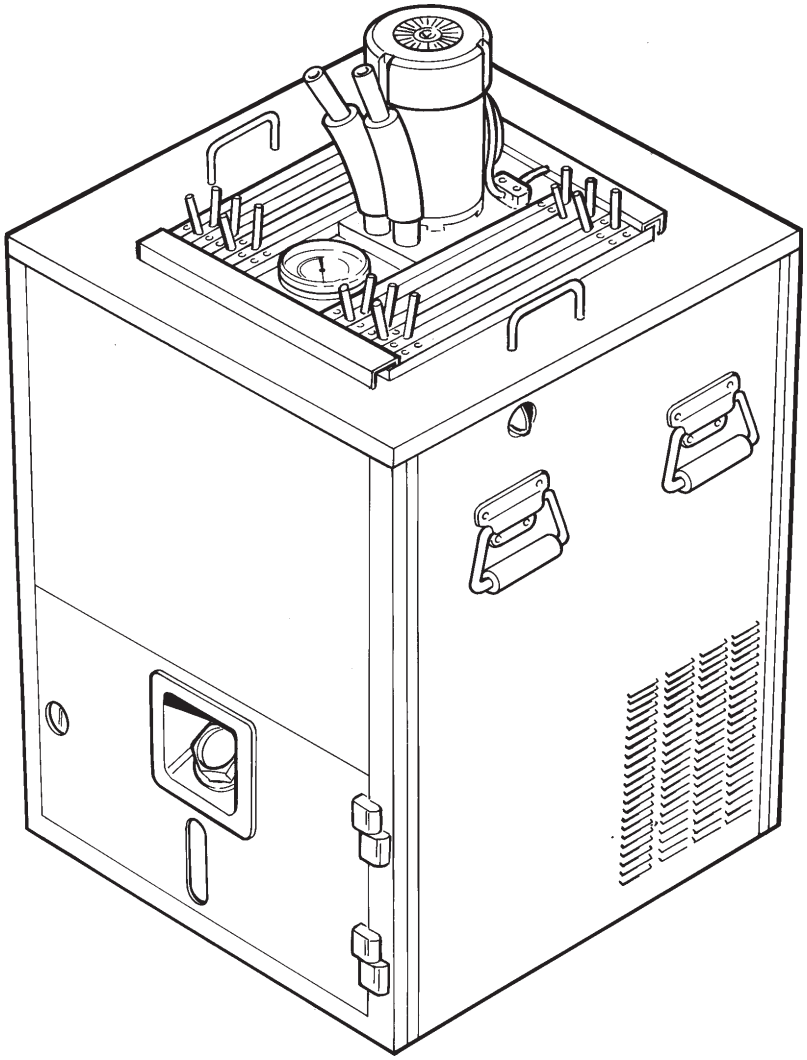
# CLASSIC 1000
# REMOTE COOLER
## PRODUCT MANUAL



# CLASSIC 1000
# REMOTE COOLER

CONTENTS



## 1. INTRODUCTION:

IMI Cornelius has a highly versatile range of Classic Remote Coolers, to suit a variety of applications.

There are 2 basic models:

Air Cooled Classic 1000 *

Water Cooled Classic 1000 *

For each of these, a lid format can be selected with a 3 stage top mounted, water recirculation pump, giving a nominal, dead end pressure of 1.8 bar (26 psi).

Cassette coils are available, with various length options, depending upon the quantity and type of product to be dispensed. There is a choice of, short, long and super long coils, to give a variety of dispense temperatures. A maximum of 14 short or long coils can be incorporated. Where super long coils are required, a maximum of 6 may be used. Any coil spaces not required should be filled with coil blanks.

Both cooler types have ice bank and temperature controlled water bath thermostats, which can be selected according to the operating conditions.

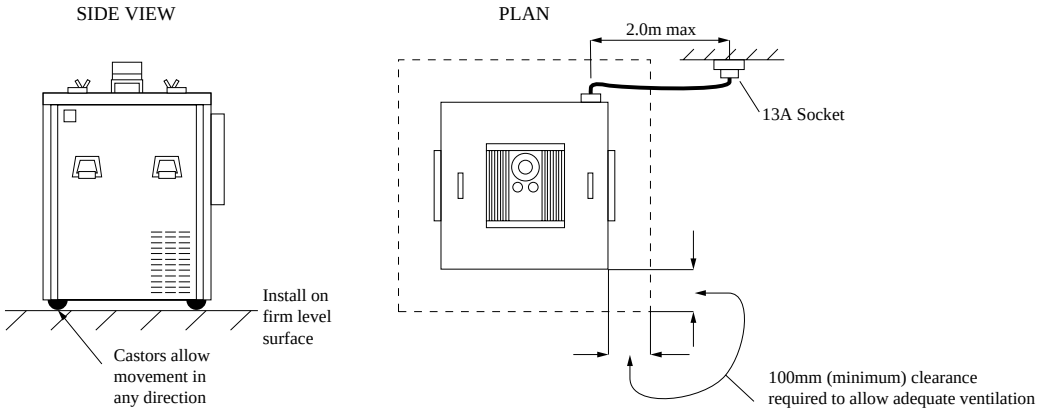
The Air Cooled model will dissipate heat to its surroundings from the fridge plant and should be located in a well ventilated area, as close to the chilled cellar as possible.

The Water Cooled model has a fully sealed refrigeration system in the base unit. Heat is dissipated via a water/ glycol mixture to an exterior wall mounted Discharge Unit. The coolant is pumped via a Recirculation Pump which is mounted in the base unit. The Water Cooled model can be sited in a chilled cellar, with minimal heat output.

* The 1000 suffix in the product name indicates the maximum theoretical number of pints which can be served in a 1 hour period without a marked increase in product temperature. It does not allow for heat loss in the python and other assemblies.

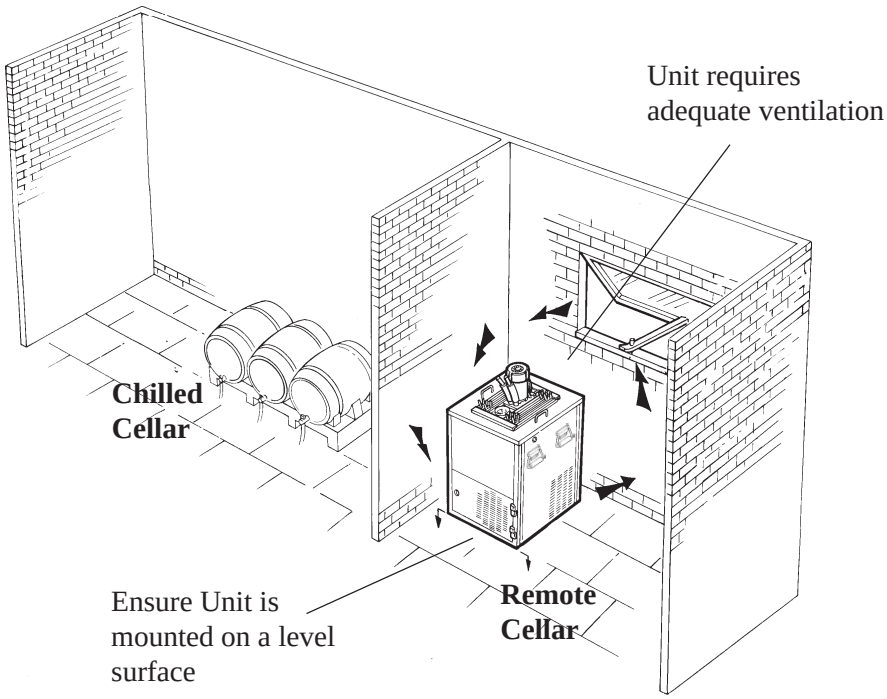
## 2. AIR COOLED MODEL
INSTALLATION INSTRUCTIONS

### 2.1 SITING

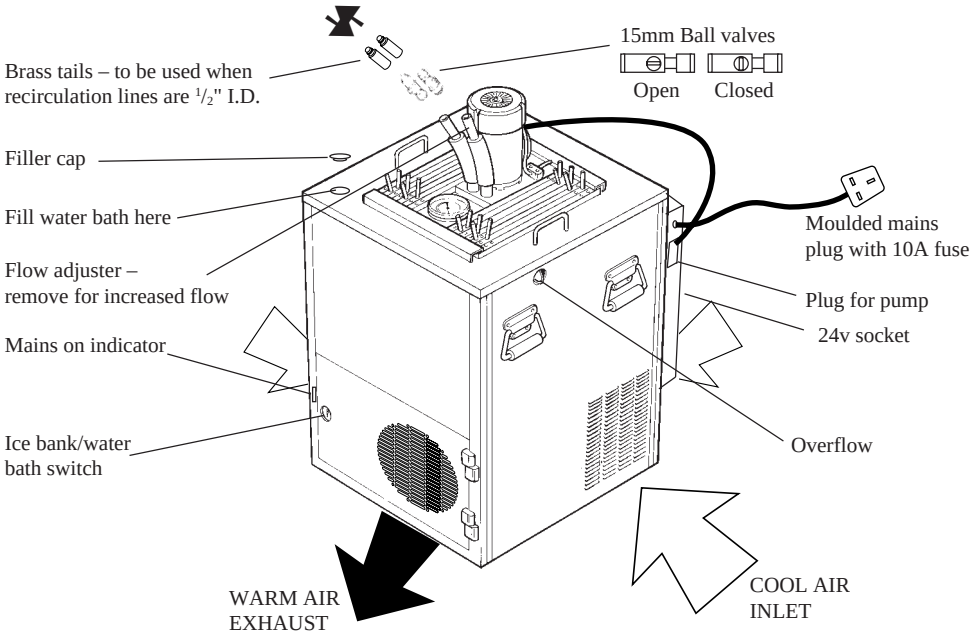



1. Do not drag over rough floors or down steps and always keep in an upright position.
2. Site as near to the stored product as possible.
3. Avoid siting in a chilled cellar, unless cellar cooling is uprated by 1.5kw
4. Allow access to side and front panels, for maintenance and servicing.
5. Avoid siting the unit in warm areas with poor ventilation (i.e. cupboards or small storerooms).
6. Prevent exposure to water spillage, spray or very high humidity.
7. Never allow air vents (louvres) to become obstructed or blocked.
8. Protect from physical damage and do not place heavy items on top.
9. Locate the Classic 1000 within 2m of a grounded, switched, 13 amp, 230V socket which is easily accessible for isolation of the cooler.
   The socket should be installed to current IEE regulations. It is recommended that the mains electrical supply is protected by RCCB.
   The Cooler must be earthed.
10. The cooler is designed to operate in the range of ambient temperatures from 10°C up to 35°C.

### 2.2 SITING & INSTALLATION DIAGRAM



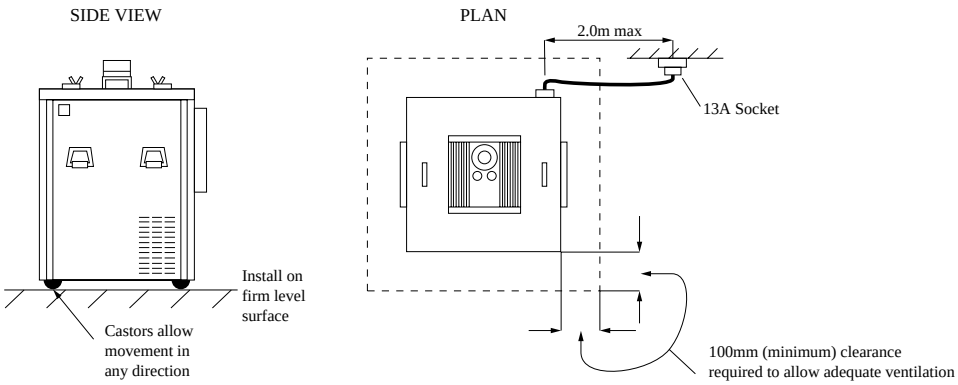
## 2.3 INSTALLATION




1. Installation must be carried out by a suitably trained person and comply with national and local codes for connection to the electrical supply.
2. Remove the packaging and fill the water bath with cold mains water, to the level of the overflow. (The cooler should not be moved once the water bath has been filled with water.)
3. Assemble Ball Valves to pump. Ensure these are closed. Check pump is plugged in.
4. Connect the 3 pin plug to the mains and switch on. The mains on neon should illuminate.
5. The cooler is factory set on icebank mode. If necessary, select water bath setting using the switch behind the lower front panel.
6. Connect product coils to product lines. Check for leaks.
7. Connect the recirculation lines to the ball valves. Open both valves and top up the water level where necessary.
8. Check the water flow. Remove the flow adjuster if necessary.
9. Allow the cooler to build up its icebank (5 hours minimum).

# 3. WATER COOLED MODEL
## INSTALLATION INSTRUCTIONS

### 3.1 SITING




GENERAL (Applies to both base and discharge unit)

1. Prevent exposure to water spillage, spray or very high humidity.
2. Never allow air vents (louvres) to become obstructed or blocked.
3. Protect from physical damage and do not place heavy items on top.

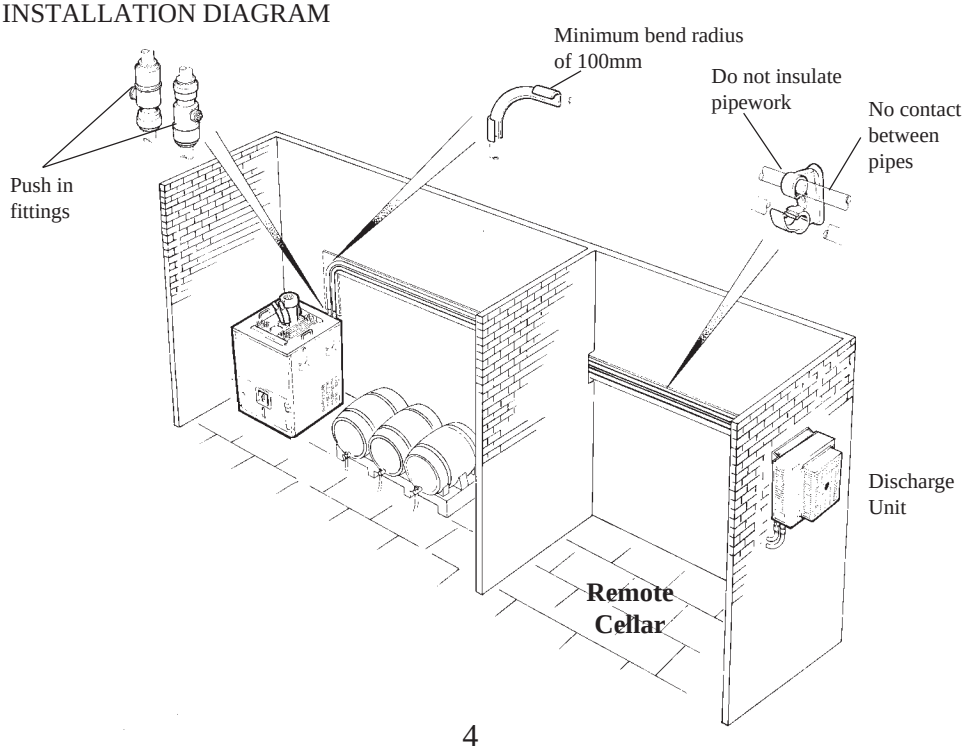
BASE UNIT

1. Do not drag over rough floors or down steps and always keep in an upright position.
2. Site as near to the stored product as possible.
3. Allow access to side and front panels, for maintenance and servicing.
4. Locate the Classic 1000 within 2m of a grounded, switched, 13 amp, 230v socket which is easily accessible for isolation of the cooler. The socket should be installed to current IEE regulations.
   It is recommended that the mains electrical supply is protected by RCCB.
   The Cooler must be earthed.

DISCHARGE UNIT

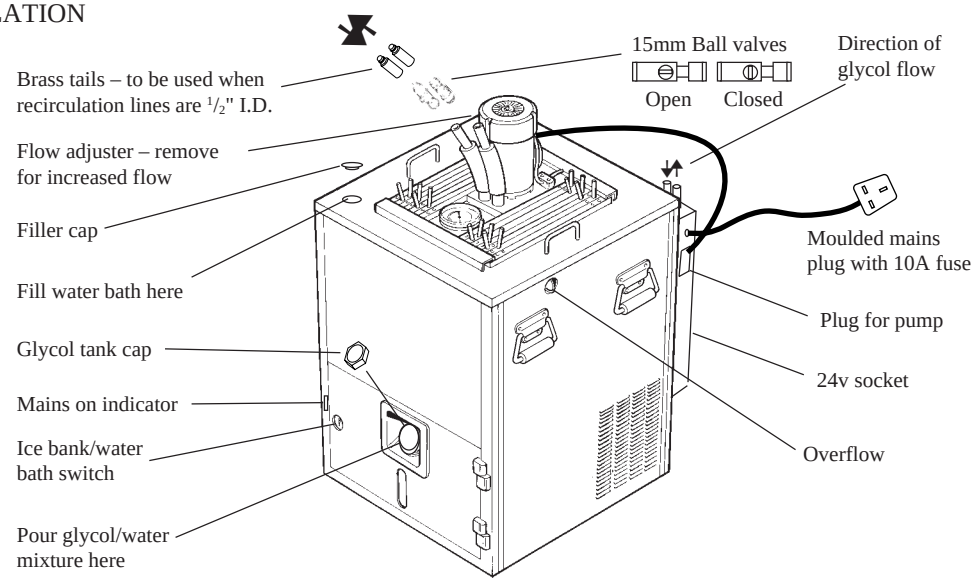
1. The Discharge Unit should be mounted in a convenient position on an EXTERIOR wall and provide access for pipes and electrical cable to the Base Unit (Maximum 30m run length from Base Unit). If no exterior wall is available within 30 metres of the Base Unit, then mount inside on a wall in a cool room with plenty of fresh air ventilation. Avoid warm areas (i.e. cupboards or small storerooms).
2. The Discharge Unit is designed to operate in the range of ambient temperatures from -10°C to 35°C.

### 3.2 SITING & INSTALLATION DIAGRAM



# CLASSIC 1000
# REMOTE COOLER

## 3.3 INSTALLATION



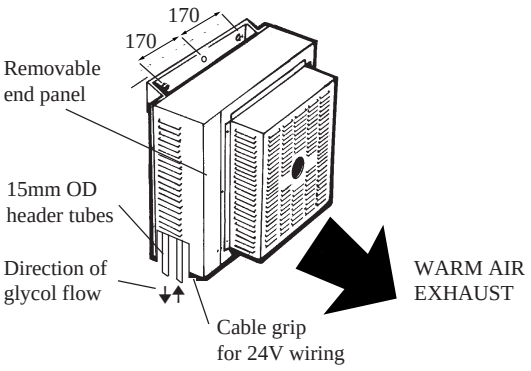

### GENERAL

1. Installation must be carried out by a suitably trained person and comply with national and local codes for connection to the electrical supply.

### BASE UNIT

1. Remove the packaging and fill the water bath with cold mains water, to the level of the overflow. The cooler should not be moved once the water bath has been filled with water.
2. Assemble Ball Valves to pump. Ensure these are closed. Check pump is plugged in.

### DISCHARGE UNIT




Secure the Discharge Unit to the wall in a manner capable of supporting the Discharge Unit weight (9Kg). Two suitable fixing screws and rawl plugs should be used which secure the Discharge Unit via two holes located at the top of the unit.

### GLYCOL LINES/WIRING

1. Using 0.75mm$^2$ electrical cable & plug, connect the Discharge Unit to the Base Unit. The plug socket is located at the rear of the cooler (Note: This is a nominal 24 volt supply. The Base Unit 24 volt plug is supplied with the unit).
2. Complete the glycol circuit by connecting the pipework between the Base Unit and the Discharge Unit with the aid of the fittings provided. Avoid ups and downs in each glycol line as this may create air locks. Do not kink or crush the tubing (minimum bend radius of 100mm) and support where necessary.
   This circuit will carry hot glycol solution under pressure, and it is important for safety reasons that suitable tubing is used. Consult a specialist tubing manufacturer or contact Cornelius in case of difficulty. PVC tubing, whether braided or not, is not suitable for this application.
   The tubing ID must be sufficient to ensure a minimum flow rate of 6 litres/minute in the glycol circuit. For a pipe run of 30m out + 30m back, an ID of at least 11.5mm will be required.

SYSTEM COMMISSIONING

1. It is essential the following procedure is strictly adhered to, to ensure the glycol circuit is primed correctly.
2. Mix monopropylene glycol and water to give a solution of 30% Glycol 70% water. Do not use ethylene glycol.

   Ensure that sufficient water/glycol mixture is available for pouring into the reservoir tank before switching the system on. You will need:-

   4 litres – for the tank

   4 litres – for every 35 metres of 12 mm I/D glycol line.
3. Disconnect one of the glycol lines from the rear of the base unit and fill the glycol tank. Reconnect glycol line.
4. Connect the 3 pin moulded plug to the mains and switch on the power to the Base Unit.
5. The base mounted coolant pump will start to prime the system.

   **As the coolant level drops, keep filling the reservoir with the mixture, ensuring it does not drop below the minimum level. Do not allow the base mounted coolant recirculation pump to run dry.**

**Check glycol circuit is complete**
**Leave one fitting disconnected**

↓

**Fill glycol tank**
**Connect remaining fitting**

↓

**Have remaining glycol ready**

↓

**Switch on cooler and keep tank full**

**If circuit fails to prime eliminate air as follows:-**

**Switch off for 30 seconds**
**Ensure full tank**

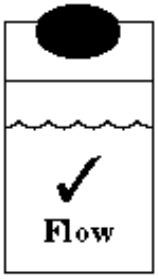
↓

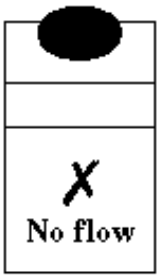
**Switch on cooler and keep tank full**

↓

**Note: high temp. cut-out?**
**Allow 4 mins for cooler restart**

**Glycol tank during operation**




**COMPLETING THE INSTALLATION**

1. The cooler is factory set on icebank mode. If necessary, select water bath setting using the switch behind the lower front panel
2. Connect product coils to product lines. Check for leaks.
3. Connect the recirculation lines to the ball valves. Open both valves and top up the water level where necessary.
4. Check the water flow. Remove the flow adjuster if necessary.
5. Allow the cooler to build up its icebank (5 hours minimum).

**NOTE** There is a low temperature thermostat on the water cooled Classic which will not allow the fan in the Discharge Cooler to operate if the temperature of the coolant is low. On installation, therefore, the fan may not start for some time.

## 4. MAINTENANCE INSTRUCTIONS

### 4.1 AIR COOLED MODEL

1. Check that the water level in the water bath is up to the overflow.
2. Check and clean the Condenser fins. Dirt and dust can block the air vents in the condenser, severely reducing the effectiveness of the refrigeration system.
3. Check that there is adequate air flow through the unit, ensuring enough space all round and that there are no obstructions in the front of the air flow vents.
4. Check the condition and the effectiveness of the Python insulation.
5. Check the Python for correct water recirculation.
6. At regular intervals, to be determined by the owner and/or the user, the cooler should be checked for electrical safety.

### 4.2 WATER COOLED MODEL

1. Check that the water level in the water bath is up to the overflow.
2. Check that the Discharge Unit fan is working and that there are no obstructions or blockages of the air flow vents.

**N.B. The fan is controlled by a thermostat mounted within the Base Unit. It may switch the fan off when air into the discharge unit drops below approx 12°C.**

3. Check and clean the heat exchanger fins on the Discharge Unit. Dirt and dust can block the air vents in the heat exchanger, severely reducing the effectiveness of the refrigeration system.
4. Check the condition and the effectiveness of the Python insulation.
5. Check the Python for correct water recirculation.
6. At regular intervals, to be determined by the owner and/or user, the cooler should be checked for electrical safety.
7. Check the glycol lines are not kinked or crushed. Check for leaks.
8. Check the level of coolant (Water/Glycol) in the reservoir and re-fill as necessary with a 30% Glycol 70% Water mix.

## 5. FAULT FINDING

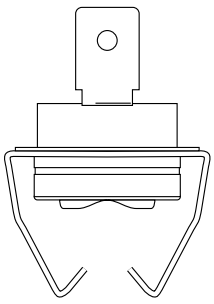
### 5.1 AIR COOLED MODEL

| PROBLEM | POSSIBLE FAULT | POSSIBLE CAUSE | ACTION |
|---|---|---|---|
| No Product. | Dispense system faulty. | | Check and correct. |
| | Product frozen in coil. | Is ice bank too large? | Check and replace thermostat if faulty. |
| Product too cold. | Long soak time in coil and/or python. | Low throughput. | Reduce the number of taps per product. |
| | Coil too long. | Incorrectly specified. | Fit shorter coil. |
| Product consistently too warm. | No ice bank or water bath too warm. | Fuse blown or no electrical supply. | Check fuse, plug and mains switch. |
| | | Water bath thermostat used but ice bank thermostat needed. | Switch to ice bank. |
| | | Water bath thermostat set too high. | Turn thermostat down. |
| | | Thermostat failed. | Replace. |
| | | Refrigeration system failed. | Replace base. |
| | No water being recirculated through python. | Water recirculation pump not plugged in. | Plug pump into socket on the base. |
| | | Water recirculation pump failed. | Replace. |
| | | Blockage in python. | Check for kinks. Clear out any debris in the water recirculation pipes. |
| | Product coil too short. | Incorrectly specified. | Fit longer coil. |
| Product too warm after a period of time. | Insufficient ice being produced or being produced very slowly. | Poor airflow through the condenser. | Check for space around the cooler and airflow obstruction. Clear and clean the condenser fins. |
| | | Condenser fan failed or operating incorrectly. | Replace. |
| | | Refrigeration system fault. | Replace base. |
| Product too warm during peak periods. | Throughput too high. | Too many coils in the cooler for such a high demand. | Reduce the number of products on the cooler. Fit further cooler if necessary. |
| | | Product inlet temperature may be too high. | Reduce the temperature of product storage area. |

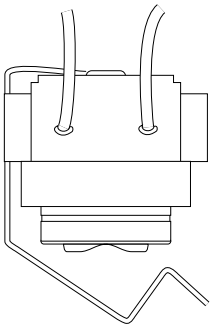
5.2 WATER COOLED MODEL

- **Fault finding is very similar to the air cooled model.**
- **Follow the air cooled table on the previous page, with the additions detailed below.**

| PROBLEM | POSSIBLE FAULT | POSSIBLE CAUSE | ACTION |
|---|---|---|---|
| Product consistently too warm. | No ice bank or water bath too warm. | No coolant in CRU. † | Refill with 30% Glycol 70% water. Check for leaks. |
| | | Coolant pump in CRU † failed. | Replace. |
| | | Coolant not flowing through Discharge Cooler. | Check all the stop valves are open. Check glycol lines are not kinked or crushed. Ensure pump priming procedure is strictly adhered to. |
| | | Discharge Cooler airflow blocked. | Clear blockage. Clean fins as necessary. |
| | | Discharge Cooler fan * failed. | Replace. |
| Product too warm after a period of time. | Insufficient ice or slow ice build. | Discharge Cooler airflow blocked. | Clear blockage. Clear fins as necessary. |
| | | Discharge Cooler fan * failed. | Replace. |



*** N.B. The Discharge Cooler fan is controlled by a thermostat mounted on the liquid line of the refrigeration circuit. The fan may not run in cold ambients (approximately less than 12°C). On initial start up (in warm conditions) the fan will not start until the liquid line is warm.**

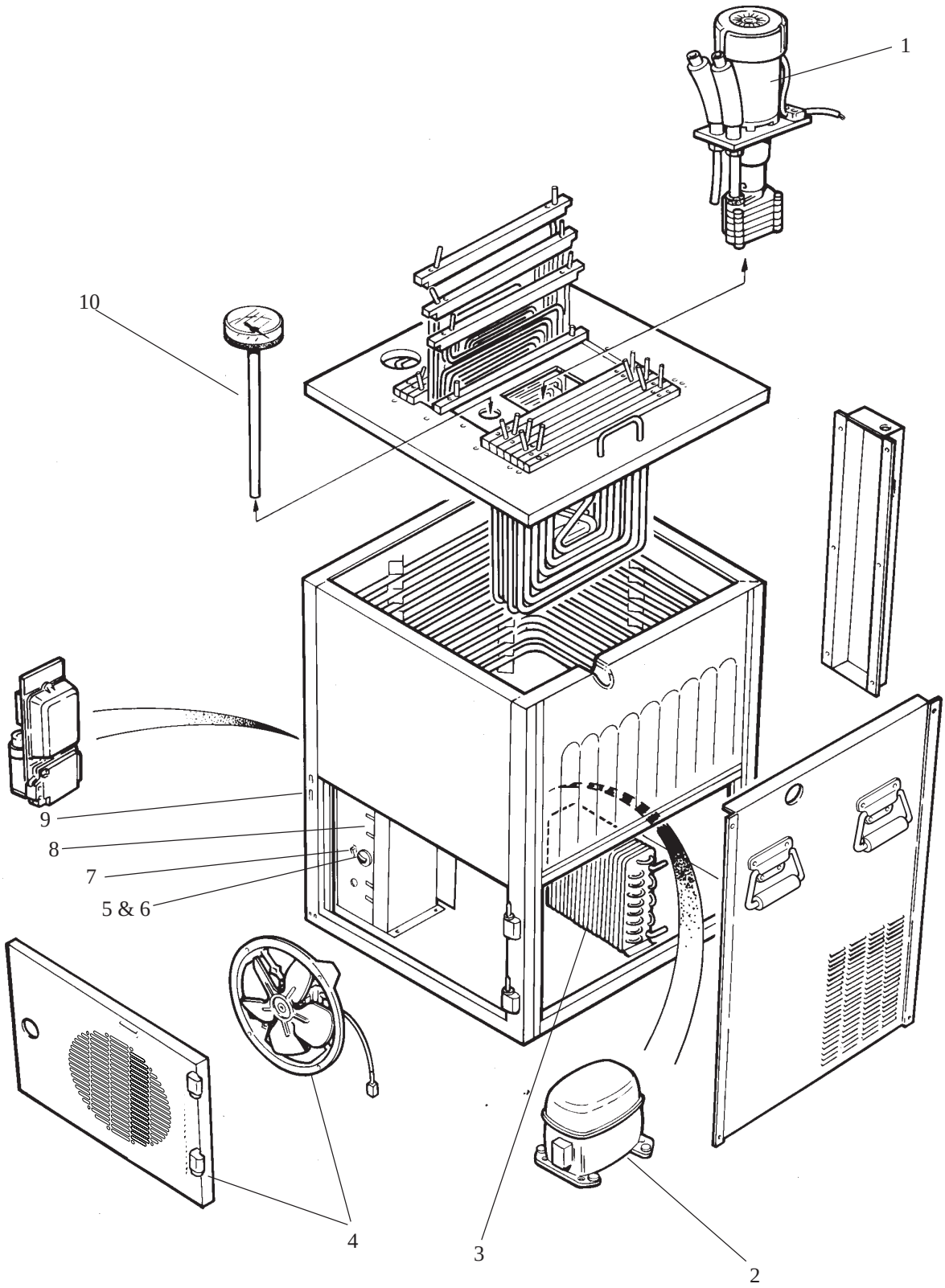


**† N.B. There is a high temperature cut-out mounted on the liquid line of the refrigeration circuit. If temperatures become excessive, this thermostat will cut-out the compressor. The device protects the compressor against loss of coolant flow, loss of 24v supply and loss of discharge unit airflow.**

**Both of the above thermostats are auto-reset.**

# CLASSIC 1000
# REMOTE COOLER

GENUINE SPARES



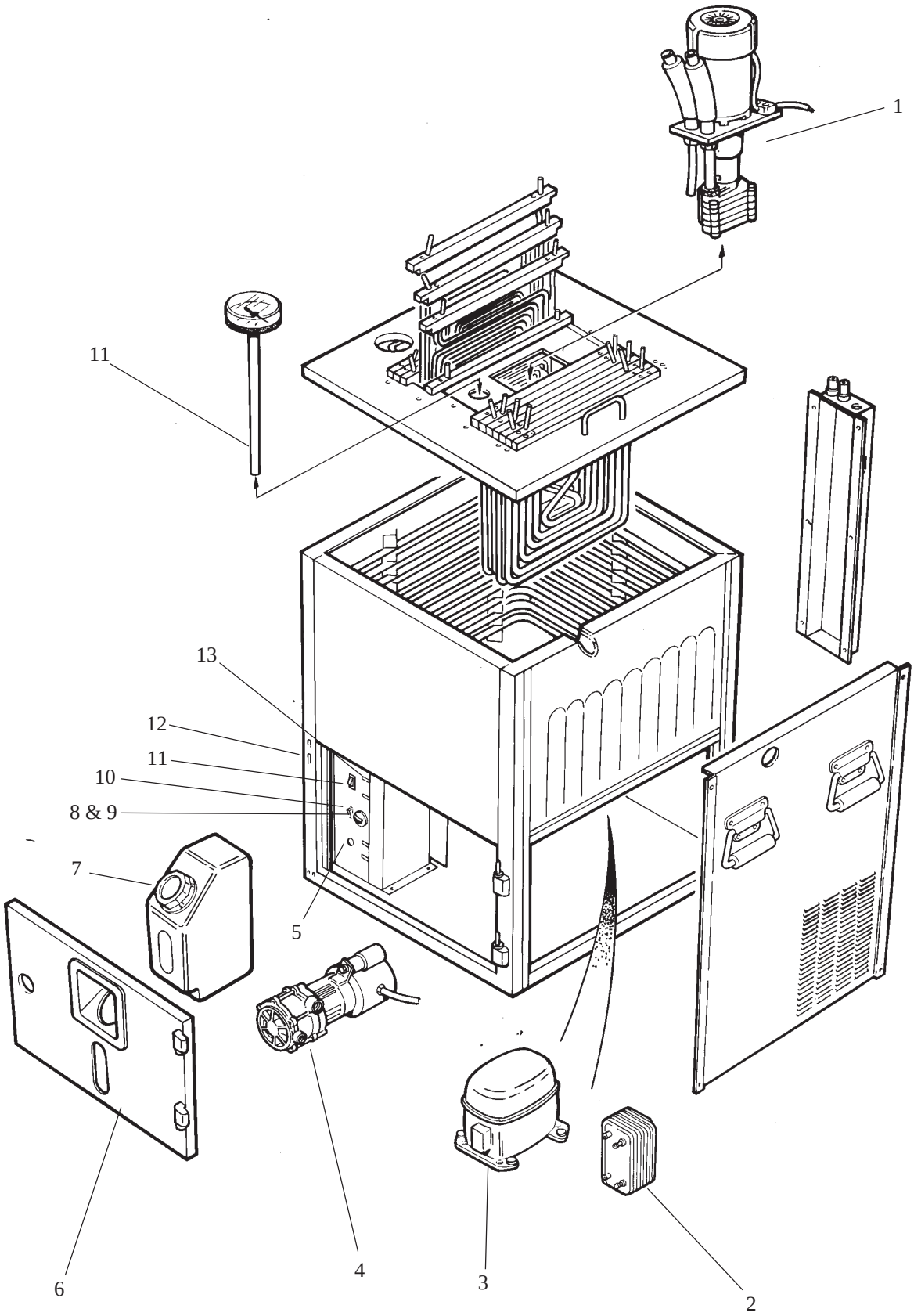
## 6. PARTS LIST

### 6.1 AIR COOLED MODEL

| ITEM No. | PART No. | DESCRIPTION |
|---|---|---|
| 1a | 99 5500 000 | Top Mounted Pump (Aquaflow) |
| 1b | 99 1000 384 | Spares Pump Assy. - Marchmay |
| 2 | 44 000 210 | Conmpressor (Danfoss) |
| | 44 0000 218 | Compressor (Embraco - Aspera) |
| 3 | 2RF096A | Condenser |
| 4 | 58 1000 336 | Fan Door Assembly |
| 5 | 58 0475 059 | Control Knob |
| 6 | 58 0400 075 | Water Bath Stat |
| 7 | 58 0440 370 | Ice Bank/Water Bath Switch |
| 8a | 58 1174 007 | Ice Bank Stat |
| 8b | 14 2498 000 | Electronic Ice Control |
| 9 | 58 0440 334 | Mains Neon (Green) |
| 10 | 58 0400 082 | Thermometer |
| Not Shown | 58 1005 304 | Filler Cap |
| | 2RF738A | Coil Blank |
| | 2ZU573A | Ball Valve |
| | 58 1000 310 | Mains Lead and Plug Assembly |
| | 58 0480 145 | Castor (this cannot be used to replace wheel) |
| | 58 0480 148 | Wheel |
| | 2RF371A | Temperature Probe (for use with 14 2498 000 only) |

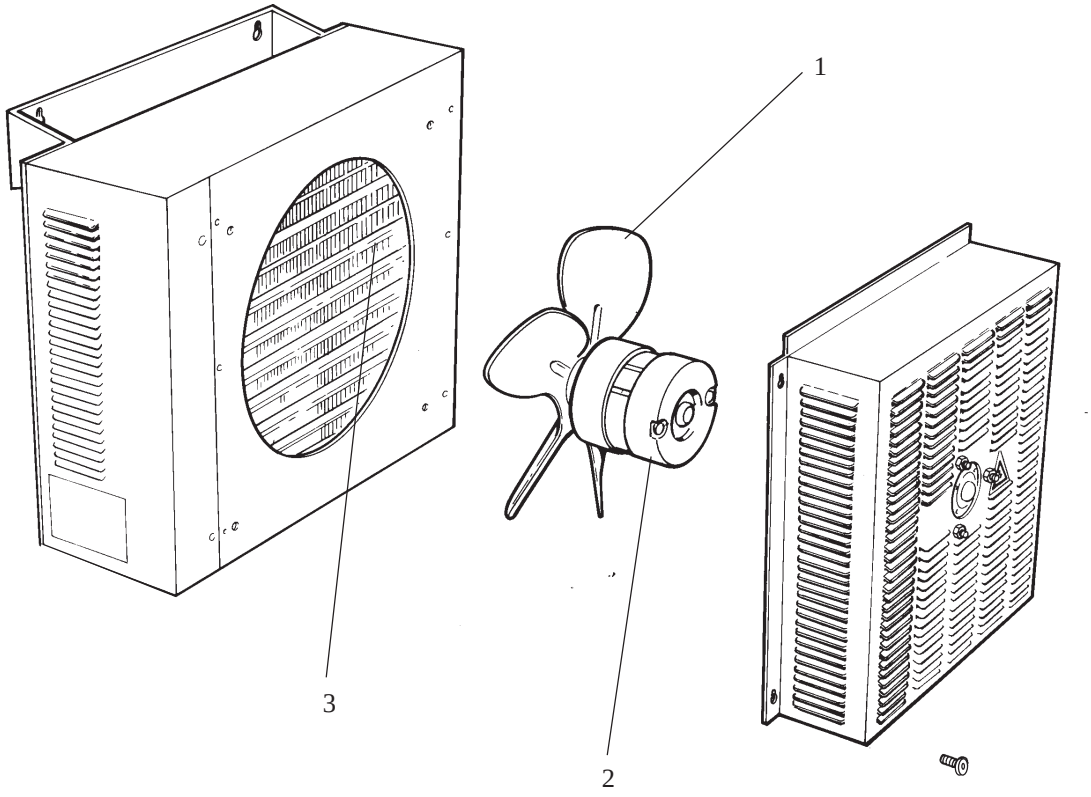
# CLASSIC 1000
# REMOTE COOLER

GENUINE SPARES



6.2 WATER COOLED MODEL

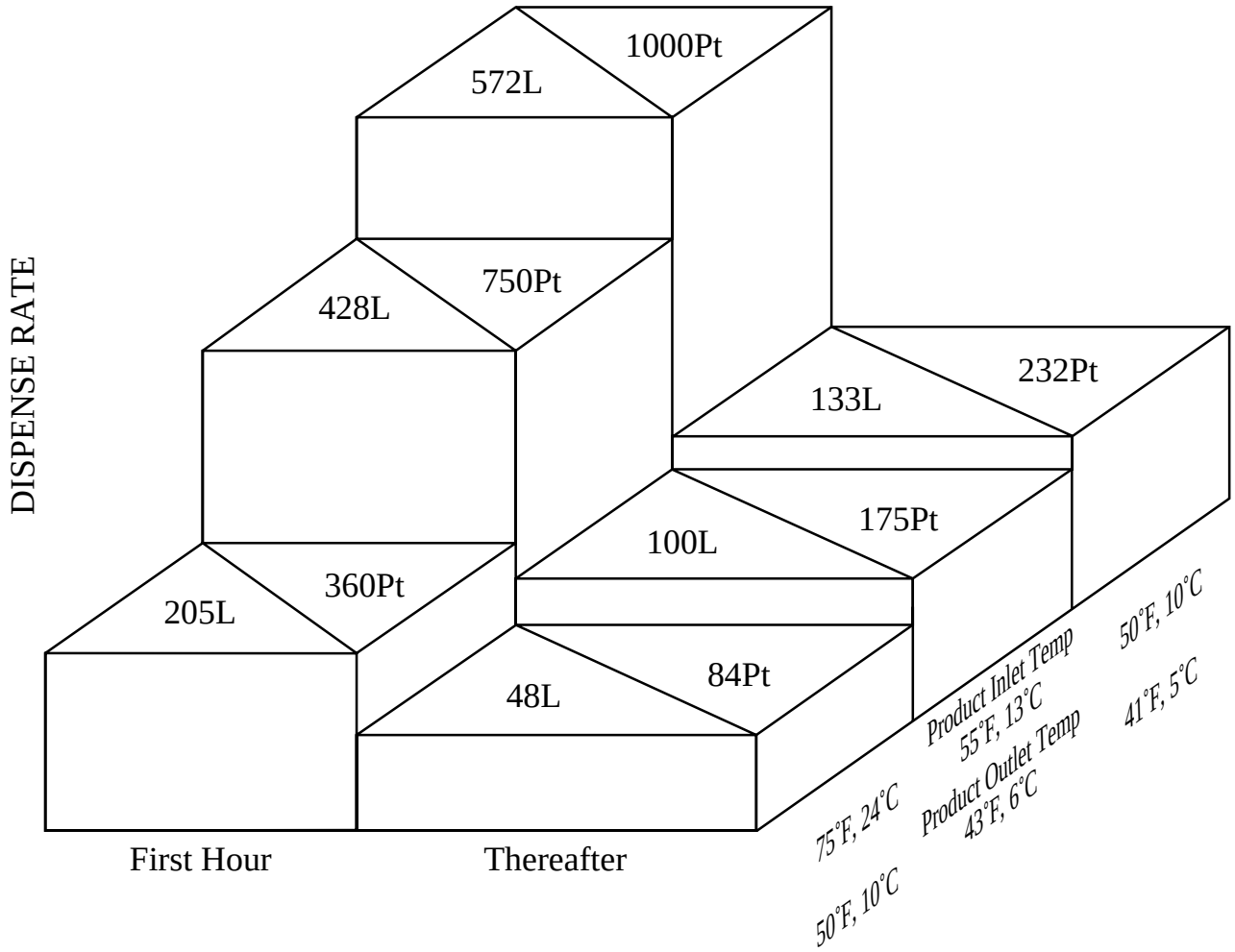
| ITEM No. | PART No. | DESCRIPTION |
|---|---|---|
| 1a | 99 5500 000 | Top Mounted Pump (Aquaflow) |
| 1b | 99 1000 384 | Spares Pump Assy. - Marchmay |
| 2 | 2RF150A | Heat Exchanger |
| | 58 1000 349 | Heat Exchanger (barbed connector) |
| 3 | 44 0000 210 | Compressor (Danfoss) |
| | 44 0000 218 | Compressor (Embraco - Aspera) |
| 4 | 58 0420 560 | Coolant Pump |
| 5 | 2EF013A | 5 Amp Fuse |
| 6 | 58 1001 321 | Door |
| 7 | 58 1005 302 | Reservoir Bottle |
| 8 | 58 0475 059 | Control Knob |
| 9 | 58 0400 075 | Water Bath Stat |
| 10 | 58 0440 370 | Ice Bank/Water Bath Switch |
| 11 | 58 0440 239 | Test Switch |
| 12 | 58 0440 334 | Mains Neon |
| 13a | 58 1174 007 | Ice Bank Stat |
| 13b | 14 2498 000 | Electronic Ice Control |
| 14 | 58 0400 082 | Temperature Gauge |
| Not | 58 1005 304 | Filler Cap |
| Shown | 2RF738A | Coil Blank |
| | 2ZU573A | Ball Valve |
| | 58 1000 310 | Mains Lead and Plug |
| | 58 0480 145 | Castor (this cannot be used to replace wheel) |
| | 58 0440 423 | Fan Control Switch |
| | 58 0440 401 | High Temperature Cut-Out Switch |
| | 58 0440 395 | Transformer |
| | 58 0480 148 | Wheel |
| | 2RF371A | Temperature Probe (for use with 14 2498 000) |




6.3 DISCHARGE UNIT

| ITEM No. | PART No. | DESCRIPTION | |
|---|---|---|---|
| 1 | 2MP161A | Fan Blade 250mm | |
| 2 | 2MR400A | Fan Motor 24 v | |
| 3 | 58 1000 402 | Heat Exchanger | |

## 7. CLASSIC 1000 THEORETICAL THROUGHPUT CAPACITY




**Note**

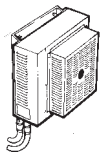
- ❖ Compressor based on average duty plus all ice bank reserve used up in 1 hour.
- ❖ Performance based on product coil of ≈ 5 m length.
- ❖ No python load assumed.
- ❖ Deduct 50 litres (88 pints) for every 10 metres (33 feet) of python run.
- ❖ R134a Gas
- ❖ 21 cc Compressor

## 8. SELECTION CHART

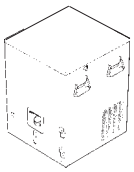
**STANDARD MODEL**

**CLASSIC 1000 WATER COOLED**

21cc Compressor
25kg Ice Reserve
4 litres Glycol
Integral Glycol Reservoir & Pump
Mains Indicator
Water Bath Thermostat
Ice Bank Thermostat
Ice Bank/Water Bath Switch



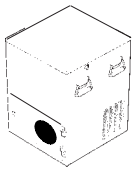
Discharge Unit



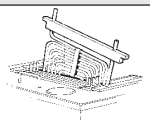
Base Unit

**CLASSIC 1000 AIR COOLED**

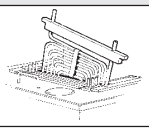
21cc Compressor
25kg Ice Reserve
Icebank/Water bath Control
Mains Indicator
Water Bath Thermostat
Ice Bank Thermostat
Ice Bank/Water Bath Switch



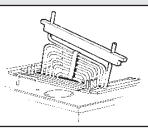
**COILS**



**SHORT** +



**LONG** +



**SUPER LONG** +

**BLANKS** =

**PRODUCT COILS**

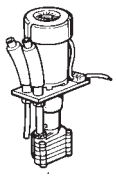
**14 SPACES**

**N.B. Super long coil takes up two spaces**

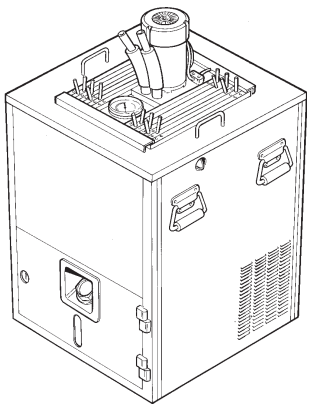
**OPTIONS**

**TEMPERATURE INDICATOR**

**PUMP**



3 Stage,
Top Mounted Pump

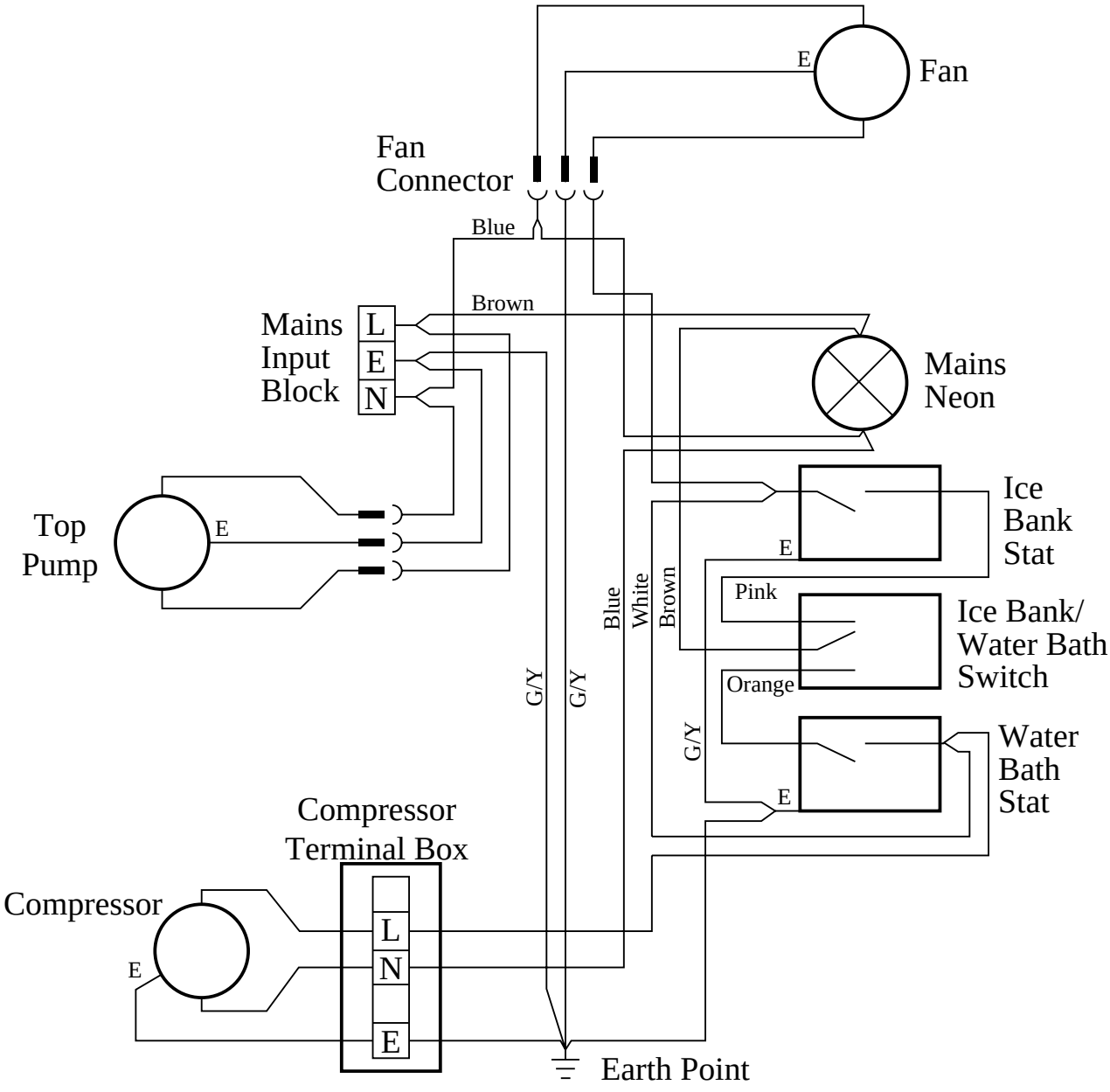


**FITTINGS**

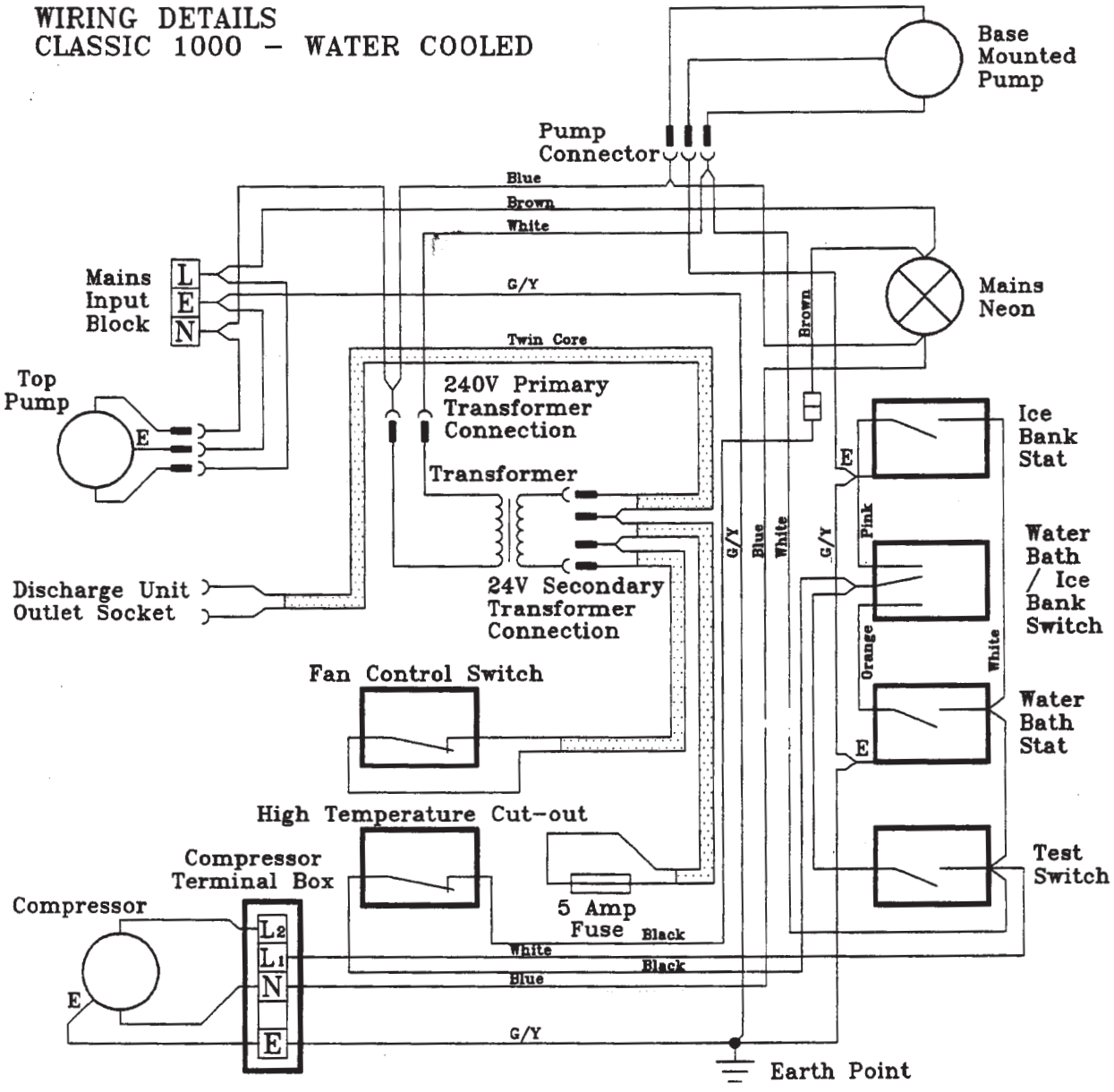
CUSTOMER FITTING KIT
LABELS & SPECIAL PARTS
BALL VALVES
BRASS TAILS
INSTALLATION INSTRUCTIONS

# 9 WIRING DIAGRAMS

## 9.1 AIR COOLED MODEL



9.2 WATER COOLED MODEL



# ORDER FORM/ PROFORMA INVOICE

GENUINE SPARES

**Please complete fully all parts 1-4**

**OFFICE USE ONLY**

**1.**

| Customer Order Number: | | **Cornelius Account No.** | |
|---|---|---|---|

Name: _____ Company Name: _____

Day Time Phone Number: _____ Fax Number: _____

**2.**

Invoice Address: _____

_____

_____ Post Code: _____

Delivery Address: _____

_____

_____ Post Code: _____

Special Instructions: _____

**OFFICE USE ONLY**

**3.**

| Part Number | Part Description | Qty Required | **Price per Unit** | **Cost** |
|---|---|---|---|---|
| | | | | |
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| | |
|---|---|
| Total Cost | |
| Delivery | |
| VAT @ 17.5% | |
| **Total Order Value** | |

**OFFICE USE ONLY**

| **Acknowledgement No.** | **Cheque Clearance Date** | **Due Date** | **Request Date** |
|---|---|---|---|
| | | | |

IMI Cornelius standard terms & conditions of sale apply.

**4.**

Please indicate payment method: ☐ Account ☐ Cheque ☐ Postal Order ☐ Access/Visa

Cheques or Postal Orders should be made payable to IMI Cornelius (UK) Ltd.

For Access or VISA Visa Payments, please indicate your card number.

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ Expiry Date: _____

Signature: _____ Name: _____ Date: _____

Address: _____

_____ Post Code: _____

**Please return to: IMI CORNELIUS (UK) LTD Rawson Spring Way Riverdale Industrial Estate Sheffield S6 1PG**

**TEL: 0114 285 5886** ORDER 8.30 am HOTLINE 5.15 pm **FAX: 0114 232 1070**

IMI CORNELIUS (UK) LTD
Tything Road
Alcester
Warwickshire
England B49 6EU
Telephone: 01789 763101
Facsimile: 01789 400595