

DW6

Positive Displacement Pump

Original Instructions

MODEL: DW6

FORM NO.: PL8500014

REVISION: 07/2025





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Declaration of Conformity



CE Declaration of Conformity English original

We, SPX Flow Technology Poland Sp. z o.o.
Ul. Rolbieskiego 2, 85-862 Bydgoszcz
as the **Manufacturer**

and SPX Flow Technology Poland Sp. z o.o.
Ul. Rolbieskiego 2, 85-862 Bydgoszcz
as the **Design Center**,

declare under our sole responsibility that our

Positive Displacement Pumps
DW+ 1; DW+ 2; DW+ 3; DW+ 4; DW+ 5; DW+ 1; DW 6

to which this Declaration relates is/are in conformity with the following **EU Regulations and Directives**
as well as applicable harmonized standards as per the current valid revision of these norms and
statutory instruments:

Machinery Directive (MD)	2006/42/EC
Low Voltage Directive (LVD)	2014/35/EU
Electromagnetic Compatibility Directive (EMC)	2014/30/EU
Safety of machinery — General principles for design — Risk assessment and risk reduction	ISO 12100:2010
Safety of machinery - Hygiene requirements for the design of machinery	EN ISO 14159:2008
Pumps and pump units for liquids - Common safety requirements	EN 809:1998+A1:2009/AC:2010
Liquid pumps - Safety requirements	EN 13951:2012

Bydgoszcz, Poland 1.07.2026

Jacek Goska, Site Leader
SPX Flow Technology

Place & date of the declaration

Name of the person
empowered to draw up the
declaration on behalf of the
Manufacturer or the Authorized
Representative

Signature

1. General Description

This operating manual should be read carefully by the competent operating and maintenance personnel.

It must be pointed out that we will not accept any liability for damage or faults resulting from failing to comply with this operating manual.

Descriptions and data given herein are subject to technical changes.

1.1. Intended Use

The DW6 pump is exclusively intended for pumping liquids, especially in food and beverage installations.

Refrain from using the pump in a manner which exceeds the scope and specifications stated below.

Any use exceeding the margins and specifications set forth is considered to be not intended.

The manufacturer is not liable for any damage resulting from such activities.

The user will bear the full risk.

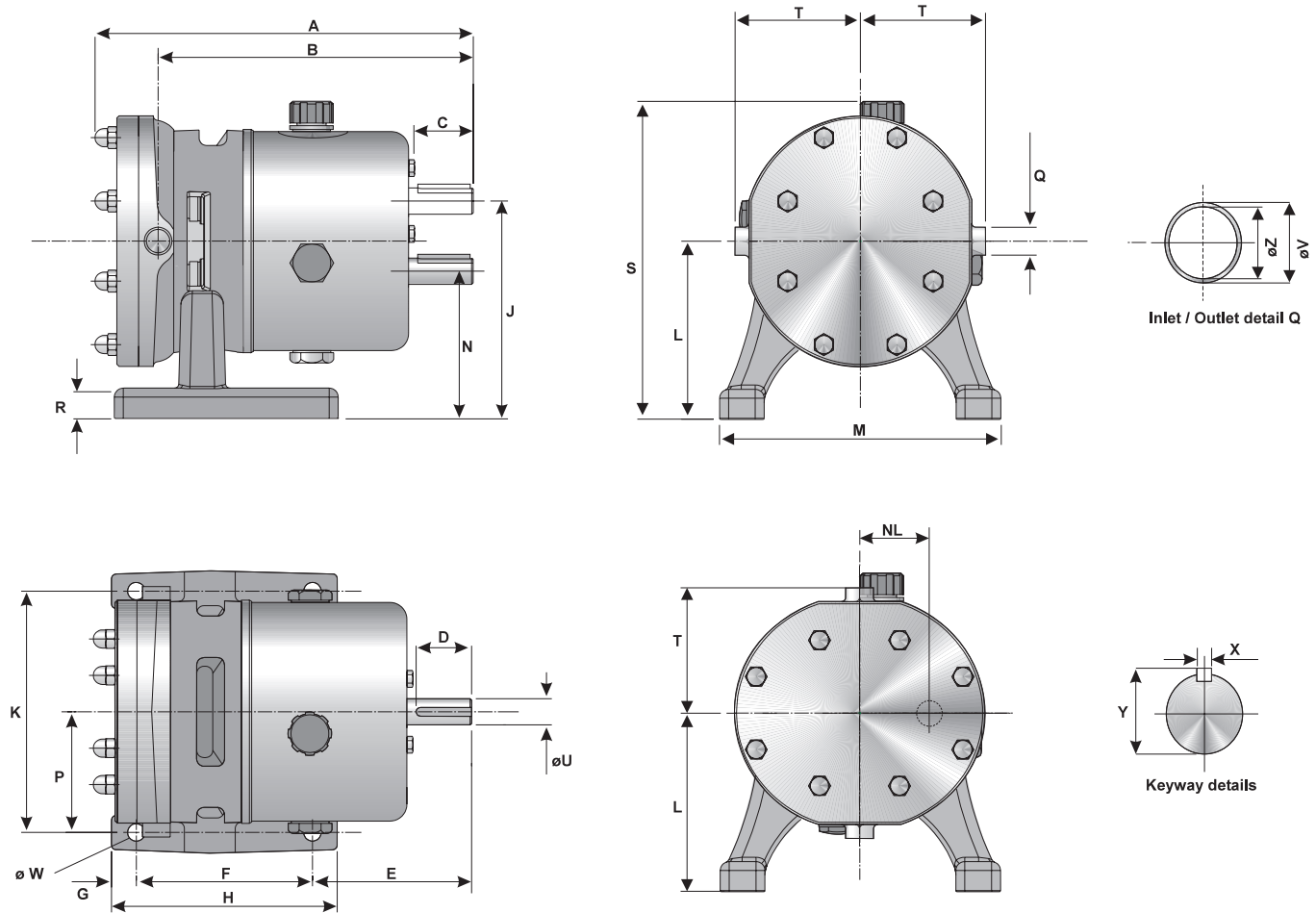


Caution!

Improper use of the pump leads to:

- damage,
- leakage,
- destruction,
- potential failures in the production process.

2. DW6 Pump Dimensions



Pump model	A	B	C	D	E	F	G	H	J	K	L	M	N	NL	P	Q*	R	S	T	U	W	X	Y	Z	V	Net weight* (kg)	Oil capacity* (litres)
DW6/172/-	804	692	98	90	351	420	40	500	376	491	293	541	208	85	245	3"	49	528	218	ø50	ø24	14	54	72.9	76.7	370	25.0
DW6/198/-	804	692	98	90	351	420	40	500	376	491	293	541	208	85	245	3"	49	528	218	ø50	ø24	14	54	72.9	76.7	370	25.0
DW6/308/-	830	706	98	90	351	420	40	500	376	491	293	541	208	85	245	4"	49	528	218	ø50	ø24	14	54	97.6	102.5	390	25.0
DW6/519/-	881	732	98	90	351	420	40	500	376	491	293	541	208	85	245	DN150	49	528	218	ø50	ø24	14	54	150	157	460	25.0

Note!

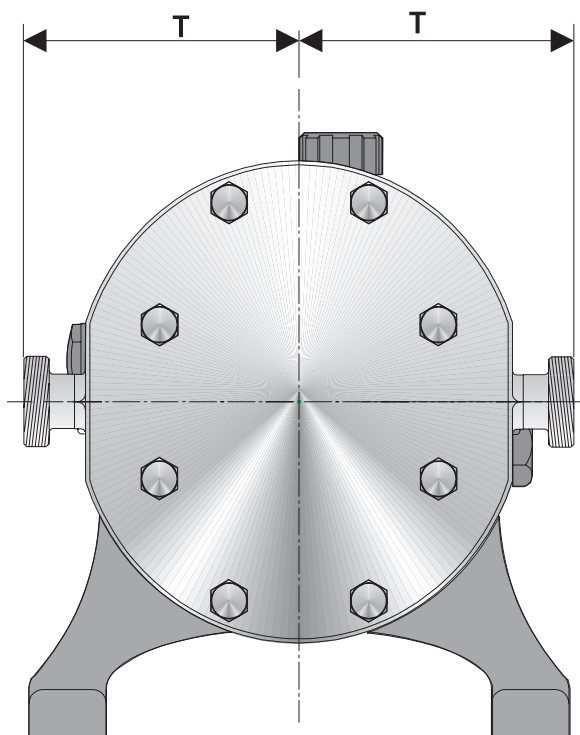
See chapter 2.1: DW6 Pump dimensions with fittings.

Note!

Dimensions given are in accordance with ISO 2768-mK-E, which specifies the permissible deviation in dimensions (excluding those marked with "**").

2. DW6 Pump Dimensions

2.1. DW6 Pump Dimensions with Fittings

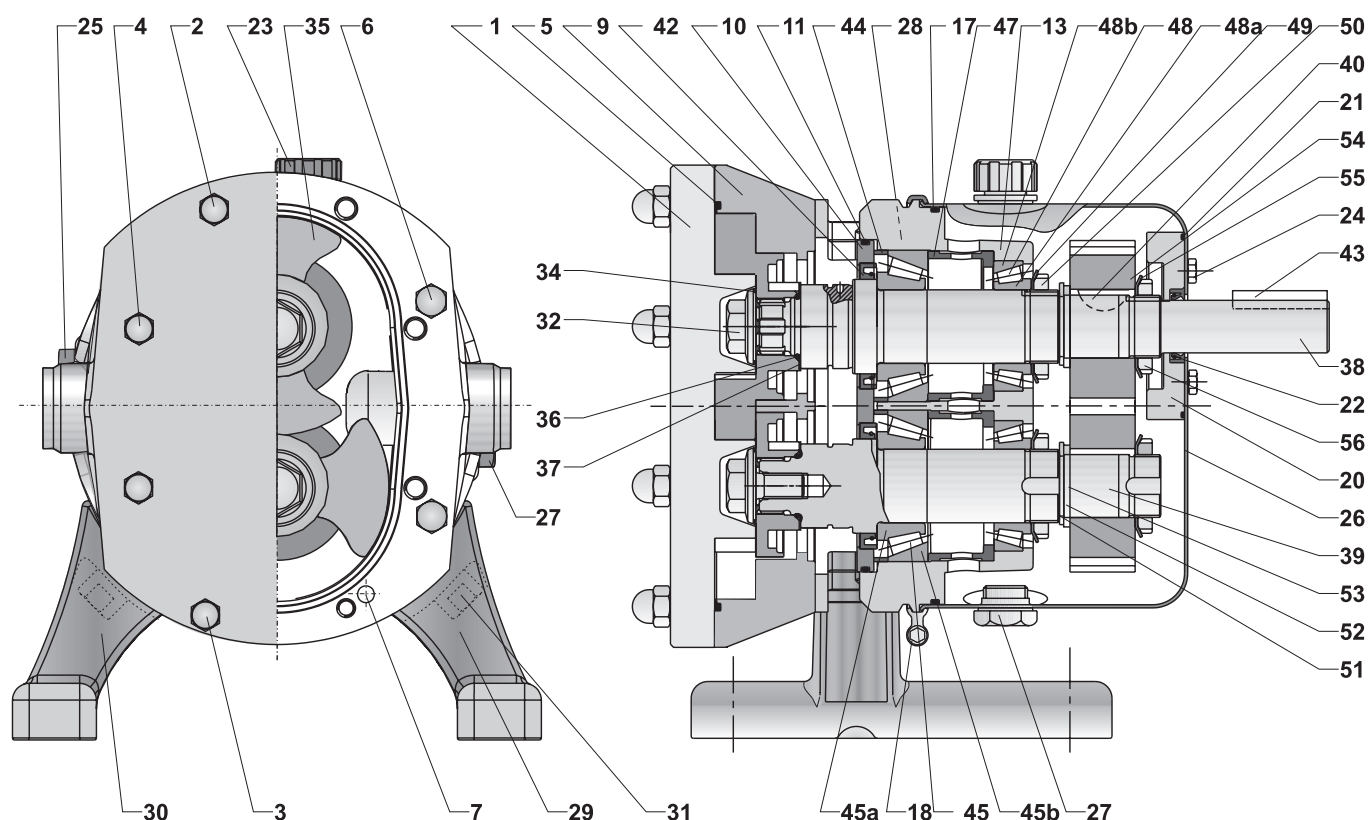


Pump	T								
	CLAMP			MALE PARTS					
	BS 4825 part 3	ISO 2852	DIN 32676	ISO 2853	BS 4825 part 4	SMS ("1145")	BS 4825 part 5	DIN 11851	DS 722
	1" TRI	1" ISO	DN25	1" ISO	1" IDF	1" SMS	1" RJT	DN25	1" DS
DW6/172/-	239.5	239.5	246	239.5	239.5	243	244.3	263	242
DW6/198/-	239.5	239.5	246	239.5	239.5	243	244.3	263	242
	4" TRI	4" ISO	DN100	4" ISO	4" IDF	4" SMS	4" RJT	DN100	4" DS
DW6/308/-	239.5	239.5	246	239.5	248	253	244.3	272	242
	DN150 TRI	DN150 ISO	DN150				DN150 RJT	DN150	
DW6/519/-	243	243	243				255	265	

Note!

Dimensions given are in accordance with ISO 2768-mK-E, which specifies the permissible deviation in dimensions unless otherwise specified in the figure.

3. Sectional Drawing - Pump



Item	Description
1	Front cover
2	Bolt, front cover
3	Bolt, front cover stepped
4	Nut, front cover dome
5	Gasket, front cover
6	Screw, rotor case to chassis
7	Dowel
9	Rotor case
10	Oil seal plate
11	O-ring, oil seal plate
13	Chassis
17	O-ring, can
18	Oil filler plug
20	Seal consol
21	O-ring, seal consol
22	Oil seal rear
23	Oil filler plug
24	Screw, seal consol
25	Oil level window
26	Can
27	Oil drain plug
28	Nut
29	Foot, left
30	Foot, right
31	Screw for foot
32	Rotor screw with washer

Item	Description
34	O-ring, rotor screw
35	Rotor
36	O-ring, rotor/shaft
37	Shims, rotor
38	Shaft main
39	Shaft aux
40	Gear key
42	Oil seal front
43	Drive key
44	Front spacer
45	Bearing front
45a	Bearing front, inner bearing race
45b	Bearing front, outer bearing race
47	Spacer, rear bearing
48	Bearing rear
48a	Bearing rear, inner bearing race
48b	Bearing rear, outer bearing race
49	Bearing rear tab washer
50	Bearing rear nut
51	Circlip
52	Gear spacer
53	Gear shims
54	Gear (1 pair)
55	Gear tab washer
56	Gear nut

4. Introduction

4.1. DW6 Pump Range

This manual covers all types of DW6 pump. Check the nameplate of the pump to ensure that you have one of the above versions.

4.2. DW6 Pump, Standard and Auxiliary Equipment

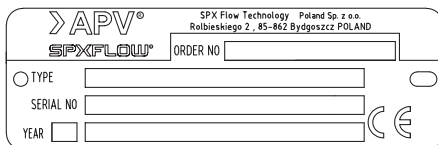
The following standard options are available in the DW6 range:

- Bareshaft pump.
- Pump with constant speed geared motor, suitable for inverter drive use. Up to 37 kW these are available with stainless steel motor shroud.
- Pump with geared motor with constant or manually variable speed.
- Pump base plate and coupling guard in stainless steel.
- Lobe rotors suitable for max. 110°C or max.180°C product temperature in stainless steel AISI 316L or Non Galling Alloy (NGA).
- Piston rotors suitable for max. 110°C product temperature in stainless steel AISI 316L or NGA.
- Elastomers in EPDM, FPM (Viton) or ISOLAST™.
- Single mechanical shaft seal in SiC/Carbon or SiC/SiC, flushed or non-flushed.
- Double mechanical shaft seal in SiC/Carbon or SiC/SiC.
- Horizontal or vertical suction and discharge ports.
- Rectangular inlet.

4.3. Identification of Pump Models

A nameplate as shown in Fig. 1 is fitted on the extension frame.

Fig. 1
(example)



Example:

Order No.:	Indicates the SPX Flow order number.
Type:	Indicates the DW6 pump type.
Serial No.:	Indicates the unique DW6 pump serial number.
Year:	Indicates the year of manufacture.

The empty field can be used to identify the pump within overall system.

4.4. Identification of Motor Models

The plate indicates the motor type and height of construction, motor capacity, speed, etc.



Caution!

Check that the specifications of the motor and motor control unit are correct. This applies in particular to applications which carry a risk of explosion.

5. Safety Precautions

The safety advice listed in this operating manual, the national workplace health and safety regulation as well as internal precautions and practical advice on ways to manage the risks must be followed. It is strictly forbidden to suspend safety devices or change their mode of working.

The pump fulfils the technical demands, and the function is reliable provided that the pump is operated in compliance with the given instructions.

To avoid injuries to persons and/or damages on machinery this instruction manual will have to be strictly observed by the personnel responsible for the operation of the pump.

Inspection, regular service, and maintenance of the pump play a key role in running the pump and production. Any kind of alarms and faults, leaks etc. during operation and production must be acknowledged and necessary action to be taken to avoid any break down of the production. It is in the responsibility of the user to carry out the service and perform maintenance of the pump.

The requirements for the service media must be always met when the pump is in operation. Power cuts will cause the pump to stop, and a CIP cleaning will be required before production can be resumed.

5.1. Operator Requirements

Operators includes all persons working on or near the equipment. Only skilled, instructed, physically and mentally capable persons can work on and use this pump.

5.2. Recommended Personal Protective Equipment

It is always the operator's responsibility to wear appropriate personal protective equipment (PPE), while operating or working on this machine. This may include, but is not limited to, appropriate clothing, safety shoes, gloves, hearing protection, eye, and face protection depending on the operational circumstances.

5.3. Unexpected Stop during Production and Product Blockage

An unexpected stop during production is usually related to a power failure but may also be caused by other factors such as blockages. To remove the blockage, check the pipe system, clean any filter if necessary.

5.4. Emergency Stop

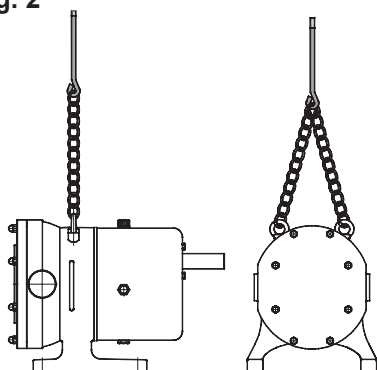
The emergency stop located on the control panel is an emergency operation intended to stop a process or movement that has become hazardous. By activating/pressing the emergency stop button the plant/machinery comes to an immediate full stop. The emergency stop must not be used as regular operation stop or shut down procedure.

5.5. Residual Risks

Despite the inherent protective safe design measures, safeguarding, and complementary protective measures, the residual risks remain.

6. Receipt, Storage, Handling and Transport

Fig. 2



6.1. Receipt

Check the consignment for damage immediately on arrival. In case of damage, clearly mark upon the carrier's paperwork (with a brief description of the damage) that the goods have been received in a damaged condition.

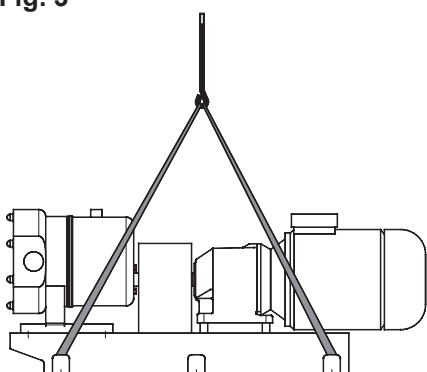
6.2. Storage

After receipt and inspection, if the pump is not to be installed immediately, the pump must be repacked and placed in suitable roofed storage.

The storage location must be clean, dry and free from vibration. Plastic or gasket type port covers must be left in place.

If a moist or dusty atmosphere is used for storage, further protect the pump and unit with a suitable cover.

Fig. 3



6.3. Handling and Transport

Act with caution when lifting the pump. All parts with a weight of more than 20 kg must be handled with a suitable hoisting device. Use a crane, forklift truck or other suitable lifting gear, and always use 2 hoisting belts in conjunction with this.

Refer to the pump weight on page 7 before selecting and using any lifting gear. Ensure that lifting equipment is correctly rated and used within the specified limits.

The drawings on the left show how the pump should be lifted.

Fig. 4

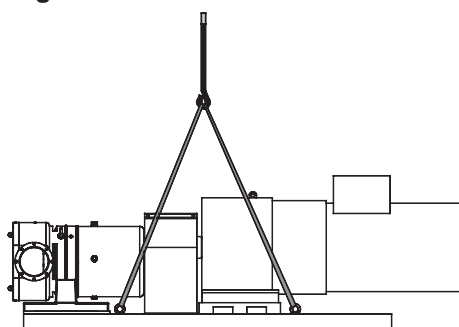


Fig. 2: DW6 bareshaft pump: To be lifted with chain as shown in fig. 2.

Fig. 3: DW6 pump on baseplate type 2: To be lifted by putting straps below the baseplate as shown in fig. 3.

Fig. 4: DW6 pump on baseplate type 3: To be lifted by putting straps below the baseplate as shown in fig. 4.



Caution!

Always use 2 hoisting belts and never fasten at the front of the pump body.



Caution!

Never lift the pump at the shroud as it is not designed to carry the weight of the motor. Remove the shroud before lifting the pump. Always use securely fitted lifting straps when lifting with a crane or similar lifting gear.



Caution!

Never go underneath a load that is being lifted!

7. Installation of the Pump



Caution!

Read through the instructions before installing the pump and starting it up. If in doubt, contact your local SPX Flow representative.

7.1. Positioning



Caution!

Pumps should only be installed, disassembled, repaired and assembled by personnel trained in servicing of SPX Flow pumps, or by SPX Flow fitters. For further information, please contact your local SPX Flow representative.

The following must be observed:

- Install the pump as close to the liquid source as possible.
- Keep the number of bends, tees, valves and other components in the pipe system leading to the inlet of the pump to an absolute minimum.
- Install the pump as low in relation to the liquid source as possible.
- Install the pump with sufficient space for maintenance access.

7.2. Lining up the Pipe System

Ensure that pipe unions are properly aligned and assembled. Use appropriate gaskets. Support the suction and discharge piping as close to the pump as possible.



Caution!

During the suction process the pump may tend to vibrate. A pipe support should be placed close to the pump suction to prevent pipework vibration creating excessive noise.

7.3. Power Supply



Caution!

The installation of all electrical parts must be carried out by qualified personnel.

Connect the motor to the mains via a motor switchbox in accordance with local regulations. Connect the motor in accordance with the instructions inside the cover of the terminal box of the motor. Ensure that the pump rotational direction is correct. See chapter 7.4.

7.4. Pump Rotation

Depending on the required flow direction and the position of the shaft, the rotation direction of the pump is shown in fig. 5, 6, 7, 8. The rotation direction can be determined by looking at the motor coupling.

Fig. 5

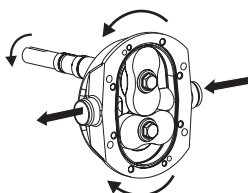


Fig. 7

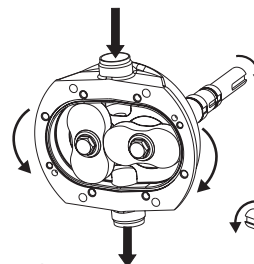


Fig. 6

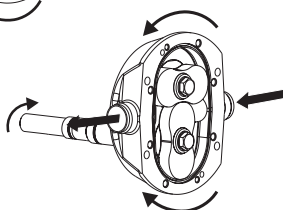
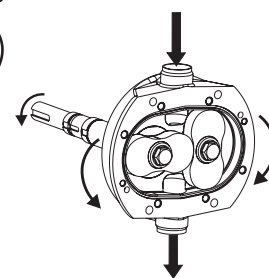
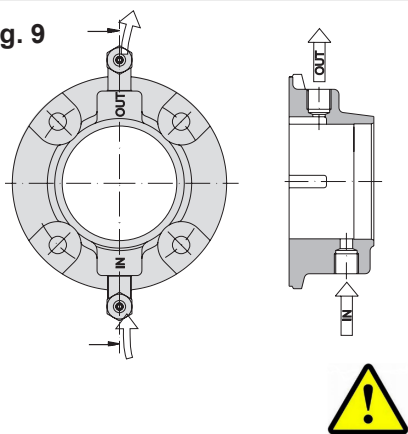


Fig. 8



7. Installation of the Pump

Fig. 9



7.5. Liquid Supply for Water Flushed Seals

If seal flushing is required, connect the flushing liquid to the pump. Pumps fitted with a liquid-flushed mechanical shaft seal have 2 hose connectors for flushing liquids in the seal housing. The hose connectors are M5 and fit a Ø6.0 mm hose. See chapter 13 for operating specifications.

The hose connection should always be positioned vertically with the fluid inlet below and the outlet above (Fig. 9).

Caution!

Do not use these connections for flushing with steam or steam condensate. If steam or condensate flush is required, a special aseptic piping must be used.

8. Start-up and Operation

Before starting the pump, remove any dirt, debris or foreign objects which may have collected in the rotor chamber.

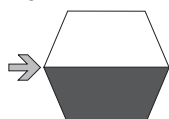
The rotors should be removed from the pump during the cleaning of the system before start-up. Flushing plugs can be used, see spare parts chapter. Use the sectional drawing for reference.

8.1. Checking the Pump for Foreign Material

Remove the pump body as described below. Use the sectional drawing for reference.

1. Disconnect the power supply.
2. Undo and remove the front cover bolts (2,3,4) in the front cover (1).
3. Use the two large bolts with full length thread (2) as jacking screws in the threaded holes in the front cover (1). The front cover is removed by turning each bolt one turn at a time - this ensures that the front cover is removed in an even manner. Remove the front cover (1).
4. Rotate the rotors (35) by manually turning the coupling between the pump and motor to ensure that there are no foreign objects behind the rotors.
5. Any foreign objects in the pump must be removed. Clean with air or water, removing the rotors if necessary. See chapter 9.2.
6. Re-fit the front cover gasket (5) in the rotor case (9).
7. Re-fit the front cover (1) by positioning it on the dowels (7) in the rotor case (9), if fitted, tapping it gently in place with a plastic mallet, and fastening the front cover bolts (2, 3, 4) to the appropriate torque. See chapter 11.1.
8. Rotate the rotors (35) by manually turning the coupling between pump and geared motor carefully to ensure freedom of rotors movement inside the pump.

Fig. 10



8.2. Checking the Following before Finish of the Installation

- That the oil level of the pump is visible in the oil level window (25) as shown in fig. 10,



Caution!

Never allow the pump to run without liquid, as this will ruin the shaft seal.

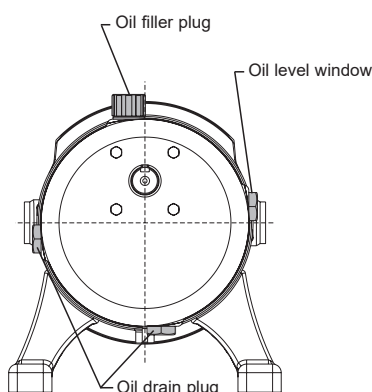
Caution!

Pumps are delivered without oil. Check the oil level when the pumps are delivered.

Note!

The oil level window should be mounted on the side that gives the highest oil level. The oil level window is above centreline. See fig. 11.

Fig. 11



Pump type	DW6
Lubricant quantities in Litre (ca.)	25

- that the lubricant used is of APV recommended type,
- that the pump shaft (38) and the motor shaft are properly aligned,
- that the pump port connections are tight,
- that there is liquid in the pump,

8. Start-up and Operation

- that the pump rotates freely,
- that nothing obstructs the flow and that liquid has free access to the pump,
- that the rotational direction is correct,
- that the coupling guard has been fitted properly,
- if the pump has a flushed seal, check that the flushing flowrate is adequate. See chapter 13.5,
- that the pump is free from dirt, weld spatter or other foreign objects. See chapter 8.1.

**Caution!**

Never start the pump before the coupling guard between the pump and motor has been securely fitted.

**Caution!**

There are rotating parts in the pump. Never put hands or fingers into the pump while it is in operation.

**Caution!**

Never touch the gearbox of the pump as it can become very hot.

**Caution!**

Never touch the rotor case during operation. If the pump is being used for hot fluids, the rotor case may become very hot.

**Caution!**

Always ensure that all pipe connections have been fitted and tightened properly before the pump is started. If the pump is used for hot and/or hazardous liquids, special care must be taken. In such cases, follow the local regulations for personal safety when working with these products.

**Caution!**

Always remove assembly tools from the pump before starting it up.

**Caution!**

Always ensure that no debris of any kind is present in the pump.

**Caution!**

Always ensure that the pump is filled with liquid before it is started.

**Caution!**

Always ensure that the pump and the motor shafts are properly aligned.

**Caution!**

Always ensure that the suction and discharge valves isolating the pump are fully open before starting the pump.

8. Start-up and Operation

Standard lubricants:							
Oil temp. °C	Pump/ambient temp. °C	Lubricant type		BP	Mobil	Shell	Castrol
		Mineral	Synthetic				
-20 - +120 °C	Ambient temp. t<40 °C and all DW6 pumps with product temp.<110 °C	X		Energol GR-XP 220	Mobil-gear 600 XP 220	Shell Omala S2 GX 220	Alpha SP 220
120 - +180 °C	Ambient temp. t>40 °C and all DW6 pumps with product temp.>110 °C At oil temperatures higher than 120°C, another drain plug and oil level gauge must be used.		X	Energyn SG-XP 220	Mobil Glygoyle 220	Shell Tivela Oil WB (S4 WE 220)	Alphasyn T220
Special lubricants for food and pharmaceutical industries:							
Oil temp. °C	Pump/ambient temp. °C	Lubricant type		Type	Approval		
		Mineral	Synthetic				
-20 - +120 °C	Ambient temp. t<40 °C and all DW6 pumps with product temp.<110 °C		X	Castrol: Vitalube GS 220	USDA (H1)		
			X	Klüber: Klüberoil 4UH- 220	USDA (H1)		
			X	Mobil: DTE FM 220	FDA 178.3570 178.362 USDA (H1)a		
APV recommends that the oil is changed every year.							



Caution!

Always ensure that the gearbox case is filled with APV recommended gear oil to the appropriate level.



Caution!

Never close or obstruct the outlet of the pump as the pressure in the system will increase above specified maximum pressure of the pump and will cause damage to the pump.



Caution!

Never drop parts - especially rotors and front covers - on the floor.



Caution!

Never exceed the maximum temperature specified on the pump nameplate.

Note!

Synthetic and mineral lubricants must not be mixed.

8.3. After Starting the Pump

1. Listen for unusual noises.
2. Look for leaks.
3. Check that there is a flow.

8. Start-up and Operation

8.4. Fault Finding

Symptoms	Possible causes - see table below
Motor overheats:	6, 7, 14, 15, 17, 19
Pump under capacity:	2, 7, 8, 9
No flow from pump:	1, 2, 3, 5
Unsteady flow:	2, 4, 5, 7
Noise and vibration:	2, 4, 5, 6, 7, 9, 10, 13, 14, 15, 16, 17, 18, 19, 20
Stall on start-up:	6, 7
Pump overheating:	7, 14, 15, 17, 19
Excessive rotor wear:	4, 10, 13, 14, 15, 18, 19
Excessive power absorbed:	6, 7
Pump seizure:	6, 10, 13, 14, 15, 18, 19
Shaft seal leakage:	11, 12, 13

Cause	Possible remedies
1. Incorrect rotation:	Reverse direction of motor by interchanging 2 of the phaseleads.
2. Insufficient N.P.S.H. and, as a result of this, cavitation:	Increase N.P.S.H., raise suction vessel, lower pump, reduce speed, increase suction pipe diameter, simplify and shorten suction pipe run, remove bends and other components which produce pressure loss.
3. No liquid in the pump:	Introduce liquid - vent air.
4. Air entering the pump:	Check the pump suction and system connections.
5. Blocked or restricted suction pipe:	Check the pipe system, clean any filter if necessary.
6. Discharge pressure exceeds the allowable:	Check for obstruction, lower pressure by increasing pipework diameter.
7. Product viscosity too high:	Decrease speed - increase product temperature.
8. Product viscosity too low:	Increase speed - reduce product temperature - reduce clearance between the rotor, pump housing and front cover.
9. Worn rotors:	Renew.
10. Shaft bearing wear:	Replace bearing or return pump to APV for overhaul, if necessary.
11. Worn mechanical seal:	Renew.
12. O-ring incompatible with the product:	Check chemical compatibility chart, or contact APV for alternative elastomers.
13. Worn timing gears:	Replace gears and retime rotors.
14. Insufficient lubricating oil:	Top up with correct grade of lubricant.
15. Incorrect grade of lubricating oil:	Check that the lubricant used is recommended by APV.
16. Rotor contact with the rotor case or front cover:	Drop discharge pressure, check clearances between rotors, front cover and pump housing. Check that the temperature shifts are as recommended in chapter 11.4.
17. Pump and motor misalignment:	Correct alignment.
18. Foreign objects in the product:	Fit strainer.
19. Loose bolts between the pump, motor and base frame:	Tighten the bolts. Check that the pump and motor are lined up correctly.
20. Loose bolts between the gearcase and foot:	Tighten the bolts. Check that the pump and motor are lined up correctly.

9. Dismantling and Re-Assembling the Pump

There are a few basic operations to carry out during maintenance of the pump. These are described in the following chapters.

Note! The sectional drawing shows the position of the various components mentioned in this procedure.



Caution! Never dismantle the pump before the power supply to the motor has been disconnected. The fuses should be removed and the cable disconnected from the motor.



Caution! Never dismantle the pump until the isolating valves on the suction and discharge side have been closed and the immediate pipe system has been drained. If the pump is used for hot and/or hazardous fluids, special precautions must be taken. In such cases follow the local regulations for personal safety when working with these products.

9.1. Removing the Front Cover (1)

To remove and re-fit the front cover (1) it is necessary to follow the procedure as described below. Use the sectional drawing for reference.

1. Disconnect the power supply to the motor.
2. Shut off the flushing supply if fitted.
3. Close the isolating valves on the inlet and discharge side of the pump.
4. Undo the front cover bolts (2, 3, 4). If the pump is used for hot and/or aggressive liquids, special precautions must be taken. In such cases, observe the local regulations for personal protection when working with these products.
5. Use two large bolts with full length thread (2) as jacking screws in the threaded holes in the front cover (1). The front cover is removed by turning each bolt one turn at a time - this ensures that the front cover is removed from the rotor case (9) in an even manner. Remove the front cover (1).

Re-fitting of the front cover:

1. Re-fit the front cover gasket (5) in the rotor case (9).
2. Re-fit the front cover (1) by positioning it on the dowels, if any, (7) located in the rotor case (9), tapping it gently in place with a plastic mallet and fastening the front cover bolts (2, 3, 4) to the appropriate torque. See chapter 11.1.
3. Rotate the rotors (35) by manually turning the coupling between the pump and geared motor carefully to ensure freedom of movement of the rotors inside the pump.

9. Dismantling and Re-Assembling the Pump

Fig. 12

Rotor locking piece

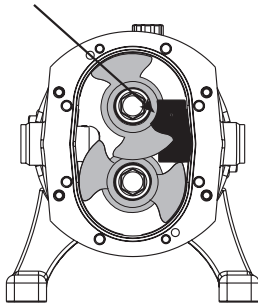


Fig. 13

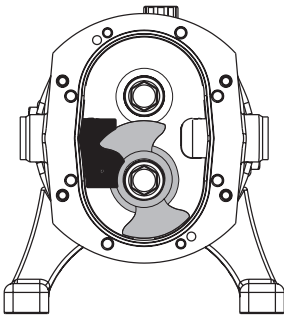


Fig. 14

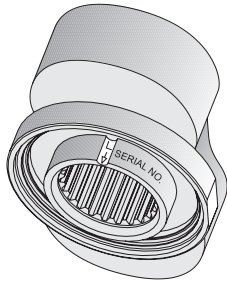
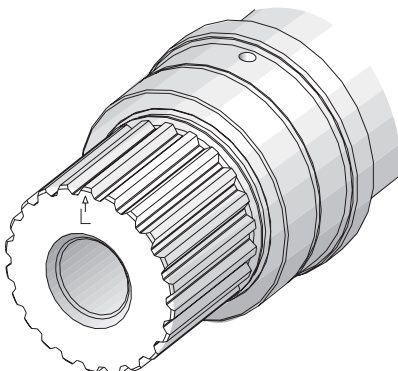


Fig. 15



9.2. Removing the Rotors (35):

To remove and re-fit the rotors it is necessary to dismantle the pump as described below. Use the sectional drawing for reference (page 9).

1. Remove the front cover (1) as described in chapter 9.1.
2. Position the rotors (35) and insert the fitting tool as shown in fig. 12.
3. Undo and remove the top or right rotor screw (32).
4. Remove the rotor locking piece and pull the rotor (35) out from the shaft (38). Ensure that the wings of the other rotor are not overlapping the hub of the rotor being pulled out.
5. Notice the marking of the rotors as shown in fig. 14. The rotors are marked with respectively 'L' for the main (long) and 'S' for the aux. (short) shaft. Notice that the rotors are marked on the back with the serial number.
6. Position the rotor locking piece as shown in fig. 13.
7. Undo and remove the bottom or left rotor screw (32).
8. Remove the rotor (35) as before by pulling it out from the shaft (39) with your fingers/special extractor.

Re-fitting the rotors (35):

Check the contact surfaces (B, D) of the shaft seal for debris and scratches. Use the sectional drawing for the shaft sealing for reference.

1. For re-fitting the rotors use the sectional drawing for reference.

Notice that the rotors are marked on the back with the serial number.

On DW6 shafts and rotors are marked with 'L' and 'S' respectively. See fig. 14 and 15. Furthermore, they are marked with an arrow against the 'L' and 'S'. At assembly the arrow on the rotor and shaft must be aligned. It is important that shims are placed in the same position as before dismantling.

2. Re-fit the top or right rotor (35) on the shaft (38).
3. Position the rotor (35) and the rotor locking piece as shown in fig. 16 and tighten the screw (32) to the specified torque. See chapter 11.1. Remove the rotor locking piece.
4. Re-fit the bottom or left rotor (35) on the shaft (39).
5. Position the rotor (35) and rotor locking piece as shown in fig. 17 and tighten the screw (32) to the specified torque. See chapter 11.1. Remove the rotor lock.
6. Rotate the rotors (35) by manually turning the coupling between the pump and geared motor carefully to ensure freedom of movement of the rotors inside the pump.
7. Carry out the shimming procedure as described in chapter 9.9.

9. Dismantling and Re-Assembling the Pump

Fig. 16

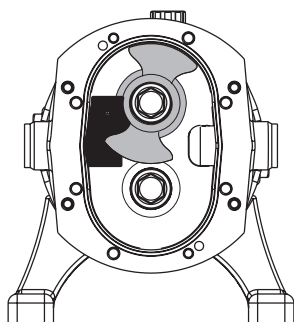
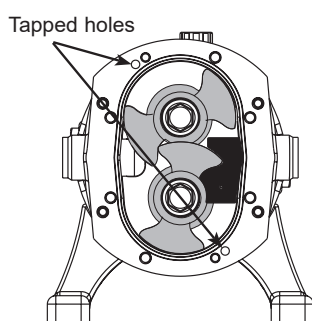


Fig. 17



9.3. Removing the Rotor Case (9)

To remove and re-fit the rotor case (9) it is necessary to dismantle the pump as described below. Use the sectional drawing for reference (page 9).

1. Remove the front cover (1) as described in chapter 9.1.
2. Remove the rotors (35) as described in chapter 9.2.
3. Remove the stationary seal rings (D), and seal O-rings (C) with your fingers.
4. Disconnect the inlet and outlet ports of the pump from the surrounding pipework.
5. Undo the bolts (6) that attach the rotor case (9) to the chassis (13).
6. Remove the rotor case (9) by placing the bolts (6) into the two tapped holes and turn each bolt one turn at a time.

Re-fitting the rotor case (9)

1. Position the rotor case (9) on the dowels mounted in the chassis (13) and use a plastic mallet to tap the rotor case home.
2. Re-fit and tighten the bolts (6) between the rotor case (9) and the chassis (13) to the specified torque. See chapter 11.1.
3. Position the O-rings (C) on the shaft seal's stationary seal ring (D) and press the stator seal rings (the longer of the seal rings) into the rotor case (9) without using tools. Keyways in the stationary seal faces (D) must fit over drive dogs of the drive ring (G) in the rotor case (9). Check the correct mounting of the stationary seal faces by feeling the spring force when mounting them in the the rotor case (9).

9.4. Removing the Can (26)

To remove and re-fit the can (26) it is necessary to dismantle the pump as described below. Use the sectional drawing for reference (page 9).

1. Disconnect the power supply.
2. Disconnect the pump from the geared motor. If possible, remove the pump from the pipework and put it on a work bench.
3. Drain the oil from the pump by undoing the oil drain plug (27) situated at the bottom of the can (26).
4. Remove the drive key (43).
5. Remove the clamp ring (18).
6. Remove the can (26).

Re-fitting the can (26)

1. Check the correct mounting of the O-ring (17).
2. Refit the can (26) over the shaft (38). Tighten the clamp ring (18) to the specified torque. See chapter 11.1.
3. Refit the oil level window (25). See fig. 11.

9. Dismantling and Re-Assembling the Pump

Fig. 18

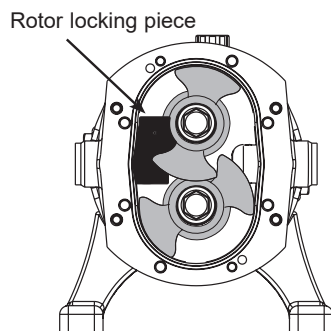


Fig. 19

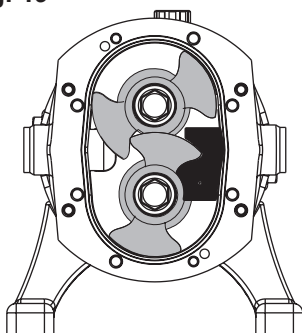


Fig. 20

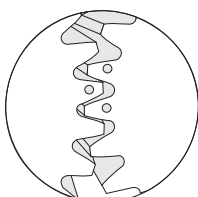


Fig. 21

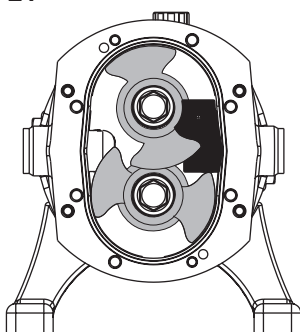
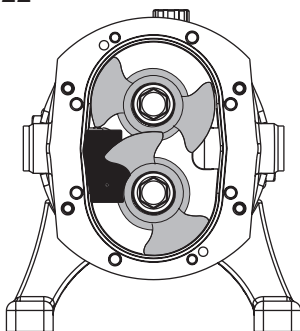


Fig. 22



4. Fill the gearbox with the recommended oil to the specified level according to fig. 10. Check for leaks. See chapter 8.2 for the required oil amount.

9.5. Removing the Lipseal Holder (20)

1. Remove the can support (26) as described in chapter 9.4.
2. Remove the screws (24).

Re-fitting the lipseal holder (20)

1. Check the correct mounting of the O-ring (21) and the lipseal (22).
2. Mount the screws (24) loosely.
3. Mount the can (26) as described in chapter 9.4.
4. Tighten the screws (24) for the lipseal holder (20) to the specified torque. See chapter 11.1.

9.6. Removing the Timing Gears (54)

To remove and re-fit the timing gears (54) it is necessary to dismantle the pump as described below. Use the sectional drawing for reference (page 9).

1. Remove the can (26) as described in chapter 9.4.
2. Remove the front cover (1) as described in chapter 9.1.
3. Position the rotors (35) and insert the rotor locking piece as shown in fig. 18.
4. Straighten the locking tab on the washer of the gear nut (55) at the gears (54) and undo the upper or right gear nut (56).
5. Re-position the rotor lock as shown in fig. 19.
6. Undo the bottom or left gear nut (56).
7. Remove the rotor lock and rotors (35) as described in chapter 9.2.
8. Straighten the locking tab on the washer (55) at the gears (54) and remove the washers (55).
9. Pull the gears (54) off the shafts (38, 39) using an extractor. Note by means of centre-punch marks which gear came off which shaft.

Re-fitting the timing gears (54)

1. Refit the timing gears (54) onto the shafts (38, 39). Check that the correct gear is fitted onto the correct shaft and correct positioning of the gears as per fig. 20.
2. Position the rotors (35) as described in chapter 9.2.
3. Position the rotor locking piece as shown in fig. 21.
4. Position the washer (55) and gear nut (56) onto the drive shaft (38) and tighten the gear nut to the specified torque. See chapter 11.1.
5. Position the rotor locking piece as shown in fig. 22.
6. Refit the washer (55) and gear nut (56) onto the auxiliary shaft (39) and tighten the gear nut to the specified torque. See chapter 11.1.
7. Bend the locking tabs on the tab washers (55).

9. Dismantling and Re-Assembling the Pump

9.7. Removing the Oil Seal Plate (10)

To remove and re-fit the oil seal plate (10) it is necessary to dismantle the pump as described below. Use the sectional drawing for reference (page 9).

1. Remove the front cover (1) as described in chapter 9.1.
2. Remove the rotors (35) as described in chapter 9.2.
3. Remove the rotor case (9) as described in chapter 9.3.
4. Remove the can (26) as described in chapter 9.4.
5. Remove the oil seal plate (10) by undoing and removing the nuts (28) and pulling the front oil seal plate out.

Re-fitting the oil seal plate (10)

1. Refit the oil seal plate (10) onto the shafts and tighten the nuts (28) to the specified torque. See chapter 11.1. Ensure that the O-rings (11) and lipseals (42) are placed in the oil seal plate (10) before refitting.

9.8. Removing the Foot (29, 30)

1. Undo and remove the screws (31). Use a hexagon socket wrench.

Re-fitting the foot (29, 30)

1. Mount the screws (31). Use Loctite 242. Use a hexagon socket screw wrench.
2. Align the assembly holes with the baseplate holes.
3. Tighten the screws (31) to the specified torque. See chapter 11.1.

If the position of the feet and hence in- and outlet is changed, it is necessary to change the position of the oil filler plug, the oil level window etc. as shown in fig. 23.

Note! Mount the plug (14) flush with the surface. Use Loctite 242.

9.9. Adjustment of the Rotors Axial Position

To be able to operate the pump effectively and safely, it is necessary to carry out the adjustment of the rotors axial position after having dismantled and re-assembled the pump to ensure the correct axial position of the two rotors. Use the sectional drawing for reference (page 9).

The measured clearance should be as close as possible to the clearances described in chapter 11.8.

1. Measure the difference in depth between rotors (35) and rotor case (9) by means of a depth micrometer. The points at which you should measure the depths are shown in fig. 23 and fig. 24. Then the rotors are turned 180° and measured again so that twelve measurements are made in total.
2. Measure the rear clearance by means of feeler gauges. See fig. 25. Never go below the min. clearance stated in chapter 11.8. The rear clearance should be measured at the same points as stated in this chapter, point 1.
3. Measure the radial clearance between rotor (35) and rotor casing (9) by means of feeler gauges. The clearance should be measured at the same rotor positions as stated in this chapter, point 1.

Fig. 23

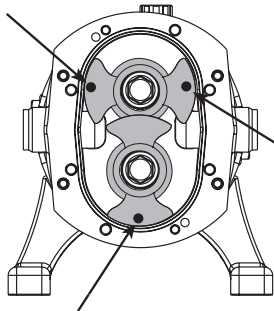


Fig. 24

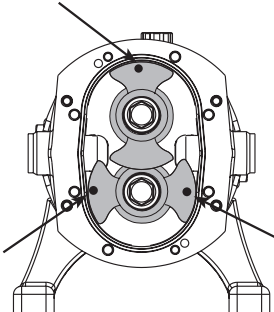
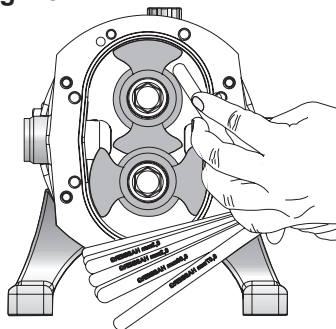


Fig. 25



9. Dismantling and Re-Assembling the Pump

4. If the clearances are not within the limits stated in chapter 11.8 or if the distances measured are able to be made closer to the mean values stated in chapter 11.8, the rotors (35) are removed as stated in chapter 9.2.
5. Remove the O-rings (36) situated on the shafts (38, 39).
6. Remove the shims (37) of the shaft (38, 39). Measure the total thickness of the shims with a micrometer and add or subtract the required amount of clearance to the shim thickness (e.g. if front clearance is 0.1 mm too large, 0.1 mm must be added to the total thickness of shims).
7. Refit the shims (37) to the shafts (38, 39). The thinner shims must be inserted first.
8. Refit the O-rings (36) on the shafts.
9. Refit the rotors (35) as described in chapter 9.2.
10. Measure the front and rear clearance again. If the clearances are still outside the limits or if they can come closer to the mean values stated in chapter 11.8, repeat shimming procedure until the measured clearances are correct.
11. When the front and rear clearances are correct, check that the rotors (35) turn freely.

Adjustment of the rotors angular position

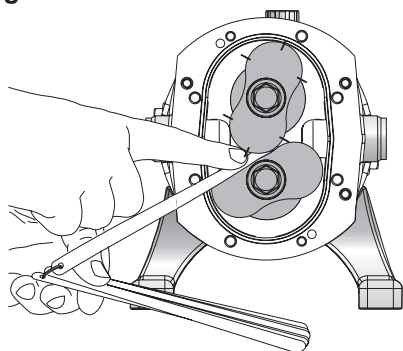
To run the pump effectively and safely, it may be necessary to carry out the adjustment of the rotors angular position after dismantling and re-assembling it to ensure the correct angular position of the two rotors. Use the sectional drawing for reference (page 9).

Note! Re-timing applies to the lobe rotors only.

Re-timing is carried out as described below:

1. Measure the interlobe clearances with feeler gauges at the 6 positions as shown in fig. 26. If these clearances are outside the tolerances stated in chapter 11.8 (column "Interlobe"), it is necessary to re-time the rotors.
2. Remove the can (26) as described in chapter 9.4.
3. Choose one of the shafts to work on. Straighten the locking tab on the washer (55) and loosen the gear nut (56) (use e.g. a wedge shaped object of soft material e.g. wood, plastic or nylon wedged between the two wheels). Ease the gear (54) max. 1 mm back along the shaft (it is important not to move the gear more than 1 mm as it can cause damage to the rotors themselves).
4. Re-check the clearances and see if the rotors have shifted in the correct direction according to chapter 11.8. If the rotors have shifted in the correct direction as wanted, go to chapter 9.9, point 6.
5. If the rotors have **not** shifted in the correct direction, retighten the gear nut (56) to the specified torque as described in chapter 11.1 and bend the tab washer down again (55). Return to chapter 9.9, point 3, but work on the other shaft.
6. Ease the second gear back along the shaft until the clearance between the rotors are as described in chapter 11.8.

Fig. 26



9. Dismantling and Re-Assembling the Pump

7. The new distance between the spacer (52) and moved gear (54) is measured with feeler gauges. Shims (53) with total thickness corresponding to the distance measured are selected.
8. Remove the gear (54) and gear key (40) as described in chapter 9.6. from the shaft and fit the selected shims (53) on the shaft.
9. Re-fit the gear key (40) and gear (54) as described in chapter 9.6. Re-fit the tab washer (55) and gear nut (56) and tighten it to the specified torque as described in chapter 11.1.
10. Measure the interlobe clearances. If they are still not within the tolerances stated in chapter 11.8, repeat the procedure starting from chapter 9.9, point 3.
11. Check that the rotors turn freely.
12. Refit the can (26) as described in chapter 9.4.

10. Maintenance

10.1. Replacing the Rotors

The rotors of the pump can be replaced with new rotors of the same type and dimension.

To change rotors it is necessary to dismantle the pump as described below. Use the sectional drawing for reference (page 9).

1. Remove the front cover (1) as described in chapter 9.1.
2. Remove the rotors (35) as described in chapter 9.2.
3. Ensure that stationary seal rings (D) are correctly in place in the rotor case and free from debris and scratches.
4. Ensure that the rotary seal rings (B) are mounted correctly in the new rotors (35) and free from debris and scratches.
5. Refit the rotors (35) as described in chapter 9.2.
6. Carry out the shimming procedure as described in chapter 9.9.

For piston rotor to piston rotor and bi-lobe rotor to piston rotor:

7. If no dowels (7) are fitted in the rotor case (9), fit the dowels in the dowel holes in the front of the rotor case (9).
8. Tap the dowels (7) gently in place with a plastic mallet.
9. Re-fit the front cover (1) for piston rotors as described in chapter 9.1.
10. Check that the pump turns freely.

For bi-lobe rotor to bi-lobe rotor or piston rotor to bi-lobe rotor:

7. Carry out the re-timing procedure as described in chapter 9.9.
8. Check that the rotors (35) turn freely.
9. If dowels (7) are situated in the rotor case (9), remove them.
10. Refit the front cover (1) for bi-lobe rotors as described in chapter 9.1.
11. Check that the rotors (35) turn freely.

10.2. Replacing Single Mechanical Shaft Seals

See page 44.

10. Maintenance

10.3. Changing Port Orientation

It is possible to change the suction and discharge port orientation from horizontal to vertical and vice versa without making any modifications to the pump.

To change the port orientation it is necessary to dismantle the pump as described below. Use the sectional drawing for reference (page 9).

1. Disconnect the power supply to the motor.
2. Disconnect the pump from the motor. If possible, remove the pump from the pipework and place it on a work bench.
3. Undo the oil drain plug (27) at the bottom of the can (26) to drain the oil from the pump.
4. Exchange the plugs on the can (26). Orange oil filler plug (23) in top position. The oil level window should be mounted on the side that gives the highest oil level - oil level window (25) above the centreline. Oil drain plugs (27) at the bottom and the side below the centreline. See fig. 11.
5. Move the feet (29, 30) to the required position as described in chapter 9.8.
6. Fill the gearbox with oil to the specified level according to fig. 10. Check for leaks. See chapter 8.2 for required amount of oil and positioning of oil level window.

10.4. Changing the Bearings (45, 48)

To replace the bearings (45, 45a, 45b, 48, 48a, 48b) it is necessary to dismantle the pump as described below. Use the sectional drawing for reference (page 9).

Fig. 27

Rotor locking piece

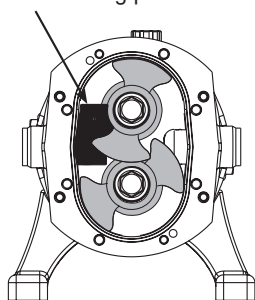
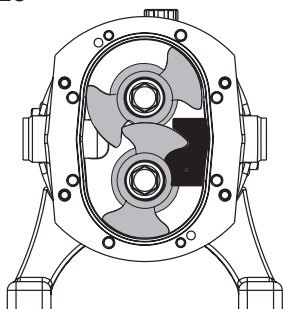


Fig. 28



1. Remove the timing gears (54) as described in chapter 9.6.
2. Remove the gear key (40), shims (53), spacer (52) and circlip (51).
3. Straighten the locking tab on the tabwasher (49).
4. Position the rotor locking piece as shown in fig. 27 and undo the drive shaft (38) bearing lock nut (50).
5. Reposition the rotor locking piece as shown in fig. 28.
6. Undo the auxiliary shaft (39) bearing lock nut (50).
7. Remove the bearing nut (50) and tabwasher (49).
8. Remove the rotors (35) as described in chapter 9.2.
9. Remove the shims (if fitted) and shaft O-ring. Keep the shims and O-ring together as a set for each shaft. Mark each set for identification to ensure later re-assembly on the correct shaft.
10. Remove rotor case (9) and the oil seal plate as described in chapters 9.3 and 9.7.
11. Remove the shafts (38, 39) from chassis (13) by applying force to the rear of the shafts. During this process the bearings should be pushed free. Remove the shaft and bearings.

10. Maintenance

Fig. 29

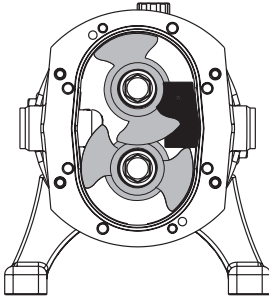
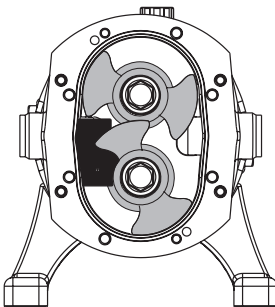


Fig. 30



12. Remove outer bearing races (45b, 48b) from the chassis and inner bearing races (45a, 48a) from the shafts (38, 39). If the shafts are damaged they should be replaced.
13. Clean bearing seats of the chassis (13) and the shafts (38, 39).
14. Fit the new outer bearing races (45b, 48b) and spacing washer (47) in the chassis (13).
15. Fit the front inner bearing race (45a) on the shafts (38, 39) by heating the bearings.
16. Place both shafts (38, 39) in the bore hole of the chassis.
17. Fit the rear inner bearing race (48a), washer (49) and bearing lock nut (50) onto the shafts (38, 39).
18. Position the shims (44) and fit the oil seal plate (10), but without lipseals (42).
19. Fit the rotor case (9) as described in chapter 9.3.
20. Fit the rotors (35) onto the shafts (38, 39) (without shaft seal) as described in chapter 9.2.
21. Position the rotor locking piece in fig. 29 and 30 respectively and tighten the bearing lock nuts (50) until no backlash can be felt in the bearing assembly.
22. Remove the rotors (35) from the shafts as described in chapter 9.2.
23. Check that the shafts (38, 39) turn freely.
24. Check that the running torque of both drive shaft (38) and auxiliary shaft (39) is as specified in the table in chapter 11.1. Measure the relevant torque without lipseals. During measuring the bearings must be lubricated with WD40. Check that the shafts can run freely.
25. If the torque is not within the specification given in chapter 11.1 then adjust the nuts (50) and repeat the procedure until the correct torque is obtained.
26. Bend the locking tab on the washer (49).
27. Refit the circlip (51), spacing ring (52) and gear key (40) on the shafts (38, 39).
28. Refit the gears (54) as described in chapter 9.6.
29. Fit the oil seal plate (10) with lipseals (42) as described in chapter 9.7 and the rotor case (9) as described in chapter 9.3.
30. Fit the rotors (35) as described in chapter 9.2. Check that the stationary seal faces (D) and O-rings (C) are in place in the rotor case (9). Check seals (B, D) for debris and scratches.
31. Re-fit the can (26) as described in chapter 9.4.
32. Re-fit the front cover (1) as described in chapter 9.1.
33. Ensure that the rotors turn freely.

10. Maintenance

10.5. Recommended Holding of Spare Parts

We recommend that both seal kits and service kits are held in stock.

Seal Kit

The seal kit consists of wearing parts of the seal.

Service Kit

The service kit is made up of a number of main components of the pump. These components are not wearing parts, but replacement may be necessary. These components are rotors (35), front cover (1), rotor case (9), rotor screws (32), spacing washers (37), shafts (38, 39), bearings (45, 48), gears (54) and gear shims (53).

The table below shows the recommended stock of spare parts for normal operation and for applications where there are special requirements, for example 24 hour operation, operation with abrasive media or processes which are sensitive to even a short production stop.

WEARING PARTS (Seal face kit, elastomer kit)				SERVICE PARTS		
Number of pumps in operation				Number of pumps in operation		
				0-5	5-20	>20
				Kits	Kits	Kits/10 pumps in oper.
Normal operation	1	2	1	0	1	1
Special requirements	2	3	2	1	2	1

11. Technical Data

11.1. Tightening Torque Settings

Tightening torque required for bolts, nuts, and screws in DW6 pumps:

Metric tool must be use - size shown in [mm]

	Front cover bolts/nuts Large	Front cover bolts Small	Rotor bolts	Rotor case/chassis Bolts	Seal housing Screws	Oilseal plate Nut	Chassis/foot Screws	Running torque, bearings, approx. 100 rpm. Shaft	Clamp ring Screw	Gear nut	Lipseal holder Screws
Item No.	(2)	(3)	(32)	(6)	(I)	(28)	(31)		(19)	(56)	(24)
Pump	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm
DW6 (piston)	190 [24]	190 [24]	400 [46]	400 [30]	20 [6 UMB]	60 [19]	190 [24]	14.0-16.0 [SKF-HN13]	10 [5 UMB]	150 [SKF-HN12]	20 [13]
DW6 (lobe)	190 [24]	190 [24]	1000 [46]	400 [30]	20 [6 UMB]	60 [19]	190 [24]	14.0-16.0 [SKF-HN13]	10 [5 UMB]	150 [SKF-HN12]	20 [13]

11.2. Maximum Differential and Discharge Pressures

The maximum differential pressures and discharge pressure specified below must not be exceeded.

	Differential pressure
Max. 25 bar:	DW6/198/30
Max. 15 bar:	DW6/308/15
Max. 12.5 bar:	DW6/172/12.5
Max. 7 bar:	DW6/519/7

	Discharge pressure
Max. 33 bar	DW6

11.3. Maximum Permissible Moment

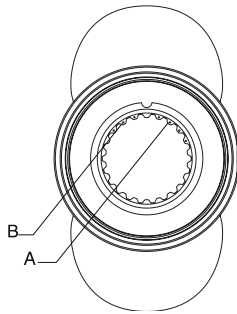
For motors of 45kW capacity onward it is recommended, due to the inertia of the motor, to equip the coupling between the pump and gear motor with a safety device ensuring that the maximum transferred moment does not exceed the pump's maximum allowable moment given in the table below.

	DW6
Max. moment	1400Nm

The coupling supplier's demands for lining up must be kept.

11. Technical Data

Fig. 31



A = Rotor type

· = High efficiency

.. = High temperature*

... = Multi-Duty

.... = Super tight*

B = Material

· = Stainless steel

.. = Non-galling material (NGA)

... = Special material

* Contact the factory for clearances not specified in chapter 11.8.

11.4. Maximum Permissible Temperature

Check the nameplate of the pump to see the maximum permissible temperature limit for the pump. This temperature must not be exceeded.

Furthermore, the maximum rotor temperature should be checked. Rotors with maximum temperature of 110°C are marked with . or ... or on the spline.

Rotors with maximum temperature of 180°C are marked with .. on the spline. See fig. 31 for DW6 pump and the description under the illustration on the left.

11.5. Sound Pressure and Sound Power Level

Measurements have been carried out in accordance with: DS/ISO 9614-2 for DW6 pump

Tolerance $\pm 3\text{dB}$.

LpA in dB refers to the sound pressure level at a distance of 1 metre from the surface of the pump at a height of 1.6 m above floor level, as required by 2006/42/EC.

Lwa states the sound power level.

The sound power levels have been stated for the following operating conditions:

A: Maximum differential pressure and maximum rotational speed

B: Maximum differential pressure and 50% of maximum rotational speed

C: Maximum differential pressure and 25% of maximum rotational speed

D: 50% of maximum differential pressure and maximum rotational speed

E: 50% of maximum differential pressure and 50% of maximum rotational speed

F: 50% of maximum differential pressure and 25% of maximum rotational speed

The values shown in the table apply to water at 20°C.

The noise level may increase considerably, if reducers (reduction/expanding fittings) are mounted on the inlet/outlet.

Pump	LpA in dB						LwA in dB					
	A	B	C	D	E	F	A	B	C	D	E	F
DW6/175/12.5	76	72	70	73	71	70	88	84	82	85	83	82
DW6/198/30	86	77	73	78	73	71	98	89	85	90	85	83
DW6/308/15	84	77	71	78	70	70	96	89	83	90	82	82
DW6/519/7	80	73	71	80	70	70	92	85	83	92	82	82

11. Technical Data

11.6. Temperature Changes and Maximum Temperature

The following precautions should be observed regarding product temperature changes in the pump.

High efficiency and super tight (NGA) rotors:

Pumps fitted with high efficiency or super tight rotors should be treated with caution when the product temperature changes.

Multi-duty rotors:

Pumps fitted with multi-duty rotors are designed to withstand an immediate product temperature change corresponding to the CIP cleaning regime.

High temperature rotors:

Pumps fitted with high temperature rotors are designed to withstand an immediate product temperature change corresponding to the SIP procedure.

SIP:

The pumps with high efficiency, super tight or multi-duty rotors are stationary (not running) prior to the SIP.

The permissible product temperatures and their permissible changes:

Rotor type	Max product temperature	Max ΔT
Super tight	110°C	-
High efficiency	110°C	-
Multi-Duty	110°C	80°C
High temperature	180°C	120°C

At temperature changes above max ΔT the product temperature should be increased gradually, according to the formula below:

$$\frac{\text{Required } \Delta T - \text{Max } \Delta T}{2.1^{\circ}\text{C}} \times 5 \text{ sec.} = \text{TIME in sec.}$$

In case of increased temperature changes we recommend using electronic control.

11.7. Maximum Permissible Rotational Speed

The maximum rotational speed specified below must not be exceeded.

DW6: max. 800 rpm

For pumps with special lip seals, see chapter 13.

11. Technical Data

11.8. Clearance of Pumps Adjustment

DW6/172/12.5 - Piston

High temperature 180°C			
	Front	Bag/Rear	Tip
Min.			
Max			
Multi-Duty 110°C			
	Front	Bag/Rear	Tip
Min.	0.38	0.23	0.25
Max	0.44	0.29	0.41
Supertight*			
	Front	Bag/Rear	Tip
Min.			
Max			

DW6/198/30 - Lobe

High temperature 180°C				
	Front	Bag/Rear	Tip	Interlobe
Min.				
Max				
Multi-Duty 110°C				
	Front	Bag/Rear	Tip	Interlobe
Min.	0.28	0.23	0.30	0.41
Max	0.34	0.29	0.46	0.61

Supertight*			
Front	Bag/Rear	Tip	Interlobe

DW6/308/15 - Lobe

High temperature 180°C				
	Front	Bag/Rear	Tip	Interlobe
Min.				
Max				
Multi-Duty 110°C				
	Front	Bag/Rear	Tip	Interlobe
Min.	0.32	0.23	0.30	0.41
Max	0.38	0.29	0.46	0.61

Supertight			
Front	Bag/Rear	Tip	Interlobe
0.22	0.15	0.30	0.41
0.28	0.21	0.46	0.61

DW6/519/7 - Lobe

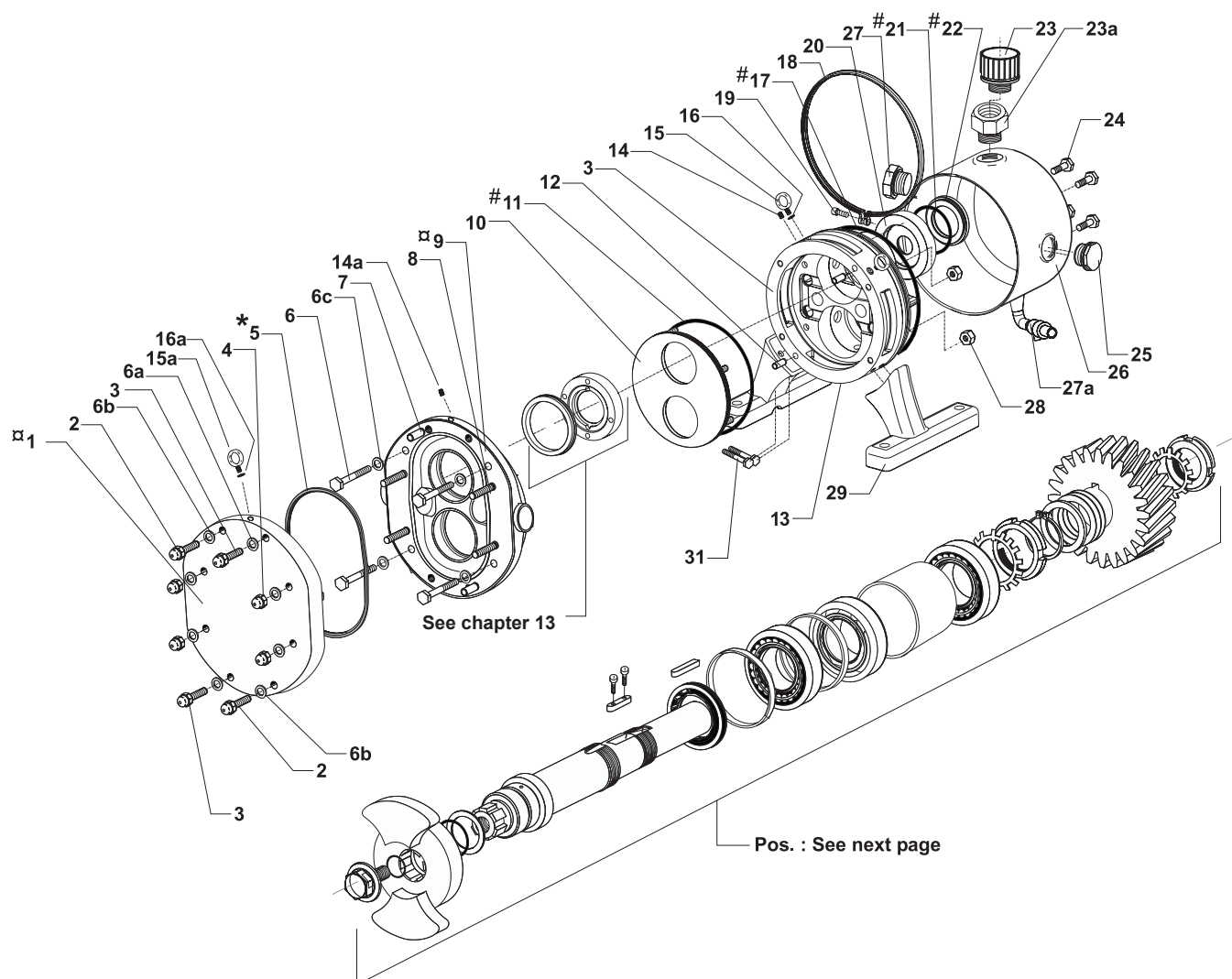
High temperature 180°C				
	Front	Bag/Rear	Tip	Interlobe
Min.				
Max				
Multi-Duty 110°C				
	Front	Bag/Rear	Tip	Interlobe
Min.	0.40	0.23	0.30	0.41
Max	0.46	0.29	0.46	0.61

Supertight*			
Front	Bag/Rear	Tip	Interlobe
0.22	0.15	0.30	0.41
0.28	0.21	0.46	0.61

* Contact APV for clearances not specified.

12. Spare Parts

12.1. DW6 Pump



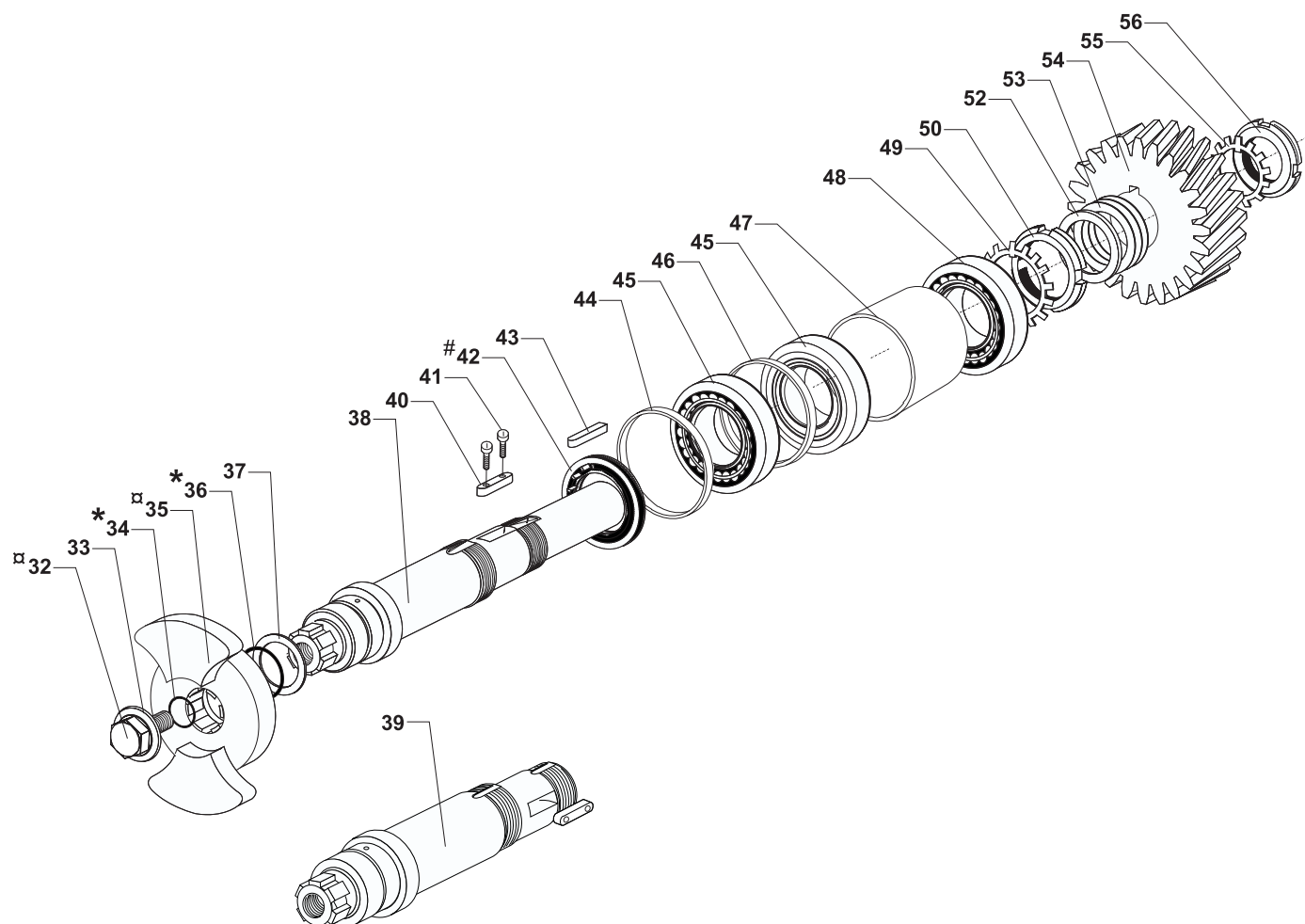
- * Wet end seal kit.
- # Gear box seal kit.

12. Spare Parts

				Piston	Lobe	Lobe	Lobe
				DW6/172/12.5	DW6/198/30	DW6/308/15	DW6/519/7
Item	Qty	Material	Description	Part No.			
1	1	AISI 316L	Front cover	LA1100601	LA1100600	LA1100600	LA1100600
2	2	AISI 304	Big bolt, front cover	LA1000600	LA1000600	LA1000600	LA1000600
3	2	AISI 304	Small bolt, front cover	LA1001600	LA1001600	LA1001600	LA1001600
4	4	AISI 304	Nut, front cover dome	L773719	L773719	L773719	L773719
6	4	AISI 304	Screw, rotor case to chassis	L773715	L773715	L773705	L773716
6a	6	AISI 304	Washer	L701254	L701254	L701254	L701254
6b	2	AISI 304	Washer	LA2176002	LA2176002	LA2176002	LA2176002
6c	4	AISI 304	Washer	L773488	L773488	L773488	L773488
7	2	AISI 316L	Dowel	L1162740	L1162740	L1162740	L1162740
8	4	AISI 304	Stud, front cover	LA1003601	LA1003601	LA1003601	LA1003601
9	1	AISI 316L	Rotor case	LA17086172	LA17086198	LA17086308	LA17086519
10	1	AISI 304	Oilseal plate	LA1312600	LA1312600	LA1312600	LA1312600
12	2	AISI 316L	Dowel, rotor case to chassis	LA1160860	LA1160860	LA1160860	LA1160860
13	1	AISI 304	Chassis	LA1300600	LA1300600	LA1300600	LA1300600
14	2	AISI 304	Plug	LA2000600	LA2000600	LA2000600	LA2000600
14a	1	AISI 304	Plug	LA2000500	LA2000500	LA2000500	LA2000500
15	2	AISI 304	Lifting eye bolt	LA2101616	LA2101616	LA2101616	LA2101616
15a	1	AISI 304	Lifting eye bolt	L773398	L773398	L773398	L773398
16	2	Nylon	Washer	L773718	L773718	L773718	L773718
16a	1	Nylon	Washer	L773654	L773654	L773654	L773654
18	2	AISI 304	Clamp ring	LA1354600	LA1354600	LA1354600	LA1354600
19	2	AISI 304	Screw for clamping	L772962	L772962	L772962	L772962
20	1	Brass	Seal consol	LA1301600	LA1301600	LA1301600	LA1301600
23	1	Plastic	Oil filler plug	LA2203001	LA2203001	LA2203001	LA2203001
23a	1	316	Nipple int. threaded 1-3/4"	L781064	L781064	L781064	L781064
24	4	AISI 304	Screw, seal consol	L773454	L773454	L773454	L773454
25	1	Plastic	Oil level window	L2221000	L2221000	L2221000	L2221000
26	1	LM6	Can	LA1364600	LA1364600	LA1364600	LA1364600
27	1	Plastic	Oil drain plug	L2210A001	L2210A001	L2210A001	L2210A001
27a	1	316	Ball valve	LA2210600	LA2210600	LA2210600	LA2210600
28	4	AISI 304	Nut, oil seal plate	L773652	L773652	L773652	L773652
29	2	AISI 304	Foot	LA1147600	LA1147600	LA1147600	LA1147600
31	4	AISI 304	Screw for foot	L772568	L772568	L772568	L772568
*5, 34 & 36	1	EPDM	Wet end seal kit	LA2380604	LA2380604	LA2380604	LA2380604
-	1	FPM (Viton)	Wet end seal kit	LA2380602	LA2380602	LA2380602	LA2380602
-	1	ISOLAST	Wet end seal kit	LA2380615	LA2380615	LA2380615	LA2380615
#11, 17, 21, 22 & 42	1	FPM (Viton)	Gear box seal kit	LA2381602	LA2381602	LA2381602	LA2381602

⌘ Part No. mentioned below do not cover pumps sold with 3.1 certificate.
For 3.1 spare parts, contact APV.

12. Spare Parts



* Wet end seal kit.

Gear box seal kit.

12. Spare Parts

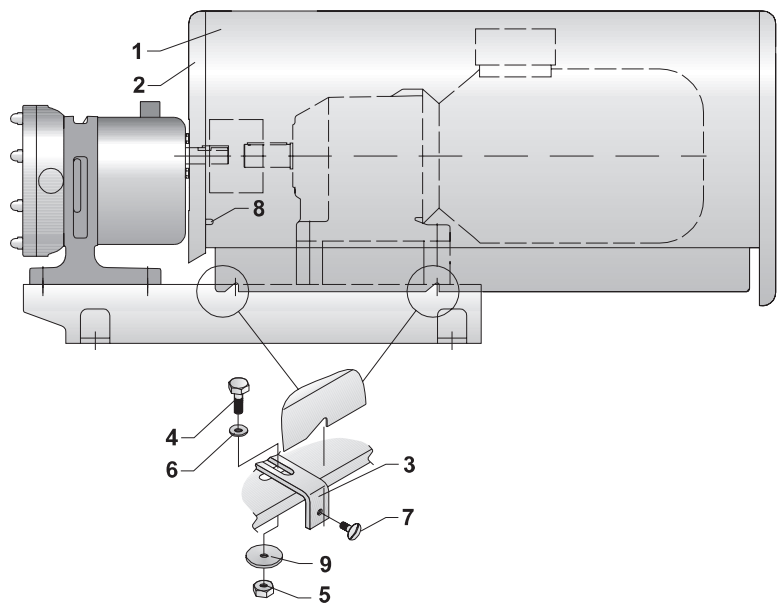
				Piston	Lobe	Lobe	Lobe
				DW6/172/12.5	DW6/198/30	DW6/308/15	DW6/519/7
Item	Qty	Material	Description	Part No.			
α32	2	AISI 329	Rotor screw with washer	LA10506172	LA10506198	LA10506308	LA10506519
	2	18/02	Washer ring	LA2658600	LA2658600	LA2658600	LA2658601
α35	2	AISI 316L	Rotor-Multi Duty	LA146172P3SH	LA14619823SH	LA14630823SH	LA14651923SH
	2	AISI 316L	Rotor-high temperature				
-	2	NGA	Rotor-high temperature			LA14630825WH	
	2	NGA	Rotor-super tight				
37	1	AISI 316L	Shims, rotor	L2657600	L2657600	L2657600	L2657600
38	1	AISI329L	Shaft main	LA1500600	LA1501600	LA1501600	LA1501600
39	1	AISI329L	Shaft aux	LA1600600	LA1601600	LA1601600	LA1601600
40	2	EN 6A	Gear key	L2180A600	L2180A600	L2180A600	L2180A600
41	4	-	Screw, gear key	L701450	L701450	L701450	L701450
43	1	EN 6A	Drive key	L2181A600	L2181A600	L2181A600	L2181A600
44	2	St.37-2	Front spacer	LA1856600	LA1856600	LA1856600	LA1856600
45	4	-	Bearing front	L2717600	L2717600	L2717600	L2717600
46	2	St. 37-2	Spacer, front bearing	LA1860600	LA1860600	LA1860600	LA1860600
47	2	St. 37-2	Spacer, rear bearing	LA1861600	LA1861600	LA1861600	LA1861600
48	2	-	Bearing rear	L2718600	L2718600	L2718600	L2718600
49	2	-	Bearing rear tab washer	L2720065	L2720065	L2720065	L2720065
50	2	-	Bearing rear nut	L2719065	L2719065	L2719065	L2719065
52	2	-	Gear spacer	LA1850600	LA1850600	LA1850600	LA1850600
53	1	St. 37-2	Gear shims	L4000A600	L4000A600	L4000A600	L4000A600
54	1	St. 37	Gear (1 pair)	LA2750600	LA2750600	LA2750600	LA2750600
55	2	-	Gear tab washer	L2720060	L2720060	L2720060	L2720060
56	2	-	Gear nut	L2719060	L2719060	L2719060	L2719060

α Part No. mentioned below do not cover pumps sold with 3.1 certificate.
For 3.1 spare parts, contact APV.

12. Spare Parts

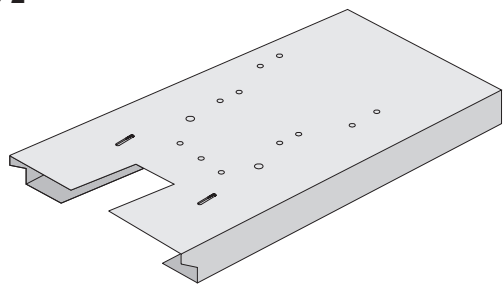
12.2. Motor Shroud

Type 2



12.3. Baseplate

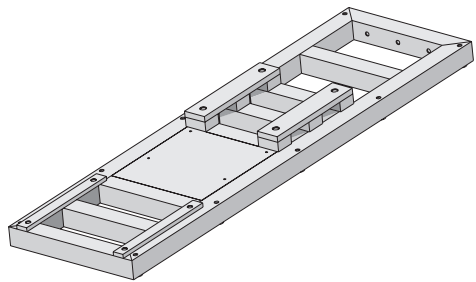
Type 2



DW6 max. 11 kW		
Part No.		
Type 2	LA2764600	LA2764601**

** Must be used, when the shaft is mounted on the right.

Type 3



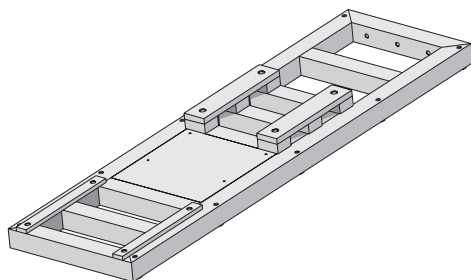
DW6	
Part No.	
Type 3	LA2765xxx*

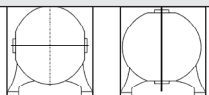
* Contact APV for DW6 baseplates.

12. Spare Parts

12.4. Complete Motor Shroud

Type 3



DW6		
In-/outlet position		
Gear size*	Part No.	
SK 572.1	#	#
SK 672.1		
SK 772.1		
SK 872.1		
SK 972.1		

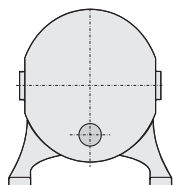
* Gear motor manufacturer: NORD.

Contact APV for DW6 shrouds.

12.5. Coupling Guard

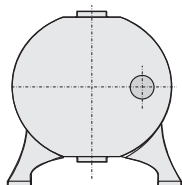
Item	Description	Qty	DW6
1	Screw	2	*L700233
2	Washer	4	**L701478
3	Nut	2	***L700241

B



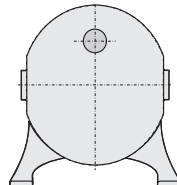
Shaft mounted at the bottom

H

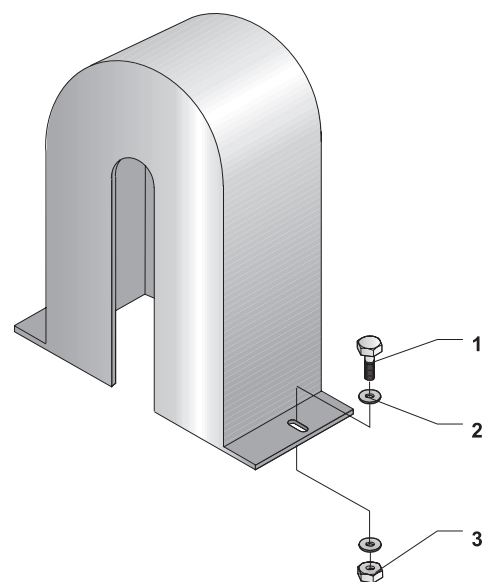


Shaft mounted horizontally
(right)

T

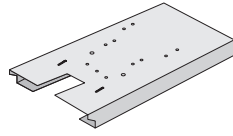


Shaft mounted on the top



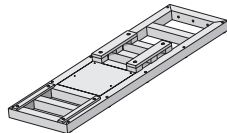
12. Spare Parts

Type 2



DW6 max. 11 kW			
In-/outlet position	 B	 T	 H
Gear size*	Part No.		
SK 572.1	#		
SK 672.1	LA2780672	#	#
SK 772.1	LA278067721		
SK 872.1	LA278068721		

Type 3





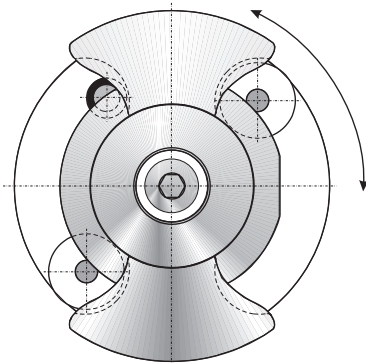
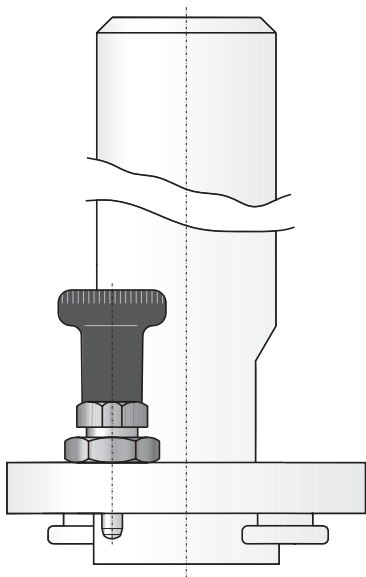
DW6				
In-/outlet position	 B	 T	 H	In-/outlet position
Gear size*	Part No.			Gear size*
SK 572.1	#	#	#	
SK 772.1	LA27806772			
SK 872.1	LA27806872			SK872
SK 972.1	LA27806972			SK972
SK52	#	#	#	SK52
SK62 max. 37 kW		LA27806621		SK62
SK62 min. 45 kW		LA2780662		
SK72		LA2780662		SK72
SK82		LA2780662		SK82
SK92		LA2780692		SK92
SK102	#	#	#	SK102

* Gear motor manufacturer: NORD.

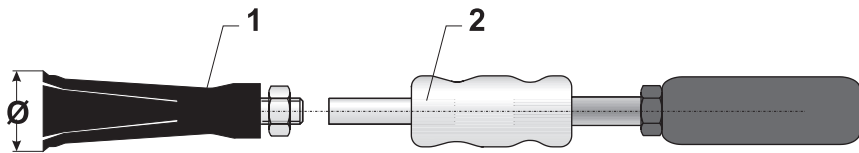
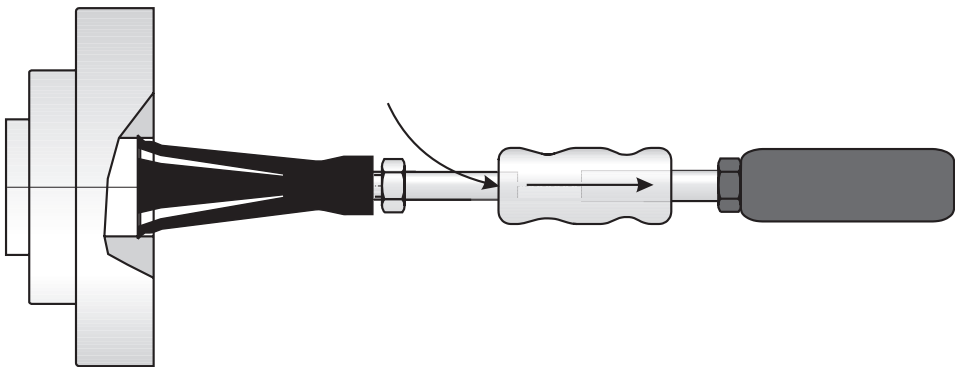
Contact APV for DW6 coupling guards.

12. Spare Parts

12.6. DW6 Removal Tool



Pos.	Qty	Description	DW6
-	1	Piston removal	#

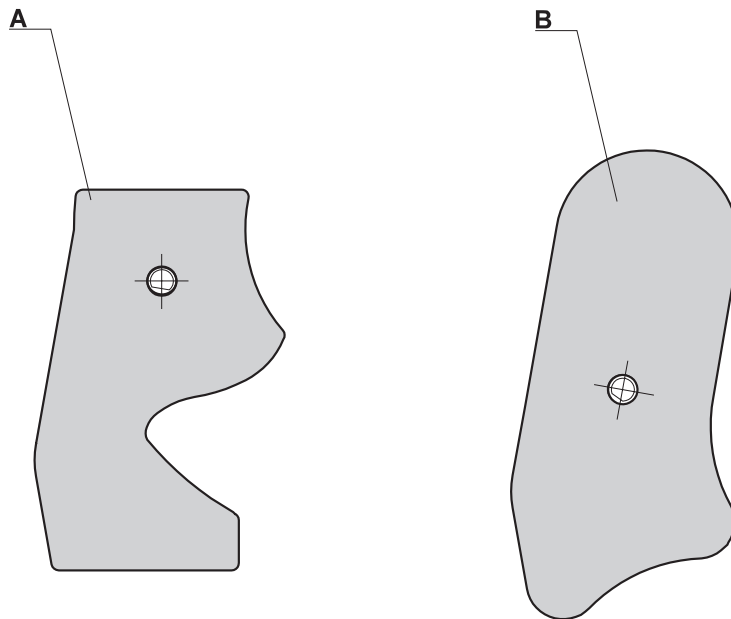


Pos.	Qty	Description	DW6
1	1	Lobe removal	#
2	1	Impact hammer	#

Contact APV for DW6 removal tool.

12. Spare Parts

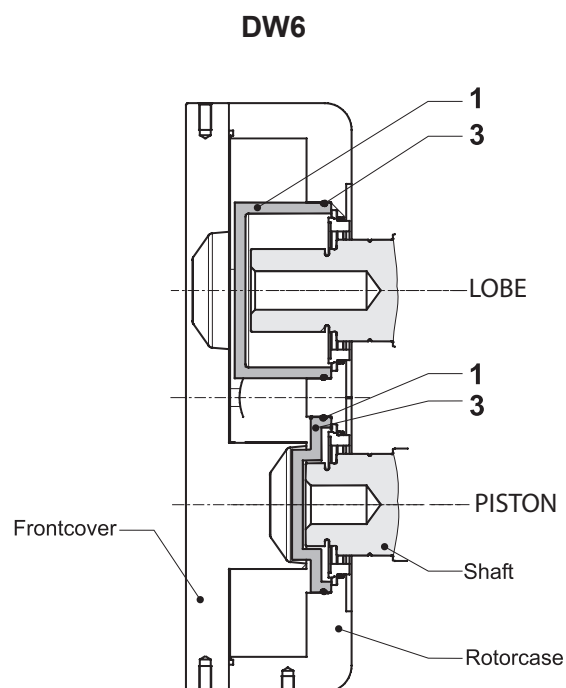
12.7. Locking Tool



Qty	Material	Description	DW6
1	Plastic	Piston locking tool (A)	LAFT0005
1	Plastic	Lobe locking tool (B)	LAFT0015

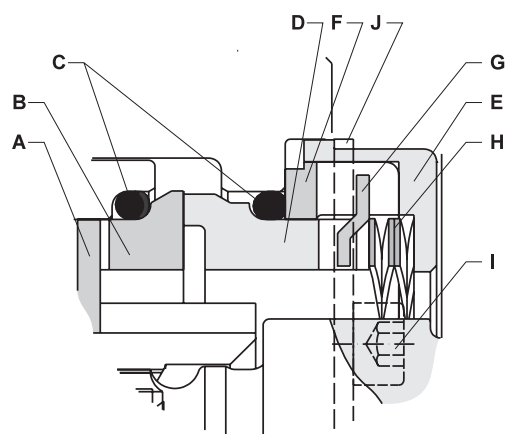
12. Spare Parts

12.8. Fitting Tools for Pump Flushing



Item	Qty	Material	Description	Piston	Lobe	Lobe	Lobe
				DW6/172/-	DW6/198/-	DW6/308/-	DW6/519/-
1-4	-	-	Complete kit	LA2370600	LA2370601	LA2370601	LA2370601
1	2	Plastic	Plug	LA1857601	LA1857600	LA1857600	LA1857600
3	2	EPDM	O-ring	L2580004	L25069004	L25069004	L25069004

13. Shaft Seal



- A: Rotary drive ring
B: Rotary seal face
C: O-ring, seal
D: Stationary seal face
E: Seal housing
F: Ring
G: Stationary drive ring
H: Wave spring
I: Screw, seal housing
J: Clamp, seal housing

13.1. Single Mechanical Shaft Seal

Operational Specifications

Max. pump discharge pressure: see chapter 11.2

Rotational speed per minute: see chapter 11.7

Product temperature °C: see chapter 11.4

13.1.1 Replacing Single Mechanical Shaft Seals

To change the shaft seal it is necessary to disassemble the pump as described below. Use the sectional drawing for reference (page 9 and drawing on the left).

1. Remove the front cover (1) as described in chapter 9.1.
2. Remove the rotors (35) as described in chapter 9.2.
3. Remove the stationary seal face (D) and the O-ring (C) with the fingers.
4. Check the new shaft seals contact surface for dirt and scratches.
5. Mount the new stationary seal face (D) and O-ring (C) in the rotor casing (9) without using tools. The stationary seal face (D) is the longer of the two shaft seal rings. The keyway in the stationary seal face (D) must fit over the groove in the stationary drive ring (G). Check that it is correctly fitted by feeling the spring force (H) when it is pushed in over the shaft (38, 39).
6. Remove the rotary seal face (B) and O-ring (C) from the rotor (35).
7. Insert a new rotary seal face (B) and O-ring (C) in the rotor (35).
8. Mount the rotors (35) as described in chapter 9.2.
9. Mount the front cover (1) as described in chapter 9.1.
10. Check that the rotors turn freely.

Note!

All types of shaft seal (single lip seal, triple lip seal, single mechanical seal, single mechanical seal with water flush, dual mechanical seal and packed gland packing) can all be mounted on the same pump. This requires only the correct shaft seal kit. These kits are described in the spare parts chapter on page 50.

13.2. Single Mechanical Shaft Seal with Water Flush

Operational Specifications

Discharge pressure: see chapter 11.2

Flushing pressure: max. 2 bar

Difference from flushing pressure to the product side: max. 2 bar

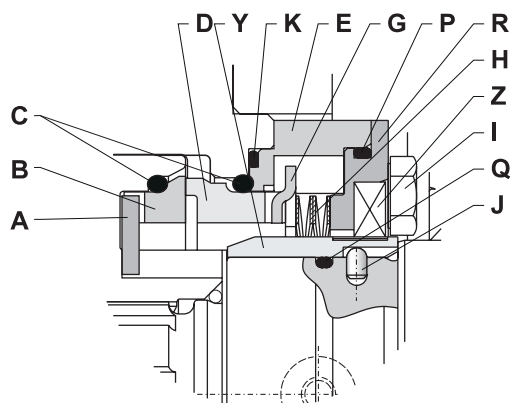
Flow, flushing pressure per seal: min. 0,1 l/min

Rotational speed per minute: see chapter 11.7

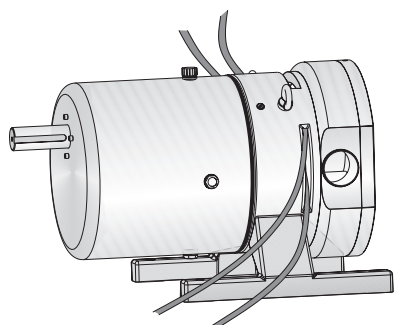
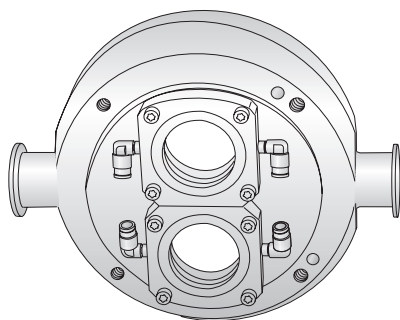
Product temperature °C: see chapter 11.4

13. Shaft Seal

13.2.1 Replacement of Single Mechanical Shaft Seal with Single Mechanical Shaft Seal with Water Flush



- A: Rotary drive ring
- B: Rotary seal face
- C: O-ring, seal
- D: Stationary seal face
- E: Seal housing
- R: Clamp plate
- G: Stationary drive ring
- H: Wave spring
- I: Screw, seal housing
- J: Pin
- P: O-ring, clamp plate
- Q: O-ring, shaft
- Y: Sleeve
- Z: Lip seal



To change the shaft seal it is necessary to disassemble the pump as described in the following. Use the sectional drawing for reference (page 9 and drawing on the left).

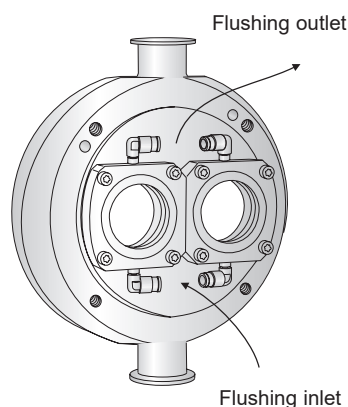
1. Remove the front cover (1) as described in chapter 9.1.
2. Remove the rotors (35) as described in chapter 9.2.
3. Remove the stationary seal faces (D) and the O-rings (C) with the fingers.
4. Remove the rotor case (9) as described in chapter 9.3.
5. Remove the holding device from the single mechanical shaft seal.
6. Position the shafts (38, 39) such that the holes for the guide pins (J) face upwards.
7. Insert the guide pins (J) in the holes.
8. Seat the O-rings (Q) in the shaft grooves.
9. Position the shaft sleeves (Y) on the shafts (38, 39). Check that the key in the sleeve fits over the guide pin (J) – it may be necessary to lubricate with food-quality grease. The shaft sleeve is correctly mounted when the edge of the sleeve is in contact with the shaft shoulder.
10. Apply liquid sealer compound to the seat on the clamp plate (R). Position a new lip seal (Z) with the smooth side facing upwards and press home into the clamp plate. Position the seal housing in the recess on the rear of the rotor case (9). Mount the drive ring (G) first and then the spring (H) in the seal housing (E).
11. Position the clamp plate (R) on the seal housing (E) once more and tighten the screws (I) by the indicated torque – see chapter 11.1.
12. Apply liquid sealing compound or PTFE tape to the thread of the liquid inlet bends and screw into the seal housing. The bends must be positioned as in figure on the left.
13. Cut 1 meter hose into 25 cm pieces.
14. Press the hose pieces into the bends.
15. Apply food-quality grease to the shaft seals before pushing the rotor case into place.
16. Position the rotor case (9) over the guide pin in the chassis (13) and carefully tap into position with a plastic mallet. Check that the hose-ends are positioned between two of the rings forming the chassis – see figure on the left.
17. Tighten the bolts (6) which fix the rotor case (9) to the chassis (13) by the indicated torque – see chapter 11.1.
18. Check the shaft seal's contact surfaces (B, D) for dirt and scratches. Mount the stationary seal faces (D) (the stationary seal faces are the longest of the two shaft seal parts) in the rotor case without using tools. The keyways in the stationary seal faces must fit over the grooves in the drive ring (G). Check that it is correctly fitted by feeling for spring power when pushed in over the shaft.

13. Shaft Seal

19. Mount the rotors (35) as described in chapter 9.2.

20. Mount the front panel (1) as described in chapter 9.1.

21. Check that the rotors turn freely.



Connection for Flushing Liquid

When the pump is set up with in- and outlet vertical, the flushing liquid supply is connected to the bottom elbows, as shown in figure on the left. With horizontal inlet/outlet, the flushing liquid supply can be connected either to the left or the right elbow pair.

Replacement of Shaft Seal Stationary Seal Face (D) and Rotary Seal Face (B)

See: Replacement of single mechanical shaft seals on page 44.

Replacement of lip seal (L)

For single mechanical shaft seal with flush, see chapter 9.1. Inspect the stationary seal face (D) and rotary seal face (B) on the shaft seal for wear and scratches and decide whether they need replacing.

Note!

All types of shaft seal (single lip seal, triple lip seal, single mechanical shaft seal, single mechanical shaft seal with water flush, double mechanical shaft seal and packed gland) can all be mounted on the same pump. This requires only the correct shaft seal kit. These kits are described in the spare parts list of the shaft seal.

Caution!

Do not use these connections for flushing with steam or steam condensate. If steam or condensate flush is required, a special aseptic piping must be used.



13.3. Double Mechanical Shaft Seal

Operational Specifications

Discharge pressure: see chapter 11.2

Flushing pressure: max. 15 bar

Difference from flushing pressure to product side: max. 7 bar

Flow, flushing pressure per seal: min. 0,5 l/min

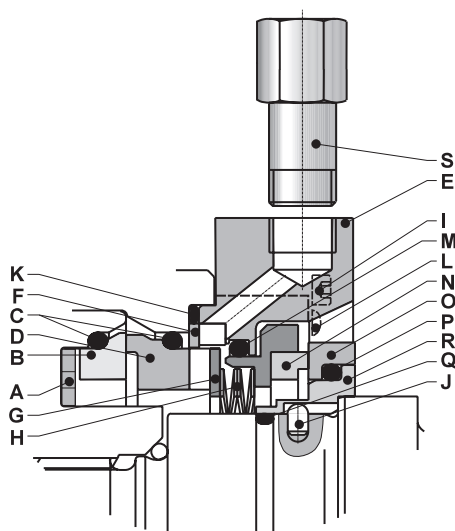
Rotational speed per minute: see chapter 11.7

Product temperature °C: see chapter 11.4

13.3.1 Replacement of Double Mechanical Shaft Seal

To change the shaft seal it is necessary to disassemble the pump as described in the following. Use the sectional drawing for reference (page 9 and drawing on the left).

1. Remove the pipe unions (S).
2. Remove the front cover (1) as described in chapter 9.1.
3. Remove the rotors (35) as described in chapter 9.2.
4. Remove the stationary seal face (D) and the O-ring (C) with the fingers.
5. Remove the rotor case (9) as described in chapter 9.3.
6. Undo screws (I) and remove the screws (L).
7. Remove the stationary seal face (N), spring (H) and O-ring (M).



- A: Rotary drive ring
- B: Rotary seal face, product side
- C: O-ring kit
- D: Stationary seal face, product side
- E: Seal housing
- F: Ring
- G: Stationary drive ring
- H: Wave spring
- I: Screw, seal housing
- J: Pin
- K: O-ring
- L: Screw
- M: O-ring, stationary seal face
- N: Stationary seal face, atmosphere side
- O: Rotary seal face, atmosphere side
- P: O-ring, rotary seal face
- Q: O-ring, shaft
- R: Stopring
- S: Pipe unions

13. Shaft Seal

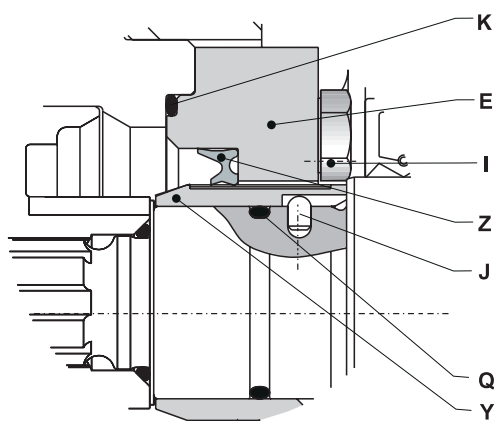
8. Remove the rotary seal face (O) and O-ring (P) from the stopring (R).
9. Check that the stopring (R) is clean and correctly positioned on the shaft (38, 39). The stopring (R) must be pushed all the way back to the shaft shoulder.
10. Mount the new O-ring (P) followed by the new rotary seal face (O) on the stopring (R).
11. Place the O-ring (M), spring (H) and the new stationary seal face (N) in the seal housing (E) and lock by turning the screws (L).
12. Mount the rotor case (9) on the chassis (13) - see chapter 9.3.
13. Check the new shaft seal's contact surface for dirt and scratches. Mount the stationary seal face (D) (the stationary seal face is the longest of the two shaft seal parts) in the rotor case (9) without using tools. The keyway in the stationary seal face (D) must fit over the cut-out in the drive ring (G). Check that it is correctly fitted by feeling for spring power when pushed in over the shaft.
14. Change the rotary seal face (B) and O-ring (C) in the rotor.
15. Mount the rotors (35) as described in chapter 9.2.
16. Mount the front cover (1) as described in chapter 9.1.
17. Check that the rotors turn freely.
18. Place the pipe unions (S) in the threaded holes.

13.3.2 Connection for Flushing Liquid

See: Connection for flushing liquid on page 46.

Note!

All types of shaft seal (single lip seal, triple lip seal, single mechanical shaft seal, single mechanical shaft seal with water flush, double mechanical shaft seal and packed gland) can all be mounted on the same pump. This requires only the correct shaft seal kit. These kits are described in the spare parts chapter on page 50.



13.4. Single Lip Seal

Operational Specifications

Pump discharge pressure: max. 6 bar

Rotational speed per minute: max. 400 rpm

Product temperature °C: see chapter 11.4

13.4.1 Replacement of Single Lip Seal

To replace the single shaft lip seal it is necessary to disassemble the pump as described below. Use the sectional drawing for reference (page 9 and drawing on the left).

- E: Seal housing
- I: Screw
- J: Pin
- K: O-ring, seal housing
- Q: O-ring, sleeve
- Y: Sleeve
- Z: Lip seal

1. Remove the front cover (1) as described in chapter 9.1.
2. Remove the rotors (35) as described in chapter 9.2.
3. Use a hook, pliers or similar to extract the lip seal (Z) from the shaft seal housing (E).
4. Clean the area in which the lip seal (Z) sits.

13. Shaft Seal

5. Lubricate the new lip seal (Z) generously with a food-quality grease and bring the lip seal over the shaft (38, 39) onto the seal housing (E). Check that the seal has been installed with the correct side uppermost – see sectional drawing.
6. Check that the lip seal (Z) has been pushed all the way back to the shaft seal housing (E).
7. Mount the rotors (35) as described in chapter 9.2.
8. Mount the front cover (1) as described in chapter 9.1.
9. Check that the rotors turn freely.

Note!

All types of shaft seal (single lip seal, triple lip seal, single mechanical shaft seal, single mechanical shaft seal with water flush, double mechanical shaft seal and packed gland) can all be mounted on the same pump. This requires only the correct shaft seal kit. These kits are described in the spare parts chapter on page 50.

13.5. Triple Lip Seal

Operational Specifications

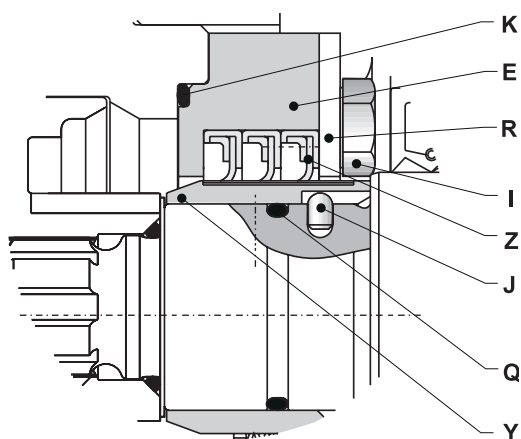
Pump discharge pressure: max. 5 bar

Rotational speed per minute: see chapter 11.7

Product temperature °C: see chapter 11.4

13.5.1 Replacement of Triple Lip Seal

To change the shaft seal it is necessary to disassemble the pump as described in the following. Use the sectional drawing for reference (page 9 and drawing on the left).



E:	Seal housing
I:	Screw
J:	Pin
K:	O-ring, seal housing
Q:	O-ring, sleeve
R:	Clamp plate
Y:	Sleeve
Z:	Lip seal

1. Remove the front cover (1) as described in chapter 9.1.
2. Remove the rotors (35) as described in chapter 9.2.
3. Remove the rotor case (9) as described in chapter 9.3.
4. Loosen and remove the screws (I) which attach the clamp plate (R) and the seal housing (E) to the rotor case (9).
5. Remove the clamp plate (R) and the seal housing (E).
6. Remove the lip seals (Z) from the seal housing (E).
7. Spread suitable liquid sealant on the outer diameter of the new lip seals (Z) and press them into the seal housing (E).
8. Then lubricate the new lip seals (Z) with food-quality grease on the inner side. Check that the lip seals have been installed with the correct side foremost - see sectional drawing.
9. Check that the shaft sleeve (Y) is clean and correctly positioned on the shaft (38, 39). The sleeve must be pushed all the way back to the shaft shoulder.
10. Mount the shaft seal housing (E) and clamp plate (R) on the rotor case (9) and tighten the screws (I) by the indicated torque - see chapter 11.1.
11. Mount the rotor case (9) as described in chapter 9.3.

13. Shaft Seal

12. Mount the rotors (35) as described in chapter 9.2.
13. Mount the front panel (1) as described in chapter 9.1.
14. Check that the rotors turn freely.

Note!

All types of shaft seal (single lip seal, triple lip seal, single mechanical shaft seal, single mechanical shaft seal with water flush, double mechanical shaft seal and packed gland) can all be mounted on the same pump. This requires only the correct shaft seal kit. These kits are described in the spare parts chapter on page 50.

13.6. Packed Gland Seal

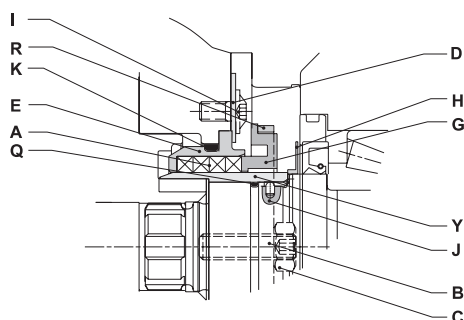
Operational Specifications

Max. discharge pressure: max. 10 bar

Product temperature °C: see chapter 11.4

13.6.1 Replacement of Packed Gland in Gland Seal

To replace the packed gland it is necessary to disassemble the pump as described below. Use the sectional drawing for reference (page 9 and drawing on the left).



- A: Packed gland
- B: Pointed screw
- C: Lock nut
- D: Washer
- E: Seal housing
- G: Follower
- H: Deflector
- I: Screw
- J: Pin
- K: O-ring
- Q: O-ring
- R: Clamp plate
- Y: Sleeve

1. Remove the front cover (1) as described in chapter 9.1.
2. Remove the rotors (35) as described in chapter 9.2.
3. Remove the rotor case (9) as described in chapter 9.3.
4. Unscrew and remove the lock nut (C).
5. Remove the clamp plate (R) and the follower (G).
6. Remove the packed glands (A) from the seal housing (E).
7. Press the new packed glands (A) into the seal housing (E).
8. Mount the clamp plate (R) and the follower (G) and tighten the lock nut (C).
9. Check that the deflector (H) is lying correctly against the shaft shoulder and that the sleeve (Y) is clean and correctly positioned on the shaft (38, 39). The sleeve must be pushed all the way back to the deflector (H).
10. Mount the rotor case (9) as described in chapter 9.3.
11. Mount the rotors (35) as described in chapter 9.2.
12. Mount the front cover (1) as described in chapter 9.1.
13. Check that the rotors turn freely.
14. If necessary tighten the lock nut (C) when the pump is activated.

Note!

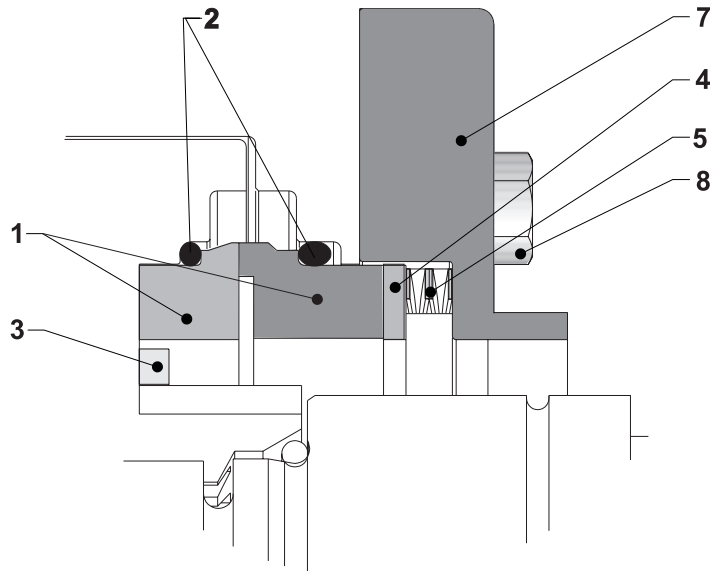
All types of shaft seal (single lip seal, triple lip seal, single mechanical shaft seal, single mechanical shaft seal with water flush, double mechanical shaft seal and packed gland) can all be mounted on the same pump. This requires only the correct shaft seal kit. These kits are described in the spare parts chapter 13.7.

Subject to changes.

13. Shaft Seal

13.7. Spare Parts

13.7.1 DW6 Single Mechanical Seal



				Pump type	
				DW6 (lobe)	DW6 (piston)
Pos.	Qty	Material	Description	Part No.	
1 & 2	1	SiC/C-EPDM	Seal face kit*	LA2355604	LA2355604
1 & 2	1	SiC/SiC-EPDM	Seal face kit*	LA2356604	LA2356604
2	1	EPDM	O-ring kit	LA2310604	LA2310604
1 & 2	1	SiC/C-FPM (Viton)	Seal face kit*	LA2355602	LA2355602
1 & 2	1	SiC/SiC-FPM (Viton)	Seal face kit*	LA2356602	LA2356602
2	1	FPM (Viton)	O-rings kit	LA2310602	LA2310602
1 & 2	1	SiC/C-ISOLAST	Seal face kit*	LA2355615	LA2355615
1 & 2	1	SiC/SiC-ISOLAST	Seal face kit*	LA2356615	LA2356615
2	1	ISOLAST	O-rings kit	LA2310615	LA2310615
3, 4 & 5	1	SS	Seal service kit**	LA2304600	LA2304601
7	1	AISI 304	Seal housing	LA1200601	LA1200601
8	4	AISI 304	Screw, seal housing	L700234	L700234

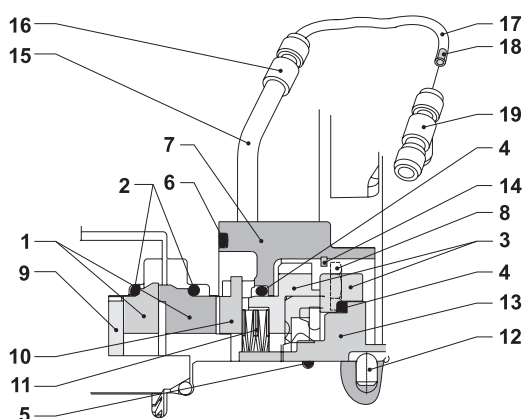
Note! Quantities shown in table above are for single shaft only. For a pump twice the number are required = the parts chosen x 2.

* Seal face kit: Rotary seal face, stationary seal face (1) and 2 off O-rings (2).

** Seal service kit: Rotary and stationary drive ring (3 and 4) and wave spring (5).

13. Shaft Seal

13.7.2 DW6 Double Mechanical Seal



				Pump type	
				DW6 (lobe)	DW6 (piston)
Pos.	Qty	Material	Description	Part No.	
1 & 2	1	SiC/C-EPDM	Seal face kit, prod.side*	LA2357604	LA2357604
1 & 2	1	SiC/SiC-EPDM	Seal face kit, prod.side*	LA2358604	LA2358604
2	1	EPDM	O-rings kit	LA2310604	LA2310604
3 & 4	1	SiC/C-EPDM	Seal face kit, atm. side*	LA2359604	LA2359604
4	1	EPDM	O-rings kit	L25060604	L25060604
5 & 6	1	EPDM	O-rings kit, seal housing*	LA2365604	LA2365604
1 & 2	1	SiC/C-FPM (Viton)	Seal face kit, prod.side*	LA2357602	LA2357602
1 & 2	1	SiC/SiC-FPM (Viton)	Seal face kit, prod.side*	LA2358602	LA2358602
2	1	FPM (Viton)	O-rings kit	LA2310602	LA2310602
3 & 4	1	SiC/C-FPM (Viton)	Seal face kit, atm. side*	LA2359602	LA2359602
4	1	FPM (Viton)	O-rings kit	L25060602	L25060602
5 & 6	1	FPM (Viton)	O-rings kit, seal housing*	LA2365602	LA2365602
1 & 2	1	SiC/C-ISOLAST	Seal face kit, prod.side*	LA2357615	LA2357615
1 & 2	1	SiC/SiC-ISOLAST	Seal face kit, prod.side*	LA2358615	LA2358615
2	1	ISOLAST	O-rings kit	LA2310615	LA2310615
9 - 13	1	AISI 316L	Seal service kit**	LA2361600	LA2361601
7	1	AISI 316L	Seal housing	LA1213600	LA1213600
8	4	AISI 316L	Screw	L701923	L701923
14	1	WS 1.4310	Circlip	L773780	L773780
15	2	AISI 304	Tube 45°	L773777	L773777
16	2	AISI 304	Straight fitting 1/8"	L773779	L773779
17	2	Teflon	Hose	L773095	L773095
18***	2	AISI 304	Bushing	L773098	L773098
19***	1	AISI 304	T-piece	L773758	L773758

Note!

Quantities shown in table above are for single shaft only. For a pump twice the number are required = the parts chosen x 2.

* Seal face kit: Rotary seal face, stationary seal face (1 or 3) and 2 off O-rings (2 or 4).

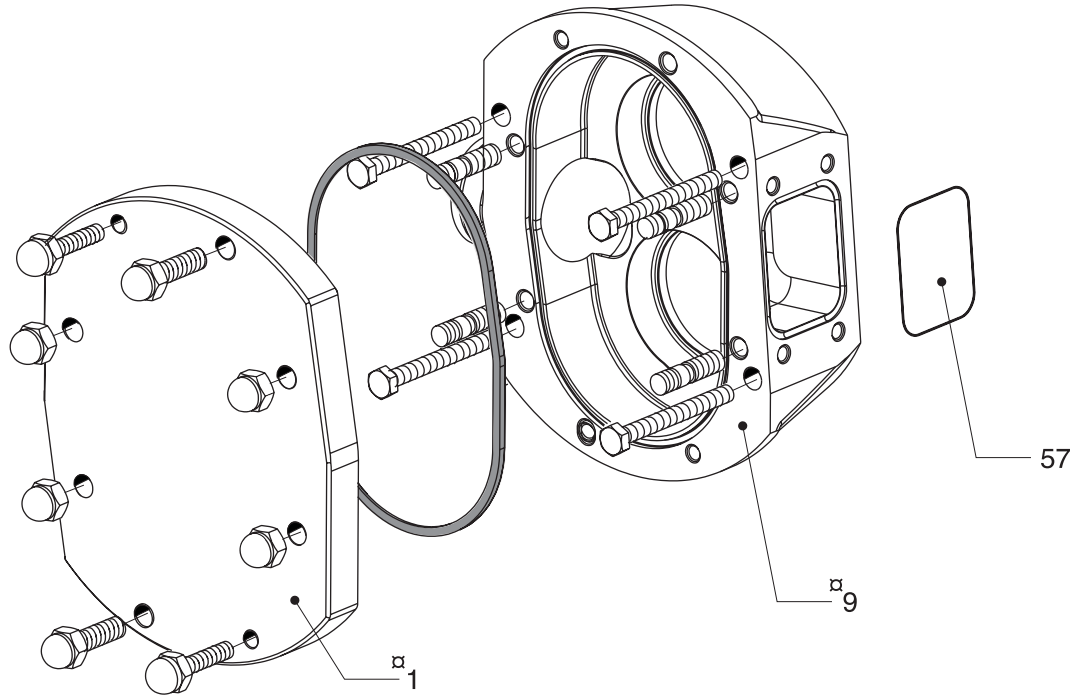
** Seal service kit: Rotary drive ring (9), stationary drive ring (10), wave spring (11), pin (12), stopring (13).

*** Additional parts available, if required.

14. Accessories - Rectangular Inlet

This is an appendix manual and applies only with rectangular inlet. The DW6 pump fitted with the rectangular inlet must be put into operation or serviced only if one has read and understood the complete DW6 pump instruction manual.

14.1. Spare Parts



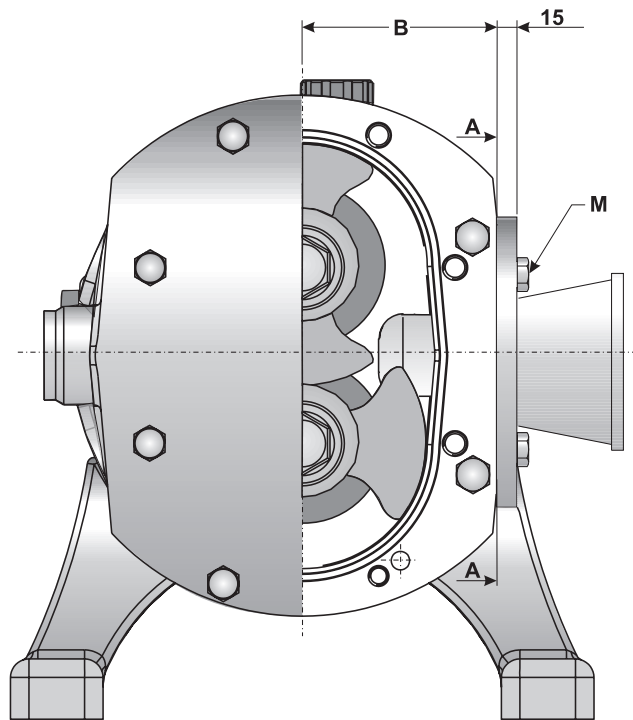
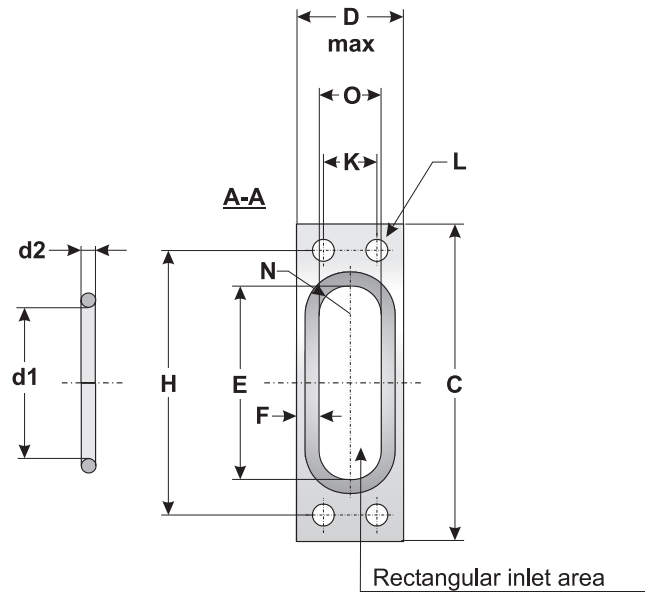
Pos.	Qty	Material	Description	Part No.			
				Piston DW6/172/-	Lobe DW6/198/-	Lobe DW6/308/-	Lobe DW6/519/-
9	1	AISI 316L	Rotor case	#	LAR17016198	LAR17016308	#
57	1	EPDM	O-ring		L25072004	L25074604	
--	--	FPM (Viton)	-		L25072002	L25074602	
--	--	ISOLAST	-		L25072015	L25074601	
1	1	AISI 316L	Front cover		LAR1100600	LAR1100600	

Contact APV for not specified pump sizes.

Part No. mentioned above do not cover pumps sold with 3.1 certificate.
For 3.1 spare parts, contact APV.

14. Accessories - Rectangular Inlet

14.2. Dimension Sketch



Pump model	B	C	D	E	F	H	K	L	M (*)	N	O	Area (mm ²)	O-ring (d1 x d2)
DW6/198/-	185	276	85.1	183	10.2	256	48	Ø11	M10 x 30 (4)	R15	66.9	12050	154.5 x 3.0
DW6/308/-	185	277	110.8	183	9	256	72	Ø11	M10 x 30 (4)	R15	92.8	16789	172.0 x 3.0

(*) off screws



DW6 Positive Displacement Pump

Original Instructions

Model: DW6

SPXFLOW®

SPX Flow Technology Poland sp. z o.o.
Rolbieskiego 2
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Poland

www.spxflow.com

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