

HK HYDRAULIK-KONTOR GmbH

Handel • Projektierung • Service • Lager
Hydro: Pumpen • Motore • Ventile • Zylinder • Anlagen • Winden • Getriebe

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Working- and Maintenance Instruction – First Start up for HCA – HPI Micro- and Mini- power packs

1. Before first start

Before first start read and understand this Maintenance-instructions. Please read also the brochure HPI Micro- or Mini Power Pack with the coding chart and understand the construction of the pump support interface and the basic sketch. Check the Fixing positions of the delivered power pack (see point 5) and check the useful capacity of the tank with the cylinder-demand.

2. Oil

As work medium use a hydraulic oil of viscosity class HLP 46 after ISO VG 46 with a purity of the 25 µm in Middle and North European regions. The oil is to be filled filtered. (Comment: The oil purity of 25 µm is not guaranteed by the oil producers, not even in delivered barrels.) For applications with low environment-temperatures (for example winter applications) should be chosen a hydraulic oil of the kind HLP 32 after ISO VG. The working viscosity should not be lower than 20 cSt as well as 5°E. That means that the working temperature of the oil should not be higher than 50°C, at most 55°C! Optimal viscosity is 40 cSt as well as 6°E. On the application of other oil, speak with your authorised dealer.

3. Oil- and filter-change

The first filter-cleaning should be planned with the first oil change. The filter should be examined for special residues like for example fine steel- and brass-chips. Furthermore, also the filter strainer and the check valve should be tested of contamination. To this, the check valve is to be turned out of port 4 at the pump support interface. (see picture page 4) Further oil changes are to be enforced after 500 working hours or once a year. To clear the filters the tank has to be dismantled. A cleaning can be done by washing out and blowing out with compressed air.

4. Electrical connection

The connection of direct / alternating current-motors is to be enforced only by qualified personnel. The electric fuse is to be chosen in accordance with the motor data. The turning direction of the pumps is always right, therefore the electric motor has left turning direction (by view on shaft). To check the direction of the electric motor it must turn right direction by looking on the fan.

Alternating current-motors:

It is to be followed the statements of the electric motor manufacturers. Instruction are enclosed separately at the electric motor (see connection-boxes). The cables for connection of the capacitor and the centrifugal clutch (if existing) must be connected matching to the turningv direction.

Direct current-motors:

The connection has to be done by a relay, e.g. direct at the direct current motor. See connection plan and relay circuit on page 4.

5. Fixing positions

The fixing positions of the power pack is dependent on the chosen tank and the demanded useful capacity. The possible fixing position L1-L5 is fixed with order as well as with the offer description, see packing list and the brochure. Another fixing position as delivered is to be discussed with the dealer, because the suction-filter must have the correct position. Fixing positions see brochure HPI.

6. First starting

- a) On basis of the complete hydraulic plan (in the brochure only basic sketch of the power pack is shown and the parts list, the function of the complete hydraulic system is to be clarified.
- b) Oil level – Check the oil level in the transparent tank and fill up until the upper quarter.
Check whether the right oil type is used.
Check the clean oil
- c) Pressure test
Test the pump pressure with the first starts and check ups at the pressure gauge.
- d) Turning direction test
At the first starting process: start the electric motor shortly only by tapping on the start button and check the turning direction of the electric motor (direction: right turning with view on the fan)
Particularly with 230V motors the manufacturers of the motors made a wrong preliminary connection of the turning direction.
- e) Working pressure
Maximum value of the pressure relief valve. The pressure relief valve of the micro- and mini power packs type HCA is pre set by the manufacturer at the demanded pressure or lower. This is however additionally list or invoice as well as in the ordering code ... 120N = setting at 120 bar. With the start, the pressure is to be observed at the pressure gauge. The pressure relief valve is only to use as security valve, avoid high temperature and noise by only short using times. Keep an eye on noise.
- f) General Control
Check hose connections and fittings on tightness and leakage.

7. Running time

Direct current-motor

Direct current motors of the HCA power packs are only intermittent duties. This depends on the maximum working pressure and output volume of the power pack. The motor name plate declares the intermittent duties S2 or S3. Because the working period S2 and S3 of the electric motors depends on the size of the gear pump and the maximum working pressure, find the exactly terms in the characteristic lines of the HPI brochure. This maximum load check is to be done by the electrical personell. The stated times are not to be lengthened. With obscurities please ask your authorised dealer.

S1 Continuous Duty of the direct current motor

Duty type consisting of working at a constant load during a certain time long enough to reach the thermal equilibrium. The temperature of the power pack should not overstep the working temperature of 40-50°C

S2 Temporary Duties of the direct current-motor

Duty type consisting of working at a constant load during a determined period shorter than the one necessary for reaching the thermal equilibrium, followed by a rest the duration of which should be long enough to reach the same temperature as the cooling medium.

S3 Periodical intermittent Duties of direct current-motors

Types of duties consisting of a series of identical cycles each of them including a working time at constant load and a rest time, the duration being not sufficient for reaching the thermal equilibrium during the heating periods as well as the cooling periods.

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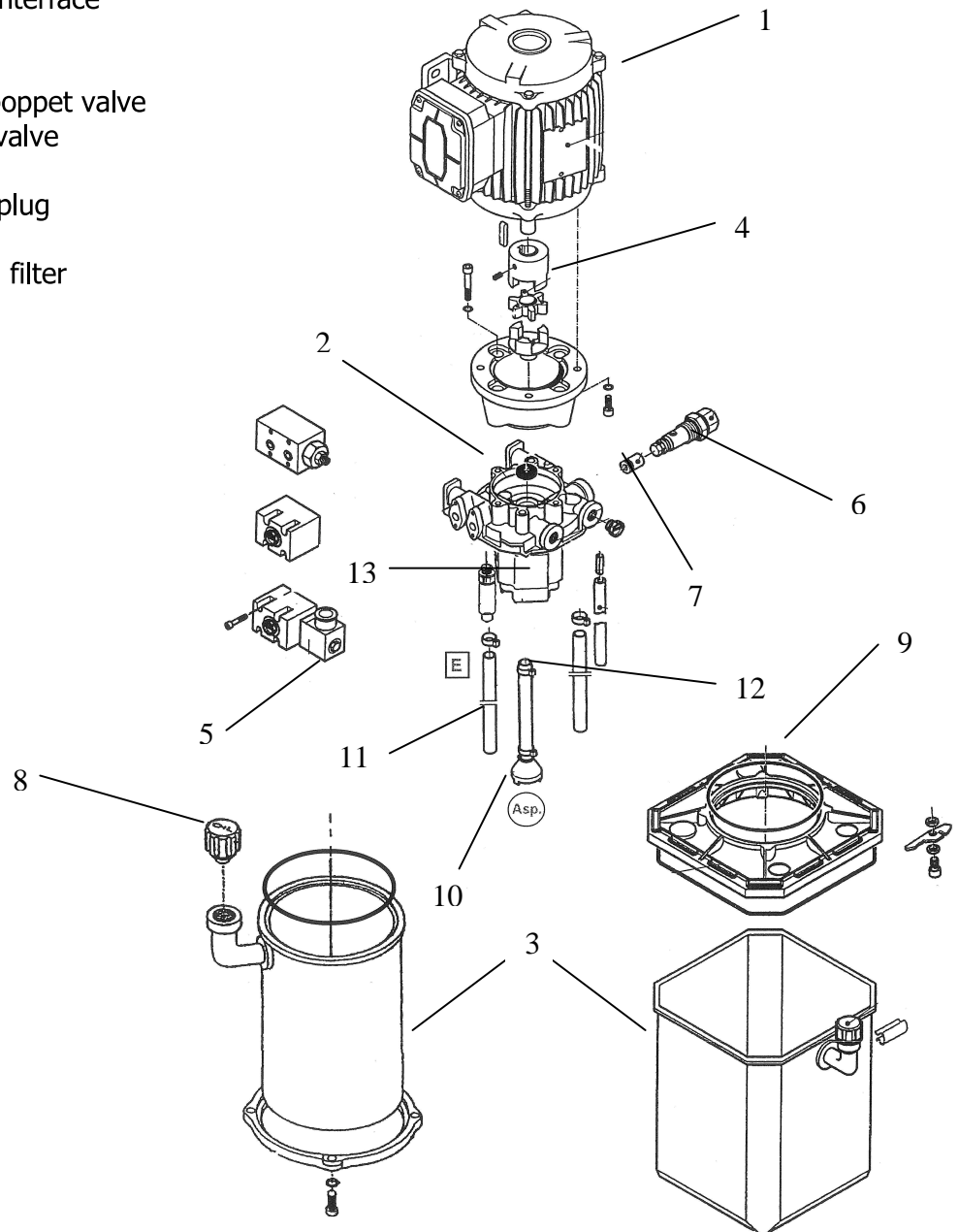
Alternating Current Motor:

The HCA power packs are not admitted for 100% duty (on the basis of the expected oil temperature) even if the current motor is made for 100% duty. It is not allowed to overstep a maximum oil temperature of 40-50°C (persistence temperature). If the oil temperature does not overstep 50°C at long term working, 100% duty is possible.

Notice: Before working at 100% duty ask your authorised dealer.

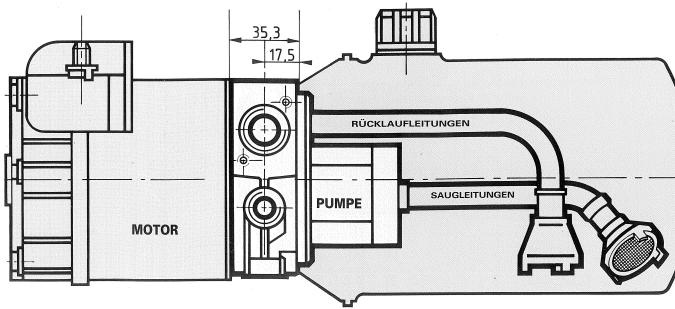
8. Parts of the power pack

- 1 electric motors (alternating current or direct current)
- 2 pump support interface
- 3 tank
- 4 coupling+
- 5 seat valve / poppet valve
- 6 pressure relief valve
- 7 check valve
- 8 filter, breather plug
- 9 tank flange
- 10 suction / return filter
- 11 return pipe
- 12 suction pipe
- 13 gear pump

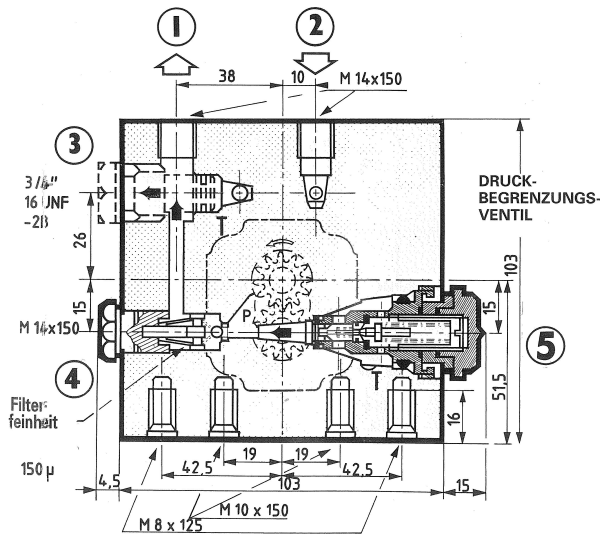
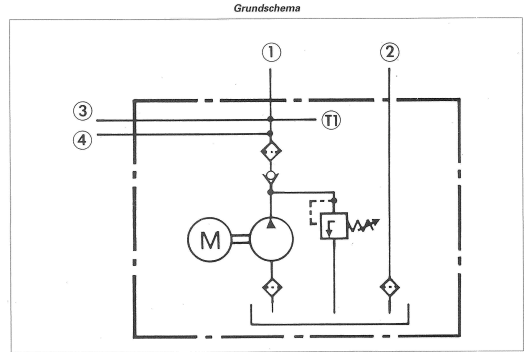


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Basic Sketch
 Schéma hydraulique de base



Port of the Pump support interface
 (dimensions only for micro range)

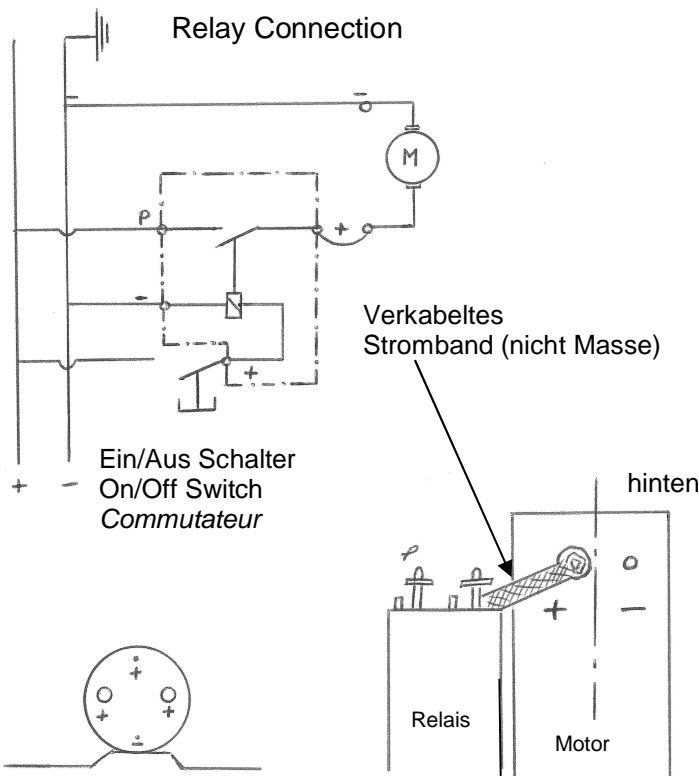
ANSCHLÜSSE	P	T	P UND T
①	●		●
②		●	
③	●	●	
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Useful Capacity

NUTZINHALT

BEHÄLTER		LAGE 1-3-4-5	LAGE 2
KODE	TYP	NUTZINHALT	
F	0,5 L	0,5 L	0,4 L
W	0,75 L	0,7 L	0,6 L
P	1 L	0,9 L	0,8 L
T	1,1 L	1,1 L	0,7 L
E	1,5 L	1,4 L	1 L
A	2 L	2 L	1,4 L
H	2,5 L	2,4 L	2 L
■ M	2,8 L	1,8 L	
▲ B	3 L		2,3 L
▲ S	4 L		3,4 L
C	5 L	4,7 L	3,8 L
▲ V	5,2 L		5 L
▲ Z	6 L		5,3 L
▲ U	8 L		5 L

Relay Connection



Fixing Positions

