

DEMINERALIZZATORE D'ACQUA

Manuale Operatore

WATER DEMINERALIZER

User Manual

DEMINERALISATEUR D'EAU

Manuel d'utilisation

UMKEHROSMOSEANLAGE

Bedienerhandbuch

DESMINERALIZADOR DE AGUA

Manual Operador







WATER DEMINERALIZER

USER MANUAL

REVISIONS

The following table lists subsequent editions/revisions of the manual. The "Description" field brief explains the subject of the latest revision.

Code	Rev.	Date	Description
D#0MDAA1000X	0	09-2005	First issue
D#0MDAA1000X	1	10-2006	Modified resin filter assembly and maintenance procedures
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INTRODUCTION

Dear Client

Thank you for choosing this product from M.O.COM. Srl. We hope that you will find it completely satisfactory.

This manual describes all procedures for the correct installation and use of the equipment.

Should you have any questions or suggestions concerning this product or our support, do not hesitate to contact us.

Symbols



The product described in this manual is manufactured in accordance with the highest safety standards and doesn't represent any danger for the operator if used according to the following instructions. The product is in accordance with the following European Directive as applicable:

- 2006/95/CE. for the approximation to the legislation of the Members States related to low voltage equipment.
- 2004/108/CE for the approximation to the legislation of the Members States related to the electromagnetic compatibilità.

INTENDED USE

APPLICABLE

EUROPEAN

DIRECTIVES

Important notes

The equipment is meant for professional use and can be employed only the purpose it was designed for, that is the demineralization of the public water, and its use for the water steam sterilizer feeding.



WARNING THE DEVICE MUST ONLY BE USED BY QUALIFIED PERSONNEL. IT MAY NOT BE USED OR HANDLED BY INEXPERT AND/OR UNAUTHORIZED PERSONNEL FOR ANY REASON.

	NOTES				
5	THE INFORMATION INCLUDED IN THIS MANUAL IS SUBJECT TO CHANGE WITHOUT NOTICE.				
	M.O.COM. SRL SHALL NOT BE RESPONSIBLE FOR DIRECT, INDIRECT, ACCIDENTAL OR CONSEQUENTIAL DAMAGE OR OTHER DAMAGES RELATED TO THE SUPPLY/USE OF THIS INFORMATION.				
	THIS DOCUMENT MAY NOT BE REPRODUCED, ADAPTED OR TRANSLATED, IN WHOLE OR IN PART, WITHOUT THE PRIOR, WRITTEN AUTHORIZATION OF M.O.COM. SRL				
	MOCOM IS REGISTERED TRADEMARK OF M.O.COM. SRL.				



PURPOSE OF THE MANUAL

The purpose of this manual is to provide directions for:

- becoming familiar with the product;
- its appropriate installation;
- its secure and efficient employment.

The appendixes provide information regarding:

- technical characteristics;
- maintenance procedures;
- analysis and solution of problems;
- further miscellaneous documentation.

GENERAL DIRECTIONS





The product must <u>always</u> be used in compliance with the procedures set out in this manual and never for purposes that are different from the foreseen ones.

WARNING



THE USER IS RESPONSIBLE FOR ALL LEGAL OBLIGATIONS LINKED TO THE PRODUCT'S INSTALLATION AND USE. IF THE PRODUCT IS NOT INSTALLED OR USED PROPERLY, OR CORRECT MAINTENANCE/ SERVICING IS NOT CARRIED OUT, IT SHALL NOT BE POSSIBLE TO DEEM THE MANUFACTURER RESPONSIBLE FOR ANY POSSIBLE BREAKAGE, MALFUNCTIONING, DAMAGES TO THINGS, OR INJURIES TO PERSONS.

Please observe the following precautions in order to avoid injury or property damage; in particular:

- Before connecting the power supply cable, <u>ensure</u> that nominal mains voltage is equal to the one indicated on the label. Voltages differing from indicated ones, may damage the apparatus's electric parts.
- Be sure the electric plant is provided with a **<u>grounding</u>** conforming to laws and/or rules in force.
- When getting started, carry out the "hydraulic circuit purging" so that possible processing residuals will be expelled (see "Initial installation").



- <u>**Do not**</u> remove any label or nameplate from the device; should you need any new ones, apply for them.
- <u>Do not</u> use corrosive products, acids, steel wool or brushes for cleaning the equipment.
- **<u>Do not</u>** wash the equipment with direct water jets.
- Use <u>only</u> original spare parts.





PACKAGE	Package:
CONTENT SIZE AND WEIGHT	Overall weight about 18 Kg
	NOTE CHECK THE INTEGRITY OF THE PACKAGE UPON RECEIPT.
	 Once the package is opened, check that: the supply matches the specifications of the order (see the accompanying document); there is no obvious product damage.
	NOTE
	Should the supply be erroneous, any part be missing or there be damages of any kind, inform the retailer and the transporter that carried out delivery at once and in detail.
HANDLING THE PRODUCT	The product must be handled according to directions provided on the packaging. We recommend to transport and store the device at temperatures not lower than 5°C.
	Prolonged exposure to low temperature can damage the product. Keep the original packaging and use it whenever the device is to be transported. The use of different packaging could damage the product during shipment.
	Keep the plugs mounted on the demineralizer's pipe fittings (to be reapplied in case of subsequent shipment).
CONTENT	The package contains the following items:
DESCRIPTION	Demineralizer equipment (Ref. 1):
	Kit for the installation of the draining pipe (Ref. 2);
	Draining pipe (red) - Ref. 3;
	 Feeding pipe (blue), complete with gaskets – Ref. 4;
	 Reinforced silicone pipe (Ref. 5) for connecting <i>Milldrop</i> to sterilizer, external tank or tap; 1 1 3
	Power supply cable – Ref.
	 Kit (Ref. 7) containing: start/stop signal cable, nr. 2 pipes union, nr. 4 clamps, jack plug and key for purging tap;
	 Operator's Manual and Warranty Certificate – Ref. 8.





PRODUCT INFORMATION

INTRODUCTION

GENERAL FEATURES "*Milldrop*" is **M.O.COM.'s** proposal in the field of water demineralization for water steam sterilizer.

It is a sophisticated apparatus but easy to use, and adaptable to the user requirements by means of different installation possibilities.

Thanks to the reverse osmosis membrane and resin filter, the equipment "transforms" the water coming from water works into qualitatively excellent demineralized water.

"Milldrop" – which is considerably easy to use and small in size - represents the ideal equipment to be put next to any water steam sterilizer.

"Milldrop" is a water demineralizer based on the reverse osmosis principle.

The equipment includes:

- active carbon filter, having a duration of about 800 liters of demineralized water produced;
- two resin filters having a duration of about 500 liters of demineralized water produced,
- osmotic membrane which, if regularly checked, can last more than 800 liters of demineralized water produced.

<u>NOTE</u>

THE LIFETIME OF FILTERS AND OSMOTIC MEMBRANE DEPENDS ON THE QUALITY OF THE WATER FEEDING THE MILLDROP.

The limit values for the feeding water are reported in the following table:

Element/Feature	Value
Turbidity	< 1 NTU
Cholrine	< 0.1 ppm
Ph	2-11
Salt density	< 5 SDI
Specific conductivity at 20°C	< 1000 µS/cm
Iron	< 0.1 ppm
Temperature	< 35°C
Total hardness	< 30°F

NOTE

FOR A SPECIFIC HARDNESS HIGHER THAN 25°F, THE USE OF A RESIN SWEETENER AND SALTS REGENERATION IS RECOMMENDED; THIS IS REQUIRED IF THE HARDNESS IS HIGHER THAN 30°F.

The equipment operation is controlled by an electronic board which also monitors any alarm (leak and lack of water, quality of the output water, etc.).

"*Milldrop*" may be installed on a work plane, hung to a wall or set inside the washbasin piece of furniture.

"Milldrop" offers different installation possibilities:

- direct connection to the sterilizer series Millennium (provided with automatic filling feature and start/stop interface);
- direct connection to an external tank with automatic water filling feature (possibility to connect up to 3 sterilizers);
- direct connection to a drawing tap (provided with electric button), to fill manually little tanks.

For extra details please refer to chapter "Hydraulic connections".





FRONT PANEL



green LED – good quality of the outlet water yellow LED– sufficient quality red LED– poor quality red LED– lack of inlet water or low pressure red LED– internal water leak

REAR PANEL



Solenoid valve filter

A - Connector and solenoid valve of the water inlet

C - Quick connector for permeation product

S – Connector for sterilizer's start/stop cable

T – Connector for feeding tank/drawing tap start/stop cable or purging jack plug (service)

220Vac input - Fuses - Mains switch

B - Draining quick connector

L - Purging tube quick connector

FUNCTIONING

The Milldrop operation is very easy and automatic in any use.

- 1) Directly connected to a Millennium series sterilizer, it operates at the start of the sterilizer's water feeding pump, and until the pump stops.
- 2) Connected to the external tank, it starts working as the water level in the tank goes down the maximum threshold, and stops as it is again reached.
- 3) Connected to the drawing tap (provided with electric device), it starts working as you press the tap's button and stops pressing it again.





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INSTALLATION

INTRODUCTION

The correct and careful installation is the <u>first</u> and <u>fundamental</u> step in achieving the good demineralizer operation, long life and complete utilization of its features.

Moreover, this precaution will avoid the danger for physical injury or property damage, not to mention equipment malfunctions and faults. So, please follow the instructions in this chapter **scrupulously**.

NOTE

➤ THE TECHNICAL SERVICE (SEE APPENDIX Z) IS AT YOUR DISPOSAL FOR ANY DOUBT YOU MAY HAVE OR FURTHER INFORMATION YOU MAY REQUIRE.

THE DEMINERALIZER HAS PASSED THE REQUIRED TESTS BEFORE BEING DELIVERED. SO IT DOES NOT REQUIRE ANY ADDITIONAL CALIBRATION AT THE GETTING IN SERVICE.

POWER SUPPLY

The electrical system the demineralizer will be connected to, must be suitably dimensioned basing on the power requirements of the device. See the nameplate located on the backside of the equipment.

WARNING



VERIFY THE ELECTRIC PLANT'S CONFORMITY, AND THAT IT IS GROUNDING PROVIDED.

SIZE OF EMBEDDING CHAMBER When installing the demineralizer inside a cabinet, adequate space all around the device must be foreseen in order to provide an effective ventilation, as well as an opening in the back to allow the passage of the power cord and piping.

The built-in compartment should have the following minimum dimensions:

- Height 280 mm
- Width 270 mm (free space on the ventilation grid side)
- Depth 480 mm (plus a space for rear connections and front panel free view)



WARNING

COMPARTMENT DIMENSIONS LESS THAN THOSE SHOWN MAY COMPROMISE THE CORRECT AIR CIRCULATION AROUND THE DEVICE AND AN ADEQUATE COOLING, CAUSING CONSEQUENT PERFORMANCE DETERIORATION AND/OR POSSIBLE DAMAGE.

NOTE

➢ IF THE MAINS SWITCH REMAINS INACCESSIBLE, USE A MAINS SOCKET INCORPORATING AN ON/OFF SWITCH.

REFER TO APPENDIX A (TECHNICAL CHARACTERISTICS) FOR COMPLETE TECHNICAL DATA.



ENGLISH

GENERAL INSTALLATION	Obey the following warnings for the correct operation of the device and/or avoid <u>dangerous situations</u> :				
PRECAUTIONS	 Install the demineralizer on a <u>flat surface</u>; Leave adequate space for ventilation (at least 5 cm on the of the ventilation grid side). 				
	 Do not install near cisterns, wash-basins, etc. to <u>avoid direct contacts with water or liquids</u>, possible short circuits and/or potentially dangerous situations for the operator; Do not install in <u>excessively humid</u> or <u>poorly ventilated</u> places; 				
	 Do not install in places with <u>gas</u> or inflammable and/or explosive <u>vapors</u>; 				
	 Install the unit so that the power cord is <u>not bent</u> or <u>crushed</u>. It must run freely all the way to the mains socket. 				
	 Install the unit so that any external fill/drain piping is <u>not bent</u> or <u>crushed</u>. The length of the reinforced silicone tube connecting <i>Milldrop</i> to the sterilizer or tank, <u>shall not</u> <u>exceed 2 meters</u>, otherwise performance quality could fall or, what is worse, the demineralizer itself could not operate properly. 				
POWER SUPPLY	The demineralizer must be connected to a mains socket of power adequate for the absorption required, and provided with ground connection in compliance with current laws and/or standards. The mains socket must be suitably protected by a circuit breaker having the following characteristics: - Nominal current 5 A - Differential current 0,03 A				
	NOTE				
	THE MANUFACTURER WILL NOT BE LIABLE FOR DAMAGES CAUSED BY INSTALLING THE UNIT ON INADEQUATE ELECTRICAL SYSTEM AND/OR NOT GROUNDED.				
	If you need to replace the power cord plug, use a type of equal characteristics or, at any rate, adequate to the equipment power requirements. The user is entirely responsible for the choice and replacement of the plug.				
	DANGER				
	CONNECT THE POWER CORD DIRECTLY TO THE SOCKET.				

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<u>DO NOT</u> USE EXTENSIONS CORDS, ADAPTERS OR OTHER ACCESSORIES.



INSTALLATION ONTO A WALL

Milldrop can be placed on a working plane, mounted on the Millrack system (see the relating User Manual) or installed on a wall (see Fig. A-B-C). In this last case, proceed as follows:

- 1. Remove the screws (1) and the lid (A). Figure A
- 2. Remove the screws (2-3) and the side panel (B). Figure A
- 3. Position the panel (B) on the wall where *Milldrop* has to be installed and mark the wall by a pencil in the mounting slots (C). Figure B

NOTE

THE DEMINERALIZER MUST BE INSTALLED PERFECTLY HORIZONTAL, OTHERWISE THE ANTI-FLOODING SYSTEM COULD NOT PROPERLY FUNCTION. ON CHOOSING THE INSTALLATION POINT, CONSIDER THE ROOM NECESSARY FOR REAR PIPING, FOR THE FRONT PANEL FREE VISION AND FOR THE ADEQUATE VENTILATION (SEE PARAGRAPH GENERAL INSTALLATION PRECAUTIONS).

4. Bore the holes corresponding the marks just made. Figure C.



BEFORE DRILLING, BE SURE THAT NO PIPING OR ELECTRIC CABLES ARE INSIDE THE WALL.

- 5. Reassemble the side panel (B), fasten the screws (2 and 3).
- 6. Insert the screw anchors (4) in the holes, the screws (5) in the panel's slots and screw down. (Note: items 4 and 5 are not supplied) see Figure C.
- 7. Reassemble the lid (A) and fasten the screws (1).







HYDRAULIC AND ELECTRICAL CONNECTIONS

Initial installation





Purging the internal hydraulic circuit



- 1. Use the kit supplied (Page 3, Ref. 2) and install the draining bracket onto the washbasin's siphon where you wish to install the *Milldrop* draining pipe; carry out an hole Ø 6 mm in the siphon across the bracket's fitting.
- 2. Insert the red pipe in the ring nut , plug it in the bracket's fitting, and fasten the ring nut.



3. Cut the red pipe long enough to reach the draining connection B on the rear panel of the demineralizer.

NOTE

THE PIPING MUST NOT BE BENT, SQUASHED OR HAVE A PARTICULARLY TORTUOUS ROUTE, OTHERWISE PERFORMANCE WILL BE QUALITATIVELY VERY LOW OR, WHAT IS WORSE, THE DEMINERALIZER ITSELF SHOULD MALFUNCTION.

- Take the plug out the draining quick connector (see picture) and connect the red pipe (*keep the plug*!).
- Install a tap (not supplied) provided with male connector ³/₄" on the water outlet and near the demineralizer. Check the pressure value of the water works (see Appendix A).
- 6. Connect the feeding blue pipe (supplied) between the tap outlet and the water inlet "A" on the rear panel of the demineralizer, check for the presence of gaskets, and fasten both the pipe's ring nuts.
- 7. Open the tap and check for no leaks.
- 1. Remove the plastic plug from the quick connector "C" on the rear panel of the demineralizer and connect the supplied pipe-union.
- 2. Mount the reinforced silicone pipe on the pipe-union, tight by clamps.
- 3. Place the opposite end of the silicone pipe inside a wash-basin.



Figure E





See Figure F:

- 4. Plug the key (supplied with the kit page 3, Ref. 7) in the fitting of the purging tap positioned under the *Milldrop* equipment and turn the tap on "Service Mode" position.
- 5. Plug the purging jack (supplied with the kit Page 3, Ref. 7) in the connector "T".
- 6. Connect the mains cable and switch on the demineralizer.
- 7. The water will start to flow from the silicone tube connected to the quick connector "L"; let to drain for about 10 minutes.

WARNING

This hydraulic circuit purging procedure allows to eliminate the maintenance liquids from the osmotic membrane, avoiding that the liquids are passing from and damaging the resin filter.

- 8. Switch off the equipment.
- 9. Take the purging jack out the connector "T".
- 10. Plug again the key in the fitting of the purging tap and back it on "Normal Mode" position.
- 11. Take the plastic plug out the quick connector "C" (keep the plug!)
- 12. Remove the pipe-union and silicone tube from the quick connector "L" and connect it to the quick connector "C".



Close the quick connector "L" with the plastic plug. Check for the tightness.

Continue the installation by carrying out the specific hydraulic connections according to the use required.







Case 1: Direct connection to a sterilizer series Millenium

See Figure G:

- Keep the DIP1 position on the electronic board unchanged (see diagram on page 25):
 - Make sure that the position is as indicated in the figure. If not, correct it.



INSTALLATION

1. Cut the silicone pipe (connected to the quick connector "C" on the demineralizer rear panel) long enough to reach the pipe-union installed on the sterilizer's automatic feeding point, connect and tight by clamps.



THE PIPES MUST NOT BE BENT, SQUASHED OR HAVE A PARTICULARLY TORTUOUS ROUTE. THE LENGTH OF THE FEEDING SILICONE TUBE MUST NOT EXCEED 2 METRES, OTHERWISE THE GENERAL PERFORMANCE SHOULD DECREASE OR THE DEMINERALIZER ITSELF SHOULD MALFUNCTION.

2. Connect the supplied start/stop signal cable between the connector "S" on the demineralizer rear panel and the female jack connector on the sterilizer.



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Case 2: Connection to an external feeding tank (optional)

See Figure H:

Keep the DIP1 position on the electronic board unchanged (see diagram on page 25):

Make sure that the position is as indicated in the figure. If not, correct it.



- 1. Plug the supplied pipe fitting in the inlet point (label "*Milldrop*") of the tank.
- 2. Cut the silicone pipe (connected to the quick connector "C" on the demineralizer rear panel) long enough to reach the pipe-union installed on the tank's inlet (label "*Milldrop*"), fit and tight by clamps.



- 3. Plug a supplied pipe-union in one of the three outlets available on the tank (label M1, M2 or M3), fit a silicone pipe and tight by clamps.
- 4. Cut the silicone pipe long enough to reach the pipe-union installed on the sterilizer's automatic feeding point, fit and tight by clamps.
- 5. Connect the start/stop signal cable (provided with the demineralizer) between the jack connector "T" on the demineralizer rear panel and the female jack connector on the tank's level sensor cabling.
- 6. The tank is provided with a tap for drawing manually the permeation product. If the user wishes to use also this feature, connect the supplied pipe fitting to the drawing tap.







Case 3: Connection to an electric-type drawing tap (option)

See Figure I:

Configure DIP1 on the Milldrop electronic board as follows (see diagram on page 25):

- Remove the external cover and the protection of the electronic board.
- Change the setting of the DIP1 switches as shown in OFF the figure
- Refit the covers.
- 1. Install the drawing tap (with electric button) where desired (anyhow, near the demineralizer).
- 2. Plug the supplied pipe fitting on the drawing tap's outlet, cut the silicone pipe installed on the outlet C of the demineralizer so that it is long enough to reach the pipe fitting of the tap, and tight by clamps.





ON

- NOTE THE PIPING MUST NOT BE BENT, SQUASHED OR HAVE A PARTICULARLY TORTUOUS ROUTE. THE SILICONE TUBE'S LENGTH MUST NOT EXCEED 2 METRES, OTHERWISE PERFORMANCE WILL BE QUALITATIVELY VERY LOW OR, WHAT IS WORSE, THE DEMINERALIZER ITSELF SHOULD MALFUNCTION.
 - 3. Connect the start/stop signal cable of the drawing tap between to the connector "T" on the demineralizer rear panel p.





FIRST STARTUP

MILLDROP CONNECTED TO THE STERILIZER SERIES MILLENNIUM

MILLDROP

CONNECTED TO THE FEEDING TANK Once properly installed, proceed with the following additional startup operations and checks according with the Milldrop use.

Turn on the demineralizer and then the sterilizer.

Ended the initial test of the sterilizer, enter the SETUP menu, select "Filling Options" and the mode "AUTOMATIC" (see the Operating Manual of the sterilizer).

Check that demineralizer starts to work as the sterilizer's automatic feeding pump starts, and stops at the same time as the pump.

NOTE



THE EQUIPMENT WILL STOP AUTOMATICALLY IF THE DELIVERY OF WATER LASTS UNINTERRUPTEDLY FOR MORE THAN 20 MINUTES. TO RESTART THE MILLDROP OPERATION TURN OFF AND ON THE EQUIPMENT AGAIN.

The demineralizer starts immediately as turned on (if the tank is empty or with water under the maximum level).

As reached the maximum water level in the tank (signaled through the level sensor), the demineralizer stops automatically.

NOTE

STARTING AT EMPTY TANK, THE MILLDROP OPERATION MIGHT BE STOPPED BY THE PROTECTION TIME-OUT OF **20** MINUTES AND BEFORE THE WATER INSIDE THE TANK HAS REACHED THE MAXIMUM LEVEL. IN THIS CASE, TURN OFF AND ON AGAIN TO RESTART THE EQUIPMENT OPERATION AND WATER FILLING UP.

Turn on the sterilizer.

Ended the sterilizer initial test, enter the SETUP menu, select "Filling Options" and the mode "AUTOMATIC" (see the Operating Manual of the sterilizer).

If the water level into the sterilizer's internal tank is lower the minimum, the automatic feeding pump starts promptly.

In this case, the demineralizer will start a few seconds after the start of the sterilizer's pump (i.e. as the tank's float, by lowering, triggers the demineralizer by the start/stop command), and will stop as the tank's float reaches again the maximum level.



NOTE

THE EQUIPMENT WILL STOP AUTOMATICALLY IF THE DELIVERY OF WATER LASTS UNINTERRUPTEDLY FOR MORE THAN 20 MINUTES. TO RESTART THE MILLDROP OPERATION TURN OFF AND ON THE UNIT AGAIN.

In case of manual water drawing also from the tank's tap, ensure that the water remaining in the tank is sufficient to warrant the water need of sterilizer(s) connected to the tank, considering also the time necessary to restore a sufficient level into the tank:

- one sterilizer connected, the remaining water must be at least 2 liters .
- two sterilizers connected, the remaining water must be at least 4.5 liters.
- three sterilizers connected, the remaining water must be at least 7 liters.





MILLDROP CONNECTED TO THE MANUAL DRAWING TAP

Press the tap's button to start the water delivery.

Press 2 seconds again the tap's button to stop the water delivery.

<u>NOTA</u>

WAIT 10 SECONDS BEFORE PRESSING AGAIN THE TAP'S BUTTON TO RESTART WITH THE WATER DELIVERY.

NOTE

THE EQUIPMENT WILL STOP AUTOMATICALLY IF THE DELIVERY OF WATER LASTS UNINTERRUPTEDLY FOR MORE THAN 20 MINUTES. TO RESTART THE MILLDROP OPERATION TURN OFF AND ON THE UNIT AGAIN.

STAND-BY STATUS

Over the first startup operations, the demineralizer sets in stand-by status.

In such a condition, the turning on of alarm LED will have no influence on the demineralizer subsequent starting, except the alarm "Internal leak" that will stop the demineralizer and prevents it from operating.

In this case, turn off the demineralizer and call the Technical Service.



5

<u>NOTE</u>

THE TECHNICAL SERVICE (SEE APPENDIX Z) IS AT YOUR DISPOSAL FOR ANY DOUBT YOU MAY HAVE OR FURTHER INFORMATION YOU MAY REQUIRE.





SUMMARY TABLE

Device	REVERSE OSMOSIS WATER DEMINERALIZER	
Model	Milldrop	
	C.M.F. S.r.I. Via E.Ellero, 9 33080 Cusano di Zoppola (PN [=Province of Pordenone]) - ITALY	
Manufacturer	for	
	M.O.COM. Srl Via Saliceto, 22 40013 Castel Maggiore (BO) Italy	
Power supply voltage	220 – 240 V ~	
Mains frequency	50/60 Hz	
Mains fuses	2x F 3,15A 250V	
Protection fuse on the electronic board	T 3,15A 250V	
External size (LxHxD)	220 x 235 x 415 mm (rear connections excluded)	
Nominal power	130 W, 2A max	
Insulation class	Class I	
Utilization	Internal use	
Environment operating conditions	Temperature:+15°C ÷ +35°CRelative humidity:90% non-condensing	
Net weight	14 Kg	
Outlet flow rate	25 lt/h	
Inlet pressure	1 ÷ 4 bar	
Working pressure	Max 10 bar (at pump outlet)	
Tap water temperature	+10°C ÷ + 35°C	
Resin filter cartridge life (average value)	about 500 I (depending on the quality of the inlet water)	
Osmotic membrane and active carbon filter life (average value)	about 800 I (depending on the quality of the inlet water)	



CHARACTERISTICS OF THE DEMINERALISED WATER

FILTERING CHARACTERISTICS

The following table shows the demineralizer's average filtering characteristics, compared with values stated by the standards EN 285 and EN 13060.

Element/Characteristic	Unit of measure	Value at the inlet	Value at the outlet	Value according to EN 13060/EN 285
Ph value	-	7,6	6,3	5 - 7
Conductivity at 20°C	µS/cm	435	1,8	<15
Dry residue	mg/l	345	2	<10
Cadmium	mg/l Cd	<0.01	<0.003	<0.005
Iron	mg/l Fe	0.32	0.03	<0.2
Manganese	mg/l Mn	0.03	<0.003	<0.1
Nickel	mg/l Ni	<0.01	<0.003	<0.1
Lead	mg/l Pb	<0.05	<0.02	<0.05
Copper	mg/l Cu	0.02	0.006	<0.1
Zinc	mg/l Zn	0.56	0.02	<0.1
Chlorides	mg/l Cr	3.7	<0.05	<2
Phosphates	mg/l P	0.01	<0.01	<0.5
Silicon oxide	mg/l SiO2	5,7	<0.10	<1
Appearance	-	colorless,	transparent, wit	hout sediments
Hardness	mmol/l	2.57	<0.005	<0.02

NOTE

THE VALUES SHOWN IN THE COLUMN "OUTLET WATER" ARE INDICATIVE AND REFERRED TO VALUES OF THE COLUMN "INLET WATER".

5



INTRODUCTION

In addition to the procedures for the correct use, it needs the user performs an ordinary maintenance in order to guarantee safe and efficient operation over the entire life of the equipment.

The ordinary maintenance hereafter described consists in easy manual activities and preventive maintenance interventions.

ORDINARY MAINTENANCE PROGRAMME



The table summarizes the maintenance required to maintain the demineralizer operating at its peak efficiency.

WEEKLY	Clean and disinfect the external surfaces	
YEARLY (or earlier if the limit of 500 litres has been reached	Replace the resin filter cartridges	
YEARLY (or earlier if the limit of 800 litres has been reached	Replace osmotic membrane and active carbon filter	

DANGER



<u>ALWAYS REMOVE</u> THE MAINS CABLE FROM THE POWER OUTLET, BEFORE CARRYING OUT ANY KIND OF MAINTENANCE.

SHOULD THAT NOT BE POSSIBLE, OR WHENEVER THE EXTERNAL BREAKER IS FAR AWAY OR, AT ANY RATE, NOT VISIBLE TO THE MAINTAINER, PLACE A WORK IN PROGRESS SIGN ON THE EXTERNAL BREAKER AFTER TURNING IT OFF.

GENERAL MAINTENANCE PROCEDURES

With reference to the above table, let's take a summary look at the various maintenance to be performed:

- Clean all the external surfaces using a clean cotton cloth dampened with water plus, possibly, a neutral detergent. Dry the surfaces and remove any residue before using the equipment.
- To disinfect the external surfaces, use denatured alcohol, as well as detergents containing a minimum percentage of sodium hypoclorite (or equivalent substances).
- Yearly or whenever necessary, replace the exhausted filters with new ones having the same characteristics. For this maintenance, call the Technical Service (see Appendix Z).

NOTE

Should the demineralizer be foreseen unused for a time longer than 20 days, we suggest to empty the external feeding tank, if connected.



REPLACING THE FILTERS

Resin filter cartridges

For filters replacement follow the procedures reported below.

See Figures L and M:

- 1. Turn off *Milldrop*, remove the mains cable and disconnect pipes and cable from the use side (sterilizer, feeding tank or drawing tap).
- 2. Turn off the water tap feeding the Milldrop.
- 3. Remove the screws (1) and take off the lid (A).
- 4. Remove the screws (2) and take off the side panel (B) (if possible).
- 5. Lift and extract the filters assembly (C) from its bearings, disconnect pipes Ø8 (3 and 4) from the quick connectors on both ends of the resin filter cartridges.
- 6. Replace both cartridges, taking care to install them in the correct position and with the arrows towards the bottom of the unit (Fig. M).



- c verify that the jack of the start/stop cable coming from the sterilizer, tank or drawing tap is disconnected from the *Milldrop*; plug the purging jack in the "**T**" connector.
- d. connect the mains cable and switch on the *Milldrop*.
- e. the water will start to flow from the silicone tube connected to the quick connector "**C**"; let to drain for about 10 minutes.
- 9. Turn off *Milldrop*, remove the purging jack from the "**T**" connector, mount the equipment lids and restore the hydraulic and electric connections.



Osmotic membrane and active carbon filter cartridge

The osmotic membrane and the active carbon filter cartridge have the same duration, and therefore must be both replaced at the expiry.

mocom

Replace first the osmotic membrane.

See Figure N

- 1. Turn off *Milldrop*, remove the mains cable and the hydraulic and electric connection with the equipment (sterilizer, tank or drawing tap).
- 2. Proceed as for the resin filter cartridges, and remove the whole filter assembly (A) from its supports to access the osmotic membrane assembly (B).
- 3. Disconnect the pipes Ø8 (1) and (2) from their quick connectors and replace the osmotic membrane.



4. Reconnect the pipes respecting their original position.



Figure N

5. Carry out the purging of the hydraulic circuit as for the first installation (see page 9); let to drain the water for about 10 minutes.

WARNING



The hydraulic circuit purging procedure allows to eliminate the maintenance liquids from the osmotic membrane, avoiding that the liquids are passing from and damaging the resin filter

6. Check for no leaks in the equipment and on the quick connectors.



Replace now the active carbon filter cartridge.

See Figure O

- 1. Turn off MILLDROP and remove the mains cable.
- 2. Disconnect the quick elbow Ø10 (1) and "T" Ø10 (2) connectors and replace the carbon filter cartridge (A) taking care to install it in the correct position and with the arrow towards the bottom of the unit (Fig. O).



3. Reconnect the pipes respecting their original position.



- 4. Carry out the purging of the hydraulic circuit as for the resin filter cartridges:
 - a: pull the pipe-union (and its connected pipe) out the quick connector "C".
 - b: plug an other supplied pipe-union in the quick connector "**C**", mount a silicon pipe (not supplied) and place the opposite end inside a wash-basin.
 - c verify that the jack of the start/stop cable coming from the sterilizer, tank or drawing tap is disconnected from the *Milldrop*; plug the purging jack in the "**T**" connector.
 - d. connect the mains cable and switch on the Milldrop.
 - e. the water will start to flow from the silicone tube connected to the quick connector "**C**"; let to drain for about 10 minutes.
- 5. Turn off *Milldrop*, remove the purging jack from the "**T**" connector, mount the equipment lids and restore the hydraulic and electric connections.

ENGLISH





REPLACING THE FLOW RESTRICTOR

See Figure P:

- 1. Turn off *Milldrop* and remove the mains cable.
- 2. Turn off the water tap feeding the *Milldrop*, remove the equipment lid and the side panel.
- 3. Disconnect the "flow restrictor" from the red pipes Ø6 and replace with a new one.





- 4. Reassembly the equipment lids, connect the mains cable and turn on the unit.
- 5. Open the water feeding tap and check for no leaks.
- 6. Reassemble the board protection panel and the lid, fasten the screws.



Figure P

DISPOSAL AT END-OF-LIFE

In accordance with Directives 2002/95/ EC, 2002/96/ EC and 2003/108/ EC, regarding the reduction in use of dangerous substances in electrical and electronic equipment, as well as waste disposal, such equipment may not be disposed of as normal urban waste and must be separated accordingly. When purchasing a new, equivalent piece of equipment, the old piece of equipment that has reached its end-of-life must be handed over to the reseller for proper disposal. As regards reuse, recycling and other forms of recovery of the above mentioned waste, the manufacturer carries out the functions defined in the individual national legislations.

The proper collection and separation of such equipment for recycling, treatment and disposal helps avoid any possible negative effects on the environment and health and facilitates the recycling of the materials of which the equipment is made. The crossed out rubbish can symbol indicates that the product, at the end-of-life, must be collected separately from other types of waste.

WARNING!

Improper disposal of the product results in the application of sanctions which are defined by individual national laws.



INTRODUCTION

If you run into a problem or alarm while using the equipment, you should <u>**not**</u> be immediately concerned. It may not, in fact, be related to a breakdown but, more probably to an anomalous situation, often merely transitory (such as a blackout), or incorrect use.

In any case, it is important to first identify the cause of the anomaly and then take suitable corrective action, either autonomously or with the help of the **Technical Support Department (see Appendix Z)**.

For this purpose, below, we provide instructions for diagnosing and resolving general problems.

At the starting on

It is possible that at the start of operation, and also in normal condition, the red LED (signaling poor outlet water quality) lights for a few seconds; this situation is normal.

On the contrary, if the LED remains lit for a time longer than 45 seconds (matched with the acoustic alarm), the equipment enters in blocking status; in this case it will be necessary to replace the resin filter and/or the osmotic membrane.

This fault condition is preceded by an intermediate phase during which Milldrop, even if correctly operating, turns on the yellow LED (matched with the acoustic alarm) to signal that the filter replacement is coming near.

Milldrop unused for a few days

Should the equipment be unused for a few days, the red LED could remain lit for a time longer than 45 seconds at the subsequent starting on, so resulting in the blocking of the equipment. In this case switch off the unit and switch on it again. If the problem occurs again, replace the filter.



NOTE

SHOULD YOU FORESEE NOT TO USE THE EQUIPMENT FOR MORE THAN 20 DAYS, WE SUGGEST TO EMPTY THE EXTERNAL TANK WHENEVER PROVIDED.

ANALYSIS AND RESOLUTION OF PROBLEMS

If your demineralizer is <u>not</u> working correctly, please make the following checks <u>before</u> calling the <u>Technical Support</u> <u>Department</u>:

PROBLEM	POSSIBLE CAUSE	PROPOSED SOLUTION
	The power cord is not plugged-in.	Plug it in.
	There is no voltage at the socket.	Check the cause of the lack of voltage at the socket and fix it.
The demineralizer does <u>not</u> power-on.	The main switch and/or differential switch are OFF.	Turn the switch ON.
	The mains fuses or the on-board fuse are blown.	Replace with new fuses of same rating value. (See <i>Summary Table</i> in Appendix A).
Alarm:	Water leak inside the equipment.	Remove the water leak cause and dry the internal parts well.
water leak (red LED blinking)	Electronic board failure.	Replace the electronic board.





PROBLEM	POSSIBLE CAUSE	PROPOSED SOLUTION
	Entry tap closed.	Open the tap.
Alarm: lack of water (red LED blinking)	Water work pressure insufficient.	Check the water pressure.
	Solenoid valve filter clogged up	Clean the filter (see rear view, page 5).
	Pressure switch failure.	Replace the pressure switch.
LLD Similing)	Inlet solenoid valve failure.	Replace the solenoid valve.
	Active carbon filter clogged up.	Replace the active carbon filter.
Alarm:	Resin filters depleted.	Replace the resin filter assembly.
Poor outlet water quality (red LED blinking)	Osmotic membrane depleted.	Prepare to replace the osmotic membrane shortly
Alarm:	Resin filters almost depleted.	Prepare to replace the resin filters shortly.
Sufficient outlet water quality (yellow LED blinking)	Osmotic membrane almost depleted.	Prepare to replace the osmotic membrane shortly.
Alarm:	Purging jack in the quick connector "T"	Remove the jack and plug in the start/stop cable
Continuous operation	Starting on with tank empty	Turn off and on the demineralizer
over 20 minutes	Feeding tank's float failure.	Replace the float.
(water quality LED's are flashing and	Pump failure.	Replace the pump.
intermittent buzzer	Drawing tap button failure	Check the cause.
sounds)	Osmotic membrane clogged up.	Carry out the hydraulic circuit purging or replace the osmotic membrane it
Alarm:	Water not yet in circulation	Effettuare un prelievo di acqua
Conductivity probe disconnected or probe sensor without	Conductivity sensor without water	Check the connection of the pipe on the quick connector "C" and perform a water drawing
water (green LED flashing and	Conductivity probe cable disconnected	Reconnect the cable
intermittent buzzer)	Conductivity probe failure	Replace the probe
	Continuous working time exceeding 20 minutes.	Turn off the demineralizer and turn on again (or push again the tap's button).
	Start/stop signal cable detached	Connect the cable.
The demineralizer	Feeding tank's float failure.	Replace the float.
does not deliver any water.	Alarm signaling for inlet water lack or internal leak	Remove the problem.
	Lack of the power supply.	Remove the cause.
	Alarm signaling for poor outlet water quality.	Replace the resin filter assembly.
	Pump failure.	Replace the pump.
	Pump failure.	Replace the pump.
Low outlet flow rate	Resin filter and/or active carbon filter clogged up.	Replace the resin filter and/or the active carbon filter.
	Osmotic membrane clogged up.	Cleanse the osmotic membrane or replace it.





ELECTRIC DIAGRAM





HYDRAULIC DIAGRAM



1 - Water inlet solenoid valve

- 2 Activated carbon filter assembly
- 3 Pressure switch
- 4 Pump assembly
- 5 Membrane assembly 6 - Resin filter assembly
- 7 Flow restrictor
- 8 Draining union
- 9 Conductivity probe 10 – Purging tap
- 11 Quick connector plug



Legend:







DICHIARAZIONE DI CONFORMITÀ

DECLARATION OF CONFORMITY DECLARATION DE CONFORMITE KONFORMITÄTSBESCHEINIGUNG DECLARACION DE CONFORMIDAD

Applicazione delle Direttive CE 2006/95 - 2004/108. Application of the EC Directives 2008/95 - 2004/108. Application des Directives CE 2006/95 - 2004/108. Anwendung der EG Vorschriften 2006/95 - 2004/108. Aplicación de las Directivas CE 2006/95 - 2004/108.



II Legale Rappresentante <u>C.M.F. S.r.I.</u> (Funzione - Position - Fonction - Stellung - Función)









FOR ANY REQUEST FOR TECHNICAL SERVICE FOR THE PRODUCT, WHETHER IN OR OUT OF WARRANTY, DIRECTLY CONTACT THE

TECHNICAL SUPPORT DEPARTMENT

OF THE DEALER OR RESELLER THAT SUPPLIED THE PRODUCT.

M.O.COM. Srl is completely available to customers to provide any technical information about the product as well as to offer suggestions and advice on steam sterilization procedures.

In this regard, please refer to the following address:

M.O.COM. Srl Via Saliceto, 22 40013 Castel Maggiore (BO) Italy

website www.mocom.it

