Valid for pump P/No: 35 84 70

Workshop
CC 92
Hydr Propulsion Pump
W-1015 EN

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We reserve the right to change specifications without notice.

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General

The following repair instructions are intended to assist in inspections and repairs to be carried out, the instructions are valid for two pumps. When ordering in going parts to your pump, please use the catalogue that was delivered with the roller. Also inform us of the machines S/N and the P/N and S/N for the pump. That will allow us to use our special knowledge and guarantee that the correct parts are delivered. Prerequisite is that this work is carried out only by qualified personnel.

These units are manufactured with great care and with adherence to defined tolerances to the highest manufacturing accuracy, and therefore the following points must be given particular attention:

Dismantling

1. When dismantling the unit from the machine, immediately close openings with plugs to prevent ingress of dirt.

2. Make note of the details on code plate, such as serial number, type number and running time of unit (for ordering spare parts).

3. Remove external dirt (cleaning spirit or trichlor solution).

4. Have a clean work place ready, lay out tools ready.

5. Use only non-threading cleaning rags.

6. Before dismantling components, mark parts to ensure correct re-assembly.

7. Carry out step by step dismantling.

8. The appearance of the parts removed often gives an indication of the condition of the system. For example:

   Scored sliding surfaces, heavy abrasion
   - contaminated operating fluid

   Discoloration of components with heavy loading
   - overheating of operating fluid, incorrect choice of viscosity or inadequate specifications of operating fluid
   - insufficient oil
Reassembly

1. Use only genuine spare parts. We recommend the use of pre-assembled, coordinated and tested component groups. The required component groups and seal kits should be selected from the spares list and ordered by quoting the code plate details.

2. Assembly should be carried out observing the maximum cleanliness.

3. Assembly is carried out in reverse order to dismantling unless otherwise stated, e.g. Bearings in Front Case to be pre-loaded.

4. Fundamentally do not reuse old seals.

5. Oil components before assembly (hydraulic mineral oil).

6. Tighten screws with torque wrench according to specifications. If there is any suspicion of stripping of threads, use new screws.

7. When carrying out dismantling/reassemble instructions refer to the appropriate drawings.

Important

On completion of repair, close all openings with plugs. Should difficulties arise, please contact our nearest service centre.
1. Protecting the drive shaft.

2. Loosen rotating ring and remove it. Press-off the front cover.

3. Inspect:
   1. Groove
   2. Bore
   3. Shaft
   4. O-ring

Remove valves completely. (1 and 2)

Control:
O-ring, housing.
Replacement of the tightening nut, record measure.

Attention!
Check valve settings after installation.
Remove valve completely.

Attention!
Check valve setting after installation!
Sealing of the Control Device

P/N 35 84 70

Attention!
Check correct hydraulic zero position!

1. Remove pipe.
   Remove fixing screws.
   Lever off control device.

2. Check:
   1. Sealing face
   2. Gasket
   3. Outlet orifice
1. Remove pipe and control module.

2. Remove brake valve.
P/N 35 84 70

Dismantling of the Pump, contd.

Brakevalve

3. Pos. 1 Ball with spring
   Pos. 2 Orifice
4. Mark the pump and remove gear pump.

5. Remove gear set.
6. Check: Throttle valve

7. Unscrew locking screws.
8. Remove control module.

9. Mark cover.
   Record measure of the adjustment screw.
   Loosen locknut, hold adjustment screw.

10. Unscrew locking screws.
    Remove O-ring
11. Pull out control piston.

12. Release port plate fixing. Lift port plate. If necessary use screwdriver, but only in this position in the corners. (Opposite sides: sealing surfaces)
13. Lever off control plate - note positions of locating pin and hole drilling.

14. Remove joint pins.

Remove rotating group.
15. Remove cover ring.

16. Remove drive shaft with slight hammer strokes.

17. Remove cradle with bearing cups.
1. Replace all bearings.

2. Check:
   1. Splines for damage or fretting
   2. Running surfaces
   3. Grooves cut by shaft seal

3. Check:
   Bearing surfaces (1)

4. Check:
   Sliding surface (1) free of scoring.
   Make sure sliding ring/swivel pin (2) are free of pay.

5. Check:
   That return device is free of scoring (1), no wear in slipper pad area.
   (Otherwise: replace both parts together).
6. Check:
   That there are no scratches or metal deposits on sliding surface (1), and there is no (or little) axial play (2). (Otherwise: pistons must be replaced in sets).

7. Check:
   Cylinder drillings (1), teeth (2). (Otherwise: replace cylinder complete with port plate).

8. Check:
   Cylinder gliding surface (1) free of scratches, no traces of wear and no embedded foreign particles. No scratches on the valve plate (2). (Replace ONLY in sets).

9. Check:
   Fit control piston and swash plate. Pin bearing (1), groove in control piston (2).

10. Check:
    That the control piston guide is not scored.
1. Insert bearing cup set.

2. Assemble bearing, wire. 
Assistance: Use bearing with grease or fix the bearing with rubber ring.

3. Rubber ring.

4. Insert completely swivel cradle into the housing. Pay attention for correct seat of the swivel cradle in the housing.
5. Remove rubber ring.

6. Assemble articulating pin.

7. Assemble device for fixation of the swivel cradle.

8. Assemble drive shaft with bearings and radial seal rings.
   Note:
   Oil piston and piston pad.

10. Assemble cylinder completely.

11. Remove assembly device.
12. Insert O-rings with grease. Insert fixing pin (1).

13. Control plate, clockwise - located in direction of rotation. When the casting of the housing are visible trough the hole in the valveplate.

14. Place control plate with grease. Control plate, clockwise - located in direction of rotation. Web of the port plate visible. As in above.

Attention! Noise notches are ground in required direction of rotation.
15. Place in correct position.

16. Insert positioning piston into the housing.

Note:
Oil positioning piston before assembly.

17. Insert O-rings with grease.
18. Assemble control module.
   Assembly assistance:
   Turn at zero position.

19. Fit charge pump.

20. Assemble pressure charge valve.

### Tightening Torques for Shaft Bolts
(Metric ISO Standard Thread)

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<th>12.9</th>
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### Tightening Torques for Locking Screws VSTI
(Metric ISO Fine Thread)

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### Tightening Torques for Seal-Lock Nuts
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### Tightening Torques for Cross-Slotted Lens Head Screws
DIN 7985
(Metric ISO-Standard Thread)

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General advice

- Make yourself familiar with the equipment of the machine.
- Only operate the machine if you are completely familiar with the operating and control elements as well as the functioning of the machine.
- Use your safety equipment like helmet, safety shoes and hearing protection.
- Make yourself familiar with your working field.
- Only operate the machine for its intended purpose.

Please observe the guidelines of the Professional Association and the machine manufacturer.

Before starting

- Observe the operating instructions before starting.
- Check the machine for remarkable faults.
- Do not operate the machine with defective instruments, warning lights or control elements.
- All safety devices must be in a secure position.
- Do not carry with you movable objects or secure them to the machine.
- Keep oily and inflammable material away from the machine.
- Before entering the driver’s cabin, check if persons or obstacles are beside or beneath the machine.
- Be careful when entering the driver’s cabin, use stairs and handles.
- Adjust your seat before starting.
Start

- When starting all operating, levers must be in "neutral position".
- Only start the machine from the driver's seat.
- Check the indicating instruments after start to assure that all functions are in order.
- Do not leave the machine unobserved when the motor is running.
- When starting with battery connection cables, connect plus with plus and minus with minus.
- Always connect mass cable (minus) at last and cut off at first.

Warning

⚠️ Exhaust gas is dangerous. Assure sufficient fresh air when starting in closed rooms!

Hydraulic equipment

1. Hydraulic equipment is standing under high pressure.

⚠️ High pressure fluids (fuel, hydraulic oil) which escape under high pressure can penetrate the skin and cause heavy injuries. Therefore immediately consult a doctor as otherwise heavy infections can be caused.

2. When searching leakages use appropriate auxiliary devices because of the danger of accidents.

3. Before working at the hydraulic equipment, lower pressure to zero and lower working arms of the machine.

4. When working at the hydraulic equipment, absolutely stop motor and secure roller against rolling away (e. g. parking brake)!

5. When connecting hydraulic cylinders and motor, pay attention to correct connection of hydraulic flexible hoses.

6. In case of exchanging the ports, the functions are vice versa (e. g. forward/revers) danger of accidents!

7. Check hydraulic flexible hoses regularly and replace them in case of damage or wear!
   The new hose or pipe must comply with the technical requirements of the machine manufacturer!

   Orderly disposal or recycling of oil, fuel and filters!
Attention!
Observe safety regulations!

Connect both control chambers with a hose.
Avoidance of rest signal from hydraulic zero position.
Connect manometer to $M_A$ and $M_B$.
Adjust zero position so that at blocked drive both manometer indicate the same pressure value.

Note:
Death line of zero position. Swiveled out to the right - swiveled out to the left.
Attention!
Observe safety regulations!

Connect manometer to $X_1$ and $X_2$.
Adjust zero position so that at blocked drive both manometer indicate the same pressure value.

Note:
- Eccentric adjusting
- Do not turn over ±90°.
Attention!
Observe safety regulations!

Note:
Readjusting only at operating temperature.

Connect manometer to $M_A$ and $M_B$.

HP-valves: Operate valves with small pump flow volume. Check setting value. (Only for a short time for temperature reason.) Change "setting value" - check.

Note:
Adjusting data according to order.
Attention!
Observe safety regulations!

Note:
Readjusting only at operating temperature.

Connect manometer to "G".

Attention!
Charge pressure setting!
Nominal pressure $p_H$ - 20 bar
Peak pressure $p_H$ - 40 bar
at max. speed.

Note:
Adjusting data according to order.