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## Diagram Index

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## NB:

The information contained in the following manual and the technical specifications, aesthetics , functions etc...of the Industrial deionizer Mod. 048/050 can be varied by DESTATIC SAS, without obligation of prior notice whatsoever.

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Electrostatic energy provokes great damages to machine function the causes are various: temperature variations, friction, ..

With the DESTATIC systems, static electricity, created in production processes, gets neutralised through a flow of ions generated by an ionising bar, powered by a high tensioned electronic generator.

DESTATIC systems can be applied to many production processes: labelling machines, woodworking machines, optical machines, cigarette machines, textile machines, printing machines, blistering machines, capsule weighing systems, boxing machines, machines for processing plastic materials etc....

DESTATIC has always projected and realised systems of high technology and quality, and today guaranteed by the CE certification on all its products.

### **Warnings!**

The DESTATIC mod. 048/050 deionzers are 6000 V, electronic high tension generators and able to supply up to 3.5m, with short-circuit protection of the output. This means that before carrying out any kind of maintenance operation, cleaning, replacement etc... of the deionizing group + cables + bars, you have to switch of the device and disconnect it from the power supply.

DESTATIC declines any responsibility in case of opening, tampering, incorrect use etc...of the deionizer Mod. 048/050.

### **Summary of the main warnings:**

- DO NOT switch on the generator if all the bars are not connected properly (be sure screw the bayonet supplied well down).
- CLOSE with the proper plugs, the eventual EAT bushings not utilised.
- DO NOT touch the bars when the generator is connected and in operation.

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The product Mod. 048/050 complies to European Union standards (EU Council Directives). The conformity declaration is available at our offices:

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### **Warranty legislation and certificate**

All our products are covered by the following warranty terms for a maximum period of 12 months from the date of the invoice:

For complete replacement of any mechanical part and electrical part that should be found defective.

This replacement will take place provided that:

- A) the fault in our equipment is promptly notified by fax or telephone; code number marked on the damaged piece must be mentioned and machine type specified. The purchaser has to fill in the below coupon and enclose it to the purchase invoice.
- B) the damaged and/or malfunctioning material is received by our spare parts department within 30 days from the moment we forward you new spare parts, otherwise these parts will be charged to you.
- C) that our engineers confirm that the parts have really in-built defects. If it were found that the problem was caused by improper use of our products or that the equipment was tampered by unskilled persons or, in any case, that it was used for other purposes than what mentioned in the instructions manual accompanying it, we will waive any responsibility and will not replace the said parts. Also the warranty will not be applied in case of damaged caused by wrong connections of the battery or connections to other battery appliances which do not conform to the specifications quoted in this manual.
- D) Excluded from this warranty are all parts subject to wear are, cables and connecting wires and connectors which do not present any factory defects.
- E) Transportation expenses in connection to replacements are at the expense of the client.

The services of our engineers in connection with the replacement and installation of the parts supplied are not included in this assistance and guarantee service and will therefore be charged normally.

Model....

Serial n°.....

Date of purchase

Purchasers signature.....

PS. Always attach this coupon to the purchase invoice.

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## Starter Kit

The industrial deionizer Mod. 048/050 is supplied with the following accessories:

- Deionizer Mod. 048/050
- Earth Cable
- Instruction and maintenance manual
- Plugs for closing EAT bushings (one plug for model 048, three plugs for model 050)

The antistatic bars and the connecting cables are supplied separately as they have to be based on the facility for which they will function.

## Technical characteristics of the deionizer 048/050

The deionizer Mod. 048/050 has the following technical characteristics

- Power supply tension 220v / 50Hz mono-phase
- Power supply absorption 40 W
- Fuse 500 mA delayed
- Tension generated (with respect to the earth clamp) 6000 V~ – (effective)
- Tension generated (with respect to the earth clamp) 8460 V (highest value)
- Maximum power output 3.5mA~ (effective)
- Current limiter in case of output short-circuit (EAT) yes
- Number of outputs up to 2 Mod. 048  
up to 4 Mod. 050
- Functional distance Bars up to 5m Mod. 048  
Bars up to 8m Mod. 050
- Material self-extinguishing ABS
- Operational temperature 10...50° C
- Weight 3.7 Kg
- Dimensions (LWH) 190 x 170 x 140 mm  
(exclusive of accessories)

Diagram 2 – antistatic bar

- Material: self – extinguishing ABS
- Isolating tension: 10 KV
- Operational temperature: 10..50° C
- Length of connecting cable: as requested (max. 20 m)
- Distance of bar from the surface to be treated: from 4 to 50 mm
- Fixing: distance as requested
- Weight ~800g/m (excluding cable)
- Dimensions (W H) 20 x 27 mm
- Dimensions (L): as requested (from 80 to 5000mm)

## Front Panel

### Diagram 3 –front panel Mod. 050

Key – Front panel of the deionizer

- A Bushings for connecting the antistatic bars  
Mod. 048: two bushings  
Mod. 050: four bushings

### Table 1 – list of the connections relative to the front panel

The connection of the bars is made through the banana plugs, as per diagram. The connection of the bars has to be made with the power supply off and the plug disconnected. The banana plug has to be inserted deeply into the hole and has to be secured to the same by a bayonet screw which the banana plug is supplied with.

The eventual bushings not in use have to be plugged with their proper accessory. Only once these operations are finished can it be possible to put the device into operation by inserting the VDE for power supply and activating the switch on the back of the appliance.



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Diagram 4 – back panel

Key – back panel of the deionizer

A = luminous ON switch

B = fuse holder

C = VDE plug for power main connection

Table 2 – list of connections relative to the back panel

Integrated in the VDE on the back panel, is the fuse holder. When broken the fuse can be replaced with another one, as indicated in the chapter “Technical Characteristics”, only when the device is switched off and disconnected from the power mains.

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## Earth connection

The earth connection has to be made through the section  $2.5\text{mm}^2$  cable, to be connected to the screw (supplied with nut and washer) that's on the side of the appliance.

The connection has to be carried out perfectly for the deionizer to reach maximum performance.

## Diagram 5 – earth connection

Key – deionizer back panel

A= earth connection using a lug on screw 4MA.

Table 3 – earth connection

## **Principles of electrostatic**

### **Introduction**

Electrostatic phenomena are electrical phenomena produced in space (and in the surrounding bodies) of electrical free charges, positive or negative which can be found in static balance (i.e. motionless) on bodies which are electrically charged anyway.

Coulomb's law states that electrical charges act mutually on each other with reciprocal attraction and repulsion, which extend and invest all the surrounding space. A punctiform  $Q_1$  electrical charge, positive or negative, acts in radius in all directions, resulting in a symmetrical sphere shaped electrical field. This means that, a test charge  $Q_2$  positive or negative immersed in this field will be repulsed or attracted by the  $Q_1$  charge, depending if it's of the same  $Q_1$  charge or not.

## INSTALLTION OF THE DEIONIZER MOD. 048/050

The deionizer 048/050 can be installed horizontally or vertically and does not need to be put in particularly ventilated areas.

The steps below have to be followed for a correct installation:

- The deionizer has to be well fixed onto a proper support, same for the cables which go to the antistatic bars.
- The deionizer has to be fixed for easy access to the front panel, (bushings for bar connection), to the back panel (VDE mains plug, fuse, switch) and on the side next to earth connection.
- The earth connection has to be carried out with special care, it has to be done in exactly the right way using the clamp enclosed on the side of the device. Use section wire at 2.5 mm <sup>2</sup>.
- Do not expose the deionizer to liquids, gas, metal shavings, production waste etc....
- Do not subject the deionizer to excessive vibrations, it can eventually be fixed to the body with rubber supports.
- When not in use, plug the EAT bushings with the supplied accessory.

## **INSTALLATION OF THE ANTISTATIC BARS**

The bar has to be installed with the two screws supplied at the client's requested distance, and put at the end of the bar itself.

### **FIRST INSTALLATION**

The geometry of installation of the bar, with respect to the charged surface to be neutralized has to be determine, at least the first time, by a DESTATIC representative, after viewing the facility or by viewing a diagram of the same.

### **NEXT INSTALLATIONS**

For the following installations the below rules have to be followed:

- Only use the supplied screws for fixing the bars.
- Do not install the bars in places where inflammable substances or water are present.
- Take particular care when making the earth connection to the external part of the bar (aluminium support), use the proper cable supplied.
- The bar is supplied with an already assembled cable to which the bars are connected and are the right length for the geometry of the plant itself. do not try to extend the EAT cable with a common cable, as isolation would be completely insufficient. Do not extend with an EAT cable, at this kind of high tension the connections between the two parts is extremely critical and would provoke unacceptable losses.

## MAINTENANCE OF THE DEIONIZER MOD. 048/050

The deionizer Mod. 048/050 does not need any maintenance whatsoever.

DESTATIC declines any responsibility in case of opening, tampering, incorrect use etc... of the deionizer Mod. 048/050.

## MAINTENANCE OF THE ANTISTATIC BARS

The antistatic bars, seeing the work that they are designed to carry out, are subject to wear (the steel tips, with age tend to wear out and lose efficiency) and above all, they tend to accumulate dirt (in form of dust which sticks to the bars).

These are the major causes which call for a periodic cleaning of the bars and eventual replacement with new.

For cleaning the bars, the following steps have to followed:

- Switch off the deionizer Mod. 048/50
- Disconnect the deionizer from the mains.
- Disconnect the screw plugs which connect the bars to the deionizer
- Proceed with cleaning the bars on site or disassemble them from the system on which they are mounted. Use compressed air for cleaning.
- Reposition the bars onto the system
- Reconnect the screw plugs
- Reconnect the deionizer to the power mains.
- Switch on the deionizer Mod. 048/050

## Troubleshooting

A small anomaly is not always the result of a broken device. The following notes may come of some use when facing such situations.

Problem	Cause	Solution
The luminous switch on the back of the device is OFF.	The deionizer is disconnected from the mains and/or the switch is OFF	Connect the deionizer to the mains and switch ON
	The fuse is broken	Replace the fuse with one of same power
The deionizer is correctly connected to the mains and to the bars but it does not work.	The bars are not in the right position with relation to the operation, one of them probably discharges to earth	Reposition the antistatic bars.
The deionizer is correctly connected to the mains and to the bars but it only works partially.	The earth connection is defective or incorrect.	Clean the bars
	The bars are dirty and consequently waste towards earth.	

Table 4 – Troubleshooting

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Diagram 10 – high view

For fixing, keep in mind the matrix's of the four holes on the top lid of the deionizer.  
These measures are:

- 171 \* 126 mm

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User's Notes