

STRIKERMAXX II
HYDRAULIC BREAKER
AUTOMATIC LUBRICATION PUMP



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SYSTEM INFORMATION



PUMP TYPE: _____

TIMER SETTING: _____

PUMP SERIAL: _____

EQUIPMENT
TYPE: _____

DATE INSTALLED: _____



GENERAL SAFETY AND GUIDELINES

INSTALLATION GUIDELINES

- Make sure that the equipment is in a safe and secure location.
- Make sure that main power disconnect is in the off position
- Lockout the equipment to prevent unauthorized use while work is underway
- Visualize where the distribution block(s), hose(s), pump(s) and clamp(s) will be located on the machine.
- Determine if any drilling or welding is required and permitted.
 - o No drilling on lifting arms
 - o If welding is required and there are computers onboard, disconnect them
 - o After the welding/drilling is complete, touch up with correct paint color.
- Ensure that no contamination can penetrate the components of the central lubrication system and the lubricated area during assembly.
- Work with clean tools all the time.

OTHER SAFETY POINTS

- If working from height, use proper safety equipment, and fall arrest gear.
- Exercise extreme caution when working on wet or icy equipment.
- Wear proper safety gear when working such as safety boots, safety glasses and high-visibility vests.
- Turn off power whenever you are working on the electrical systems.
- If the system is going into overpressure, be careful around the pressure relief valve, as lubricant can be ejected with some force causing injury.

SYSTEM MAINTENANCE AND SERVICE

- During the first few weeks after installation the system should be checked for the following:
 - o ensure grease collar is adequate at all lubrication points
 - o check all points and hoses for breakage and proper attachment
- The system does not require any routine maintenance, other than keeping the reservoir filled with lubricant, and visual inspections of the lines.
- The system is weather tight and use of car washes and jet steam machines is acceptable.
- The system comes with a 1 year warranty.



When installing the grease pump, please note the following:

- The amount of grease fed onto the tool shank must be adjusted appropriately for each hammer.
- The minimum working temperature of grease used is below lowest ambient temperature during operation.
- The pump must be installed so that it operates only when the hammer is working.
- When installing the system in hammers not equipped with a built-in grease channel make sure the hammer movements inside the housing do not damage the grease hose or couplings.

Hammers having the automatic lubrication connection

- The pump unit must be fitted on the carrier so that it is well protected and it is easy to fill the grease holder
- The lubrication hose is led from the pump to the end of the stick arm. The hose can be fastened on the pressure or return line of the hammer.
- The quick coupling is fixed at the end of the stick arm near the connection of the hammer hoses with a pipe clamp
- The lubrication hose is led to the connection along the hammer hose

Hammers without the automatic lubrication connection

A hammer not having the connection already may need the following:

- The hole of the grease nipple may need to be reshaped
- The original grease nipple must be removed and replaced by coupling included with the system.

Note:

When operating the hammer, it has to be assured that the tool greasing is adequate to substantially decrease the wear rate of the tool and bushing, and also prevent entry of impurities and dust rising from the object to be broken.

When the hammer is working in a horizontal or upside-down position as in tunneling or scaling, please note the following:

- ❖ In case there is only one lubrication point in the hammer, lubrication of the lower tool bushing has to be made manually by removing the tool.
- ❖ In case there are greasing points for both of the tool bushings, lubrication of the lower tool bushing has to be made manually with a grease gun. A second pump element may be considered.
- ❖ Remember to check that the space between the tool and the piston does not become filled with grease, because this might damage the hammer. Removing the tool can check this.



The hydraulically actuated grease pump HAMAX Compact is mainly used to lubricate hydraulic hammers or other construction machinery attachments. Its compact size allows it to be mounted directly at the attachment.

For supply, the grease pump is connected with a bypass line to the supply and return lines of the hydraulic system. This can be done via the hose lines or via direct flange connection with M14 connections.

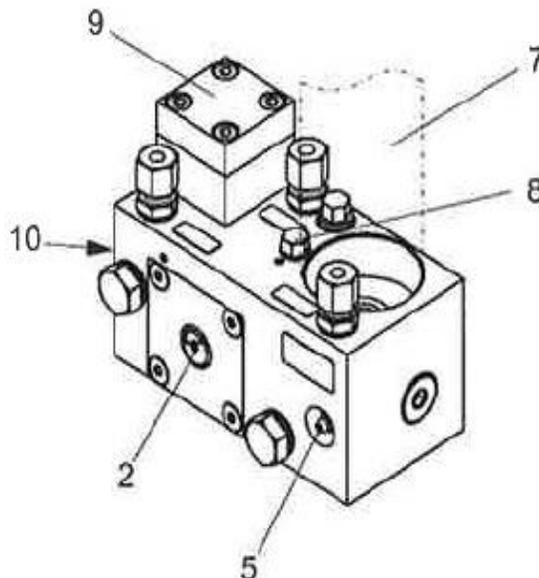
At time of delivery, the securing bolts, inlet screw couplings, plug screws and the appropriate seals are supplied with the pump loosely, and may be required to be assembled.

- Hose connection model: The enclosed screw couplings must be installed. Subsequently, the grease pump's supply and return lines must be connected to the carrier's hydraulic system via a bypass line. G $\frac{1}{4}$ " screw couplings are required for the connection of the oil and lubricant lines.
- Flange connection model: The G $\frac{1}{4}$ " threads must be closed by the enclosed plug screws and packing rings. The enclosed O-rings are used to seal the flange connections.

Pump Operation:

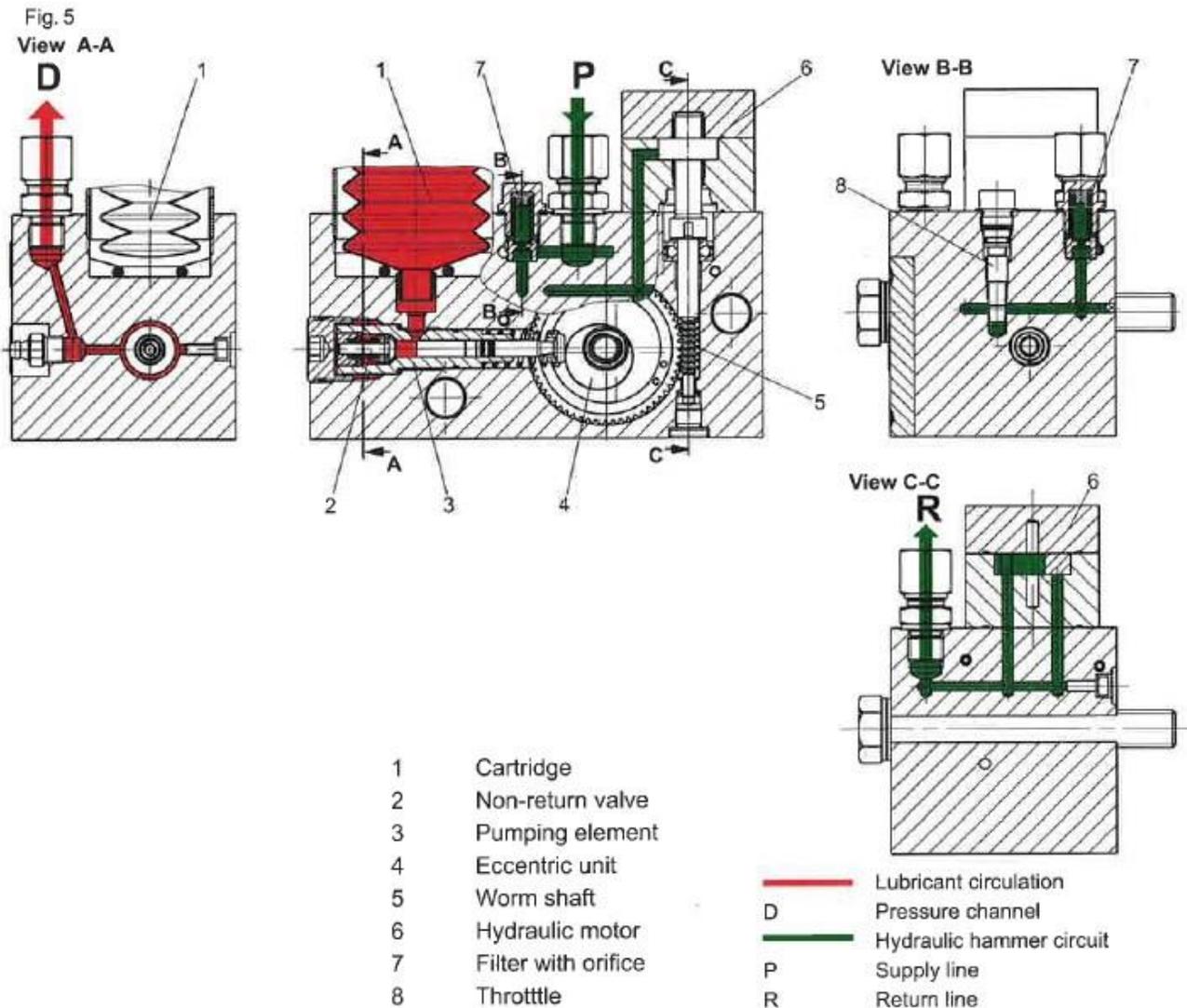
As the drive is actuated by the hydraulic motor (9), a continuous system of lubricant is supplied. The delivery rate can be varied with a throttle (8).

A manual grease nipple (5) is integrated in case of failure of the hydraulic system. Transparent plastic cartridges (7) serve as a storage reservoir. Different types of cartridges can be used depending on the pump model. The grease level is checked visually by the position of the visible follower plate. The function of the pump is checked with the visible eccentric shaft (2) which rotates during operation. In case of wear of the pumping element (4), the grease comes out of the lateral relief hole (10).

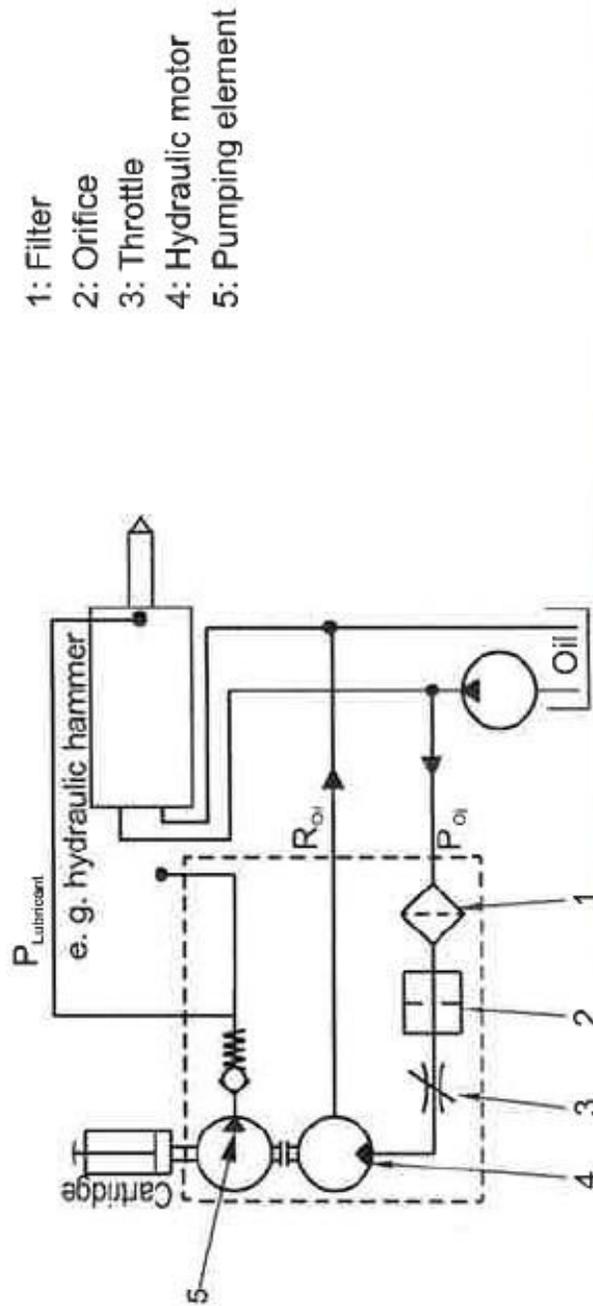




OPERATING PRINCIPLE



The hydraulic pump is connected to the hydraulic system of the carrier unit via the pressure pipe (P). To this effect, the hydraulic oil is routed via a filter with orifice to the hydraulic motor (7), via the throttle (8) and to the hydraulic motor (6) which ensures a continuous drive. The hydraulic oil is returned to the hydraulic circuit via the return line R. To enable regulation of the motor speed, and thus the stroke rate of the delivery plunger and flow, the oil throughput can be adjusted by the throttle (8). The hydraulic motor drives a worm shaft (5) which transmits the revolutions to the eccentric (4). The eccentric gives rise to the suction and delivery stroke of the delivery plunger of the pumping element (3). An integrated non-return valve (2) prevents the pumping medium from being sucked back. Via the pressure channel D, the lubricant is supplied to the various outlets which are either open or closed depending on the installation location or position. Lubricant cartridges serve as supply tanks for the lubricant. (1)





Hydraulic Motor:

Supply:	Hydraulic hammer circuit, 90-250 bar
Difference pressure in operation:	min 70 bar
Admissible return pressure:	max 20 bar
Displacement:	max 2 L/min
Default speed of the eccentric with oil ISO VG 46 at 20°C:	14 rpm at 1.8L/min
Hydraulic oil:	ISO VG 46-100
Temperature range:	0 to +70°C

Speed can be adjusted with throttle

Pumping Element:

Delivery rate/stroke PE120FH:	0.12 cm ³
Default stroke number:	14 strokes/min

Stroke number can be adjusted with throttle.

General:

Weight:	approx.3.9 kg
Grease supply:	cartridge
Type of Cartridge:	different types based on replaceable cartridge sleeve (Model M14 Type J or S)
Lubricant:	EP-grease without solid contents or chisel pastes up to NLGI class 2 Contact your dealer for acceptable chisel pastes

Manual lubrication via the grease nipple on the pump is required at temperatures below 0°C, until the operating temperature is reached and the pump operates independently.

Two different lubricant outlets are possible

The pump's supply connector comprises a filter and an orifice to limit the supply flow. Both elements are interchangeable.

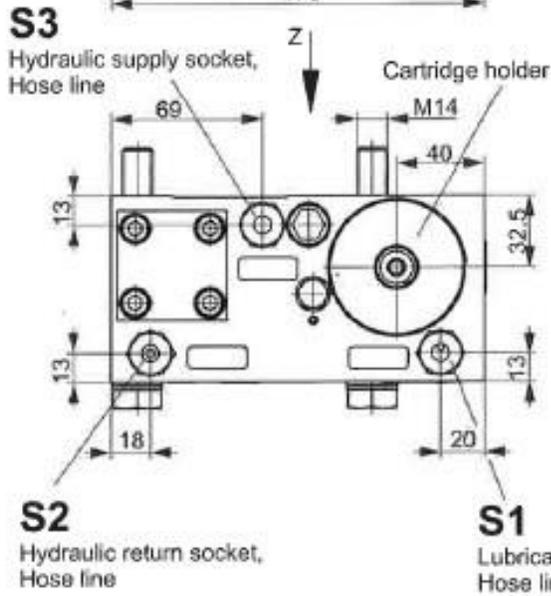
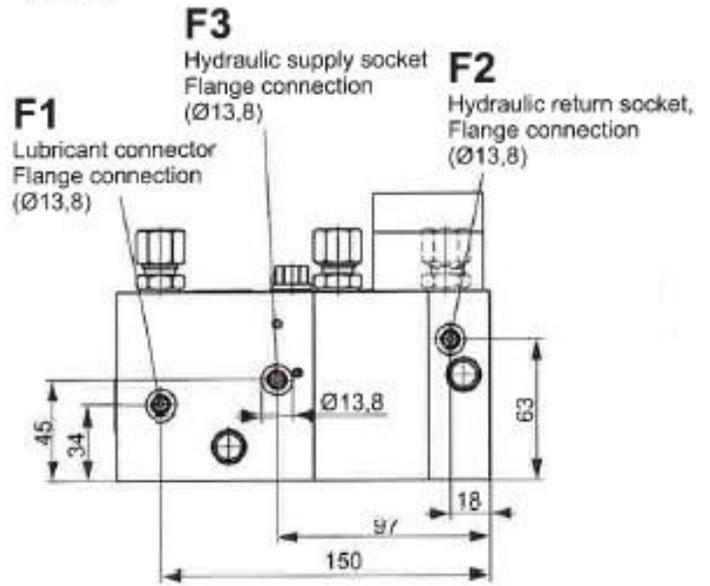
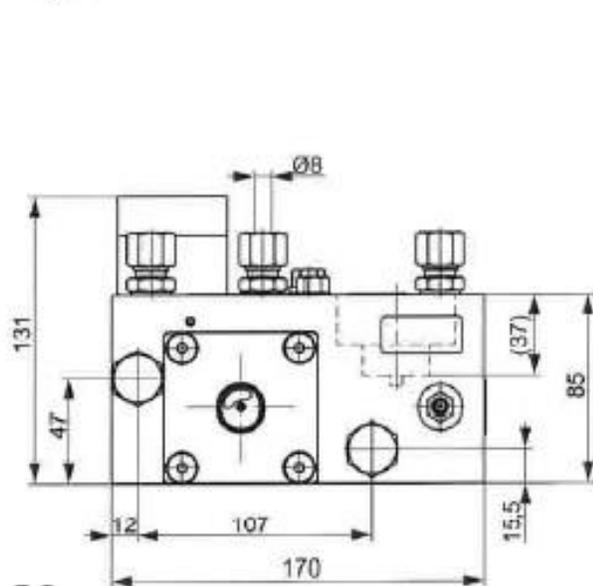
The return socket may be subject to a max back pressure of 20 bar. This value should not be exceeded, as this will prevent the pump from operating correctly.



Installation dimensions for model connection M14

Fig. 3:

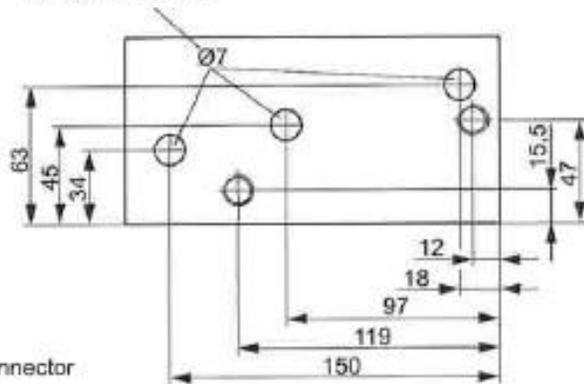
View "Z"



Drilling pattern

for performing the flange connection:

The connection bore-hole (min. Ø4 mm) must be located in this area.





Assembly of the Pump:

The pump can be positioned with the cartridge in either the horizontally or vertically suspended condition. If the cartridge is in the vertical condition, it must be ensured that neither dirt nor other contamination may fall into the intake area below the cartridge.

Two hex bolts (M14x110) with nylon insert nuts are included for fastening. These must be tightened to 110 Nm.

The location and type of pump installation must be coordinated with the manufacturer of the carrier unit and ensure that the positioning is good.

Connection of the Pump:

Hose Connection Model (M14): (see page 9 diagram for reference)

- First close the bore-holes for the flange connection model F1-F3 (Fig 3) on the back of the pump by means of the hex socket screw M4x12 supplied, using the copper seals 4x8x1.
- The O-rings (9x2.5), G $\frac{1}{4}$ plug screws and packing rings (13x18x1.5) are not required for this application.
- The lubricant is connected to the S1 connection in the standard version. Connect a bypass line to the hydraulic system of the carrier unit for supply of the grease pump, pressure line at S3 and return at S2.
- Two hex bolts M14x110 with lock washers are included for fastening the pump. Tighten using 110 Nm of torque.

Flange Connection Model (M14): (see page 9 diagram for reference)

- First close the bore holes for the hose connection at (S1, S2, S3) on the pump by means of the G $\frac{1}{4}$ plug screws and copper seals.
- Check whether the connecting bore-holes are in the required area according to the drill pattern on page 9.
- Insert the O-rings (9x2.5) supplied into the bore holes F1-F3, ensuring maximum cleanliness in the area of the sealing surfaces.
- Two hex bolts (M14x110) with lock washers are used with a torque of 110 Nm to mount the pump.

*****Before commissioning the unit, fill the lubricant lines via the manual grease point*****



Changing the Cartridge:

Before installing the cartridge for the first time, grease the O-rings (1, 2) slightly. To accelerate priming, first remove the cap from the cartridge opening, then, using the cartridge follower plate, press out grease by about 5-10mm. Insert the cartridge into the adapter holder by pressing it slightly, then tightening by hand. In initial installations, fill the lubricant line via the manual grease point on the front of the pump. On cartridges that are already installed, if the follower plate is all the way at the top of the cartridge, then it is empty and requires replacement.

****When replacing the cartridge, ensure that no contamination enters the intake area, and that utmost cleanliness is maintained.****

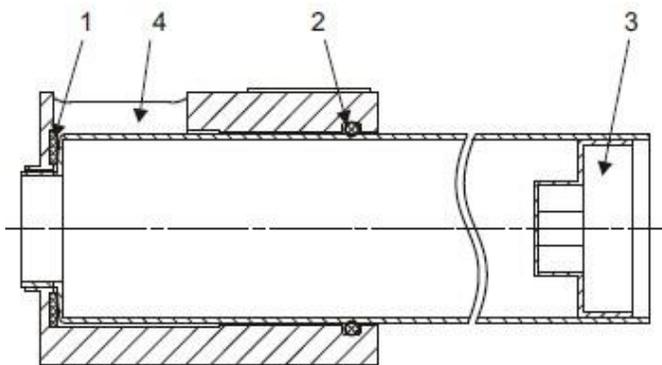
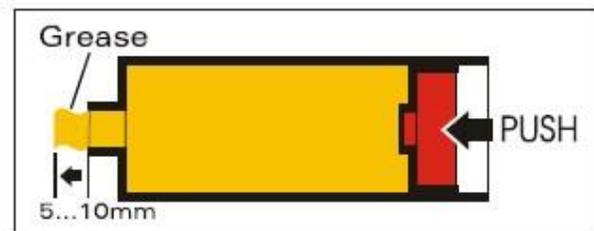


Fig. 5



General Maintenance:

After 6 weeks of operation, recheck all connections and fasteners for proper torque. Check all components for damage and leaks on a regular basis. Be careful of leaks under high pressure.

Check the lubricant level regularly and refill as necessary. When refilling the lubricant, ensure that the utmost cleanliness is kept to avoid contamination of the system and lubricant. Ensure that you use suitable lubricants for the machine and application. When changing to a different supplier of lubricant, ensure that the quality is the same as the previous lubricant.

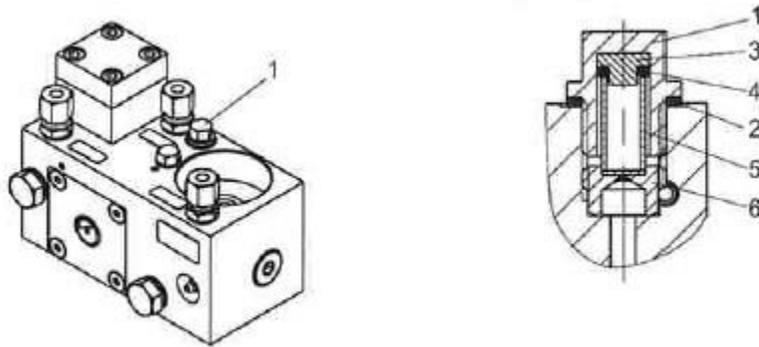


PUMP MAINTENANCE

Changing of the Filter and Orifice:

To replace the filter and orifice, first remove the plug screw (1) using a wrench. Afterwards, you can release the thrust piece (3) and the O-ring (4) as well as the strainer (5). Use a slotted screwdriver to unscrew the orifice (6).

For reinstallation, make sure that the sealing edge of the orifice is undamaged. Refasten the orifice into the housing, then re-insert the strainer, O-ring and thrust piece. Then secure into the housing using the plug screw and a copper seal (2).



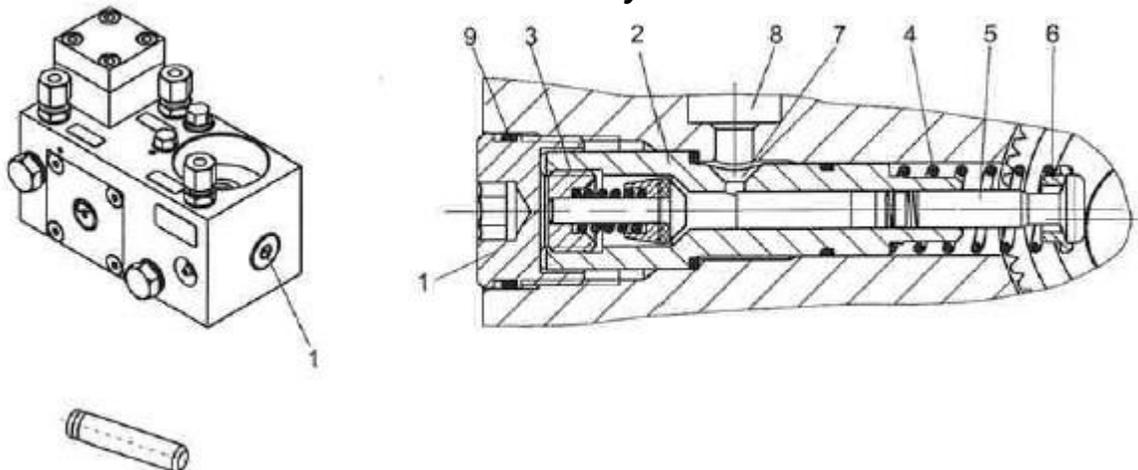
Changing of the Pumping Element:

****To remove the pumping element, make sure that the system is depressurized.****

To remove the pumping element, remove the lock screw on the front of the pump housing (1) with a 8mm hex key. To pull out the pumping element (2), use the supplied pulling tool. Screw the tool into the thread (3) on the front of the pumping element and pull outwards. Ensure all items (4, 5, 6) come out with the element.

To install, make sure that no dirt has gotten into the pump. The intake bore (7) must be directly below the lubricant bore of the grease cartridge (8). Cover the pump element again with the closure screw (1). Slightly grease the O-ring (9) on the closure screw before assembly.

**** When using copper paste, you must replace the pump element after approx 1000-1500 hours of service due to the wear caused by the solids content. ****





DELIVERY QUANTITY

Adjust the hydraulic motor's throttle to vary the delivery rate. To do this adjustment, the system must be depressurized.

To start the adjustment, first step is to remove the plug screw (2). Afterwards you can adjust the throttle (4) using a slotted screwdriver. By unscrewing the throttle, you increase the flow rate, thus enhancing the delivery rate. Before returning the pump to service, reinstall the plug screw with a copper seal (2 and 3).

Check for proper working order via the visible eccentric shaft. The number of revolutions of the eccentric shaft or the number of strokes of the delivery plunger that can be determined enables you to calculate the precise delivery rate.

The diagram shows the guide values for adjustment of the throttle. Before adjustment, screw the throttle clockwise inward until it stops. By unscrewing the throttle counter-clockwise, you can adjust the required delivery rate.

Adjustment of the revolutions of the eccentric (pump delivery rate) is made via an adjusting throttle, the oil flow rate requiring adjustment on each pump individually. The values of the throttle rotations in the table are to assist adjustment.

If the required delivery rate is not known, you can assume a range between 0.5 and 1.0 cm³/min for most hydraulic hammers.

Fig. 12:

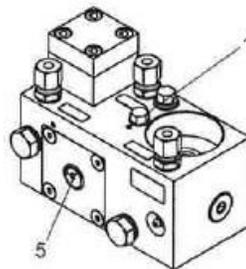
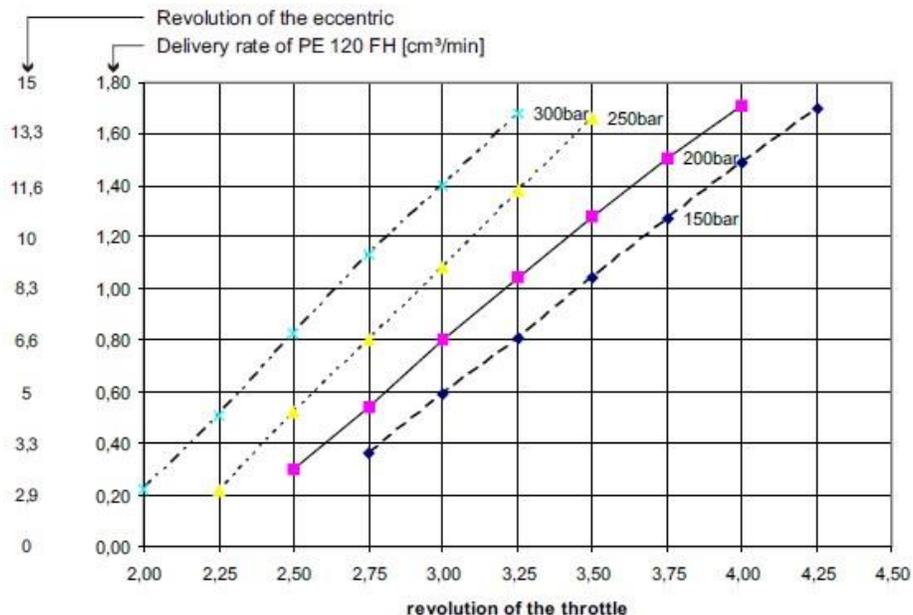
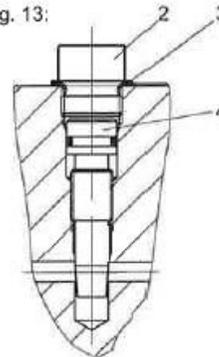
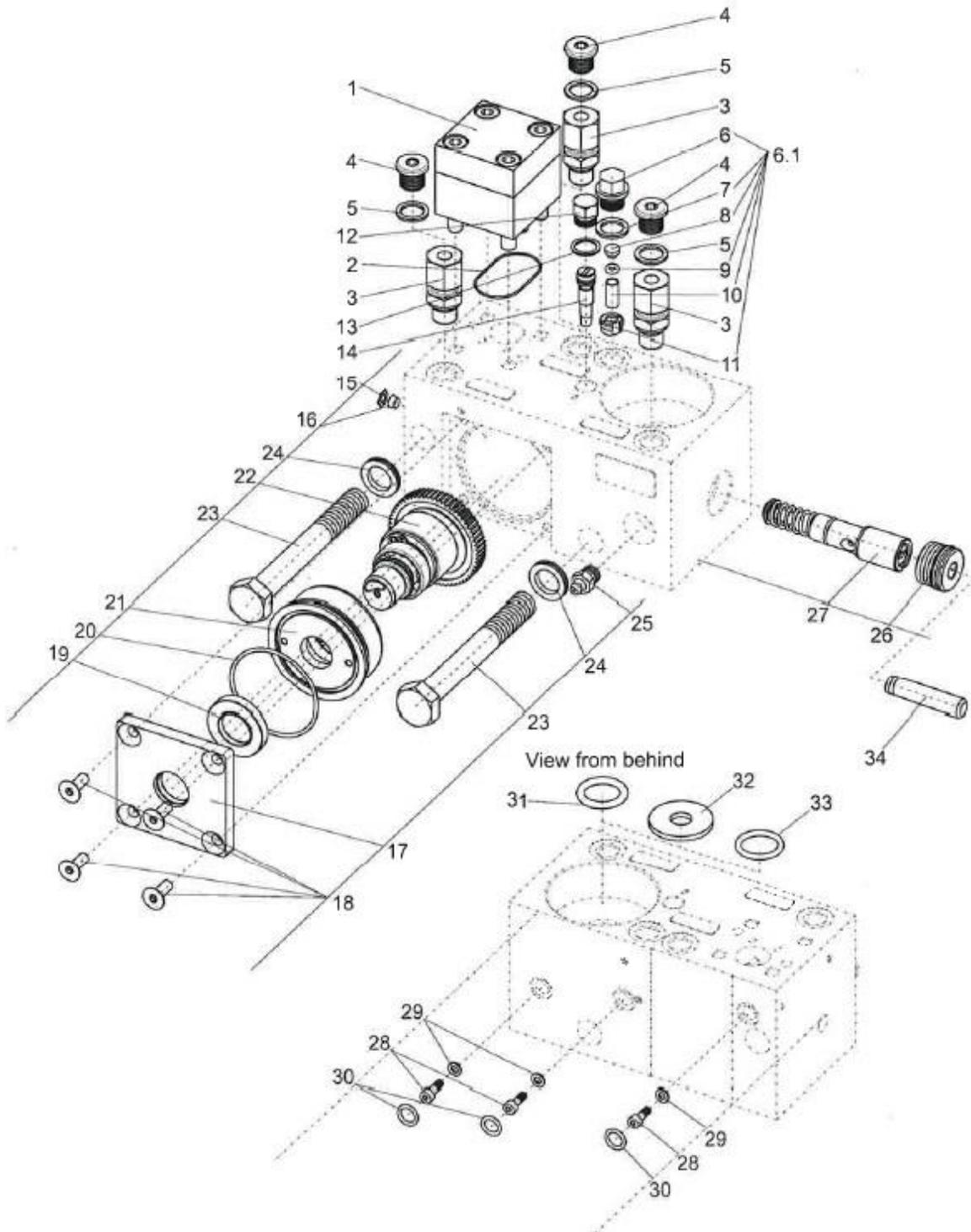


Fig. 13:





Malfunction	Origin	Remedies
Pump doesn't supply lubricant; eccentric shaft doesn't rotate	No hydraulic oil pressure at the entrance available	Check the pressure of the hydraulic line
	Filter and throttle contaminated	Clean the filter and throttle
	Throttle is closed	Turn the throttle approx. 1-1/2 rotation counterclockwise and put on the oil supply. Adjust the throttle after working again.
	Hydraulic motor faulty	Change the hydraulic motor
	Back pressure of the return line is too high	Check the hydraulic system
Pump doesn't supply lubricant; eccentric shaft rotates	Cartridge is empty	Replace the cartridges
	Air bubbles in the cartridge	Unscrew the cartridge of the Cartridge holder. Push the following piston of the cartridge by hand until bubble-free lubricant comes out. Re-screw the cartridge.
	Unscrew the cartridge of the cartridge holder.	Change the sealing
	Pumping element faulty or worn out	Change the pumping element
Quantity of lubricant is too small or too big	Oil flow adjusted wrongly	Adjust the throughput with the throttle
Grease comes out of the lateral relief hole	Pumping element worn out	Change the pumping element



SPARE PARTS LIST



Pos.	Quantity	Description	Item Number
1	1	Hydraulic motor 2,2 cm ³ /U	2576GM0001
2	1	O-ring Ø36,5x1 for hydraulic motor	09037710289641
3	0-3	Straight coupling GE8S G1/4"	04012021006S
4	0-3	Plug screw G1/4"	090090800513
5	0-3	CU-Sealing ring 13x18x1,5	090760303011
6	1	Filter complete (Consisting of itmes 6-11)	25760001
6.1	1	Plug screw filter	F2576/59-00
7	1	CU-Sealing ring 13x18x1,5	090760303011
8	1	Thrust piece for filter	F2576/58-00
9	1	O-ring Ø7,5x1,5	09037710065141
10	1	Strainer	04700090
11	1	Orifice	F2576/57-00
12	1	Plug screw	F2576/70-00
13	1	CU-Sealing ring 12x16x1	090760302611
14	1	Throttle complete	2576GD0001
15	1	Scalloped ring ZJ10	104000018
16	1	Valve sleeve	080110007
17	1	Eccentric cover outside	F2576/68-00
18	4	Hexagon screw with hexagon socket M6x16	090799101813
19	1	Radial Shaft sealing ring 20x35x6x6,5	0903760A01011
20	1	O-ring Ø48x2	09037710376141
21	1	Gear cover inside, incl. o-ring	25760012
22	1	Eccentric unit complete	2576GG0001
23	0-2	Hex. Bolt M14x110	BLT-M14-110
24	0-2	Lock washer NL14	WASHER-M14
25	1	Grease nipple A M10x1k	0971412021512
26	1	Cover screw for pumping element PE-120 FH, incl. O-ring	25760013
27	1	Pumping element	2576GE0003
28	0-3	Hex. Socket screw M4x12	090091200323
29	0-3	CU-Sealing ring 4x8x1	090760301211
30	0-3	O-ring Ø9x2,5 f. flange connection	09037710025141
31	0-1	O-ring for cartridge type J	09037710313141
	0-1	O-ring for cartridge type S	09037710315141
32		Flat seal for cartridge type S	
	0-1	from 01/2016	080100134
	0-1	until 12/2015	
33	0-1	O-ring for cartridge type S	09037710286181
34	1	Pulling device for PE-120FH	F2576/55-00

CONTACT INFORMATION



Additional information, system layout diagrams, and more detailed manuals on individual components are available upon request.

For technical support, sales and parts, and other products, please contact your local Toku/Striker dealer.

1-877-954-9923

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