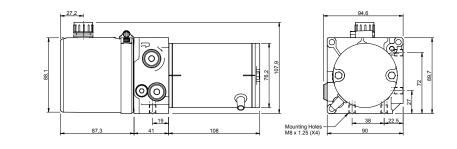
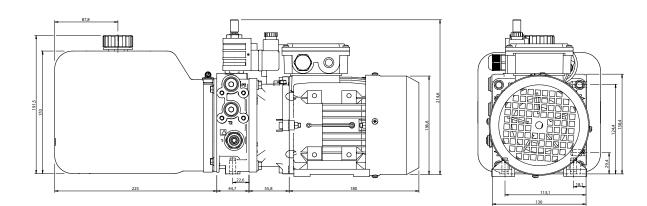


AC & DC Power Units Maintenance Manual





We reserve the right to change technical specifications and dimensions without giving notice.



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This document should be read in conjunction with our installation and oil contamination publications which can be found on our website.

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Introduction

To help maintain performance and maximise the lifespan of our power packs, we recommend following the instructions in this guide.

Each unit undergoes extensive tests before despatch and, if installed correctly, will have a long and trouble-free life. Power packs are assembled to customer specific requirements in respect of control options and relationship of tank filler port to mounting position.

The following instructions have been compiled as a practical guide and are not exhaustive or specific to any installation or application.

Warning

Only appropriately qualified and experienced personnel with knowledge of good hydraulic practices must be allowed to work on the installation, service and maintenance of the power pack.

- Before working on the power pack make sure:
- System pressure is exhausted.
- Equipment is mechanically secured and electrically isolated.
- Safety notices are in place.

Environment

The power unit should be installed in accordance with instructions provided by RFP and be maintained within those environmental recommendations.

U Check:

- External heat sources must not radiate excessive heat.
- Oil filler, electrical terminal and hydraulic connections must have suitable access.
- Exposure to dust, water, moisture and condensation must be avoided.

Hydraulic Connections

! Check:

- Inspect hydraulic hoses for general condition. Look for chaffing, damage, deterioration due to heat, age and corrosion.
- Check that any previous maintenance has been carried out to a suitable standard.
- Check replacement hoses and fittings are of adequate standard and pressure rating for the application. Replace as necessary.
- Hoses must NOT have ends replaced, they must be replaced as a complete assembly.
- Inspect any solid pipework for damage, corrosion and leaks. Look for loose and overtightened compression fittings. Replace as necessary.
- Swaged swivel fittings must not be overtightened. This can weaken the swaging and cause leaks.

Electrical Connections

Check:

- Check condition of wiring and the security of connections.
- Check earth connections.
- Check that the supply voltage is within tolerance and does not drop significantly when the unit is running under load.
- For battery powered units, ensure that the battery is in a good state of charge and is capable of the required discharge rate.
- Check the condition of all fuses and that they are of appropriate rating for the application. Any inappropriate replacements may be masking other hidden faults in the system.
- External controls and relays must be checked in accordance with the manufacturer's requirements.



Electric Motors

Bearings

Both AC & DC motors are manufactured with sealed for life lubricated bearings.

- For DC motors, is it unlikely that it is economic to replace bearings.
- For AC motors, it may be practical and economic to replace bearings.

DC Brush Type Motors

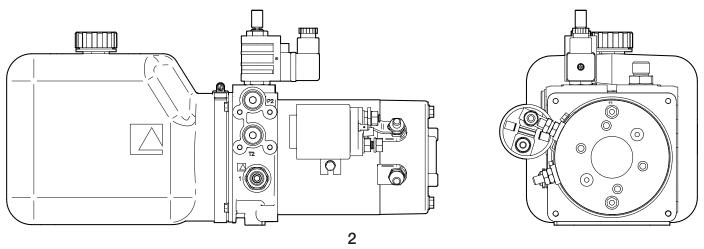
- Carbon brushes wear out. Life depends on usage, frequency of motor starting and thus rate of wear.
- For motors rated 2.2kW and below: Brushes are not normally replaceable, and the motor must be exchanged.
- For motors rated above 2.2kW: Brushes may be replaceable. However, commutator condition must be evaluated first.
- If brushes become contaminated with water, oil or other fluids, the motor must be replaced.

Hydraulic Oil

This is a potentially complex subject in terms of initial choice of oil for an application. Extremes of heat and cold will influence final choices when the unit was initially installed.

As a general guide only, and dependent upon installation conditions and frequency of use, change the oil every 12 months. Installations in dusty, humid or other extreme environments may require more frequent monitoring & oil changes. The most common oil used is standard hydraulic mineral oil grade VG32.

- Use only the specified grade of oil for the application. That grade may be specified by the machine manufacturer rather than RFP.
- Do NOT mix grades of oil. The same specification oil from different manufacturers may be acceptable dependant on availability.
- Use only filtered oil from known and sealed sources.
- We advise that oil is added to tanks by a pump which incorporates a micronic filter rated to 10 microns absolute.
- Do NOT use dirty / corroded funnels and open containers to transfer oil.
- Do NOT use additives or fluid to thin oil (e.g. low temperature operation).
- Do NOT use water-based fluids. The lubricity of these fluids is often insufficient to prevent very rapid wear of components.
- Do NOT use Skydrol or similar aviation oils.
- For installations which experience extremes of temperature, it may be necessary to use oils with a higher viscosity index. This is NOT the same as viscosity grade. Contact the machine manufacturer or RFP for advice. Viscosity index is a measure of an oil's ability to resist change of viscosity with change in temperature.



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Reservoir

- Clean down the external surfaces and check that the filler breather cap is both present and in good condition. Replace as necessary.
- Drain old oil as necessary.

If a drain plug is fitted, remove and allow the oil to drain into a suitable receptacle.For routine oil changes, remove the pipework connected to the main outlet, connect a hose to direct flow into a suitable receptacle, and run the power unit until empty.

DO NOT run the unit without oil for more than a few seconds.

In instances of gross contamination entering the system, it may be necessary to remove the tank, in which case, the internal surfaces of the tank must be thoroughly cleaned with lint free cloths. The whole system must also be flushed out.

- In the event of gross contamination, use a new tank neck seal. DO NOT overtighten tank bolts.
- A small magnet will be found inside the tank which is intended to attract ferrous particulate. Clean or replace it.
- Clean or, preferably replace the oil filler breather cap fitted to the tank.
- It is advisable to fill the tank with oil via a pumped & filtered source. Always use clean oil from a clean and sealed container. See 'Hydraulic Oil' section above.
- Oil filters (where fitted) should be replaced when oil changes are carried out. Note that some types of filters and strainers are inside the tank. Filters should be replaced with genuine RFP parts matching original specifications.
- Contamination: 80% of all hydraulic failures are due to contamination.
- Recycle all old oil responsibly. Clean up any oil spills immediately.

Caution

• Never add oil to the tank when the actuating ram(s) are extended. This can cause oil spillage resulting in significant hazard to person and damage to other equipment.

Priming After Service

Power unit MUST be primed before use.

Under no circumstances should an unprimed power unit be run for more than a few seconds as this may damage the pump and invalidate the warranty.

Before starting system, make a final check that all external pipe work connections have been tightened and that control valves are in the neutral position.

DO NOT over tighten swaged fittings because this will damage the swaged end potentially causing leaks or complete failure of the fitting.

Before starting system:

- Check all external pipe work connections are tight. Do not overtighten swaged fittings.
- Check that control valves are in the neutral position.

Most systems will be self-priming, i.e. they will re-charge the pump and the system with oil without intervention. However, if difficulties are experienced:

- 1. Disconnect the pressure hose from the cylinder and place end of hose into the tank filler port or a separate container.
- 2. Run the unit motor for 2 seconds maximum. Repeat if necessary until a continuous flow of oil is seen. The unit is now primed.
- 3. Reconnect the fittings.
- 4. Re-check the oil level in the tank.
- 5. Operate the system through several cycles to purge air.
- 6. Check the tank oil level again.

These notes are for guidance only - they do not form part of any contract. They are covered by Related Fluid Power Ltd. 'Conditions of Sale' and 'Terms of Warranty'. They are provided in good faith without liability.

If you have any queries or require any additional information we suggest you contact either Related Fluid Power Ltd., or a qualified hydraulics engineer.