



TECHNICAL BROCHURE

FOR CP4202-0643/0647

OIL FILTRATION UNIT



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1. INTRODUCTION

The Filtration unit CP4202 is designed to clean a wide range fuel tanks and storage units.

The unique Chainings 203mm-filter medium is fitted to the unit, which will remove water, acids, ethylene glycol and all other aqueous contaminants together with solids above 1 micron.

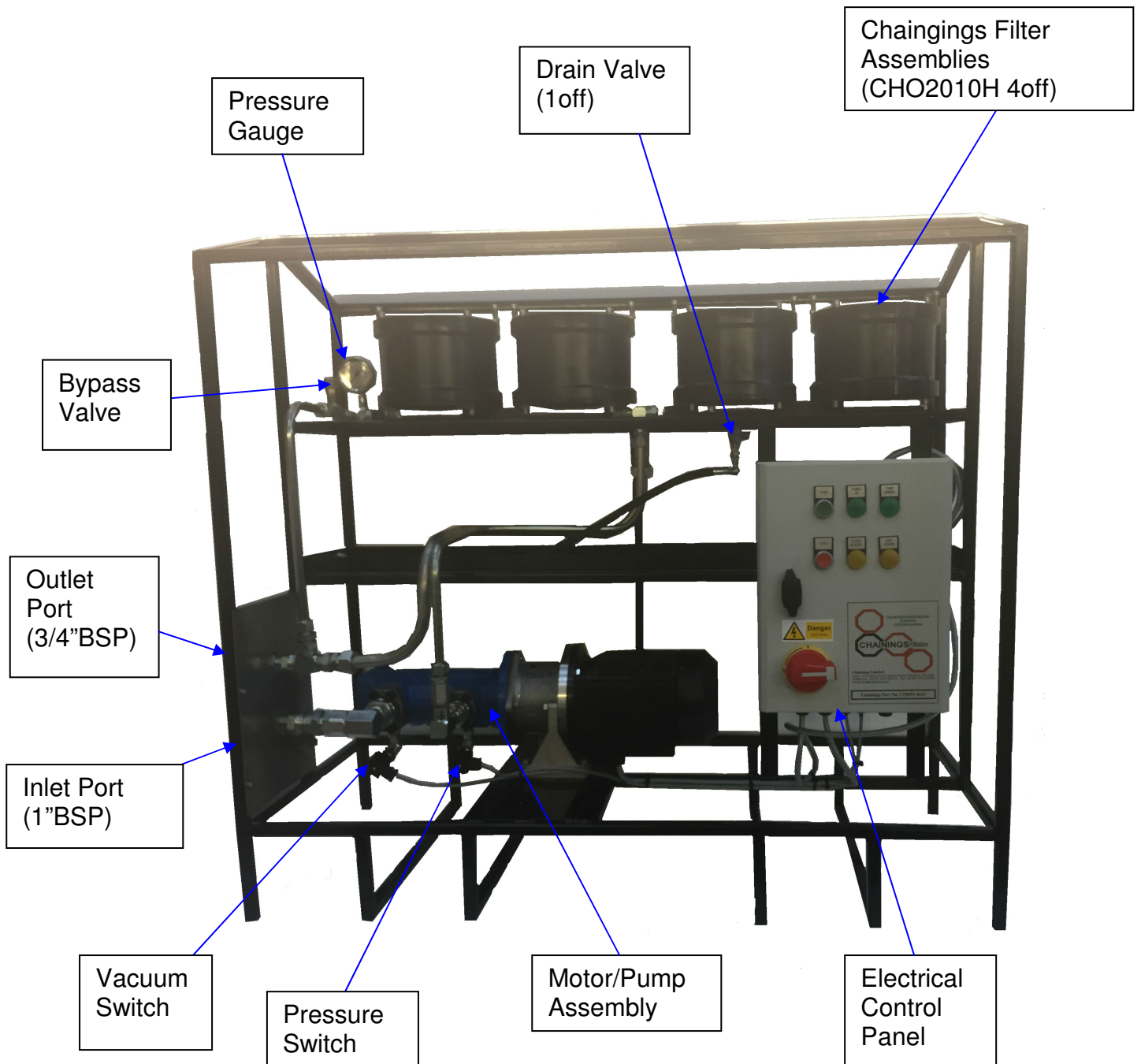
Note:

It is advisable to contact the manufacturer before cleaning fluids where the characteristics are not known.

2. FILTRATION UNIT FEATURES

- 2.1 Electrical Panel; This houses all the electrical controls to & from the unit. All the components are secured in a weatherproof cabinet built to IP55 standard. The panel is provided with safety interlock, so that access cannot be gained unless electrically isolated.
The following lamps & controls are mounted on the panel door;
- a) Pump, Start Button (Green)
 - b) Pump Stop Button (Red)
 - c) Power On Indicator (Green Lamp)
 - d) Pump Running Indicator (Green Lamp)
 - g) High vacuum indicator (Amber lamp)
- Mounted on top of the cabinet is a flashing beacon to indicate filters are blocked
- 2.2 Filter Assembly; Part of the unique range of element types & sizes, the Chainings filter medium is housed in 4off corrosion resistant housings & sealed to provide the maximum efficiency for contamination control. Designed specifically for ease of filter element replacement.
- 2.3 Pump & Motor; Consisting of a 240V 0.75Kw motor, close coupled to a Triple Screw pump. This assembly has been selected to produce laminar circulation of oil with the minimum revolutions of the pump's rotating parts, to aid the efficiency of the filters in removal of oil contamination. The pump is fitted with a mechanical relief valve set to discharge oil back to the pump's suction feed should the generated pressure exceed 9 Bar.
- 2.4 Pressure Gauge; A 0-10 Bar pressure gauge located in the filter circuit to provide a visual indication of the pressure generated during the cleaning cycle.
- 2.5 Pressure Switch; Located in the filter circuit & factory set to 9 Bar. Its function is to protect the filters from excess pressure due to filter element blockage. Should the pressure rise to the defined setting, the pressure switch will latch an electrical signal, automatically turning off the unit & activating the Amber "Filters Blocked" Lamp.
- 2.6 Vacuum Switch; Located in pump suction side and factory set to ensure that the unit does not operate if the connection hose from the system supply is either restricted or not properly connected. Should the vacuum increase above the set value, the switch will latch an electrical signal, automatically turning off the unit & illuminating the "High Vacuum" Lamp
- 2.7 Filter Bypass Valve; Located between filter pressure and filter return circuit. Factory set in the normally closed position. It's function is to relieve undue pressure in the filters if the unit has not been used for a period of time and the filters have not been replaced upon restart. Once the pressure reduces as a regular and constant flow of oil passes through the filter, then the Bypass valve may be closed again.

2. FILTRATION UNIT FEATURES Cont.



3. INSTALLATION & OPERATION OF THE UNIT

3.1 Installation of Unit

The electrical supply to the unit should be connected to a suitable Single Phase 220-240V 50Hz supply.

Notes:

- 1. When the electrical supply is connected to the unit, ensure that the pump operates in the direction of rotation as depicted on the arrow on top of the pump assembly. (i.e Anti-clockwise viewing from front end of pump with motor at the rear)**
- 2. This unit has been tested with transformer oil to BS148 IEC296. During initial operation, it is advisable to flush the system before using on intended application.**
- 3. It is important to ensure that the supply to & the delivery from the unit is free from restrictions otherwise malfunction may occur.**
- 4. Before operation of the unit, ensure that filter elements are fitted into the Chainings Filter Housings.**
- 5. Ensure the Filter Drain Stop Valve and Filter Bypass valve are in the closed position.**

Connect the supply hose from a suitable port on the bottom of the oil reservoir to the Inlet Port of the Filtration Unit. Ensure that there are no restrictions on the connection port and any Isolating valves are in the Open position.

Do not connect the other hose until the Air Bleed sequence has been completed.

3.2 Air Bleed Procedure.

- 1. With the electrical supply connected, turn the Mains Isolation Switch to the "On" Position. Power On Lamp will be illuminated.**
- 2. Turn the "Filter Drain" Stop Valves to the On position. Place a suitable receptacle under the Stop valves to collect discharged oil.**
- 3. Press Green "Pump Start" Button.**
- 4. Observe the oil discharging through the "Filter Drain" Stop Valves.**
- 5. When a constant flow of oil with no air entrapment is observed, press the Red "Pump Stop" Button and immediately turn the "Filter Drain" Stop Valves to the Closed Position.**

Connect the feed hose from the Outlet Port of the Filtration Unit to a suitable port on the top of the oil reservoir. Ensure that the port is free from restrictions and is below the oil level. (To prevent air entrapment)

3. INSTALLATION & OPERATION OF THE UNIT Cont.

3.3 Operation of Unit

1. Once fully connected, the unit may be switched on by pressing the Green “Pump Start” Button and oil from the reservoir will be circulated through the filtration unit Chainings filters before returning back to the reservoir. Ensure that the filter Bypass valve is fully closed.
2. Optimum pressure generated by the filtration unit should be between 6 to 9 Bar.
3. Once Running the unit will continue to circulate oil until;
 - a) The Red “Pump Stop” button is pressed. This will stop electrical supply to the pump’s motor
 - b) The “High Vacuum” Lamp is on indicating that the supply to the filtration unit is not connected or restricted. A preset switch will trip the pump running circuit to stop electrical supply to the pump’s motor.
 - c) The Yellow “Filters Blocked” Lamp is on indicating that the filter elements have become blocked. In this condition, the pressure in the unit has risen to a preset value of 9 Bar. A preset switch will trip the pump running circuit to stop electrical supply to the pump’s motor.
 - d) If the Yellow “Filters Blocked” Lamp is on, the filtration unit should be electrically isolated by turning the Mains Isolator to the Off position and the filter elements replaced. (See Filter Change procedure Section 6)
4. Once the filter elements have been replaced, the Air Bleed Procedure will need to be repeated before normal operation commences.

Note; **To cancel “Filters Blocked” or “High Vacuum alarms, the Mains Isolator must be turned to the ‘Off’ position then back ‘On’ again, to recommence operation of the unit.**

NOTE; **This product is fully tested to specification before it leaves the factory. Should any queries or problems arise, then the manufacturer should be contacted immediately. Adjustments made to the product without the prior knowledge of the manufacturer may invalidate any warranty claims.**

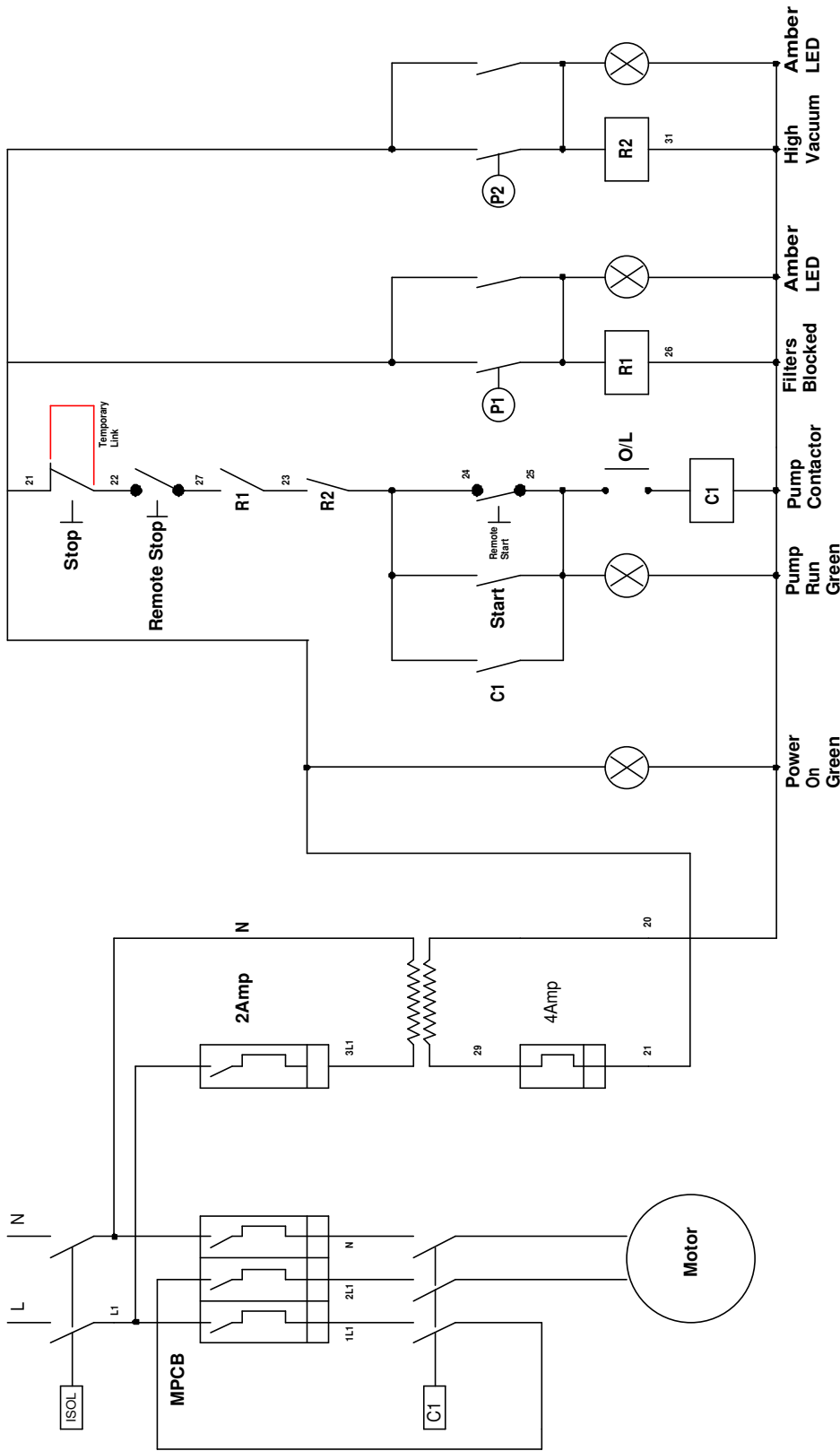
4. SPECIFICATIONS

1.	TYPE OF FILTRATION UNIT	CP4202
2.	TYPE OF FILTER HOUSING	CHO2010H
3.	SIZE OF FILTER ELEMENT	OCH2010 *
5.	POWER SUPPLY TO CABINET	220-240V 50Hz 1Ph
6.	CONTROL SUPPLY	24vAc (Except supply to motor)
7.	PUMP/MOTOR SPEC.	Motor; 240V 0.75Kw Pump:AFT40R54U19
8.	FREQUENCY SETTING	50Hz
9.	NOMINAL FLOW RATE	15Lpm
10.	INLET PORT SIZE	1" BSP
11.	OUTLET PORT SIZE	¾" BSP
12.	WEIGHT	150Kgs (Approx)
13.	SIZE	120-50-100cm
14.	MIN & MAX OPERATING TEMP (AMBIENT)	10 – 50 Deg C
15.	MIN & MAX OPERATING TEMP	10 – 80 Deg C
16.	MAXIMUM PRESSURE TO THE UNIT	0.5 Bar
17.	MAXIMUM SUCTION LIFT	5 Metres
18.	MIN OPERATING PRESSURE	2Bar
19.	MAX OPERATING PRESSURE	Press. switch setting 9 Bar

- **For re-ordering Chainings Filter Elements quote 4off OCH2010.**

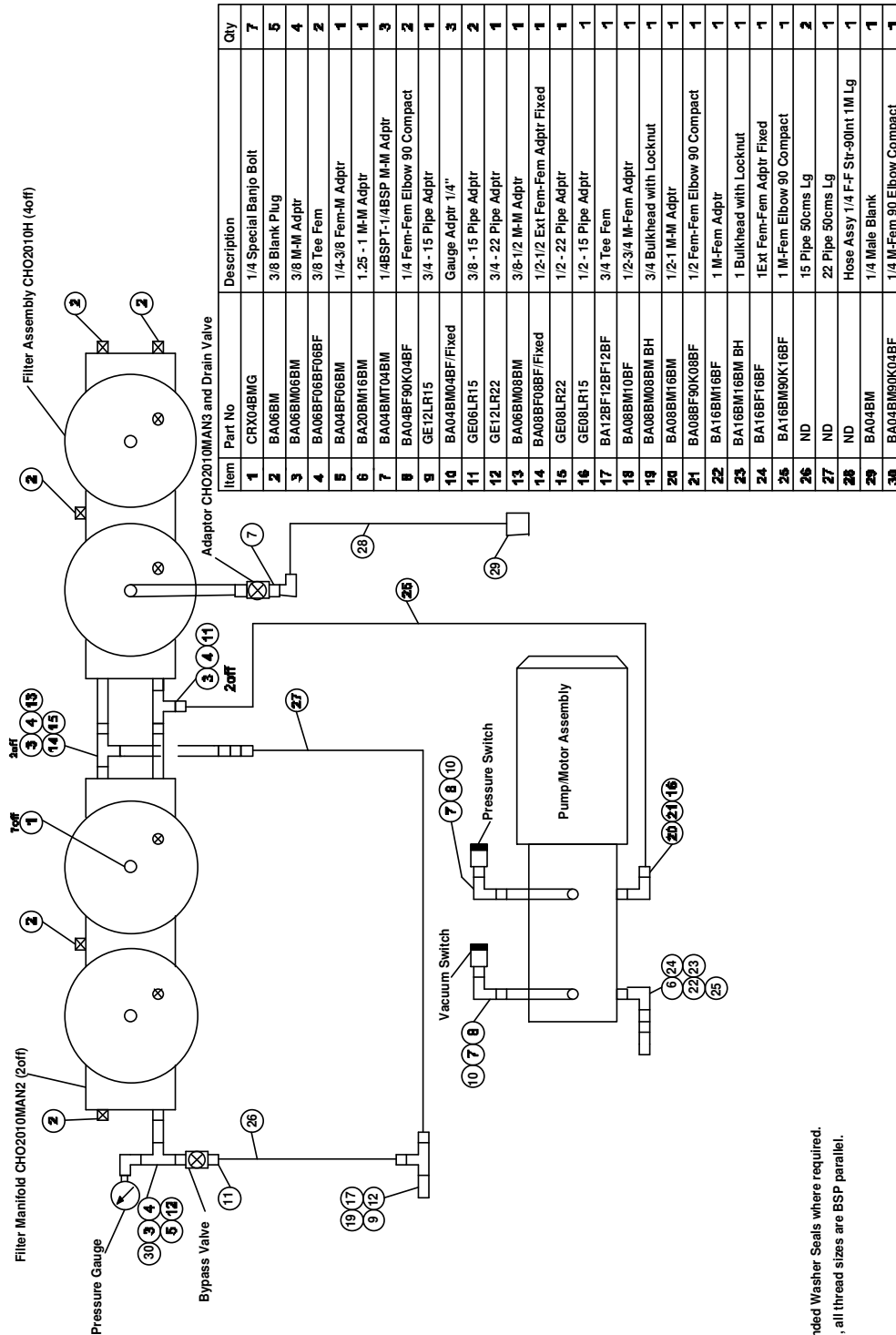
5. DRAWINGS

ELECTRICAL CIRCUIT DIAGRAM CP4202-0643-01



5 DRAWINGS Cont.

Piping Diagram CP4202-0643-03

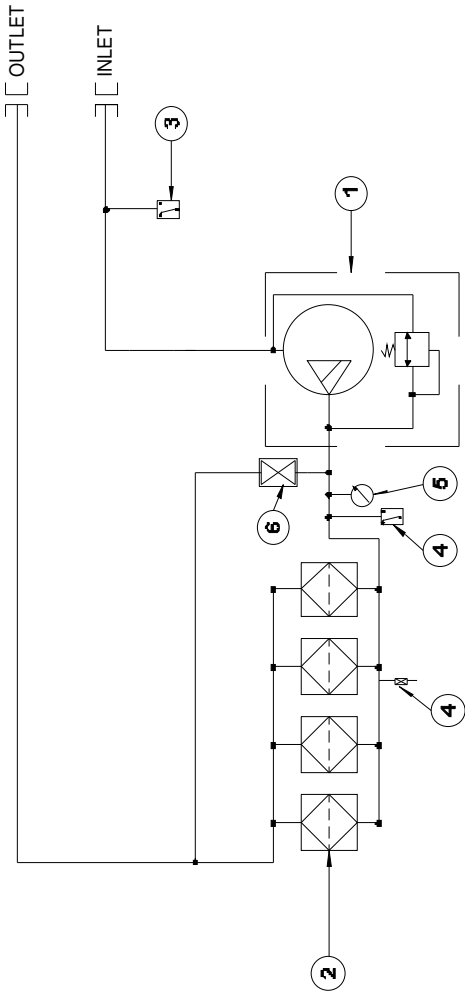


NOTES:
 Assemble Bonded Washer Seals where required.
 Unless Stated, all thread sizes are BSP parallel.

5. DRAWINGS Cont.

HYDRAULIC CIRCUIT DIAGRAM CP4202-0643-02

Ref	Part No.	Description	Qty
1	AF140R38U19LSW197	Pump/Motor Assy	1
2	CHO2010H	Chainings Filter Assy	4
3	3821229	Vacuum Switch	1
4	4920H22	Pressure Switch	1
5	83600101	Pressure Gauge 0-10 Bar	1
6	80700606	Manual Bypass Valve	1
7	80900404	Filter Drain stopcock	1
8			



6. FILTER CHANGE PROCEDURE

Removal of used elements:

1. Ensure the filtration unit is electrically isolated and the connection hoses removed.
2. Pull the ¼" BSP Flexible Hose Assembly out of the filtration unit and remove the steel blanking plug. Direct end of hose into a suitable oil collection vessel.
3. Open the handle of the Filter Drain valve located under the Chainings Filter assembly to the rear of the electrical control cabinet. Gradually loosen the Bleed plug fitted on each Filter Lid, to decay any residual pressure.

WARNING: Care should be taken to avoid the risk of oil contacting the operator, in case of undue pressure being released.

4. Loosen & remove the M8 clamping screws, spring washers & plain washers, securing the lid to the filter housing.
5. Unlock the nuts fitted to the underside of the two M8 bolts located on the Filter Lid & screw the bolts downward to assist removal of the lid.
6. Once the Filter Lid has been removed, pull the Filter Element upwards & away from the Filter Housing.
7. Dispose of the Filter Element in accordance with any legislative procedures that may be applicable.

Installation of new element:

1. Ensure that the Filter Housing is clean & free from contaminates. Ensure that the 'O' Ring on the Centre Tube is correctly positioned & not damaged.
2. Install the replacement Filter Elements & ensure that it is seated firmly at the bottom of the Filter Assembly.
3. Ensure that the 'O' Ring on the Filter Lid is correctly fitted & Not damaged.
4. Apply a film of clean oil around the 'O' Ring on the Filter Lid & ensure that the ends of the two bolts for extraction purposes, are not protruding through the bottom of the Filter Lid.
5. Line up the holes in the Filter Lid with the tappings in the Filter Housing & press down to locate the lid.
6. Replace the clamping screws, spring washers & plain washers & Torque tighten each screw in a diagonal fashion, to 20Nm.
7. Hand tighten the two bolts on the Filter Lid & lock to the Lid with the nuts fitted to the underside of each bolt. **Note; The Filter Element has been designed to compress as the lid is being tightened down.**
8. Tighten the Bleed plugs into each filter lid. (Note: Maximum Torque 20Nm)
9. Turn the handle of the Filter Drain Valve to the closed position and refit the blanking plug to the end of the Flexible Hose Assembly and restore the hose inside the filtration unit.
10. The unit can now be restarted.

WARNING: ALWAYS USE GENUINE CHAININGS FILTER ELEMENTS.