FRAL
RIGHT HUMIDITY ON DEMAND

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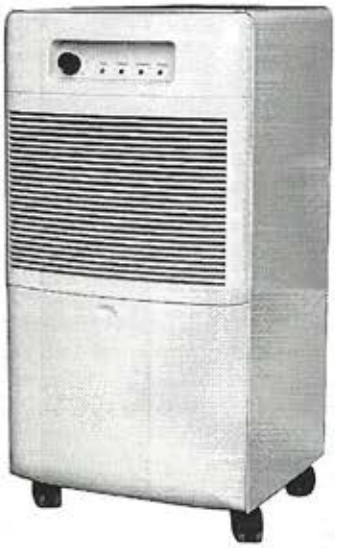

FDC32

MANUALE D'USO E MANUTENZIONE
USE AND MAINTENACE MANUAL
BEDIENUNGSANLEITUNG
NOTICE D'UTILISATION ET D'ENTRETIEN

AQ Airquality S.R.L.
Av. del Libertador 2221 (1636) Olivos - Buenos Aires.
Líneas rotativas: (5411) 5353-0260
E-mail: info@airqualitysrl.com.ar
Home Page: www.airqualitysrl.com.ar

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1. SAFETY WARNINGS

This dehumidifier must be always connected using earthed electrical plugs as required for all electrical appliances; FRAL Company declines any responsibility for any danger or damage whenever this norm is not complied with.

Any intervention on the machine using any instrument must be carried out only by a qualified technician.

When the machine is connected with a power socket, it must be in vertical position and any rough move must be avoided because it could cause some water to come into contact with electrical parts; it is therefore recommended to remove the plug from the socket before moving around the dehumidifier; if any water may have been spread on the machine, following some rough handling of the same, then the dehumidifier must be turned off and can be started up again only after 8 hours.

Correct Distance: *this dehumidifier* draws in the air from the back and lets out through the front side grille: therefore the back panel, which supports the air filter, must be kept at a minimum distance of 15 cm from the wall.

The dehumidifier, moreover, must not be set running in narrow areas, which do not allow a proper diffusion in the room of the air coming out from the grille. It is, instead, allowed to set the machine sides near the walls.

This dehumidifier has been designed and manufactured in compliance with the strictest safety rules. Therefore, pointed instruments (screw drivers, wool needles or similar ones) are not to be inserted in the grille or in the opening of the back panel when it is opened to remove the filter.

The machine must not be cleaned using water. To clean the machine use a wet cloth. Remember to disconnect the plug from the socket before.

The front panel should not be used to lay over it cloths or other things: it could cause damages or dangers.

The filter should be cleaned periodically (normally every month), but in dusty rooms it should be cleaned more often (see chapter 7). Remember that when the filter is dirty, the air circulation and, consequently, the machine performance is reduced.

2. PERTINENT TECHNICAL NORMS AND REGULATIONS

The dehumidifier has been designed and manufactured in conformity to all following European Norms and Regulations:
MACHINES NORMS (2006/42/CE - 17.05.2006) ;
SECURITY REGULATIONS FOR LOW TENSION APPLIANCES 2006/95/CE - 12.12.2006;
ELECTROMAGNETIC COMPATIBILITY (EMC) – 2004/108/CE – 15.12.2004.
It is hereby certified that this Dehumidifier conform to the:
IEC Regulations CEI-EN 60335-2-40, CEI-EN 55014-1, 55014-2.
The machine is built according to RoHS European Norms

3. DESCRIPTION OF THE MACHINE

FUNCTIONING

This ***dehumidifier*** is a refrigerating cycle dehumidifier: its functioning is based on a physical principle according to which the air, coming into contact with a cooled surface, it wets the surface by covering it with humidity in the form of condensed drops, or ice with low ambient temperature. What really happens is that a refrigerating machine maintains in a refrigerated state the coil through which is conveyed the incoming air that, in this way, is cooled and dehumidified. Then the air, passing through a warm heat-exchanger, heats up and returns in the room dehumidified and at a slightly higher temperature.

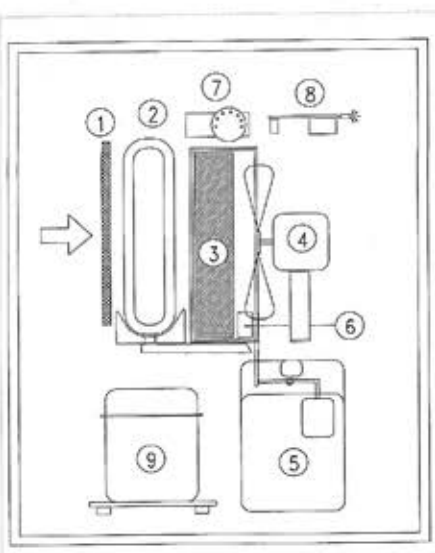


Fig. 1
Machines with water tank floating ball stop

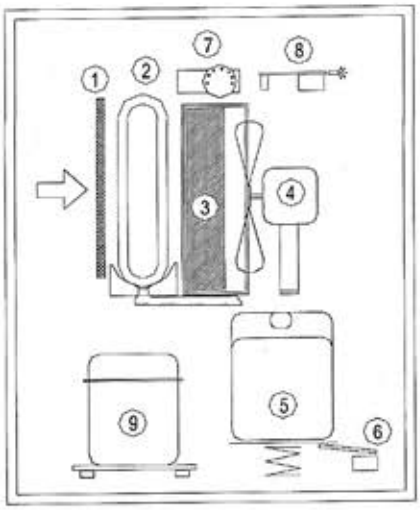


Fig. 2
Machines with water tank gravity stop

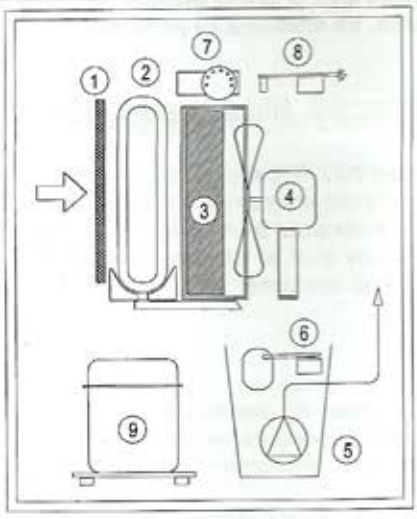


Fig. 3
Machines with condensed water lifting pump

With reference to the drawing (fig. 1), the air is drawn in through the back side of the dehumidifier, then it passes through the **filter** (1), through the aluminium refrigerated coil or **evaporator** (2), again trough the heat- exchanger or **condenser** (3). Finally, **the motor fan** (4) expels the air back into the room through the front grilled panel: The condensed water is collected in the **tank** (5). A **micro-switch** (6) stops the machine when the water in the tank reaches the correct level by raising the water float lever. The **humidistat** (7) starts the functioning of the dehumidifier when the humidity his higher than the preset level. An **electronic circuit** (8) controls the defrosting and prevents the **compressor** (9) repeated starts within too short a time by delaying each new start.
Some models have a different water tank stop device and use a gravity system (fig. 2) instead of the floating ball.

Fig. 3 refers to the machine provided with lifting pump, which includes a water collection tank (5) and a floating ball stopping device for full tank (6), in case the pump would not unload properly.

Machines provided with Hot Gas Defrosting System

The models with hot gas defrosting system have one by-pass solenoid valve and a special electronic card.
The functioning of Hot Gas Defrosting is an exclusive Fral system for the dehumidifiers: this system consists of a thermostat and one electronic control, which use the hot gas by-pass system only when it is necessary and for the period of time required; this will lengthen the life of the machine by reducing the hot gas functioning phases.

4. CONTROL AND DISPLAY PANEL

CONTROL PANEL

The Control Panel is always placed on the upper side of the machine and consists of 4 lights indications:
POWER (Supply): **red light** which turns on when the electric power arrives at the machine;
FULL (ALARM): **green light** which turns on when the water tank is full, or when the lifting pump is not working properly and then it fills up the water tank. When this light is on, the machines will stop running.
DEFROST: **red light** which turns on when the compressor is in 'pause or idle' position for the programmed delayed start off at first start up of the machine, or during the defrosting phases.
WORKING (RUNNING): red light on when the dehumidostat starts up automatically the functioning of the machine.

DEHUMIDOSTAT

May be placed on the front or rear side of the machine.
It consists of a number scale ranging from 1 to 5 or from 1 to 7. The minimum value correspond to 80%, the highest value to 20%; the intermediate value (3-4) indicates that the humidity is at approx. 55%, a suggested good general value.
In the position "CONT", the machine will keep running all the time, independelntly from the relative humidity in the room.
In position "OFF", the machine is not running and will never start running (one-pole switch)

HOUR COUNTER

Some models are equipped with an Hour Counter which is normally located in the rear side of the machine: this will show the hours that the machine has been working.

5. FIRST STARTING OF MACHINE

Before starting the dehumidifier, make sure that the machine has been standing in vertical position for at-least 8 hours. If one fails to observe this procedure, irreparable damage may be caused to the compressor. Then one can proceed and connect the dehumidifier plug to a 230 V - one phase power socket.
The red light 'POWER' will switch on confirming correct supply of power to the machine. If the light 'WORKING' is still off, turn clockwise the knob on the control panel till the light 'WORKING' is ON. The light 'DEFROST (PAUSE) will also switch on and , after about 5 minutes the dehumidifier **will start dehumidifying.**
When the red light is "ON" (ALARM), the machine wiil not start: one must check that the water tank be empty and, then, that be set in correctly; with the machines provided with pump, check that the pump function be working and that the delivry pump may be clear.

AND IF THE DEHUMIDIFIER DOES NOT START OR DEHUMIDIFY ?

First make sure that the red light 'POWER' is 'ON': this means that the current is fed to the machine. If the power supply light is not on, make sure that the connecting wire plug may be properly inserted into a main line socket in the room. After checking all this, if the power light is still off, then call the dealers service.

Make sure that the green light '**FULL' be off**; If this is not the case, check the correct position of the draining pipe (see point 4.)
Make sure that the red light 'RUNNING' be 'on'; this means that the Humidostat activates the functioning of the machine. When the dehumidifier is set again to functioning, after an idle period due to the reaching of the preset humidity or after emptying the water tank, if the Humidostat requires functioning of the machine, then beside the two red central lights, also the red light 'Pause' will light up. During this 5 minutes long phase, only the motor fan is running whereas the compressor is off. This operating cycle take place every 45 minutes to allow the defrosting of the cooler. When the red light 'Pause' will remain off for a period longer than 6 minutes, the dehumidifier should be brought to Dealer's service centre.

When the machine appears to be working correctly (the two central red lights are on), but it is not producing condensed water or produces only very little condensed water, it should be checked whether the relative humidity in the room may be lower than 40-45%; if the relative humidity is higher than that, the machine should be controlled by the dealer's service.

6. CONNECTION TO A DRAIN PIPE - LIFTING PUMP (optional)

This dehumidifier a
This dehumidifier can be connected directly with a fixed draining pipe; in this case, the water tank must be removed to allow for the connection of the pipe to the connection fitting.
For the connection, use one pipe provided with a ¾" female fitting at one end.
In the machines with ball-cock, if the water tank is not fitted in, the machine will not work.
Some have machines have a switch in order to allow the function ng without water tanks, in other machines one must modify the tongue-shaped device placed near the ballcock.
In the machines with tank placed in the front, one special fitting, which is supplied with the machine, must be placed on the right upper side of the water tank room, and must be used also the supplied rubber device to block the microswitch lever which is located on the left upper side of the water tank towards the front part.

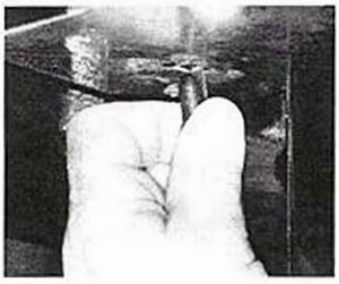
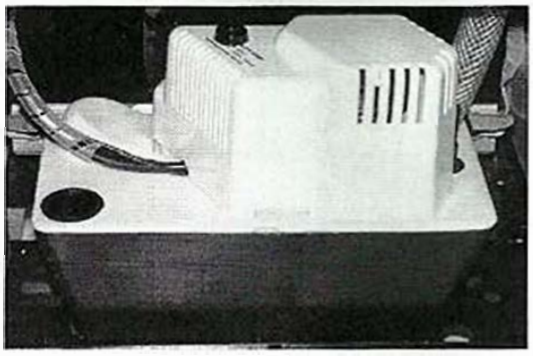


Fig. 1

Fig.2

Machines with condensed water lifting pumps
This machine includes a condensed water lifting pump.
Put the rubber pipe of the pump supply in a waste pipe or similar. Pay attention that the pipe be no choked up because of eventual narrow bends.
The pump will work automatically, controlled by a ball cock placed inside the pump.
Before moving the machine, push the button placed on the pump to empty the tank of the pump.
If the pump cannot work correctly, the compressor stops and the green light turns on. In this case, check the pipe situation. Maximum head working pressure of the pump is about 3.5-4 meters.



7. PERIODICAL MAINTENANCE

AIR FILTER CLEANING

The only required periodical maintenance is the cleaning of the filter once every month, or more often if the enviroment is very dusty or the dehumidifier is working for many hours every day.
The cleaning must be done by placing the filter under a water jet with the drilled panel facing the floor so that the water jet may push the filter towards the drilled panel.
After a few years running, may be necessari to make a cleaning of the warm heat exchanger (condenser) by using compressed air. This operation must be done by a specialized technician. This cleaning will improve the performaces and the long life of the machine.

Note: You can require spare filters from your dealer's service.

AQ Airquality S.R.L.
Av. del Libertador 2221 (1636) Olivos - Buenos Aires.
Líneas rotativas: (5411) 5353-0260
E-mail: info@airqualitysrl.com.ar
Home Page: www.airqualitysrl.com.ar