. 160 l/h	max. 210 l/h	max. 420 l/h
Product water profit	min. 50 %	min. 50 % [1)]	min. 75 – 80 % [2)]	min. 75 – 80 % [2)]
Salt retention rate	≥ 96 %	≥ 98 %	≥ 98 %	≥ 98 %
Water quality	< 50 µS/cm	< 20 µS/cm	< 20 µS/cm	< 20 µS/cm
Water pressure on site	min. 1,5 bar, max. 6 bar	min. 1 bar, max. 6 bar	min. 1 bar, max. 6 bar	min. 1 bar, max. 6 bar
Conductivity raw water	2000 µS/cm	2000 µS/cm	2000 µS/cm	2000 µS/cm
Untreated water hardness	30 °dH	25 °dH	0 °dH	0 °dH
Storage tanks	optional	30 l	80 l	80 l
Total electrical loading	0,55 kW	1,4 kW	1,4 kW	1,9 kW
Upstream softener	–	recommended	needed	needed
Mode of operation	230 V, 50 Hz, 10 A	230 V, 50 Hz, 10 A	230 V, 50 Hz, 10 A	230 V, 50 Hz, 10 A
Protection Class	IPX I	–	–	–
Weight	30,0 kg	49,0 kg	63,0 kg	81,0 kg

[1)] when connected to a supply of raw water, up to 10 °dH, cold
[2)] when connected to a supply of softened water, up to 0 °dH, cold

To guarantee the constant function of the RoMatik we urgently recommend the completion of a maintenance contract with the responsible Winterhalter after sales service.

If later the RoMatik 150 is fitted into the dishwashers GS 24, GS 29, GS 29B as well as GS 14 and GS 15 (with integrated detergent dispenser ELT 10 and/or pressureless boiler) the impulse filling kit also has to be fitted into the dishwasher.

Caution:
It is imperative that treated water does not come into contact with copper pipes, galvanised pipes or brass components (e. g. connection pieces).
Ask for the integrated water softener into dishwashers GS 302, GS 315 and dish/ utensil washer GSR 36 E, GS 402 and GS 500.

Note:
In cases where there is a low overall salt content, water up to 3 °d hardness is particularly suitable for use in dishwasher equipment. Should the raw water have a higher value, we recommend installation of an appropriate water treatment system!

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BMZ-01/06 52 11 441 Subject to technical alterations.