



## -Installation and maintenance details

This document is intended to advise on the installation and maintenance of Flowfit's AC mini powerunits, this information is not intended to be application specific. Please contact Flowfit for any further information.

### **Warning**

Only experienced competent/qualified personnel should work on the installation of this power unit.

### Hydraulic Fluid

A high-quality mineral hydraulic oil is to be used in the system, always fill from a filtered clean source (ISO4406 18/16/13), ISO viscosity grade VG 32 or 46 is recommended. Leave a 25mm air gap at the top of the oil tank, larger gaps may be needed if the unit is subjected to tilting. Do not use water-based fluids, Phosphate Esters or oils such as Skydrol.

### Electrical connection

Always use the wiring instructions under the lid of the terminal box on the electric motor, the fan of the electric motor must run in the direction of the arrow on the fan cowl.

Wiring Diagrams below are for reference only, always refer to the terminal box lid. Please note the rotation below refers to the direction of the motor shaft not the fan.

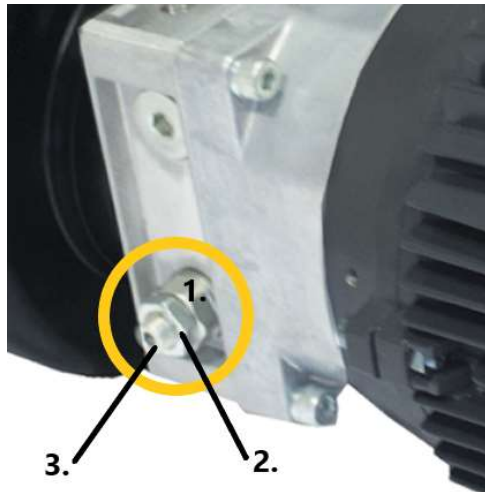
⚠ e.g., Clockwise wiring = anti-clockwise fan direction.

THREE PHASE MOTORS		SINGLE PHASE CAP START/CAP RUN MOTORS	
STAR CONNECTION	DELTA CONNECTION	CLOCKWISE	ANTI-CLOCKWISE

- ⚠ Running the power unit in the wrong direction with oil in the tank may result in the failure of the pump shaft seal, it may be necessary to run the unit "dry" without oil in the tank to check the fan rotation on the electric motor matches the direction of the arrow, this must only be performed for a maximum of 2 seconds.
- ⚠ To reverse the rotation for three phase motors, swap any two of L1, L2 & L3.
- ⚠ Generally, for UK 3PH 400V 50Hz use Star connection for 0.18Kw to 3Kw and Delta connection for sizes 4KW and above.

## Pressure setting

If the relief valve has been factory set then adjustment is not necessary, however if the main relief setting needs to be changed, please use the steps below:-



The picture shows the main pressure relief valve (1.) of the hydraulic powerunit, it is located on the two-cavity side of the central housing. To adjust the relief valve pressure, loosen the screw nut (2.); the relief valve screw (3.) can now be adjusted. Using a suitable Allen key set the desired pressure turning the screw (3.) in a clockwise rotation (+) to increase the maximum pressure and anti-clockwise rotation (-) to decrease the maximum pressure. Once the desired pressure has been achieved retighten (2.).

To accurately set the relief a pressure gauge needs to be fitted in the required part of the system.

**⚠** Care should be taken not to raise the relief valve pressure above the intermittent pressure (P2) rating of the pump and should be set only for system requirements and not the maximum. Details below:-

TYPE	DISPLACEMENT (CC/R)	MAX PRESSURE (BAR)			MAX SPEED (R/MIN)	MIN SPEED (R/MIN)	LENGTH (MM)
		P1	P2	P3			
GP-F100.19	0.19	200	230	250	7,000	1,000	60
GP-F100.26	0.26	200	230	250	7,000	1,000	61
GP-F100.38	0.38	200	230	250	7,000	1,000	62
GP-F100.50	0.50	200	230	250	7,000	1,000	63
GP-F100.65	0.65	200	230	250	7,000	1,000	64
GP-F100.75	0.75	200	230	250	7,000	1,000	65
GP-F100.88	0.88	200	230	250	7,000	1,000	66
GP-F101.00	1.00	200	230	250	6,000	850	67
GP-F101.25	1.25	200	230	250	5,000	700	69
GP-F101.50	1.50	200	230	250	4,000	600	71
GP-F101.75	1.75	180	210	230	4,000	600	73
GP-F102.00	2.00	160	190	210	3,000	500	75

TYPE	DISPLACEMENT (CC/R)	MAX PRESSURE (BAR)			MAX SPEED (R/MIN)	MIN SPEED (R/MIN)	LENGTH (MM)
		P1	P2	P3			
GP-F200.75	0.75	230	250	270	6000	1000	73.5
GP-F201.1	1.10	230	250	270	6000	1000	75.5
GP-F201.3	1.30	230	250	270	6000	1000	76.5
GP-F201.6	1.60	230	250	270	6000	1000	77.5
GP-F202.1	2.10	230	250	270	6000	1000	80
GP-F202.6	2.60	230	250	270	6000	800	82
GP-F203.2	3.20	210	230	250	5000	800	85
GP-F203.7	3.70	210	230	250	4500	800	87.5
GP-F204.2	4.20	210	230	250	4000	800	90
GP-F204.8	4.80	190	210	230	3500	600	92.5
GP-F205.8	5.80	190	210	230	3000	600	97
GP-F207.0	7.00	160	180	200	2500	500	105
GP-F208.0	8.00	160	180	200	2100	500	109.5

## Hydraulic Connections

Use only hoses and tube that have been pellet cleaned or nitrogen flushed, all fittings and hose ends must be tightened to the manufacturers torque setting.

- ⚠ Reusable, cast iron, brass, aluminium or any low-pressure fittings must not be used in the installation.
- ⚠ Ensure that all hose and fittings are selected for the required pressure and flow rate and that hoses are not twisted, or the bend radius exceeded.

## Installation checks

- ⚠ Ensure that the orientation of the unit is correct for the tank breather position and specification. e.g. Vertical or horizontal mount.
- ⚠ The power unit should be mounted adequately using the mountings available with the tank supported if necessary.
- ⚠ Adequate space should be considered for easy access to the drain plug, breather and all adjustable valves and electrics.
- ⚠ The IP rating of the electric motor should be checked for the suitability of the environment it will be located in.
- ⚠ Avoid locating the unit in areas of high moisture, dust or extreme temperatures.
- ⚠ Ensure that all system actuators meet ISO4406 18/16/13 cleanliness standards.
- ⚠ The unit should be self-priming, if not; remove the pressure line and run this to tank; start and stop the motor 4/5 times until a continuous flow of oil can be seen.
- ⚠ When working with hydraulic fluids, strictly observe the safety instructions provided by the lubricant manufacturer.
- ⚠ Operating the unit above the permissible maximum pressure can cause components to burst and hydraulic fluid to escape under high pressure. If setting the relief, it is advisable to start the unit with the relief setting at its minimum and adjust until the desired setting is reached.

## Maintenance

The following instructions are not exhaustive or specific to any particular application or installation and are intended for an appropriately qualified and experienced technician:-

- ⚠ Ensure that before commencing any service work that equipment is mechanically and electrically isolated and that system pressure has been exhausted.
- ⚠ The general condition of the oil tank and all pipework should be inspected for leaks and damage.
- ⚠ Check that all electrical connections and fuses are in a good condition and are suitable for the application.
- ⚠ Inspect the tank oil level with all actuators in their closed position.



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MANUFACTURERS AND SUPPLIERS OF HYDRAULIC COMPONENTS

### To be inspected regularly

- ⚠ Change the oil every 12 months with suitable new, clean filtered oil of at least 12 micron.
- ⚠ If changing the oil, it may be prudent to remove the tank and check the inside and the suction strainer for severe contamination. Recycle used oil responsibly.
- ⚠ Check the filler breather for any airborne contamination and replace if necessary.
- ⚠ Observe if the general environment has changed from the last inspection for moisture, dust or temperature changes.

For anything outside of the scope of this document please contact Flowfit or a qualified hydraulic engineer.

This document is for guidance only and is covered by Harrier Fluid Power Ltd T/A Flowfit's "Conditions of Sale" and "Terms of Warranty". This is provided in good faith and without liability and does not form part of any contract.

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