Maintenance instructions and spare parts list

Aquatec high-pressure pumps built from 2022

AQUATEC- Water maker, Manufacture and distribution by North-Marine Handels GmbH	
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Check daily

Attention!	In the event of condensation in the oil (whitish/greyish discoloration due to continuous operation, warm environment), change the oil immediately.

First oil change after 50 hrs, otherwise every 200 hrs or after 6 months at the latest.

Oil type: Gear oil ISO VG 220, alternatively automotive gear oil SAE 90 GL4.

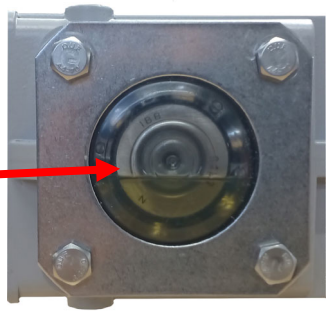
Oil change instruction

of high-pressure pump:
The oil can be drained via the drain plug at the rear of the crankcase. The drain plug (wrench size 19 mm) or Hexagon socket 8 mm under the crankcase. Sealed of copper ring.

Alternatively, the oil can be extracted through the oil dipstick opening using a suction pump.

Dipstick full screwed into crankcase
.

Oil level
Slightly below center sight glass
Quantity
0,24 Liter

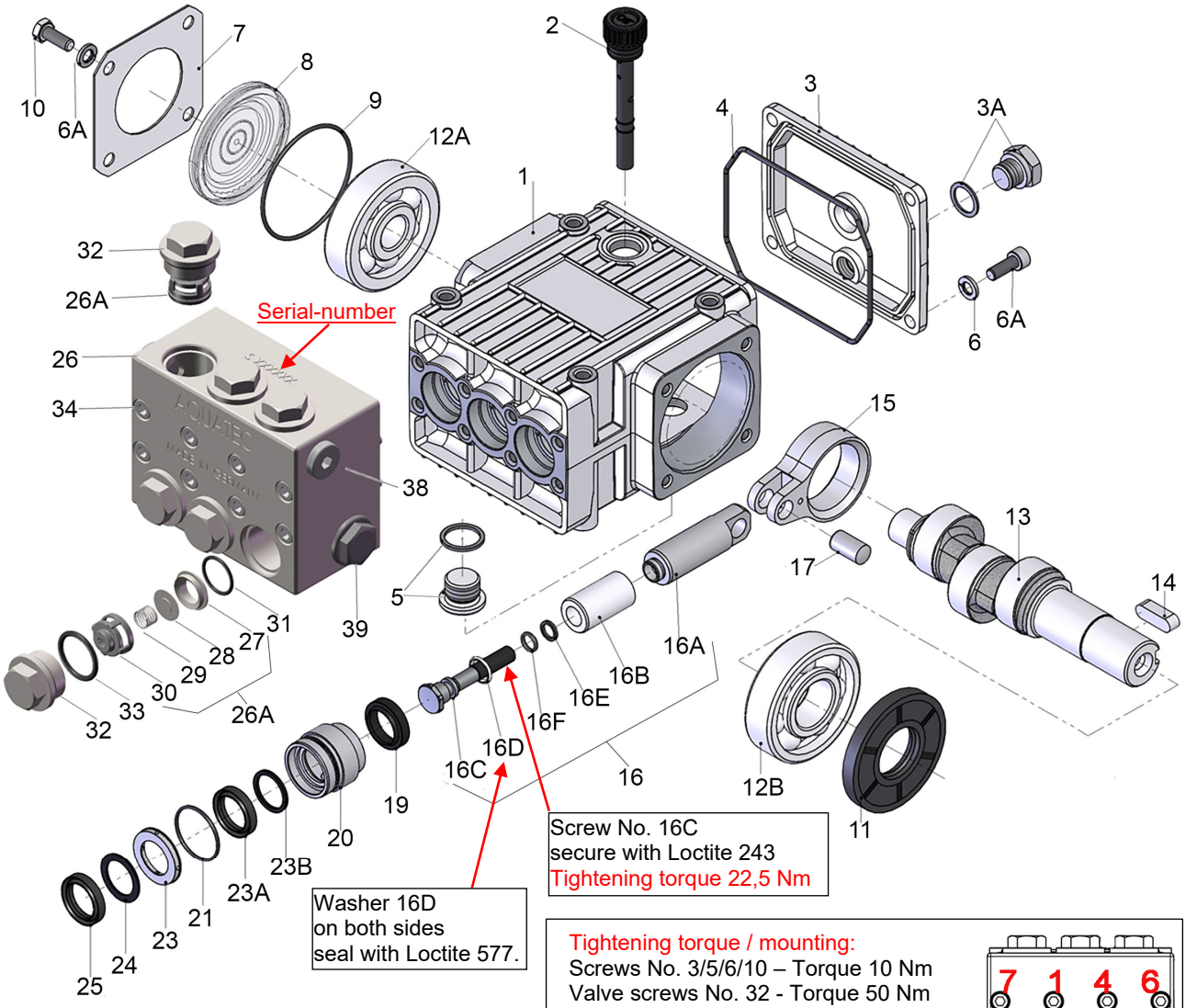


Depressurize the pump and pressure-side system components before commissioning. Avoid suction and delivery of air or air/water mixtures and cavitation at all times.

If there is a **danger of frost**, the water in the pump and in the pump fittings must be emptied. The high-pressure discharge port can also be used and the pump run “dry” for about 10 seconds for this purpose.

Tightening torques and spare-part-numbers of high-pressure-pump typ 1.

Note!	**When ordering spare parts please state Pump-Head Serial No.**



Note!	Grease the thread of the valve screws (No. 32) with e.g. Anti-Size (metal-free for stainless steel) to prevent seizing.

Spare part numbers of high-pressure-pump type 1

Type 1, crankcase color grey

Note!	When ordering spare parts please state Pump-Head Serial No.

No.	Order No.	Description	Qty
1	141609	Crankcase	1
2	141610	Oil Dipstick	1
3	141611	Crankcase Cover	1
3A	141612	Oil Drain Plug Assy	1
4	141613	O-Ring	1
5	141614	Plug Assy	1
6	141615	Cylinder Screw M6 x 16	4
6A	141616	Spring Washer 6,3	8
7	141617	Bearing Cover	1
8	141618	Oil Sight Glas	1
9	141619	O-Ring	1
10	141620	Hexagon Screw M6 x 12	4
11	141621	Radial Shaft Seal	1
12A	141622	Ball Bearing	1
12B	141623	Ball Bearing	1
13	141624	Crankshaft DD500 12/ 24 V- AC 55, 230/1/50	1
13	141625	Crankshaft AC 65/ 110, 230/1/50	1
13	141626	Crankshaft AC 75/ 135, 230/1/50 (AC 150, 115/1/60 und 440/3/60)	1
13	141627	Crankshaft AC 150, 400/3/50	1
13	141628	Crankshaft AC 150- 240, 230/1/50 (AC 190/ 240, 400/3/50)	1
14	141629	Fitting Key	1
15	141630	Connecting Rod	3
16	141631	Plunger Assy 18mm dia.	3
16A	141632	Plunger	3
16B	141633	Plunger Pipe	3
16C	141634	Tension Screw (secure with Loctite 243 torque 22,5)	3
16D	141635	Steel Ring (seal on both sides with Loctite 577)	3
16E	141636	O-Ring	3
16F	141637	Support Ring	3
17	141638	Crosshead Pin	3
19	141639	Gear Seal	3
20	141605	Sealing girder	3
21	141640	O-Ring	3
23	141602	LRF- Ring	3
23A	141641	Low pressure seal black	6
23B	141654	Support Ring LP	3
24	141644	Support Ring HP	3
25	141642	High pressure seal brown	3
26	141600	High pressure head	1
26A	141648	Valve assy (27-30)	6
27	141604	Valve Seat	6
28	141603	Valve Plate	6
29	141606	Valve Spring	6
30	141607	Spring Tension Cap	6
31	141608	O-Ring	6
32	141601	Plug	6
33	141649	O-Ring -S210062	6
33	141493	O-Ring S210063-	6
34	141645	Hexagon Screw M6 x 55	8
38	141646	Plug G1/4"	1
39	141563	Plug G1/2"	1

Maintenance

Changing the Seals

Remove the 8 socket screws (photo 1) on the valve casing (34).

Photo 1

For the type of thread locker used and the required tightening torques, observe the table in the exploded view.

Lever off the valve casing using two screwdrivers (photo 2). The seal retainers (20) will remain either in the drive or in the valve casing (photo 3).

Photo 2

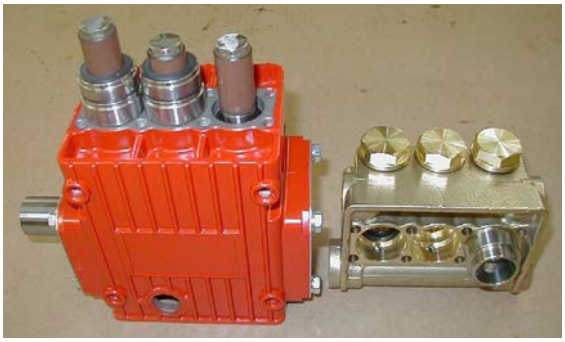


Photo 3

Take the seal sleeves out of the drive (photo 4) or pump head (photo 5) by carefully turning and lifting them.

Important! Do not damage the plunger surfaces. Carefully take the worn seals (23/23A) out of the seal retainers (20) and the valve casing (26) (photo 6).

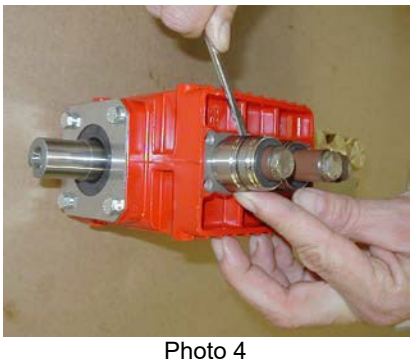


Photo 4

Photo 5

Photo 6

Coat new seals lightly with silicon grease. Insert the seal (23, brown) in to the valve casing (26) with the groove side ***down*** (photo 7 / 8.

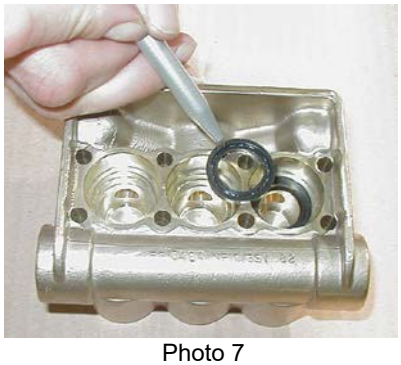


Photo 7

Photo 8

Place the seal (23) into the valve casing (26) recess with one side up, then press the rest of the seal into the recess little by little using the flat side of a screwdriver (photo 12).

Photo 12

Photo 13

Photo 14

Mount the seal retainers into the drive (photo 13). Then fit the drip shields (23B) by carefully passing them along the plungers (photo 14). Finally push the seal (23A, black) with its groove pointing upwards into the seal retainer.

Photo 17

With the recess side facing down, place the drip return rings (25) onto the seal retainers; slide the teflon support rings (24) onto the ceramic (photo 19). Then mount the pump head squarely (photo 20), and tighten the hexagon screws (34) to 12 Nm, see exploding diagram for the sequence.

Photo 19

Photo 20

Changing the Valves

To change the valves (26A), screw off the plugs (32) (photo 21) and remove the whole valve with a taper-nose pliers (photo 22). The valves (26A) can be dismantled by levering them apart using a screwdriver (photo 23).

Photo 21

Photo 22

Photo 23

Insert new valves (26A) (photo 24) and tighten plugs (32) to 25 Nm.

Photo 24