



**BOOTH SOVEREIGN
NECTA 360/366 SERVICE MANUAL**



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**INTRODUCTION TO THE BOOTH SOVEREIGN
COOLER CARBONATOR**

The Sovereign has been designed to meet the very demanding specification of the Coca Cola Company and has been passed by them to Class 'C' standard.

'IT'S AS GOOD AS A CAN'

THE PRINCIPAL OF OPERATION

All cold drink operations are carried out through the PCB located in the top of the Unit and a functional diagram is shown on page 12.

The 230 volt pumps, compressor and fan are operated via relays on the PCB.

Where a particular component is not operating observation of the relative relay will ascertain if it is switching the signal out from the PCB:-

- a. **If switching OK** look for a fault downstream, possibly wiring, or the component itself failed.
- b. **If not switching OK** look for a fault on the control side.
- c. All relays on the PCB are switched via the IC2 PIC
- d. The agitator runs permanently and is powered direct from the 230 volt input to the PCB.

All 230 volt connections to the PCB are via plugs and sockets which are colour coded for easy recognition when making connections.

Chilling the drinks is carried out in an 'Ice Bank' system, the ice being controlled by electronic probes rather than a thermostat.

Two points to be aware of in this type of system are :-

- a. The system will not run with no water in the bath or if the level falls below the probes.
- b. Contamination in the bath such as syrup or cleaning fluid may result in the unit producing an excess of ice, causing the cooling coils to be blocked and no drinks being served.

If the water pump runs continuously for over 90 seconds, the PCB disables the water pump and solenoid valves in order to protect them from damage.

Disconnection of the power supply will re set the PCB time out circuit.

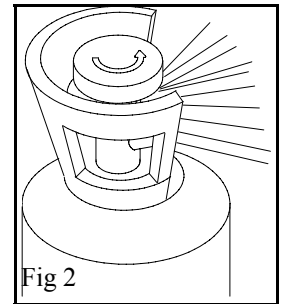
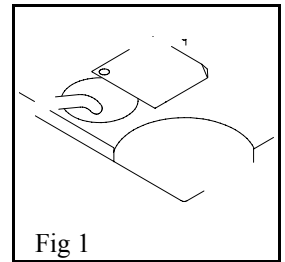


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COMMISSIONING THE SOVEREIGN COOLER CARBONATOR

1. Remove the stopper from the end of the overflow pipe and place the waste bucket into position ensuring the cooler overflow pipe is placed into the bucket..
2. Fill the ice bath with **cold** water, through the filler hole on the left hand side of the deck until water pours from the over flow pipe. Fig 1.
4. Point the CO² bottle away from people and vent the bottle to atmosphere for 3 seconds to ensure no air enters the carbonation chamber. Fig 2.
5. Connect the CO² regulator to the gas bottle and turn on & set pressure to 3.4bar (50psi).
6. Vent the carbonator for 3 seconds using the ring pull on top of the carbonation chamber.
7. Turn on the mains water supply to the machine.
8. Plug in the electrical interface to the cabinet.
9. Insert the syrup dip tubes into the correct syrup containers or attach bag in box fittings and connect to boxes according to system being used.
10. Prime syrups & water through to the dispense nozzles.

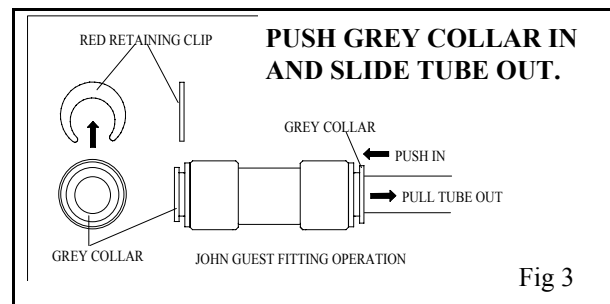


After approximately 2 hours cold drinks should be available below 5°C.

GENERAL SERVICE INFORMATION

USING JOHN GUEST FITTINGS

THE RED RETAINING CLIP MUST BE REMOVED BEFORE ATTEMPTING TO TAKE OUT THE TUBE FROM A JOHN GUEST FITTING Fig 3



REFRIGERATION CHECK PROCEDURE

The Sovereign employs a hermetically sealed system, creating an ice reserve of approximately 2.5kgs (5-6lbs) according to ambient conditions.
Designed to operate in maximum ambient temperatures of 32 degrees C.

DISPENSING WARM DRINKS – FRIDGE SYSTEM RUNNING

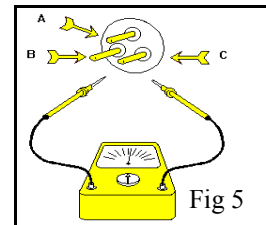
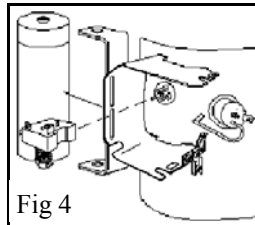
ENSURE THAT THE SYSTEM HAS BEEN RUNNING FOR A MINIMUM 1 HOUR

It is sometimes difficult to tell if the Compressor is operating due to the noise of the fan and it may be necessary to feel the compressor by hand or temporarily stop the fan.

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SYMPTOM	POSSIBLE CAUSE	REMEDY
1. Fan not running whilst the compressor is running.	Check wiring, Fan failed.	Correct as necessary. Replace.
2. Both Compressor & Fan Running.	Condenser blocked. Loss of refrigerent gas.	Thoroughly clean. It may be necessary to remove the fan as well as the side panels to access the inner side of the condenser. Check in the ice bath for ice on the evaporator coil. If none is evident replace complete unit and return to Booth or a competent refrigeration engineer.
3. Compressor cutting out, Fan continuing to run.	Compressor relay failed. Capacitor failed. Compressor winding failed.	Replace. Fig 4. Replace. Check windings for continuity and earth leak with meter. Fig 5.

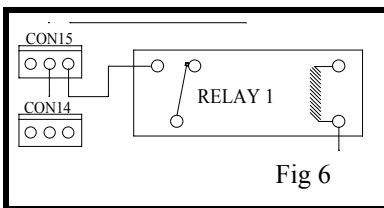


Replace complete unit if faults found and return to Booth or a competent refrigeration engineer.

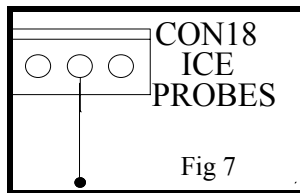
DISPENSING WARM DRINKS – FRIDGE SYSTEM NOT RUNNING
THE FRIDGE WILL NOT RUN IF THE BATH WATER LEVEL IS BELOW THE ICE SENSORS.

The fridge system is controlled via the PCB through a 24v controlled relay switching 230v to the compressor. Observing the respective relay is operating will indicate if the 230v supply is being switched. The agitator runs permanently and powered direct from the 230v input to the PCB.

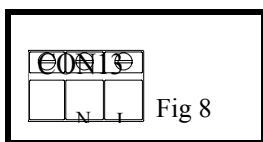
1. Relay 1 **not** operating. Fig 6



Low water level in bath.
Ice probe failure.



Top up. (see fig 1 page 3)
Remove Ice probe plug on PCB
CON18 & short all 3 probes together.
Fridge should start within 5 seconds.
Fig 7.
If not started Reconnect replace PCB.



Low voltage supply failure to PCB

Relay failed.

Wiring fault.

Check 24v connections from Vending machine to PCB.
Replace PCB

Check 230v supply at con 13 on PCB.
Fig 8. Restore supply.

2. Relay operating.

Start relay fallen off compressor pins.
Complete compressor failure.

Refit.
Replace.



NO DRINKS BEING SERVED - UNIT NOT RUNNING



SYMPTOM

POSSIBLE CAUSE

REMEDY

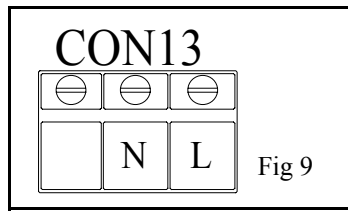
1. Unit not running or dispensing drinks.

No 24v or 0v connection to PCB.

Check 24v supply from Vending machine with a meter.

No 230v or neutral connection to PCB.

Check 230v supply across con 13 on PCB. Fig 9.



Restore.

Wiring fault.

Check all connections for continuity.

NONE OR PARTIAL DRINKS BEING DISPENSED

SYMPTOM

POSSIBLE CAUSE

REMEDY

1. No drinks at all being dispensed. Carbonated drink selection spluttering CO2 gas from nozzle.

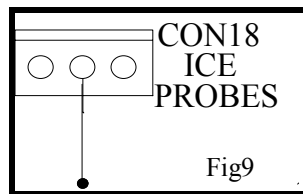
Freeze up. Ice bath contaminated with syrup or sanitising fluid.

Drain bath by inserting a syphon tube into the bath filler Fig 3 page 3 & allow the water to flow into a bucket.

Any discoloration would suggest a syrup leak which should be investigated & rectified before leaving the unit.

Flush out with warm (**max 50°C**) water ensuring all ice is melted and drained.

Re connect and fill bath with fresh water. Fig 7-8-9.



Unplug Ice probes on PCB. CON 18. Fig 9.

Fridge continues to run. Replace IC2 Pic chip on PCB.

Fridge stops. Check wiring for short circuit downstream from PCB.

Compressor running very hot & cutting out on overload.

Loss of refrigerant – replace unit.



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SYMPTOM	POSSIBLE CAUSE	REMEDY
2. Syrup only being dispensed. Fridge system running normally.	No water supply.	Inlet water solenoid failed – replace. Check Relay 2 on PCB and supply from CON10 to Solenoid. Blockage in supply pipe – clear. Inlet water regulator blocked – clear.
3. Syrup only on carbonated selection – still drink OK a. Carb water solenoid opening.	No CO2 pressure in carbonator. CO2 bottles empty. CO2 regulator failed. CO2 pressure set to zero CO2 back check valve stuck or blocked Carbonator not filling.	Open relief valve on top of carb bowl to check. Replace. Replace. Re set to 3.4bar (50psi). or replace. Dismantle & clean or replace.
b. Carb water Solenoid not opening.		Check supply from CON23 during end. If OK, check connections downstream. Solenoid failed – replace If not operating check input signal from vending machine.
4. Syrup & Gas only – No carb water.	Carb fill solenoid not opening	Check supply from CON24. If none replace PCB. Check solenoid – replace if necessary. Check for blockage in valve assembly-pipes-etc.
5. Syrup only on Still Drink. Carbonated OK. a. Still water solenoid opening.	Water pump not running.	Check relay 2 is operating. Check wiring to pump if OK replace Pump. If not replace PCB or IC2 PIC chip.
b. Still water solenoid not opening.	Solenoid failed.	Check supply from CON25 is OK. If OK check connections downstream. If not operating check input signal from vending machine Replace PCB or IC1PIC chip.
6. No syrup dispensed	Syrup container empty.	Replace with new supply. Check appropriate relays 3-4 on PCB are operating. If operating – check cons 2-3 on PCB & connections downstream. If not operating check input signal from vending machine.
	Syrup pump not running Pump failure.	Replace
	Syrup pump dried out due to being left empty after syrup ran out.	Flush Hot water (50 degrees MAX) through or replace.Pump failure.

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CARBONATION.

The level of carbonation in the drink has been designed to meet the demanding Coca Cola standards and has been passed by them for the sale of their products.

Good carbonation depends on a combination of Design – CO₂ gas pressure – Water Pressure – Water Quality – Temperature & Cleanliness throughout the system , particularly at the dispense nozzles.

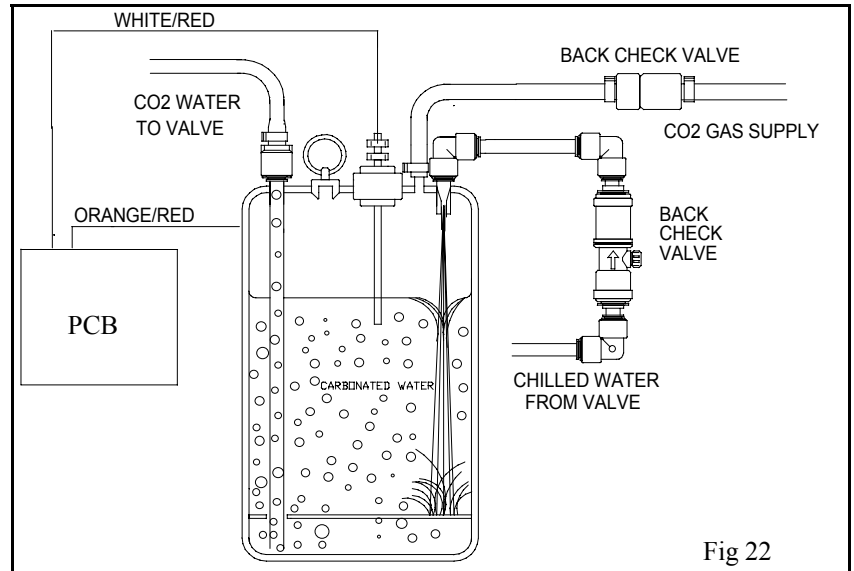
CREATING CARBONATED WATER

Understanding how it works.

Carbonated water is created by mixing Carbon Dioxide gas with water in a stainless steel chamber and is controlled by the following parameters:-

1. Temperature.
The colder the water the easier the gas can be absorbed.
2. Water pumping pressure 4.8 bar (75psi)
3. CO₂ gas pressure 3.4 bar (50 psi)

Water is pumped into the chamber in the form of a jet which strikes the baffle plate at the bottom causing considerable turbulence which in turn causes the gas to be rapidly absorbed into the water.



Whilst creating carbonated water, this process will also remove part of other gasses present in water, such as chlorine & air to name but 2, which, being lighter than CO₂ gas will rise to the top of the chamber eventually causing loss of carbonation.

Replenishing the water.

The electrical circuit controlling the water level inside the chamber can be seen above as follows :-
PCB - white/red wire - level probe - water - stainless steel chamber wall - orange/red wire - PCB.

When the dispense valve is opened the following procedure occurs automatically :-

- a) The water is pushed out by the CO₂ gas pressure.
- b) When the water level falls below the tip of the probe, the circuit is broken.
- c) Breaking the circuit causes the IC1 PIC chip on th PCB, to set a 3 second delay before activating the water pump, open the carb fill solenoid & the inlet water solenoid on the vending machine.
- d) When the water level rises to the tip of the probe a 4 second timer is set by the IC1 PIC chip
- e) After 4 seconds all action ceases.

SOLVING PROBLEMS

1. Problems associated with the chamber itself.

- a) Other gasses, mentioned above, can eventually fill up the top of the chamber, normally full of CO₂ gas, causing poor carbonation.

In order to rectify this situation proceed as follows:-

1. Pull the relief ring on the front of the unit, Fig 5 page 3, for 3 seconds to purge the system & ensure a fresh CO₂ gas atmosphere.
2. Disconnect the electrical power to the unit & open the carb water dispense valve manually until gas comes from the dispense nozzle. Fig 30 page 11.
3. Re connect electrical power & the carbonator will refill automatically



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IT IS A GOOD PREVENTATIVE MEASURE TO OPERATE THE VENT VALVE FOR 3 SECONDS DURING ALL ROUTINE VISITS TO KEEP THE CHAMBER FRESH.

- b) Temperature.
If the refrigeration system has failed and **ambient water** is entering the chamber carbonation levels will be very poor. Follow refrigeration test procedure on page 4.
- c) CO2 gas pressure.
The system has been designed to operate on a gas pressure of 3.4 bar (50 psi) and whilst a lower pressure will result in poor carbonation, a **higher pressure will not** increase it and will probably decrease it.

2. Understanding CO2 gas bottles.

- a) CO2 gas bottles are filled to approximately 2/3ds with liquid CO2 at approximately 54 bar (800 psi) leaving a top chamber for CO2 in the form of gas, very much like the carbonator illustration page 9. However, these bottles when empty, are usually left open which can result in air getting in which is not released when the liquid is put in. As air is lighter than CO2 gas, this air remains at the top of the chamber ready to be 'first out' when the bottle is opened.
- b) **It is vital** that the bottle is opened for 3 seconds **prior to connecting the regulator** to prevent this air being injected directly into the carbonator.
- c) If the procedure described in (b) above is not carried out you can immediately cause the problem described in (1a) above.

A flooded carbonator will cause poor or no carbonation due to the top chamber, normally filled with CO2 gas being occupied by water, this can be diagnosed by water coming from the pressure relief valve when opened.

SYMPTOM

POSSIBLE CAUSE

REMEDY

1. Poor carbonation – Flat drinks.

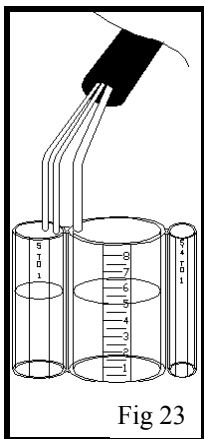


Fig 23

Air in carbonation chamber.

See page 9.

CO2 pressure too low or too high.

Re set regulator to 3.4bar (50psi)

Water pump pressure too low.

Pump very noisy if starved of water. Check supply and test for flow rate to unit after filters. 3 ltrs per min is the minimum required flow. (Time flow into a bucket)

Replace dirty or blocked filters.

Dirty dispense nozzles.

Sanitise nozzles. Figs 26 – 28 page 9.

Excessive fobbing.

Check drink strength with a brix cup and re set to the manufacturers setting. Fig 23.

Check flow rate of carbonated water and re set if more than 28ml/sec.

2. Flooded carbonation chamber.

Water pump running continuously.

Disconnect & re connect power supply to ascertain if 90 second time out is operating.

Remove CON19 on PCB & short the 2 pins together on PCB. (low Voltage).

If water pump stops after 5 seconds look for a break in the wiring between the level probe plug & carbonator top.

If pump continues to run replace PCB or IC2 PIC CHIP

Water Pump pressure too high.

Check inlet water regulator setting at 2 bar. Reset if too high.

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**SANITIZING PROCEDURE FOR PARTS IN CONTACT WITH FOOD
PLUS WATER BATH**



Where “**HAND HOT** “ water is suggested the temperature is designated to be a maximum of 50 degrees C



HOT WATER from the Vending Machine boiler can cause damage to some parts of the Regent and should not be used in any procedure unless specifically stated

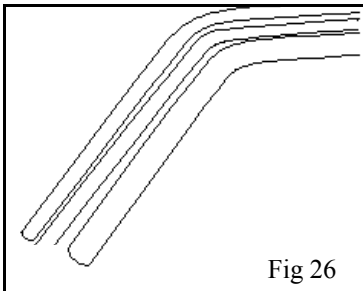


Fig 26

1. Remove stainless steel dispense tubes from holder by pulling with a twisting motion. Fig 26.

2. Immerse dispense tubes and holder in **HAND HOT** water to remove any external deposits and brush clean. Fig 27.

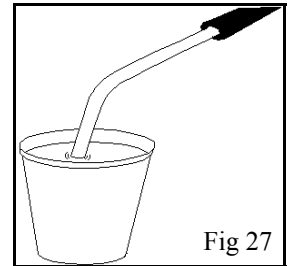


Fig 27

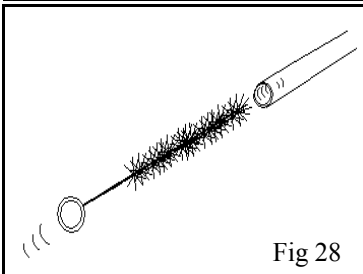


Fig 28

3. Clean inside tubes & holder with brush provided. Fig 28.

4. Flush STILL water line with 0.5 ltr of water.

5. Clean stainless steel dip tubes in clean water on every occasion that a new container of product is fitted, by filling one empty container with **HAND HOT** water - placing the tubes in for 5 minutes - brush clean and insert into the container of product.

3 MONTHLY SANITIZATION

PREPARATION

1. Ensure that the waste bucket is in place .
2. Lift syrup dip tubes above liquid level in product container Fig 29 & press primer switches to empty lines, then place in a container of clean water and prime through to dispense nozzle then lift out of water & continue until empty.

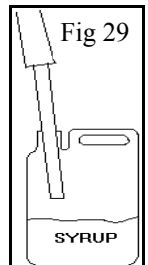


Fig 29

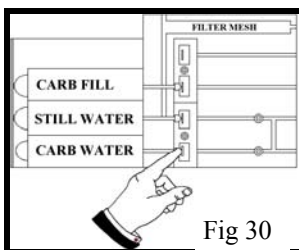


Fig 30

3. Disconnect the electrical power to the unit & open the carb water dispense valve manually until gas comes from the dispense nozzle. Fig 30.

4. Drain bath by siphoning the water into a bucket. Flush out with warm (**max 50°C**) water ensuring all ice is melted and drained. Fig 3 page 3.

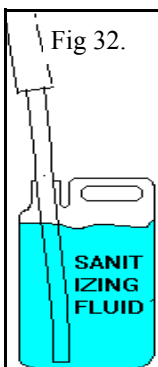


Fig 32.

5. Prepare a solution of proprietary sanitizing fluid such as . **DIVERSAL BX4A**. carefully following the manufacturers instructions. A 5 litre syrup container is ideal for this operation. Fig 32.

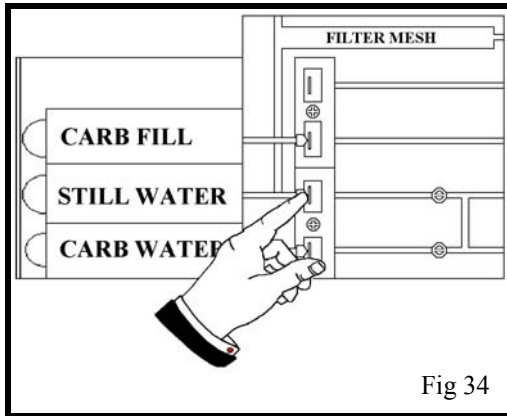
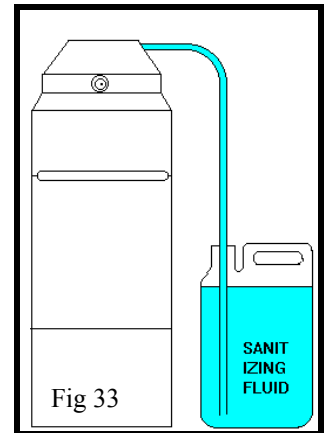


SANITIZING WATER SYSTEM

1. Where a filter is fitted remove the cartridge, put sanitiser into the chamber & and flush through. Where a complete filter is fitted, dummy filters are available for this purpose.

ALTERNATIVE.

2. Disconnect flexible water inlet tube from the water supply and place the end into a container of sanitizing fluid. Fig 33

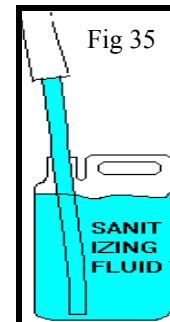


2. Switch on power & manually operate the still water solenoid to clear any air locks. Release & allow the carbonator chamber to fill. Fig 34

3. Draw 1 cup of carbonated water followed by 1 cup of still water to ensure all tubes are full of sanitizer.
4. Fill water bath with sanitizer solution until water appears at overflow.
5. Switch off power & leave to stand for period recommended by sanitizer manufacturer.
6. Follow **daily routine** on page 11 using sanitizer fluid to clean dispense nozzles.

SANITIZING SYRUP LINES

1. Switch on the main power.
2. Place dip tubes into the container of sanitizing fluid & operate the syrup priming switches until the fluid pours from the dispense nozzle. Fig 35
3. Leave to stand for the period recommended by the manufacturer of the sanitizer.
4. Switch off power.



RECOMMISSIONING

1. Switch on power supply.
2. Place syrup dip tubes into a 5 litre container of clean cold water and flush 1 litre through each syrup line .
3. Reconnect inlet water supply tube to machine supply & vend 3 litres of **still water**.
4. Vend 3 litres of **carbonated water** .
5. Siphon off water bath and refill with **cold** water.



THE ICE BANK IS CONTROLLED BY ICE PROBES SENSING RESISTANCE, ANY SANITIZER LEFT IN THE WATER BATH COULD CAUSE THE UNIT TO FREEZE UP. IT IS RECOMMENDED THAT THE BATH IS SYPHONED OFF A SECOND TIME & REFILLED WITH COLD WATER

6. Re connect syrup tubes to the appropriate syrup containers , fit all covers etc.
7. Prime waters and syrups through to dispense nozzle & check drink strength with a brix cup. Fig 23 P8.
8. Close vending machine door & test vend all cold drinks.



**CLEANING & MAINTENANCE
PARTS NOT IN CONTACT WITH FOOD PRODUCTS**

1. **ICE BATH** See parts in contact with food pages 6 & 7.

2. **CONDENSER.**

Condensers are one of the most neglected areas of a refrigeration system.

Lack of cleaning will :-

At Best a). Shorten the overall life of the compressor
b). Impare the drink performance for your customer reducing sales.

At Worst Cause complete failure of the system resulting in
Expensive repairs,
Customer dissatisfaction.
Poor reputation for both your Company & Booth Dispensers.

Thoroughly clean the condenser **AT LEAST ONCE A MONTH** with a small stiff brush accessing through front & left side panels as well as the rear. Avoid poking between the fins with screwdrivers & sharp objects which may puncture the condenser causing expensive repairs.

Heavily clogged condensers may require the unit to be removed "outside" & the dirt blown out with compressed air or CO2 gas.

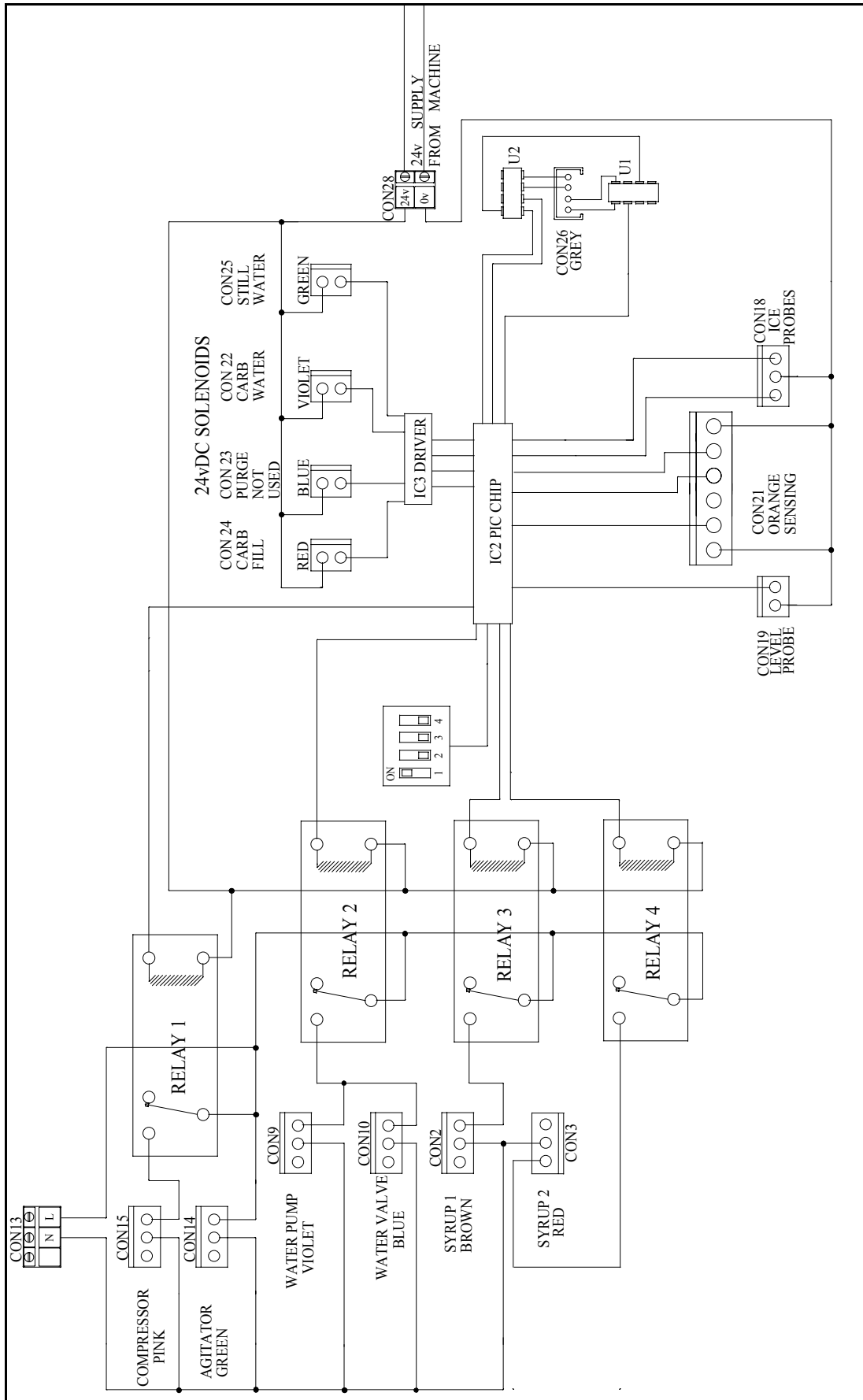
Remember that the more often the condenser is cleaned, the easier it will be to do.

3. **GENERAL CLEANING.**

Ensure that the complete unit is clean, particularly around the edges of removable panels where spillage from ingredients may have ingressed, & especially where the unit stands.

If necessary remove the unit from the vending machine & thoroughly clean the base and floor.

NB Where liquid has ingressed into the unit investigate the cause and rectify.



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REMOVAL & TRANSPORTATION OF BOOTH REGENT MODULE

Before removing the Sovereign from a vending machine it is important to ensure that it can be transported comfortably and in a hygienic manner without leaving a trail of ingredients on the customers premises as well as the vehicle used.

Proceed as follows:-

1. Place syrup dip tubes into a container of clean water and prime through until the water is coming from the nozzle
Whilst still priming, lift the dip tubes above the level of the water until all tubes are empty.
2. Switch off main power & manually open the carbonated water valve until gas only splutters from the dispense nozzle.
3. Syphon all water from the Ice bath.
4. Disconnect water supply, Co2 supply, & unplug the electrical interface.

The unit is now ready to be removed from the vending machine.

TRANSPORTATION. **ALWAYS TRANSPORT REFRIGERATION UNITS UPRIGHT**

As with all refrigeration systems, irreparable damage can be caused by laying the units on their side or even transporting upside down.

Where the unit is transported by a carrier this is out of your control & the carton should always be marked in a conspicuous manner, the correct upright position in which it must be handled.

If a module has been transported incorrectly it should be placed in the correct upright position & left overnight before attempting to run the system.

Failure to observe the above precautions could seriously damage the system.

DISPOSAL OF SCRAP UNITS

It is now illegal to simply scrap a refrigeration unit.

Before a refrigeration unit can be scrapped it must first have the gas removed by a specialist using specialist equipment.

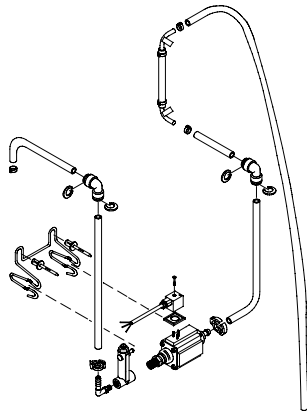
Contact your local refrigeration repair company for advice.



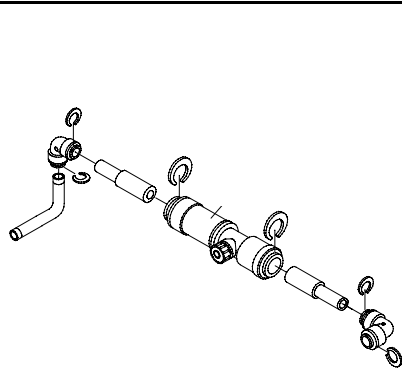
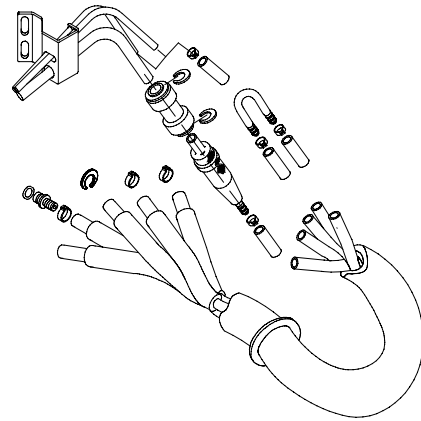
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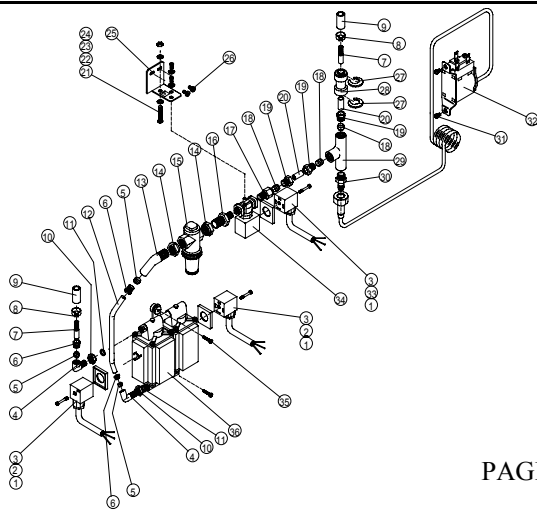
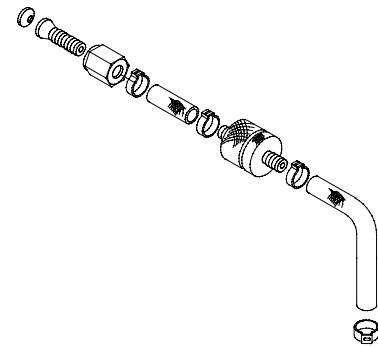
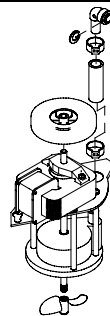
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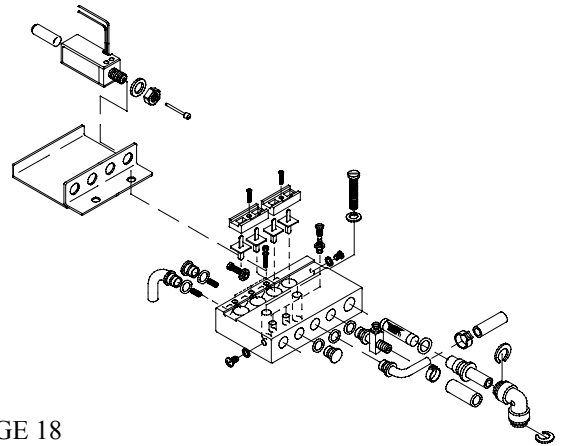
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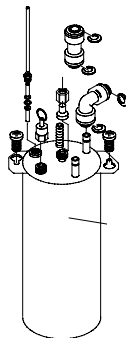
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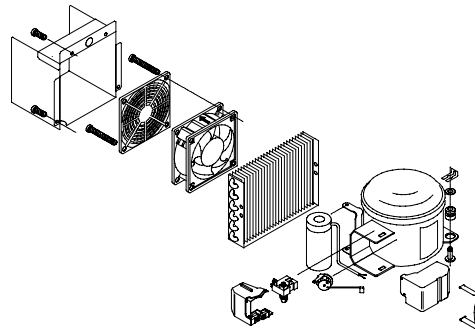
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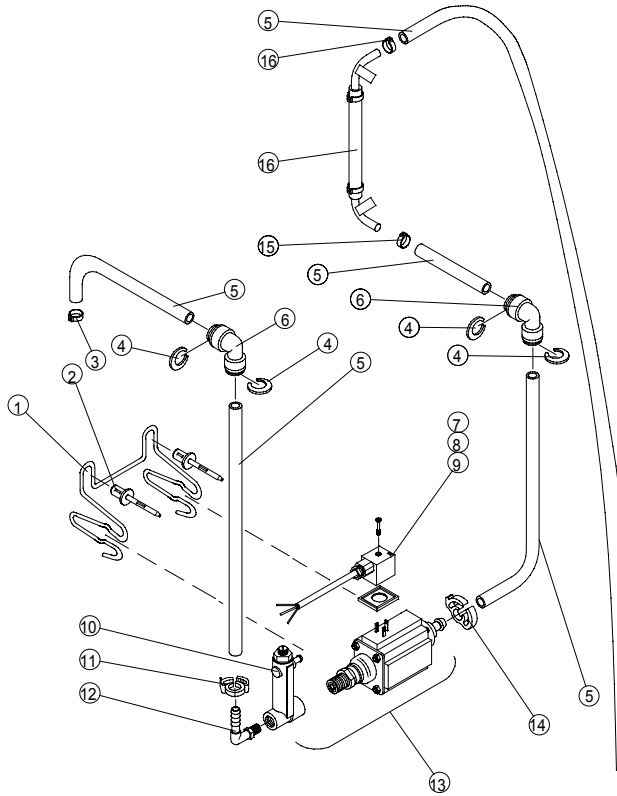
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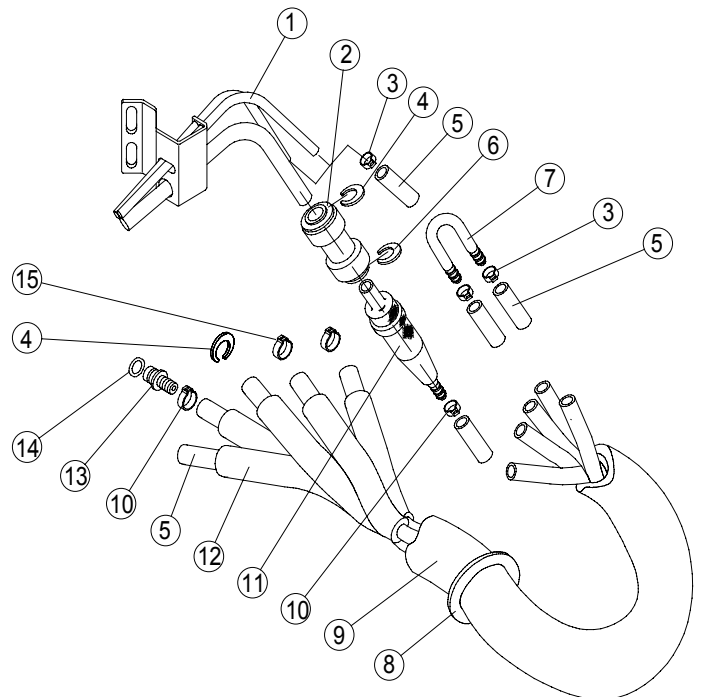


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ITEM	DESCRIPTION	PART No
1	RETAINING CLIP	1B3525
2	POP RIVET	1B3864
3	CLAMP OETIKER 11.3	1B1855
4	JG LOCKING CLIP	1B8483
5	TUBING EVA 4ID 8OD	1B8456
6	JG ELBOW CONNECTOR EQUAL 5/16"	1B7515
7	SCREW ATTACHMENT MPM	1B5135
8	SYRUP PUMP HARNESS	1A2853
9	SEAL WASHER MPM	1B5134
10	ADJUSTMENT FITTING	1B6000
11	HERBIE CLIP 'BB'	1B5629
12	HOSE CONNECTOR 90 deg	1B2396
13	SYRUP PUMP 230V	1A2279
14	HERBIE CLIP 'C'	1B6048
15	CLAMP OETIKER 10.5	1B1668
16	SYRUP SENSOR	1A2964

ITEM	DESCRIPTION	PART No
1	DISPENSE NOZZLE ASSEMBLY SPL360	1A3585
2	REDUCING CONNECTOR 3/8"x5/16"	1B4114
3	CLAMP OETIKER 10.0	1B4295
4	JG LOCKING CLIP 5/16"	1B8483
5	TUBING EVA 4IDx8OD	1B8456
6	JG LOCKING CLIP 3/8"	1B8484
7	PIPE RECIRC RETURN	1B8325
8	SNAP BUSHING 4ID	1B9021
9	TUBE INSULATION 15IDx9 WALL	1B9179
10	CLAMP OETIKER 10.5	1B1668
11	VALVE RESTRICTOR ASSEMBLY	1A2374
12	TUBE INSULATION 6IDx6 WALL	1B9178
13	NIPPLE BARBED	1B0266
14	'O' SEAL 6.07ID	1B0915
15	CLAMP OETIKER 11.8	1B4296



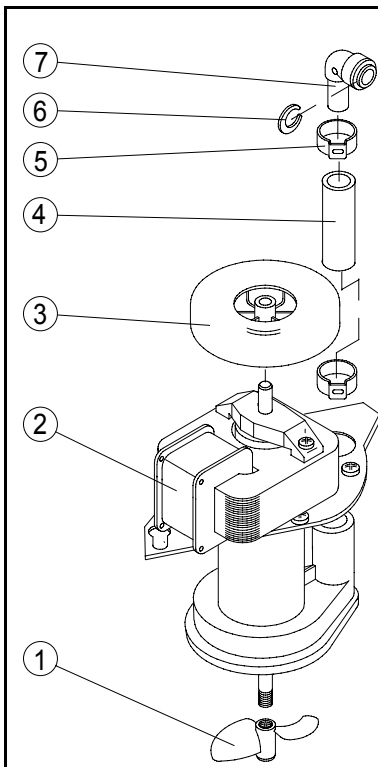
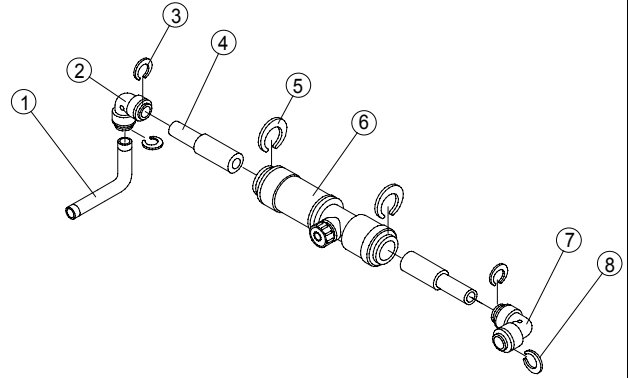
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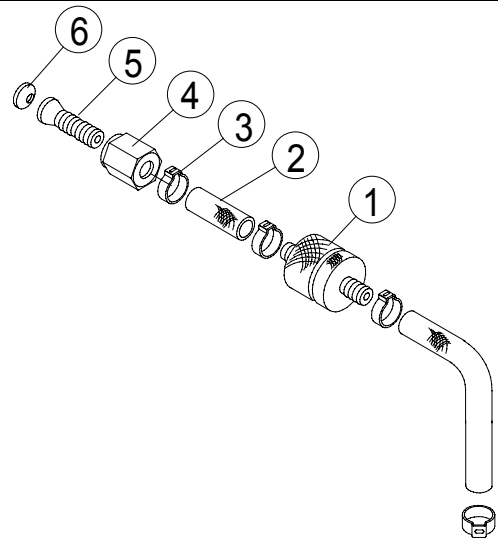


ITEM	DESCRIPTION	PART No
1	CAN FILL PIPE	1B9016
2	ELBOW CONNECTOR EQUAL 3/8"	1B3656
3	JG LOCKING CLIP 3/8"	1B8484
4	STEM REDUCER 15mm – 3/8"	1B7011
5	JG LOCKING CLIP 15mm	1B8485
6	CHECK VALVE DOUBLE CENTRE TAP	1B7014
7	JG ELBOW REDUCER 3/8" x 5/16"	1B7278
8	JG LOCKING CLIP 5/16"	1B8483



ITEM	DESCRIPTION	PART No
1	BLADE IMPELLER 45 x LH TWIN BLADE M4	1B7797
2	PUMP SUBMERSIBLE	1B8308
	PUMP SUBMERSIBLE WITH PLATE (REQUIRED IF UPDATING)	1B9283
3	FAN PUMP SUBMERSIBLE	1B9730
4	INCLUDED WITH PUMP	*****
5	CLAMP OETIKER 13.3	1B1669
6	LOCKING CLIP 5/16"	1B8483
7	JG STEM ELBOW 3/8" x 5/16"	1B8108

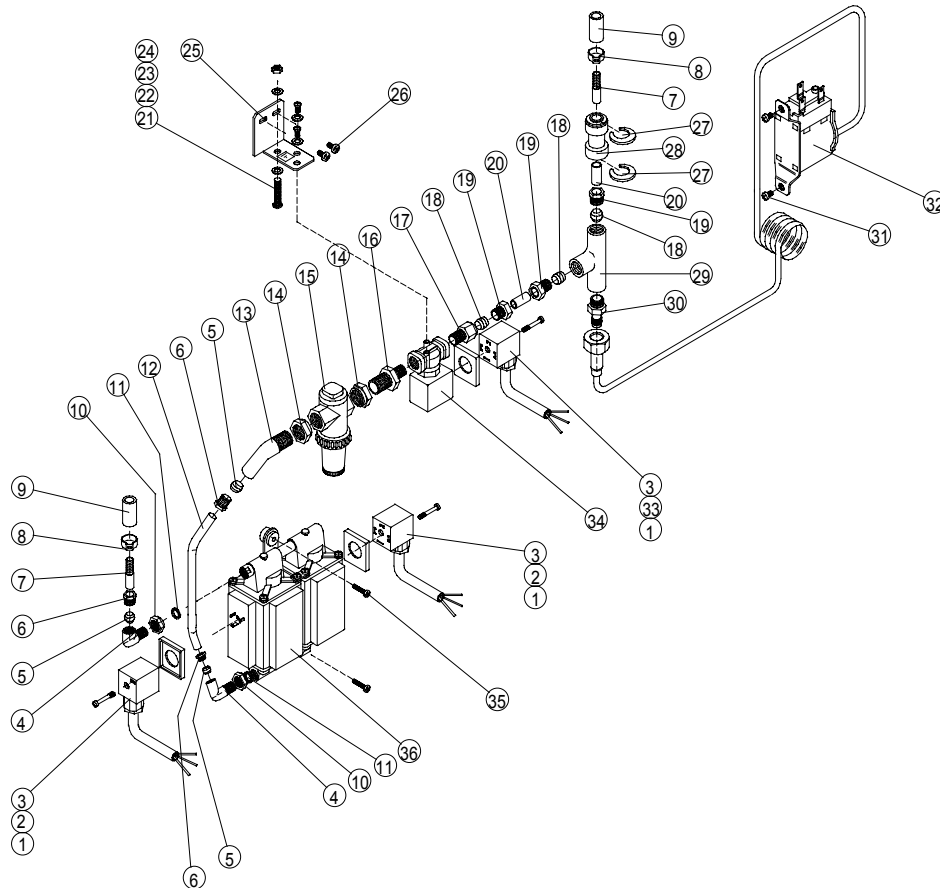
ITEM	DESCRIPTION	PART No
1	CHECK VALVE	1A1637
2	HOSE 10OD x 5ID	1B7875
3	CLAMP OETIKER	1B1855
4	NUT SWIVEL	1B0408
5	NIPPLE SWIVEL GAS	1B0381
6	SEAL 6ID	1B0418



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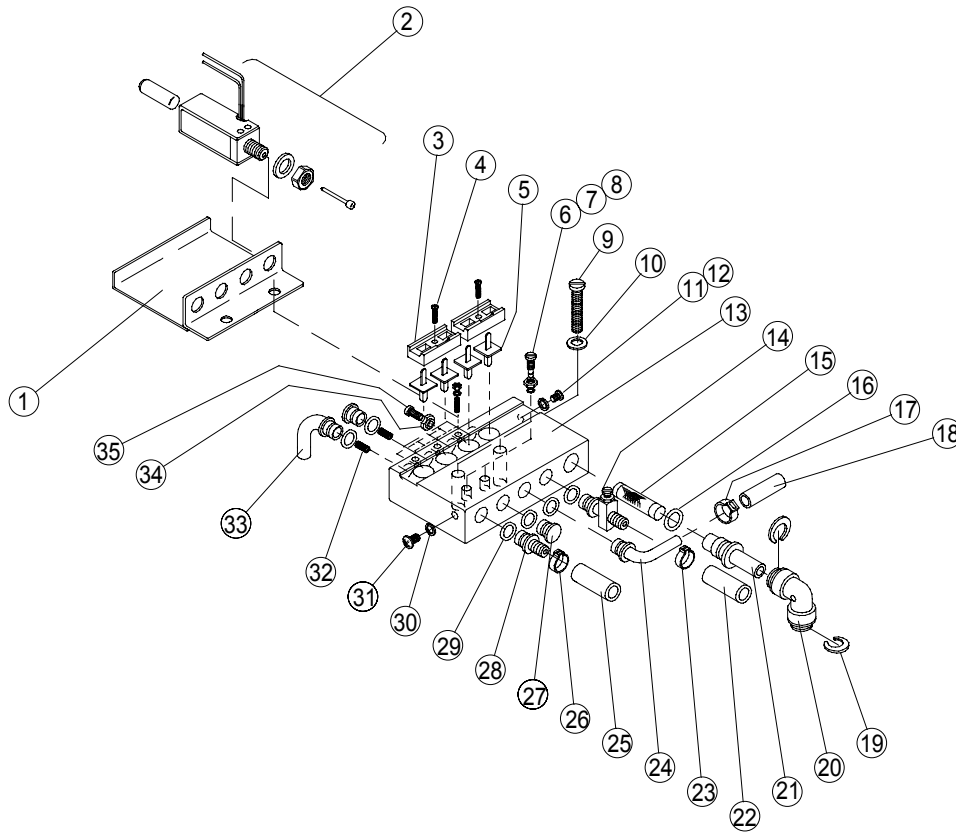


ITEM	DESCRIPTION	PART No	ITEM	DESCRIPTION	PART No
1	SCREW ATTACHMENT MPM	1B5135	19	TUBING NUT 5/16"	1B8916
2	HARNESS WATER PUMP	1A2612	20	TUBING S/S 8mm	1B2564
3	SEAL WASHER MPM	1B5134	21	SCREW M5 x 10 BRASS	1B7226
4	ADAPTOR ELBOW 1/8" BSP	1B3505	22	WASHER 11/64" BRONZE	1B0089
5	OLIVE ENOTS REF 36050105	1B3013	23	WASHER 5ID COPPER	1B0951
6	TUBING NUT	1B3014	24	NUT M5 BRASS	1B0084
7	BARBED TAILPIECE STRAIGHT	1B3508	25	SOLENOID & REG BRACKET	1B9188
8	CLAMP OETIKER 13.3	1B1669	26	SCREW M5 POZI PAN	1B9298
9	TUBE REINFORCED	1B2584	27	JG LOCKING CLIP 5/16"	1B8483
10	HOBBS CONED LOCKNUT	1B3506	28	JG STRAIGHT EQUAL 5/16"	1B7101
11	HOBBS SEAL	1B3507	29	ADAPTOR TEE 1/4" BSP	1B5315
12	WATER PUMP OUTLET PIPE	1B9195	30	UNION M FLARE TO M PIPE	1B4962
13	HOBBS ELBOW 3/8" BSP	1B8811	31	SCREW M4 x 6 BRASS	1B1560
14	HOBBS CONED LOCKNUT	1B1385	32	PRESSURE SWITCH	1B5120
15	WATER REGULATOR RP120	1B8810	33	CONNECTOR MPM	1B5133
16	HOBBS STRAIGHT CONNECTOR	1B1385	34	SOLENOID VALVE	1B5132
17	ADAPTOR 5/16" OD x 1/4" BSP	1B8913	35	SCREW M4 x 16 BRASS	1B3433
18	OLIVE 5/16"	1B8915	36	DUPLEX WATER PUMP 230V	1A1098

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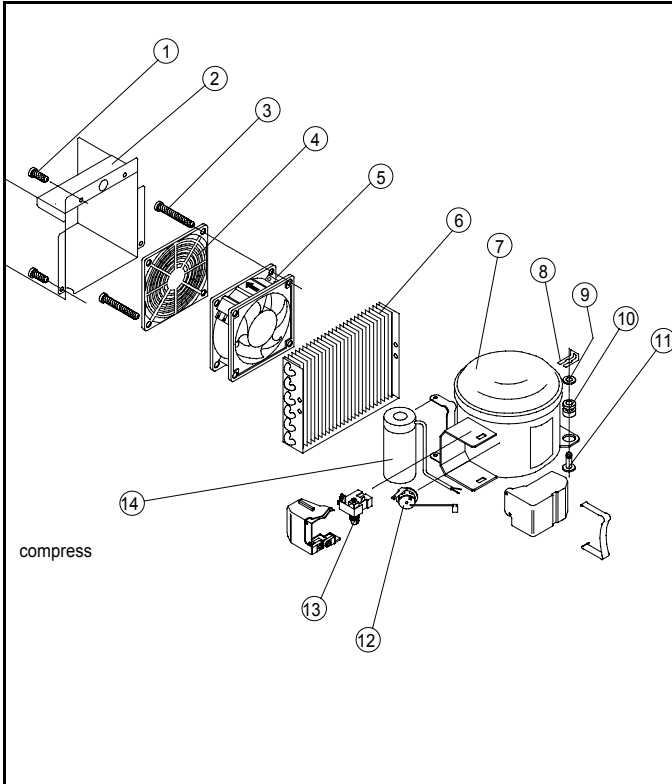


ITEM	DESCRIPTION	PART No	ITEM	DESCRIPTION	PART No
1	SOLENOID MOUNTING PLATE	1B7899	19	JG LOCKING CLIP 5/16"	1B8483
2	SOLENOID 24V DC	1B1276	20	JG ELBOW EQUAL 5/16"	1B7515
3	ACTUATOR BRACKET	1B0010	21	STRAIGHT WATER NIPPLE	1B9015
4	SCREW No 8 ST/ST POZI PAN	1B2223	22	TUBING EVA	1B8456
5	LONG STEM ACTUATOR	1B4797	23	CLAMP OETIKER 8.7	1B6829
6	SCREW ADJUSTMENT	1B1447	24	ELBOW CONNECTOR 1/4"	1B9040
7	NUT HEX NYLON 10-32 UNF	1B2442	25	TUBING EVA	1B8456
8	'O' SEAL 1D1.15 x 1.0	1B4963	26	CLAMP OETIKER 10.5	1B1668
9	SCREW M5 x 30	1B0886	27	PLUG VALVE MANIFOLD	1B6904
10	WASHER 5.3ID x 10OD	1B1028	28	NIPPLED BARB	1B0266
11	SCREW NYLON M5 x 6 POZI PAN	1B6199	29	'O' SEAL 6.07ID x 1.78	1B0915
12	BONDED SEAL M5	1B6039	30	BONDED SEAL M4	1B6265
13	VALVE CONTROL BLOCK	1B5782	31	SCREW NYLON M4 x 6 POZI PAN	1B6264
14	FLOW ADJUSTER ASSEMBLY	1A2806	32	VALVE SPRING	1B0649
15	SCREEN FILTER	1B1986	33	ELBOW CONNECTOR	1B9033
16	'O' SEAL 7.66ID x 1.78	1B8476	34	COOKIE BITE WASHER	1B9228
17	CLAMP OETIKER 10.0	1B4295	35	SCREW RECESSED 8-32 UNC x 1/2"	1B9478
18	TUBING MDP	1B7100			

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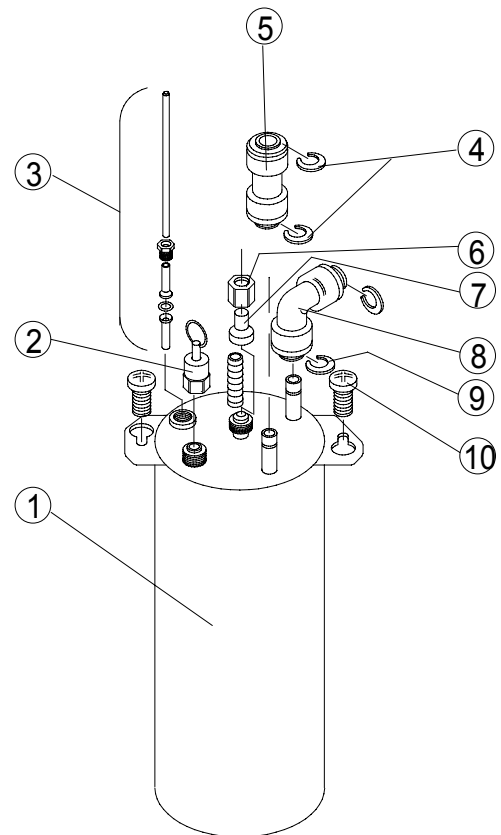


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ITEM	DESCRIPTION	PART No
1	SCREW M4 x 8	1B2660
2	FAN SHROUD	1B8962
3	SCREW No8 x 13/4"	1B6811
4	GUARD FAN	1B2978
5	FAN 120mm	1A2777
6	CONDENSER	1B6623
7	COMPRESSOR GD40MB	1B8250
8	SNAP ON CLIP	1B5993
9	WASHER 8mm ID	1B5995
10	RUBBER GROMMET	1B5939
11	MOUNTING PIN	1B5994
12	THERMAL OVERLOAD	1B8448
13	RELAY START GD40MB	1B8447
14	CAPACITOR GD40MB	1B8446

ITEM	DESCRIPTION	PART No
1	CAN WELDED ASSEMBLY	1B9633
2	RING RELIEF VALVE	1B8533
3	PROBE ASSEMBLY	1A2741
4	JG LOCKING CLIP 1/4"	1B9333
5	JG STRAIGHT REDUCING 5/16" x 1/4"	1B9004
6	NUT SWIVELPLATED	1B0408
7	SWIVEL NUT BLANKING INSERT	1B9044
8	JG ELBOW EQUAL 5/16"	1B7515
9	JG LOCKING CLIP 5/16"	1B8483
10	SCREW M5 x 10 STEEL	1B0254



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