

# OPERATION MANUAL



Donaldson.<sup>®</sup>  
**Ultrafilter**



MI-134 rev.3  
20.02.2009

**ultracool mini**

**0240 Indigo 2008 50/60Hz**

Article number 50Hz: E6812018-A1, HP P/N 5188-8771

Article number 60Hz: E6812218-A1, HP P/N 5188-8772



## Warnings

**This Operation Manual is to be followed by all persons working with the unit. It is imperative that this Manual is made freely available at all times to service personnel and is kept at the point where the unit is installed.**

**The basic maintenance, as indicated in point 5.1, should be carried out by properly trained personnel and, if necessary, under the supervision of a person qualified for this job.**

**Ultrafilter personnel, or personnel authorised by ultrafilter, should carry out any work in the refrigerating or electric circuit during the warranty period. After the warranty period, the work must be carried out by qualified personnel.**

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Attention. Points of special interest to keep in mind.

# 1 Introduction

## 1.1 General notes

- This water chiller complies fully with CE.
- The Company does not accept responsibility if safety regulations are not met during handling, operation, maintenance and repair, even though these may not be strictly stated in this operation manual.
- We recommend the translation of this operation manual into the native language of foreign workers.
- The usability and life cycle of the water chiller as well as avoiding premature repairs depends on proper operation, maintenance, care and competent repair under consideration of this operation manual.
- We are constantly updating our products and are confident that they respond to the latest scientific and technological demands. However, as manufacturers, we do not always know the end use or the total range of our products' applications. Therefore we cannot accept liability for our products in applications where additional safety measures may be necessary. We highly recommend that users inform us of the intended application in order to undertake additional safety measures, if necessary.

## 1.2 Safety regulations



The operator has to observe the national working, operating and safety regulations. Also, existing internal factory regulations must be met.

Maintenance and repair work must only be carried out by specially trained personnel and, if necessary, under supervision of a person qualified for this work.

- Protective or safety devices must not be removed, modified or readjusted.
- During operation of the water chiller none of the protective or safety devices must be removed, modified or readjusted, temporarily or permanently.
- Only use correct tools for maintenance and repair work.
- Use original spare parts only.
- All maintenance and repair work must only be carried out to the machine once it has been stopped and disconnected from the power supply. Ensure that the water chiller cannot be switched on by mistake by unplugging it.
- Do not use flammable solvents for cleaning.
- Keep the surrounding area absolutely clean during maintenance and repair work. Keep free of dirt by covering the parts and free openings with clean cloth, paper or adhesive tape.
- Ensure that no tools, loose parts or similar are left inside the system.

## 2 Installation

### 2.1 Reception and Inspection



On receipt of the ultracool unit, it must be inspected for damage during transport. In the case of any damage, external or internal, this cannot be referred to the manufacturer because all units are checked before dispatch. **If any damage is observed, this should be documented and reported to the forwarding company. The ultrafilter warranty does not include any damages incurred during transportation.**

The refrigerant circuit controls are set before shipment of the unit. They should not be re-adjusted under any circumstances (except by an authorized service agent). This would void the warranty of the unit.

### 2.2 Transportation



Keep the unit upright at all times. Do not tilt when shipping or moving. **The tilting of the ultracool unit may affect the internal suspension of the refrigerant compressor.**

The ultracool unit must be transported by pallet jack or forklift truck.

### 2.3 Site

**Never install this unit in the same room as the printing press.**

The ultracool unit must be installed in an atmosphere where the range of temperatures is within the indicated margins mentioned in point 3.1. It is necessary to add ethylene or propylene glycol to the water of the circuit, as indicated in point 2.4.

The chiller must be installed on a solid level surface that is capable of supporting a minimum of 400kg (880 lb).

We recommend the installation of the ultracool unit in a well-ventilated site and in a corrosive-free, dust-free atmosphere.

In the case of out-door installation the chiller must be protected from rain with a roof and it must be installed in such way that the control panel receives as few direct sunlight as possible.

In average the unit will be exhausting 27000 Watts (92178 Btu/h) into the surrounding air. Most of this heat comes from the cooling of the application and a small part is produced by the chiller itself. It is important that this heat can be removed in order to maintain an ambient temperature as low as possible (the higher the ambient temperature is, the lower the chiller performance). The air flow rate is approximately 150 m<sup>3</sup>/min (5297cfm). The fan draws air through the condensers grid at the front and back side of the chiller and exhausts it through the top. The condensers grid size is 560 mm (22") x 690 mm (27") each one.

## 2

## Installation

Leave a space of 1m (40") around the UC unit (see **figure 1**). It is important to facilitate maintenance work and cleaning, especially in front of the condenser grid and in the left panel.

If necessary the unit can be installed without any free space on the left and right panels. In this case foresee that the unit can be moved forwards to free the lateral panels when there are maintenance works to be carried out.

The inlet of fresh air onto the condenser should be in the most direct way possible, avoiding any chance of air recycling (the ceiling above should not be at less than 1 m (40")).

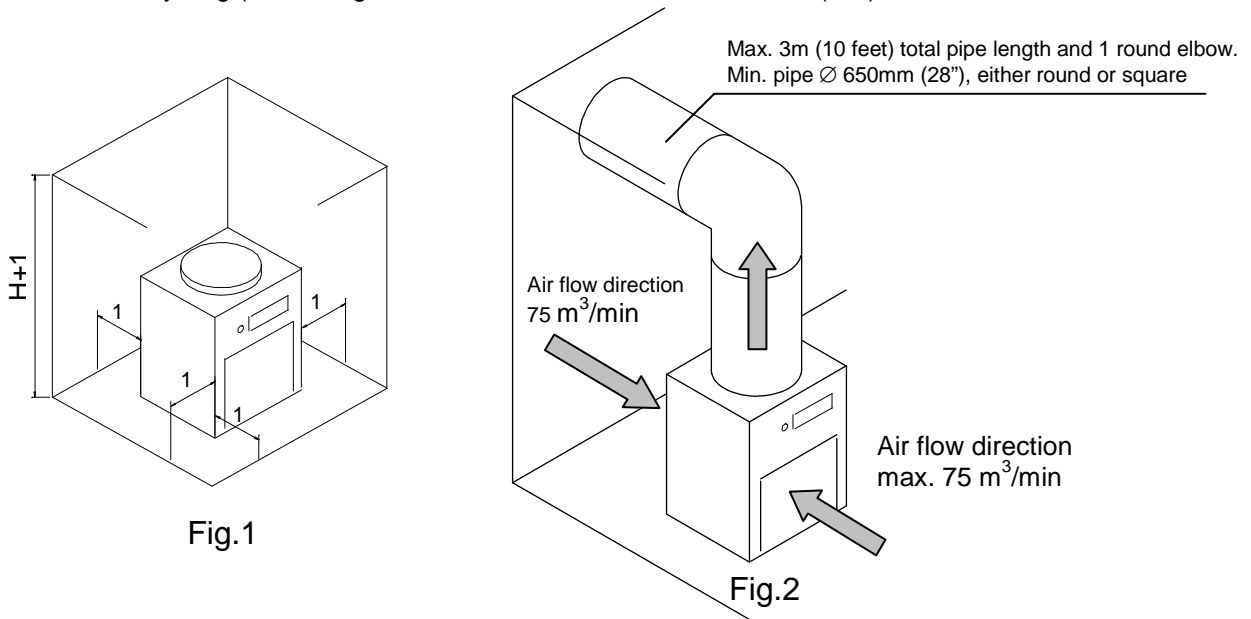


Fig.1

Fig.2

**Figure 1:** In case of installation in a small room it is imperative that the room has an appropriate ventilation system to evacuate all the heat generated by the chiller as explained before on this same point. If the heat is not removed the temperature in the room will quickly increase beyond the operating limits of the unit and it will stop by high pressure alarm (see point 3.1).

**Figure 2** shows the maximum length that the air from the chiller can be conducted if the room has not an appropriate ventilation system. In this case it is still necessary to install a ventilation grid facing each condenser with a minimum surface of 0.75 m<sup>2</sup> (8 square feet).

Make sure that if the chiller is vented to the outside there is a way (a louver door or shutoff door on the outside wall) to keep the cold outside air from entering the chiller when it is not operating. Take into account the pressure drop created by these elements when sizing the air duct.

In this type of installation consider that the chiller will be drawing into the room the same amount of air that it is exhausting to the outside.

### 2.4 Installation



**The ultracool units must always operate with the panels closed to enable the inlet of fresh air only through the condenser.**



#### 50 Hz and 60 Hz version except for USA

This unit is adjusted to a cold water setpoint of 6°C (43°F) and an antifreeze setpoint of -1°C (30°F). A minimum ethylene or propylene glycol concentration of 15% must be added to the water circuit to avoid freezing and the antifreeze setpoint must be adjusted in accordance to the table below. For instance, if the minimum ambient temperature is -10°C, then 30% of ethylene or propylene glycol is required and the antifreeze setpoint must be adjusted at -14°C (7°F).

**60 Hz version for USA**

This unit is adjusted to a cold water setpoint of 43°F (6°C), and an antifreeze setpoint of 21°F (-6°C). A minimum ethylene or propylene glycol concentration of 20% must be added to the water circuit to avoid freezing. If the ambient temperature is lower than 21°F (-6°C), the Ethylene or propylene glycol concentration must be adjusted at 30% and the antifreeze setpoint at 7°F (-14°C).

<b>Minimum ambient temperature</b>	50Hz version °C	$T^{\circ} \geq -3^{\circ}\text{C}$	$-3^{\circ}\text{C} > T^{\circ} \geq -6^{\circ}\text{C}$	$-6^{\circ}\text{C} > T^{\circ} \geq -15^{\circ}\text{C}$
	60Hz version °F	$T^{\circ} \geq 27^{\circ}\text{F}$	$27^{\circ}\text{F} > T^{\circ} \geq 21^{\circ}\text{F}$	$21^{\circ}\text{F} > T^{\circ} \geq 5^{\circ}\text{F}$
<b>Antifreeze set point</b>	50Hz version °C	- 3°C	- 6°C	- 14°C
	60Hz version °F	27°F	21°F	7°F
<b>Ethylene or propylene glycol concentration(1)</b>		<b>15%</b>	<b>20%</b>	<b>30%</b>
<b>Water circuit mixture(2):</b>	Refrifluid B + Ethylene or propylene glycol + Water	2 litres + 15 litres + 85 litres	2 litres (0.5 gal) + 20 litres (5 gal) + 80 litres (20 gal)	2 litres (0.5 gal) + 30 litres (8 gal) + 70 litres (17 gal)

- (1) The ethylene or propylene glycol percentage is given as % measured as weight of the total mixture. In case of any modification in the quantity of water in the installation, the concentration of ethylene or propylene glycol should be checked.
- (2) If more volume is required it is necessary to keep the ethylene or propylene glycol concentration



Only an authorized technical service can adjust the antifreeze thermostat set point.

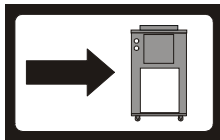


**Do not use automotive antifreeze. Use lab grade ethylene or propylene glycol only! Do not use an ethylene or propylene glycol concentration above 30%; this would damage the water pump.**

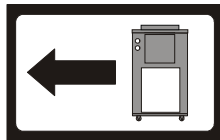
The product “Refrifluid B” is supplied with the chiller.

**2.5 Identification labels on the ultracool unit**

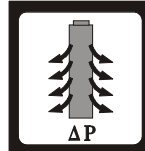
You can find the following labels stuck on the ultracool unit.



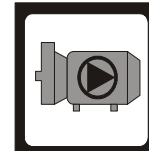
Water inlet from the installation to the ultracool unit (**inside the housing**).



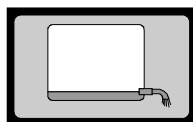
Water outlet from the ultracool unit to the installation (**inside the housing**).



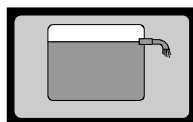
Water filter pressure drop.



Water pump pressure.



Drain (**inside the housing**).



Connection for the tank overflow (**inside the housing**).



**Danger of cuts!**  
Completely disconnect the chiller power supply before opening this cover.



**Danger, hot surface.**



Power supply depending on version.

## 2.6 Water Connection

Leave at least **1.5 meters (5 feet) of flexible pipe** right after the chiller's inlet and outlet connection. It will allow to move the chiller for a better maintenance access without dismantling the water pipes.

The chiller should be located as close as possible to the Indigo machine. . **The water lines must be in pipes of at least 1". Maximum equivalent total pipe length depends on the pipe size:**

	Maximum total pipe length
pipe diameter 1"	60 m (195 feet)
pipe diameter 1 ¼"	110 m (396 feet)

**Table 1.2** Equivalent Length for Common Fittings and Valves:

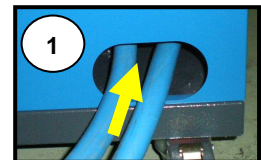
Equivalent pipe length m ( feet)	Type of Fitting or Valve	
	90° Bend	Ball Valve
1.5 (5)	0.3 (1)	0.3 (1)

Minimize the number of bends in the water lines. The length of hose, number of fittings, valves, etc. will also cause an increase of the pressure drop.

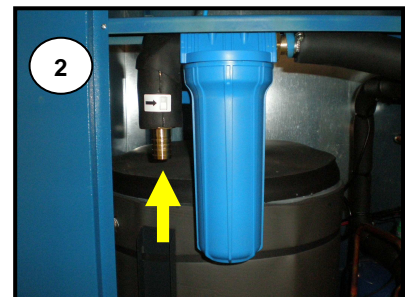


To perform the water connections **make sure the chiller is turned Off and disconnected from any power supply** and open de left panel of the chiller.

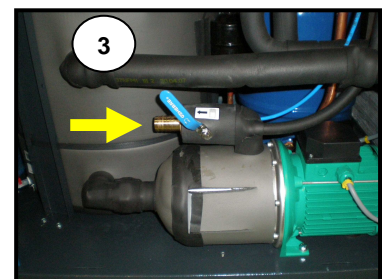
1.- Introduce the inlet and outlet water pipes inside the chiller housing through the connections port. There are two connections ports available; one at the back panel and the other at the left panel. You can use the most suitable for you and close the other with the cover supplied.



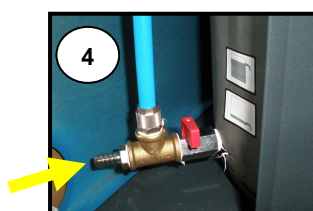
2.- Connect the inlet water pipe to the hose carrier located at the inlet of the water filter



3.- Connect the outlet water pipe to the hose carrier located at the pump outlet. See the identification labels.



4.- Connect a pipe at the drain and overflow connection located at the bottom of the water tank. Use a flexible pipe with 10mm internal diameter.







Always install thermal insulation for all pipes or, at least, make sure that the pipes are opaque to the light.

When possible install the water lines at the same level as the chiller until reaching the Indigo printing press. The height difference between the chiller and the application should never exceed 10m (33 feet). **In the installations in which the water level of the circuit exceeds the maximum level of the tank inside the ultracool unit, it will be necessary to install a check valve in the water outlet of the ultracool unit and a solenoid valve in the water inlet.** The power supply of this solenoid valve will be carried out by terminals designed for that purpose (see electrical diagrams).



To prevent rusting of the water pipes, we recommend plastic pipes and fittings.

Where flexible tubing is used, it should be of reinforced construction and rating for a minimum working pressure of 6 bar g (90 psig) within -15°C and 30°C (5°F and 86°F).

## 2.7 Electrical Connection

Operating voltage 400VAC +/-10%, 50Hz, 3 Ph or 460VAC +/-10%, 60Hz, 3 Ph depending on the version.

It must be checked that the supply voltage does not exceed a maximum variation of 10% referring to nominal.

Introduce the main power supply cable through the cable gland located at the bottom of the left panel (see fig.7). Avoid as much as possible that the cable gets in contact with the air/refrigerant heat exchanger (which looks like a radiator) as its surface gets hot during operation (fig.8). Connect the cable with the incoming power terminal block which is located on the left side of the X1 terminal block inside the electrical box of the chiller. (see fig.9).



Fig.7

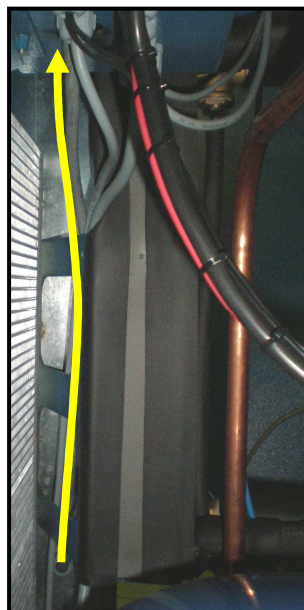


Fig.8

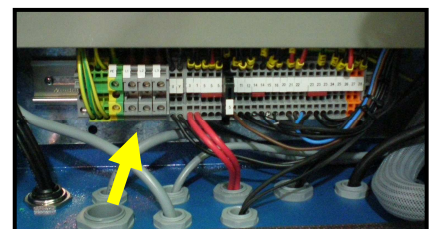


Fig.9

Number of wires: 4 wires (3phases+ earth). The wire size should meet local electrical codes.

Maximum fuse size: 32 Amps (50 /60 Hz)

Minimum circuit ampacity: 32 Amps (50 /60 Hz)

The chiller has some special terminals prepared for the following functions:

- **Terminals 23 and 24, remote On/Off operation:** This chiller is meant to be turned On and Off automatically by the HP Indigo press. This remote On/Off signal is transmitted to these terminals by a dry contact in the press (open contact = chiller Off, closed contact = chiller On).

**Note: During the initial commissioning, the chiller must stay turned Off but connected to the power supply (Main power switch On) for at least 6 hours (see point 3.2). During this time the chiller must not receive any On signal.**

- **Terminals 25 and 26, external solenoid valve connection:** They can be used to supply a solenoid valve with 24VAC. If the pipes or the Indigo machine are installed above the level of the chiller's outlet this valve prevents backflow when the chiller is stopped (see point 2.6). These terminals are at 24V only when the water pump is working.
- **Terminals 27 and 28, external alarm report signal:** These terminals provide a dry contact for a general alarm of the chiller. This contact is open as long as there is no active alarm.
- **Terminals 29 (GND), 30 (TxRx+) and 31 (TxRx-), Modbus network RS485.** The unit can be connected to a supervisory Modbus network via a standard RS485 serial line. For the RS-485 connection use twisted pair shielded cable AWG20 (0,5 mm<sup>2</sup>) or AWG22 (0,3 mm<sup>2</sup>). The maximum length is for this cable 100m, keep it away from power cables. Speed 19200 Baud.



**A system of fuses or circuit breakers must be installed before the power inlet connection to the ultracool unit. The maximum size of these protections is defined in the ultracool characteristics plate.**

## 3 Start-up

### 3.1 Operating Conditions

The control thermostat in the chiller will control it in order to maintain the preset cold water temperature.

#### Water temperature at the inlet:

Nominal:	11°C (53°F)
Maximum:	30°C (86°F)

#### Cold water temperature at the outlet:

Nominal:	6°C (43°F)
Minimum:	5°C (40°F)
Maximum:	15°C (60°F)

#### Temperature of the ambient air:

Nominal:	25°C (77°F)
Minimum:	-15°C (5°F)
Maximum:	50°C (122°F)

### 3.2 Chiller start-up

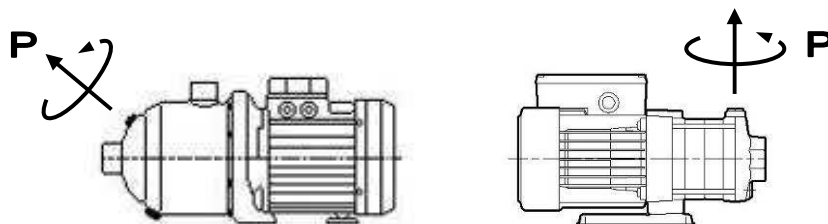


Clean the application water circuit with tap water in order to be sure that there are no free particles. Otherwise the filter element can block up during the start up process.

**Turn Off the Main power switch** (to avoid any possibility of unexpected start up of the equipment during this operation). Open a lateral panel, open the tank cover and fill the tank **with water of the required quality (see annex 9), the suitable glycol concentration and the Refrfluid B additive** according to **point 2.4** of this manual. Fill it directly to the tank until the maximum level of the tank is reached.

Prime the pump in order to release any air inside.

1. Remove the priming plug (P, see diagram below).
2. Keep the priming plug open until only liquid runs out the priming plug.
3. Replace the priming pump and tighten securely.

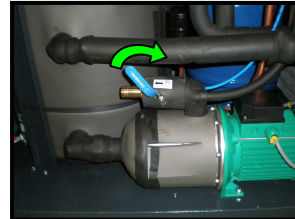


Do not start the ultracool unit until the pump has been properly vented.

### 3

## Start-Up

Open the water inlet valve completely and close the outlet water valve completely as shown on the following pictures:



Make sure that the external fuses are installed. See electrical diagram.

Make sure that the Remote On/Off control is not connected between terminals 23 and 24 and a wire-bridge is not installed between them either.



When the ultracool unit is started for the first time, it is necessary to turn On the Main power switch (element 1 in the control panel, see point 4) and wait six hours before continuing with the start-up sequence. This time is necessary for the crankcase of the compressor to heat up. **The compressor can be damaged if this procedure is not followed.**

Close both lateral panels and **switch OFF the main power switch during any electrical intervention.**

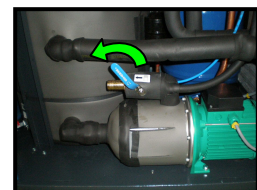
Connect the Remote ON/OFF control in terminals 23 and 24. If you do not use a remote control, connect the wire-bridge supplied inside the electrical box to link terminals 23 and 24.

Switch ON the general switch and, if necessary, give an ON signal through the remote ON/OFF, then **the unit will start up.**



Check that the working pressure of the pump is higher than 5bar (73psi). If it is below this value the pump is turning in the wrong direction. If this happens **switch OFF the main power switch, disconnect the chiller from the power supply** and exchange two phases in the main power supply. The compressor of the chiller is connected in phase with the water pump: Once the pump is turning in the right direction the compressor will turn correctly too. **If the compressor runs in the wrong direction it will make a loud noise while operating and the chiller will not cool down the water. Do not let the compressor run like this for long or it could get damaged.**

**With the main power switch turned OFF** open the left panel and open completely the water outlet valve. After that close the left panel and turn ON the main power switch.



After 5 minutes stop the unit open the left panel and check the level in the tank. If the level is below the maximum then refill the water tank again.  
Repeat this operation until water level in the tank remains constant.

**When refilling the tank respect the ethylene or propylene glycol concentration as per point 2.4.**

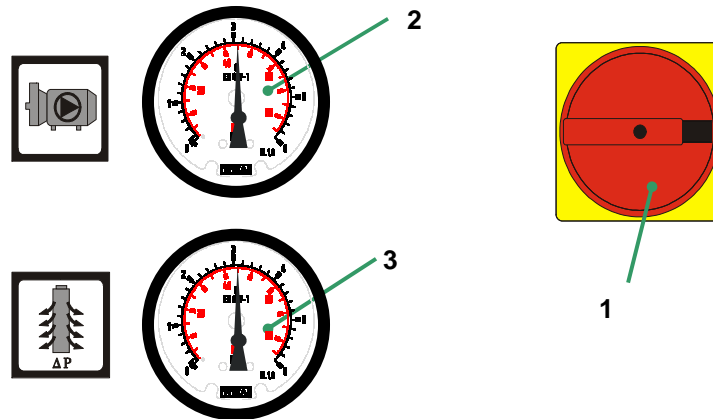
On the control thermostat select the desired temperature of the cold water outlet (see point 4.2.1). The ultracool units are delivered with a pre-set temperature of 6°C (43°F).



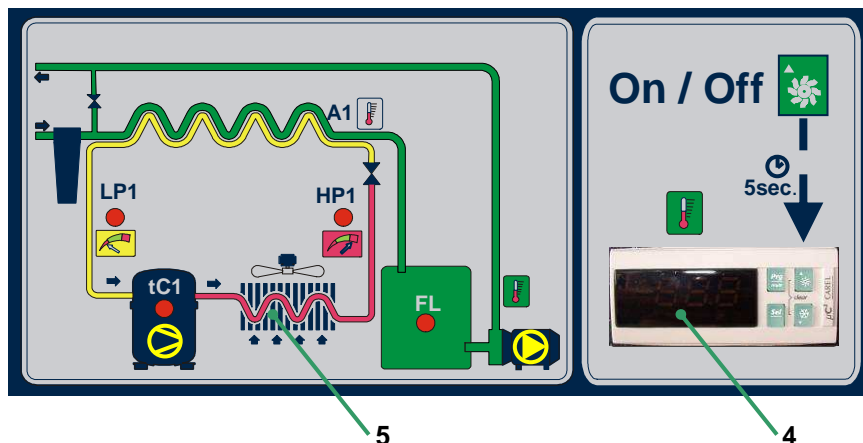
**Check the working pressure of the water pump, if it is higher than 5,1 bar (74 psi) and all manual valves in the circuit are fully open, then check that the water pipes meet the requirements on point 2.6.**

## 4 Control Panel

### Refrigerant pressure gauges



### Control Panel of UC-140

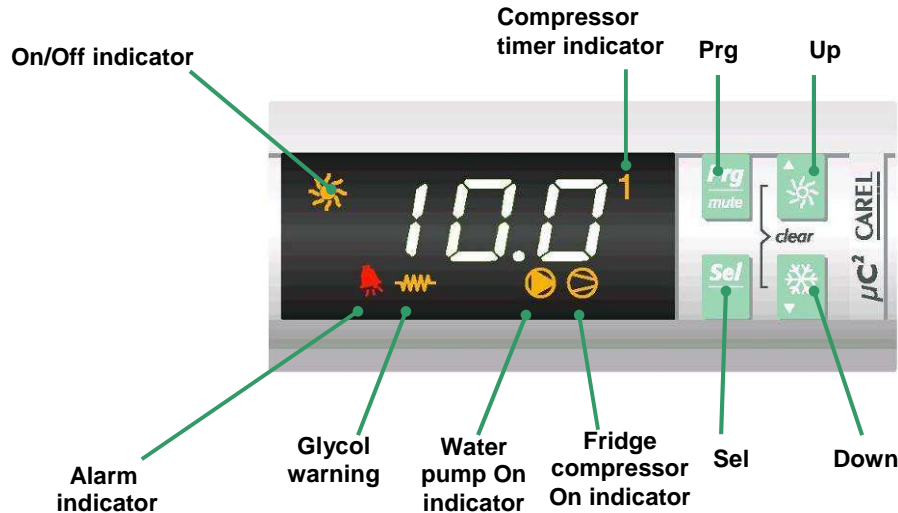


#### 4.1 Components of the Control Panel

The control panel consists of the following elements:

1. **Main power switch:** connects and disconnects the ultracool unit from the power supply.
2. **Water pressure gauge:** indicates the pressure supplied by the pump
3. **Water filter pressure gauge:** indicates the pressure drop of the water filter and the evaporator.
4. **Control thermostat:** indicates the cold water temperature at the outlet of the ultracool unit and enables it to be regulated.
5. **Flow diagram.** It helps to identify the alarms and signals that appear in the thermostat display see section 4.2.)

## 4.2 Control Thermostat



### 4.2.1 Operation

As long as the main power switch is on, the display of the control thermostat shows the water temperature measured in the water tank. In the 50Hz version the display shows the temperature in °C and in the 60Hz version it shows it in °F.

**Remote On/Off:** The chiller cannot be started without an On signal through Remote On/Off control from the press (circuit closed between terminals 23 and 24). **See point 2.7.**

**Local On/Off:** As long as the remote On/Off is connected, the chiller can be also turned On and Off locally through the control thermostat keypad. In order to start/stop the chiller press the UP button during a few seconds. When the chiller turns On the On/Off indicator signal is lit in the thermostat display as depicted above.

**Setting the temperature:** to introduce the required working temperature (between 5°C (40°F) and 15°C (60°F) use the following procedure:

- Press **Sel** button for about 5 seconds, the display will show "- / -".
- Press **Down** button several times until the display shows "- r -".
- Press **Sel** button and the display will show "- r01 -". This parameter is the setpoint.
- Press **Sel** button to display the current setpoint value.
- To increase or to decrease the value of the setpoint, use the **Up** and **Down** buttons.
- Press **Sel** button to confirm the new value. The display will show "- r01 -".
- Press **Prg** button three times to exit the setpoint modification procedure. The display will show again the water tank temperature.

1. **On/Off indicator:** it indicates when the chiller is turned On.
2. **Alarm indicator:** this is lit when there is an alarm. Depending on the alarm it can cause fridge circuit or all the ultracool unit to stop. The display will show the alarm code:
  - Alarm code FL: Low water level alarm or pump overload.
  - Alarm code A1: Antifreeze alarm.
  - Alarm code tC1: compressor overload alarm
  - Alarm code LP1: Low refrigerant pressure.
  - Alarm code HP1: High refrigerant pressure.
  - Alarm code Ht: High water temperature.
  - Alarm code E1, E2, E4: Sensor disconnected, short-circuited or faulty.
  - Alarm code EPr : EEPROM error during operation.
  - Alarm code EPb: EEPROM error at start-up.
  - Alarm code ELS: Low supply voltage.
  - Alarm code EHS: High supply voltage.
3. **Glycol warning:** this indicator is lit when the working conditions of the chiller require ethylene or propylene glycol as antifreeze agent in the water circuit to avoid freezing. Be sure that the water mixture has the suitable ethylene or propylene glycol concentration when this is lit. Please check **point 2.4** from this manual to adjust the ethylene or propylene glycol concentration of the water mixture according to the ambient temperature and antifreeze set point.
4. **Pump On indicator:** this remains lit when the pump is working.
5. **Compressor On indicator:** this remains lit when the compressor is working.
6. **Compressor timer indicator:** when “1” blinks it means that the thermostat is delaying the compressor’s start. Once the compressor starts “1” is fixed.

**Modbus network:** This thermostat has a RS485 serial connection for Modbus network able to transmit the cold water temperature, cold water pressure and ambient temperature to the press. The water flow is also determined by the working pressure of the pump: As long as the working pressure of the pump is at 5,1 bar (74 psi) or less, the press will receive enough water flow (4200 l/h (18,5 US gal/min) or more).



## 5 Maintenance

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### 5.1 Basic Maintenance

#### **Weekly:**

Verify that the water temperature indicated on the control thermostat is approximately at the set point.

Verify the water level in the tank.

Verify the state of the water filter, if the pressure drop exceeds 1 bar (10 psi) (see element 3 on point 4) change the filter element.

#### **Monthly:**

With the Unit disconnected (Main power switch Off), clean the condenser with a blast of compressed air, from the inside towards the outside.

Clean the housing, internally and externally, eliminating the dust present especially on the water pump rack.

#### **Yearly:**

Change the filter element and refill the water circuit, see point 2.4.

## 6 Troubleshooting

In the following chart the possible causes for an alarm are given together with their solution:

DEFAULT	CAUSE	SOLUTION	RESTART PROCEDURE
<b>HP1.</b> <b>Alarm due to high pressure of the refrigerant:</b> The pressure of the fridge circuit is higher than the maximum allowed (20 bar). It stops the compressor.	Lateral panels of the housing open	Close the panels	Disconnect the chiller and connect it again by turning Off/On the main power switch (element one on point 4.1).
	Low airflow into the condensor	Check that there is enough free space in front of the condenser and clean the condenser if necessary	
	The ambient temperature is too high	Wait until the ambient temperature is lower. <b>Check that the indications on point 2.3 are respected.</b>	
	Water temperature too high	Try to cool down the water in the circuit running the chiller with the application stopped. If the unit still stops, try doing this with the outlet valve completely closed (see point 3.2).	
	Motor fan not working	The motor fan is not working if it is not turning when the chiller is running and tripping by HP1, then <b>contact authorised technical service.</b>	
High pressure switch failure	<b>Contact authorised technical service.</b>		
<b>LP1.</b> <b>Alarm due to low pressure of the refrigerant:</b> The pressure of the fridge circuit is below the minimum allowed (0.5 bar)	Ambient temperature too low	The minimum ambient temperature is -15°C.	The Low-pressure safety switch (SLP) automatically resets itself when the pressure is back to normal
	Water freezing	Verify the ethylene or propylene glycol content. See point 2.4. If the problem persists <b>contact an authorized technical service.</b>	
	Gas leakage	<b>Contact authorised technical service.</b>	
Low pressure switch failure	<b>Contact an authorised technical service.</b>		

DEFAULT	CAUSE	SOLUTION	RESTART PROCEDURE
tC1 <b>Compressor overload alarm</b>	Excess current  Compressor running in the wrong direction	Check if the electrical connections are correct. Check supply voltage and power surges.  All the motors in the chiller are delivered turning in the same direction. Verify that the pump is turning in the right direction. See point 3.2.	Disconnect the chiller (turn Off the main power switch, see element 1 on point 4). Open the electrical box and reset the circuit breaker . Turn the Main power switch On and start the unit through the remote On/Off control.
FL. <b>Water level alarm</b>	Level switch did not switch to the "full" position  Water leak in the internal circuit of the UC.  Water leak in the external water circuit.  Water leak in the water pump	Check that the level switch works properly and that the tank is full enough. After disconnecting the Main Power switch open the back panel, open the water tank, lift the level switch manually. If it works correctly you should hear its contact "click". Close the tank and the panel and try to start the unit again  <b>Contact authorised technical service.</b>  Find the leak and get it repaired.  If there is a leak in the water pump seal <b>contact authorised technical service</b> to replace the whole water pump. Check that the water quality is inside the limits (see point 9).	The level switch automatically resets itself when there is enough water in the tank
<b>or Water pump overload</b>	Circuit breaker Q2 is Off	Check if the electrical connections are correct. Check voltages, intensities and variations. Check water pressure. Check water quality. Check if the pump is blocked	Disconnect the chiller (turn off the main power switch, see element 1 on point 4). Open the electrical box of the chiller and reset the circuit breaker. Turn the Main power switch On and start the unit through the remote On/Off control.

DEFAULT	CAUSE	SOLUTION	RESTART PROCEDURE
<p><b>A1.</b></p> <p><b>Antifreeze control operates continuously (see point 4)</b></p>	<p>Water circuit blocked</p> <p>Possible freezing due to low ambient temperature</p> <p>Water tank temperature sensor fault</p>	<p>Clean the water circuit, if necessary replace the water filter element. Check for closed valves in the circuit.</p> <p>The ethylene or propylene glycol concentration must be according to point 2.4 and the antifreeze setpoint also has to be adjusted according to it. <b>Contact authorised technical service.</b></p> <p>Measure the water temperature inside the tank and check that it is approximately the same as shown on the control thermostat's display. If it isn't <b>contact authorised technical service.</b></p>	<p>The control will go back to normal operation when the problem is solved</p>
<p><b>Ht</b></p> <p><b>High water temperature</b></p>	<p>The water tank temperature is above 35°C for some minutes</p>	<p>Check the cold water set point is within the limits indicated on point 3.1. Disconnect the application from the chiller for a while and run the chiller without load. If the problem persists <b>contact authorised technical service.</b></p>	<p>The chiller is still working normally.</p>
<p><b>The control thermostat displays the following codes:</b></p> <p><b>E1, E2, E4.</b></p> <p><b>EPr, EPb.</b></p> <p><b>ELS, EHS.</b></p>	<p>A temperature sensor (NTC sensor) or pressure transducer is faulty, disconnected or short-circuited.</p> <p>There is an internal memory error.</p> <p>The power supply voltage is out of limits.</p>	<p><b>Contact authorised technical service.</b></p> <p><b>Contact authorised technical service.</b></p> <p>Check that the power supply is within the specifications on point 2.7</p>	<p>The chiller can be restarted when the faulty part is replaced</p> <p>The chiller will go back to normal operation when the problem is solved</p>

## 7 Technical Features

UC			240 Indigo 50Hz	240 Indigo 60Hz
Cooling capacity	kW (ton)		26,3 (7.5)	25,2 (7)
Water flow	l/h (gpm)		4200 (18.5)	4200 (18.5)
Water pressure	bar (psi)		5,1 (74)	4,8 (70)
Compressor	kW		5,9	5,7
Condenser	kW (ton)		32,2 (9)	30,6(8.7)
Evaporator	kW (ton)		26,3(7.5)	25,2(7)
Motor fan	Nº		1	1
	KW		0,8	0,8
	m3/h (scfm)		9000 (5300)	9000 (5300)
Water pump		kW	1,85	1,91
	max flow	l/h (gpm)	12000 (52.8)	7900 (35)
	min flow		1200 (5.3)	790 (3.5)
	max pres.	bar (psi)	5,6 (81)	6,5 (94)
	min pres.		3 (43)	3,1 (45)
Water tank volume	litre (US gal)		100	100
Water connections			1" hose carriers	
Dimensions	Front	mm (in)	715 (28)	715 (28)
	Depth	mm (in)	945 (37)	945 (37)
	Height	mm (in)	1490 (59)	1490 (59)
Weight	kg (lb)		260 (573)	260 (573)
Power	kW		8,6	8,4
Max. fuse size	A		32	32
Voltage	V/P/Hz		400/3/50	460/3/60
Nominal COP			3,9	3,9

All data related to nominal conditions: Water outlet temperature 6°C and ambient temperature 25°C.



## 9 Annexes

### 9.1 Water quality

In order to protect the water circuit of the ultracool units, the water to be cooled must have specific physical/chemical properties so that it is not aggressive. If this water is outside any of the limits listed in the table below, it can seriously damage some of the materials of the ultracool unit.

Parameter	Limit values
pH	7 – 8
Total Hardness (TH)	< 150 ppm
Conductivity	50 – 500 $\mu\text{S}/\text{cm}$
$\text{NH}_3$	< 2 ppm
Total iron ions ( $\text{Fe}^{2+}$ and $\text{Fe}^{3+}$ )	< 0.2 ppm
Chloride ( $\text{Cl}^-$ )	< 300 ppm
$\text{H}_2\text{S}$	< 0.05 ppm
Solid particles	< 150 $\mu\text{m}$
Ethylene or propylene glycol	Min 15% - Max 30%

The Total Hardness is specified in ppm (mg/L) of  $\text{Ca}_2\text{CO}_3$ .

Please note that ultra pure waters like deionised water can also be harmful for some of the materials of the ultracool units as they have a conductivity below 50  $\mu\text{S}/\text{cm}$ .

A concentration of ethylene or propylene glycol higher than the 30% can seriously damage the pump of the ultracool units.



**ultrafilter will not accept any warranty for any damage caused by water that is out of one or more of the above limits.**

## 10 Spare parts

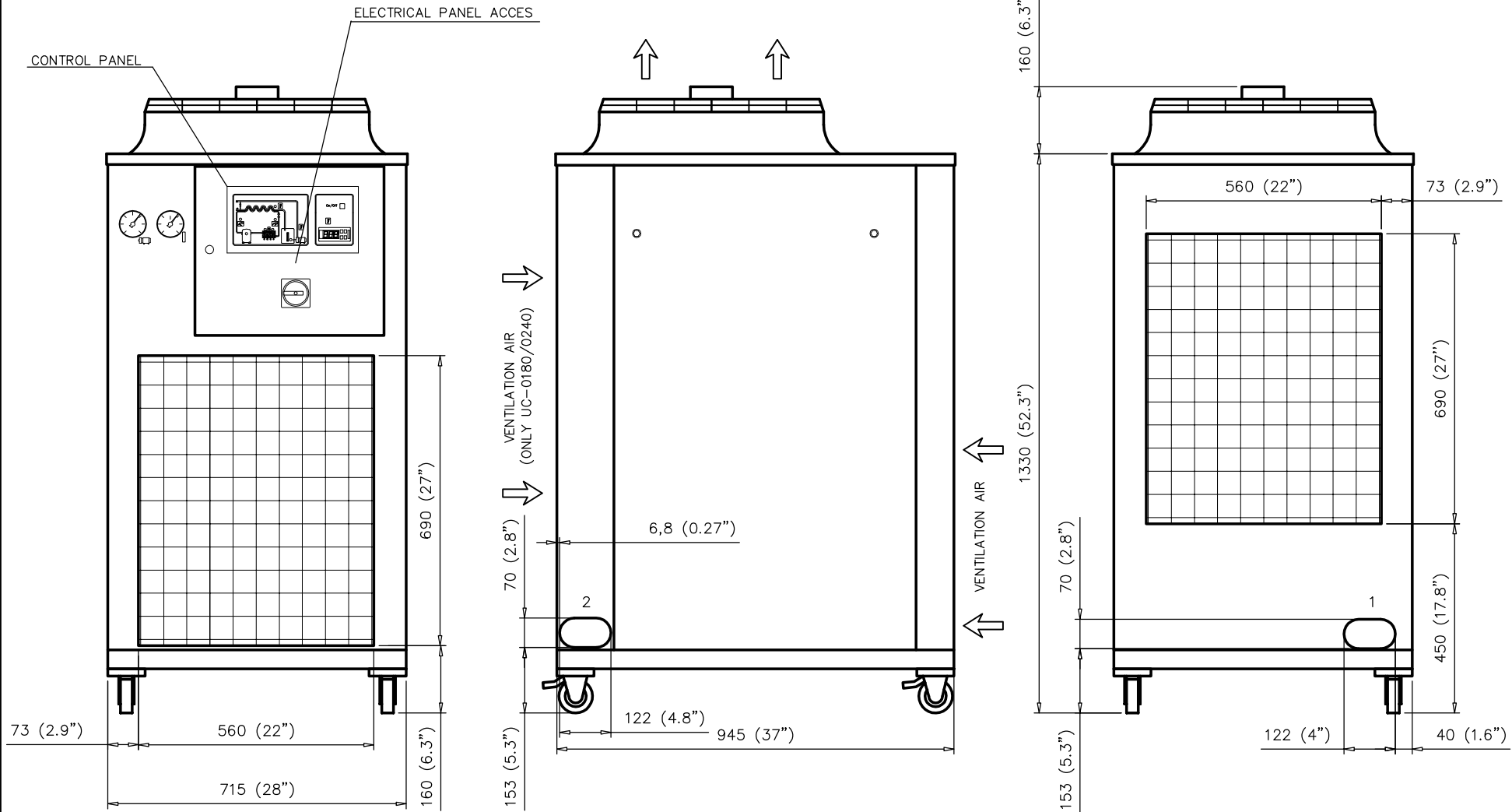
Ref.	Component name	UC-240 2008	
		50 Hz	60Hz
T1	Control transformer	E4181904S2K	E4181930K
KM1	Compressor contactor	E4242022S1K	E4242110SK
KM2	Pump's contactor	E4242002SK	E4242002SK
Q2	Pump's circuit breaker	E4266042K	E4266038K
Q1	compressor's circuit breaker	E4266108K	E4266104K
B8	Communication kit	E5326048AK	E5326048AK
F1/2	Fuses Kit	E7016216	E7016216U
P1	Control thermostat	E7030218-A0	E7030418-A0
Q0	General Switch	E4292012K	E4292016K
F-1	Dryer filter	0112095000K	0112095000K
M1	Compressor	E5121238K	E5121236K
B5	High-pressure safety switch	0113100000K	0113100000K
I-3	Refrigerant pressure transducer	E5328018K	E5328018K
B6	Low-pressure safety switch	0113811000K	0113811000K
E-1	By pass (complete kit)	E7016097S2	E7016097S2
E-6	Liquid sight glass (optional)	0107397000K	0107397000K
V-1	Expansion valve	0102015000K	0102015000K
E-2	Evaporator Kit	E5291044K	E5291044K
	Temperature probe	E7016128	E7016128
M2	Pump Kit	E4521377ASK	E4521452K
I-1	Pressure gauges Kit (1)	E7016214S1	E7016214S1U
I-2			
B4	Level switch	E4202004K	E4202004K
M3	Motor fan	E5204282S2K	E5204282S2K
E-4/5	Condenser Kit	E3752010P3	E3752010P3
E-3	Water tank kit	E3540026K3	E3540026K3
I-4	Water pressure transducer	E5328102K	E5328102K
F-2	Water filter kit	E7427006S2K	E7427006S2K
E-8	Liquid vessel kit	E5351002SK1	E5351002SK1
T1	Fusible plug	---	E5828002K
B7	Compressor safety pressure switch	---	E5311354K
CONSUMABLES	Ethylene glycol 20 litres (5 US gal)	E7016212	E7016212
	Bactericide 2 litres	E7011852	E7011852
	Filter element	E7427006AK	E7427006AK
	Service kit (2)	E7016222	E7016222
OPTIONS	Solenoid valve kit (3)	E7016044	E7016044U

(1) Includes pump pressure gauge and filter pressure drop gauge.

(2) Includes all material for the yearly maintenance. 20 litres (5 US gal) ethylene glycol + bactericide (Refrifluid B) + service manual

(3) To avoid tank overflow when the chiller is installed below printing press level





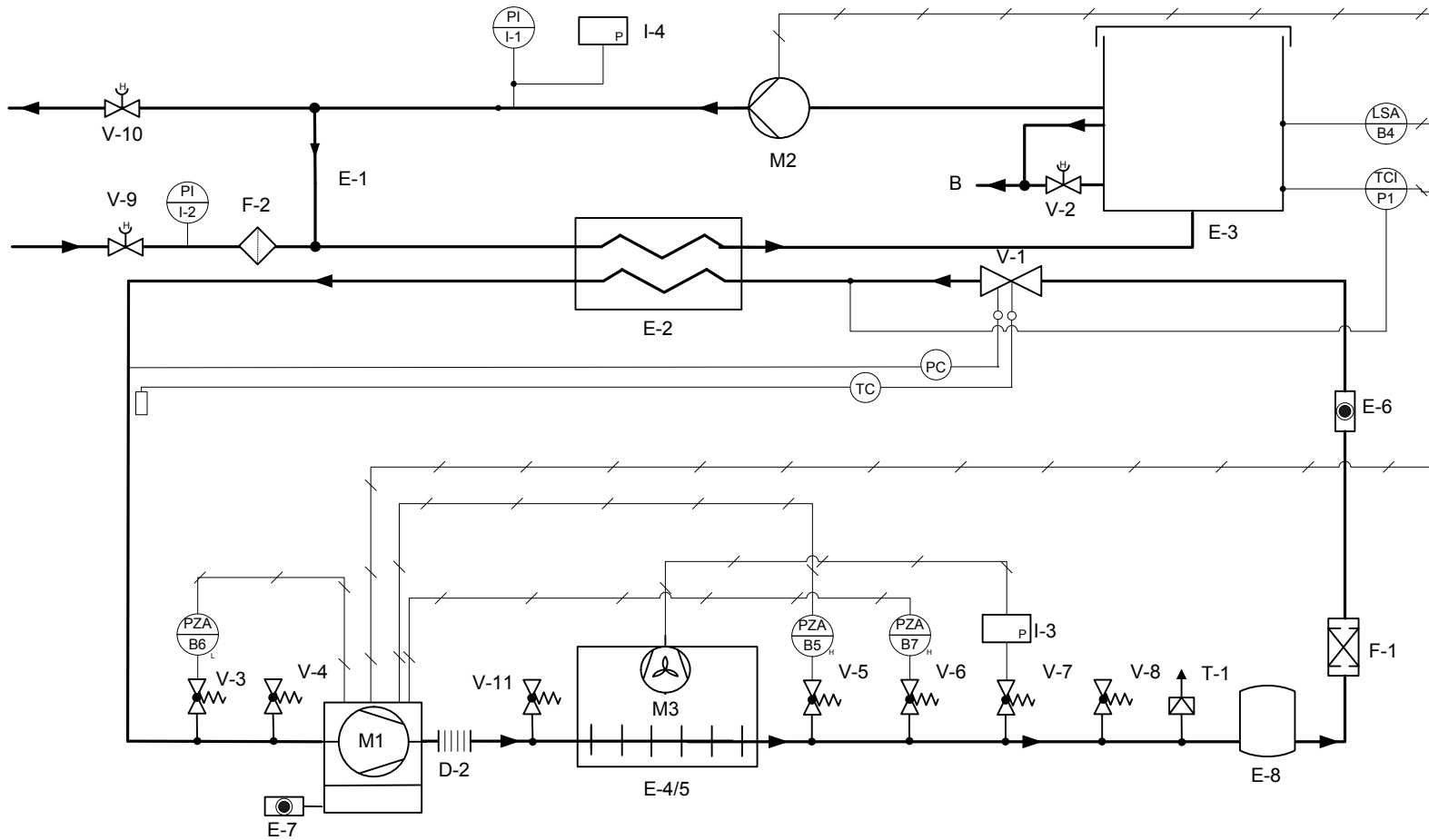
1/2.- CONNECTIONS PORT:  
 - 25 mm (1") WATER INLET HOSE  
 - 25 mm (1") WATER OUTLET HOSE  
 - 10-12 mm (1/2") DRAIN AND OVERFLOW HOSE  
 WEIGHT: 260 kg (573 lb)

DIMENSIONS IN mm (INCHES)



**DIMENSIONAL DIAGRAM**  
**ULTRACOOOL-0060/240 SP 2008**

N°	ED-7007	REV.:	3
DATE:	24.09.07	DATE:	29.02.08
DIB.:	QUIM G.	APR.:	X. PRATS



**FLOW DIAGRAM**  
**ULTRACOOOL-0240 SP HP 2008**

TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION
E-1	Water by-pass	E-8	Sight glass - oil level	D-2	Vibration adjuster	M1	Freon compressor	V-3/8	Schrader valve
E-2	Water - freon evaporator	F-1	Filter dryer	B4	Level switch	M2	Pump	V-9/10	Manual valve
E-3	Water tank	F-2	Water filter	B5	High pressure safety switch	M3	Motor fan	V-11	Schrader valve
E-4/5	Freon condenser	I-1	Water outlet pressure gauge	B6	Low pressure safety switch	T1	Fusible plug (only 60Hz version)	B	Emptying + Overflow tap
E-6	Sight glass (optional)	I-2	Water inlet pressure gauge	B7	Compressor safety pressure switch	V-1	Expansion valve		
E-7	Sight glass - oil level	I-3/4	Pressure transducers	P1	Control thermostat	V-2	Drain manual valve		

Nº: EF-7009	REV: 3
DAT.: 27.11.07	DAT.: 28.07.08
DIB.: Quim G.	APR.: X. Prats

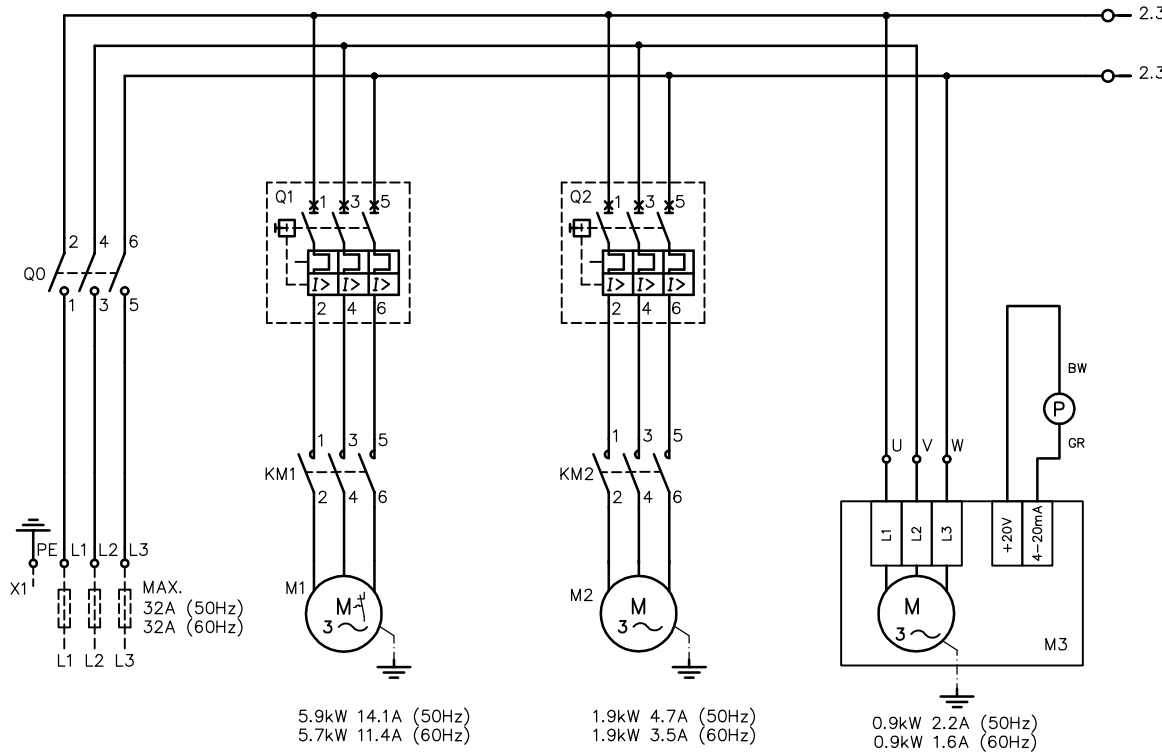
400V/3Ph/50Hz

460V/3Ph/60Hz

X1	PE	L1	L2	L3	U	V	W	5	5	6	10	11	12	13	32	14	14	14	15	16	18	19	20	23	23	23	23	24	25	26	27	28	29	30	31	

RS485 MODBUS COMMUNICATIONS  
 EXTERNAL ALARM MAX. 24VAC 2A  
 EXTERNAL SOLENOID VALVE MAX. 50VA  
 REMOTE ON/OFF  
 USE A DRY CONTACT ONLY

- M1 - FREON COMPRESSOR
- M2 - PUMP
- M3 - MOTOR FAN
- KM1 - COMPRESSOR CONTACTOR
- KM2 - PUMP CONTACTOR
- Q0 - GENERAL SWITCH
- Q1 - COMPRESSOR CIRCUIT BREAKER
- Q2 - PUMP CIRCUIT BREAKER
- F1/2 - TRANSFORMER FUSES
- F3 - CONTROL THERMOSTAT FUSE (ONLY 60Hz VERSION)
- T1 - TRANSFORMER
- B4 - LEVEL SWITCH
- B5 - HIGH PRESSURE SAFETY SWITCH
- B6 - LOW PRESSURE SAFETY SWITCH
- B7 - COMPRESSOR SAFETY PRESSURE SWITCH (ONLY 60 Hz VERSION)
- B8 - RS485 CONVERTER
- P1 - CONTROL THERMOSTAT



5.9kW 14.1A (50Hz)  
5.7kW 11.4A (60Hz)

1.9kW 4.7A (50Hz)  
1.9kW 3.5A (60Hz)

0.9kW 2.2A (50Hz)  
0.9kW 1.6A (60Hz)

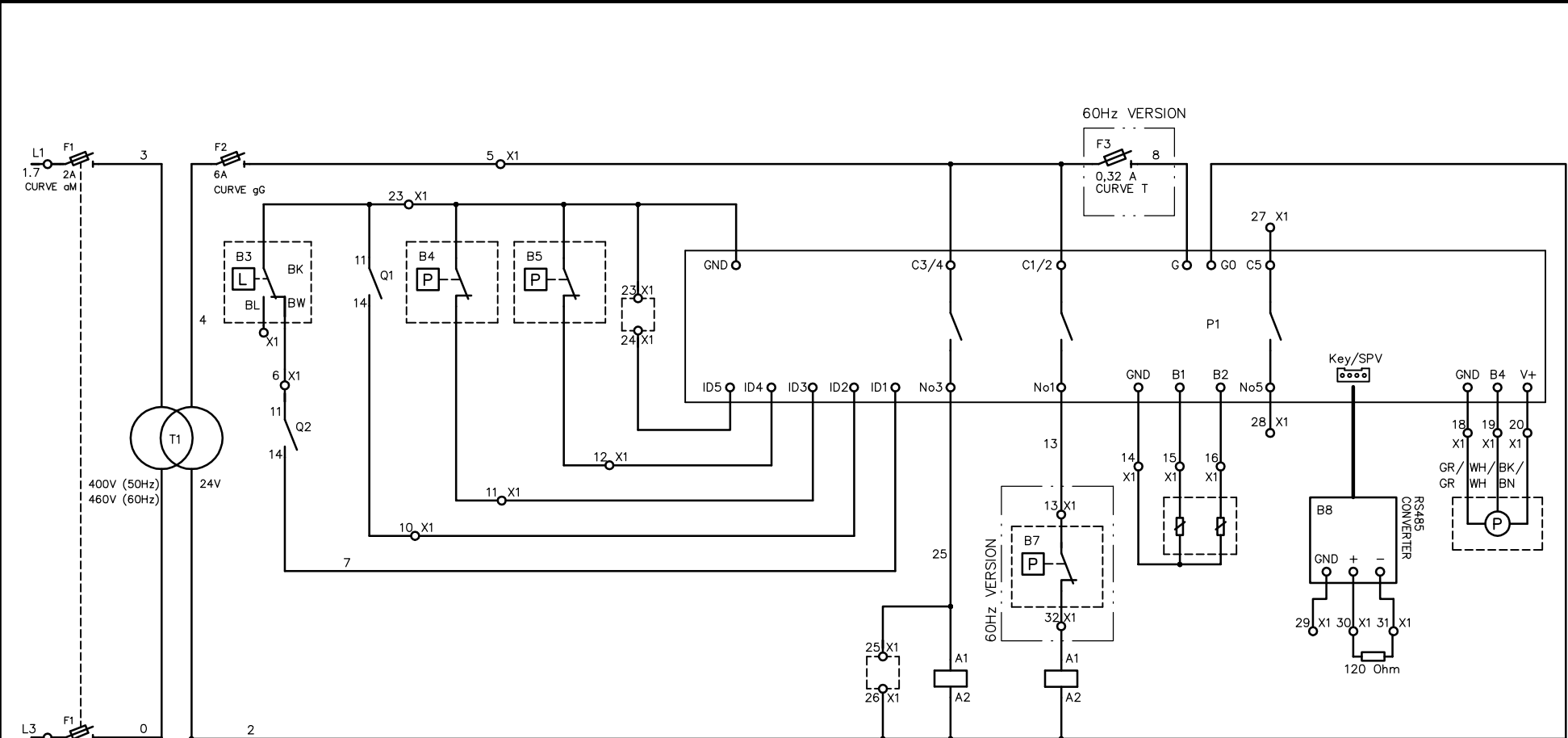


**ELECTRICAL DIAGRAM**  
**ULTRACOOOL-0240 HP 2008**

N°:	6818/1	REV.:	5
DATE:	31.03.06	DATE:	27.05.08
DIB.:	QUIM G.	APR.:	X. PRATS



**ELECTRICAL DIAGRAM**  
**ULTRACOOOL-0240 HP 2008**



- 1 L1 F1 1.7 2A CURVE gM
- 2 24V
- 3 400V (50Hz) 460V (60Hz)
- 4 T1
- 5 24V
- 6 400V (50Hz) 460V (60Hz)
- 7 WATER LEVEL, PUMP OVERLOAD, PHASE SEQUENCE
- 8 OVERLOAD COMPRESSOR
- 9 HIGH PRESSURE
- 10 LOW PRESSURE
- 11 REMOTE ON/OFF USE A DRY CONTACT ONLY
- 12 EXTERNAL SOLENOID VALVE MAX 30VAC
- 13 PUMP
- 14 KM2 1.2 1.4 1.4 1.4 1.4
- 15 KM1 1.2 1.2 1.2 1.2 1.2
- 16 COMPRESSOR SAFETY PRESSURE SWITCH (ONLY 60 HZ VERSION)
- 17 WATER TEMPERATURE SENSOR 1
- 18 FRIDGE GAS TEMPERATURE SENSOR
- 19 EXTERNAL ALARM. MAX. 24VAC 2A
- 20 RS485 MODBUS COMMUNICATIONS
- 21 WATER PRESSURE SENSOR
- 22 120 Ohm
- 23 Key/SPV
- 24 GND B4 V+

N°: 6818/2	REV.: 5
DATE: 31.03.06	DATE: 27.05.08
DIB.: QUIM G.	APR: X. PRATS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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# Refrifluid B

## CHARACTERISTICS

Refrifluid B is a fluid specially designed for the treatment, cleaning and conservation of the inside of tanks and piping in water coolers, especially when it is necessary to avoid bacteria, algae and fungi growing.

Its composition has been specially designed to accomplish three different objectives:

- It includes a widely effective bactericide, algacide and fungicide based on non-corrosive quaternary ammonium components.
- It can be used adding a little quantity of the product directly into the water tank.
- It contains an anticorrosive, which covers all metallic surfaces with a thin film, protecting them from corrosion.

## USE AND CARE

It must be used in small quantities. The maintenance concentration has to be in the proportion 1:50 (1 litre of refrifluid B for each 50 litres of water) and it has to be added at least once per year (refilling the tank with new water).

When the system requires to be cleaned, due to the bacteria, algae and fungi growth, the proportions should be higher (1:15 – 1:25). In such case, besides, it would be recommended to use before the product DA8, for carry over the incrusted organic material. Afterwards it is possible to fill in again the tank and set up the unit.

## MATERIAL SAFETY DATA SHEET

### 1. IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

**Trade name:** REFRIFLUID B

**Trade code:** 6299

**Company:** Chemipol, S.A. Joan Monpeo,149. 08223 -TERRASSA - (BARCELONA)  
Telf: 34-93-7831044 Fax: 34-93-7837580

**Emergency telephone number of the company and/or of an authorised advisory centre:**  
Chemipol, S.A. Telf: 34-93-7831044

**Competent person responsible for the safety data sheet:** [nurianguita@chemipol.com](mailto:nurianguita@chemipol.com)

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components within the meaning of EEC directive 67/548 and corresponding classification:

10% - 12.5% 2-ethylhexanoic acid

N.67/548/CEE: 607-230-00-6 CAS: 149-57-5 EC: 205-743-6

Repr. Cat. 3; R63

### 3. HAZARDS IDENTIFICATION

Possible risk of harm to the unborn child

### 4. FIRST AID MEASURES

Contact with skin:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

Contact with eyes:

Do not use eyewash or ointment of any kind (before obtaining an examination or advice from an eye specialist).

Wash immediately with water for at least 10 minutes.

Swallowing:

Induce vomiting. SEEK A MEDICAL EXAMINATION IMMEDIATELY and present the safety-data sheet.

A suspension of activated charcoal in water, or liquid paraffin may be administered.

Inhalation:

Ventilate the premises. The patient is to be removed immediately from the contaminated premises and made to rest in a well ventilated area. Should the patient feel unwell, OBTAIN MEDICAL ATTENTION.

## 5. FIRE-FIGHTING MEASURES

Recommended extinguishers:

Water, CO<sub>2</sub>, Foam, Chemical powders, according to the materials involved in the fire.

Extinguishers not to be used:

None in particular.

Risks arising from combustion:

Avoid inhaling the fumes.

Protective equipment:

Use protection for the respiratory tract.

## 6. ACCIDENTAL RELEASE MEASURES

Measures for personal safety:

Use a mask, gloves and protective clothing.

Environmental measures:

Limit leakages with earth or sand.

If the product has escaped into a water course, into the drainage system, or has contaminated the ground or vegetation, notify the competent authorities.

Cleaning methods:

Rapidly recover the product. To do so, wear a mask and protective clothing.

If the product is in a liquid form, stop it from entering the drainage system.

Recover the product for re-use if possible, or for elimination. The product might, where appropriate, be absorbed by inert material.

After the product has been recovered, rinse the area and materials involved with water.

## 7. HANDLING AND STORAGE

Handling precautions:

Avoid contact and inhalation of the vapours. See, too, paragraph 8 below.

Do not eat or drink while working.

Incompatible materials:

None in particular.

Storage conditions:

Adequately ventilated premises.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Precautionary measures:

Give adequate ventilation to the premises where the product is stored and/or handled.

Respiratory protection:

Not needed for normal use.

Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

Eye protection:

Not needed for normal use.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Exposure limit(s) (ACGIH):

2-ethylhexanoic acid

TLV TWA: 0,85 ppm - 5 mg/m<sup>3</sup>

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and colour:	Red liquid
Odour:	Characteristic.
pH:	8 - 10
Melting point:	N.A.
Boiling point:	N.A.
Flash point:	N.A.
Solid/gas flammability:	N.A.
Explosive properties:	N.A.
Oxidizing properties:	N.A.
Vapour pressure:	N.A.
Density 20°C:	1.03 +/- 0.02 g/cc
Solubility in water:	Soluble.
Lipid solubility:	N.A.
Partition c. (n-octanol/H <sub>2</sub> O):	N.A.
Vapour density:	N.A.

## 10. STABILITY AND REACTIVITY

Conditions to avoid:

Stable under normal conditions.

Substances to avoid:

None in particular.

Hazardous decomposition products:

None.

## 11. TOXICOLOGICAL INFORMATION

The concentration of each substance should be borne in mind in assessing the toxicological effects deriving from the preparation.

Set out below is the toxicological information relating to the main substances in the preparation.

The product does not contain toxicologically relevant substances.

## 12. ECOLOGICAL INFORMATION

Adopt good working practices, so that the product is not released into the environment.

## 13. DISPOSAL CONSIDERATIONS

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions.

In so doing, comply with the local and national regulations currently in force.

Where applicable, refer to the following regulatory provisions : 91/156/EEC, 91/689/EEC, 94/62/EC and subsequent amendments.

## 14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

## 15. REGULATORY INFORMATION

Council Directive 67/548/EEC (Classification, packaging and labelling of dangerous substances) and subsequent amendments. Council Directive 1999/45/EC (Classification, packaging and labelling of dangerous preparations) and subsequent amendments. Commission Directive 98/24/EC (Protection of the health and safety of workers from the risk related to chemical agent). Commission Directive 2000/39/EC (Occupational exposure limit values). Regulation (EC) No 1907/2006 (REACH).



Xn

Symbols:

Xn Harmful

R Phrases:

R63 Possible risk of harm to the unborn child

S Phrases:

S36/37 Wear suitable protective clothing and gloves.

Contents:

2-ethylhexanoic acid

Where applicable, refer to the following regulatory provisions :

Directive 2003/105/CE ('Activities linked to risks of serious accidents') and subsequent amendments.

Regulation (EC) nr 648/2004 (detergents).

## 16. OTHER INFORMATION

Text of R phrases referred to under heading 3:

R63 Possible risk of harm to the unborn child

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

ACGIH - Threshold Limit Values - 2004 edition

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

..

**CE** EC Declaration of conformity **GB**

97/23/EC (Defined by pressure equipment directive)

98/37/EC (Known as the 'Machinery Directive')  
ultrafilter, S.L.

Based in Terrassa-Barcelona-Spain, Colom II Street, n° 606, Postal Code 08228

Declares that under our sole responsibility for supply/manufacture of the product:

Name Model Serial-Nr

UC-0060/0080/0100/0140/0180/0240

To which this declaration relates, is in conformity with the Directive 97/23/EC issued by the EUROPEAN COMMUNITY

**CE** EC Konformitäts Erklärung **D**

97/23/EC (Defeniert in der Druckgeräteverordnung)

98/37/EC (Bekannt als 'Maschinen Weisung')  
ultrafilter, S.L.

Mit Sitz in Terrassa-Barcelona-Spain, Colom II Strasse, nr. 606, Postfach 08228

Erklärt, daß unserer alleinigen Verantwortung unterliegt, das Lieferung/Herstellung des Produktes:

Name Modell Serien-Nr

UC-0060/0080/0100/0140/0180/0240

Auf welches diese Erklärung Bezug nimmt, den erlassenen Weisungen 97/23/EC der EUROPÄISCHEN GEMEINSCHAFT

**CE** Declaration de conformité CE **F**

97/23/EC (Défini par la directive des équipements sous pression)

98/37/EC (connue comme 'Directive Machine')  
ultrafilter, S.L.

Domicilié à Terrassa-Barcelona-Espagne, rue Colom II, no. 606

Déclare sous sa seule responsabilité de fournisseur/fabriqueur du produit:

Nom Model Serial-Nr

UC-0060/0080/0100/0140/0180/0240

Objet de cette déclaration, est en conformité avec la Directive 97/23/EC issue de la COMMUNAUTE EUROPEENNE

**CE** Declaración de conformidad CE **E**

97/23/EC (Definida por la directiva de equipos a presión)

98/37/EC (Conocida como 'Directiva de maquinaria')  
ultrafilter, S.L.

Con sede en Terrassa-Barcelona-España, calle Colom II n° 606, C.P. 08228

Declara que, bajo nuestra responsabilidad como proveedores/fabricantes, el producto:

Name Model Serial-Nr

UC-0060/0080/0100/0140/0180/0240

Es conforme a la Directiva 97/23/EC establecida por la COMUNIDAD EUROPEA.

**CE** EC Verklaring van conformiteit **NL**

97/23/EC (Ontworpen volgens de Pressure Equipment Directive - richtlijnen)

98/37/EC (Bekend als 'machine richtlijn')  
ultrafilter, S.L.

Gezeteld in Terrassa-Barcelona-Spanje, Colom II Straat, nr. 606, Postcode 08228

Verklaart dat onder volledig eigen verantwoordelijkheid voor de levering/fabricage van onderstaand product

Naam Model Serienummer

UC-0060/0080/0100/0140/0180/0240

Waartoe deze verklaring behoort, conform is aan de richtlijn 97/23/EC, uitgegeven door de EUROPESE GEMEENSCHAP

**CE** Dichiarazione di conformità CE **I**

97/23/EC (Definita dalla direttiva dei recipienti a pressione)

98/37/EC (conforme alla 'Direttiva Macchine')  
ultrafilter, S.L.

Colom II Street, n° 606, Terrassa-Barcelona Codice Postale 08228

Dichiara la responsabilità per la produzione prodotto:

Nom Model Serial-Nr

UC-0060/0080/0100/0140/0180/0240

Il contenuto della presente relazione è in conformità con la Direttiva 97/23/EC della COMUNITÀ EUROPEA

**CE** EC Prohlášení o shode **CZ**

97/23/EC (Definováno směrnici pro tlaková zařízení)

98/37/EC (Machinery Directives)  
ultrafilter, S.L.

Se sídlem Terrassa-Barcelona-Spain, Colom II Street, n° 606, Postal Code 08228

Z titulu své odpovědnosti výrobce a dodavatele prohlašuje ze toto prohlášení o shode se vztahuje k zařízení:

Typ Model Sériové číslo

UC-0060/0080/0100/0140/0180/0240

A je plně v souladu se směrnici Evropského společenství c. 97/23/EC

**CE** EC Overensstemmelseserklæring **DK**

97/23/EC (Defineret af direktivet for trykluftstyr)

98/37/EC (Kendt som 'Maskindirektivet')  
ultrafilter, S.L.

Bosiddende i Terrassa-Barcelona-Spain, Colom II Street, n° 606, Postal code 08228

Erklærer under eneansvar for levering/fremstilling af produktet:

Navn Model Serienummer

UC-0060/0080/0100/0140/0180/0240

Hvortil denne erklæring relaterer, at produktet er i overensstemmelse med Direktivet 97/23/EC udstedt af det EUROPÆISKE FÆLLESSKAB

**CE** EC Declaratie de Conformitate **RO**

97/23/EC (Conform reglementarilor de utilizare a echipamentelor sub presiune)

98/37/EC (Cunoscuta ca 'Directiva Constructiilor de Masini')  
ultrafilter, S.L.

Domicilié à Terrassa-Barcelona-Espagne, rue Colom II, no. 606

Declara pe proprie raspundere ca furnizarea/fabricarea produsului:

Nume Model Numar Serial

UC-0060/0080/0100/0140/0180/0240

La care se refera aceasta declaratie este in conformitate cu Directiva 97/23/EC emisa de COMUNITATEA EUROPEANA



Donaldson

Xavi Prats  
Technical Director