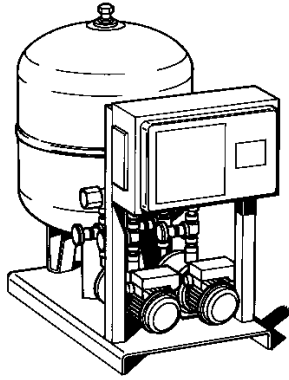


TRANSFLO SEALED SYSTEMS



Mount the equipment on a concrete base suitably sized to absorb vibrations and provide adequate support.

CONNECTION TO THE SYSTEM

Before connecting the equipment, flush the pipework until clean.

Connect the unit to the system return main and on the inlet side of the main circulating pump. Expansion pipework should be sized to accommodate the contained system water expansion and contraction rate.

The equipment is designed to accommodate an Expansion rate of 1 degree C per minute.

Expansion pipework, intermediate cooling vessel and Pressurization equipment should not be insulated.

All pipework should be correctly aligned to eliminate any strain on the unit.

CAUTION - Care should be taken to allow for any increase of pressure created by the circulating pump when selecting equipment.

With the circulating pump running the system pressure will change from its original condition. The pressure at the pump discharge will be higher than the system pressure at the pump suction by an amount equal to the pump head. By locating the Pressurization equipment at the suction side of the pump, the pressure changes caused by pump operation are thereby added to the original imposed system pressure.

Suitable size mains water pipework should be provided to the spill tank make-up valve.

Water pressure should be at 1.5 bar minimum.

ELECTRICAL

A 4 wire 415/3/50 electrical supply should be made available to the control panel - The operating voltage and electrical data are indicated on the motor nameplate and connection should be made as shown on the wiring diagram. The equipment must be earthed. External boiler interlock control circuit wiring should be carried out to the unit control panel connections.

When the Pressurization equipment is supplied as separate modules other electrical wiring and connection will be the responsibility of the installer.

Interlock relays are fail safe shut down the burner and provide warning when a fault condition occurs.

Do not run the pump(s) at this stage. If the low pressure alarm activates this can be cancelled by pushing the mute button on the panel fascia.

The overloads should be set to the same value indicated on the motor nameplate. If the motor current exceeds the set value for prolonged periods of time the overload will operate & trip out the starter to disconnect the supply to the motor, this will also light the trip indication on the control panel. This will have to manually reset by the reset button.

COMMISSIONING

The sets are factory tested and controls set in accordance with the system specification.

CAUTION - Do not adjust the controls without consultation and verification with Fluid Automation Ltd

Verify that the system is standing at the Initial cold pressure.

Verify that the spill tank water level is standing at the closed position of the water make-up float valve, or off position of the water make-up level switch when fitted.

Carefully open the Unit spill tank/pump suction isolating valves.
PRIME AND VENT THE PUMPS - Vent pumps by carefully slackening the vent plugs until water is seen to escape.
Tighten the vent plugs.

Check the pumps are free to turn by removing the motor fan cowl and carefully rotating the pump and motor rotating assembly using the motor fan. Replace the fan cowls

Check the rotation by quickly turning the pumps on and off to see if the motor shaft turns in the correct direction.
Rotation can be reversed on three phase motors by interchanging any two of the incoming phases.

The selected pump can now be started with the discharge valves closed and when the pressure is stable, slowly open the discharge valves.

CAUTION - Do not operate for prolonged periods with closed discharge valve. Do not close the suction valve while the pump is operating.

Any initial noise may be due to air in the system and should cease provided the system is fully vented.

CAUTION - Do not run the pumps dry - otherwise the mechanical seal will be damaged - and leak.

Close the system valve and allow the pump to transfer water to the Diaphragm cushion vessel until the pump cuts out automatically on pressure rise. It is important the water level is maintained in the spill/break tank so that the pumps do not run dry.

The system valve should now be opened slowly and the pumps allowed to pressurize the system, care being taken not to open the valve to quickly and drain the vessel in the event of the system not already being correctly filled.

The pump will cut out automatically at the required system pressure.

THE SYSTEM MUST BE FULL, VENTED AND PRESSURIZED BEFORE THE BOILERS ARE OPERATED.

OPERATION

Now that the system is pressurized and the system water heated, consequently the system pressure will rise to reach the pressure at which the auto valve will open and allow expanded water to enter the spill tank, eventually at design temperature all expanded water will be transferred to the spill tank, via the automatic valve.

Whilst the boilers are off contraction of the system water will take place indicated by reduction of pressure and the duty pump will operate to maintain the system operating pressure.

TRANSFLO SEALED SYSTEMS

The pumps will operate on a fall in system temperature or should a leak develop.

CONTROLS

The control panel contains the following equipment for the automatic control of the unit.

HRC fuses and DOL starters for pumps.

High and low pressure alarm relay and boiler interlock.

Audible alarm bell.

Mains isolating switch.

240 volt control circuit supply.

The system pressure is maintained between set limits by the automatic sequence operation of the pumps from pressure switches, which are preset, pressure switch one starts the duty pump, if the duty pump is unable to maintain the required pressure level the system pressure falls and the support pump(s) is activated.

Pump operation can be altered by the selector switch on the panel fascia. All pressure switches can be overridden by unit running in the hand positions.

PRESSURE ALARMS & BOILER INTERLOCKS

Inside the panel are pressure alarm relays which are continuously energised by pressure switches (High & low pressure) as long as the system pressure is maintained within the limits. When the relays are energised a contact on each is closed to complete the boiler circuit and so allow the boiler to operate. If the system pressure either rises or falls outside the pressure switch settings the associated alarm relay opens and breaks the boiler interlock circuit. At the same time an alarm lamp, is displayed on the panel fascia to indicate whether a HIGH OR LOW PRESSURE ALARM has occurred and audible alarm sounds.

If the panel isolator is switched off for any reason the relays are de-energised and again the boiler will stop. In this case however, the audible alarm will not sound since the power supply is off. Also if the panel control fuse blows for any reason the relays open and stop the boiler but again the alarm bell will not sound due to loss of power supply.

MAINS ISOLATOR

The electrical supply to the panel is connected to an isolating switch which is interlocked with the panel door so that the door can only be opened with the isolator is "off".

A "PANEL ALIVE" lamp on the panel front indicates when the isolator is switched "on".

CONTROL CIRCUIT FUSE

All lamps starter coils and relay coils in the panel are supplied at 240 volts through a control circuit fuse rated at 4 amps. If the fuse blows for any reason a lamp on the panel front is lit, indicating "control fuse failure". Everything will stop and all other lamps will go out.

The control circuit should be thoroughly checked to establish the cause of the failure, before the fuse is replaced.

IMPORTANT

- 1) Always ensure that the mains supply is switched off before examining any electrical equipment on the unit.
- 2) Always replace blown fuses with the correct size fuse cartridge. NEVER use fuse wire in HRC fuse holders.
- 3) Check the overload unit is correctly set at the motor full load current. NEVER increase the setting above the motor FLC amps.
- 4) Check wiring connections every six months for any loose wires or signs of wear-loose wiring connections can cause overheating and burning of the wiring.

IMPORTANT MAINTENANCE

- 1) Check the Diaphragm cushion pressure periodically.
- 2) When duplicate pumps are fitted, alternate the duty pump weekly.
- 3) Examine and clean, (if necessary), the spill tank periodically. Recoat if applicable.
- 4) The electrical installation should be thoroughly checked every 6 months

Periodic checks should be carried out on the following:

- 5) That the pump performance is correct.
- 6) That the unit is not noisy or vibrating.
- 7) That the pump mechanical seal or other unit components are not leaking.
- 8) check motors for overheating.

The pump motors are normally fitted with grease lubricated pre-packed ball bearings which require examination annually.

ASK FLUID AUTOMATION FOR DETAILS OF A SERVICE CONTRACT AND RECOMMENDED SPARE PARTS QUOTATION.