

Operating Instructions for H+L Power Packs

1. General

The operational safety of the hydraulic system and the durability of the built-in elements is principally dependent upon careful maintenance. Usage of the following standards will make your hydraulic system a safe control unit with long operational durability.

2. Starting

2.1 Pipes to consumer

Pipes must be cleaned carefully before mounting. The mounting and connections must be checked with the hydraulic plan. See also assembly instructions available from the hydraulic tube and fitting manufacturer.

2.2 Oil filling

Power packs are delivered without oil. The oil must be filtered before filling. Please select the oil from the attached oil recommendation chart.

2.3 Electro motor

Connect the electric motor according to the technical specification. Before checking the electric motor rotation direction (short turn-on, direction arrow on the motor or pump bell housing) unscrew the adjusting spindle from the accumulator charging valve and the drain cock (red star grip). With this adjustment the hydraulic system must work unpressured for approximately 5 minutes to de-aerate. At the same time it is necessary that the pump delivers oil. Due to unfavourable positioning or because of long storage it maybe possible that the pump will not de-aerate. In this case try de-aeration by disconnecting a consumer pipe and routing it back to tank. The oil will be pumped without pressure back to the reservoir.



The specifications given herein are subject to alteration

2.4 Accumulator charging valve function description

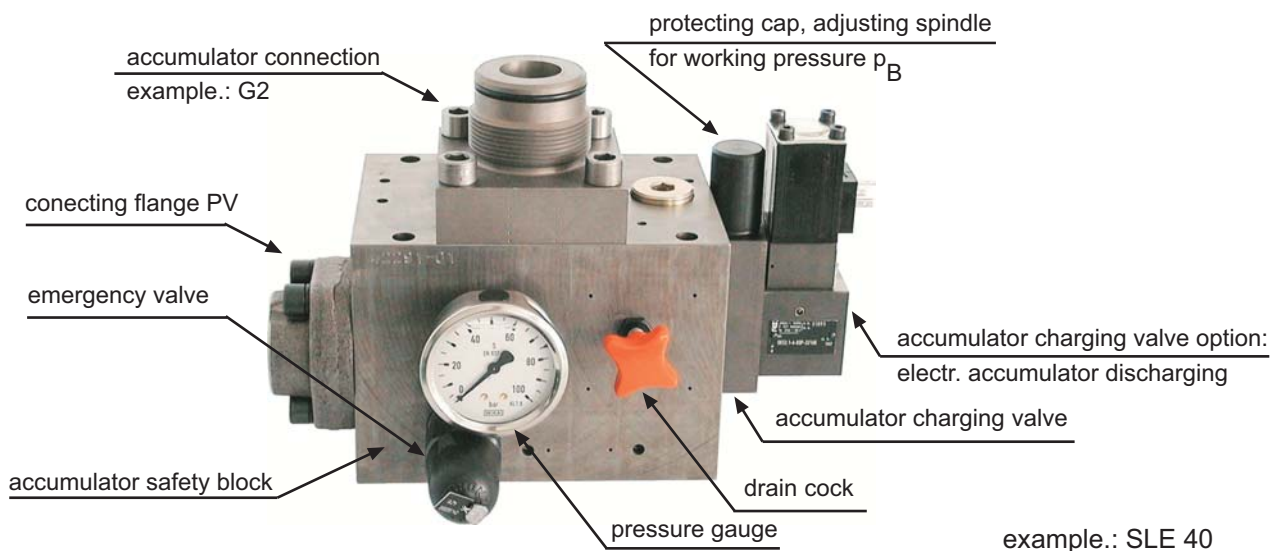
The system working pressure p_B is adjustable only at the accumulator-charging valve. The adjusted pressure is described in the hydraulic plan.

The accumulator charging valve has a fixed hysteresis of 5, 10, 15 and 20% of the working pressure p_B . When the top adjusted pressure is reached (accumulator full) the valve switches the pump to unpressured circulation. If the pressure is falling down to the selected pressure difference (because of the accumulator evacuation to the consumer) the accumulator charging valve switches so that the pump fills the accumulator to the adjusted pressure. It is possible at delivery, that the accumulator-charging valve isn't adjusted in line with the hydraulic plan. Then the adjusting must be made during start up.

2.5 Pressure adjusting

a) Drain cock (red star grip) turn in

b) Accumulator-charging valve adjusting spindle slow turn in and observe pressure gauge. If the working pressure p_B is reached, the spindle must be fixed with the locknut and the protecting cap can be mounted.



2.6 Accumulator

The accumulator oil filling is made automatically by the accumulator-charging valve. The manual safety discharging is done by unscrewing the drain cock (red star knob). Before re-operation the drain cock must be completely turned in. If this is not the case the system will have decreased performance and it will heat up. Users of hydraulic systems with accumulators must take due care of safety, including valid specification. MAINTANANCE SHOULD NOT BE CARRIED OUT UNTIL THE STORED PRESSURE IS RELEASED.

3. System maintenance

Please compile a maintenance book which notes the work carried out during the machine life, with oil and filter changes and any service issues.

3.1 Oil-level control

Before starting the oil level must be checked every day. The oil level indicator is positioned on the front of the tank. The oil level must be positioned between the marks min. and max. Refill only oil of the same specification.

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3.2 Oil change

The first oil change is approximately 20 working hours after first start up. Then in an interval of 3000 working hours or after a regular examination of the oil. At all oil changes it is necessary to clean the oil tank inside. That is possible by removing the cleanout cover or tank lid.

3.3 Filter elements

The filter elements are generally not reusable (exception: wire mesh elements) and they must be checked and if necessary changed at the oil change interval. The contamination indicator should also be checked regularly to see if elements are clogged and replaced if required.

3.4 Accumulators

The accumulator gas pre-charge must be regularly checked, latest at oil change. We recommend you obtain a charge and test device because only an accurately pre-charged accumulator can guarantee correct function of the system. The filling or measurement of the gas pre-charge can only be made on accumulators with zero pressure on the oil side.

3.5 Working pressure

The set pressure must be checked in regular time intervals. Every pressure difference will change the performance of the machine.

3.6 Temperature

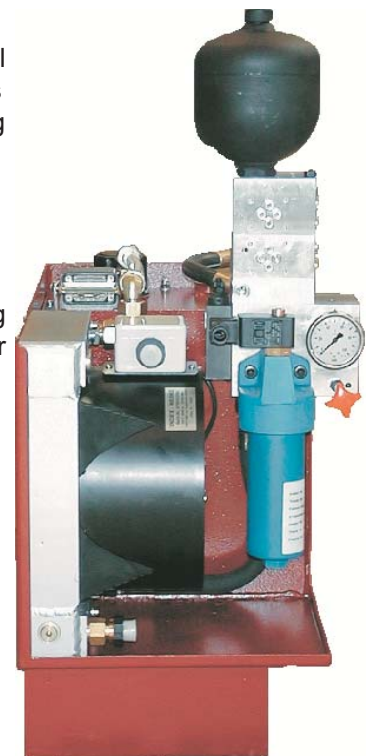
The oil temperature must be checked regularly. A unreasonable rise in the temperature show increased wear, or that there are switching errors in the control elements, or an open drain cock on systems with accumulator charging valves (see 2.6). Possible source of errors at systems with heat exchanger are furring or closed cooling water valve on oil / water heat exchanger, or defective / disconnected ventilator, dirty radiator on oil / air heat exchanger.

3.7 Circuit, hydraulic connections

Pipe work and fittings must be checked for leakage, if it is necessary the pipefitting must be tightened. Hosepipes are wear parts. They must be checked at regular time intervals and replaced if they are cracked or damaged.

4. Spare parts

Use only original spare parts to suit the components fitted. To guarantee the safety of the system we recommend you exchange complete H+L components or send them to H+L for inspection and repair.



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