

DEMIPLUS

ION-EXCHANGE RESIN WATER DEMINERALISATION PLANT

BENEFITS

COMPLETE UTILIZATION OF THE WATER TO BE SOFTENED MAXIMUM SAVING OF WATER RESOURCES AND MINIMUM ENVIRONMENTAL IMPACT USE OF SPECIFIC RESINS FOR WATER

AUTOMATIC MANAGEMENT VIA CONTROL UNIT



The **demineralisation of the water** is obtained by ion-exchange: the water passes through the resins and is softened in a single step at a predetermined speed o **completely remove the ions present.** Once exhausted, **the resins are regenerated automatically with Acid+ Demi and Alca-**.

RESIN REGENERATION

Resin regeneration is controlled by water conductivity measurement with **programmable cycles and times using an eprom memory**. The matrices of the **cationic and anionic resins** are made of macroporous polystyrene with strong cross-linking and high exchange capacity, resistant to oxidation and to osmotic pressures. They are specific to produce **water with low conductivity** and have a uniform particle size to **minimise pressure drops and maximise cycles**. Demiplus consists of two fibreglass columns with external epoxy fibreglass filaments, a moulded iso-gel internal shell, a plastic base and threaded connections, all mounted on a carbon steel self-bearing frame treated with acid resistant paint. The pneumatically operated multi-way valves are made of Novodur ABS resistant to a hydrostatic pressure of 22 bar.

TECHNICAL CHARACTERISTICS

Demiplus consists of:

- 2 fibreglass columns with external epoxy fibreglass filaments, an internal shell in a single piece made of blowmoulded iso-gel, an injection moulded plastic base, injection moulded threaded connections, tested at 8 bar, and filters according to DIN 19643.
- **2 pneumatic multi-way valves** made of PVC, for the management of the functions of all the columns with PVC injectors including the suction of the regenerating solutions inside the column heads.
- **2 pneumatic valves** for the suction of the reagents and reflux control.
- **2 flow meters** to view and control the flow rate of the reagents.
- Cationic resin macroporous polystyrene cationic resin with strong cross-linking and high exchange capacity. Resistant to oxidation and

to osmotic pressures, specific for water and with uniform particle size to minimise pressure drops and maximise cycles.

- Anionic resin macroporous polystyrene anionic resin with strong cross-linking and high exchange capacity. Resistant to oxidation and to osmotic pressures, specific for water and with uniform particle size to minimise pressure drops and maximise cycles.
- **Control unit** for the automatic management of the plant, complete with conductivity reader.
- **Skid frame** made of AISI 304 Stainless steel for positioning and mounting of the columns and the service systems required for the operation of the plant.
- Electric and hydraulic material made of PVC.





COMPONENTS



FLOW MANAGEMENT UNIT Equipped with built-in service valves.



ELECTRICAL CONTROL PANEL AND WATER FLOW MANAGEMENT WITH STORAGE LEVEL The float allows the automatic stop when the maximum storage volume has been reached.



PLANT CONTROL SYSTEM

It represents the interface with the operator: it displays the work phases of the plant and allows test and setting. It also displays the conductivity of the liquid leaving the plant (thanks to the connection to the conductivity detector).



REGENERANT FLOW RATE DETECTOR To check that the flow of the regenerants and of the resins is in line with the settings.



THE LINE CONSISTS OF TWO MODELS:

	DEMIPLUS 50	DEMIPLUS 150
VESSEL	TWO MADE OF FIBREGLASS WITH 50 KG OF RESIN EACH	TWO MADE OF FIBREGLASS WITH 150 KG OF RESIN EACH
HOURLY PRODUCTION	UP TO 2,000 L/HOUR OF DEMINERALISED WATER	UP TO 4,000 L/HOUR OF DEMINERALISED WATER
TOTAL PRODUCTION PER CYCLE	APPROXIMATELY 3,000 L IN 3 HOURS AND 45 MINUTES*	APPROXIMATELY 9,000 L IN 3 HOURS AND 40 MINUTES*

*Values refer to water with medium hardness.

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