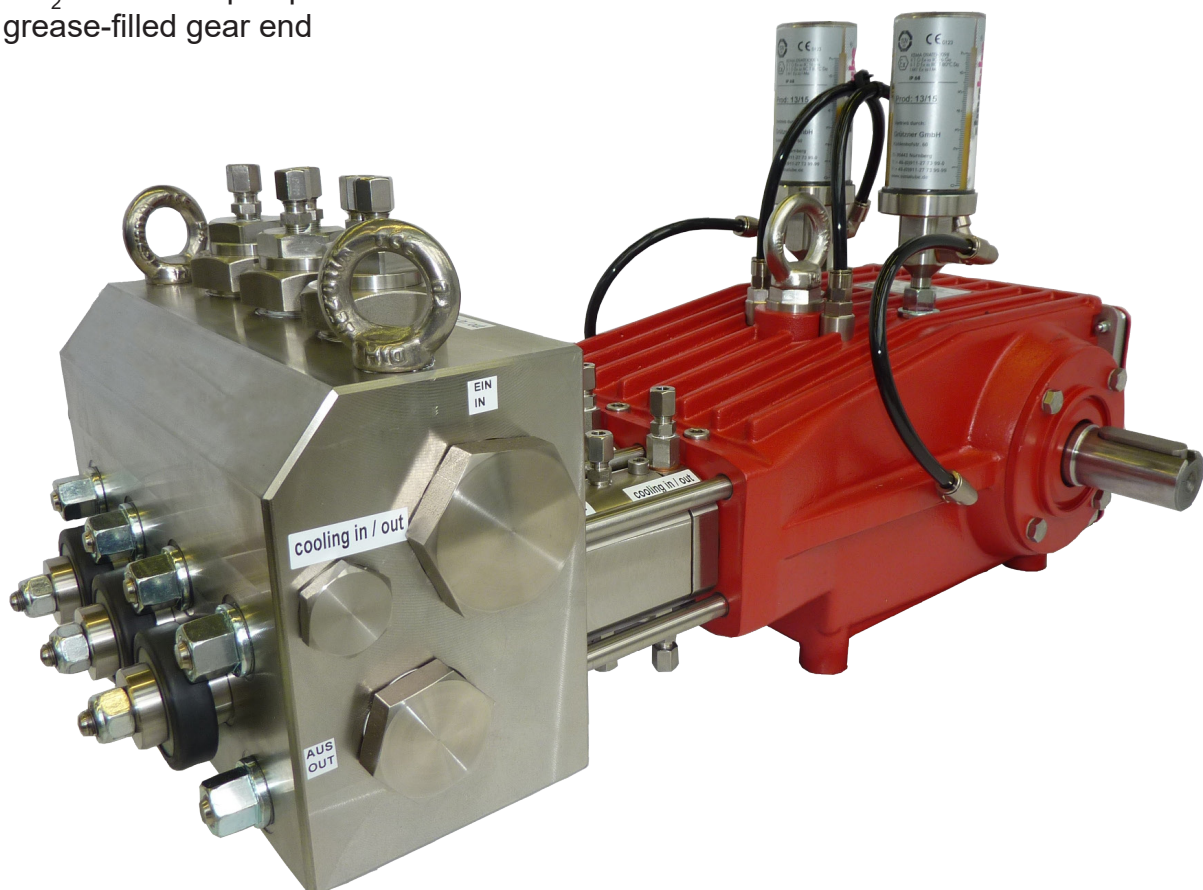


Model CLP124G

Triplex Ceramic
Plunger Pump
Operating Instructions/
Repair and Service
Manual

CO₂ Circulation pump with
grease-filled gear end



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INSTALLATION INSTRUCTIONS

Operation and Maintenance

Ensure trouble-free CO₂ supply.

The gear box is lubricated with grease. Do not fill with oil.

Maximum admissible pressure for the drip return is 60 bar.

Leave at least 12.6" (320 mm) of space in front of the valve casing or behind the Pump for service work.

Safety Rules

The operating instructions must be read and adhered to before performing any work on the pump or complete assembled unit. No responsibility will be carried by us for damage to materials or persons caused by improper handling of our pumps.

A safety valve is to be installed so that the admissible operating pressure cannot be exceeded by more than 10%.

The pump has a protective device which prevents a sudden outflow of the medium due to mechanical component failure. A greater degree of security is attained by fitting a safety shut-off valve on the suction side to avoid such outflow.

Pump operation without a safety valve as well as any excess in temperature or speed limits automatically voids the warranty.

When the pump is in operation, the shaft end must be covered by shaft guard (21) and the driven shaft side and coupling by a protective cover.

Fit shaft guard (21) using shaft guard holder (21A) and screws (17).

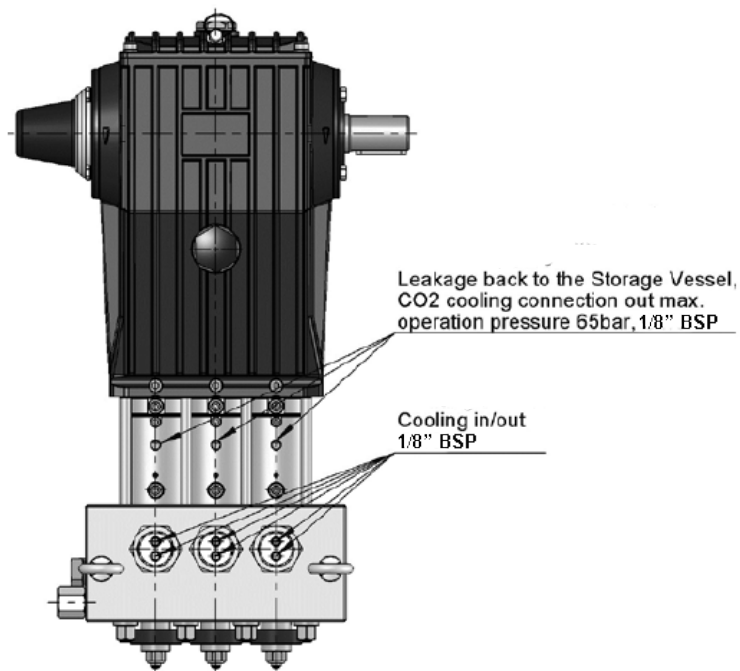
Pressure in the discharge line and in the pump must be at zero before any maintenance work to the pump and unit takes place. Close off the suction line.

Take necessary precautions to ensure that the driving motor cannot get switched on accidentally (by disconnecting the fuses, for example).

Make sure that the pump and all parts on the pressure side of the unit are vented and refilled, with pressure at zero, before starting the pump.

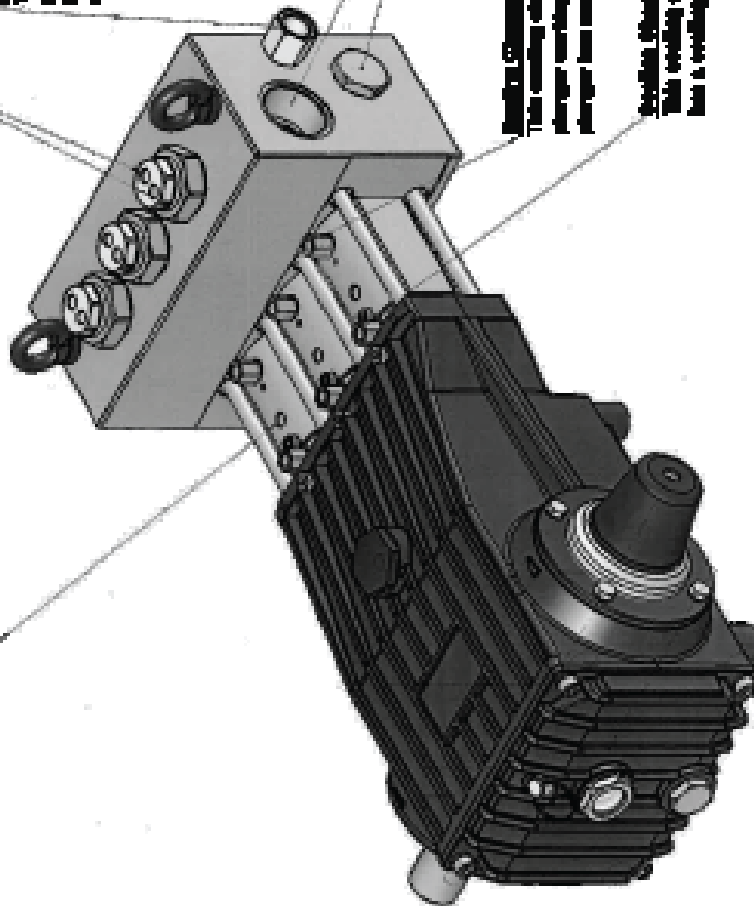
The absorption and pumping of air or CO₂ in gas form as well as cavitation must be avoided.

Cavitation and/or compression of gases lead to uncontrollable pressure-kicks which can ruin the pump and pump unit parts and also be dangerous for the operator or anyone standing nearby.



Oil Sealing Channel CCBs in the pump

This is a CCB sealing channel. This channel can be used with OCB seals. Most pumps have one channel. This is also the outlet for the OCB leakage coming from the high pressure seal. At this sealing channel you get in at the down side with drops with liquid OCB. The OCB will leak up inside the pump and will go straight upward in the top of the storage vessel. It is important that the top to the vessel is going straight upward. The pipe which is going to the storage vessel should not have any inclination because we need the head from the vessel to produce the flow.



Carbon Channel Number 1:

This piping channel is made to keep the valve sealing and when the valve is not sealing it means. If you have CCB you handle the valve making you can seal it down and break and liquid. This is usual before sealing the pump. This sealing channel is in the highest point of the pump.

Carbon Channel Number 2:

This sealing channel is made to keep the valve sealing and when the pump is running. The CCB which is going and under pressure has a higher temperature in the CCB on the inlet side. This keeps the CCB under the seal.

OCB inlet on both sides

OCB outlet on both sides

Sealing Channel Number 3:

This sealing channel is made to seal down the high pressure seal and to seal the pump's working room. CCB is getting more when it comes under pressure. Most storage has one sealing channel.

Sealing Channel Number 4:

This sealing channel is made to seal down the low pressure seal. Most storage has a sealing channel.

How to seal the channels

You have to look that the difference of temperature is always right to take everything head.

For example:

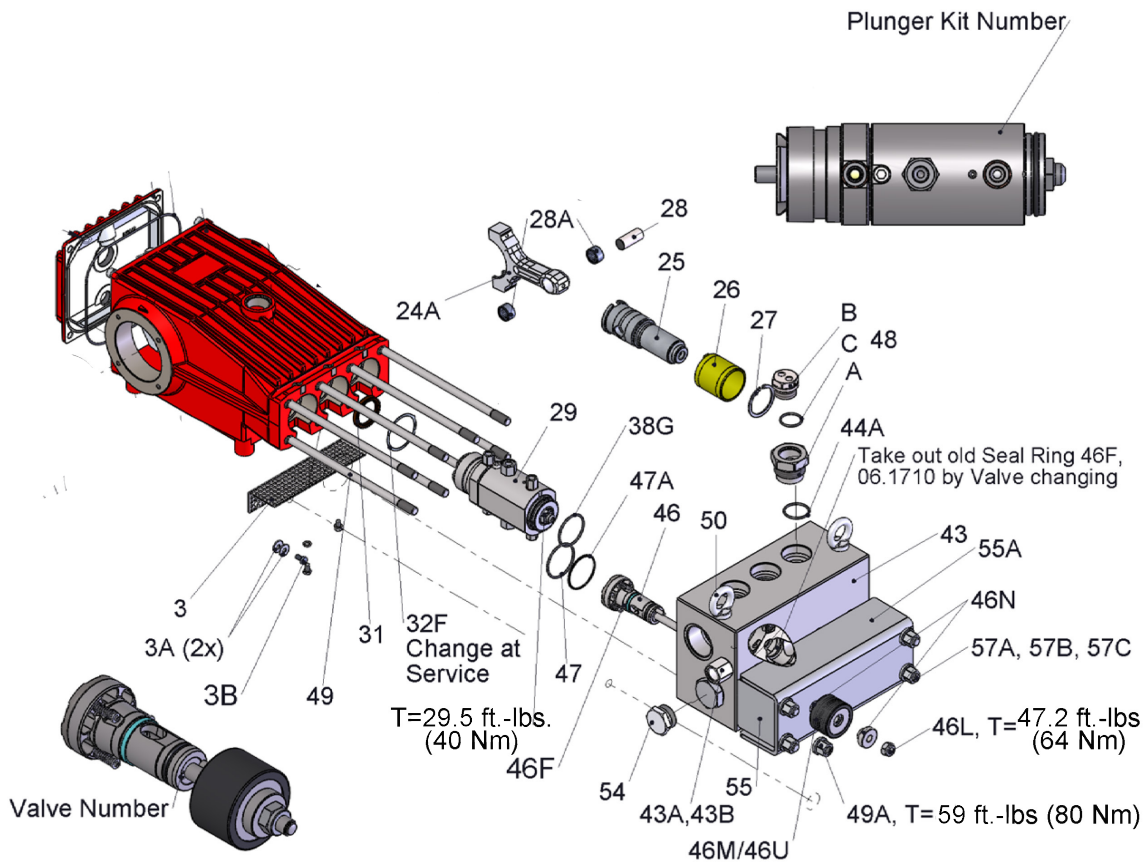
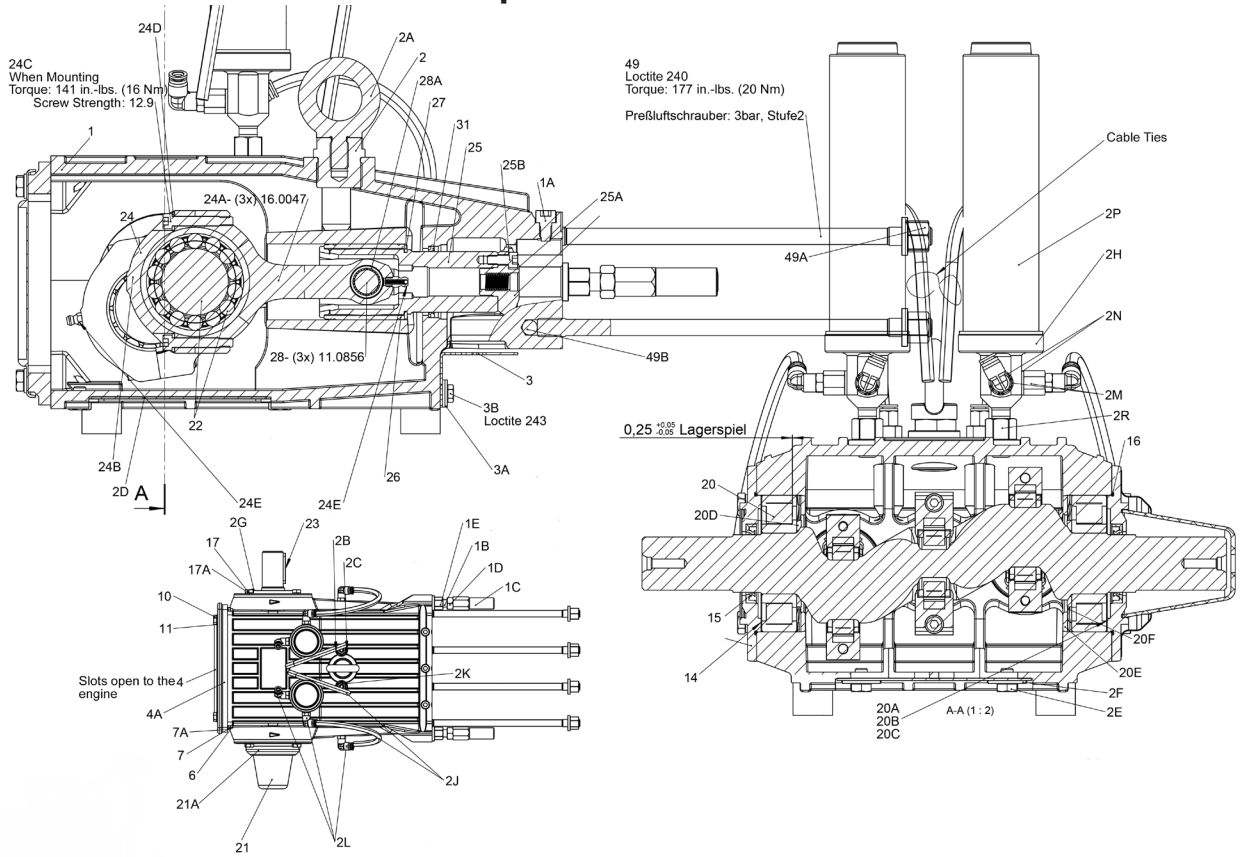
If you have a high pressure storage vessel then you can use sealing channel 1/2 with under sealed down to 4°C up to 4°C.

The CCB which is going to the OCB sealing channel also sealed down to 4°C up to 4°C. This is a standard sealing of the channel.

And example:

If you have a low pressure storage vessel then you can seal with under because the OCB is low seal for 4°C. In this when you can use sealing channel 3/4 in the same way like the CCB sealing channel. On the down side is with liquid OCB in the top side straight up to the top of the storage vessel.

Exploded View - CLP124G



CLP124G SPARE PARTS LIST - FLUID END

<u>ITEM</u>	<u>PART</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>ITEM</u>	<u>PART</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	CP04807G	Crankcase	1	20A	CP07117	Fitting Disc	1
1A	CP04808	Fixing Screw	3	20B	CP13001	Fitting Disc	2
2	CP04882	Plug	2	20C	CP04091	Fitting Disc	3
2A	CP07623	Eye Bolt	1	20D	CP04813	Spacer Ring	2
2B	CP04883	Grease Connection	2	20E	CP04898	Cover Plate	2
2C	CP04629	O-Ring	2	20F	CP04899	Wave Spring	2
2D	CP04884	Vent Grill, Bottom	1	21	CP05376	Shaft Guard	1
2E	CP04885	Hexagon Screw	4	21A	CP04900	Shaft Guard Holder	1
2F	CP04886	Washer	4	22	CP04901	Crankshaft Assembly	1
2G	CP04374	Lubrication Fitting	2	23	CP13243	Fitting Key	1
2H	CP04887	Manifold	2	24	CP04902	Connecting Rod Assembly	3
2J	CP13430	Hose	4	25	CP04907	Crosshead Assembly	3
2K	CP04888	Connector	2	25A	CP04908	Adapter Assembly	3
2L	CP04637	90 Degree Elbow	6	25B	CP04804	Hexagon Screw	9
2M	CP04889	Hexagon Reducer	4	26	CP04909	Crosshead Sleeve	3
2N	CP07258	Copper Washer	4	27	CP04817	Clip Ring	3
2P	CP04881	Lubricant Dispenser	2	28	CP04818	Crosshead Pin	3
2R	CP13430	Hexagon Screw	2	28A	CP04819	Needle Bushing	6
3	CP04802	Metal Cover	1	29	CP04890	Plunger Kit (30, 32-42)	3
3A	CP04803	Washer	4	31	CP04910	Radial Shaft Seal	3
3B	CP04804	Hexagon Screw	2	43	CP04821	Valve Casing	1
4	CP04891	Air Vent	1	44A	CP07150-0003	O-Ring	3
4A	CP04892	Vent, Crankcase Cover	1	46	CP04823	Valve Set	1
6	CP04893	Countersunk Screw	4	47	CP04779	O-Ring	3
7	CP04894	Hexagon Nut	4	47A	CP04825	Support Ring	3
10	CP04561	Hexagon Screw	4	47B	CP04895	O-Ring	3
11	CP05341	Washer	4	48	CP04826	Cooler Plug Assembly	3
14	CP04896	Bearing Cover	2	49	CP04827	Stud Screw	8
15	CP04897	Radial Shaft Seal	2	49A	CP13430	Hexagon Nut with Rim	8
16	CP07113	O-Ring	2	50	CP04901	Eye Bolt	1
17	CP07114-0100	Hexagon Screw, 316 SS	8	53	CP04561	Hexagon Screw	1
17A	CP4811	Safety Washer	8	54	CP04829	Plug, 1" BSP	1
20	CP04812	Roller Bearing	2				

Pump Mounting Selection Guide

Bushings

06496 - 35mm H Bushing

Pulley & Sheaves

07165 - 12.75" Cast Iron - 4 gr. - AB Section

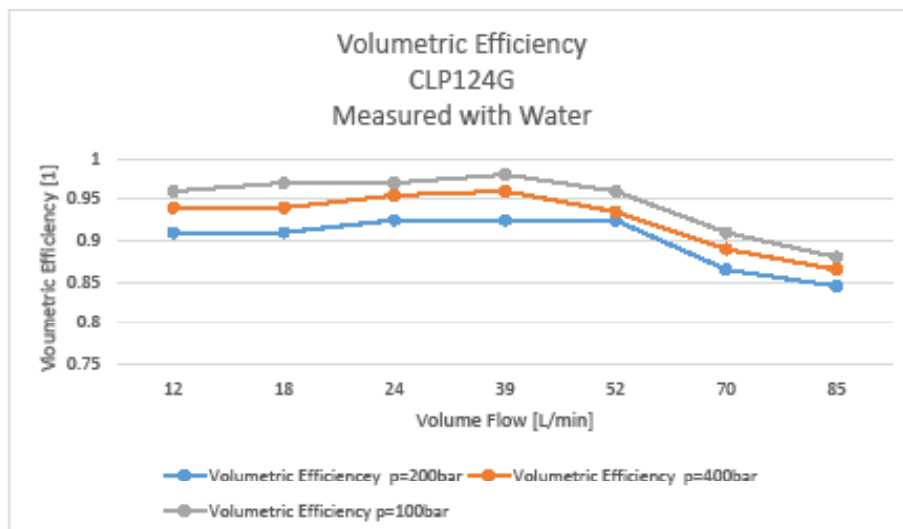
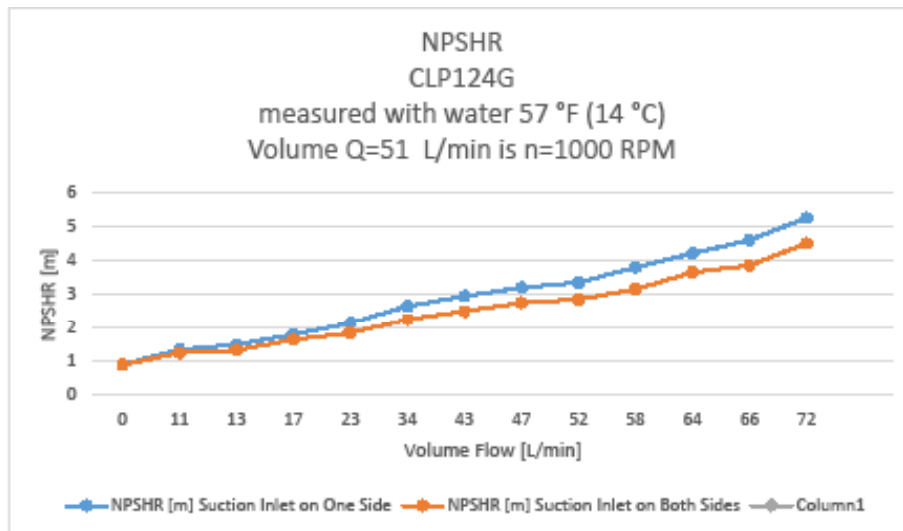
Rails

07357 - Plated Steel Channel Rails
(L=11.75"xW1.88"xH=3.00")

Specifications

Model CLP124G

	U.S	Metric
Volume	13.5 GPM	51 LPM
Maximum Discharge Pressure	4350 PSI	300 BAR
Maximum Inlet Pressure	4350 PSI	300 BAR
Maximum Power Consumption.....	40 BHP	30 kW
Minimum Power Consumption.....	4 BHP	3 kW
Maximum Speed		1000 RPM
Plunger Diameter	0.94"	24 mm
Stroke	1.57"	40 mm
Inlet Port		(2) x 1-1/2" BSP
Discharge Port		(2) x 1" BSP
Crankshaft Mounting		Either Side
Shaft Rotation		Top of Pulley Towards Fluid End
Weight	183 lbs.	83 kg
Crankshaft Diameter	1.38"	35mm



Repair Instructions

To Change Valves

Remove nuts (49A). Take off the valve casing (43) or push the drive end back. Screw off nut (46L). Remove disc (46N), guard ring (46M). Using a plastic hammer, disassemble valve (46) by tapping the valve retainer pin (46O) on the front. Change O-ring (47) and Support Ring (47A) in the valve casing (43). Take the old sealing Ring (46F) out of the Valve Casing (43). Fit the new valve (46) in reverse order.

To Change Plunger Set

Unscrew the 8 nuts (49A) and pull the valve casing off to the front or push the drive end back. Position every plunger to the top dead centre. Unscrew the plunger pipe at the hexagon turning at least ten times. Take off holding screw (1A). Pull the plunger set (29) out of the guides in the crankcase. Take Tolerance disc (32F) out of the middle bore, and put in a new Tolerance disc. Fit the new plunger set in reverse order. The contact surfaces on the plunger (25) and in the drive (1) must be clean. Coat thread (M10) on the Plunger with Anti Seize.

Important! Deformation of the plunger pipe due to eccentric tightening of the tension screw or dirt or damage on the front surface can cause accelerated wear or the plunger pipe to fracture.

Tighten the valve casing fixing nuts (49A) crosswise and evenly.

Important! If the cover plate (3) has been removed, coat the thread of its screw (3B) with glue when refitting.

To Dismantle Gear

Remove the 8 nuts (49A) and pull the valve casing off to the front or push the drive end back. Disassemble the plunger set (29). Screw off gear cover (4) and bearing cover (14).

Remove conrod screws (24) and push the front conrod parts as far as possible into the crosshead guide. Cut the roller bearing cages open and remove the roller parts. Turn the crankshaft lightly and carefully hit it out to one side using a rubber hammer.

Important! Do not bend conrod shanks. Check the running surfaces on the roller bearings, cross-head and seal surfaces (shaft, plungers).

To Reassemble

After removing the inner ring from casing bearing (20), thread new cages onto the crankshaft and click new roller parts into place. Thread on the outer rings. Press on the inner ring from casing bearing (20). Thread in the crankshaft and screw the conrods together.

Using a soft tool, press in the casing bearing outer rings until these lie flat with the outer edge of the bearing hole. Lubricate all bearings with grease. Then screw on the bearing cover together with the radial shaft seal and O-ring. Push in the bearing outer ring together with the bearing cover. Fit shim 20D on both sides. Fit shims (20A,B,C) symmetrically.

Adjust axial bearing clearance to at least 0.2 mm and maximum 0.3 mm. All bearing points lubricate with grease. After assembly the shaft should have a clearance of between 0.2 mm and 0.3 mm.

Tighten conrod screws. Conrod must be movable on the crank pin. Rotate Crankshaft after assembling 2 turns by Hand.

Eco2Blast pumps and accessories are warranted by the manufacturer to be free from defects in workmanship and material as follows:

- This warranty is limited to repair or replacement of pumps and accessories of which the manufacturer's evaluation shows were defective at the time of shipment by the manufacturer. The following items are NOT covered or will void the warranty:

- Liability under this warranty is on all non-wear parts and limited to the replacement or repair of those products returned freight prepaid to Eco₂Blast which are deemed to be defective due to workmanship or failure of material. A Returned Goods Authorization (R.G.A.) number and completed warranty evaluation form is required prior to the return to Eco₂Blast of all products under warranty consideration. Call (260)728-4433 to obtain an R.G.A. number.

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