

SKF Maintenance products	THAP	Edition 5	Date 2004-04	Page 1/10
Service manual		Compiled HW	Approved	

Safety Instructions

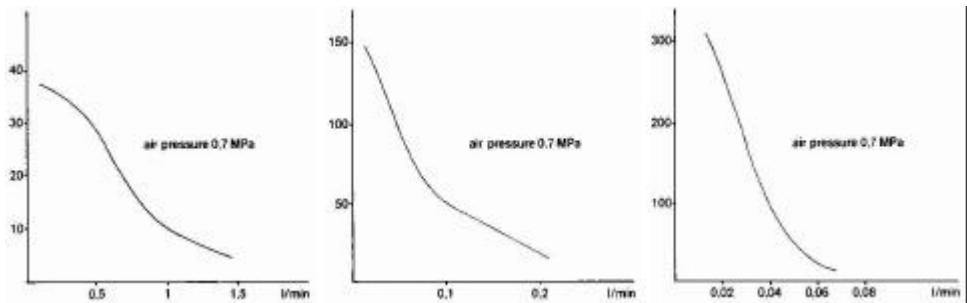
As high pressures constitute a potential safety risk, the following instructions must be complied with:

- The equipment should only be operated by trained personnel.
- Always follow the operating instructions.
- Check the pump and all accessories carefully before use. Never use even slightly damaged components.
- Make sure all air has been removed from the hydraulic system, before pressurizing the pump.
- The use of a pressure gauge is recommended.
- Always prevent the workpiece/tool from being projected upon sudden release of pressure (e.g. by use of retaining nut).
- Never use the equipment above the stated maximum hydraulic pressure.
- Never exceed the stated maximum air pressure.
- Never use the pump together with accessories which are rated below the maximum pressure of the pump.
- Use protective goggles.
- Never modify the unit.
- Use original parts only.
- Only use clean, recommended hydraulic oils (e.g. SKF LHM 300, LHDF 900 or similar).
- The pump should only be connected to a clean and dry air supply.

1. Technical data

	THAP 030	THAP 150	THAP 300
Nominal hydraulic pressure:	30 MPa	150 MPa	300 MPa
Pressure ratio:	1:59	1:252	1:450
Maximum air press:	0.8 MPa	0.8 MPa	0.8 MPa
Volume/stroke:	6.63 cc	1.09 cc	0.42 cc
Outlet:	G 3/4"	G 3/4"	G 3/4"
Length:	380 mm	330 mm	405 mm
Height:	190 mm	190 mm	190 mm
Width :	120 mm	120 mm	120 mm
Weight:	10 kg	8 kg	11 kg

Flow chart



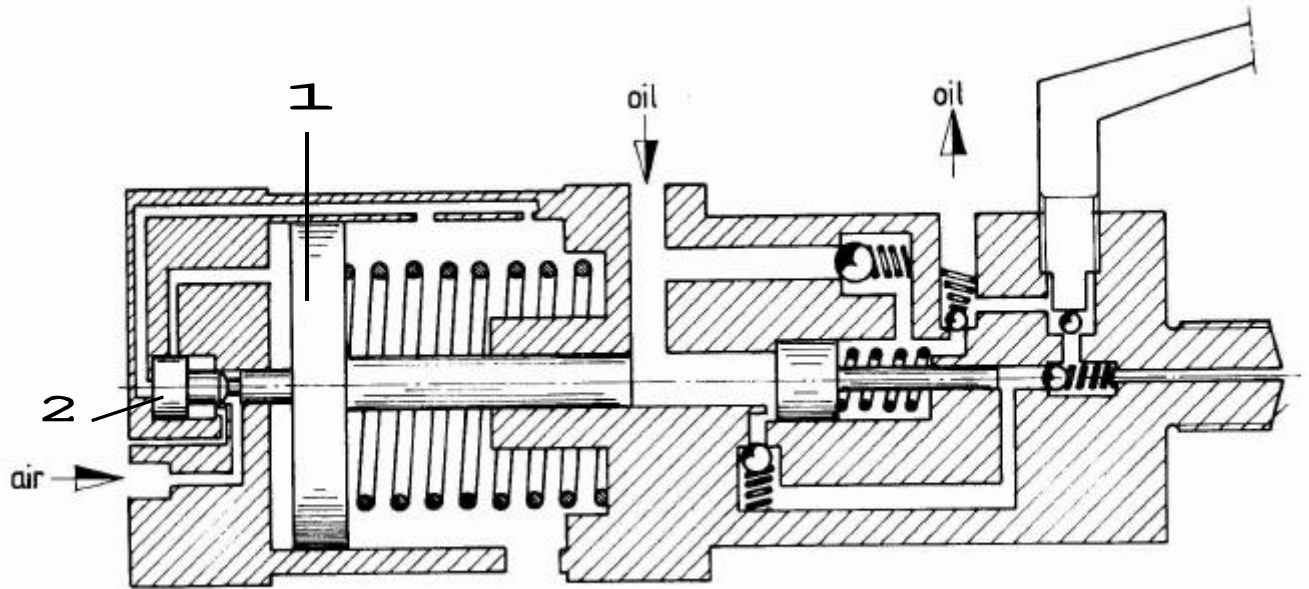
2. Function description

2A) The Air Motor:

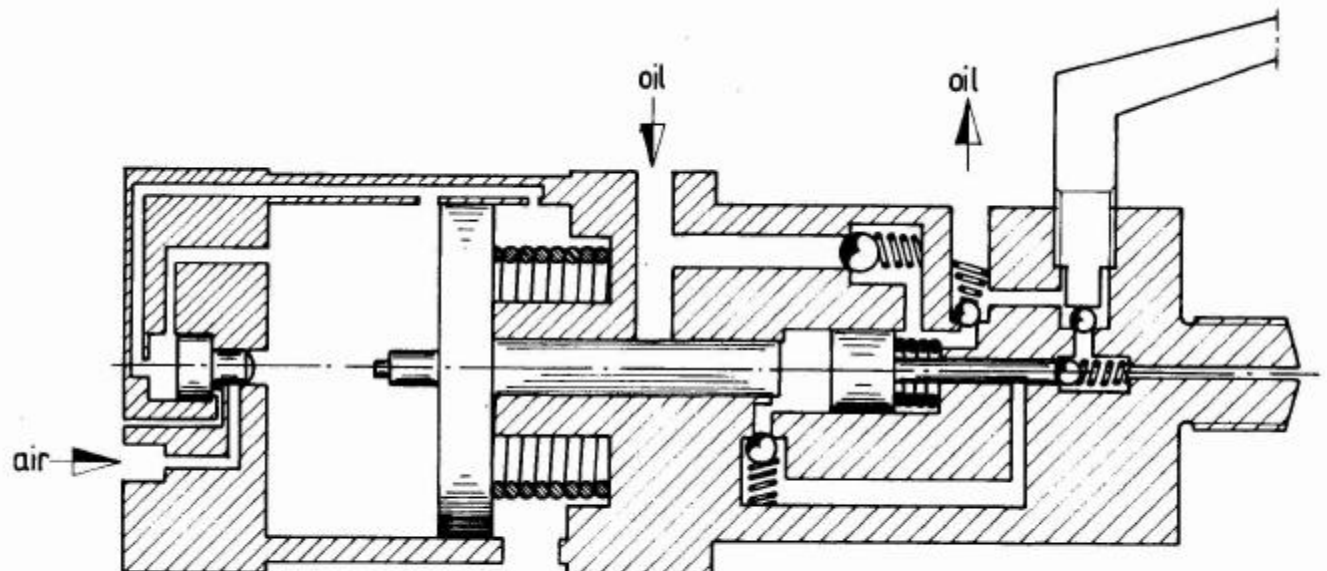
Basically, the air motor is the same for the whole range of air driven pumps.

The air piston (1) movement is controlled by a sliding valve (2), which is mounted in the rear cover. At the end of the working stroke of the air piston, the sliding valve will be activated by the compressed air. The air inlet will then be disengaged and the air piston returns to its initial position. At the end of the return stroke, the air piston will push the sliding valve to its initial position and a new working stroke will follow.

Observe: The minimal air pressure needed to make the pump work is 0,3 MPa.

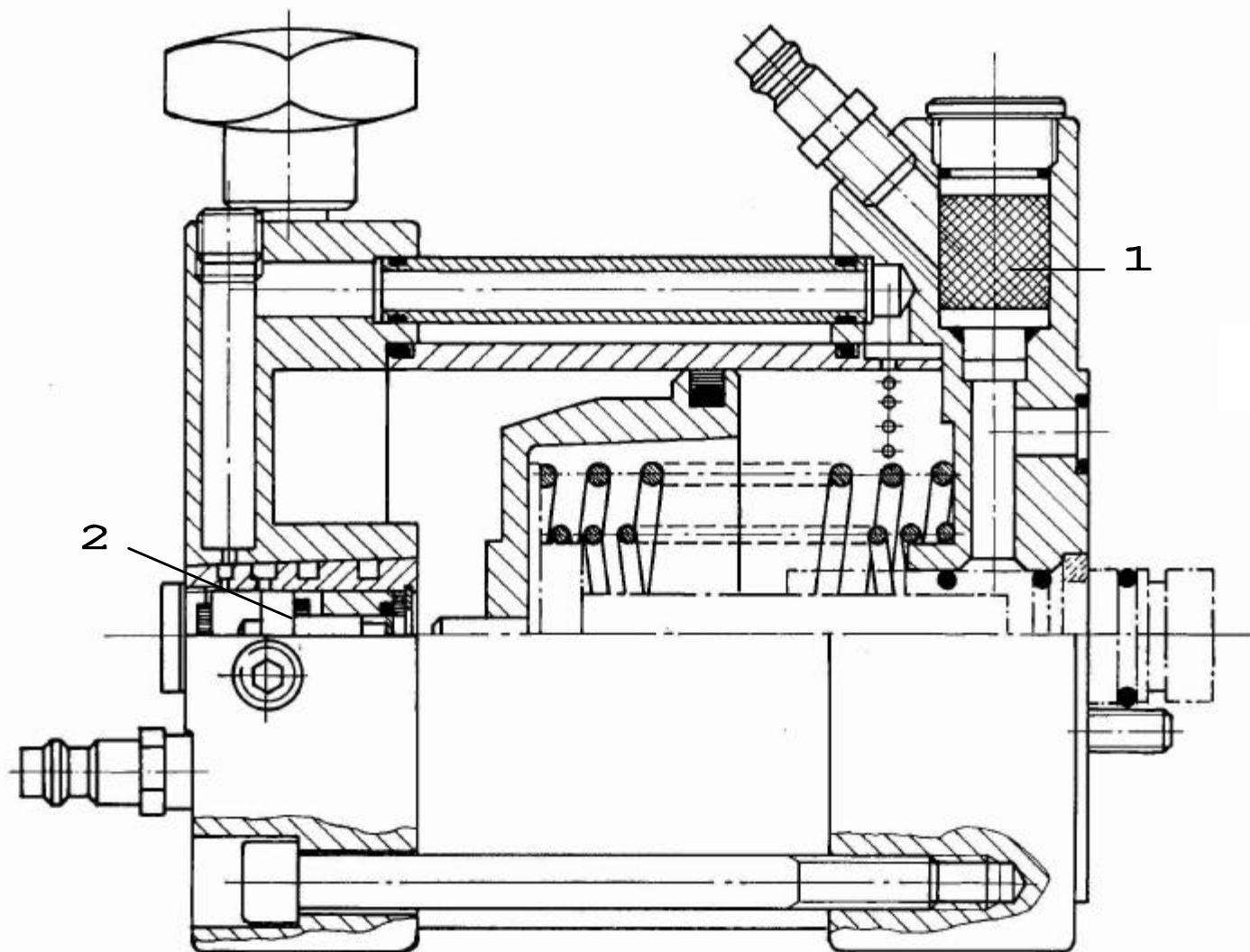


THAP 300 (fig. 1)



THAP 300 (fig. 2)

2A) The Air Motor (cont'd)



Air Motor THAP Pump (fig. 3)

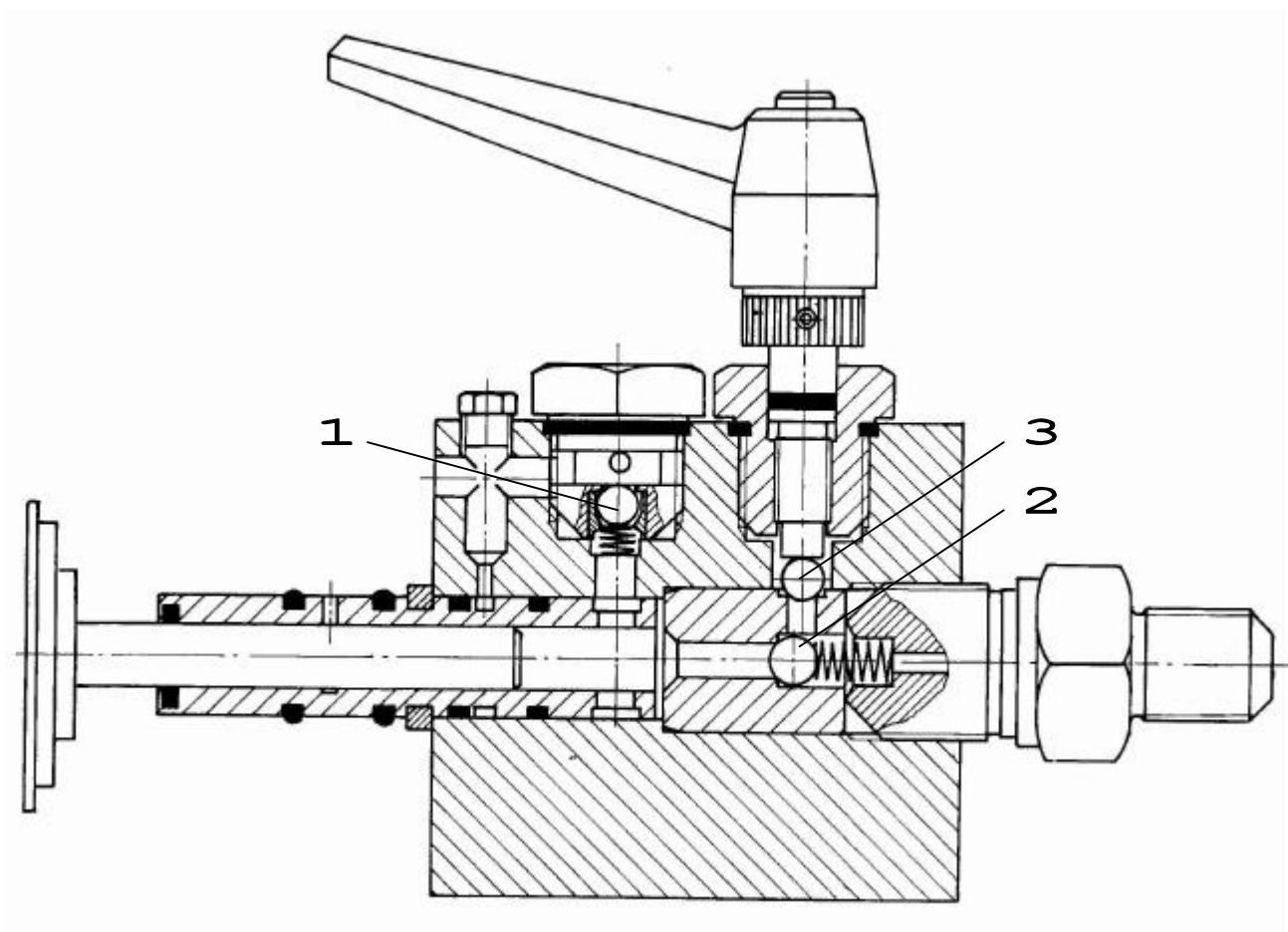
In event of complete overhaul it is recommended to lubricate the sliding "control" valve (2), in order to assure a proper function of the air piston. (This valve is mounted in the middle of the rear cover). Use a penetrating oil (eg. WD 40) to lubricate the sliding valve.

Normally, no maintenance is required with exception of the oil suction filter (1). It is essential to regularly clean the oil suction filter, which is easily accessible.

2B) The Hydraulic Pump:

THAP 030

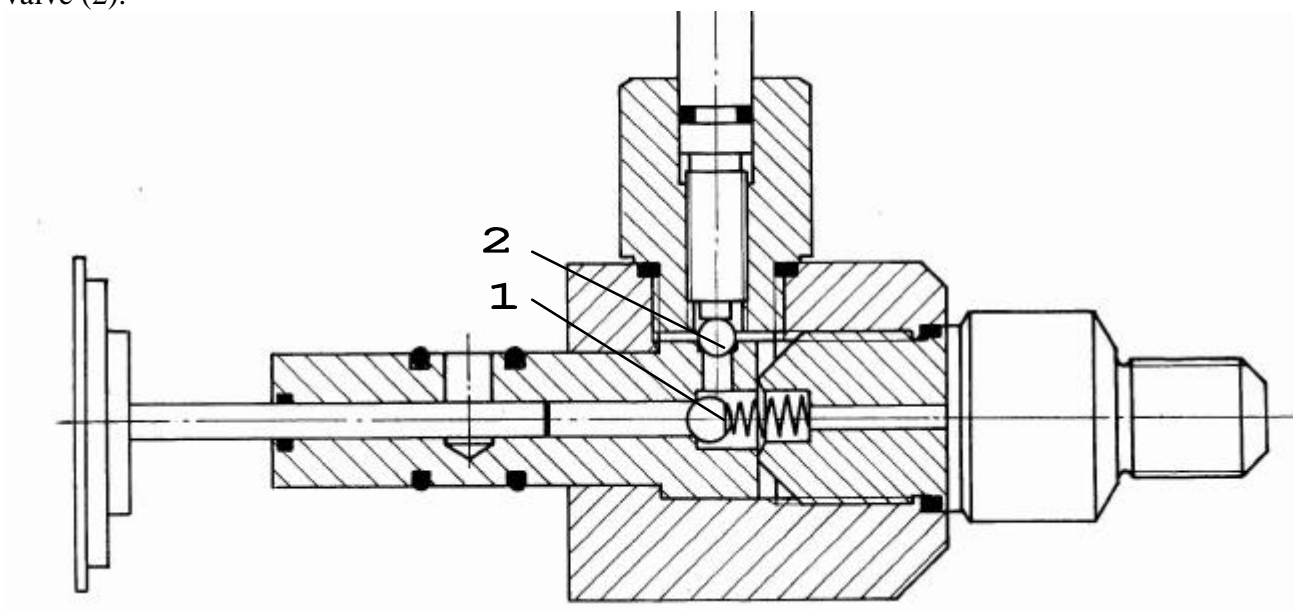
The THAP 030 is a "one"-step pump, which is equipped with a suction valve (1), a pressure valve (2), and a release valve (3).



THAP 030 (fig. 4)

THAP 150

The THAP 150 is also a "one"-step pump, which is equipped with a pressure valve (1), and a release valve (2).



THAP 150 (fig. 5)

2B)The Hydraulic Pump (Cont'd)

THAP 300

The THAP 300 is, contrary to the THAP 030 and THAP 150, a 'two-step' pump.

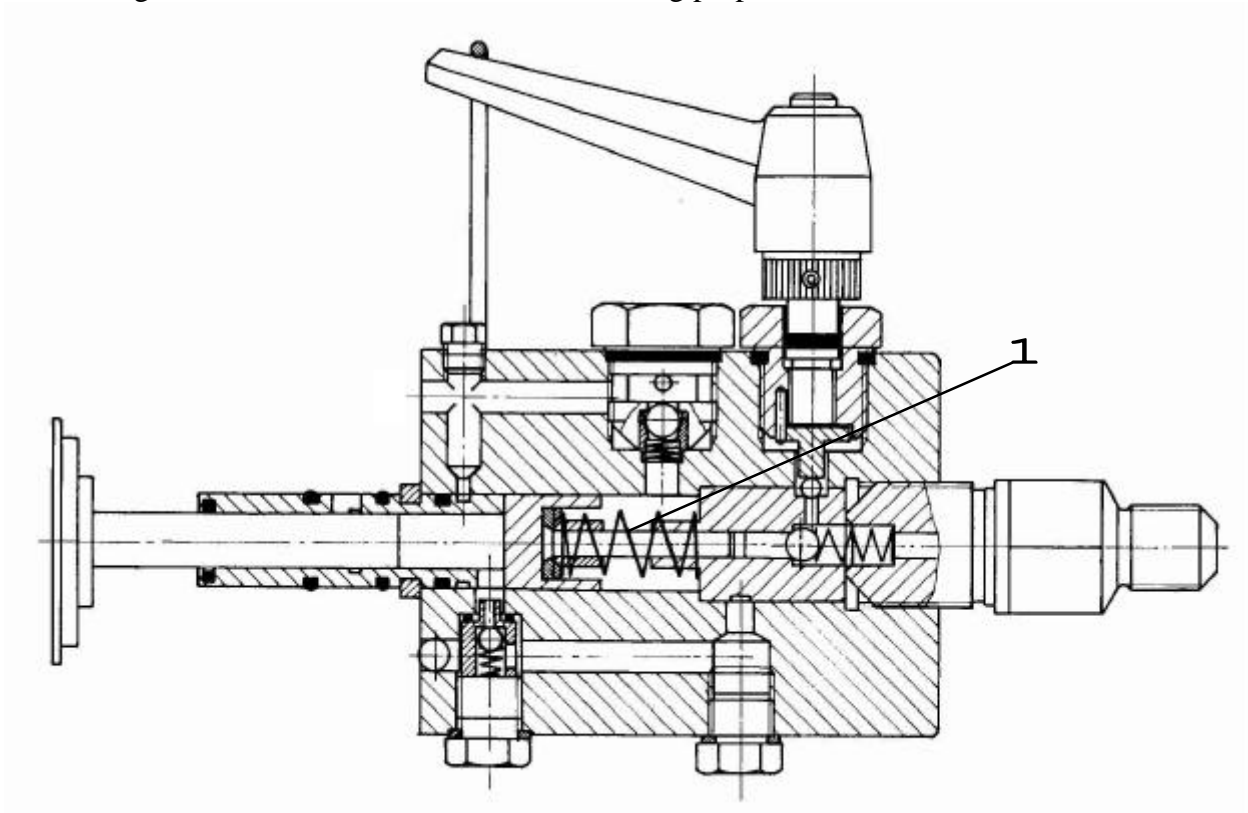
The required hydraulic pressure is obtained in two steps.

The second (high pressure) (1) piston will be activated as soon as oil pressure is built up and will also be returned by means of a spring.

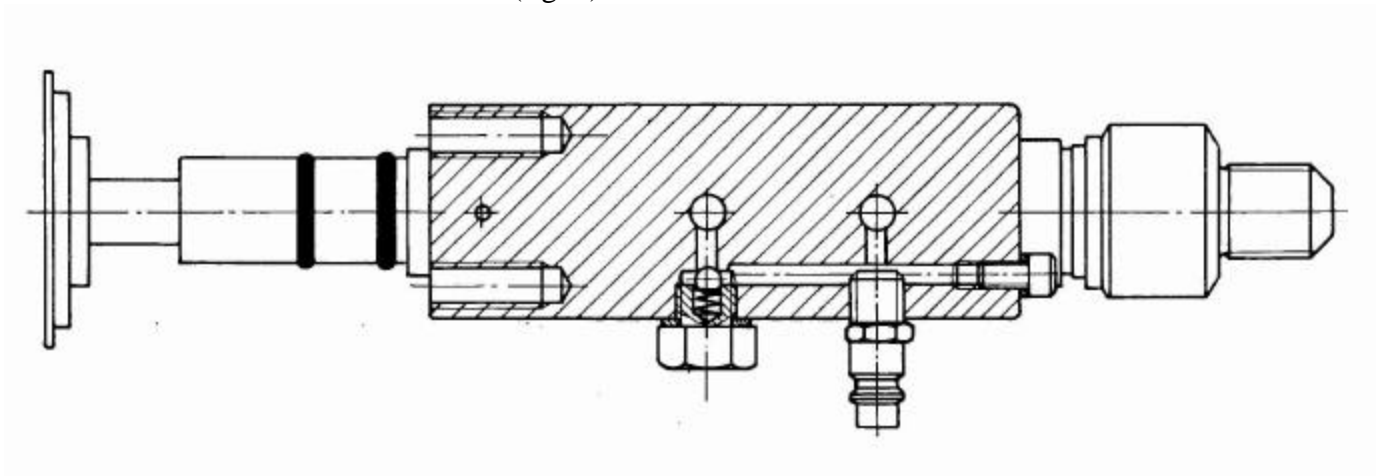
There will always be a certain oil flow in the return hose, as soon as the second piston is moving, even if the release valve is closed. (See Fig. 1 and Fig. 2).

This oil comes from the "pressureless" side of the second piston.

This arrangement is made for lubrication and cooling purpose.



THAP 300 (fig. 6)



THAP 300 (fig. 7)

3) Maintenance notes

- Remember that working with high pressures always constitutes a potential risk. Always check that all equipment is connected correctly, all air has been removed from the system, and that no damaged components are used.
- In the event of general maintenance it is recommended to use all seals from kit THAP...-10
- All valves in the hydraulic part of the pumps are fitted with a ball and are, with exception of the release valve, spring loaded.
- All valves are accessible without the need of disassembling the hydraulic unit, which simplifies cleaning of the valves.
- It is essential to clean the oil suction filter regularly.
- Use only recommended hydraulic oils. (e.g. SKF Mounting Fluid LHMF 300 and Dismounting Fluid LHDF 900). Make sure that the oil is perfectly clean, as any dirt could cause severe wear.
- Make sure that the pump is perfectly clean after maintenance, in order to avoid malfunction of the pump.
- No adjustments are required.
- If the THAP pump is not going to be used for a considerable time, It is recommended to add some penetrating oil (eg. WD40) into the air inlet connection. Run the pump for 10 seconds. The penetrating oil helps ensure prevent the air motor piston from seizing due to prolonged storage times.

4) Fault finding list

Air Motor (See page 2 & 3)

- air motor does not run

A) No air pressure

- Make sure that the air connection is properly mounted.
- Make sure that the air valve is open.
- Make sure the air filters are clean.

B) Sliding control valve dirty. (clean the valve and make sure that it moves easily in the housing,)



- Remove the breather plug from the air motor.
- Use a pair of pliers to check that the air valve is not stuck.
- Apply some penetrating lubricant spray (for example WD-40) to the air valve and into the air nipple. Reassemble and operate the pump

C) Return spring broken

D) Sealing of air piston damaged

Hydraulic Unit (See page 4 & 5)

- no oil suction during venting
 - dirty oil filter
 - dirty valves
 - release valve closed
 - leakage in the suction part of the pump (replace seals, which are included in kit THAP ...-10)

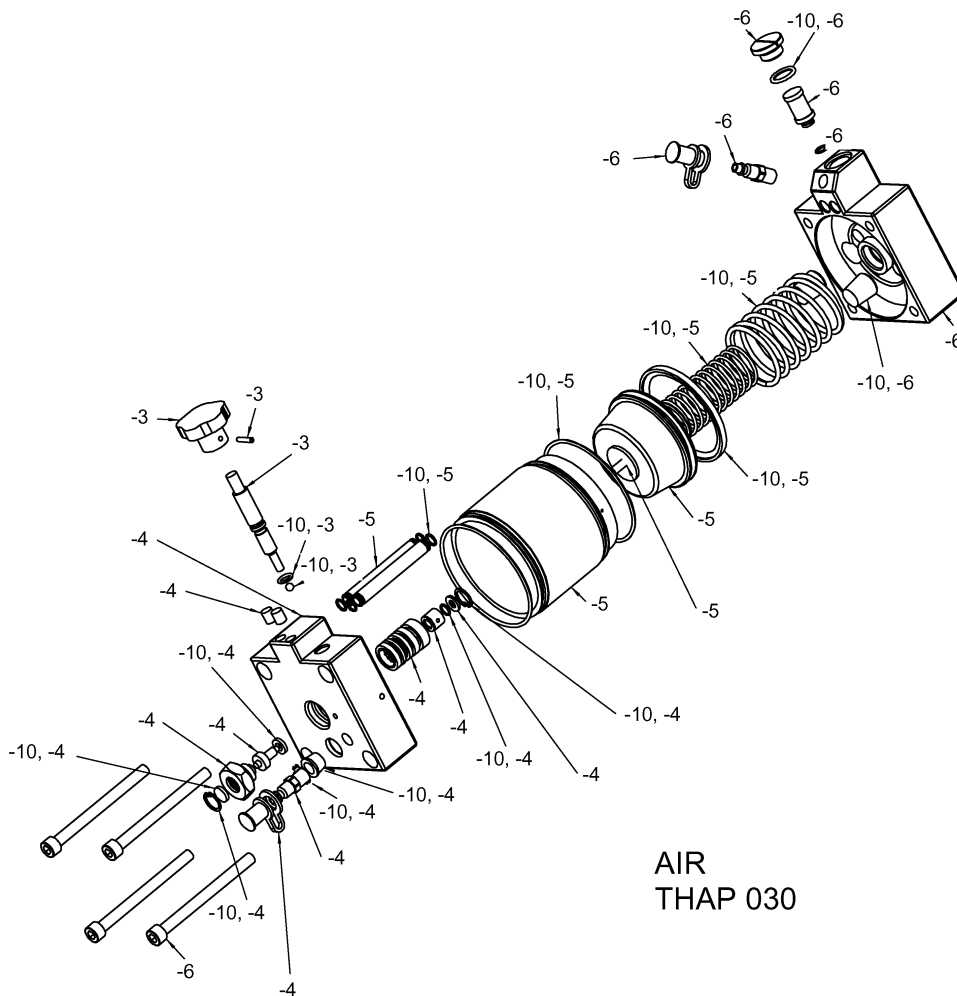
- air bubbles in return hose after venting
 - leakage at the connection of the suction hose to the pump. swap or replace the hoses. designation THAP E-2.
 - leakage in the suction part of the pump (replace seals, which are included in kit THAP ...-10)

- no oil pressure is built-up
 - release valve not properly closed
 - dirty valves

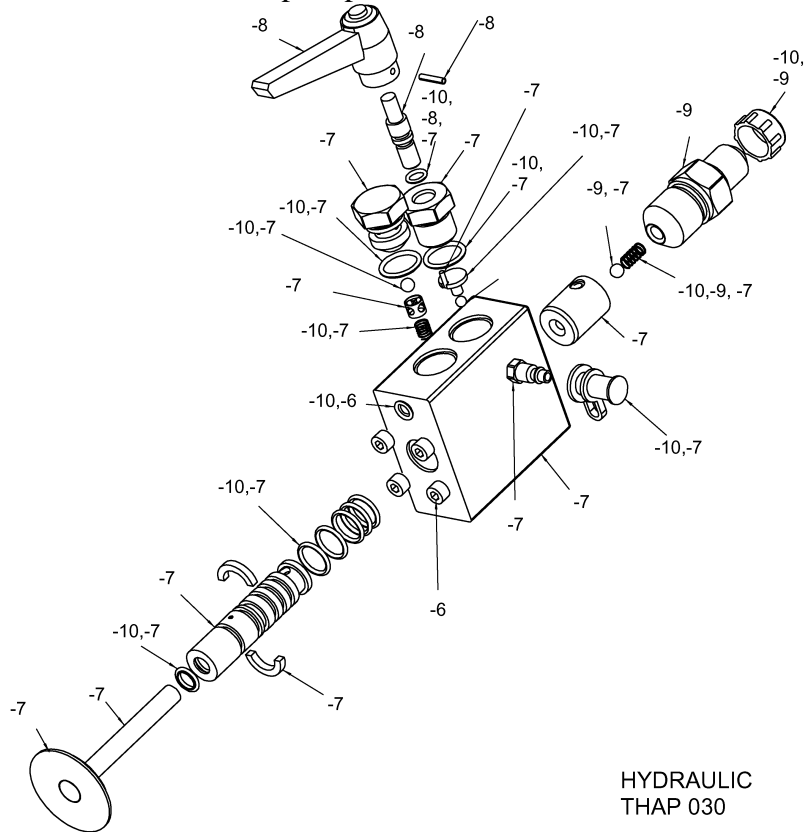
- too little oil flow
 - dirty valves
 - oil too cold
 - too high viscosity oil

5) Spare parts

Spare parts THAP 030

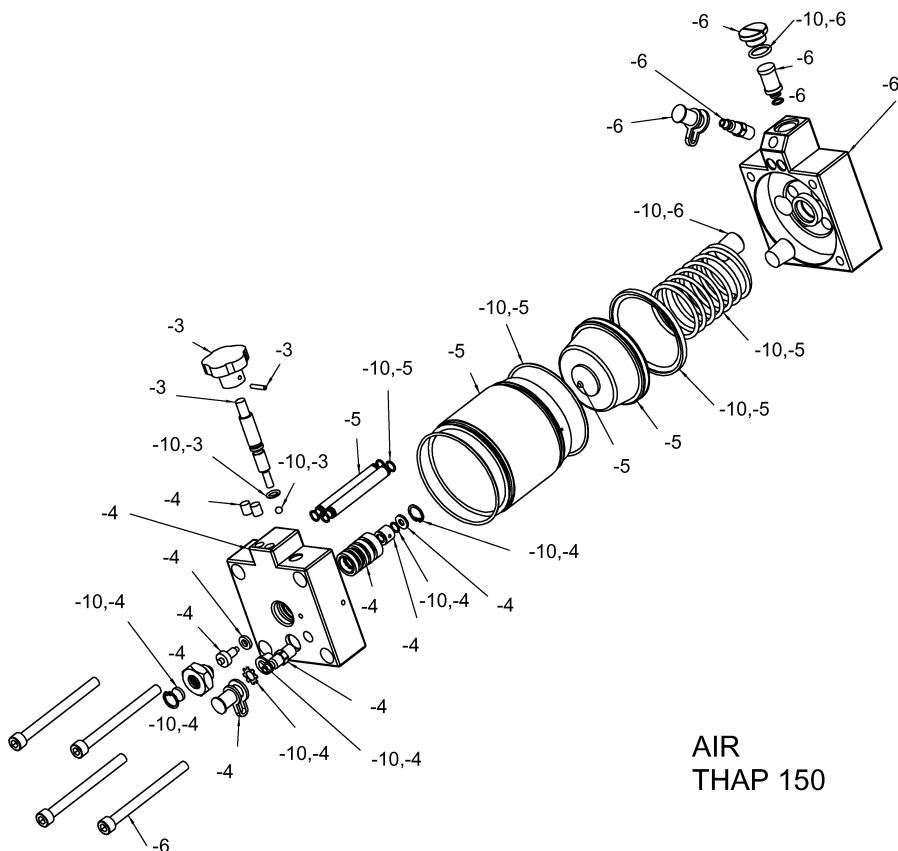


Spare parts THAP 030



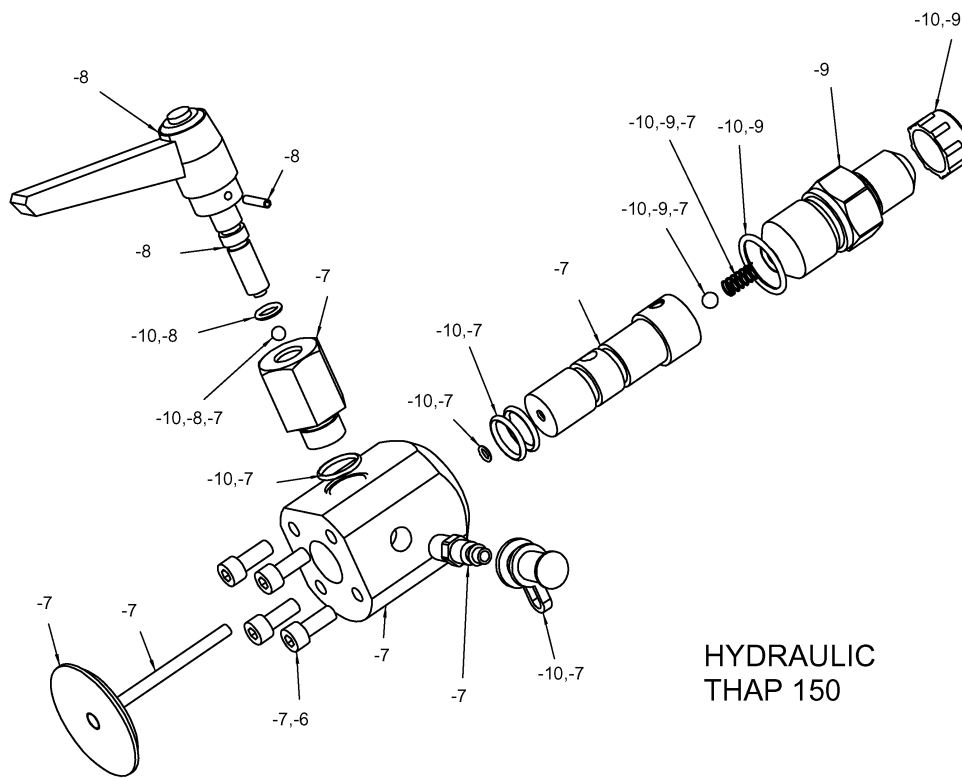
HYDRAULIC
THAP 030

Spare parts THAP 150



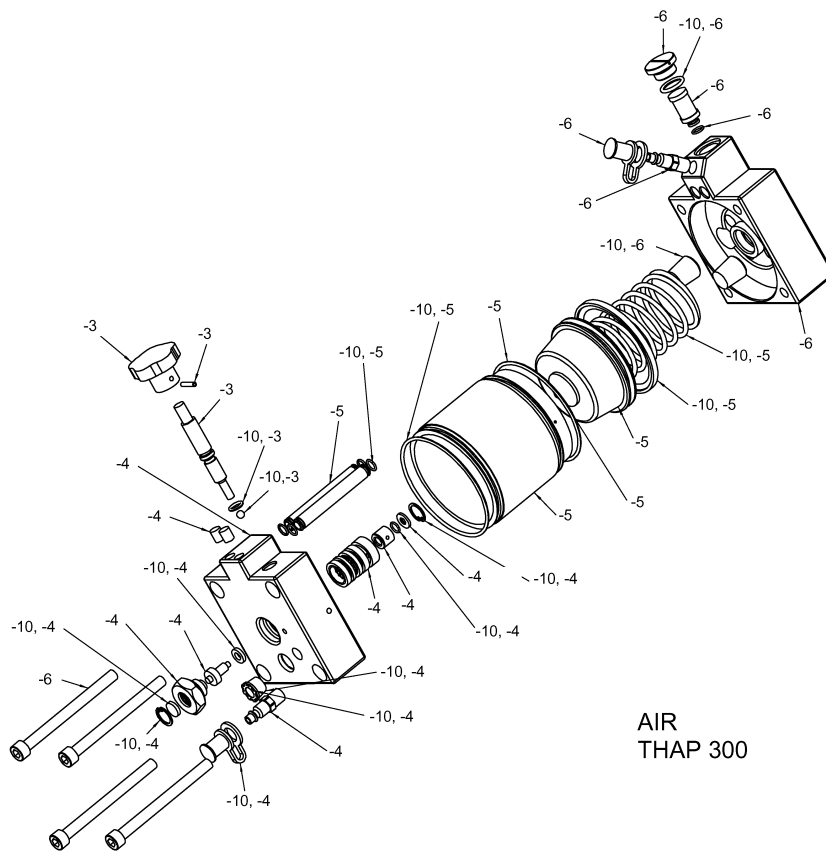
AIR
THAP 150

Spare parts THAP 150



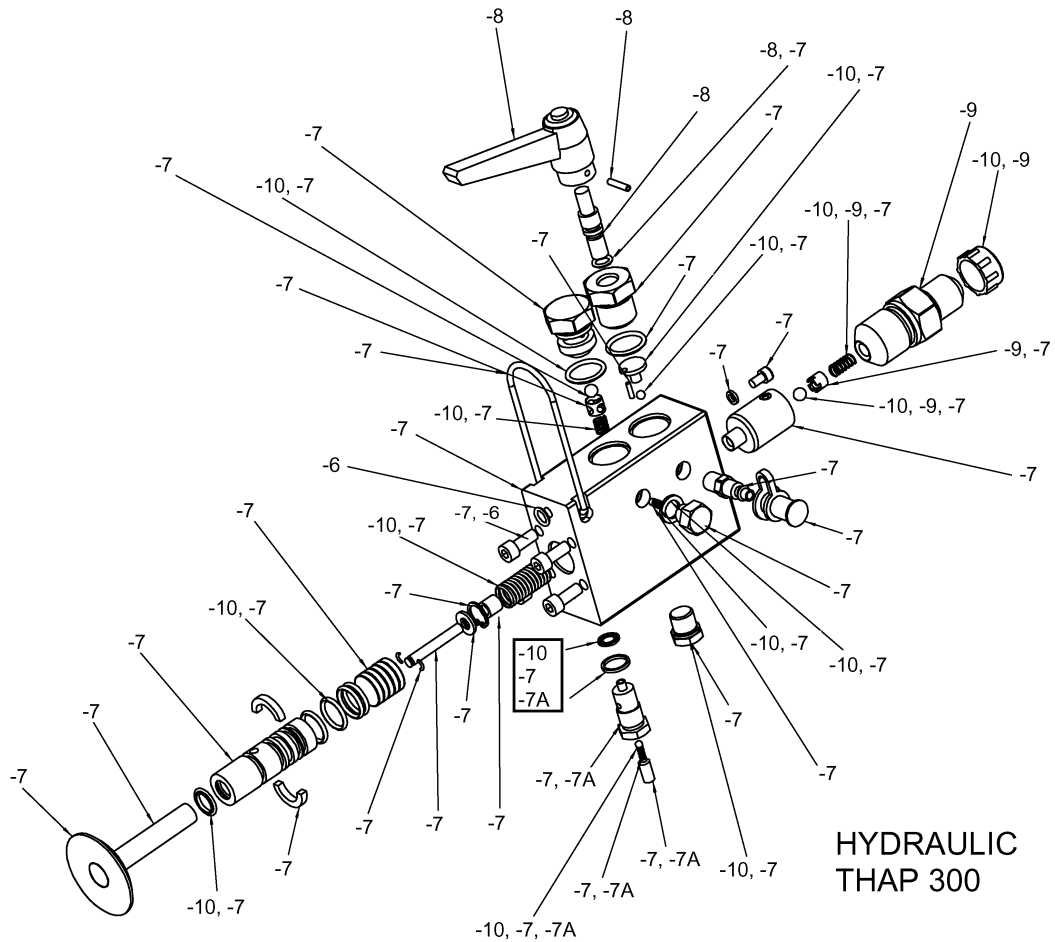
HYDRAULIC
THAP 150

Spare parts THAP 300



AIR
THAP 300

Spare parts THAP 300



Description	Designation	Designation	Designation
Transport box	THAP-1	THAP-1	THAP-1
Set of hoses	THAP E-2	THAP E-2	THAP E-2
Air valve assembly	THAP-3	THAP-3	THAP-3
Air inlet block	THAP-4	THAP-4	THAP-4
Air motor assembly	THAP-5	THAP-5	THAP-5
Oil inlet block	THAP 030-6	THAP 150-6	THAP 300-6
Oil injector assembly	THAP 030-7	THAP 150-7	THAP 300-7
Pressure valve	-	-	THAP 300-7A
Release valve assembly	THAP 030-8	THAP 150-8	THAP 300-8
Connection nipple assembly	THAP 030-9	THAP 150-9	THAP 300-9
Repair kit	THAP 030-10	THAP 150-10	THAP 300-10