

CARDEV

Oil Filtration and Coolant Handling Specialists



CDU-50M

Splits Oil/Water Emulsions

Separates Free Oil

Reduces Disposal Costs

*Permeate Suitable To Be Put
Down Drain*

Low Running Costs

Easy To Operate

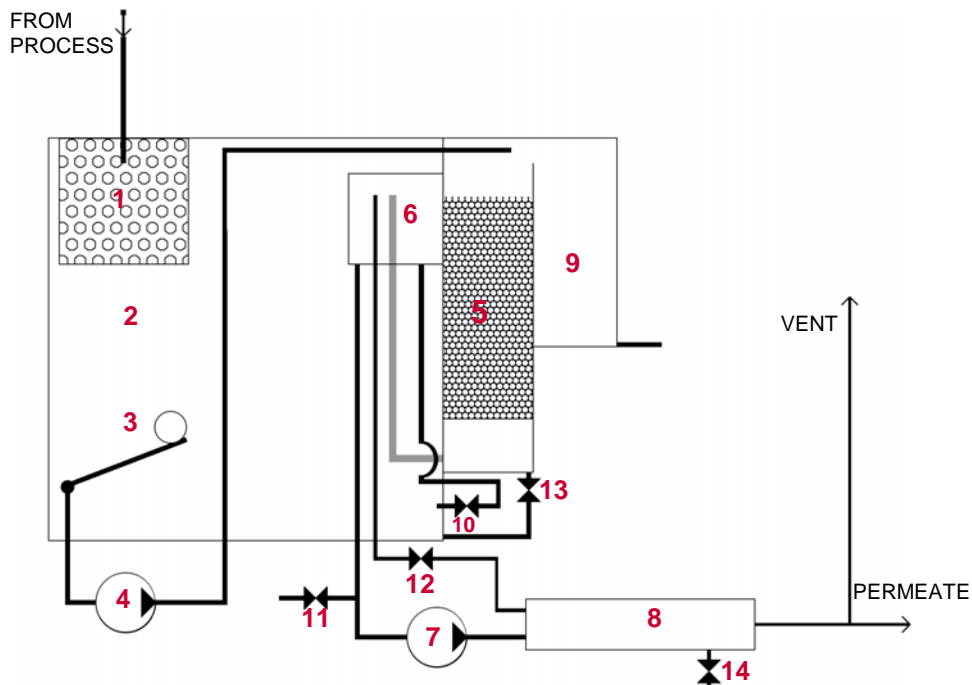


*Cardev also provide a full design
and manufacture service for units
to treat larger volumes of waste
coolant and oil/water emulsions*

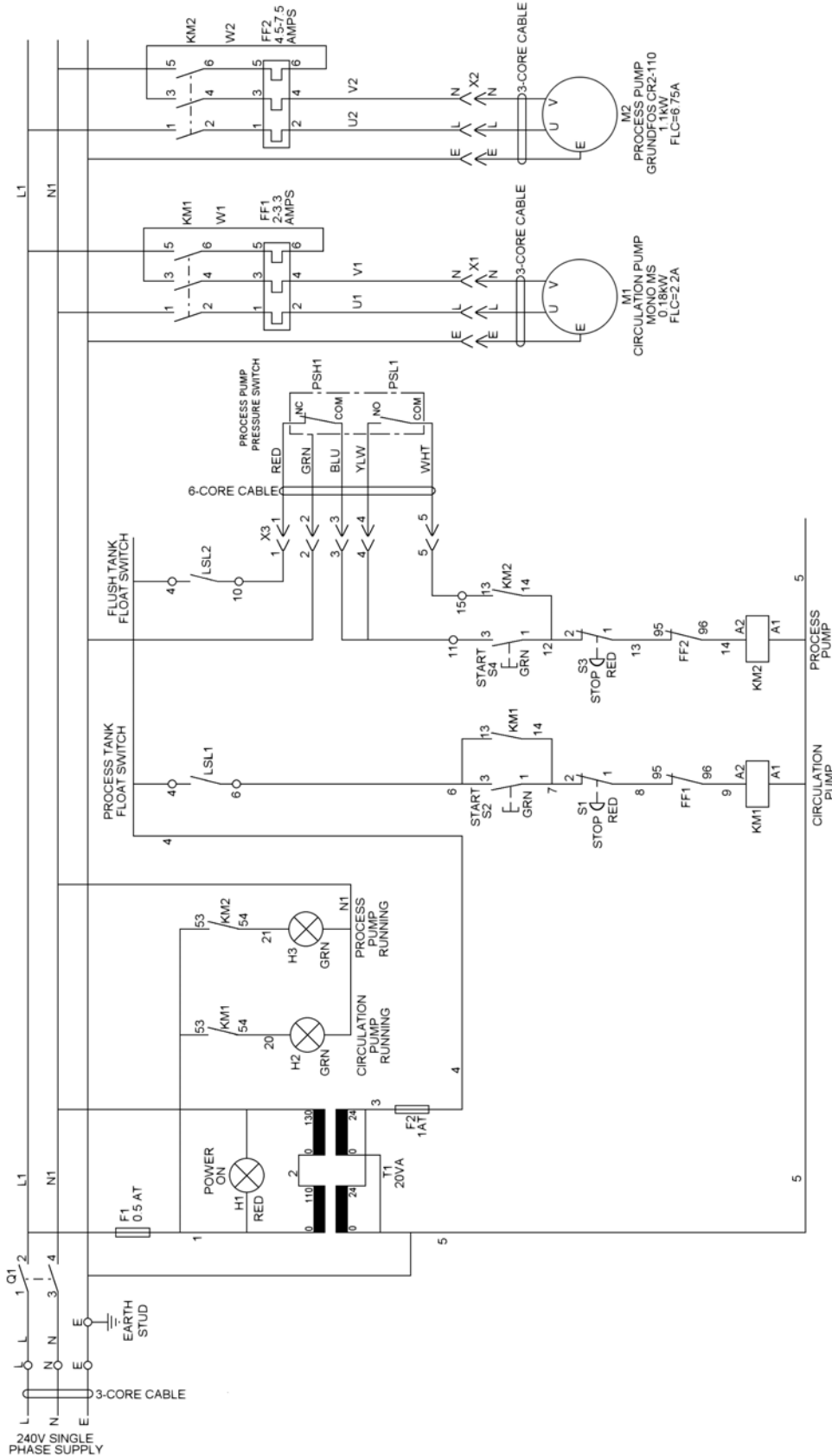
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1	BAG FILTER
2	PROCESS TANK
3	FLOATING PICK-UP
4	CIRCULATION PUMP
5	COALESCER TANK
6	INTERNAL FLUSH TANK
7	PROCESS PUMP
8	MEMBRANE
9	WASTE OIL TANK
10	FLUSH TANK DRAIN VALVE
11	FLUSHING CAMLOCK CONNECTOR
12	PRESSURE CONTROL VALVE
13	COALESCER DRAIN VALVE
14	SHROUD DRAIN



Introduction

The coolant disposal unit is designed to accept waste coolant and oily waters direct from the machine tool or wash plant.

To transfer the fluid, current site methods may be used, but we recommend the use of an CARDEV S100 – 220 or 500. As this type of machine is fitted with a bag filter, any larger particles are removed prior to the fluid entry into the CDU, so extending the life of the bag filter.

Operation

- a. Transfer the used liquid into the CDU via the bag filter (1), fill the process tank (2) until the level reaches the top of the internal flush tank (6).

Note : It will not cause a problem if the unit is partially filled.

- b. Switch on the circulation pump (4) and wait until the fluid is overflowing the flush tank (6).

- c. Position the permeate outlet so that it is flowing down from the unit.

Note : This should be open to atmosphere.

- d. Open the membrane shut-off valve and fully open the back pressure needle valve.

- e. Press the green process pump start button and hold it down until the inlet pressure gauge indicates 2 or more bar (this is to override the low pressure safety cut-out). Should the pressure fail to rise, release the button, wait for a few moments and try again. Should the problem continue, prime the system by using the flushing connection. To achieve this, connect a water supply to the flushing system camlock connection and turn on the water until the air bubbles stop rising in the flush tank (6).

Turn off the water supply, disconnect the camlock, replace the camlock cover and press the green start button to restart.

- f. Adjust the membrane back pressure needle valve until the back pressure gauge indicates 5 - 6 bar. This should equate to 8 bar approximately on the inlet gauge.

- g. After a short period, water will flow from the permeate pipe. A visual check should be made on the clarity of the permeate.

The CDU will now run until it has processed the liquid in the process tank (2) down to the low level switch, which will then stop the circulation pump (4).

The level in the flush tank will begin to fall until the cut-out switch is reached and the process pump will then stop.

The resultant concentrate in the process tank should now be removed, by pump or industrial vacuum, and transferred to a waste tank ready for disposal off site. Before removing the concentrate, the flush tank drain valve (10) and the coalescer drain valve (13) should both be opened. Ensure that the valves are closed again upon completion.

After each batch is processed the membrane should be flushed to maintain optimum performance.

The main process tank should now be refilled and the system run again until the low level cut-out switches stop the machine.

Flushing

1. Drain the flush tank and leave the drain valve (10) open.
2. Fully open the back pressure needle valve.
3. Connect the water supply to the flushing camlock connector (11) and turn on the water supply.
4. Any concentrate remaining in the process pump and membrane will flow into the flush tank and drain into the process tank.
The concentrate is expelled from the process pump and membrane by water pressure and the process pump should **NOT** be switched on at this stage.
When the fluid flowing into the flush tank begins to look almost clear, close the drain valve (10), and allow the flush tank to fill. When full, turn off the water supply and disconnect the hose and replace the camlock cover.
5. Place the permeate hose outlet into the flush tank and switch on the process pump.
Should the water level in the flush tank fall below the cut-out switch the pump will stop running. Add water to the tank until the level is above the cut-out switch.
6. Add 500ml of Surfachem to the flush tank.
The flushing cycle should be run for approximately three hours.
7. Switch off the process pump, and return the permeate hose to its normal running location.
If the CDU is to be used immediately after flushing, fill the main tank with a batch of waste fluid and follow the start-up procedure.
If, however, the CDU is going to stand idle, close the membrane back pressure needle valve and membrane shut off valve. This is to stop drain down and avoid the membranes drying out.
8. Should the permeate flow reduce to half its normal rate during the process, a flush cycle should be carried out.
9. The free oil tank should be drained as required

Built-in Safety Features

1. Low level cut-out in flush tank.
2. Low level cut-out in process tank.
3. High/Low pressure cut-out on process pump.
4. Motor overloads in panel.

CDU-50M

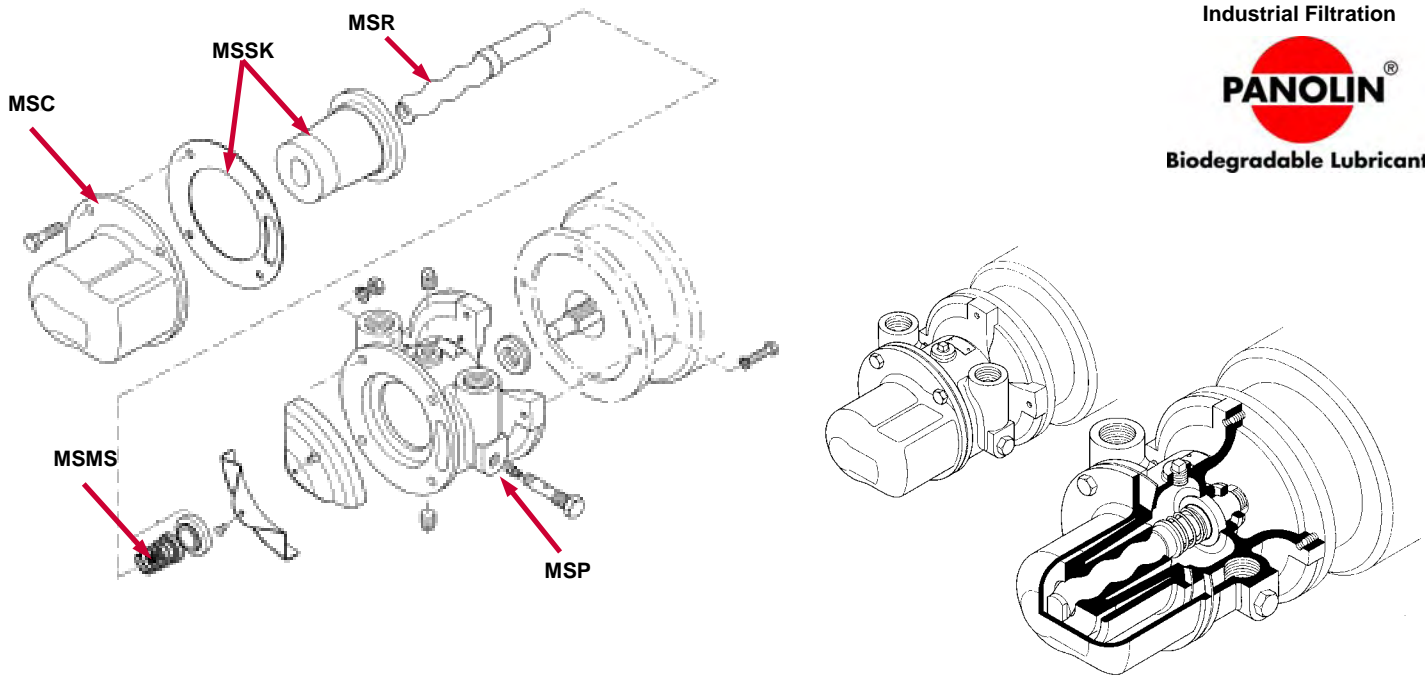
CIRCULATION PUMP & MOTOR



Industrial Filtration



Biodegradable Lubricants



Stator

This is removed by undoing the four nuts and bolts securing the barrel which is then pulled off the body. This exposes the stator which can then be removed from the rotor.

Rotor

This is removed by holding the motor shaft with a spanner on the two flats on the shaft and unscrewing the rotor with the aid of a second spanner on the flats on the end of the rotor. The threads are LEFT HAND and so the rotor should be screwed in a clockwise direction (when looking at the end of the rotor.) Removal of the rotor also releases the mechanical seal and care should be taken not to damage the mating sealing edges.

Seal

If this is disturbed or removed because of damage, when replacing or fitting a new seal, ensure it is correctly assembled before re-fitting into the pump. The rubber seal and stationary seat should be pressed into the body housing and the rotating portion assembled on to the rotor shaft before screwing the rotor back on to the motor shaft which is then locates the mechanical seal with its correct tension.

To Re-Fit

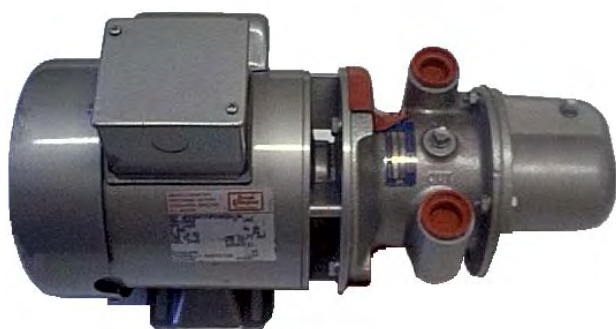
The reverse procedure is used to that of dismantling.

START-UP PROCEDURE

Pumps must be filled with liquid before starting. The initial filling is not for priming purposes, but to provide the necessary lubrication of the stator until the pump primes itself.

When the pump is stopped, sufficient liquid will normally be trapped in the rotor/stator assembly to provide lubrication upon re-starting.

If, however, the pump has been left standing for an appreciable time, moved to a new location, or has been dismantled and re-assembled, it must be refilled with liquid and given a few turns before starting.



PUMP & MOTOR

MS: 230V

MOTOR

MSM: 230V

CAPACITOR

MSC: 230V

CDU-50M

PARTS LIST



Industrial Filtration



Biodegradable Lubricants



PRESSURE SWITCH
PS2381CE



PROCESS PUMP
GP-CR2



PRESSURE GAUGE
PG160F



FILTER BASKET
FB



COALESCER ARM
COALARM



FILTER BAG
SB200

NON RETURN VALVE
NRV10



NON RETURN VALVE
NRV12



PRESSURE CONTROL VALVE
PCV



FLOAT SWITCH
CFRS



MEMBRANE POD
MEMPOD-N

MEMBRANE SET (NOT SHOWN)
AFC30

CDU-50M

CARDEV

Industrial Filtration



Biodegradable Lubricants



FLOATING PICK-UP
FPU-CDU



MEDIA



CONTACTOR
CON1B:24V



MEMBRANE SHUT OFF VALVE
MSOV



TRANSFORMER
CT



ISOLATOR SWITCH
SWCDU



OVERLOAD RELAY
TOR75: 230V 4.5-7.5 AMPS



FUSE
FUSE 0.5AMP
FUSE 1.0 AMP