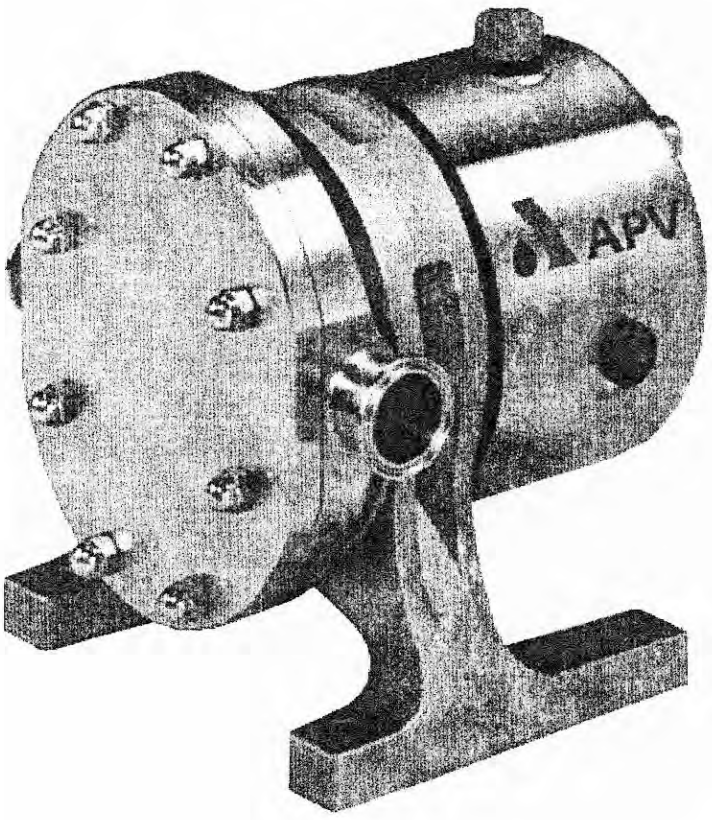
APV

Improving Process Profitability...Continuously sm

Operating Manual

381890 ISS U 05.00



DW pump

Process to Boardroom Automation sm

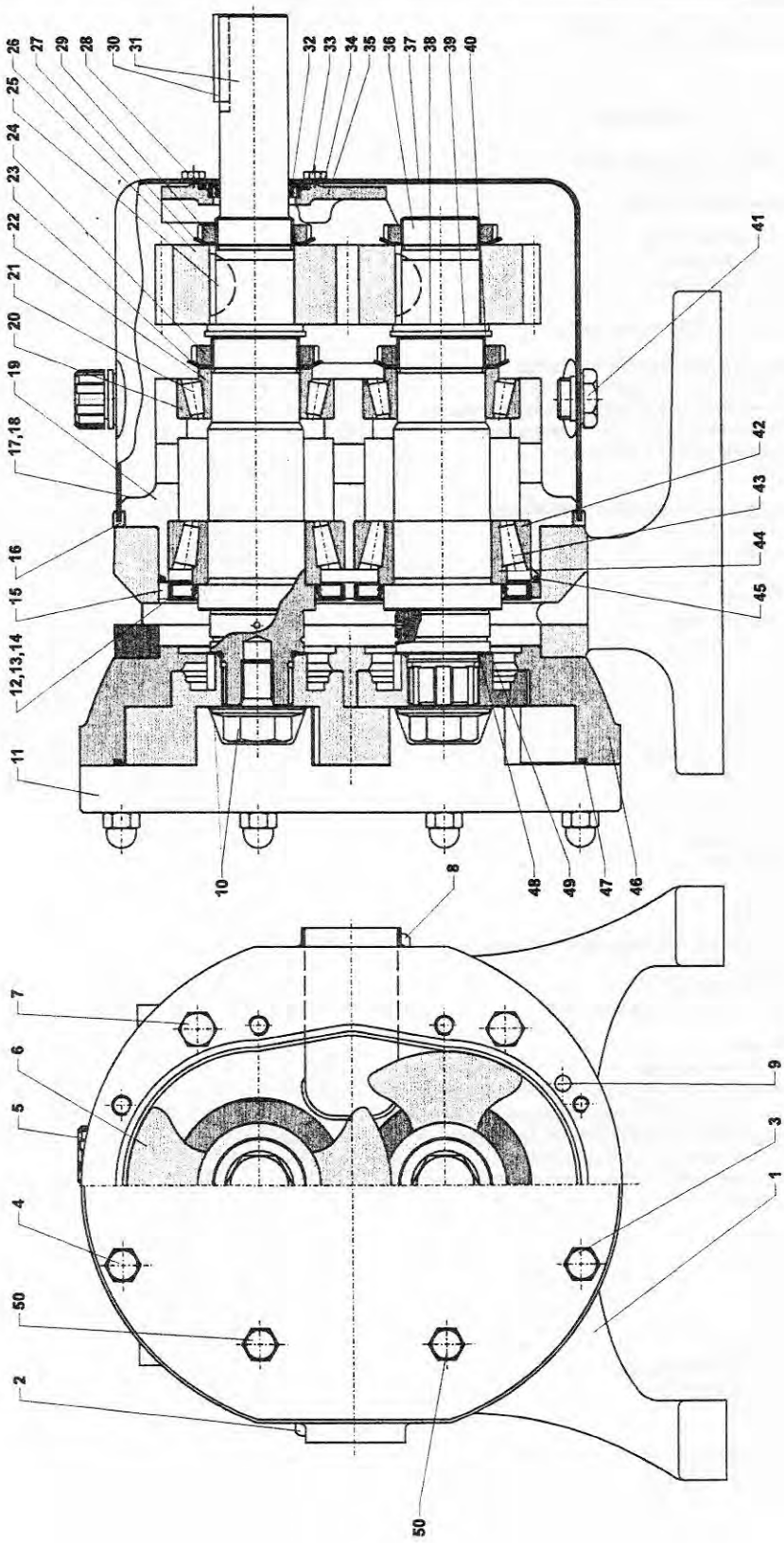
APV

381890 ISS U 05.00

Contents:

UK

Sectional Drawing



APV

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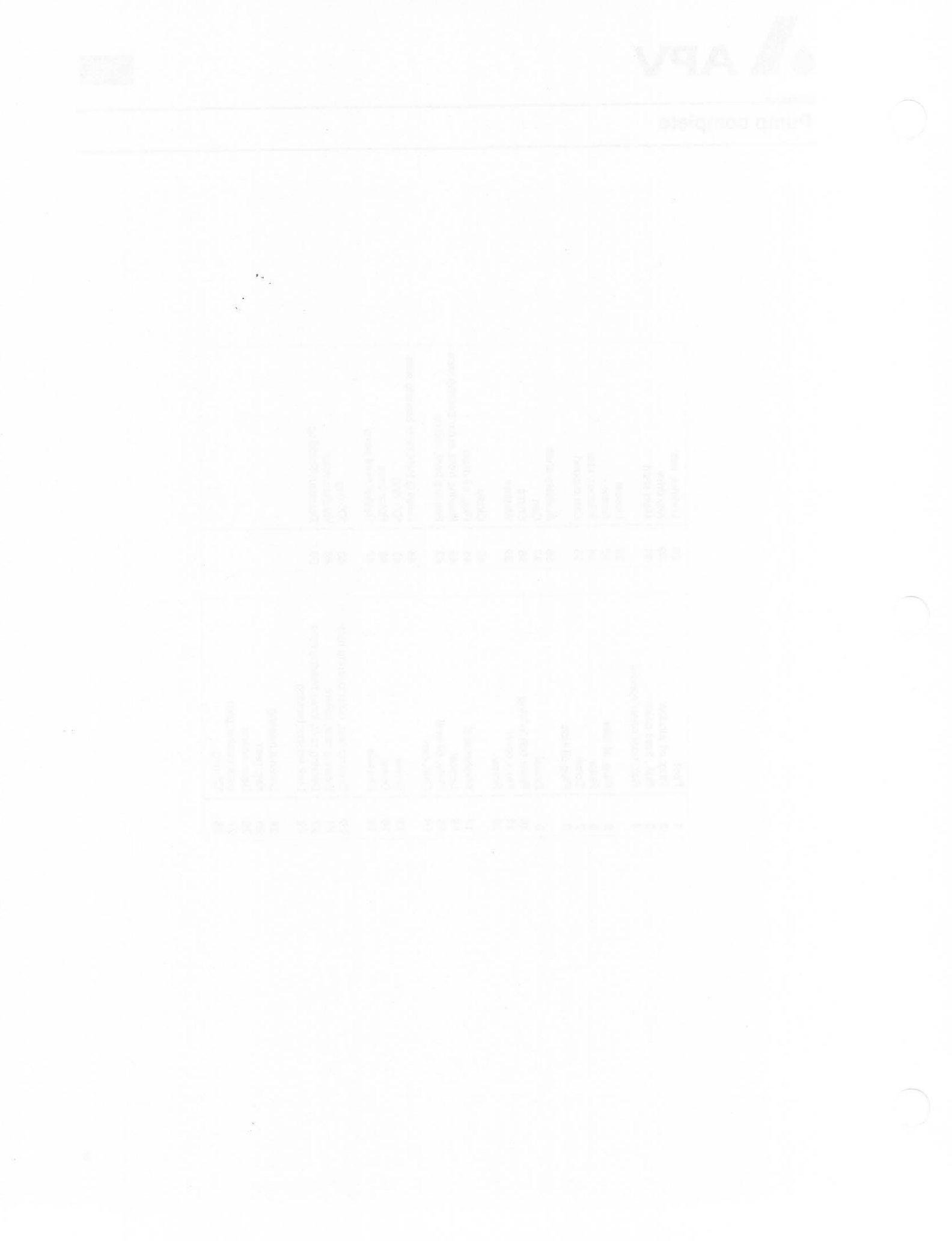
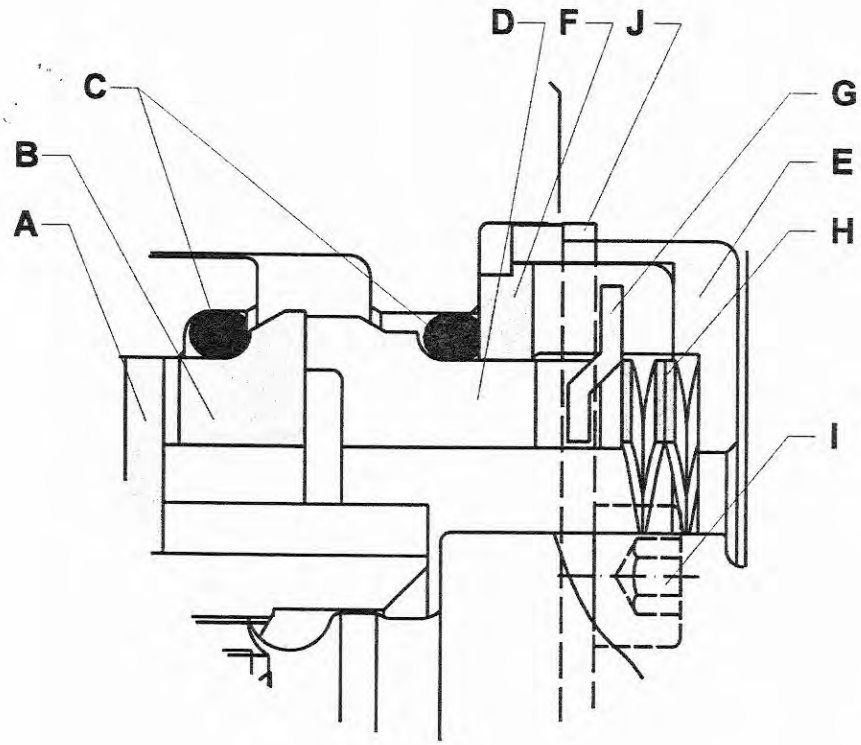
Pump complete

1	Foot
2	Plug, oil window
3	Bolt , front cover
4	Bolt, front cover special
5	Plug, oil filler
6	Rotor
7	Screw
8	Plug,oil side
9	Dowel
10	Rotor bolt "o"-ring
11	Front cover
12	Screw
13	Washer,seal
14	Lipseal
15	Plate, oil seal
16	Seal, can
17	Screw
18	Dowel
19	Chassis
20	Bearing rear, outer bearing race
21	Bearing rear, rollers
22	Bearing rear, inner bearing race
23	Lock washer,bearing
24	Locknut,bearing
25	Key, gear
26	Gear, helical
27	Lock washer,gear
28	"O"-ring

29	Locknut, rear
30	Key drive
31	Main shaft
32	Lipseal
33	Screw
34	Washer, seal
35	Can support
36	Auxiliary shaft
37	Can
38	Shims
39	Washer
40	Circlip
41	Plug, oil drain
42	Bearing front, outer bearing race
43	Bearing front, rollers
44	Bearing front,inner bearing race
45	"O"- ring
46	Rotor case
47	Gasket front cover
48	"O"-ring
49	Washer, rotor
50	Domenut/Studding



Sectional drawing - Shaft seal



Single mechanical seal

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

0. Warnings

1. Read the instructions before installing and starting the pump. Always follow the guidelines for assembly in order to secure optimum operation reliability. If in doubt, contact your local APV dealer.

Electrical installation

2. Always check that the specifications of the motor and the motor control unit are correct, particularly in operating environments where there may be a risk of explosion.
3. Always ensure that all electric installation is carried out by qualified staff.
4. Never hose down the electric motor directly with water or cleaning fluids.
5. Never dismantle the pump before the power supply to the motor has been disconnected. The fuses (isolators) should be removed and cable terminal strip of the motor dismantled.

Personal injury

6. Never start the pump before the coupling guard between pump and motor has been securely fitted.
7. Never put hands or fingers into a pump while it is rotating.
8. Never touch the gearbox of the pump as it can become very hot.
9. Never touch the pump housing during operation if the pump is being used for hot fluids as it becomes very hot.
10. 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.
11. 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.

Pump damage

12. Always remove assembly tools from the pump before starting it up.
13. Always ensure that no debris of any kind is present in the pump.
14. Always ensure that the pump is wetted before it is started.
15. Always ensure that the pump and the motor shafts are aligned properly.
16. Always ensure that the suction and discharge valves isolating the pump are fully open before starting the pump.
17. Always use securely fitted lifting straps when lifting the pump with a hoist or similar lifting gear.
18. Always ensure that the gear case is filled with an APV recommended gear oil to the appropriate level.
19. Never close or obstruct the outlet of the pump as the pressure in the system will increase above the specified maximum pressure of the pump and cause damage to the pump.
20. Never drop parts - especially rotors and front covers - on the floor.
21. Never exceed the maximum temperature specified on the pump nameplate.
22. Never exceed the maximum pump outlet pressures specified below:

    Max. 25 bar: DW5/093/25
    Max. 20 bar: DW2/007/20 ; DW3/017/20 ; DW4/039/20
    Max. 15 bar: DW1/004/15 ; DW5/142/15 ;
    Max. 12.5 bar: DW5/080/12.5
    Max. 10 bar: DW2/006/10 ; DW2/013/10 ; DW3/014/10 ; DW3/030/10 ; DW4/033/10 ; DW4/073/10
    Max. 7.5 bar: DW1/003/7.5
    Max. 7 bar: DW1/007/7 ; DW5/256/7

    These pressures apply to water at 20°C.

1. Introduction to the DW range

1.1 The DW range

This manual covers all sizes of standard DW and DWe pumps as well as high temperature pumps. Check the nameplate of the pump to ensure that you have one of the above versions.

1.2 The DW Pump, options and extras

The following standard options are available in the DW range:

- Bareshaft pump
- Pump with helical gear fixed speed motor, suitable for inverter use.
- Pump with helical gear manual variable speed motor
- Pump base plate in stainless steel
- Foot nickelplated
- Rotor clearances suitable for max. 110°C or max.180°C operation
- Elastomers in EPDM, Viton™,
- Single mechanical shaft seal in SiC/Carbon or SiC/SiC
- Single mechanical seal in flushed or non-flushed version
- Single EPDM lip seal
- Triple PTFE lip seal (confectionary)
- Horizontal or vertical suction and discharge ports
- Circumferential piston rotors in 316L stainless steel
- Standard bi-lobe rotors in 316L stainless steel

1.3 Identifying the pump model

Example - See fig. 1.

ORDER NO: C321780: The APV order number of the pump

TYPE: Indicates the type of pump : in this case DW3/017/20
017: displacement volume in l/100 rpm
020: max. allowable pressure of the pump in bars

980524-02: Indicates the number of the pump

SERIAL NO: Indicates the serial number of the pump

YEAR: Indicates year of manufacture

TEMP 110: Max. temperature in °C max.

MAX. BAR 20: Max. pressure in bar

Fig. 1

1.4 Indentification of motor

The motor is identified by means of the nameplate of the motor.

2 Installation of the pump

2.1 Positioning of the pump

Install the pump as close to the liquid source as possible.
Keep the number of bends, tees, valves and other obstructions 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 piping and access for maintenance.

2.2 The pipe system

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

2.3 Power supply

Connect the motor to the mains via a motor safety switch in accordance with local regulations.
Connect the motor in accordance with the instructions inside the cover of the terminal box of the motor.
Ensure correct pump rotational direction.

2.4 Water supply for water flushed seals

If seal flushing is required, connect the flushing liquid to the pump.
Pumps with a water flushed shaft seal have 2 hose connectors in the seal housing. The hose connectors are M5 and fit a Ø6.0 mm hose.
The necessary liquid volume is 2-3 litres/minute.
Pressure must not exceed 2 bars.

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.

3 Before start-up and starting the pump

Before starting the pump, remove all debris and foreign material 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. Unfold the sectional drawing and use it for reference.

3.1 Checking the pump for foreign material:

1. Disconnect the power supply.
2. Undo and remove the front cover bolts (3,4).

For Circumferential piston rotors:

3A. Use the two large bolts with full length thread (3) and the threaded holes in the front cover (11). The front cover is jacked off by turning each bolt one revolution at a time - this ensures that the front cover is jacked off (46) in an even manner. Remove the front cover.

For Bi-lobe rotors:

3B. Remove the front cover (11).

4. Rotate the rotors (6) by manually turning the coupling between pump and motor, to ensure that no foreign material is located behind the rotors.
5. If there is any foreign material in the pump, remove it. Clean with air or water.
6. When the pump is clean and free of foreign material, re-fit the front cover and fasten the front cover bolts (3,4) to the appropriate torque. See section 6.1.

Fig. 2

3.2 Check the following before concluding the installation:

- that the oil level of the pump is visible inthe sight glass (2) as shown in fig. 2.
- that the lubricant used is of an APV recommended type

Standard Lubricants

Oil temp. °C	Ambient / pump Ambient temp.	Lubricant basis		BP	Mobil	Shell	Castrol
		Mineral	Synthetic				
-20- +120 °C	Ambient temp. t<40 °C and all DW pumps with product temp.<110 °C	X		Energol GR-XP 220	Mobil gear 630	Omela Oil- 320	Alpha MAX 220
120-+180 °C	Ambient temp. t>40 °C or all DW pumps with product temp.>110 °C		X	Enersyn SG-XP 220	Mobil Glygole HE460	Tivela Oil WA	Alphasyn T220

Special lubricants for food and pharmaceutical industries

Oil temp. °C	Ambient / pump Ambient temp.	Lubricant basis		Type	Approval
		Mineral	Synthetic		
-20- +120 °C	Ambient temp. t<40 °C and all DW 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

Pumpe type	Lubricant quantities Litre
DW 1	0.8
DW 2	1.3
DW 3	1.4
DW 4	3
DW 5	7

Note: Synthetic and mineral lubricants must not be mixed.

- that the pump shaft (31)and the motor shaft are properly aligned.
- that the pump port connections are tight.

3 Before start-up and starting the pump

3.3 Check the following before starting the pump:

- that the pump is wetted.
- that the pump rotates freely.
- that all suction and discharge valves are open.
- that nothing obstructs the flow and that liquid has free access.
- that the rotational direction is correct.
- that the coupling guard has been fitted properly.
- if the pump has flushed seals, check that the flow of flushing liquid is adequate.

3.4 Immediately after starting the pump:

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

3.5 Fault Finding

Symptoms	Possible causes
Motor overheats:	7,8,10,17,18,20,22
Pump under capacity:	2,4,8,9,11,12
No discharge from pump:	1,2,3,6
Intermittent flow:	2,4,5,6,8
Noise and vibration:	2,4,5,6,7,8,10,11,13,16,17,18,19,20,21,22
Stall on start-up:	7,8
Pump overheating:	8,10,17,18,20,22
Excessive rotor wear:	4,5,13,16,17,18,21,22
Excessive power absorbed:	7,8
Pump seizure:	7,13,16,17,18,21,22
Loss of product through seal:	15,16

3 Before start-up and starting the pump

Cause	Possible remedies
1. Incorrect rotation:	Reverse direction of motor by exchanging 2 of the phases.
2. Insufficient N.P.S.H.:	Increase N.P.S.H., raise suction vessel, lower pump, reduce speed, increase suction pipe diameter, simplify and reduce suction pipe run, remove bends and other pressure reducing components.
3. Pump not primed:	Introduce liquid - expel air.
4. Cavitation:	Increase suction pressure.
5. Air entering pump:	Check pump suction and system connections.
6. Blocked or restricted suction pipe:	Check pipe work strainer if fitted.
7. Discharge pressure above pump max.:	Check for obstruction, lower pressure by increasing pipe work diameter.
8. Product viscosity too high:	Decrease speed - increase product temperature.
9. Product viscosity too low:	Increase speed - cool product temperature - reduce clearance between rotor, pump housing and front cover.
10. Pump speed above rated figure:	Decrease pump speed.
11. Worn rotors:	Renew
12. Pump speed below rated figure:	Increase pump speed.
13. Shaft bearing wear:	Replace-return pump to APV for overhaul,if necessary.
14. Worn mechanical seal:	Renew.
15. "O"-ring incompatible with product:	Check chemical compatibility chart, or contact APV for possible alternative elastomers.
16. Worn timing gears:	Replace gears and retime rotors.
17. Insufficient lubricating oil:	Top up with correct grade.
18. Incorrect grade of lubricating oil:	Check that the lubricant used is recommended by APV.
19. Contact of rotors with rotor case and front cover:	Drop discharge pressure, drop product temperature - check clearances between rotors, front cover and pump housing.
20. Pump and motor misalignment:	Check alignment
21. Foreign matter in product:	Fit strainer.
22. Loose bolts between pump, motor and base frame:	Tighten bolts.

4 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 sections.
The sectional drawing shows the position of the various components mentioned in this procedure.

4.1 Remove front cover:

To remove and re-fit the front cover (11) it is necessary to dismantle the pump as described below. Unfold the sectional drawing and use it for reference.

1. Disconnect the power supply to the motor.

2. Switch off the flush fluid supply, if such is in place.

3. Close the isolating valves on the inlet and discharge side of the pump.

4. Undo the front cover bolts (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. **For circumferential piston rotors:**
   Remove the front cover bolts (3,4) and use the two bolts with full length thread to jack the front cover (11) off by inserting them into the threaded holes in the front cover and turn each of them one revolution at a time. This ensures that the front cover is not damaged and removed from off the dowels (9) evenly.

   For bi-lobe rotors:
   Remove the front cover bolts (3,4) and the front cover can be removed

4.1.1 Re-fit the front cover:

1. Re-fit front cover gasket (47) in rotor case (46).

2. **For circumferential piston rotors:**
   Re-fit the front cover (11) by positioning it on the dowels (9), tapping it gently in place with a plastic mallet, and fastening the front cover bolts (3,4) to the appropriate torque. See section 6.1.

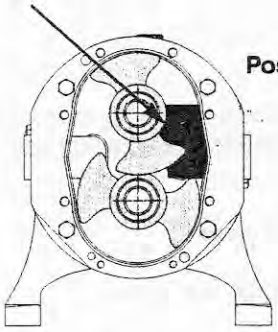
   For bi-lobe rotors:
   Re-fit the front cover (11) by fastening the front cover bolts and nuts (3,4) to the appropriate torque. See section 6.1.

3. Rotate the rotors (6) by manually turning the coupling between pump and gear motor carefully to ensure free movement of the rotors inside the pump.

4 Dismantling and re-assembling the pump

4.2 Remove the rotors

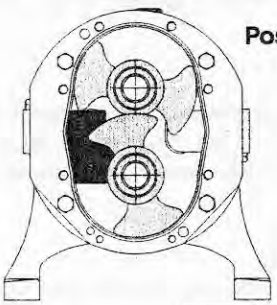
Rotor lock



Pos. 1

To remove and re-fit the rotors it is necessary to dismantle the pump as described below. Unfold the sectional drawing and use it for reference.

1. Remove the front cover (11) as described in section 4.1.
2. Position the rotors (6) and insert the fitting tool **rotor lock** as shown in pos. 1.
3. Undo and remove the top or right rotor screw (10).
4. Remove the rotor lock and use your fingers to pull the rotor (6) out. Ensure that the wings of the other rotor are not overlapping the hub of the rotor being pulled out.
5. Move the rotor lock to pos. 2.



Pos. 2

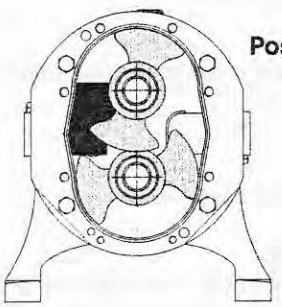
6. Undo and remove the bottom or left rotor screw (10).
7. Remove the rotor (6) as before by pulling it out from the shaft (36) with your fingers / special tool.

4.2.1 Re-fit the rotors

Check the contact surfaces (B,D) of the shaft seal for debris and scratches.

1. Re-fit top or right rotor (6) to the shaft (31).
2. Position the rotor (6) and the rotor lock as shown in pos. 3 and tighten the screw (10) to the specified torque. Remove rotor lock.

DW1	10 Nm
DW2	40 Nm
DW3	70 Nm
DW4	200 Nm
DW5	570 Nm

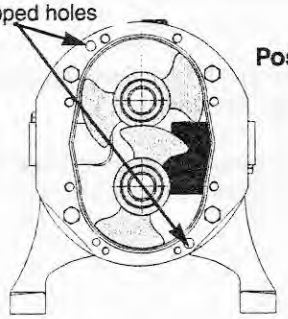


Pos. 3

3. Re-fit bottom or left rotor (6) to the shaft (36).
4. Position the rotor (6) and the rotor lock as shown in pos. 4 and tighten the screw to the specified torque. Remove rotor lock.
5. Rotate the rotors (6) by manually turning the coupling between pump and gear motor carefully to ensure free movement of the rotors inside the pump.

4.3 Remove the rotor case

Tapped holes



Pos. 4

To remove and re-fit the rotor case (46) it is necessary to dismantle the pump as described below. Unfold the sectional drawing and use it for reference.

1. Remove front cover (11) as described in section 4.1.
2. Remove rotors (6) as described in section 4.2.
3. Remove stationary seal faces (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 (7) that attach the rotor case (46) to the foot (1).
6. Remove the rotor case (46) by placing the bolts (7) into the two tapped holes and turn each bolt one revolution at a time.

4 Dismantling and re-assembling the pump

4.3.1 Re-fit the rotor case

1. Position the rotor case (46) on the dowels of the foot (1) and use a plastic mallet to knock the rotor case in place.
2. Re-fit and tighten the rotor case bolts (7) to the specified torque. See section 6.1.
3. Position the "O"-rings (C) on the stationary seal faces (D) and press the stationary seal faces (the longer of the seal faces) into the rotor case (46) without using tools. Keyways in the stationary seal faces must fit over drive dogs of the drive ring (G) in the rotor case (46). Check correct mounting by pushing the stationary seal faces (B) into the rotor case to feel the spring force.

4.4 Remove can and can support

To remove and re-fit the can (37) and can support (35) it is necessary to dismantle the pump as described below. Unfold the sectional drawing and use it for reference.

1. Disconnect the power supply.
2. Disconnect the pump from the drive. If possible, remove the pump from the system and put it on a work bench.
3. Drain the oil from the pump by undoing the oil drain plug (41) situated at the bottom of the can (37).
4. Undo and remove the bolts (33) and washers on the back of the can (37).

4a. Remove drive Key (30).

5. Remove the can (37).
6. Remove the can support (35) by loosening and dismantling the bolts which fasten the support onto the chassis (19).

4.4.1 Re-fit can support and can

Fig. 2

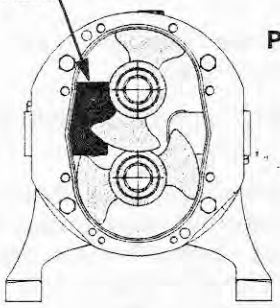
1. Refit the can support (35) over the shaft (31). Tighten the screws to the specified torque. See section 6.1.
2. Refit the can (37) over the bolts and tighten the screws (33) to the specified torque. The screws closest to centre should be tightened first. See section 6.1. Do not forget to re-fit the five O-rings (28,34) to the can support (35).

2a. Refit Drain plug (41).

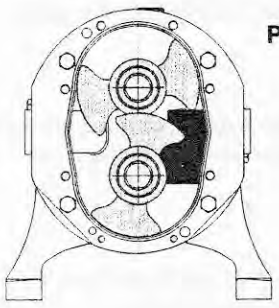
3. Fill the gearbox with oil to the specified level according to fig.2. Check for leaks.

4 Dismantling and re-assembling the pump

Rotor lock

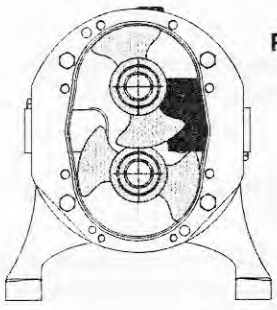


Pos. 1

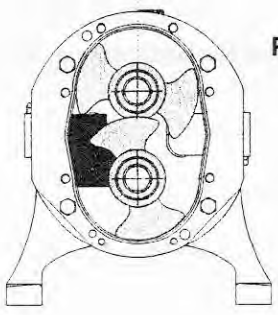


Pos. 2

Fig. 3



Pos. 3



Pos. 4

4.5 Remove the gears

To remove and re-fit the gears (26) it is necessary to dismantle the pump as described below. Unfold the sectional drawing and use it for reference.

1. Remove can (37) and can support (35) as described in section 4.4.
2. Remove front cover (11) as described in section 4.1.
3. Straighten the bent tab on the gear tab washers (27).
4. Position the rotors (6) and insert the fitting tool rotor lock as shown in pos. 1.
5. Undo the top or right gear nut (29).
6. Move the rotor lock to pos. 2.
7. Undo the bottom or left gear nut (29).
8. Remove rotor lock and rotors as described in section 4.2.
9. Remove gear nuts and tab washers.
10. Pull the gears (26) off the shafts (31,36) using a puller. Remember, which gear came off which shaft.

4.5.1 Re-fit the gears:

1. Refit the gears (26) onto the shafts (31,36). Ensure that the correct gear is fitted onto the correct shaft and correct positioning of the gears as per fig. 3. Postion rotors (6) and rotorlock as shown in pos. 3.
2. Position tab washer (27) and gear nut (29) onto the drive shaft (31) and tighten the gear nut to the specified torque. See section 6.1.
3. Position rotor lock as shown in pos. 4.
4. Refit tab washer (27) and gear nut (29) onto the auxiliary shaft (36) and tighten the gear nut to the specified torque.
5. Bend the tabs on the tab washers (27).

4 Dismantling and re-assembling the pump

4.6 Remove the oil seal plate

To remove and re-fit the oil seal plate (15) and chassis (19) it is necessary to dismantle the pump as described below. Unfold the sectional drawing and use it for reference

1. Remove front cover (11) as described in section 4.1.
2. Remove rotors (6) as described in section 4.2.
3. Remove rotor case (46) as described in section 4.3.
4. Remove the oil seal plate (15) by undoing and removing the screws (12) and pulling the front oil seal plate out. See fig. 4.

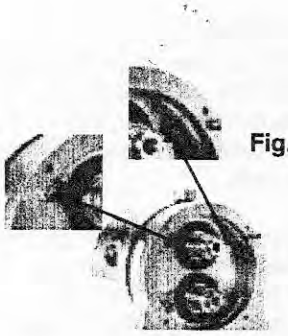


Fig. 4

4.6.1 Re-fit oil seal plate

1. Refit the oil seal plate (15) and tighten the screws(12) to the specified torque. See section 6.1. Ensure that the O-rings (45) are placed in the chassis (19) before refitting.

4.6.2 Remove the chassis

1. Remove the can (37) and can support(35) as described in section 4.4.
2. Remove the front cover (11) as described in section 4.1.
3. Remove the rotors (6) as described in sectin 4.2.
4. Undo and remove the chassis screws (17).
5. Pull the chassis (19) off the foot(1) by using the tapped holes - see fig. 5.

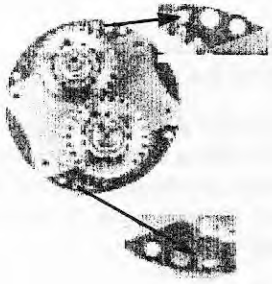


Fig. 5

4.6.3 Re-fit the chassis

1. Position the chassis (19) on the dowels(18) of the foot and use a plastic mallet to gently knock the chassis in place. Tighten the screws (17) to the specified toque. See section 6.1.

4 Dismantling and re-assembling the pump

4.7 Shimming Procedure

To be able to operate the pump effectively and safely, it is necessary to carry out the shimming procedure after having dismantled and re-assembled the pump. Unfold the section drawing and use it for reference.

Fig. 6a

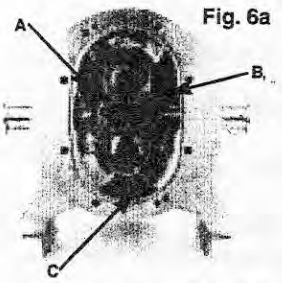


Fig. 6b

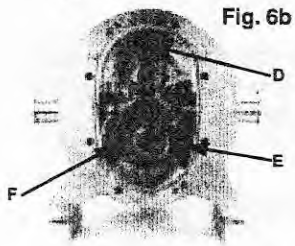
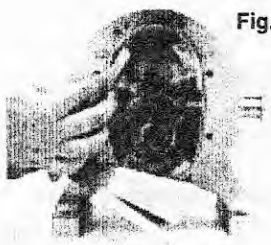


Fig. 7



1. Measure front clearance (6,46) by means of a depth micrometer. The measured clearances should be as close to the clearances described in section 6.7 as possible. The points at which you should measure the front clearance is shown in fig.6a and 6b. Then the rotors are turned 180° and measured again. So that twelve measurements are made in total.

2. Measure the rear clearance (6,46) by means of feeler gauges. See fig. 7 The clearances should be as close to the mean clearance described in section 6.7 as possible. The rear clearance should be measured at the same points as stated in section 4.7 item 1.

3. If the clearances are not within the limits stated in section 6.7 or if the distances measured able to be made closer to the mean values stated in section 6.7, the rotors (6) are removed as stated in section 4.2.

4. Remove the O-ring (48) situated on the shafts (31,36).

5. Remove the shims of the shaft (31,36) with your fingers, measure the total thickness of the shims with a micrometer, and add or subtract the required amount of clearance to the shim width (e.g. if front clearance is 0.1 mm too large, 0.1 mm must be added to the total width of shims).

6. Refit shims to the shaft (31,36). The thinner shims must be inserted first.

7. Refit O-rings to the shaft.

8. Refit rotors (6) as described in section 4.2.

9. Measure 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 section 6.7, repeat shimming procedure until the clearances are correct.

10. When the front and rear clearances are correct, check that the rotors (6) turn freely.

4 Dismantling and re-assembling the pump

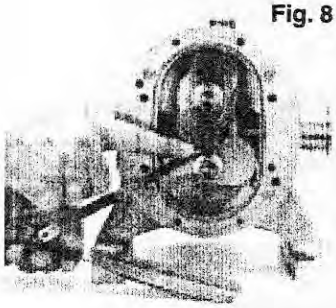
4.7.1 Re-timing the rotors

To run the pump effectively and safely, it may be necessary to re-time the pump after dismantling and re-assembling it, to ensure the correct lobe angle positon. Unfold the sectional drawing and use it for reference.

NOTE: Re-timing applies to **bi-lobe rotors** only.

Re-timing is carried out as described below:

Fig. 8

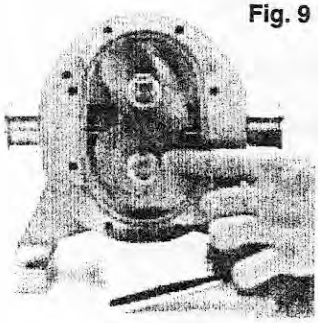


1. Measure the interlobe clearances with feeler gauges in the positions as shown in fig. 8 and 9 (6). If this clearance varies by more than stated in section 6.7. (column "Interlobe"), it is necessary to re-time the rotors.
2. Remove can (37) and can support (35) as described in section 4.4.
3. Loosen auxiliary shaft (36) gear nut (29) and ease the gear (26) away from the bearings 1 mm.
4. Check if the clearances now vary more or less than before.

5A. *If it varies more ;*
Re-tighten the auxiliary (36) gear nut (36) to the specified torque. Repeat the procedure from para 3 above in respect to the drive shaft.

5B. *If it varies less;*
Looser auxiliary shaft (29) and gear (26) and ease the gear away from the bearings until the clearance between the rotors are specified in section 6.7.

Fig. 9



6. The distance between the spacer (39) and the gear (26) is measured and shims (38) with a total thickness corresponding to the distance measured are identified.
7. The gear (26) is removed as described in section 4.5, and the gear key (25) is removed. The shims (38) are re-fitted to the shaft.
8. Refit gear key (25) and gear (26) as described in section 4.5.1
9. Measure the interlobe clearance - if the interlobe clearances are not within the limit stated in section 6.7, repeat the gear shimming procedure, until the interlobe clearances are within the limit.
10. Check that the rotors turn freely.

5 Maintenance

5.1 Changing rotors: piston rotor to piston rotor, piston rotor to bi-lobe rotor, and bi-lobe rotor to bi-lobe rotor.

It is possible to change from one rotor type to another without making any modifications to the pump. It is possible to change from piston rotor to bi-lobe rotor and vise versa on the following pump types:

DW1/003/7.5 ; DW1/004/15 ; DW2/006/10 ; DW2/007/20 ; DW3/014/10 ; DW3/017/20 ; DW4/033/10 ; DW4/039/20 ; DW5/080/12.5 ; DW5/093/12.5.

The sectional drawing shows the position of the various components mentioned in this procedure. To change rotors it is necessary to dismantle the pump as described below. Unfold the sectional drawing and use it for reference.

1. Remove the front cover (11) as described in section 4.1.

2. Remove the rotors (6) as described in section 4.2.

3. Ensure that stationary seal faces (D) are in place in the rotor case and free from debris and scratches.

4. Ensure that rotary seal faces (B) are mounted correctly in the new rotors and free from debris and scratches.

5. Refit rotors (6) as described in section 4.2.1.

6. Carry out shimming procedure as described in section 4.7.

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

7a. If no dowels (9) are situated in the rotor case (46), position the dowels in the dowel holes in the front of the rotor case.

8a. Tap the dowels (9) gently in place with a plastic mallet.

9a. Re-fit the front cover with pillars(11) as described in section 4.1.1.

10a. Check that the pump turns freely.

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

7b. Carry out re-timing procedure as described in section 4.7.1.

8b. Refit the can (37) and can support (35) as described in section 4.4.1.

9b. Check that the rotors(6) turn freely.

10b. If dowels (9) are situated in the rotor case (46), remove dowels.

11b. Refit the flat front cover (11) as described in section 4.1.1.

12b. Check that the rotors (6) turn freely.

5 Maintenance

5.2 Replacement of single mechanical shaft seals

It is possible to replace single mechanical shaft seals on the pump.
The sectional drawing shows the locations.
To change shaft seal it is necessary to disassemble the pump as described in the following.
Use the sectional drawings as reference.

1. Remove the front panel (11) as described in Section 4.1.
2. Remove the rotors (6) as described in Section 4.2.
3. Remove the stator ring (D) and the o-ring (C) with the fingers
4. Check the new shaft seal's contact surface for dirt and scratches.
5. Mount the new stator ring (D) and o-ring (C) in the pump housing without using tools.
   The stator ring is the longer of the two shaft seal parts. The keyway in the stator ring must fit over the groove in the drive ring (G). Check that it is correctly fitted by feeling for spring power when pushed in over the shaft.
6. Remove the rotor ring (B) and o-ring (C) from the rotor.
7. Insert a new rotor ring (B) and o-ring (C) in the rotor.
8. Mount the rotors (6) as described in Section 4.2.1.
9. Mount the front panel (11) as described in Section 4.1.1.
10. Check that the rotors turn freely.

NB: *All types of shaft seal (single lip seal, triple lip seal, single mechanical shaft seal, single mechanical shaft seal with water flush, dual mechanical shaft seal and packed gland packing thread) can all be mounted on the same pump.*
This requires only the correct shaft seal kit.
These kits are described under Accessories.

5.3 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.

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

To change the port orientation of the DW pump it is necessary to dismantle the pump as described below. Unfold the sectional drawing and use it for reference.

1. Remove front cover (11) as described in section 4.1.
2. Remove rotors (6) as described in section 4.2.
3. Remove rotor case (46) as described in section 4.3.

5 Maintenance

4. Remove can (37) as described in section 4.6.2. The can support (35) does not have to be removed.

5. Remove chassis (19) as described in section 4.6.2.

6. Reposition the chassis (19) on the dowels (1,18) with the drive shaft (31) in the required position. Knock it gently in place with a plastic mallet.

7. Refit the chassis (19) and as described in section 4.6.3.

8. Swap the plugs on the can (37). Orange filler plug (5) in top position. Sight glass in the side - above the centre. Blanks at the bottom and the side below the centre of the pump.

9. Re-fit the rotor case (46) onto the foot (1) as described in section 4.3.1.

10. Re-fit the rotors (6) as described in section 4.2.1.

11. Carry out shimming procedure as described in section 4.7. and possibly re-timing of rotors as described in section 4.7.1.

12. Refit the can (37) as described in section 4.4.1.

13. When the clearances are correct (46), check that the rotors turn freely.

14. Re-fit the front cover (11) as described in section 4.1.1.

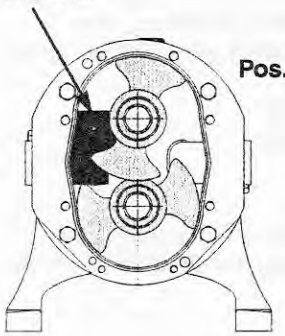
15. Rotate the pump to ensure free movement of the rotors.

5.4 Changing the bearings

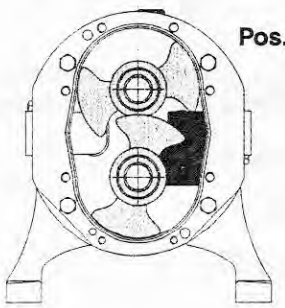
It is possible to change the bearings of the pump (42,43,44,20,21,22). The sectional drawing shows the position of the various components mentioned in this procedure.

To replace the bearings it is necessary to dismantle the pump as described below. Unfold the sectional drawing and use it for reference.

Rotor lock



Pos. 1



Pos. 2

1. Remove the front cover (11) as described in section 4.1.
2. Remove the can (37) and can support(35) as described in section 4.4.
3. Remove the gears (26) as described in section 4.5.
4. Remove gear key (25), shims (38), spacer (39) and circlip (40).
5. Straighten the bent tabs on the bearing tab washers (23).
6. Position the rotor lock as shown in pos. 1 and undo the drive shaft bearing lock nut (24).
7. Reposition the rotor lock to the pos. 2.
8. Undo the auxiliary shaft (36) bearing lock nut (24).
9. Remove bearing nuts (24) and tab washers (23).
10. Remove the rotors (6) as described in section 4.2.

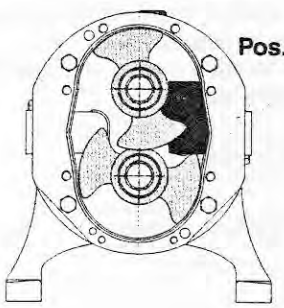
5 Maintenance

11. Remove the shaft 'O'-rings and the rotor shims. Keep them together as a set, and label them according to which shaft they were removed from.
12. Remove the oil seal plate (15) as described in section 4.6.
13. Remove the chassis (19) as described in section 4.6.2.
14. Remove shafts (31,36) from chassis (19) by applying force to the rear of the shafts. During this process, the rear inner bearing race (22) should come off the shafts.
15. Remove bearing races (42,20) from the chassis (19) and the shafts (31,36). If shafts are damaged they should be replaced.
16. Clean the bearing seats of the chassis (19) and the shafts (31,36).
17. Press new outer bearing races (42,20) into the chassis (19). Ensure that they are positioned correctly. See sectional drawing.
18. Press new front inner bearing races (44) onto the shafts (31,36). Ensure that they are positioned correctly. See sectional drawing.

Fig. 12

19. Insert shafts (31,36) into chassis (19).
20. Fit new rear inner bearing races (22) onto shafts (31,36). Position fitting tool as shown in fig. 12 and apply force to the fitting tool to press the rear bearing race past the threaded part of the shaft.
21. Fit tab washer (23) and bearing nut (24) onto the shafts (31,36).
22. Fit chassis (19) as described in section 4.6.3.
23. Fit the rotors (6) onto the shafts (31,36) (no mechanical seal necessary) as described in section 4.2.1.
24. Position the rotor lock in pos. 3 and 4, respectively, and tighten the bearing lock nuts (24) until no backlash can be felt in the bearing assembly.

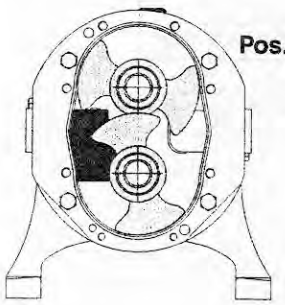
Pos. 3



25. Remove the rotors(6) from the shafts as described in section 4.2.
26. Check that the shafts (31,36) turn freely.
27. Check that the running torque of both drive shaft (31) and auxiliary shaft (36) is as specified in the table below. Check that the shafts turn freely.

DW1	0.13-0.25 Nm
DW2	0.47-0.60 Nm
DW3	0.66-0.83 Nm
DW4	1.20-1.60 Nm
DW5	1.10-1.70 Nm

Pos. 4



28. The procedure is repeated until the correct torque is obtained.
29. Bend the tab on the tab washer (23).
30. Remove the rotor case (46) as described in section 4.3
31. Refit oil seal plate (15) as described in section 4.6.1.

32. Refit the rotor case (46) as described in section 4.3.1. Ensure that stationary seal faces (D) and the O-rings (C) are in place in the rotor case. Check the seals (B,D) for debris and scratches.

33. Refit circlip (40), spacer (39) and gearkey (25) on the shafts (31,36).

34. Refit the gears (26) as described in section 4.5.1.

35. Ensure that rotary seal faces (B) are mounted correctly in the rotors (6). Check seals for debris and scratches.

36. Carry out shimming procedure as described in section 4.7.
If bi-lobe rotors need re-timing, carry out the re-timing procedure as described in section 4.7.1.

37. Re-fit the can support (37) and can (35) as described in section 4.4.1.

38. Re-fit the front cover (11) as described in section 4.1.1.

39. Ensure that the rotors turn freely.

5.5 Recommended stocks of spare parts

Seal Kit

We recommend that you keep both seal kits and service kits for the DW pump in stock. The seal kit for the DW pump consists of the wearing parts of the seal.

Service Kit

The service kit is made up of a number of the main components of the pump. These components are not wearing parts, but replacement may be necessary. These components are rotors (6), front cover (11), rotor case (46), rotor bolts (10), rotor shims shafts (31,36), bearings (42,43,44,20,21,22), gears (26), and gear shims (38).

The table below shows the recommended stock of spare parts for normal operation, and for applications where there are special needs - 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)	Number of pumps in operation		
	0-5	5-20	>20
	Kits	Kits	Kits/10 pumps in operation
Normal operation	1	2	1
Special requirements	2	3	2

Service Parts	Number of pumps in operation		
	0-5	5-20	>20
	Sets	Sets	Sets/10 pumps in operation
Normal operation	0	1	1
Special requirements	1	2	1

6 Technical data

6.1 Tightening Torque Settings

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

	Front cover bolts/nuts Large	Front cover bolts Small	Rotor bolts	Rotor case foot screws	Seal housing screws	Oilseal plate screws	Chassis foot screws	Running torque bearing nut	Can support chassis screws	Gear nut	Can support screws
Pos no.	(3)	(4)	(10)	(7)	(I,R)	(12)	(17)	(24)		(29)	(33)
Pump	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm
DW 1	10	10	10	10	10	10	15	0.13-0.25	10	25	10
DW 2	10	10	40	10	10	10	15	0.47-0.60	10	50	10
DW 3	20	20	70	20	10	10	30	0.66-0.83	10	75	10
DW 4	20	20	200	40	20	20	55	1.20-1.60	20	100	20
DW 5	30	30	570	60	20	40	95	1.10-1.70	40	125	40

6 Technical data

6.2 Sound Pressure and Sound Effect Level for DW Pumps

Measurements have been carried out in accordance with:
DS/ISO 3744 grade 2, class 2 for DW1-2 and 3
DS/ISO 9614-2 for DW4 and 5
Tolerance +3dB.

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 acc. to EC Directive (89/392/EEC)1.7.4).

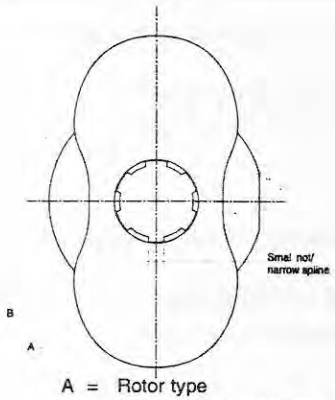
Lwa states the sound power level.
Operating Conditions are defined as follows:

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.

	LpA in dB						LwA					
Pump	A	B	C	D	E	F	A	B	C	D	E	F
DW1/003/7.5	74	64	56	71	64	56	85	76	68	83	76	68
DW1/004/15	74	64	56	72	64	56	85	76	68	84	76	69
DW1/007/7	75	65	57	71	65	56	86	65	69	83	77	69
DW2/006/10	80	66	57	73	64	58	92	78	69	86	76	69
DW2/007/20	79	66	56	72	63	57	91	77	68	85	75	68
DW2/013/10	80	66	56	74	65	59	92	77	68	87	77	70
DW3/014/10	81	67	58	79	64	57	93	79	70	91	77	70
DW3/017/20	80	66	57	80	65	58	92	78	69	92	77	69
DW3/030/10	82	68	58	80	65	58	94	80	70	92	77	70
DW4/033/10	75	65	62	67	62	59	86	76	73	78	73	70
DW4/039/20	77	67	63	69	64	61	88	78	74	80	75	72
DW4/073/10	78	68	64	70	65	62	89	79	75	81	76	73
DW5/080/12.5	80	72	68	78	71	67	91	83	79	89	82	78
DW5/093/25	82	74	70	80	73	69	93	85	81	91	84	80
DW5/142/15	81	73	69	79	72	68	92	84	80	90	83	78
DW5/256/7	83	75	71	81	74	70	94	86	82	92	85	81

6 Technical data



A = Rotor type
· = High efficiency (110°C)
·· = High temperature (180°C)
··· = Multy-Duty (110°C)

B = Material
· = Stainless steel
·· = Non Galling Material
··· = Special Material

6.3 Maximum permissable differential pressure for DW pumps

The maximum pump differential pressures specified below must not be exceeded.

Max. 25 bar: DW5/093/25
Max. 20 bar: DW2/007/20 ; DW3/017/20 ; DW4/039/20
Max. 15 bar: DW1/004/15 ; DW5/142/15 ;
Max. 12.5 bar: DW5/080/12.5
Max. 10 bar: DW2/006/10 ; DW2/013/10 ; DW3/014/10 ; DW3/030/10 ; DW4/033/10 ; DW4/073/10
Max. 7.5 bar: DW1/003/7.5
Max. 7 bar: DW1/007/7 ; DW5/256/7

6.4 Maximum permissable temperature for DW pumps

Check the nameplate of the pump to see the maximum permissable 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 ···on the spline.

Rotors with maximum temperature of 180°C are marked with ·· on the spline.

6.5 Temperature changes and max. temperature:

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

High-efficiency rotors:
Pumps fitted with high-efficiency rotors should be treated with caution regarding temperature changes.
There fore, the guidelines should be observed:
Product temperature can be increased by 2.1 °C per 5 secs. i.e. if, for example during CIP, one requires a temperature change at the pump of $\Delta T=75°C$, the product temperature must be increased gradually over 180 secs. or 3 mins. [(75/2.1) x5sec.]
Max. temperature 110°C.

Multi-duty rotors:
Pumps fitted with multi-duty rotors are designed to cope, with a temperature change of $\Delta T=80°C$, corresponding to CIP regimes, with no special precautions.
For temperature changes exceeding $\Delta T=80°C$, the temperature can be increased by 2.1°C per 5 secs.
e.g. for a temperature difference of $\Delta T=105°C$ the product temperature should be increased gradually over 60 secs. or 1 min. [(105-80)/2,1 x5sec.]
Max. temperature is 110°C.

High-temperature rotors:
Pumps fitted with high-temperature rotors are designed to withstand a temperature change during SIP of $\Delta T=120°C$ without introducing a warm-up time.

6 Technical data

For temperature changes over ΔT=120°C the temperature can be increased by 2.1°C per 5 secs.
e.g. with a temperature difference of ΔT=160°C the product temperature can be increased gradually over 90 secs. [(160-120)/2.1x5sec.].
Max. temperature is 180°C.

We recommend that pumps with high-efficiency or multi-duty rotors should not be operating during SIP cleaning.

6.6 Maximum permissable rotational speed for DW pumps

The maximum rotational speed specified below must not be exceeded.

DW1 : max. 1400 rotational speed/min.
DW2 : max. 1400 rotational speed/min.
DW3 : max. 1400 rotational speed/min.
DW4 : max. 1200 rotational speed/min.
DW5 : max. 1000 rotational speed/min.

For pumps with lip seal and triple lip seal the following regulations must be followed:

Max. rotational speed = 400 Rpm
Max. pressure = 6 bar

6 Technical data

6.7 Clearance for adjustment of DW pumps

DW1/003/7.5 - Piston

	High efficiency 110°C		
	Front	Bag/Rear	Side
Min.	0.15	0.05	0.07
Max	0.21	0.11	0.15

	Multi-Duty 110°C		
	Front	Bag/Rear	Side
Min.	0.20	0.09	0.07
Max	0.26	0.15	0.15

DW1/004/15 - Short lobe
DW1/007/7 - Long lobe

	High efficiency 110°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.10	0.05	0.08	0.12
Max	0.16	0.11	0.16	0.24

	Multi-Duty 110°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.14	0.09	0.08	0.12
Max	0.20	0.15	0.16	0.24

	High temperature 180°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.16	0.10	0.11	0.18
Max	0.22	0.16	0.19	0.30

DW2/006/10 - Piston

	High efficiency 110°C		
	Front	Bag/Rear	Side
Min.	0.16	0.05	0.07
Max	0.22	0.11	0.15

	Multi-Duty 110°C		
	Front	Bag/Rear	Side
Min.	0.23	0.08	0.07
Max	0.29	0.14	0.15

DW2/007/20 - Short lobe

	High efficiency 110°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.12	0.05	0.10	0.14
Max	0.18	0.11	0.18	0.28

	Multi-Duty 110°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.16	0.08	0.10	0.14
Max	0.22	0.14	0.18	0.28

6 Technical data

	High temperature 180°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.17	0.10	0.14	0.22
Max	0.23	0.16	0.22	0.36

DW2/013/10 - Longlobe

	High efficiency 110°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.12	0.05	0.10	0.14
Max	0.18	0.11	0.18	0.28

	Multi-Duty 110°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.17	0.08	0.10	0.14
Max	0.23	0.14	0.18	0.28

	High temperature 180°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.18	0.10	0.14	0.22
Max	0.24	0.16	0.22	0.36

DW3/014/10 - Piston

	High efficiency 110°C		
	Front	Bag/Rear	Side
Min.	0.17	0.06	0.09
Max	0.23	0.12	0.17

	Multi-Duty 110°C		
	Front	Bag/Rear	Side
Min.	0.23	0.11	0.09
Max	0.29	0.17	0.17

DW3/017/20 - Short lobe

	High efficiency 110°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.15	0.08	0.09	0.16
Max	0.21	0.14	0.17	0.30

	Multi-Duty 110°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.18	0.11	0.09	0.16
Max	0.24	0.16	0.17	0.30

	High temperature 180°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.20	0.14	0.14	0.25
Max	0.26	0.20	0.22	0.39

6 Technical data

DW3/030/10 - Long lobe

	High efficiency 110°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.15	0.09	0.11	0.16
Max	0.21	0.15	0.19	0.30

	Multi-Duty 110°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.19	0.11	0.11	0.16
Max	0.25	0.17	0.19	0.30

	High temperature 180°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.20	0.14	0.16	0.25
Max	0.26	0.20	0.24	0.39

DW4/033/10 - Piston

	High efficiency 110°C		
	Front	Bag/Rear	Side
Min.	0.20	0.07	0.09
Max	0.26	0.15	0.25

	Multi-Duty 110°C		
	Front	Bag/Rear	Side
Min.	0.25	0.10	0.09
Max	0.31	0.18	0.25

DW4/039/20 - Short lobe

	High efficiency 110°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.15	0.07	0.11	0.19
Max	0.21	0.15	0.27	0.39

	Multi-Duty 110°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.20	0.10	0.11	0.19
Max	0.26	0.18	0.27	0.39

	High temperature 180°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.22	0.14	0.17	0.30
Max	0.28	0.22	0.33	0.50

6 Technical data

DW4/073/10 - Long lobe

	High efficiency 110°C			
	Front	**Bag/Rear**	**Side**	**Interlobe**
Min.	0.15	0.07	0.12	0.19
Max	0.21	0.15	0.28	0.39

	Multi-Duty 110°C			
	Front	**Bag/Rear**	**Side**	**Interlobe**
Min.	0.19	0.11	0.12	0.19
Max	0.25	0.19	0.28	0.39

	High temperature 180°C			
	Front	**Bag/Rear**	**Side**	**Interlobe**
Min.	0.22	0.14	0.17	0.30
Max	0.28	0.22	0.33	0.50

DW5/080/12.5 - Piston

	High efficiency 110°C		
	Front	**Bag/Rear**	**Side**
Min.	0.31	0.12	0.14
Max	0.37	0.20	0.30

	Multi-Duty 110°C		
	Front	**Bag/Rear**	**Side**
Min.	0.36	0.14	0.14
Max	0.42	0.22	0.30

DW5/093/25 - Short lobe

	High efficiency 110°C			
	Front	**Bag/Rear**	**Side**	**Interlobe**
Min.	0.23	0.12	0.23	0.30
Max	0.29	0.20	0.39	0.50

	Multi-Duty 110°C			
	Front	**Bag/Rear**	**Side**	**Interlobe**
Min.	0.27	0.16	0.23	0.30
Max	0.33	0.24	0.39	0.50

	High temperature 180°C			
	Front	**Bag/Rear**	**Side**	**Interlobe**
Min.	0.32	0.23	0.30	0.45
Max	0.38	0.31	0.46	0.65

6 Technical data

DW5/142/15-Mediumlobe

	High efficiency 110°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.26	0.12	0.25	0.30
Max	0.32	0.20	0.41	0.50

	Multi-Duty 110°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.31	0.16	0.25	0.30
Max	0.37	0.24	0.41	0.50

	High temperature 180°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.35	0.23	0.32	0.45
Max	0.41	0.31	0.48	0.65

DW5/256/7 - Long lobe

	High efficiency 110°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.29	0.12	0.32	0.30
Max	0.35	0.20	0.48	0.50

	Multi-Duty 110°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.34	0.18	0.32	0.30
Max	0.40	0.26	0.48	0.50

	High temperature 180°C			
	Front	Bag/Rear	Side	Interlobe
Min.	0.38	0.22	0.39	0.45
Max	0.44	0.30	0.55	0.65

Subject to changes

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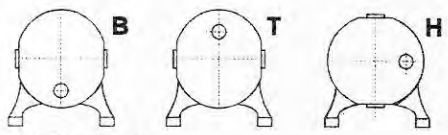
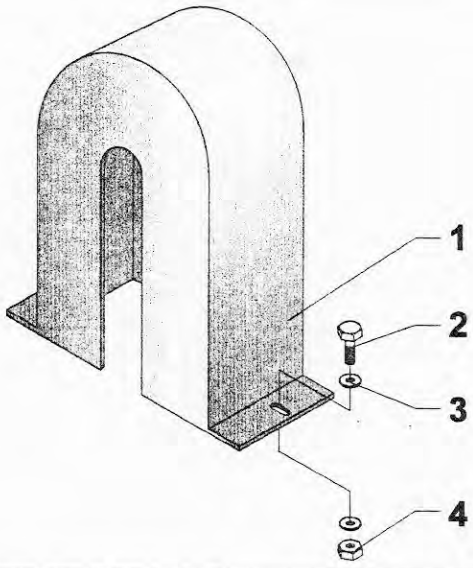
7. Koblingskappe / Coupling Guard



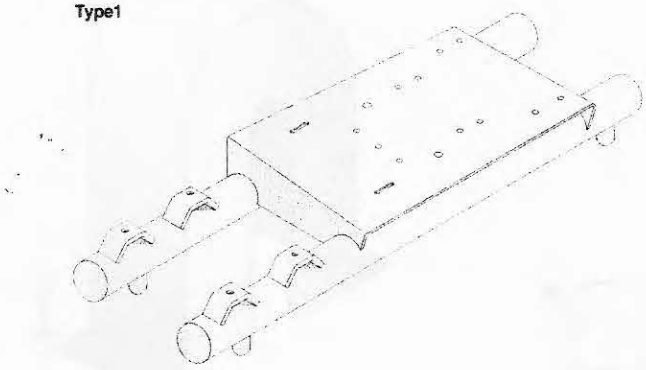
* bundplade type
* Baseplate



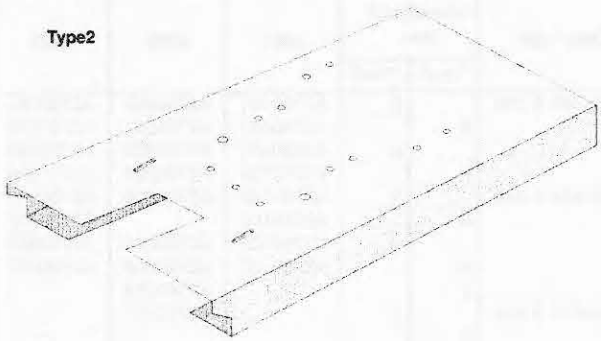
Pos	Benævnelse Description	Stk Qty	Gear type	Aksel/Shaft pos.		DW1	DW2	DW3	DW4	DW5
				*Type1	*Type2					
1	Koplingskappe / Coupling Guard	1	SK320 & 333		B	A2780101	A2780202	A2780301		
				B		A2780101	A2780201	A2780301		
					H	A2780101	A2780203	A2780306		
				H		A2780101	A2780202	A2780306		
			SK420 & 430		B	A2780102	A2780206	A2780302	A2780410	A2780520
				B		A2780102		A2780302	A2780410	A2780520
					H	A2780102	A2780204	A2780307	A2780413	A2780521
				H		A2780102	A2780206	A2780307	A2780413	A2780521
				T			A2780204			
			SK620 & 630		B		A2780207		A2780411	A2780522
				B					A2780411	A2780522
					H		A2780205	A2780308	A2780412	A2780523
				H			A2780207	A2780303	A2780412	A2780523
					T			A2780304		
				T			A2780205	A2780308		
			SK672 & 673		B				A2780414	A2780524
				B					A2780414	A2780524
					H			A2780310	A2780415	A2780525
				H				A2780305	A2780415	A2780525
					T			A2780311		
				T				A2780310		
			SK772 & 773		B					A2780532
					H			A2780313	A2780417	A2780527
				H				A2780313	A2780417	A2780527
					T			A2780312	A2780416	A2780526
				T				A2780309	A2780416	
			SK872 & 873		B					A2780533
					H				A2780419	A2780529
				H					A2780419	A2780529
					T				A2780418	
				T					A2780418	A2780528
			SK972 & 973		H					A2780531
				H						A2780531
					T					A2780530
				T						A2780530
2	Skrue / Screw	2				705856	705856	705856	705856	705856
3	Skive / Washer	4				701477	701477	701477	701477	701477
4	Møtrik / Nut	2				700240	700240	700240	700240	700240

7. Bundramme / Baseplate

Type1



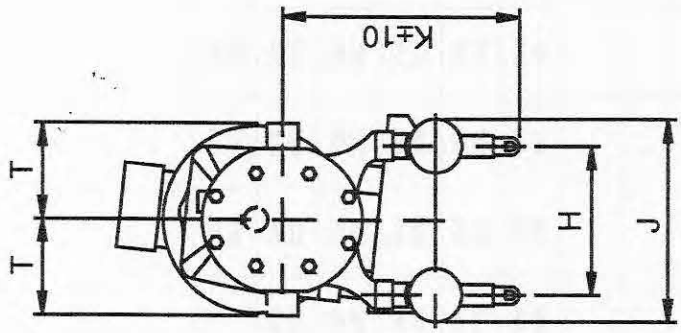
Type2

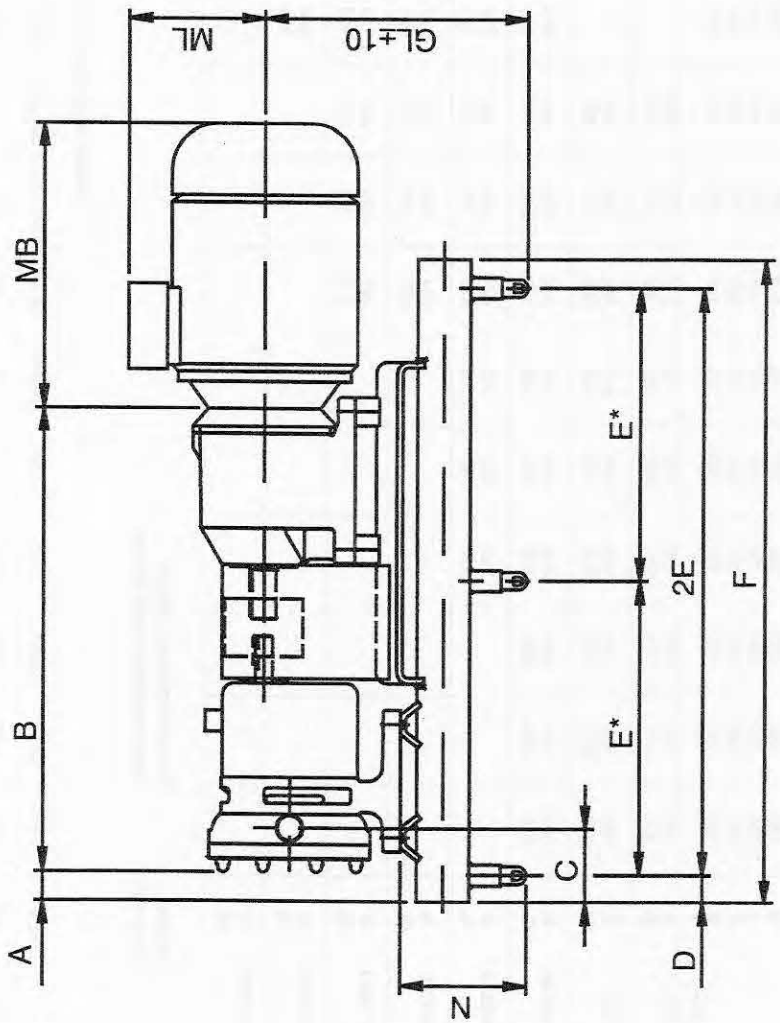


Pumpe	Type1	Type2
DW1	A2760/100	A2764/100
DW2	A2760/200	A2764/200
DW3	A2760/300	A2764/300
DW4	A2760/400	A2764/400
DW5	A2760/500	A2764/500

7. Målskitse / Dimensions sketch

Målskitse med vandret ind/udløb, bundpl. type 1 & koblingskappe /
Dim. sketch for DW with horizontal in/outlet, baseplate type 1 & guard





Gear	Symbol	DW1			DW2			DW3			DW4			DW5			
		003/7.5	004/15	007/7	006/10	007/20	013/10	014/10	017/20	030/10	033/10	039/20	073/10	080/12.5	093/25	142/15	256/7
	A	9	9	1	7	7	-3	-7	-7	-23	4	4	-22	9	9	-12	-62
	C	54	54	50	56	56	52	54	54	45	75	75	62	95	95	79	54
	D	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	E		-	-	-	-	-	-	-	-	485	485	485	610	610	610	610
	EA	520	520	520	590	590	590	780	780	780	970	970	970	1220	1220	1220	1220
	F	600	600	600	670	670	670	860	860	860	1050	1050	1050	1300	1300	1300	1300
	H	166	166	166	194	194	194	212	212	212	260	260	260	326	326	326	326
	J	230	230	230	258	258	258	288	288	288	368	368	368	434	434	434	434
	K	302	302	302	315	315	315	340	340	340	441	441	441	491	491	491	491
	N	180	180	180	170	170	170	182	182	182	251	251	251	251	251	251	251
	T	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SK 320	B	435	435	443	472	472	482	513	513	529							
	GL	274	274	274	282	282	282	302	302	302							
SK 333	B	462	462	470	499	499	509	540	540	556							
	GL	274	274	274	282	282	282	302	302	302							
SK 420/30	B	501	501	509	538	538	548	579	579	595	670	670	696	812	812	833	883
	GL	278	278	278	348	348	348	302	302	302	394	394	394	428	428	428	428
SK 620/30	B				583	583	593	624	624	640	715	715	741	857	857	878	928
	GL				348	348	348	378	378	378	394	394	394	428	428	428	428
SK672/73	B							654	654	670	745	745	771	898	898	919	969
	GL							378	378	378	394	394	394	428	428	428	428
SK 772/73	B							681	681	697	772	772	798	930	930	951	1001
	GL							378	378	378	489	489	489	554	554	554	554
SK 872/73	B										846	846	872	993	993	1014	1064
	GL										489	489	489	554	554	554	554
SK 972/73	B													1039	1039	1060	1110
	GL													554	554	554	554

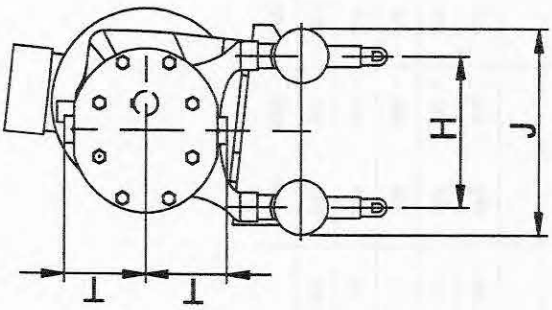
*

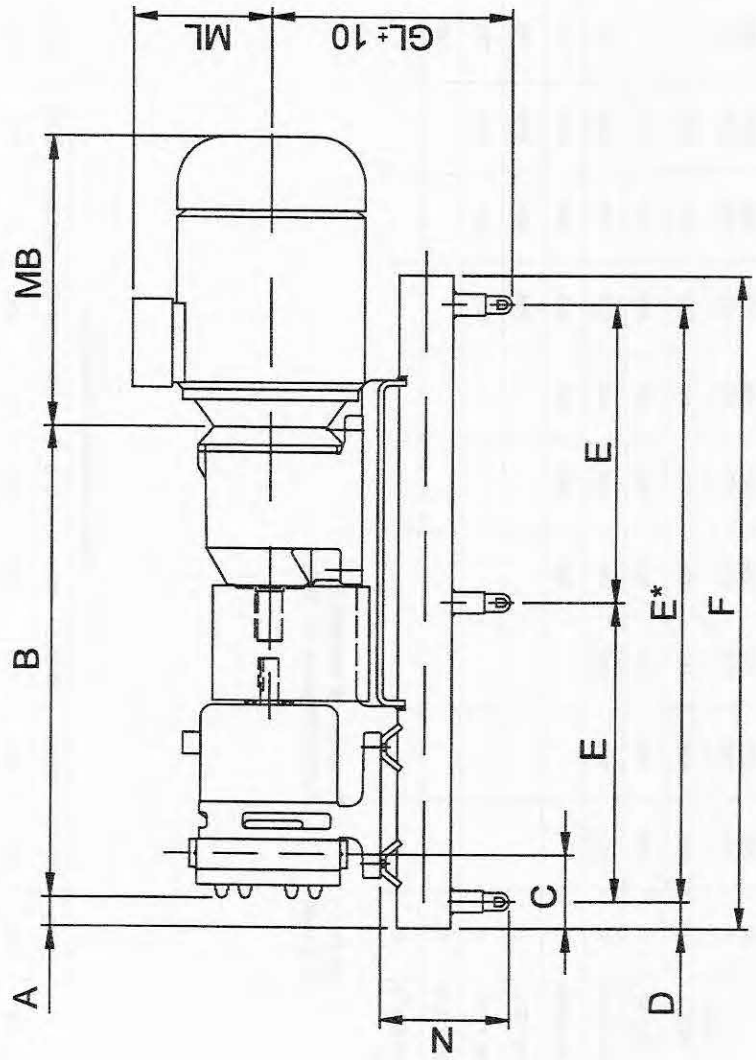
Se side : Pumpens mål med fittings
See page : Pump dimensions with fittings

	Motor størrelse / Motor size											
	63 S/L	71 S/L	80 S/L	90 S/L	100 L	112 M	132 S/M	160 M/L	160 LA/LB	180 M/L	200 L	225 S
MB	188	213	231	273	306	324	411	486	521	602	688	688
ML	100	109	124	129	140	150	174	234	234	259	306	306

7. Målskitse / Dimensions sketch

Målskitse med lodret ind/udløb, bundpl. type 1 & koblingskappe /
Dim. sketch for DW with vertical in/outlet, baseplate type 1 & guard





381834 ISS 7.04.09

		DW1			DW2			DW3			DW4			DW5			
	Symbol	003/7.5	004/15	007/7	006/10	007/20	013/10	014/10	017/20	030/10	033/10	039/20	073/10	080/12.5	093/25	142/15	256/7
	A	9	9	1	7	7	-3	-7	-7	-23	4	4	-22	9	9	-12	-62
	C	54	54	50	56	56	52	54	54	45	75	75	62	95	95	79	54
	D	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	E										485	485	485	610	610	610	610
	EA	520	520	520	590	590	590	780	780	780	970	970	970	1220	1220	1220	1220
	F	600	600	600	670	670	670	860	860	860	1050	1050	1050	1300	1300	1300	1300
	H	302	302	302	315	315	315	340	340	340	441	435	435	491	491	491	491
	J	166	166	166	194	194	194	212	212	212	260	260	260	326	326	326	326
	K	230	230	230	258	258	258	288	288	288	368	368	368	434	434	434	434
	N	180	180	180	170	170	170	182	182	182	251	251	251	251	251	251	251
Gear	T	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SK 320	B	435	435	443	472	472	482	513	513	529							
SK 333	B	462	462	470	499	499	509	540	540	556							
SK 420/30	B	501	501	509	538	538	548	579	579	595	670	670	696	812	812	833	883
SK 620/30	B				583	583	593	624	624	640	715	715	741	857	857	878	928
SK 672/73	B							654	654	670	745	745	771	898	898	919	969
SK 772/73	B							681	681	697	772	772	798	930	930	951	1001
SK 872/73	B										846	846	872	993	993	1014	2064
SK 972/73	B													1039	1039	1060	1110

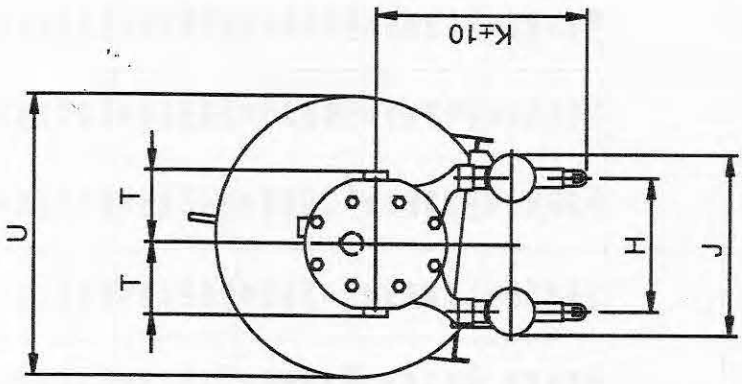
*

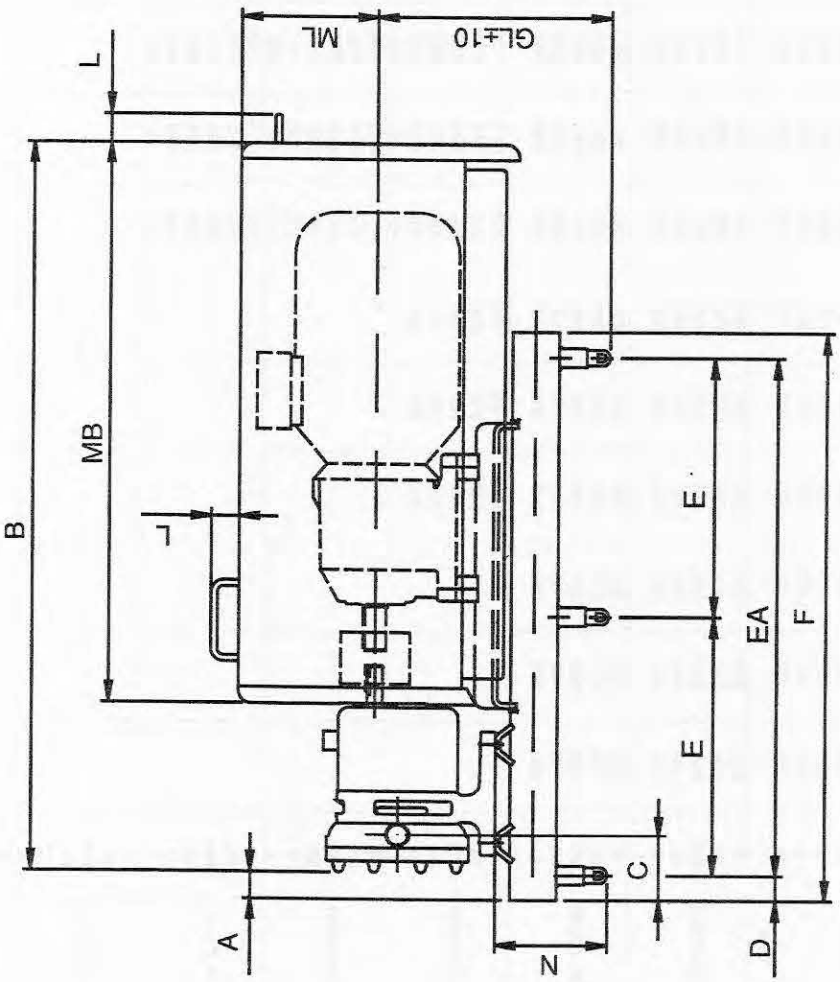
Se side : Pumpens mål med fittings
See page : Pump dimensions with fittings

	Motor størrelse / Motor size											
	63 S/L	71 S/L	80 S/L	90 S/L	100 L	112 M	132 S/M	160 M/L	160 LA/LB	180 M/L	200 L	225 S
MB	188	213	231	273	306	324	411	486	521	602	688	688
ML	100	109	124	129	140	150	174	234	234	259	306	306

7. Målskitse / Dimensions sketch

Målskitse med vandret ind/udløb, bundpl. type 1 & motorkappe /
Dim. sketch for DW with horizontal in/outlet, baseplate type 1 & shroud





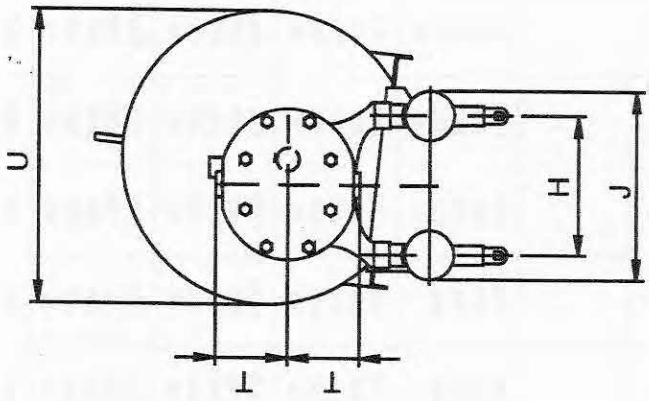
7. Målskitse / Dimensions sketch

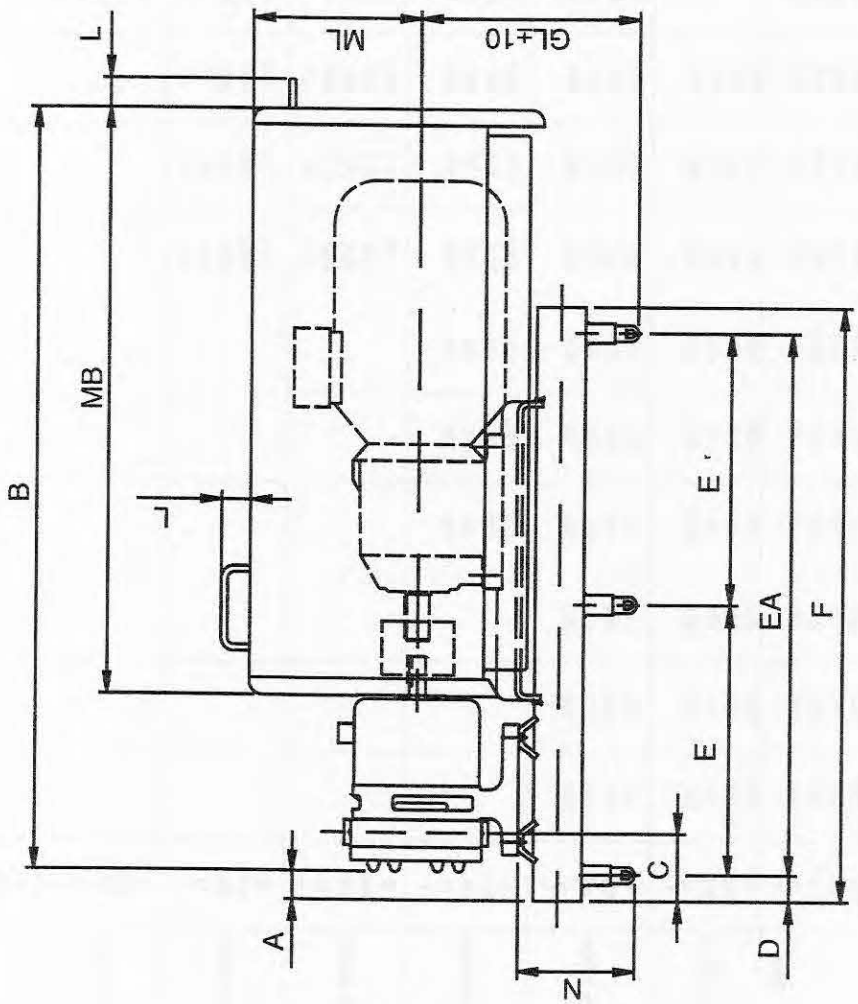
Gear	Symbol	DW1			DW2		DW3			DW4			DW5			
		003/7.5	004/15	007/7	006/10	007/20	013/10	014/10	017/20	030/10	033/10	039/20	073/10	080/12.5	093/25	142/15	256/7
	A	9	9	1	7	7	-3	-7	-7	-23	4	4	-22	9	9	-12	-62
	C	54	54	50	56	56	52	54	54	45	75	75	62	95	95	79	54
	D	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	E	-	-	-	-	-	-	-	-	-	485	485	485	610	610	610	610
	EA	520	520	520	590	590	590	780	780	780	970	970	970	1220	1220	1220	1220
	F	600	600	600	670	670	670	860	860	860	1050	1050	1050	1300	1300	1300	1300
	H	166	166	166	194	194	194	212	212	212	260	260	260	326	326	326	326
	J	230	230	230	258	258	258	288	288	288	368	368	368	434	434	434	434
	K	302	302	302	315	315	315	340	340	340	441	441	441	491	491	491	491
	N	180	180	180	170	170	170	182	182	182	251	251	251	251	251	251	251
	T	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SK 320/33	B	830	830	840	850	850	860	890	890	910							
	GL	274	274	274	282	282	282	302	302	302							
	MB	608	608	608	600	600	600	617	617	617							
	ML	145	145	145	185	185	185	208	208	208							
	U	250	250	250	305	305	305	360	360	360							
	L	-	-	-	-	-	-	-	-	-							
SK 420/30	B	830	830	840	850	850	860	890	890	910	1160	1160	1185	1165	1165	1185	1235
	GL	278	278	278	348	348	348	302	302	302	394	394	394	428	428	428	428
	MB	608	608	608	600	600	600	617	617	617	813	813	813	707	707	707	707
	ML	158	158	158	155	155	155	208	208	208	208	208	208	282	282	282	282
	U	250	250	250	305	305	305	360	360	360	360	360	360	450	450	450	450
	L	-	-	-	-	-	-	-	-	-	-	-	-	45	45	45	45
SK 620/30	B				1000	1000	1010	1175	1175	1190	1245	1245	1270	1355	1355	1380	1430
	GL				348	348	348	378	378	378	394	394	394	428	428	428	428
	MB				750	750	750	898	898	898	898	898	898	898	898	898	898
	ML				188	188	188	222	222	222	264	264	264	282	282	282	282
	U				360	360	360	450	450	450	450	450	450	450	450	450	450
	L							45	45	45	45	45	45	45	45	45	45
SK 672/73	B							1175	1175	1190	1245	1245	1270	1355	1355	1380	1430
	GL							378	378	378	394	394	394	428	428	428	428
	MB							898	898	898	898	898	898	898	898	898	898
	ML							222	222	222	264	264	264	282	282	282	282
	U							450	450	450	450	450	450	450	450	450	450
	L							45	45	45	45	45	45	45	45	45	45
SK 772/73	B							1175	1175	1190	1375	1375	1400	1525	1525	1545	1595
	GL							378	378	378	489	489	489	554	554	554	554
	MB							898	898	898	1027	1027	1027	1065	1065	1065	1065
	ML							248	248	252	252	252	252	260	260	260	260
	U							450	450	450	450	480	480	525	525	525	525
	L							45	45	45	45	45	45	45	45	45	45
SK 872/73	B										1375	1375	1400	1525	1525	1545	1595
	GL										489	489	489	554	554	554	554
	MB										1027	1027	1027	1065	1065	1065	1065
	ML										252	252	252	260	260	260	260
	U										480	480	480	525	525	525	525
	L										45	45	45	45	45	45	45
SK 972/73	B													1770	1770	1790	1840
	GL													554	554	554	554
	MB													1312	1312	1312	1312
	ML													350	350	350	350
	U													700	700	700	700
	L													45	45	45	45

* Se side : Pumpens mål med fittings
See page : Pump dimensions with fittings

7. Målskitse / Dimensions sketch

Målskitse med lodret ind/udløb, bundpl. type 1 & motorkappe /
Dim. sketch for DW with vertical in/outlet, baseplate type 1 & shroud





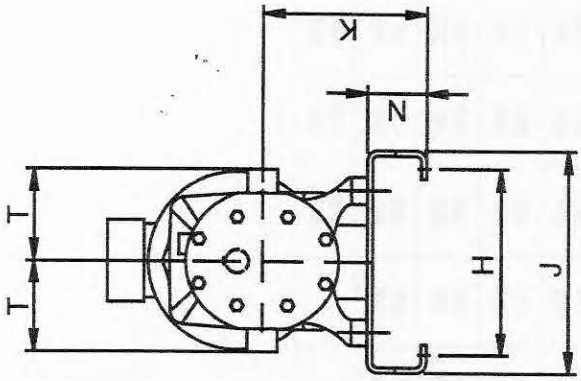
7. Målskitse / Dimensions sketch

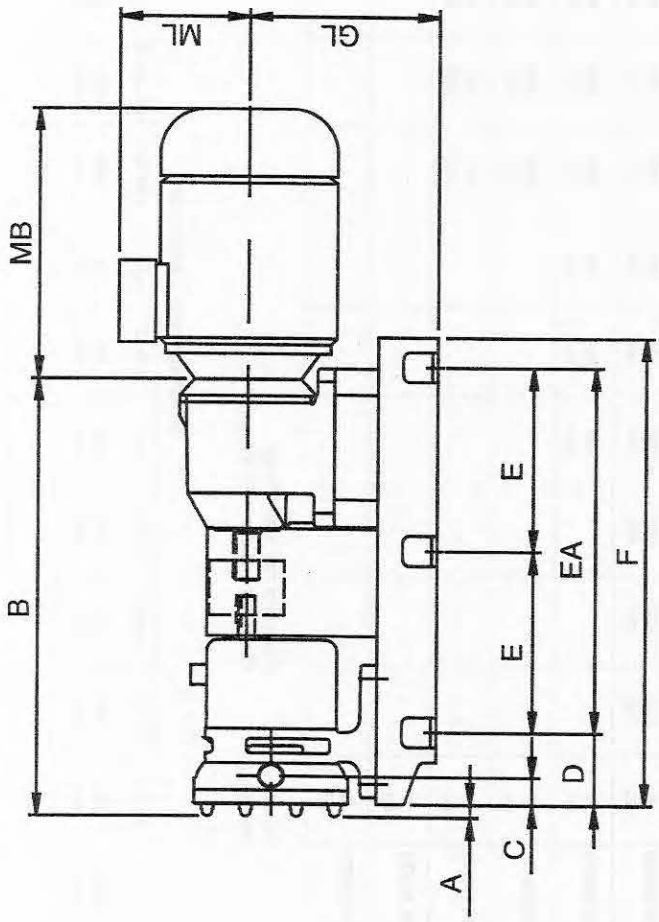
Gear	Symbol	DW1			DW2		DW3			DW4			DW5			
		003/7.5	004/15	007/7	006/10	007/20	013/10	014/10	017/20	030/10	033/10	039/20	073/10	080/12.5	093/25	142/15	256/7
	A	9	9	1	7	7	-3	-7	-7	-23	4	4	-22	9	9	-12	-62
	C	54	54	50	56	56	52	54	54	45	75	75	62	95	95	79	54
	D	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	E										485	485	485	610	610	610	610
	EA	520	520	520	590	590	590	780	780	780	970	970	970	1220	1220	1220	1220
	F	600	600	600	670	670	670	860	860	860	1050	1050	1050	1300	1300	1300	1300
	GL	302	302	302	315	315	315	340	340	340	441	441	441	491	491	491	491
	H	166	166	166	194	194	194	212	212	212	260	260	260	326	326	326	326
	J	230	230	230	258	258	258	288	288	288	368	368	368	434	434	434	434
	N	180	180	180	170	170	170	182	182	182	251	251	251	251	251	251	251
	T	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SK 320/33	B	830	830	840	850	850	860	890	890	910							
	MB	608	608	608	600	600	600	617	617	617							
	ML	151	151	151	151	151	151	170	170	170							
	U	305	305	305	305	305	305	360	360	360							
	L																
SK 420/30	B	830	830	840	850	850	860	890	890	910	1160	1160	1185	1165	1165	1185	1235
	MB	608	608	608	600	600	600	617	617	617	813	813	813	707	707	707	707
	ML	170	170	170	178	178	178	170	170	170	174	174	174	215	215	215	215
	U	305	305	305	305	305	305	360	360	360	360	360	360	450	450	450	450
	L													45	45	45	45
SK 620/30	B				1000	1000	1010	1040	1040	1060	1245	1245	1270	1355	1355	1380	1430
	MB				750	750	750	767	767	767	898	898	898	898	898	898	898
	ML				192	192	192	192	192	192	216	216	216	215	215	215	215
	U				360	360	360	360	360	360	450	450	450	450	450	450	450
	L										45	45	45	45	45	45	45
SK 672/73	B							1175	1175	1190	1245	1245	1270	1355	1355	1380	1430
	MB							898	898	898	898	898	898	898	898	898	898
	ML							261	261	261	216	216	216	215	215	215	215
	U							450	450	450	450	450	450	450	450	450	450
	L							45	45	45	45	45	45	45	45	45	45
SK 772/73	B							1175	1175	1190	1375	1375	1400	1525	1525	1545	1595
	MB							898	898	898	1027	1027	1027	1065	1065	1065	1065
	ML							257	257	257	265	265	265	260	260	260	260
	U							450	450	450	480	480	480	525	525	525	525
	L							45	45	45	45	45	45	45	45	45	45
SK 872/73	B										1375	1375	1400	1525	1525	1545	1595
	MB										1027	1027	1027	1065	1065	1065	1065
	ML										260	260	260	260	260	260	260
	U										480	480	480	525	525	525	525
	L										45	45	45	45	45	45	45
SK 972/73	B													1770	1770	1790	1840
	MB													1312	1312	1312	1312
	ML													350	350	350	350
	U													700	700	700	700
	L													45	45	45	45

* Se side : Pumpens mål med fittings
See page : Pump dimensions with fittings

7. Målskitse / Dimensions sketch

Målskitse med vandret ind/udløb, bundpl. type 2 & koblingskappe /
Dim. sketch for DW with horizontal in/outlet, baseplate type 2 & guard





7. Målskitse / Dimensions sketch

Gear	Symbol	DW1			DW2			DW3			DW4			DW5			
		003/7.5	004/15	007/7	006/10	007/20	013/10	014/10	017/20	030/10	033/10	039/20	073/10	080/12.5	093/25	142/15	256/7
	A	10	10	18	15	15	25	19	19	35	8	8	34	11	11	32	82
	C	35	35	31	34	34	30	42	42	33	63	63	50	75	75	59	34
	D	110	110	110	110	110	110	110	110	110	135	135	135	205	205	205	205
	E										360	360	360	495	495	495	495
	EA	350	350	350	440	440	440	545	545	545	720	720	720	990	990	990	990
	F	505	505	505	595	595	595	700	700	700	900	900	900	1260	1260	1260	1260
	H	198	198	198	223	223	223	278	278	278	362	362	362	392	392	392	392
	J	248	248	248	273	273	273	332	332	332	422	422	422	460	460	460	460
	K	194	194	194	217	217	217	248	248	248	300	300	300	360	360	360	360
	N	72	72	72	72	72	72	90	90	90	110	110	110	120	120	120	120
	T	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SK 320	B	435	435	443	472	472	482	513	513	529							
	GL	166	166	166	184	184	184	210	210	210							
SK 333	B	462	462	470	499	499	509	540	540	556							
	GL	166	166	166	184	184	184	210	210	210							
SK 420/30	B	501	501	509	538	538	548	579	579	595	670	670	696	812	812	833	883
	GL	166	166	166	184	184	184	210	210	210	253	253	253	297	297	297	297
SK 620/30	B				583	583	593	624	624	640	715	715	741	857	857	878	928
	GL				184	184	184	286	286	286	253	253	253	297	297	297	297
SK672/73	B							654	654	670	745	745	771	898	898	919	969
	GL							286	286	286	253	253	253	297	297	297	297
SK 772/73	B							681	681	697	772	772	798	930	930	951	1001
	GL							286	286	286	348	348	348	297	297	297	297
SK 872/73	B										846	846	872	993	993	1014	1064
	GL										348	348	348	297	297	297	297
SK 972/73	B													1039	1039	1060	1110
	GL													423	423	423	423

*

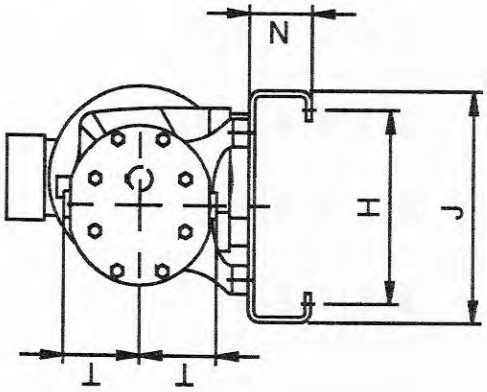
Se side :
See page :

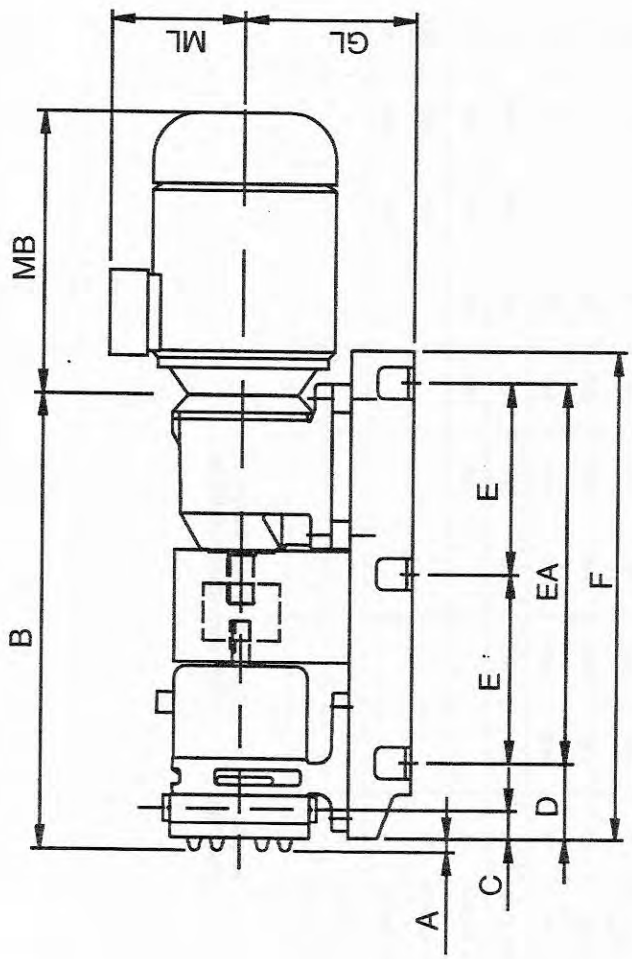
Pumpens mål med fittings
Pump dimensions with fittings

	Motor størrelse / Motor size										
	63 S/L	71 S/L	80 S/L	90 S/L	100 L	112 M	132 S/M	160 M/L	160 LA/LB	180 M/L	200 L	225 S
MB	188	213	231	273	306	324	411	486	521	602	688	688
ML	100	109	124	129	140	150	174	234	234	259	306	306

7. Målskitse / Dimensions sketch

Målskitse med lodret ind/udløb, bundpl. type 2 & koblingskappe /
Dim. sketch for DW with vertical in/outlet, baseplate type 2 & guard





		DW1			DW2			DW3			DW4			DW5			
	Symbol	003/7.5	004/15	007/7	006/10	007/20	013/10	014/10	017/20	030/10	033/10	039/20	073/10	080/12.5	093/25	142/15	256/7
	A	10	10	18	15	15	25	19	19	35	8	8	34	11	11	32	82
	C	35	35	31	34	34	30	42	42	33	63	63	50	75	75	59	34
	D	110	110	110	110	110	110	110	110	110	135	135	135	205	205	205	205
	E																
	EA	350	350	350	440	440	440	545	545	545	720	720	720	990	990	990	990
	F	505	505	505	595	595	595	700	700	700	900	900	900	1260	1260	1260	1260
	GL	194	194	194	217	217	217	248	248	248	300	300	300	360	360	360	360
	H	198	198	198	223	223	223	278	278	278	362	362	362	392	392	392	392
	J	248	248	248	273	273	273	332	332	332	422	422	422	460	460	460	460
	N	72	72	72	72	72	72	90	90	90	110	110	110	120	120	120	120
Gear	T	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SK 320	B	435	435	443	472	472	482	513	513	529							
SK 333	B	462	462	470	499	499	509	540	540	556							
SK 420/30	B	501	501	509	538	538	548	579	579	595	670	670	696	812	812	833	883
SK 620/30	B				583	583	593	624	624	640	715	715	741	857	857	878	928
SK 672/73	B							654	654	670	745	745	771	898	898	919	969
SK 772/73	B							681	681	697	772	772	798	930	930	951	1001
SK 872/73	B										846	846	872	993	993	1014	1064
SK 972/73	B													1039	1039	1060	1110

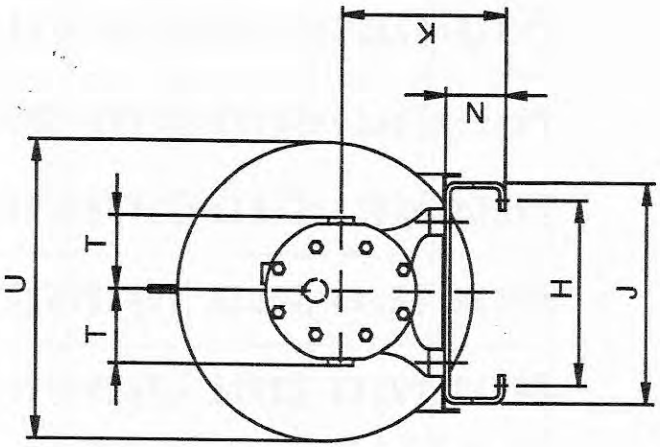
*

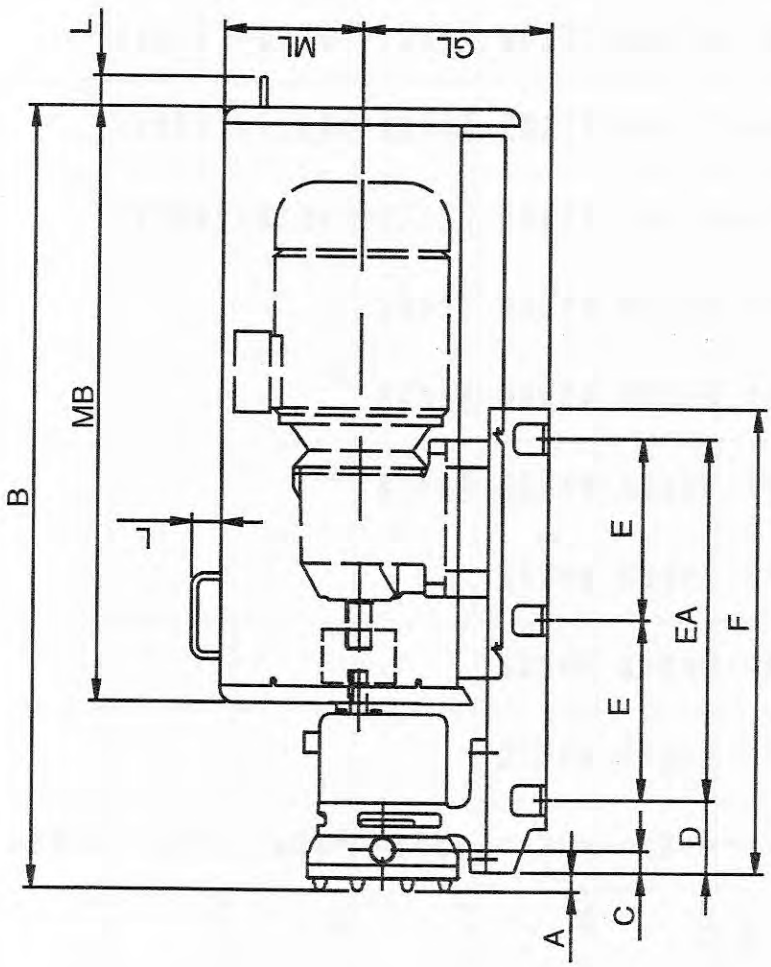
Se side : Pumpens mål med fittings
See page : Pump dimensions with fittings

	Motor størrelse / Motor size											
	63 S/L	71 S/L	80 S/L	90 S/L	100 L	112 M	132 S/M	160 M/L	160 LA/LB	180 M/L	200 L	225 S
MB	188	213	231	273	306	324	411	486	521	602	688	688
ML	100	109	124	129	140	150	174	234	234	259	306	306

7. Målskitse / Dimensions sketch

Målskitse med vandret ind/udløb, bundpl. type 2 & motorkappe /
Dim. sketch for DW with horizontal in/outlet, baseplate type 2 & shroud





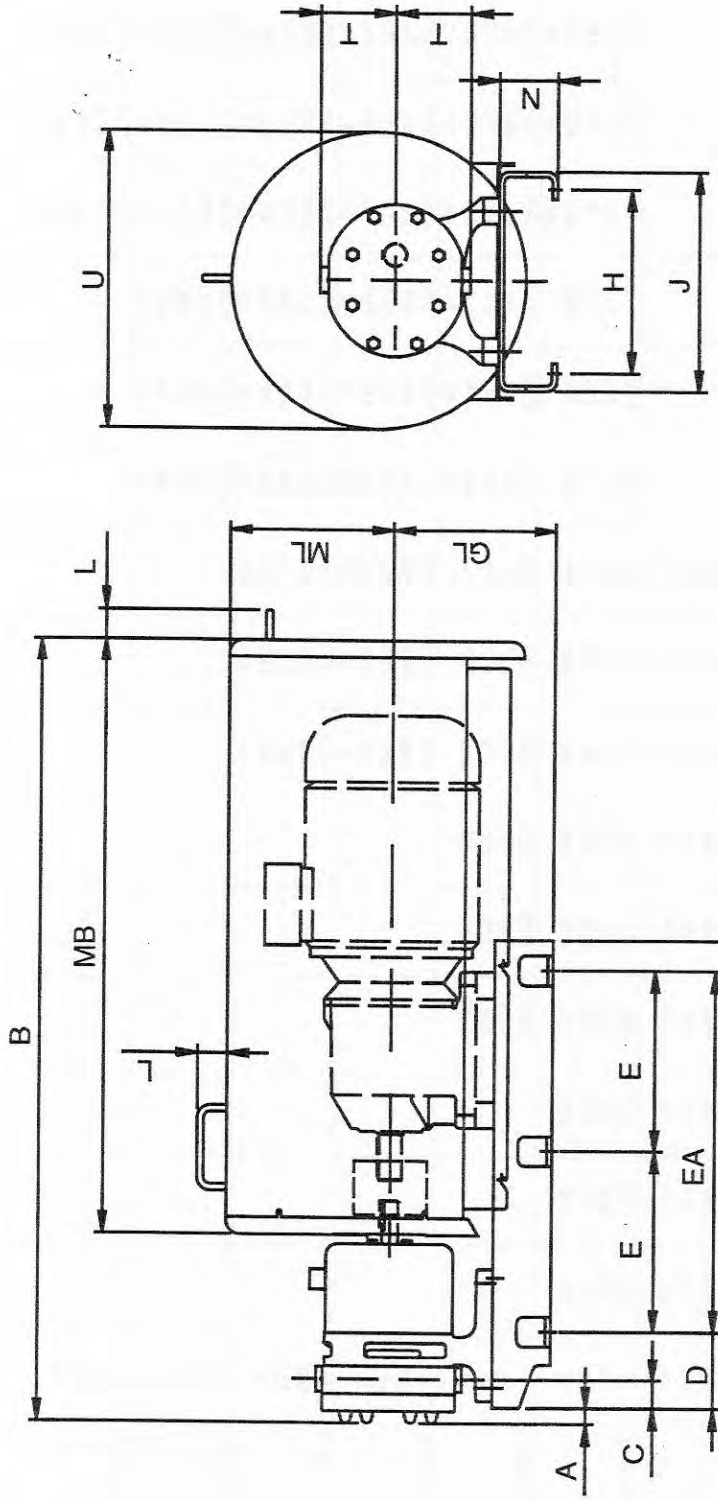
7. Målskitse / Dimensions sketch

Gear	Symbol	DW1				DW2		DW3			DW4			DW5			
		003/7.5	004/15	007/7	006/10	007/20	013/10	014/10	017/20	030/10	033/10	039/20	073/10	080/12.5	093/25	142/15	256/7
	A	10	10	18	15	15	25	19	19	35	8	8	34	11	11	32	82
	C	35	35	31	34	34	30	42	42	33	63	63	50	75	75	59	34
	D	110	110	110	110	110	110	110	110	110	135	135	135	205	205	205	205
	E										360	360	360	495	495	495	495
	EA	350	350	350	440	440	440	545	545	545	720	720	720	990	990	990	990
	F	505	505	505	595	595	595	700	700	700	900	900	900	1260	1260	1260	1260
	H	198	198	198	223	223	223	278	278	278	362	362	362	392	392	392	392
	J	248	248	248	273	273	273	332	332	332	422	422	422	460	460	460	460
	K	194	194	194	217	217	217	248	248	248	300	300	300	360	360	360	360
	N	72	72	72	72	72	72	90	90	90	110	110	110	120	120	120	120
	T	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SK 320/33	B	830	830	840	850	850	860	890	890	910							
	GL	166	166	166	184	184	184	210	210	210							
	MB	608	608	608	600	600	600	617	617	617							
	ML	152	152	152	187	187	187	223	223	223							
	U	250	250	250	305	305	305	360	360	360							
	L																
SK 420/30	B	830	830	840	850	850	860	890	890	910	1160	1160	1185	1165	1165	1185	1235
	GL	166	166	166	184	184	184	210	210	210	253	253	253	297	297	297	297
	MB	608	608	608	600	600	600	617	617	617	813	813	813	707	707	707	707
	ML	152	152	152	187	187	187	223	223	223	200	200	200	273	273	273	273
	U	250	250	250	305	305	305	360	360	360	360	360	360	450	450	450	450
	L													45	45	45	45
SK 620/30	B				1000	1000	1010	1175	1175	1190	1160	1160	1185	1355	1355	1380	1430
	GL				184	184	184	286	286	286	252	252	252	297	297	297	297
	MB				750	750	750	898	898	898	813	813	813	898	898	898	898
	ML				203	203	203	212	212	212	200	200	200	273	273	273	273
	U				360	360	360	450	450	450	360	360	360	450	450	450	450
	L							45	45	45				45	45	45	45
SK 672/73	B							1175	1175	1190	1160	1160	1185	1355	1355	1380	1430
	GL							286	286	286	252	252	252	297	297	297	297
	MB							898	898	898	813	813	813	898	898	898	898
	ML							212	212	212	200	200	200	273	273	273	273
	U							450	450	450	360	360	360	450	450	450	450
	L							45	45	45				45	45	45	45
SK 772/73	B							1175	1175	1195	1375	1375	1400	1525	1525	1545	1595
	GL							286	286	286	348	348	348	297	297	297	297
	MB							902	902	902	1027	1027	1027	1065	1065	1065	1065
	ML							254	254	254	238	238	238	380	380	380	380
	U							480	480	480	480	480	480	525	525	525	525
	L							45	45	45	45	45	45	45	45	45	45
SK 872/73	B										1375	1375	1400	1770	1770	1790	1840
	GL										348	348	348	300	300	300	300
	MB										1027	1027	1027	1065	1065	1065	1065
	ML										247	247	247	377	377	377	377
	U										480	480	480	525	525	525	525
	L										45	45	45	45	45	45	45
SK 972/73	B													1770	1770	1790	1840
	GL													423	423	423	423
	MB													1312	1312	1312	1312
	ML													362	362	362	362
	U													700	700	700	700
	L													45	45	45	45

* Se side : Pumpens mål med fittings
See page : Pump dimensions with fittings

7. Målskitse / Dimensions sketch

Målskitse med lodret ind/udløb, bundpl. type 2 & motorkappe /
Dim. sketch for DW with vertical in/outlet, baseplate type 2 & shroud



7. Målskitse / Dimensions sketch

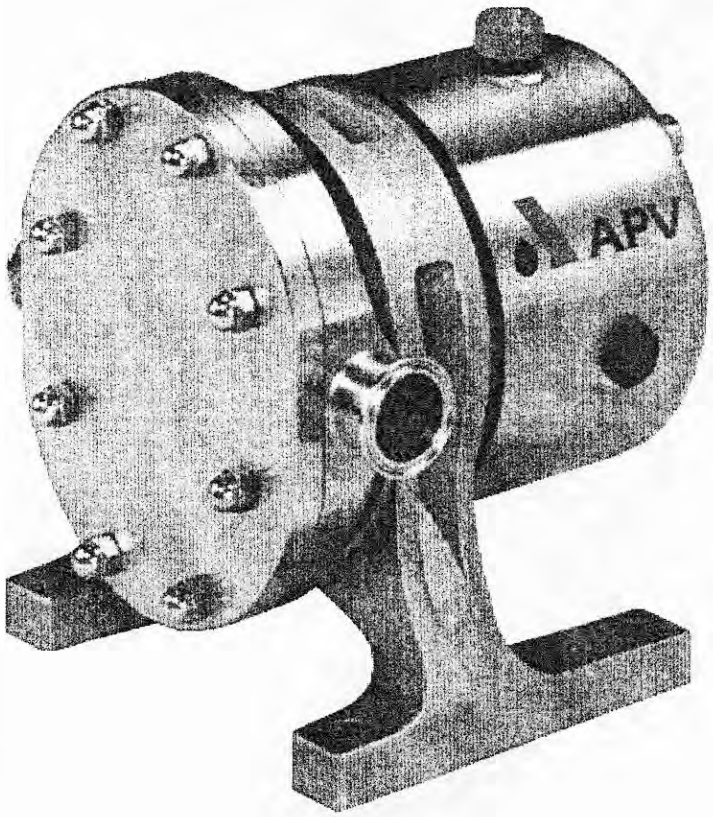
Gear	Symbol	DW1			DW2		DW3		DW4			DW5			
		003/7.5	004/15	007/7	006/10	007/20	013/10	014/10	017/20	030/10	033/10	039/20	073/10	080/12.5	093/25	142/15	256/7
	A	10	10	18	15	15	25	19	19	35	8	8	34	11	11	32	83
	C	35	35	31	34	34	30	42	42	33	63	63	50	75	75	59	34
	D	110	110	110	110	110	110	110	110	110	135	135	135	205	205	205	205
	E																
	EA	350	350	350	440	440	440	545	545	545	720	720	720	990	990	990	990
	F	505	505	505	595	595	595	700	700	700	900	900	900	1260	1260	1260	1260
	GL	194	194	194	217	217	217	248	248	248	300	300	300	360	360	360	360
	H	198	198	198	223	223	223	278	278	278	362	362	362	392	392	392	392
	J	248	248	248	273	273	273	332	332	332	422	422	422	460	460	460	460
	N	72	72	72	72	72	72	90	90	90	110	110	110	120	120	120	120
	T	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SK 320/33	B	830	830	840	850	850	860	890	890	910							
	MB	608	608	608	600	600	600	617	617	617							
	ML	177	177	177	154	154	154	185	185	185							
	U	305	305	305	305	305	305	360	360	360							
	L																
SK 420/30	B	830	830	840	850	850	860	890	890	910	1160	1160	1185	1165	1165	1185	1235
	MB	608	608	608	600	600	600	617	617	617	813	813	813	707	707	707	707
	ML	177	177	177	154	154	154	185	185	185	153	153	153	210	210	210	210
	U	305	305	305	305	305	305	360	360	360	360	360	360	450	450	450	450
	L													45	45	45	45
SK 620/30	B				1000	1000	1010	1040	1040	1060	1245	1245	1270	1355	1355	1380	1430
	MB				750	750	750	767	767	767	898	898	898	898	898	898	898
	ML				198	198	198	185	185	185	243	243	243	210	210	210	210
	U				360	360	360	360	360	360	450	450	450	450	450	450	450
	L										45	45	45	45	45	45	45
SK 672/73	B							1175	1175	1190	1245	1245	1270	1355	1355	1380	1430
	MB							898	898	898	898	898	898	898	898	898	898
	ML							250	250	250	243	243	243	210	210	210	210
	U							450	450	450	450	450	450	450	450	450	450
	L							45	45	45	45	45	45	45	45	45	45
SK 772/73	B							1175	1175	1190	1375	1375	1400	1525	1525	1545	1595
	MB							898	898	898	1027	1027	1027	1065	1065	1065	1065
	ML							275	275	275	285	285	285	317	317	317	317
	U							450	450	450	480	480	480	525	525	525	525
	L							45	45	45	45	45	45	45	45	45	45
SK 872/73	B										1375	1375	1400	1525	1525	1545	1595
	MB										1027	1027	1027	1065	1065	1065	1065
	ML										285	285	285	317	317	317	317
	U										480	480	480	525	525	525	525
	L										45	45	45	45	45	45	45
SK 972/73	B													1770	1770	1790	1840
	MB													1312	1312	1312	1312
	ML													425	425	425	425
	U													700	700	700	700
	L													45	45	45	45

* Se side : Pumpens mål med fittings
See page : Pump dimensions with fittings

APV

Improving Process Profitability...Continuously sm

Spare parts list



DW pump

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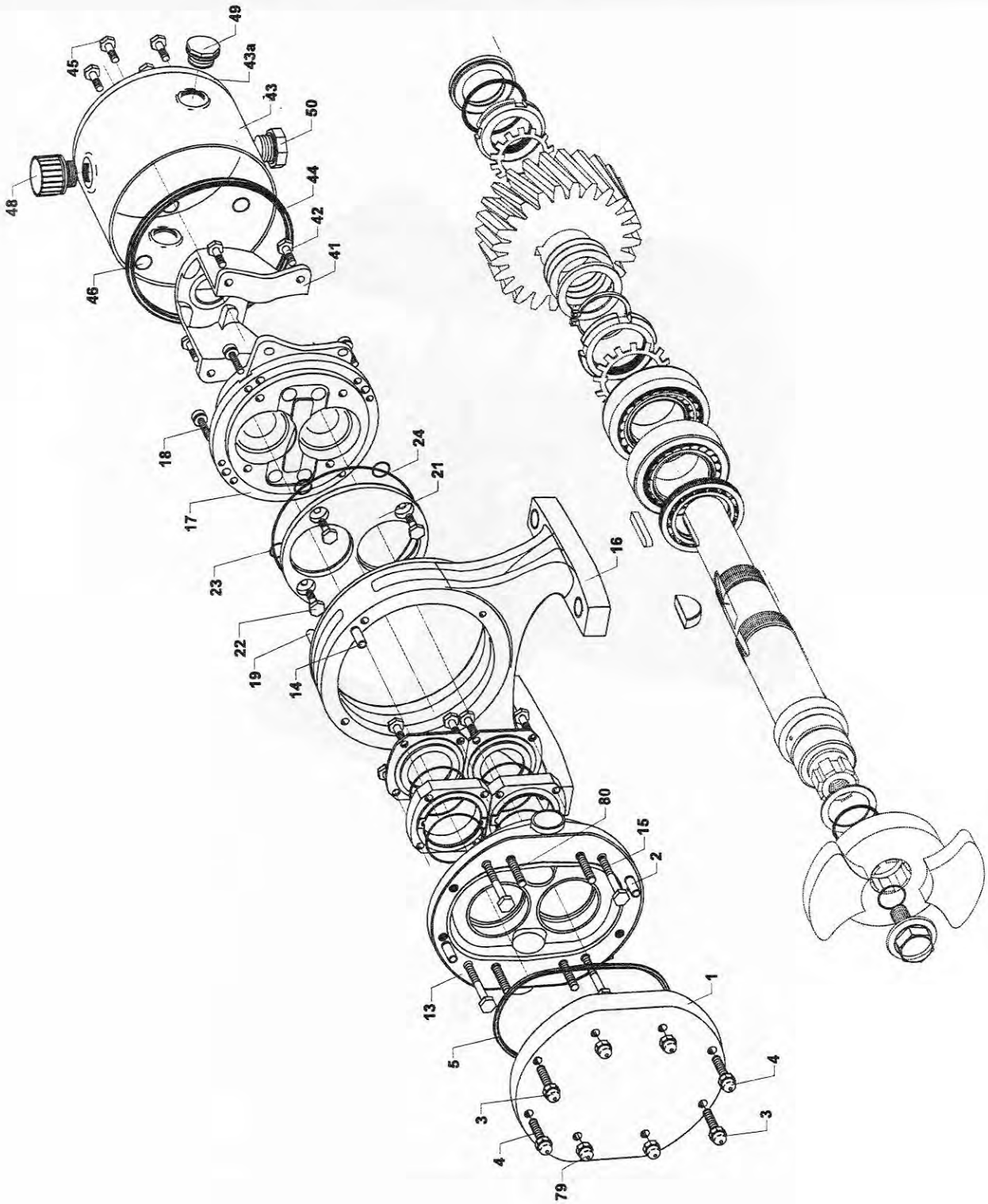
Pumpe komplet / Pump complete

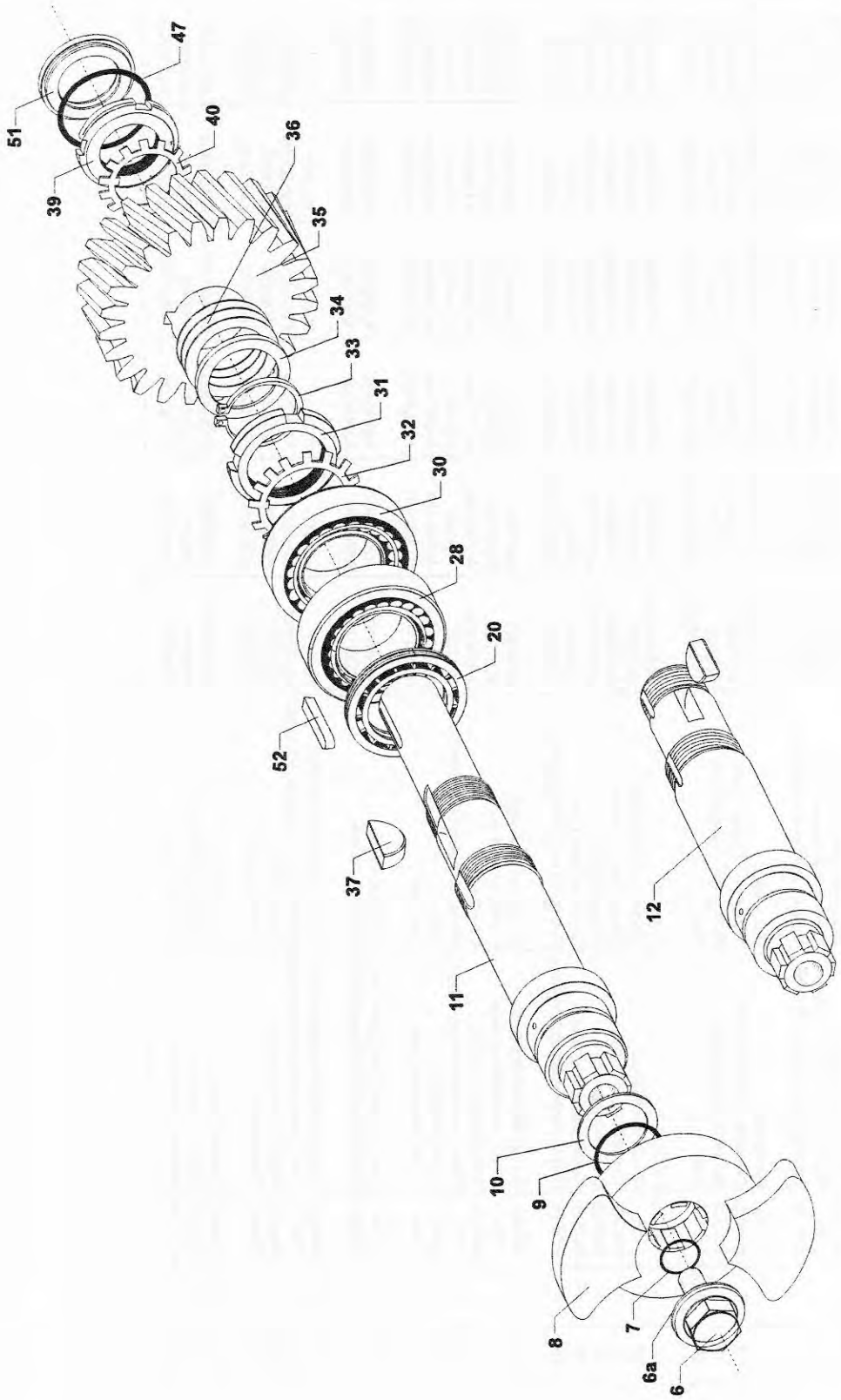


Pumpe komplet / Pump complete

Pos	Stk/Qty	Material	Benævnelse	Description	Piston	Short lobe	Long lobe	Piston	Short lobe	Long lobe
					DW1 /003/7.5	DW1 /004/15	DW1/007/7	DW2/006/10	DW2/007/20	DW2/013/10
					Del nr. / Part No.					
1	1	316L	Frontplade	Front cover	A1100101	A1100100	A1100100	A1100201	A1100200	A1100200
2	2	316S.S	Styrestift	Dowel	A1160320			A1160320		
3	2	304S.S	Stor bolt, front plade	Bolt, front cover	A1000100	A1000100	A1000100	A1000200	A1000200	A1000200
4	2	304S.S	Lille bolt, front plade	Bolt, front cover stepped	A1001200	A1001200	A1001200	A1001200	A1001200	A1001200
5	1	Viton	Pakning, front plade - Viton	Gasket, front cover Viton	A2600102	A2600102	A2600102	A2600202	A2600202	A2600202
	1	EPDM	Pakning, front plade - EPDM	Gasket, front cover EPDM	A2600104	A2600104	A2600104	A2600204	A2600204	A2600204
13	1	316L	Pumpehus	Rotor case	A17001003	A17001003	A17001006	A17002006	A17002006	A17002013
14	1	316S.S	Styrestift, pumpehus/fod	Dowel, rotor case to foot	A1160320	A1160320	A1160320	A1160320	A1160320	A1160320
15	4	304S.S	Skrue, pumpehus/fod	Screw, rotor case to foot	773449	773449	773450	773451	773451	773452
16	1	316S.S	Fod	Foot	A1140100	A1140100	A1140100	A1140200	A1140200	A1140200
17	1	Cast iron	Lejehus	Chassis	A1300100	A1300100	A1300100	A1300200	A1300200	A1300200
18	4	M.S.	Skrue, fod/lejehus	Screw, foot to chassis	2053220	2053220	2053220	2053220	2053220	2053220
19	1	316S.S	Styrestift, fod/lejehus	Dowel, foot to chassis	A1160320	A1160320	A1160320	A1160320	A1160320	A1160320
21	1	304S.S.	Olietætningsplade	Oil seat plate	A1310100	A1310100	A1310100	A1310200	A1310200	A1310200
22	4	304S.S.	Skrue, olietætningsplade	Screw, oil seal plate	770138	770138	770138	770138	770138	770138
23	4	HNBR	O-ring, olietætningsplade skrue	O-ring, oil seat plate screw	A2562014	A2562014	A2562014	A2562014	A2562014	A2562014
24	1	Nitrile	O-ring, olietætningsplade	O-ring, oil seal plate	2527001	2527001	2527001	25026001	25026001	25026001
	1	Viton	O-ring, olietætningsplade	O-ring, oil seal plate	2527002	2527002	2527002	25026002	25026002	25026002
41	1	Cast iron	Tandhjulskappebeslag	Can support	A1350100	A1350100	A1350100	A1350200	A1350200	A1350200
42	4	M.S.	Skrue, tandhjulskappebeslag	Screw, can support to chassis	773446	773446	773446	773446	773446	773446
43	1	304S.S	Tandhjulskappe	Can	A1360100	A1360100	A1360100	A1360200	A1360200	A1360200
43a	1	304	Tandhjulskappe plade	Can plate	A1363100	A1363100	A1363100	A1363200	A1363200	A1363200
44	1	Viton	Tætning,tandhjulskappe-Viton	Can seal - Viton	A2650102	A2650102	A2650102	A2650202	A2650202	A2650202
	1	Nitrile	Tætning,tandhjulskappe-Nitrile	Can seal - Nitrile	A2650101	A2650101	A2650101	A2650201	A2650201	A2650201
45	1	304S.S.	Skrue, tandhjulskappebeslag	Screw, can to can support	701517	701517	701517	701517	701517	701517
46	4	HNBR	O-ring,skrue tandhjulskappebeslag	O-ring, can to can support -screw	A2562014	A2562014	A2562014	A2562014	A2562014	A2562014
48	1	Plastic	Oliepåfyldningsstuds	Oil filler plug	2202000	2202000	2202000	2202000	2202000	2202000
49	1	Plastic	Olieskueglas	Oil level window	2220000	2220000	2220000	2220000	2220000	2220000
50	2	Plastic	Oliedrænprop	Oil drain plug	2210A000	2210A000	2210A000	2210A000	2210A000	2210A000
79	4	AISI 304	Møtrik, frontplade	Nut, front cover dome	700243	700243	700243	700243	700243	700243
80	4	AISI 304	Støttebolt, frontplade	Stud, front cover	A1002100	A1002100	A1002100	A1002200	A1002200	A1002200

Pumpe komplet / Pump complete

DW 1 - 2

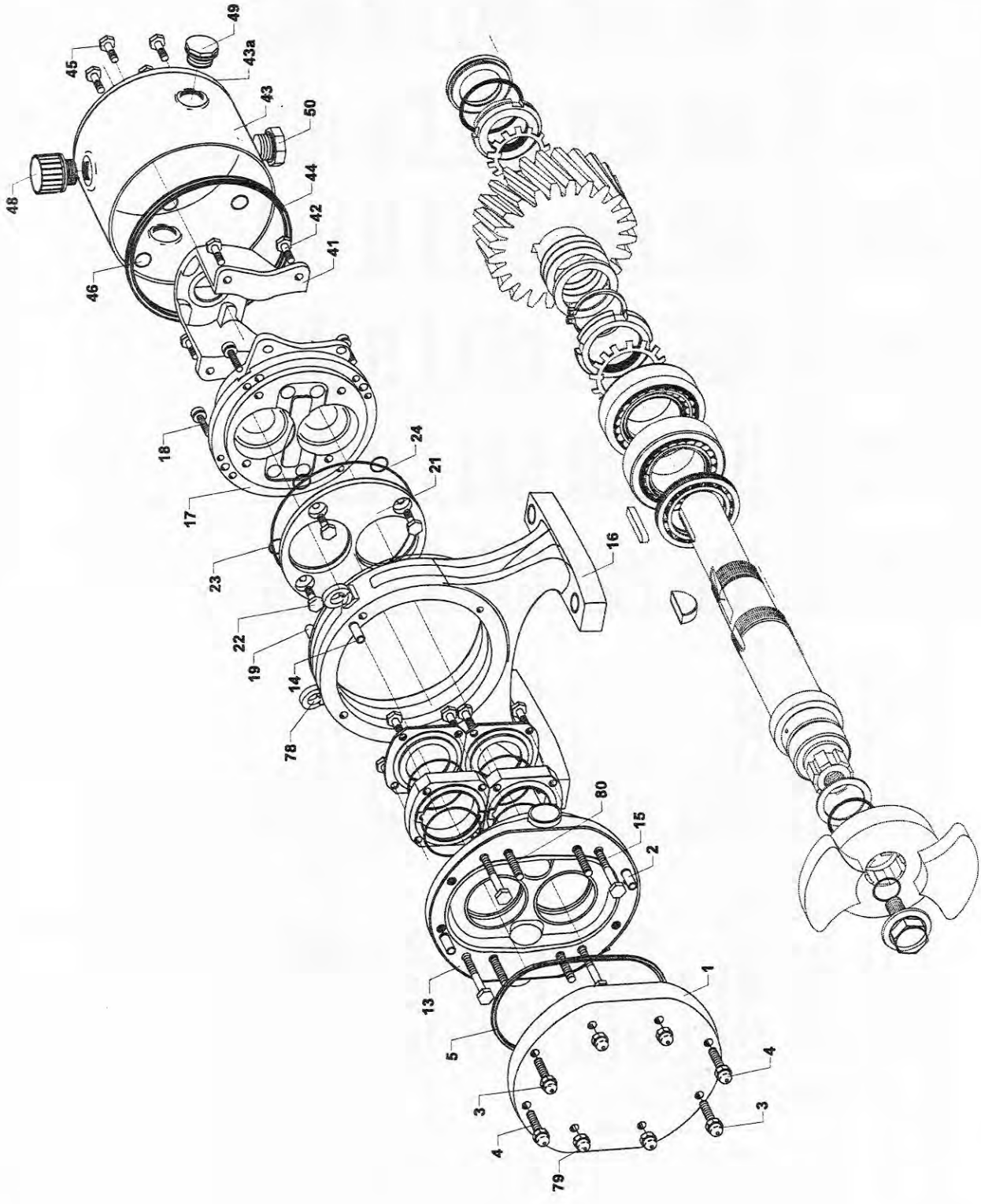


Pumpe komplet / Pump complete

Pos	Stk/Qty	Materiel	Benævnelse	Description	Piston	Short lobe	Long lobe	Piston	Short lobe	Long lobe
					DW1 /003/7.5	DW1 /004/15	DW1/007/7	DW2 /006/10	DW2 /007/20	DW2 /013/10
					Del nr. / Part No.					
6	2	329S.S	Rotor skrue incl friktionsring	Rotor Screw with washer	A10501003	A10501004	A10501006	A10502006	A10502007	A10502013
6a	2		Friktionsring	Washer ring	A2658100	A2658100	A2658100	A2658200	A2658200	A2658200
7	2	EPDM	O-ring, rotorskrue - EPDM	O Ring, rotor screw - EPDM	2511004	2511004	2511004	25019004	25019004	25019004
	2	Viton	O-ring, rotorskrue - Viton	O Ring, rotor screw - Viton	2511002	2511002	2511002	25019002	25019002	25019002
8	2	316L	Rotor-høj virkningsgrad - 110°	Rotor-high efficiency-110°	A141003P2SH	A14100421SH	A14100721SH	A142006P2SH	A14200721SH	A14201321SH
	2	316L	Rotor-Multi-Duty 110°	Rotor-Multi-Duty 110°	A141003P3SH	A14100423SH	A14100723SH	A142006P3SH	A14200723SH	A14201323SH
	2	316L	Rotor-høj temperatur - 180°	Rotor-high temperature -180°		A14100421SY	A14100721SY		A14200721SY	A14201321SY
9	2	EPDM	O-ring, rotor/aksel - EPDM	O Ring, rotor to shaft -EPDM	25028004	25028004	25028004	2506004	2506004	2506004
	2	Viton	O-ring, rotor/aksel - Viton	O Ring, rotor to shaft - Viton	25028002	25028002	25028002	2506002	2506002	2506002
10	1	316S.S	Afstandsskiver, rotor	Shims, rotor	2657100	2657100	2657100	2657200	2657200	2657200
11	1	AISI329L	Drivaksel	Shaft main	A1500100	A1500100	A1501100	A1500200	A1500200	A1501200
12	1	AISI329L	Dreven aksel	Shaft aux	A1600100	A1600100	A1601100	A1600200	A1600200	A1601200
20	2	Nitrile	Olietætning, forrest	Oil seat front	2415101	2415101	2415101	2415201	2415201	2415201
	2	Viton	Olietætning, forrest	Oil seat front	2415102	2415102	2415102	2415202	2415202	2415202
28	2	-	Forreste leje	Bearing front	2717100	2717100	2717100	2717200	2717200	2717200
30	2	-	Bagerste leje	Bearing rear	2718100	2718100	2718100	2718200	2718200	2718200
31	2	-	Møtrik, bagerste leje	Bearing rear nut	2719025	2719025	2719025	2719030	2719030	2719030
32	2	-	Spændskive, bagerste leje	Bearing rear tab washer	2720025	2720025	2720025	2720030	2720030	2720030
33	2	-	Låsering	Circlip	2177100	2177100	2177100	2177200	2177200	2177200
34	2	-	Afstandscylinder, tandhjul	Gear spacer	A1850100	A1850100	A1850100	A1850200	A1850200	A1850200
35	1	-	Tandhjul(1 par)	Gear (1 pair)	A2750100	A2750100	A2750100	A2750200	A2750200	A2750200
36	1	M.S.	Afstandsskiver, tandhjul	Gear shims	4000000	4000000	4000000	4000100	4000100	4000100
37	2	EN 6A	Feder, tandhjul	Gear key	2180A100	2180A100	2180A100	2180A200	2180A200	2180A200
38	4	-	Skrue, tandhjulsfeder	Screw, gear key						
39	2	-	Møtrik, gear	Gear nut	2719020	2719020	2719020	2719025	2719025	2719025
40	2	-	Spændskive, gear	Gear tab washer	2720020	2720020	2720020	2720025	2720025	2720025
47	1	Nitrile	O-ring, tandhjulskappebeslag	O-ring, can to can support	25027001	25027001	25027001	2539001	2539001	2539001
	1	Viton	O-ring, tandhjulskappebeslag	O-ring, can to can support	25027002	25027002	25027002	2539002	2539002	2539002
51	1	Nitrile	Olietætning, bagerst	Oil seal rear	2416101	2416101	2416101	2416201	2416201	2416201
	1	Viton	Olietætning, bagerst	Oil seal rear	2416102	2416102	2416102	2416202	2416202	2416202
52	1	EN 6A	Drivefeder	Drive key	2181A100	2181A100	2181A100	2181A100	2181A100	2181A100

Pumpe komplet / Pump complete

DW 3 - 4

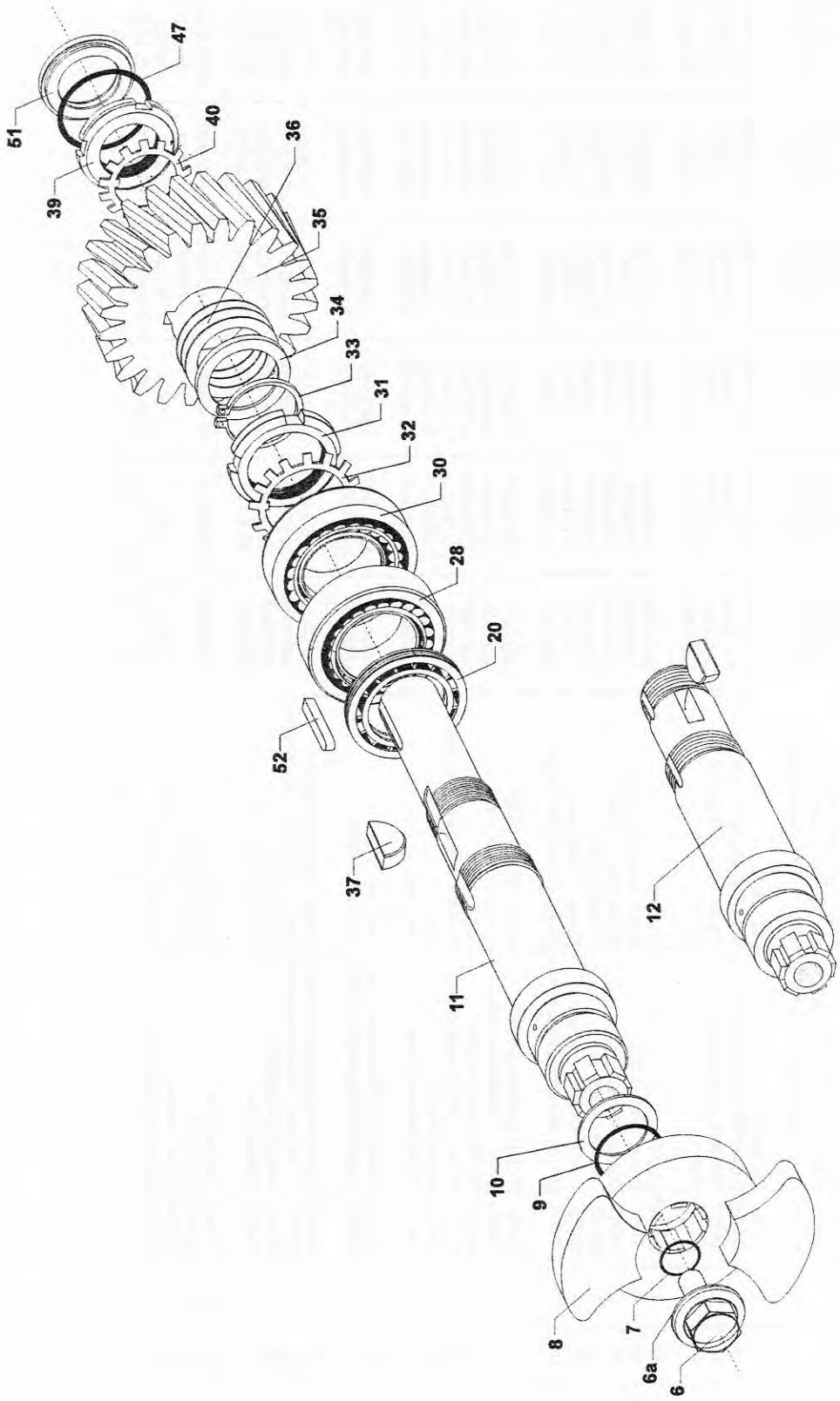


Pumpe komplet / Pump complete

Pos	Stk/Qty	Materiał	Benævnelse	Description	Piston	Short lobe	Long lobe	Piston	Short lobe	Long lobe
					DW3 /014/10	DW3 /017/20	DW3 /030/10	DW4 /033/10	DW4 /039/20	DW4 /073/10
					Del nr. / Part No.					
1	1	316L	Frontplade	Front cover	A1100301	A1100300	A1100300	A1100401	A1100400	A1100400
2	2	316S.S	Styrestift	Dowel	A1160320			A1160320		
3	2	304S.S	Stor bolt, front plade	Bolt, front cover	A1000300	A1000300	A1000300	A1000400	A1000400	A1000400
4	2	304S.S	Lille bolt, front plade	Bolt, front cover stepped	A1001300	A1001300	A1001300	A1001400	A1001400	A1001400
5	1	Viton	Pakning, front plade - Viton	Gasket, front cover Viton	A2600302	A2600302	A2600302	A2600402	A2600402	A2600402
	1	EPDM	Pakning, front plade - EPDM	Gasket, front cover EPDM	A2600304	A2600304	A2600304	A2600404	A2600404	A2600404
13	1	316L	Pumpehus	Rotor case	A17003014	A17003014	A17003030	A17004033	A17004033	A17004073
14	1	316S.S	Styrestift, pumpehus/fod	Dowel, rotor case to foot	A1160320	A1160320	A1160320	A1160420	A1160420	A1160420
15	4	304S.S	Skrue, pumpehus/fod	Screw, rotor case to foot	2008355	2008355	773453	701928	701928	20084100
16	1	316S.S	Fod	Foot	A1140300	A1140300	A1140300	A1140400	A1140400	A1140400
17	1	Cast iron	Lejehus	Chassis	A1300300	A1300300	A1300300	A1300400	A1300400	A1300400
18	4	M.S.	Skrue, fod/lejehus	Screw, foot to chassis	2053320	2053320	2053320	2053420	2053420	2053420
19	1	316S.S	Styrestift, fod/lejehus	Dowel, foot to chassis	A1160320	A1160320	A1160320	A1160420	A1160420	A1160420
21	1	304S.S.	Olietætningsplade	Oil seat plate	A1310300	A1310300	A1310300	A1310400	A1310400	A1310400
22	4	304S.S.	Skrue, olietætningsplade	Screw, oil seal plate	770138	770138	770138	773454	773454	773454
23	4	HNBR	O-ring, olietætningsplade skrue	O-ring, oil seat plate screw	A2562014	A2562014	A2562014	A2563014	A2563014	A2563014
24	1	Nitrile	O-ring, olietætningsplade	O-ring, oil seal plate	25030001	25030001	25030001	25033001	25033001	25033001
	1	Viton	O-ring, olietætningsplade	O-ring, oil seal plate	25030002	25030002	25030002	25033002	25033002	25033002
41	1	Cast iron	Tandhjulskappebeslag	Can support	A1350300	A1350300	A1350300	A1350400	A1350400	A1350400
42	4	M.S.	Skrue, tandhjulskappebeslag	Screw, can support to chassis	773446	773446	773446	773447	773447	773447
43	1	304S.S	Tandhjulskappe	Can	A1360300	A1360300	A1360300	A1360400	A1360400	A1360400
43a	1	304	Tandhjulskappe plade	Can plate	A1363300	A1363300	A1363300	A1363400	A1363400	A1363400
44	1	Viton	Tætning,tandhjulskappe-Viton	Can seal - Viton	A2650302	A2650302	A2650302	A2650402	A2650402	A2650402
	1	Nitrile	Tætning,tandhjulskappe-Nitrile	Can seal - Nitrile	A2650301	A2650301	A2650301	A2650401	A2650401	A2650401
45	1	304S.S.	Skrue, tandhjulskappebeslag	Screw, can to can support	701517	701517	701517	773454	773454	773454
46	4	HNBR	O-ring,skrue tandhjulskappebeslag	O-ring, can to can support -screw	A2562014	A2562014	A2562014	A2563014	A2563014	A2563014
48	1	Plastic	Oliepåfyldningsstuds	Oil filler plug	2202000	2202000	2202000	2202000	2202000	2202000
49	1	Plastic	Olieskueglas	Oil level window	2220000	2202000	2202000	2220000	2220000	2220000
50	2	Plastic	Oliedrænprop	Oil drain plug	2210A000	2210A000	2210A000	2210A000	2210A000	2210A000
78	2	AISI304	Ringbolt	Lifting Eye bolt				773398	773398	773398
79	4	AISI 304	Møtrik, frontplade	Nut, front cover dome	700244	700244	700244	700244	700244	700244
80	4	AISI 304	Støttebolt, frontplade	Stud, front cover	A1002300	A1002300	A1002300	A1002400	A1002400	A1002400

Pumpe komplet / Pump complete

DW 3 - 4

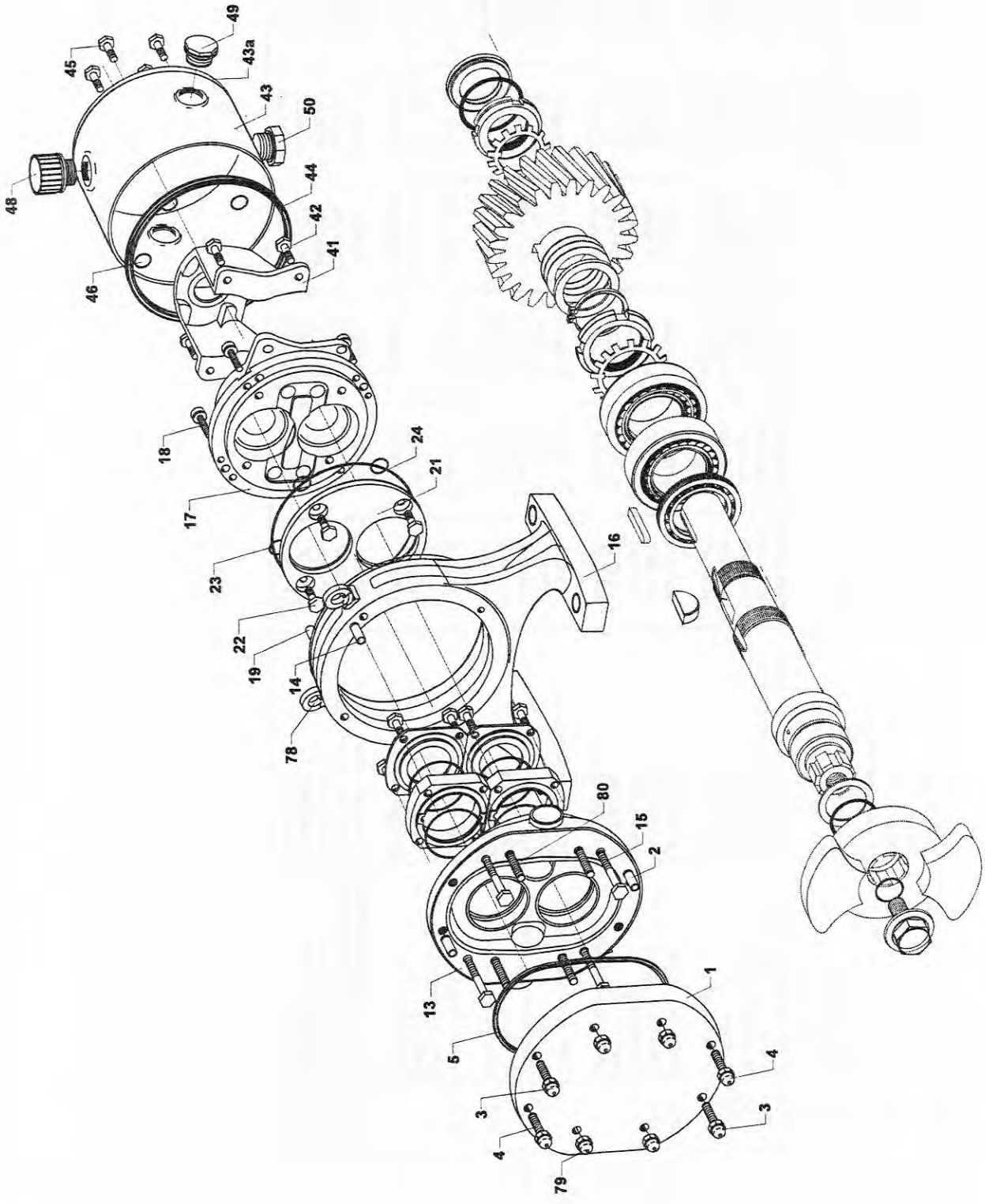


Pumpe komplet / Pump complete

Pos	Stk/Qty	Material	Benævnelse	Description	Piston	Short lobe	Long lobe	Piston	Short lobe	Long lobe
					DW3 /014/10	DW3 /017/20	DW3 /030/10	DW4 /033/10	DW4 /039/20	DW4 /073/10
					Del nr. / Part No.					
6	2	329S.S	Rotor skrue incl friktionsring	Rotor Screw with washer	A10503014	A10503016	A10503030	A10504033	A10504039	A10504039
6a	2		Friktionsring	Washer ring	A2658300	A2658300	A2658300	A2658400	A2658400	A2658400
7	2	EPDM	O-ring, rotorskrue - EPDM	O Ring, rotor screw - EPDM	25029004	25029004	25029004	25063004	25063004	25063004
	2	Viton	O-ring, rotorskrue - Viton	O Ring, rotor screw - Viton	25029002	25029002	25029002	25063002	25063002	25063002
8	2	316L	Høj virkningsgrad - 110°	High efficiency-110°	A143014P2SH	A143016215H	A143030215H	A144033P2SH	A144039215H	A144073215H
	2	316L	Multi-Duty 110°	Multi-Duty 110°	A142014P3SH	A143016235H	A143030235H	A144033P3SH	A144039235H	A144073235H
	2	316L	Høj temperatur - 180°	High temperature -180°		A143016215Y	A143030215Y		A144039215Y	A144073215Y
9	2	EPDM	O-ring, rotor/aksel - EPDM	O Ring, rotor to shaft -EPDM	25006004FQ	25006004FQ	25006004FQ	2512004	2512004	2512004
	2	Viton	O-ring, rotor/aksel - Viton	O Ring, rotor to shaft - Viton	25006002FQ	25006002FQ	25006002FQ	2512002	2512002	2512002
10	1	316S.S	Afstandsskiver, rotor	Shims, rotor	2657300	2657300	2657300	2657400	2657400	2657400
11	1	AISI329L	Drivaksel	Shaft main	A1500300	A1500300	A1501300	A1500400	A1500400	A1501400
12	1	AISI329L	Dreven aksel	Shaft aux	A1600300	A1600300	A1601300	A1600400	A1600400	A1601400
20	2	Nitrile	Olietætning, forrest	Oil seat front	2415301	2415301	2415301	2415401	2415401	2415401
	2	Viton	Olietætning, forrest	Oil seat front	2415302	2415302	2415302	2415402	2415402	2415402
28	2	-	Forreste leje	Bearing front	2717300	2717300	2717300	2717400	2717400	2717400
30	2	-	Bagerste leje	Bearing rear	2718300	2718300	2718300	2718400	2718400	2718400
31	2	-	Møtrik, bagerste leje	Bearing rear nut	2719035	2719035	2719035	2719045	2719045	2719045
32	2	-	Spændskive, bagerste leje	Bearing rear tab washer	2720035	2720035	2720035	2720045	2720045	2720045
33	2	-	Låsering	Circlip	2177300	2177300	2177300	2177400	2177400	2177400
34	2	-	Afstandscylinder, tandhjul	Gear spacer	A1850300	A1850300	A1850300	A1850400	A1850400	A1850400
35	1	-	Tandhjul (1 Par)	Gear (1 pair)	A2750300	A2750300	A2750300	A2750400	A2750400	A2750400
36	1	M.S.	Afstandsskiver, tandhjul	Gear shims	4000A300	4000A300	4000A300	4000200	4000200	4000200
37	2	EN 6A	Feder, tandhjul	Gear key	2180A300	2180A300	2180A300	2180A400	2180A400	2180A400
38	4	-	Skrue, tandhjulsfeder	Screw, gear key						
39	2	-	Møtrik, gear	Gear nut	2719030	2719030	2719030	2719040	2719040	2719040
40	2	-	Spændskive, gear	Gear tab washer	2720030	2720030	2720030	2720040	2720040	2720040
47	1	Nitrile	O-ring, tandhjulskappebeslag	O-ring, can to can support	2539001	2539001	2539001	2532001	2532001	2532001
	1	Viton	O-ring, tandhjulskappebeslag	O-ring, can to can support	2539002	2539002	2539002	2532002	2532002	2532002
51	1	Nitrile	Olietætning, bagerst	Oil seal rear	2416301	2416301	2416301	2416401	2416401	2416401
	1	Viton	Olietætning, bagerst	Oil seal rear	2416302	2416302	2416302	2416402	2416402	2416402
52	1	EN 6A	Drivefeder	Drive key	2181A300	2181A300	2181A300	2181A400	2181A400	2181A400

Pumpe komplet / Pump complete

DW 5

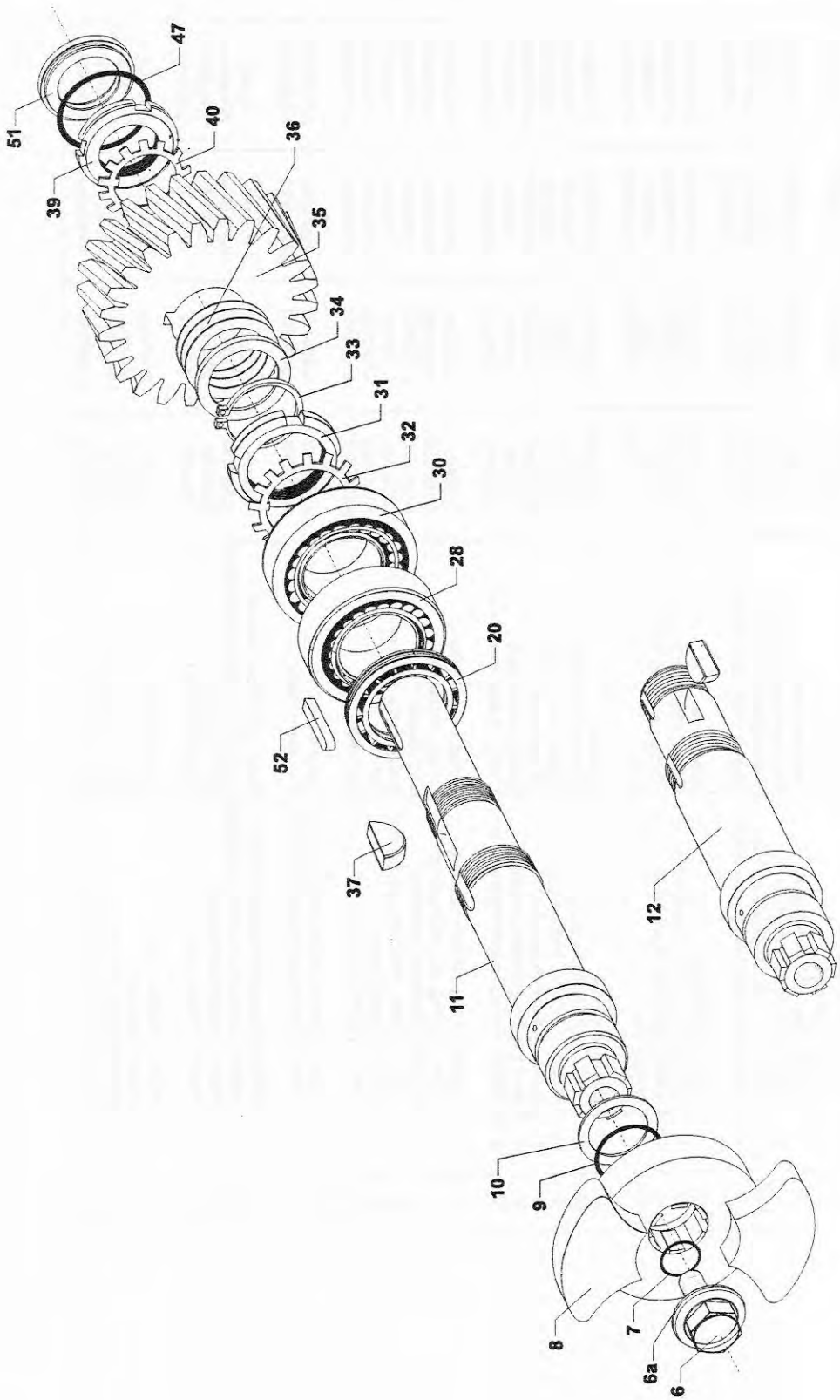


Pumpe komplet / Pump complete

Pos	Stk/Qty	Material	Benævnelse	Description	Piston	Short lobe	Medium lobe	Long lobe
					DW5 /080/12.5	DW5 /093/25	DW5 /142/15	DW5 /256/7
					Del nr. / Part No.			
1	1	316L	Frontplade	Front cover	A1100501	A1100500	A1100500	A1100500
2	2	316S.S	Styrestift	Dowel	A1160520			
3	2	304S.S	Stor bolt, front plade	Bolt, front cover	A1000500	A1000500	A1000500	A1000500
4	2	304S.S	Lille bolt, front plade	Bolt, front cover stepped	A1001500	A1001500	A1001500	A1001500
5	1	Viton	Pakning, front plade - Viton	Gasket, front cover Viton	A2600502	A2600502	A2600502	A2600502
	1	EPDM	Pakning, front plade - EPDM	Gasket, front cover EPDM	A2600504	A2600504	A2600504	A2600504
13	1	316L	Pumpehus	Rotor case	A17005080	A17005080	A17005142	A17005256
14	1	316S.S	Styrestift, pumpehus/fod	Dowel, rotor case to foot	A1160520	A1160520	A1160520	A1160520
15	4	304S.S	Skrue, pumpehus/fod	Screw, rotor case to foot	773500	773500	702060	773482
16	1	316S.S	Fod	Foot	A1140500	A1140500	A1140500	A1140500
17	1	Cast iron	Lejehus	Chassis	A1300500	A1300500	A1300500	A1300500
18	4	M.S.	Skrue, fod/lejehus	Screw, foot to chassis	2053525	2053525	2053525	2053525
19	1	316S.S	Styrestift, fod/lejehus	Dowel, foot to chassis	A1160520	A1160520	A1160520	A1160520
21	1	304S.S.	Olietætningsplade	Oil seat plate	A1310500	A1310500	A1310500	A1310500
22	4	304S.S.	Skrue, olietætningsplade	Screw, oil seal plate	701380	701380	701380	701380
23	4	HNBR	O-ring, olietætningsplade skrue	O-ring, oil seat plate screw	A2564014	A2564014	A2564014	A2564014
24	1	Nitrile	O-ring, olietætningsplade	O-ring, oil seal plate	25035001	25035001	25035001	25035001
	1	Viton	O-ring, olietætningsplade	O-ring, oil seal plate	25035002	25035002	25035002	25035002
41	1	Cast iron	Tandhjulskappebeslag	Can support	A1350500	A1350500	A1350500	A1350500
42	4	M.S.	Skrue, tandhjulskappebeslag	Screw, can support to chassis	773448	773448	773448	773448
43	1	304S.S	Tandhjulskappe	Can	A1360500	A1360500	A1360500	A1360500
43a	1	304	Tandhjulskappe plade	Can plate	A1363500	A1363500	A1363500	A1363500
44	1	Viton	Tætning,tandhjulskappe-Viton	Can seal - Viton	A2650502	A2650502	A2650502	A2650502
	1	Nitrile	Tætning,tandhjulskappe-Nitrile	Can seal - Nitrile	A2650501	A2650501	A2650501	A2650501
45	1	304S.S.	Skrue, tandhjulskappebeslag	Screw, can to can support	773455	773455	773455	773455
46	4	HNBR	O-ring,skrue tandhjulskappebeslag	O-ring, can to can support -screw	A2564014	A2564014	A2564014	A2564014
48	1	Plastic	Oliepåfyldningsstuds	Oil filler plug	2202000	2202000	2202000	2202000
49	1	Plastic	Olieskueglas	Oil level window	2220000	2220000	2220000	2220000
50	2	Plastic	Oliedrænprop	Oil drain plug	2210A000	2210A000	2210A000	2210A000
78	2	AISI304	Ringbolt	Lifting Eye bolt	773398	773398	773398	773398
79	4	AISI 304	Møtrik, frontplade	Nut, front cover dome	773456	773456	773456	773456
80	4	AISI 304	Støttebolt, frontplade	Stud, front cover	A1002500	A1002500	A1002500	A1002500

Pumpe komplet / Pump complete

DW 5

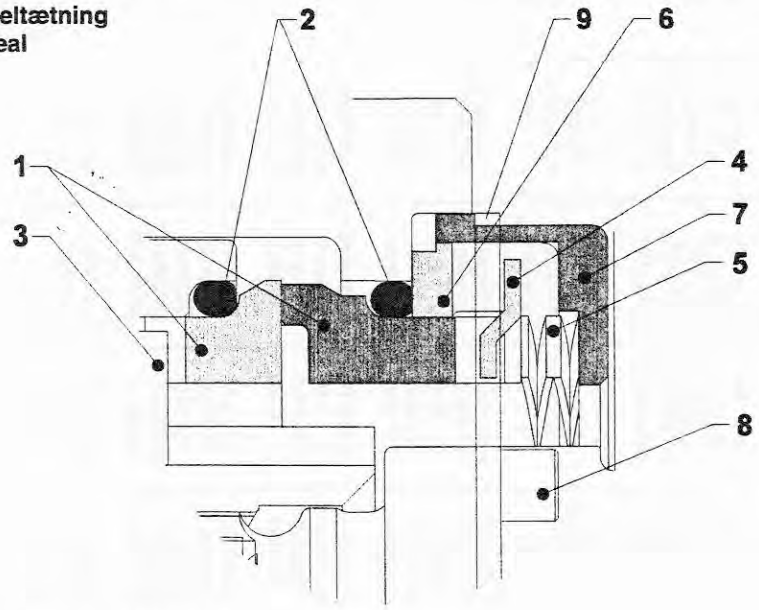


Pumpe komplet / Pump complete

Pos	Stk/Qty	Material	Benævnelse	Description	Piston	Short lobe	Medium lobe	Long lobe
					DW5 /080/12.5	DW5 /093/25	DW5 /142/15	DW5 /256/7
					Del nr. / Part No.			
6	2	329S.S	Rotor skrue incl friktionsring	Rotor Screw with washer	A10505080	A10505093	A10505142	A10505256
6a	2		Friktionsring	Washer ring	A2658500	A2658500	A2658500	A2658500
7	2	EPDM	O-ring, rotorskrue - EPDM	O Ring, rotor screw - EPDM	25034004	25034004	25034004	25034004
	2	Viton	O-ring, rotorskrue - Viton	O Ring, rotor screw - Viton	25034002	25034002	25034002	25034002
8	2	316L	Rotor-høj virkningsgrad - 110°	Rotor-high efficiency-110°	A145080P2SH	A14509321SH	A14514221SH	A14525621SH
	2	316L	Rotor-Multi-Duty 110°	Rotor-Multi-Duty 110°	A145080P3SH	A14509323SH	A14514223SH	A14525623SH
	2	316L	Rotor-høj temperatur - 180°	Rotor-high temperature -180°		A14509321SY	A14514221SY	A14525621SY
9	2	EPDM	O-ring, rotor/aksel - EPDM	O Ring, rotor to shaft -EPDM	2550004	2550004	2550004	2550004
	2	Viton	O-ring, rotor/aksel - Viton	O Ring, rotor to shaft - Viton	2550002	2550002	2550002	2550002
10	1	316S.S	Afstandsskiver, rotor	Shims, rotor	2657500	2657500	2657500	2657500
11	1	AISI329L	Drivaksel	Shaft main	A1500500	A1500500	A1501500	A1501500
12	1	AISI329L	Dreven aksel	Shaft aux	A1600500	A1600500	A1601500	A1601500
20	2	Nitrile	Olietætning, forrest	Oil seat front	2415501	2415501	2415501	2415501
	2	Viton	Olietætning, forrest	Oil seat front	2415502	2415502	2415502	2415502
25	2	M.S.	Afstandscylinder,forreste leje	Spacer,front bearing	A1860500	A1860500	A1860500	A1860500
28	4	-	Forreste leje	Bearing front	2717500	2717500	2717500	2717500
29	2	M.S.	Afstandscylinder,bagerste leje	Spacer,rear bearing	A1861500	A1861500	A1861500	A1861500
30	2	-	Bagerste leje	Bearing rear	2718500	2718500	2718500	2718500
31	2	-	Møtrik, bagerste leje	Bearing rear nut	2719050	2719050	2719050	2719050
32	2	-	Spændskive, bagerste leje	Bearing rear tab washer	2720050	2720050	2720050	2720050
33	2	-	Låsering	Circlip	2177500	2177500	2177500	2177500
34	2	-	Afstandscylinder, tandhjul	Gear spacer	A1850500	A1850500	A1850500	A1850500
35	1	-	Tandhjul (1 par)	Gear (1 pair)	A2750500	A2750500	A2750500	A2750500
36	1	M.S.	Afstandsskiver, tandhjul	Gear shims	4000A500	4000A500	4000A500	4000A500
37	2	EN 6A	Feder, tandhjul	Gear key	2180A500	2180A500	2180A500	2180A500
38	4	-	Skrue, tandhjulsfeder	Screw, gear key	2000012	2000012	2000012	2000012
39	2	-	Møtrik, gear	Gear nut	2719045	2719045	2719045	2719045
40	2	-	Spændskive, gear	Gear tab washer	2720045	2720045	2720045	2720045
47	1	Nitrile	O-ring, tandhjulskappebeslag	O-ring, can to can support	25036001	25036001	25036001	25036001
	1	Viton	O-ring, tandhjulskappebeslag	O-ring, can to can support	25036002	25036002	25036002	25036002
51	1	Nitrile	Olietætning, bagerst	Oil seal rear	2416500	2416500	2416500	2416500
	1	Viton	Olietætning, bagerst	Oil seal rear	2416502	2416502	2416502	2416502

7. Akseltætning / Shaft seal

Enkelt mekanisk akseltætning
Single mechanical seal



* Seal Face Kit : Statorring, rotorring & 2 O-ringe
Statorring, rotorring and 2 off O-rings

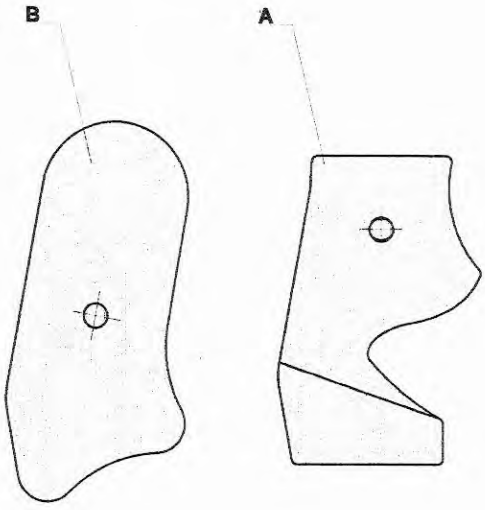
** Seal Service Kit : Rotor og stator drivring & fjeder
Rotor and stator drivering and spring

NOTE: Der indgår til en pumpe det dobbelte antal kit = de valgte dele x 2
For a pump twice the number of kits are required = the parts chosen x 2.

					Pumpe type / Pump type				
					DW1	DW2	DW3	DW4	DW5
Pos.	Stk./ Qty.	Material	Benævnelse	Description	Del nr. / Part No.				
1-2	1	SiC/C-EPDM	Seal face kit*	Seal face Kit*	A2355104	A2355204	A2355304	A2355404	A2355504
1-2	1	SiC/C-Viton	Seal face kit*	Seal face Kit*	A2355102	A2355202	A2355302	A2355402	A2355502
1-2	1	SiC/SiC-EPDM	Seal face kit*	Seal face Kit*	A2356104	A2356204	A2356304	A2356404	A2356504
1-2	1	SiC/SiC-Viton	Seal face kit*	Seal face Kit*	A2356102	A2356202	A2356302	A2356402	A2356502
3-4-5	1	SS	Seal service kit**	Seal service kit**	A2304100	A2304200	A2304300	A2304400	A2304500
6	1	AISI 304	Ring for tætning	Ring for seal	A2363/101	A2363/201	A2363/301	A2363/401	A2363/501
7	1	AISI 304	Tætningshus	Seal Housing	A2363/102	A2363/202	A2363/302	A2363/402	A2363/502
8	4	304S.S.	Skrue, akseltætningshus	Screw, seal housing	770496	770496	770496	701227	701227
9	2	AISI 304	Clamp for tætningshus	Clamp for seal Housing	A2363/100	A2363/200	A2363/300	A2363/400	A2363/500

Følgende er typisk reservedele / Following is typical spare parts					DW1	DW2	DW3	DW4	DW5
Pos.	Stk./ Qty.	Material	Benævnelse	Description	Del nr. / Part No.				
2	1	EPDM	O-rings kit	O-ring kit	A2310104	A2310204	A2310304	A2310404	A2310504
2	1	Viton	O-rings kit	O-ring kit	A2310102	A2310202	A2310302	A2310402	A2310502

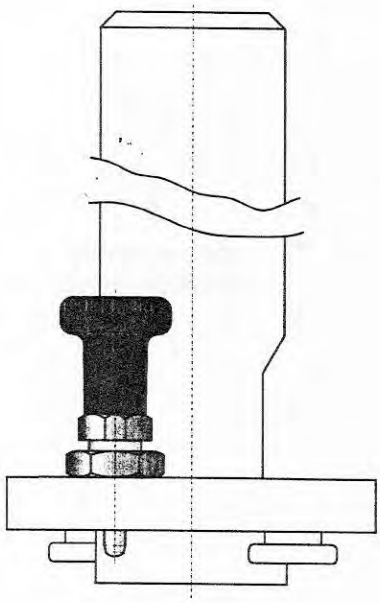
7. Låseværktøj / Locking tool

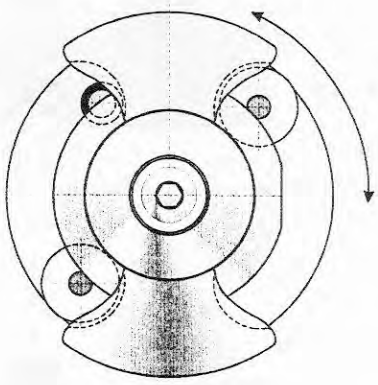


Qty.	Material	Benævnelse	Description	Pumpe type / Pump type					
				DW1	DW2	DW3	DW4	DW5 Kort/short medium	DW5 lang/long
1	Plastic	Drejestempel låse værktøj	Piston locking tool	AFT0001	AFT0002	AFT0003	AFT0004	AFT0005	----
1	Plastic	Lobe låse værktøj	Lobe locking tool	AFT0011	AFT0012	AFT0013	AFT0014	AFT0015	AFT0015L

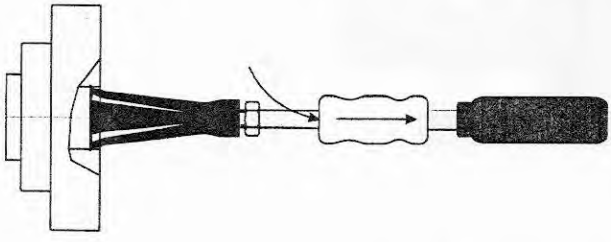

A
B

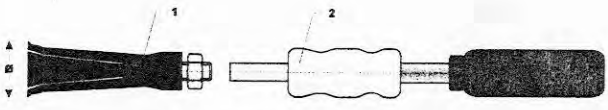
7. Aftrækker værktøj / Removal tool





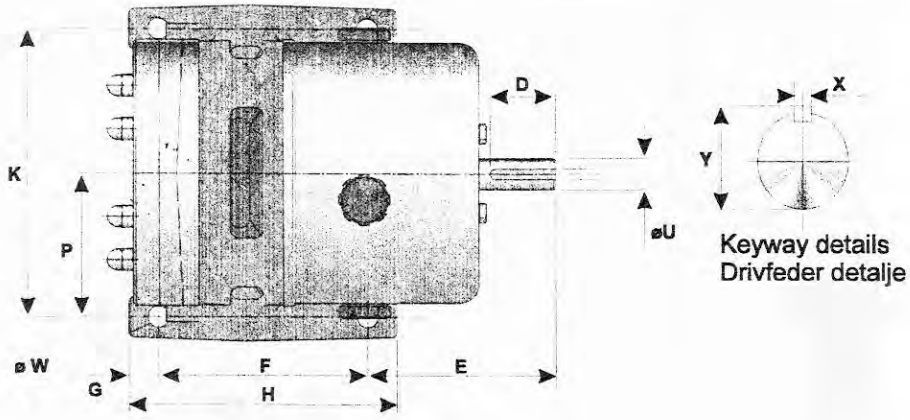
Pos.	Qty.	Benævnelse	Description	Pumpe type / Pump type				
				DW1	DW2	DW3	DW4	DW5
-	1	Piston aftrækker	Piston removal	AFT004/1	AFT004/2	AFT004/3	AFT004/4	AFT004/5



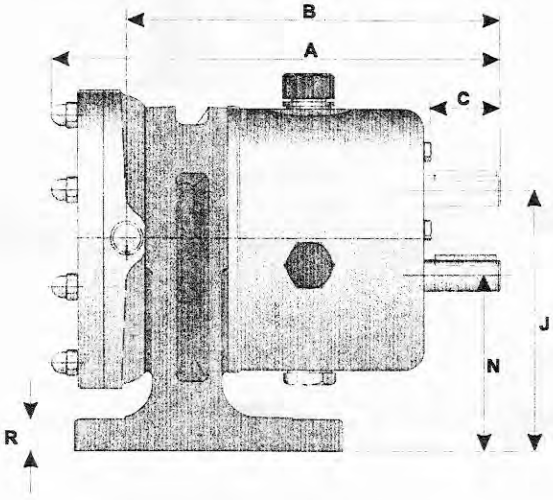


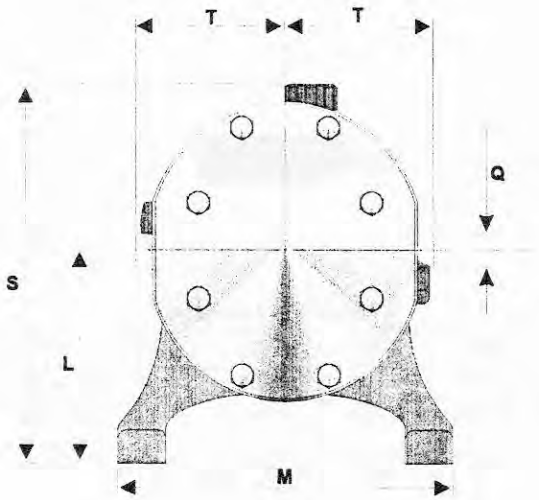
Pos.	Qty.	Benævnelse	Description	Pumpe type / Pump type				
				DW1	DW2	DW3	DW4	DW5
				Ø 17	Ø 22.5	Ø 27.5	Ø 37	Ø 48
1	1	Lobe aftrækker	Lobe removal	773508	773509	773510	773511	773512
2	1	Slagaftrækker	Impackt hammer	773507	773507	773507	773507	773507

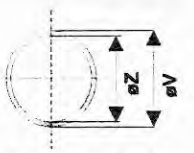
7. Pumpens mål / Pump dimensions



Keyway details
Drivfeder detalje







Inlet / Outlet detail Q
Indløb / udløb detalje Q

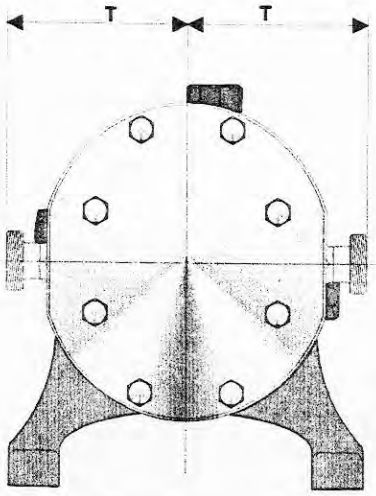
7. Pumpens mål / Pump dimensions

Pump model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	W	X	Y	Z	V
DW1/003/7.5	260	215	40	38	109	121	17	155	150	166	122	193	94	83	3/4"	19	218		ø18	ø12	6	20.5	16.0	19.05
DW1/004/15	260	215	40	38	109	121	17	155	150	166	122	193	94	83	3/4"	19	218		ø18	ø12	6	20.5	16.0	19.05
DW1/007/7	268	219	40	38	109	121	17	155	150	166	122	193	94	83	1"	19	218		ø18	ø12	6	20.5	22.2	25.4
DW2/006/10	297	248	50	36	120	142	17	176	178	194	145	228	112	97	1"	20	252		ø22	ø12	6	24.5	22.2	25.4
DW2/007/20	297	248	50	36	120	142	17	176	178	194	145	228	112	97	1"	20	252		ø22	ø12	6	24.5	22.2	25.4
DW2/013/10	307	252	50	36	120	142	17	176	178	194	145	228	112	97	1½"	20	252		ø22	ø12	6	24.5	34.9	38.1
DW3/014/10	332	271	60	40	123	160	20	200	196	212	158	252	120	106	1½"	24	273		ø25	ø14	8	28	34.9	38.1
DW3/017/20	332	271	60	40	123	160	20	200	196	212	158	252	120	106	1½"	24	273		ø25	ø14	8	28	34.9	38.1
DW3/030/10	348	280	60	40	123	160	20	200	196	212	158	252	120	106	2"	24	273		ø25	ø14	8	28	47.6	50.8
DW4/033/10	423	352	80	45	162	205	20	245	238	260	190	300	142	130	2"	24	328		ø35	ø14	10	38	47.6	50.8
DW4/039/20	423	352	80	45	162	205	20	245	238	260	190	300	142	130	2"	24	328		ø35	ø14	10	38	47.6	50.8
DW4/073/10	449	365	80	45	162	205	20	245	238	260	190	300	142	130	3"	24	328		ø35	ø14	10	38	73.0	76.2
DW5/080/12.5	565	479	109	71	232	262	25	312	303	326	240	370	177	163	2½"	33	434		ø42	ø14	12	45	60.0	63.5
DW5/093/25	565	479	109	71	232	262	25	312	303	326	240	370	177	163	2½"	33	434		ø42	ø14	12	45	60.0	63.5
DW5/142/15	586	495	109	71	232	262	25	312	303	326	240	370	177	163	3"	33	434		ø42	ø14	12	45	73.0	76.2
DW5/256/7	636	520	109	71	232	262	25	312	303	326	240	370	177	163	5"	33	434		ø42	ø14	12	45	123.0	127.0

Se næste side: Pumpens mål med fittings
See next page: Pump dimensions with fittings

Pumpe model Pump model	Netto vægt Nett weight (kg.)	Olie kapacitet Oil capacity (litres)
DW1/003/7.5	18.5	0.8
DW1/004/15	18.5	0.8
DW1/007/7	20	0.8
DW2/006/10	28	1.3
DW2/007/20	28	1.3
DW2/013/10	30	1.3
DW3/014/10	44	1.4
DW3/017/20	44	1.4
DW3/030/10	50	1.4
DW4/033/10	75	3
DW4/039/20	75	3
DW4/073/10	83	3
DW5/080/12.5	155	7
DW5/093/25	155	7
DW5/142/15	170	7
DW5/256/7	185	7

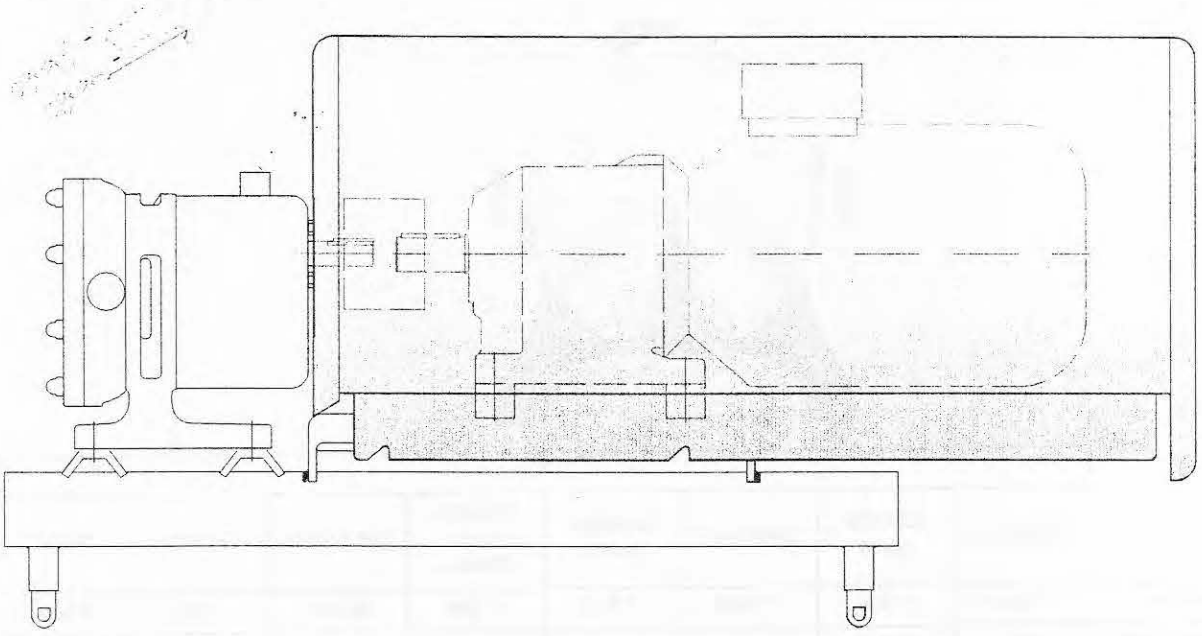
7. Pumpens mål med fittings / Pump dimensions with fittings



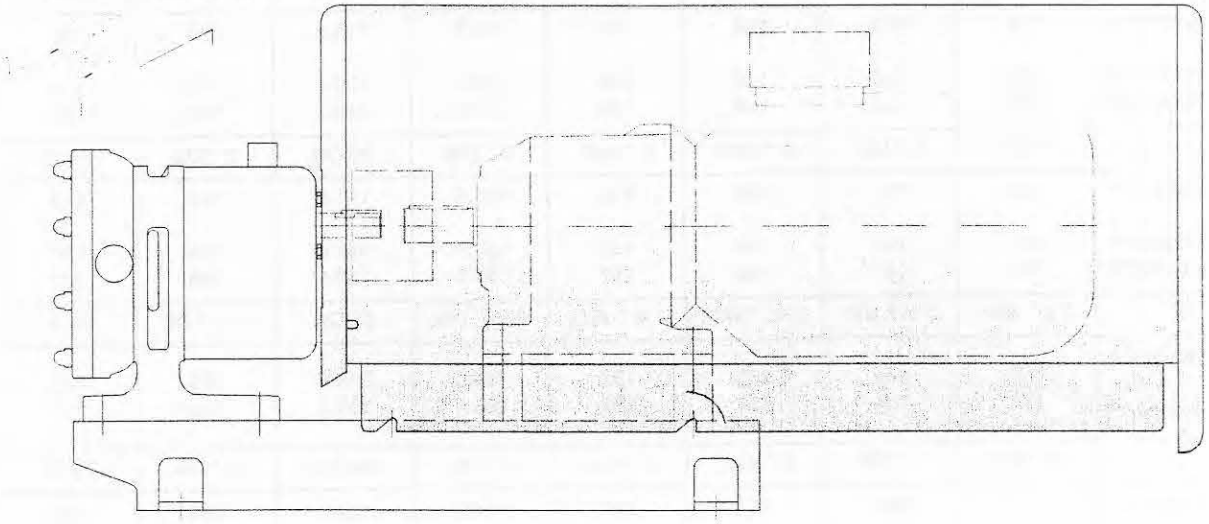
	T							
	ISO2853	BS4825 part4	SMS1145	BS4825 part5	BS4825 part3 -Clamp-	DIN 11851	DS 722	Plain
Pumpe	1" ISO	1" IDF	1" SMS	1" RJT	1"TRI	25 DN	1" DS	Plain
DW1/003/7.5	107.5	107.5	101	110	107.5	115	104.5	86
DW1/004/15	107.5	107.5	101	110	107.5	115	104.5	86
DW1/007/7	107	107	114	113	107	108.5	114	86
DW2/006/10	119	119	126	125	119.5	120.5	126	98
DW2/007/20	119	119	126	125	119.5	120.5	126	98
	1 ½ " ISO	1 ½ " IDF	1 ½ " SMS	1 ½ " RJT	1 ½ "TRI	40 DN	1 ½ " DS	Plain
DW2/013/10	119	119	126	125	119.5	125.5	126	98
DW3/014/10	133	133	140	139	133.5	139.5	140	112
DW3/017/20	133	133	140	139	133.5	139.5	140	112
	2 " ISO	2 " IDF	2 " SMS	2 " RJT	2 "TRI	50 DN	2 " DS	Plain
DW3/030/10	133	133	140	139	133.5	141.5	140	112
DW4/033/10	151	151	158	157	151.5	159.5	158	130
DW4/039/20	151	151	158	157	151.5	159.5	158	130
	2 ½ " ISO	2 ½ " IDF	2 ½ "SMS	2 ½ " RJT	2 ½ "TRI	65 DN	2 ½ " DS	Plain
DW5/080/12.5	186	186	189	192	186.5	198.5	189	165
DW5/093/25	186	186	189	192	186.5	198.5	189	165
	3 " ISO	3 " IDF	3 " SMS	3 " RJT	3 "TRI	80 DN	3 " DS	Plain
DW4/073/10	151	151	154	157	151.5	167.5	154	130
DW5/142/15	186	186	189	192	186.5	202.5	189	165
	5 " ISO	5 " IDF	5 " SMS	5 " RJT	5 "TRI	125 DN	5 " DS	Plain
DW5/256/7	-	-	-	194	-	211	-	165

Motorkappe komplet / Motorschroud complete

Bundramme / Baseplate Type 1



Bundramme / Baseplate Type 2

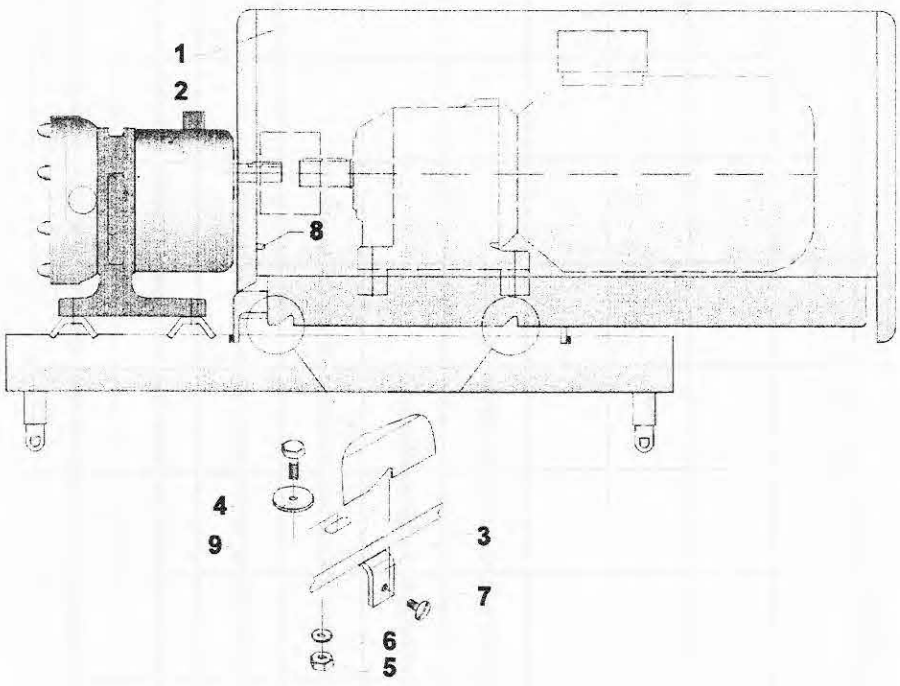


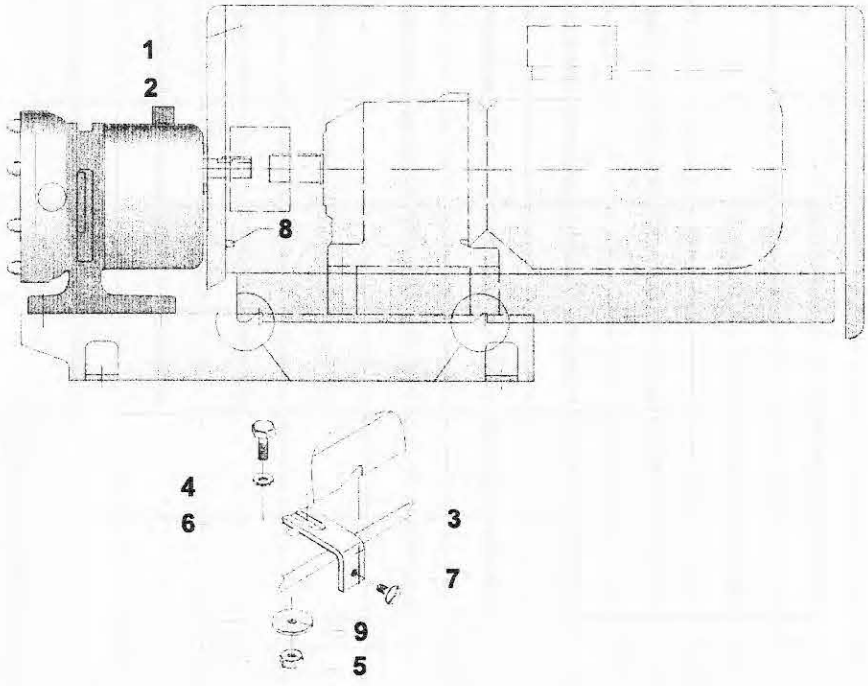
Motorkappe komplet / Motorschroud complete

Pump type	Ind/ud In/out pos.	Gear Type *									
		SK320 & 333	SK420 & 430	SK620 & 630	SK672 & 673	SK772 & 773	SK872 & 873	SK972 & 973			
		Bundramme / Baseplate Type									
		Del nr. / Part no.									
DW1		AK2500/100	AK2500/100	AK2501/100	AK2501/100						
		AK3050/100	AK3050/100	AK3051/100	AK3051/100						
DW2		AK3052/200	AK3052/200	AK3052/200	AK3600/200	AK3600/200					
		AK3052/200	AK3052/200	AK3052/200	AK3600/200	AK3600/200					
DW3		AK3601/300	AK3601/300	AK3601/300	AK4501/300	AK4501/300	AK4501/300	AK4503/300	AK4800/300		
		AK3601/300	AK3601/300	AK3601/300	AK3602/300	AK4501/300	AK4501/300	AK4503/300	AK4503/300		
DW4			AK3603/400	AK3603/400	AK4505/400	AK3603/400	AK4505/400	AK4801/400	AK4802/400	AK4804/400	AK4804/400
			AK3603/400	AK4505/400	AK4505/400	AK4505/400	AK4505/400	AK4801/400	AK4801/400	AK4803/400	AK4803/400
DW5			AK4506/500	AK4508/500	AK4507/500	AK4509/500	AK4507/500	AK4509/500	AK5251/500	AK5251/500	AK5251/500	AK7001/500	AK7001/500
			AK4506/500	AK4508/500	AK4507/500	AK4509/500	AK4507/500	AK4509/500	AK5251/500	AK5251/500	AK5251/500	AK7001/500	AK7001/500

* **Gear motor fabrikant: NORD**
Gear motor maker: NORD

7. Motorkappe type 1 & 2/ Motorschroud type 1 & 2



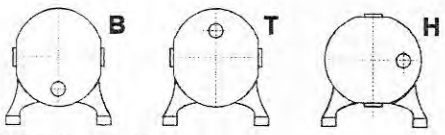


7. Motorkappe type 1 & 2/ Motorschroud type 1 & 2

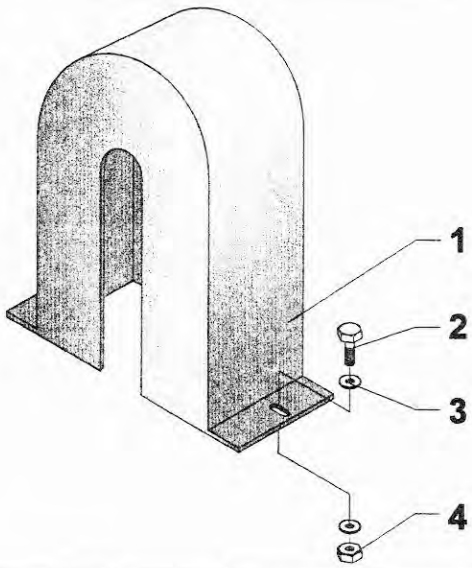
Pos.	Qty.	Benævnelse	Description	Dimension	Del nr. / Part nr.										
					DW1				DW2		DW3				
1-9	1	Komplet	Complete		AK2500100	AK2501100	AK3050100	AK3051100	AK3052200	AK3600200	AK3601300	AK3602300	AK4501300	AK4503300	AK4800300
1	1	Kappe	Schroud	ø250	A2775001	A2775001									
				ø305			A2775002	A2775002	A2775003						
				ø360						A2775004	A2775005	A2775006			
				ø450									A2775007	A2775007	
				ø480											A2775010
2		Dæksel	Cover	ø250	A2776011	A2776011									
	1			ø305			A2776002	A2776002	A2776013						
				ø360						A2776003	A2776003	A2776003			
				ø450									A2776001	A2776001	
				ø480											A2776007
3	2	Beslag	Bracket		A2770223	A2770223	A2770272	A2770272	A2770272		A2771321	A2771321	A2771357		
	1									A2770321				A2770357	A2770382
	1									A2771321				A2771357	A2771382
4	4	Skruer beslag	Screws bracket	M6x22	707608		707608		707608		707608	707608	707608		
	2					707608		707608		707608				707608	707608
5	4	Møtrik beslag	Nut bracket	M6	700240		700240		700240		700240	700240	700240		
	2					700240		700240		700240				700240	700240
6	4	Skive beslag	Washer bracket	ø16x6.4x2	255550		255550		255550		255550	255550	255550		
	2					255550		255550		255550				255550	255550
7	4	Skruer kap.	Screws bracket	M6x12	700420	700420	700420	700420	700420	700420	700420	700420	700420	700420	700420
8	2	Skruer kap.	Screws bracket	M6x20	773113	773113	773113	773113	773113	773113'	773113	773113			
	4												773113	773113	773113
9	2	Skive beslag	Washer bracket	ø16x6.4x2	255550		255550								
				ø25x6.4x1.5					773464		773464	773464	773464		

Pos.	Qty.	Benævnelse	Description	Dimension	DW4						DW5					
1-9	1	Komplet	Complete		AK3603400	AK4505400	AK4801400	AK4802400	AK4803400	AK4804400	AK4506500	AK4507500	AK4508500	AK4509500	AK5251500	AK7001500
1	1	Kappe	Schroud	ø360	A2775011											
				ø450		A2775007					A2775012	A2775007	A2775012	A2775007		
				ø480			A2775009	A2775009	A2775009	A2775009						
				ø525											A2775013	
				ø700												A2775014
2	1	Dæksel	Cover	ø360	A2776005											
				ø450		A2776006					A2776008	A2776008	A2776008	A2776008		
				ø480			A2776007	A2776007	A2776007	A2776007						
				ø525											A2776009	
				ø700												A2776010
3	2	Beslag	Bracket		A2772321	A2771357	A2771382	A2772382		A2772382					A2771421	A2771509
	1								A2770382		A2771357	A2771357	A27713571	A27713571		
	1								A2771382		A2773357	A2773357	A27733571	A27733571		
4	4	Skruer beslag	Screws bracket	M6x22	707608	707608	707608	707608								
	2			M6x22					707608	707608						
	2			M6x25							700678	700678	700678	700678	700678	700678
	2			M20x40							773501	773501	773501	773501	773501	
5	4	Møtrik beslag	Nut bracket	M6	700240	700240	700240	700240			700240	700240	700240	700240	700240	700240
	2			M6					700240	700240						
	2			M20							701670	701670	701670	701670	701670	
6	4	Skive beslag	Washer bracket	ø16x6.4x2	255550	255550	255550	255550			255550	255550	255550	255550	255550	255550
	2			ø16x6.4x2					255550	255550						
	2			ø37x21x3							773488	773488	773488	773488	773488	
7	4	Skruer kap.	Screws schroud	M6x12	700420	700420	700420	700420	700420	700420	700420	700420	700420	700420	700420	700420
8	2	Skruer kap.	Screws schroud	M6x20	773113											
	4					773113	773113	773113	773113	773113	773113	773113	773113	773113	773113	773113
9	2	Skive beslag	Washer bracket	ø25x6.4x1.5	773464	773464	773464	773464								

7. Koblingskappe / Coupling Guard



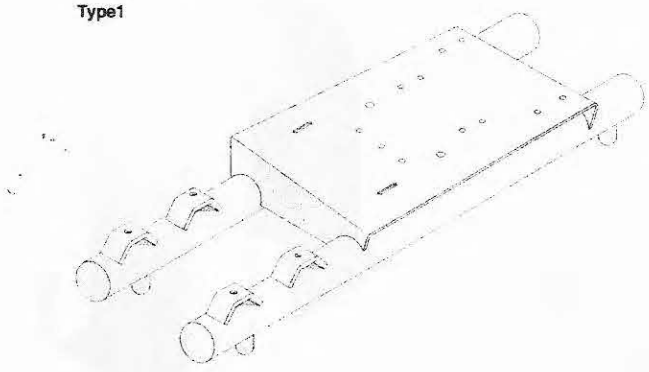
* bundplade type
* Baseplate



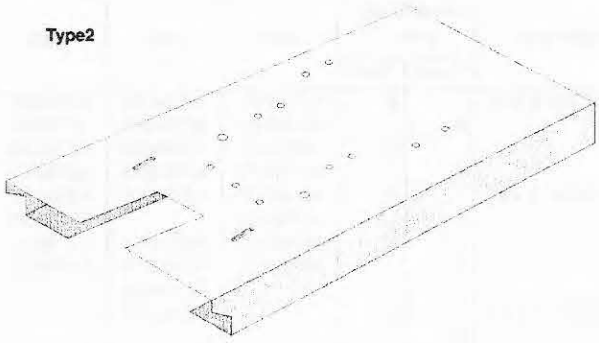
Pos	Benævnelse Description	Stk Qty	Gear type	Aksel/Shaft pos. *Type1	Aksel/Shaft pos. *Type2	DW1	DW2	DW3	DW4	DW5
1	Koplingskappe / Coupling Guard	1	SK320 & 333		B	A2780101	A2780202	A2780301		
				B		A2780101	A2780201	A2780301		
					H	A2780101	A2780203	A2780306		
				H		A2780101	A2780202	A2780306		
			SK420 & 430		B	A2780102	A2780206	A2780302	A2780410	A2780520
				B		A2780102		A2780302	A2780410	A2780520
					H	A2780102	A2780204	A2780307	A2780413	A2780521
				H		A2780102	A2780206	A2780307	A2780413	A2780521
				T			A2780204			
			SK620 & 630		B		A2780207		A2780411	A2780522
				B					A2780411	A2780522
					H		A2780205	A2780308	A2780412	A2780523
				H			A2780207	A2780303	A2780412	A2780523
					T			A2780304		
				T			A2780205	A2780308		
			SK672 & 673		B				A2780414	A2780524
				B					A2780414	A2780524
					H			A2780310	A2780415	A2780525
				H				A2780305	A2780415	A2780525
					T			A2780311		
				T				A2780310		
			SK772 & 773		B					A2780532
					H			A2780313	A2780417	A2780527
				H				A2780313	A2780417	A2780527
					T			A2780312	A2780416	A2780526
				T				A2780309	A2780416	
			SK872 & 873		B					A2780533
					H				A2780419	A2780529
				H					A2780419	A2780529
					T				A2780418	
				T					A2780418	A2780528
			SK972 & 973		H					A2780531
				H						A2780531
					T					A2780530
				T						A2780530
2	Skrue / Screw	2				705856	705856	705856	705856	705856
3	Skive / Washer	4				701477	701477	701477	701477	701477
4	Møtrik / Nut	2				700240	700240	700240	700240	700240

7. Bundramme / Baseplate

Type1



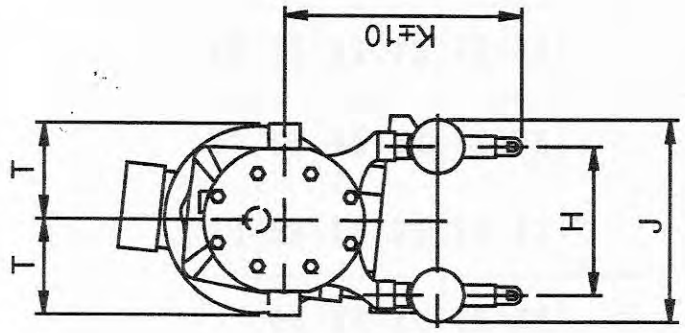
Type2

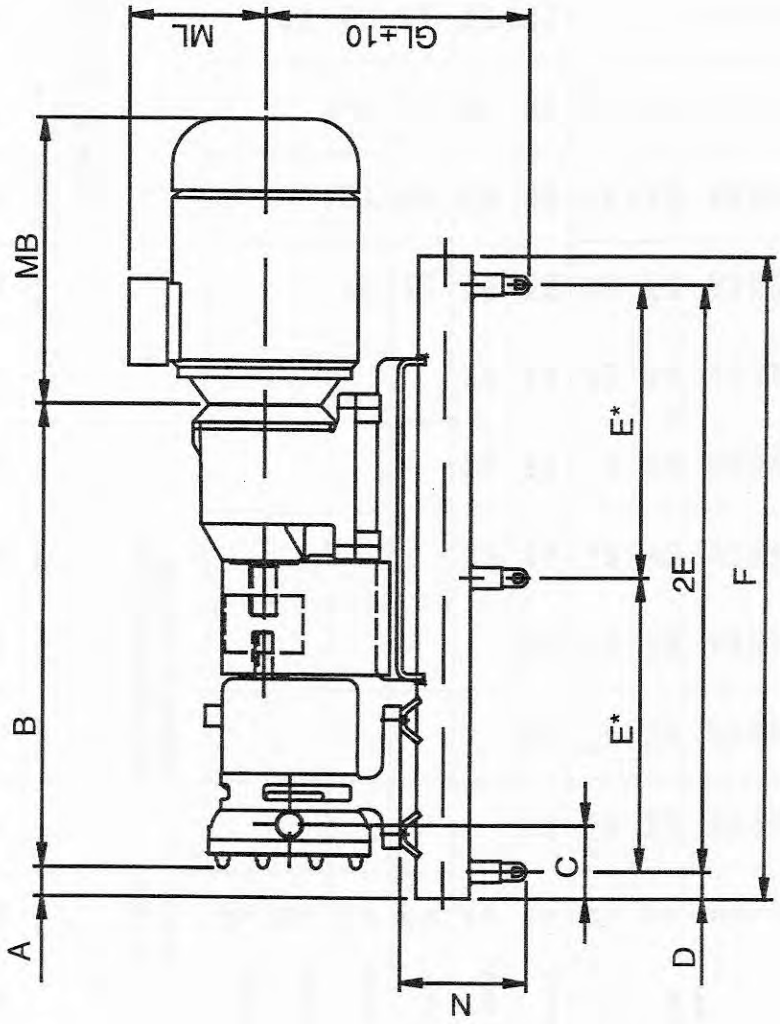


Pumpe	Type1	Type2
DW1	A2760/100	A2764/100
DW2	A2760/200	A2764/200
DW3	A2760/300	A2764/300
DW4	A2760/400	A2764/400
DW5	A2760/500	A2764/500

7. Målskitse / Dimensions sketch

Målskitse med vandret ind/udløb, bundpl. type 1 & koblingskappe /
Dim. sketch for DW with horizontal in/outlet, baseplate type 1 & guard





Gear	Symbol	DW1			DW2			DW3			DW4			DW5			
		003/7.5	004/15	007/7	006/10	007/20	013/10	014/10	017/20	030/10	033/10	039/20	073/10	080/12.5	093/25	142/15	256/7
	A	9	9	1	7	7	-3	-7	-7	-23	4	4	-22	9	9	-12	-62
	C	54	54	50	56	56	52	54	54	45	75	75	62	95	95	79	54
	D	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	E		-	-	-	-	-	-	-	-	485	485	485	610	610	610	610
	EA	520	520	520	590	590	590	780	780	780	970	970	970	1220	1220	1220	1220
	F	600	600	600	670	670	670	860	860	860	1050	1050	1050	1300	1300	1300	1300
	H	166	166	166	194	194	194	212	212	212	260	260	260	326	326	326	326
	J	230	230	230	258	258	258	288	288	288	368	368	368	434	434	434	434
	K	302	302	302	315	315	315	340	340	340	441	441	441	491	491	491	491
	N	180	180	180	170	170	170	182	182	182	251	251	251	251	251	251	251
	T	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SK 320	B	435	435	443	472	472	482	513	513	529							
	GL	274	274	274	282	282	282	302	302	302							
SK 333	B	462	462	470	499	499	509	540	540	556							
	GL	274	274	274	282	282	282	302	302	302							
SK 420/30	B	501	501	509	538	538	548	579	579	595	670	670	696	812	812	833	883
	GL	278	278	278	348	348	348	302	302	302	394	394	394	428	428	428	428
SK 620/30	B				583	583	593	624	624	640	715	715	741	857	857	878	928
	GL				348	348	348	378	378	378	394	394	394	428	428	428	428
SK672/73	B							654	654	670	745	745	771	898	898	919	969
	GL							378	378	378	394	394	394	428	428	428	428
SK 772/73	B							681	681	697	772	772	798	930	930	951	1001
	GL							378	378	378	489	489	489	554	554	554	554
SK 872/73	B										846	846	872	993	993	1014	1064
	GL										489	489	489	554	554	554	554
SK 972/73	B													1039	1039	1060	1110
	GL													554	554	554	554

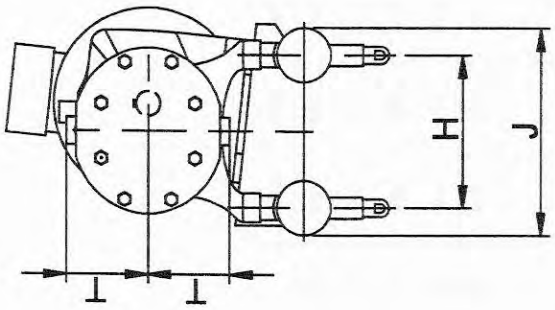
*

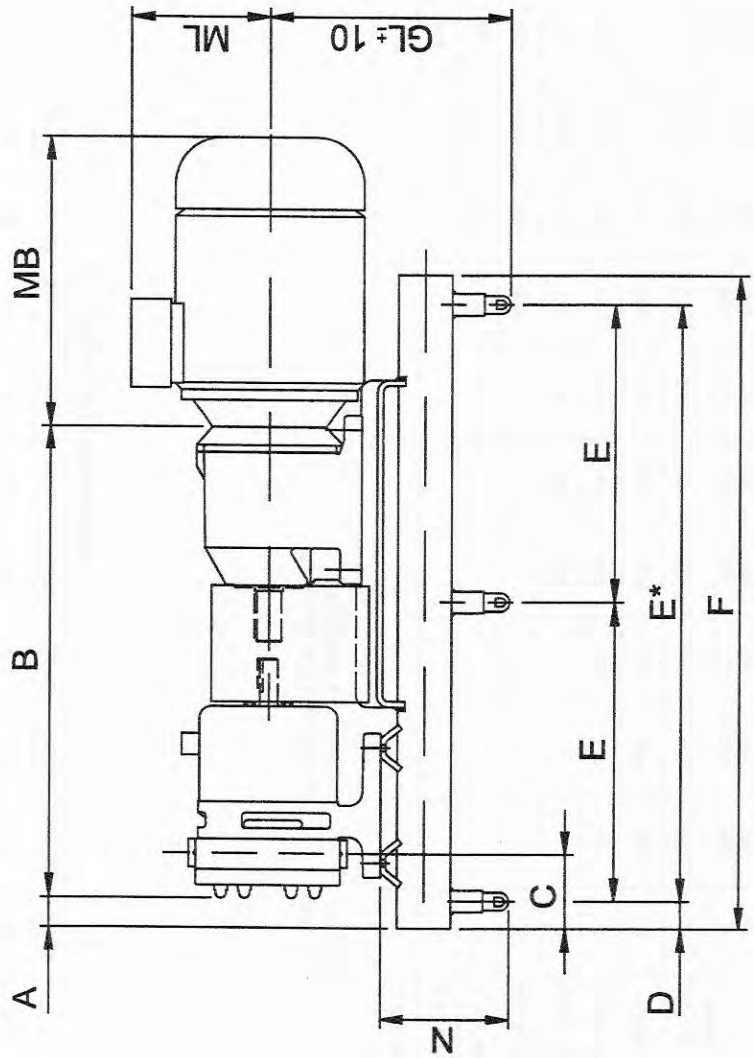
Se side : Pumpens mål med fittings
See page : Pump dimensions with fittings

	Motor størrelse / Motor size											
	63 S/L	71 S/L	80 S/L	90 S/L	100 L	112 M	132 S/M	160 M/L	160 LA/LB	180 M/L	200 L	225 S
MB	188	213	231	273	306	324	411	486	521	602	688	688
ML	100	109	124	129	140	150	174	234	234	259	306	306

7. Målskitse / Dimensions sketch

Målskitse med lodret ind/udløb, bundpl. type 1 & koblingskappe /
Dim. sketch for DW with vertical in/outlet, baseplate type 1 & guard





SB1824 ISS 7.04.00

		DW1			DW2			DW3			DW4			DW5			
	Symbol	003/7.5	004/15	007/7	006/10	007/20	013/10	014/10	017/20	030/10	033/10	039/20	073/10	080/12.5	093/25	142/15	256/7
	A	9	9	1	7	7	-3	-7	-7	-23	4	4	-22	9	9	-12	-62
	C	54	54	50	56	56	52	54	54	45	75	75	62	95	95	79	54
	D	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	E										485	485	485	610	610	610	610
	EA	520	520	520	590	590	590	780	780	780	970	970	970	1220	1220	1220	1220
	F	600	600	600	670	670	670	860	860	860	1050	1050	1050	1300	1300	1300	1300
	H	302	302	302	315	315	315	340	340	340	441	435	435	491	491	491	491
	J	166	166	166	194	194	194	212	212	212	260	260	260	326	326	326	326
	K	230	230	230	258	258	258	288	288	288	368	368	368	434	434	434	434
	N	180	180	180	170	170	170	182	182	182	251	251	251	251	251	251	251
Gear	T	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SK 320	B	435	435	443	472	472	482	513	513	529							
SK 333	B	462	462	470	499	499	509	540	540	556							
SK 420/30	B	501	501	509	538	538	548	579	579	595	670	670	696	812	812	833	883
SK 620/30	B				583	583	593	624	624	640	715	715	741	857	857	878	928
SK 672/73	B							654	654	670	745	745	771	898	898	919	969
SK 772/73	B							681	681	697	772	772	798	930	930	951	1001
SK 872/73	B										846	846	872	993	993	1014	2064
SK 972/73	B													1039	1039	1060	1110

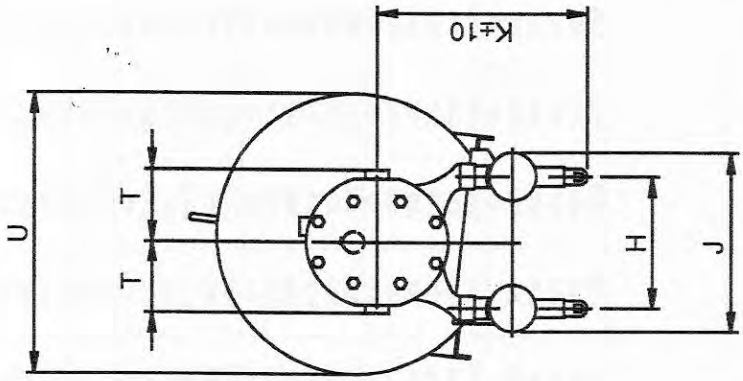
*

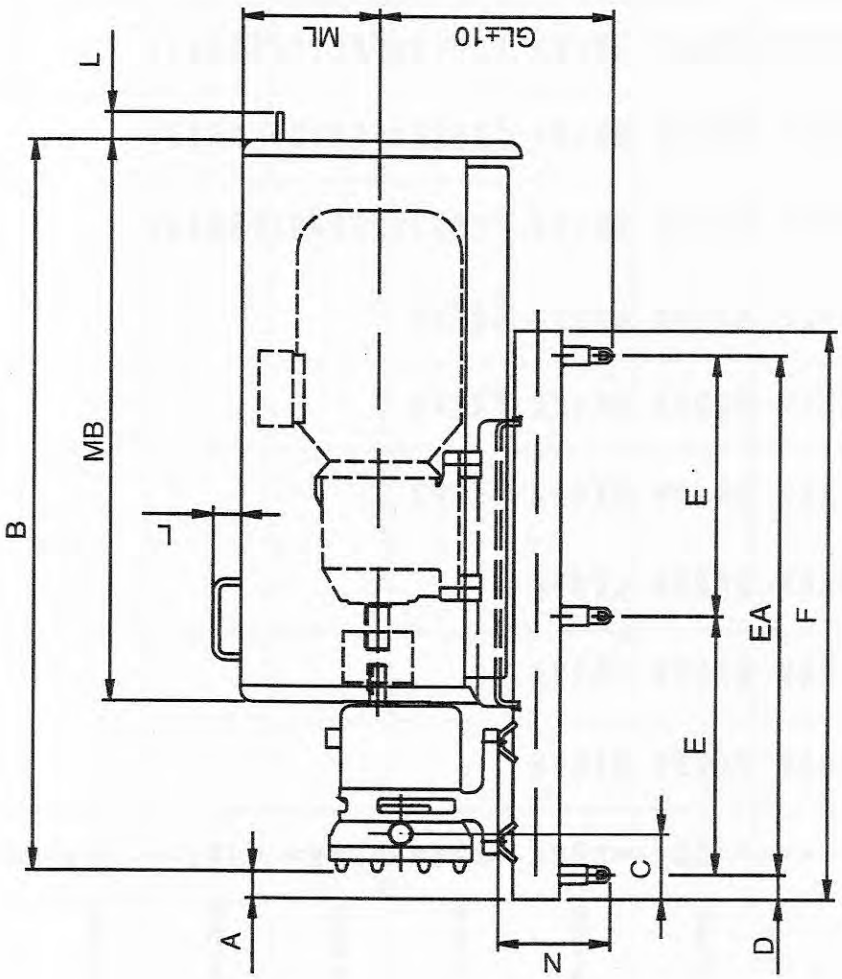
Se side : Pumpens mål med fittings
See page : Pump dimensions with fittings

	Motor størrelse / Motor size											
	63 S/L	71 S/L	80 S/L	90 S/L	100 L	112 M	132 S/M	160 M/L	160 LA/LB	180 M/L	200 L	225 S
MB	188	213	231	273	306	324	411	486	521	602	688	688
ML	100	109	124	129	140	150	174	234	234	259	306	306

7. Målskitse / Dimensions sketch

Målskitse med vandret ind/udløb, bundpl. type 1 & motorkappe /
Dim. sketch for DW with horizontal in/outlet, baseplate type 1 & shroud





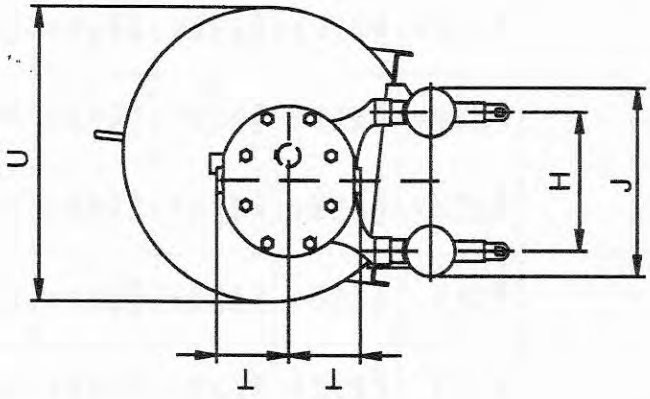
7. Målskitse / Dimensions sketch

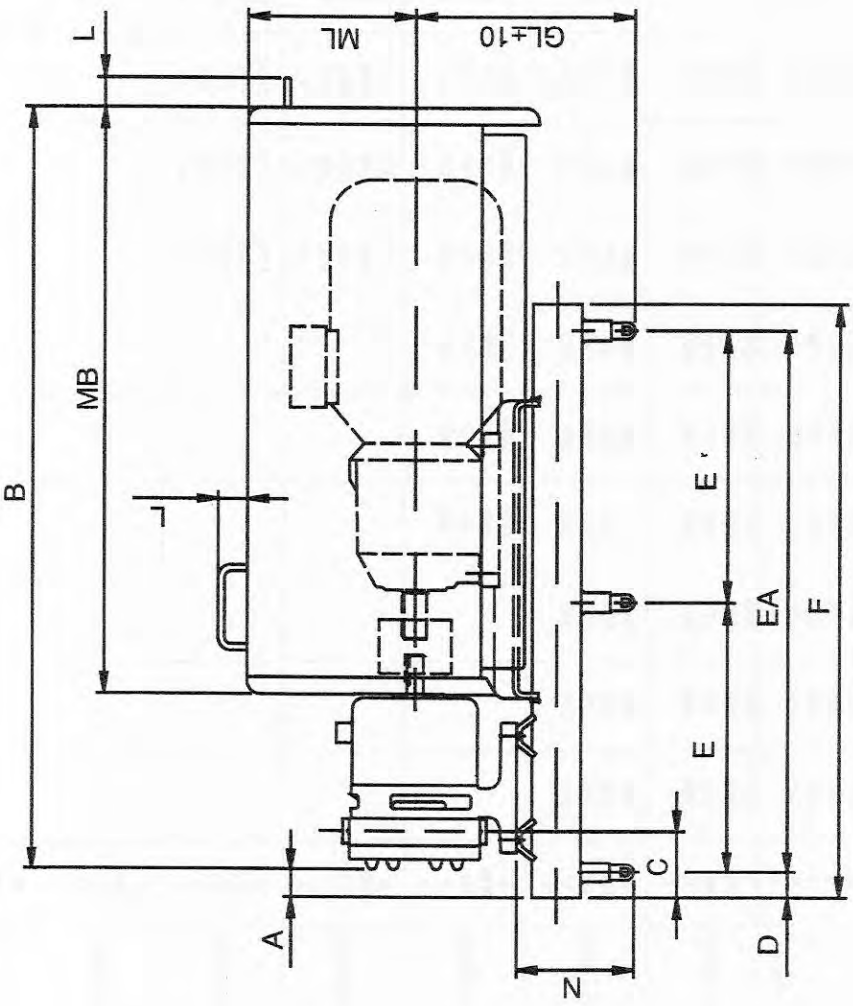
Gear	Symbol	DW1			DW2		DW3			DW4			DW5			
		003/7.5	004/15	007/7	006/10	007/20	013/10	014/10	017/20	030/10	033/10	039/20	073/10	080/12.5	093/25	142/15	256/7
	A	9	9	1	7	7	-3	-7	-7	-23	4	4	-22	9	9	-12	-62
	C	54	54	50	56	56	52	54	54	45	75	75	62	95	95	79	54
	D	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	E	-	-	-	-	-	-	-	-	-	485	485	485	610	610	610	610
	EA	520	520	520	590	590	590	780	780	780	970	970	970	1220	1220	1220	1220
	F	600	600	600	670	670	670	860	860	860	1050	1050	1050	1300	1300	1300	1300
	H	166	166	166	194	194	194	212	212	212	260	260	260	326	326	326	326
	J	230	230	230	258	258	258	288	288	288	368	368	368	434	434	434	434
	K	302	302	302	315	315	315	340	340	340	441	441	441	491	491	491	491
	N	180	180	180	170	170	170	182	182	182	251	251	251	251	251	251	251
	T	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SK 320/33	B	830	830	840	850	850	860	890	890	910							
	GL	274	274	274	282	282	282	302	302	302							
	MB	608	608	608	600	600	600	617	617	617							
	ML	145	145	145	185	185	185	208	208	208							
	U	250	250	250	305	305	305	360	360	360							
	L	-	-	-	-	-	-	-	-	-							
SK 420/30	B	830	830	840	850	850	860	890	890	910	1160	1160	1185	1165	1165	1185	1235
	GL	278	278	278	348	348	348	302	302	302	394	394	394	428	428	428	428
	MB	608	608	608	600	600	600	617	617	617	813	813	813	707	707	707	707
	ML	158	158	158	155	155	155	208	208	208	208	208	208	282	282	282	282
	U	250	250	250	305	305	305	360	360	360	360	360	360	450	450	450	450
	L	-	-	-	-	-	-	-	-	-	-	-	-	45	45	45	45
SK 620/30	B				1000	1000	1010	1175	1175	1190	1245	1245	1270	1355	1355	1380	1430
	GL				348	348	348	378	378	378	394	394	394	428	428	428	428
	MB				750	750	750	898	898	898	898	898	898	898	898	898	898
	ML				188	188	188	222	222	222	264	264	264	282	282	282	282
	U				360	360	360	450	450	450	450	450	450	450	450	450	450
	L							45	45	45	45	45	45	45	45	45	45
SK 672/73	B							1175	1175	1190	1245	1245	1270	1355	1355	1380	1430
	GL							378	378	378	394	394	394	428	428	428	428
	MB							898	898	898	898	898	898	898	898	898	898
	ML							222	222	222	264	264	264	282	282	282	282
	U							450	450	450	450	450	450	450	450	450	450
	L							45	45	45	45	45	45	45	45	45	45
SK 772/73	B							1175	1175	1190	1375	1375	1400	1525	1525	1545	1595
	GL							378	378	378	489	489	489	554	554	554	554
	MB							898	898	898	1027	1027	1027	1065	1065	1065	1065
	ML							248	248	248	252	252	252	260	260	260	260
	U							450	450	450	450	480	480	525	525	525	525
	L							45	45	45	45	45	45	45	45	45	45
SK 872/73	B										1375	1375	1400	1525	1525	1545	1595
	GL										489	489	489	554	554	554	554
	MB										1027	1027	1027	1065	1065	1065	1065
	ML										252	252	252	260	260	260	260
	U										480	480	480	525	525	525	525
	L										45	45	45	45	45	45	45
SK 972/73	B													1770	1770	1790	1840
	GL													554	554	554	554
	MB													1312	1312	1312	1312
	ML													350	350	350	350
	U													700	700	700	700
	L													45	45	45	45

* Se side : Pumpens mål med fittings
See page : Pump dimensions with fittings

7. Målskitse / Dimensions sketch

Målskitse med lodret ind/udløb, bundpl. type 1 & motorkappe /
Dim. sketch for DW with vertical in/outlet, baseplate type 1 & shroud





SH 1836 SSI 1.04.00

		DW1			DW2			DW3			DW4			DW5			
	Symbol	003/7.5	004/15	007/7	006/10	007/20	013/10	014/10	017/20	030/10	033/10	039/20	073/10	080/12.5	093/25	142/15	256/7
	A	9	9	1	7	7	-3	-7	-7	-23	4	4	-22	9	9	-12	-62
	C	54	54	50	56	56	52	54	54	45	75	75	62	95	95	79	54
	D	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	E										485	485	485	610	610	610	610
	EA	520	520	520	590	590	590	780	780	780	970	970	970	1220	1220	1220	1220
	F	600	600	600	670	670	670	860	860	860	1050	1050	1050	1300	1300	1300	1300
	GL	302	302	302	315	315	315	340	340	340	441	441	441	491	491	491	491
	H	166	166	166	194	194	194	212	212	212	260	260	260	326	326	326	326
	J	230	230	230	258	258	258	288	288	288	368	368	368	434	434	434	434
	N	180	180	180	170	170	170	182	182	182	251	251	251	251	251	251	251
Gear	T	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	B	830	830	840	850	850	860	890	890	910							
	MB	608	608	608	600	600	600	617	617	617							
SK 320/33	ML	151	151	151	151	151	151	170	170	170							
	U	305	305	305	305	305	305	360	360	360							
	L																
	B	830	830	840	850	850	860	890	890	910	1160	1160	1185	1165	1165	1185	1235
	MB	608	608	608	600	600	600	617	617	617	813	813	813	707	707	707	707
SK 420/30	ML	170	170	170	178	178	178	170	170	170	174	174	174	215	215	215	215
	U	305	305	305	305	305	305	360	360	360	360	360	360	450	450	450	450
	L													45	45	45	45
	B				1000	1000	1010	1040	1040	1060	1245	1245	1270	1355	1355	1380	1430
	MB				750	750	750	767	767	767	898	898	898	898	898	898	898
SK 620/30	ML				192	192	192	192	192	192	216	216	216	215	215	215	215
	U				360	360	360	360	360	360	450	450	450	450	450	450	450
	L										45	45	45	45	45	45	45
	B							1175	1175	1190	1245	1245	1270	1355	1355	1380	1430
	MB							898	898	898	898	898	898	898	898	898	898
SK 672/73	ML							261	261	261	216	216	216	215	215	215	215
	U							450	450	450	450	450	450	450	450	450	450
	L							45	45	45	45	45	45	45	45	45	45
	B							1175	1175	1190	1375	1375	1400	1525	1525	1545	1595
	MB							898	898	898	1027	1027	1027	1065	1065	1065	1065
SK 772/73	ML							257	257	257	265	265	265	260	260	260	260
	U							450	450	450	480	480	480	525	525	525	525
	L							45	45	45	45	45	45	45	45	45	45
	B										1375	1375	1400	1525	1525	1545	1595
	MB										1027	1027	1027	1065	1065	1065	1065
SK 872/73	ML										260	260	260	260	260	260	260
	U										480	480	480	525	525	525	525
	L										45	45	45	45	45	45	45
	B													1770	1770	1790	1840
	MB													1312	1312	1312	1312
SK 972/73	ML													350	350	350	350
	U													700	700	700	700
	L													45	45	45	45

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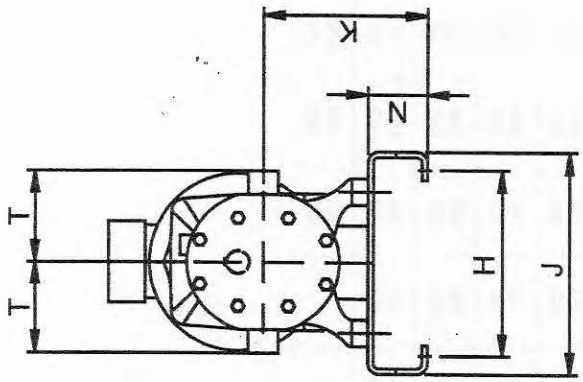
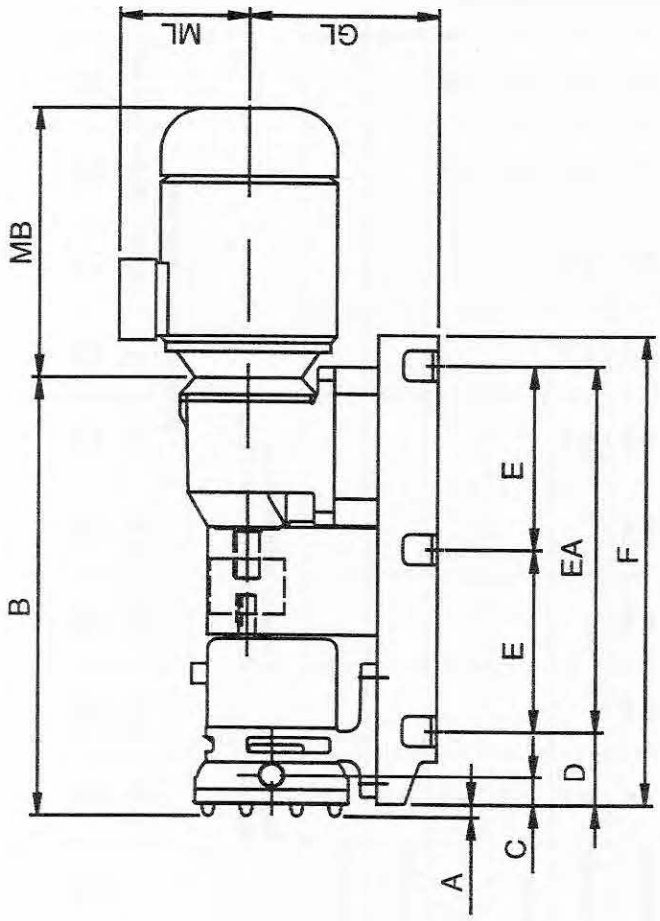
Se side : Pumpens mål med fittings
See page : Pump dimensions with fittings

7. Målskitse / Dimensions sketch

Målskitse med vandret ind/udløb, bundpl. type 2 & koblingskappe /
Dim. sketch for DW with horizontal in/outlet, baseplate type 2 & guard





		DW1			DW2			DW3			DW4			DW5			
	Symbol	003/7.5	004/15	007/7	006/10	007/20	013/10	014/10	017/20	030/10	033/10	039/20	073/10	080/12.5	093/25	142/15	256/7
	A	10	10	18	15	15	25	19	19	35	8	8	34	11	11	32	82
	C	35	35	31	34	34	30	42	42	33	63	63	50	75	75	59	34
	D	110	110	110	110	110	110	110	110	110	135	135	135	205	205	205	205
	E										360	360	360	495	495	495	495
	EA	350	350	350	440	440	440	545	545	545	720	720	720	990	990	990	990
	F	505	505	505	595	595	595	700	700	700	900	900	900	1260	1260	1260	1260
	H	198	198	198	223	223	223	278	278	278	362	362	362	392	392	392	392
	J	248	248	248	273	273	273	332	332	332	422	422	422	460	460	460	460
	K	194	194	194	217	217	217	248	248	248	300	300	300	360	360	360	360
	N	72	72	72	72	72	72	90	90	90	110	110	110	120	120	120	120
Gear	T	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SK 320	B	435	435	443	472	472	482	513	513	529							
	GL	166	166	166	184	184	184	210	210	210							
SK 333	B	462	462	470	499	499	509	540	540	556							
	GL	166	166	166	184	184	184	210	210	210							
SK 420/30	B	501	501	509	538	538	548	579	579	595	670	670	696	812	812	833	883
	GL	166	166	166	184	184	184	210	210	210	253	253	253	297	297	297	297
SK 620/30	B				583	583	593	624	624	640	715	715	741	857	857	878	928
	GL				184	184	184	286	286	286	253	253	253	297	297	297	297
SK672/73	B							654	654	670	745	745	771	898	898	919	969
	GL							286	286	286	253	253	253	297	297	297	297
SK 772/73	B							681	681	697	772	772	798	930	930	951	1001
	GL							286	286	286	348	348	348	297	297	297	297
SK 872/73	B										846	846	872	993	993	1014	1064
	GL										348	348	348	297	297	297	297
SK 972/73	B													1039	1039	1060	1110
	GL													423	423	423	423

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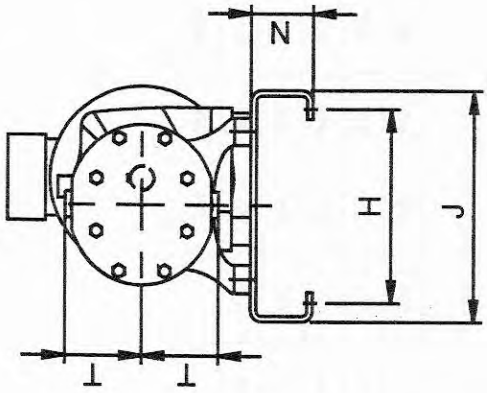
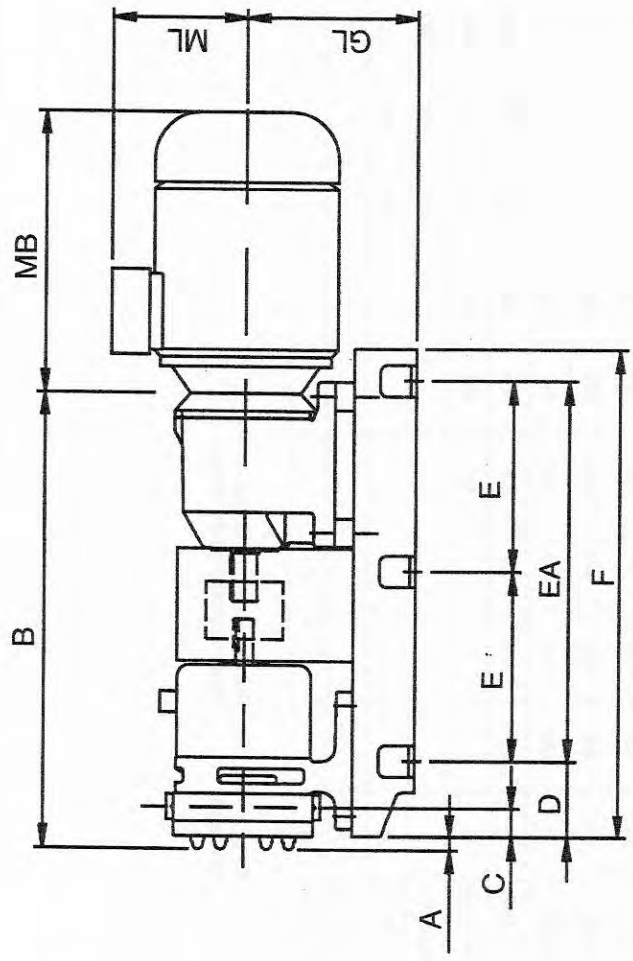
Se side : Pumpens mål med fittings
See page : Pump dimensions with fittings

	Motor størrelse / Motor size											
	63 S/L	71 S/L	80 S/L	90 S/L	100 L	112 M	132 S/M	160 M/L	160 LA/LB	180 M/L	200 L	225 S
MB	188	213	231	273	306	324	411	486	521	602	688	688
ML	100	109	124	129	140	150	174	234	234	259	306	306

7. Målskitse / Dimensions sketch

Målskitse med lodret ind/udløb, bundpl. type 2 & koblingskappe /
Dim. sketch for DW with vertical in/outlet, baseplate type 2 & guard





		DW1			DW2			DW3			DW4			DW5			
	Symbol	003/7.5	004/15	007/7	006/10	007/20	013/10	014/10	017/20	030/10	033/10	039/20	073/10	080/12.5	093/25	142/15	256/7
	A	10	10	18	15	15	25	19	19	35	8	8	34	11	11	32	82
	C	35	35	31	34	34	30	42	42	33	63	63	50	75	75	59	34
	D	110	110	110	110	110	110	110	110	110	135	135	135	205	205	205	205
	E																
	EA	350	350	350	440	440	440	545	545	545	720	720	720	990	990	990	990
	F	505	505	505	595	595	595	700	700	700	900	900	900	1260	1260	1260	1260
	GL	194	194	194	217	217	217	248	248	248	300	300	300	360	360	360	360
	H	198	198	198	223	223	223	278	278	278	362	362	362	392	392	392	392
	J	248	248	248	273	273	273	332	332	332	422	422	422	460	460	460	460
	N	72	72	72	72	72	72	90	90	90	110	110	110	120	120	120	120
Gear	T	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SK 320	B	435	435	443	472	472	482	513	513	529							
SK 333	B	462	462	470	499	499	509	540	540	556							
SK 420/30	B	501	501	509	538	538	548	579	579	595	670	670	696	812	812	833	883
SK 620/30	B				583	583	593	624	624	640	715	715	741	857	857	878	928
SK 672/73	B							654	654	670	745	745	771	898	898	919	969
SK 772/73	B							681	681	697	772	772	798	930	930	951	1001
SK 872/73	B										846	846	872	993	993	1014	1064
SK 972/73	B													1039	1039	1060	1110

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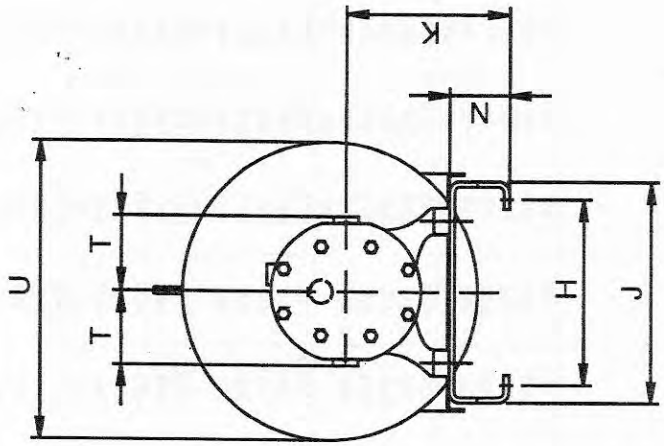
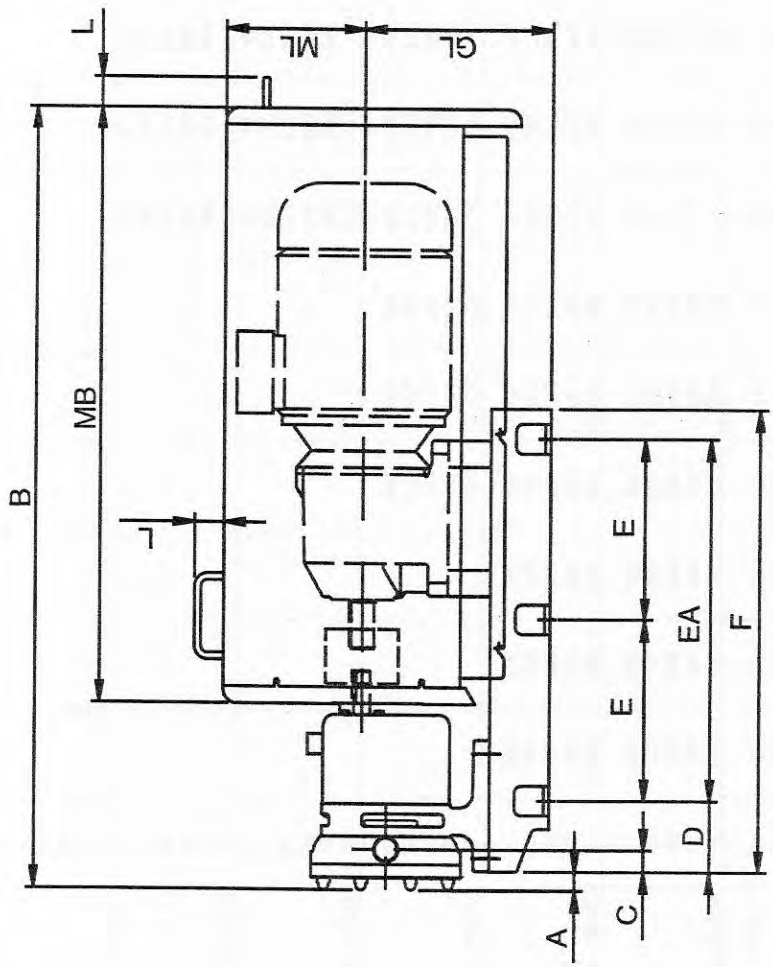
Se side : Pumpens mål med fittings
See page : Pump dimensions with fittings

	Motor størrelse / Motor size											
	63 S/L	71 S/L	80 S/L	90 S/L	100 L	112 M	132 S/M	160 M/L	160 LA/LB	180 M/L	200 L	225 S
MB	188	213	231	273	306	324	411	486	521	602	688	688
ML	100	109	124	129	140	150	174	234	234	259	306	306

7. Målskitse / Dimensions sketch

Målskitse med vandret ind/udløb, bundpl. type 2 & motorkappe /
Dim. sketch for DW with horizontal in/outlet, baseplate type 2 & shroud





7. Målskitse / Dimensions sketch

Gear	Symbol	DW1				DW2		DW3			DW4			DW5			
		003/7.5	004/15	007/7	006/10	007/20	013/10	014/10	017/20	030/10	033/10	039/20	073/10	080/12.5	093/25	142/15	256/7
	A	10	10	18	15	15	25	19	19	35	8	8	34	11	11	32	82
	C	35	35	31	34	34	30	42	42	33	63	63	50	75	75	59	34
	D	110	110	110	110	110	110	110	110	110	135	135	135	205	205	205	205
	E										360	360	360	495	495	495	495
	EA	350	350	350	440	440	440	545	545	545	720	720	720	990	990	990	990
	F	505	505	505	595	595	595	700	700	700	900	900	900	1260	1260	1260	1260
	H	198	198	198	223	223	223	278	278	278	362	362	362	392	392	392	392
	J	248	248	248	273	273	273	332	332	332	422	422	422	460	460	460	460
	K	194	194	194	217	217	217	248	248	248	300	300	300	360	360	360	360
	N	72	72	72	72	72	72	90	90	90	110	110	110	120	120	120	120
	T	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SK 320/33	B	830	830	840	850	850	860	890	890	910							
	GL	166	166	166	184	184	184	210	210	210							
	MB	608	608	608	600	600	600	617	617	617							
	ML	152	152	152	187	187	187	223	223	223							
	U	250	250	250	305	305	305	360	360	360							
	L																
SK 420/30	B	830	830	840	850	850	860	890	890	910	1160	1160	1185	1165	1165	1185	1235
	GL	166	166	166	184	184	184	210	210	210	253	253	253	297	297	297	297
	MB	608	608	608	600	600	600	617	617	617	813	813	813	707	707	707	707
	ML	152	152	152	187	187	187	223	223	223	200	200	200	273	273	273	273
	U	250	250	250	305	305	305	360	360	360	360	360	360	450	450	450	450
	L													45	45	45	45
SK 620/30	B				1000	1000	1010	1175	1175	1190	1160	1160	1185	1355	1355	1380	1430
	GL				184	184	184	286	286	286	252	252	252	297	297	297	297
	MB				750	750	750	898	898	898	813	813	813	898	898	898	898
	ML				203	203	203	212	212	212	200	200	200	273	273	273	273
	U				360	360	360	450	450	450	360	360	360	450	450	450	450
	L							45	45	45				45	45	45	45
SK 672/73	B							1175	1175	1190	1160	1160	1185	1355	1355	1380	1430
	GL							286	286	286	252	252	252	297	297	297	297
	MB							898	898	898	813	813	813	898	898	898	898
	ML							212	212	212	200	200	200	273	273	273	273
	U							450	450	450	360	360	360	450	450	450	450
	L							45	45	45				45	45	45	45
SK 772/73	B							1175	1175	1195	1375	1375	1400	1525	1525	1545	1595
	GL							286	286	286	348	348	348	297	297	297	297
	MB							902	902	902	1027	1027	1027	1065	1065	1065	1065
	ML							254	254	254	238	238	238	380	380	380	380
	U							480	480	480	480	480	480	525	525	525	525
	L							45	45	45	45	45	45	45	45	45	45
SK 872/73	B										1375	1375	1400	1770	1770	1790	1840
	GL										348	348	348	300	300	300	300
	MB										1027	1027	1027	1065	1065	1065	1065
	ML										247	247	247	377	377	377	377
	U										480	480	480	525	525	525	525
	L										45	45	45	45	45	45	45
SK 972/73	B													1770	1770	1790	1840
	GL													423	423	423	423
	MB													1312	1312	1312	1312
	ML													362	362	362	362
	U													700	700	700	700
	L													45	45	45	45

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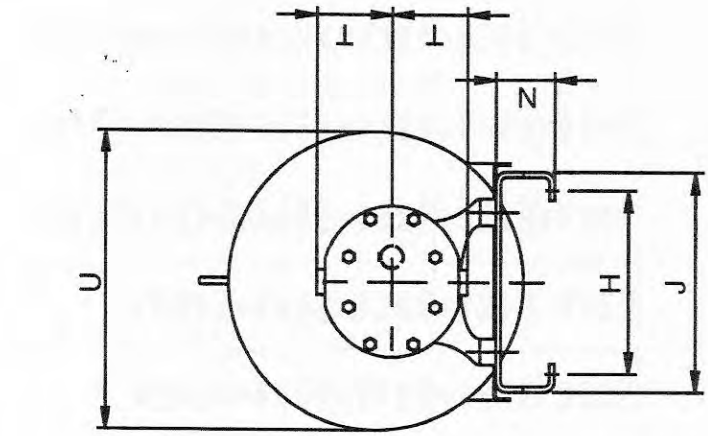
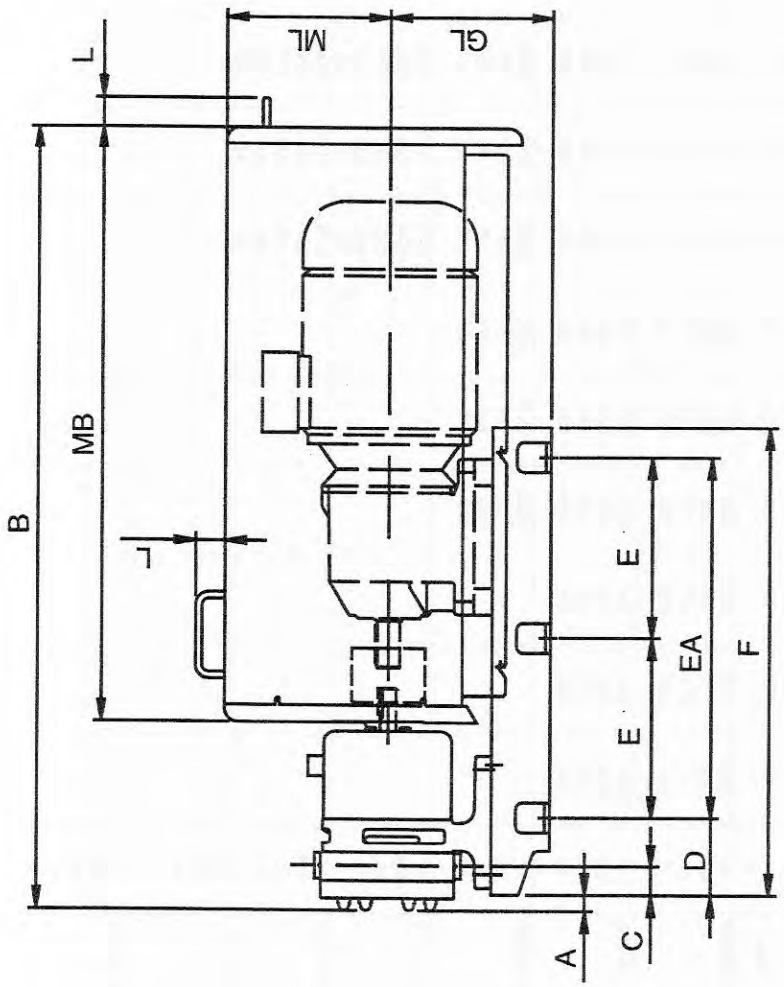
Se side : Pumpens mål med fittings
See page : Pump dimensions with fittings

7. Målskitse / Dimensions sketch

Målskitse med lodret ind/udløb, bundpl. type 2 & motorkappe /
Dim. sketch for DW with vertical in/outlet, baseplate type 2 & shroud





7. Målskitse / Dimensions sketch

Gear	Symbol	DW1			DW2		DW3			DW4			DW5			
		003/7.5	004/15	007/7	006/10	007/20	013/10	014/10	017/20	030/10	033/10	039/20	073/10	080/12.5	093/25	142/15	256/7
	A	10	10	18	15	15	25	19	19	35	8	8	34	11	11	32	83
	C	35	35	31	34	34	30	42	42	33	63	63	50	75	75	59	34
	D	110	110	110	110	110	110	110	110	110	135	135	135	205	205	205	205
	E																
	EA	350	350	350	440	440	440	545	545	545	720	720	720	990	990	990	990
	F	505	505	505	595	595	595	700	700	700	900	900	900	1260	1260	1260	1260
	GL	194	194	194	217	217	217	248	248	248	300	300	300	360	360	360	360
	H	198	198	198	223	223	223	278	278	278	362	362	362	392	392	392	392
	J	248	248	248	273	273	273	332	332	332	422	422	422	460	460	460	460
	N	72	72	72	72	72	72	90	90	90	110	110	110	120	120	120	120
	T	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
SK 320/33	B	830	830	840	850	850	860	890	890	910							
	MB	608	608	608	600	600	600	617	617	617							
	ML	177	177	177	154	154	154	185	185	185							
	U	305	305	305	305	305	305	360	360	360							
	L																
SK 420/30	B	830	830	840	850	850	860	890	890	910	1160	1160	1185	1165	1165	1185	1235
	MB	608	608	608	600	600	600	617	617	617	813	813	813	707	707	707	707
	ML	177	177	177	154	154	154	185	185	185	153	153	153	210	210	210	210
	U	305	305	305	305	305	305	360	360	360	360	360	360	450	450	450	450
	L													45	45	45	45
SK 620/30	B				1000	1000	1010	1040	1040	1060	1245	1245	1270	1355	1355	1380	1430
	MB				750	750	750	767	767	767	898	898	898	898	898	898	898
	ML				198	198	198	185	185	185	243	243	243	210	210	210	210
	U				360	360	360	360	360	360	450	450	450	450	450	450	450
	L										45	45	45	45	45	45	45
SK 672/73	B							1175	1175	1190	1245	1245	1270	1355	1355	1380	1430
	MB							898	898	898	898	898	898	898	898	898	898
	ML							250	250	250	243	243	243	210	210	210	210
	U							450	450	450	450	450	450	450	450	450	450
	L							45	45	45	45	45	45	45	45	45	45
SK 772/73	B							1175	1175	1190	1375	1375	1400	1525	1525	1545	1595
	MB							898	898	898	1027	1027	1027	1065	1065	1065	1065
	ML							275	275	275	285	285	285	317	317	317	317
	U							450	450	450	480	480	480	525	525	525	525
	L							45	45	45	45	45	45	45	45	45	45
SK 872/73	B										1375	1375	1400	1525	1525	1545	1595
	MB										1027	1027	1027	1065	1065	1065	1065
	ML										285	285	285	317	317	317	317
	U										480	480	480	525	525	525	525
	L										45	45	45	45	45	45	45
SK 972/73	B												1770	1770	1790	1840	
	MB												1312	1312	1312	1312	
	ML												425	425	425	425	
	U												700	700	700	700	
	L												45	45	45	45	

* Se side : Pumpens mål med fittings
See page : Pump dimensions with fittings

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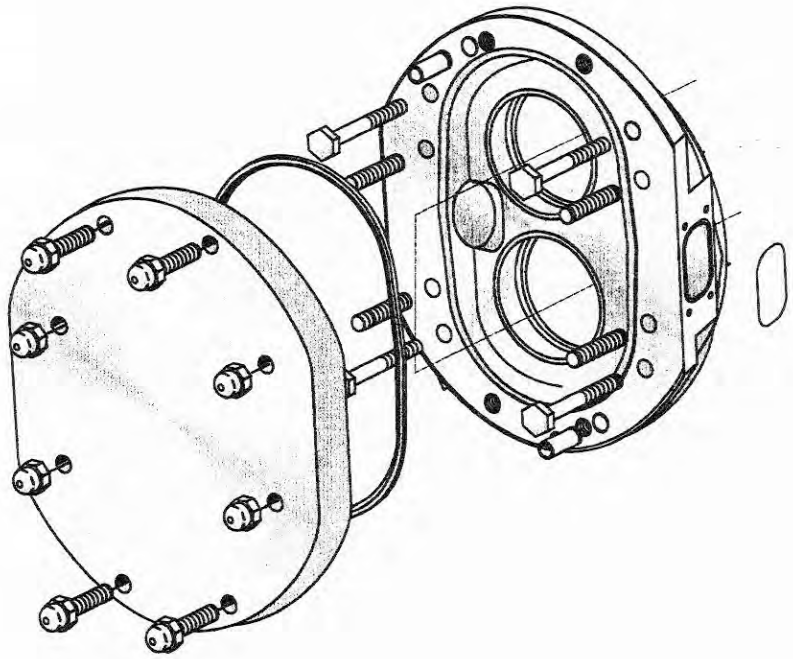

Rektangulært indløb / Rectangular inlet DW pumpe

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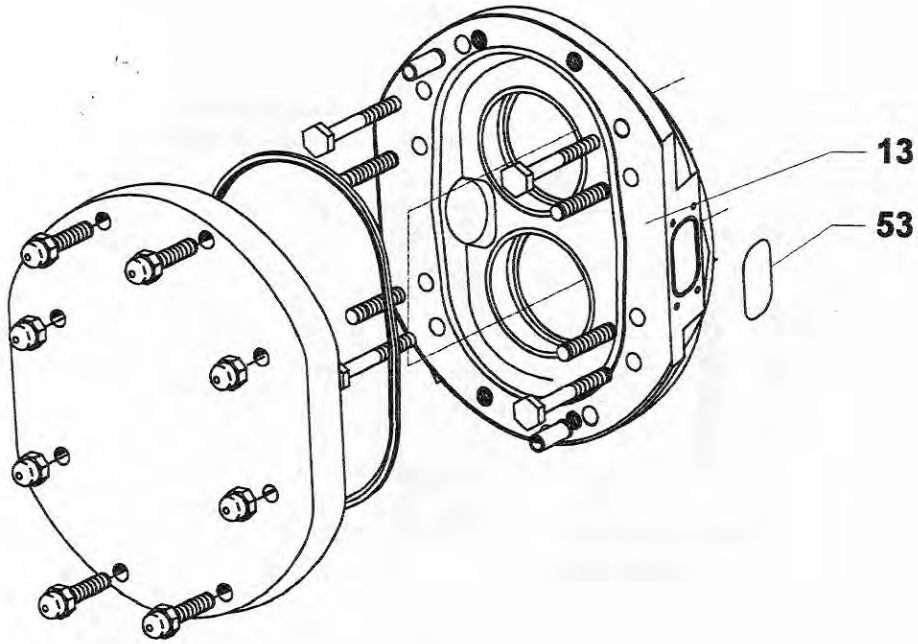
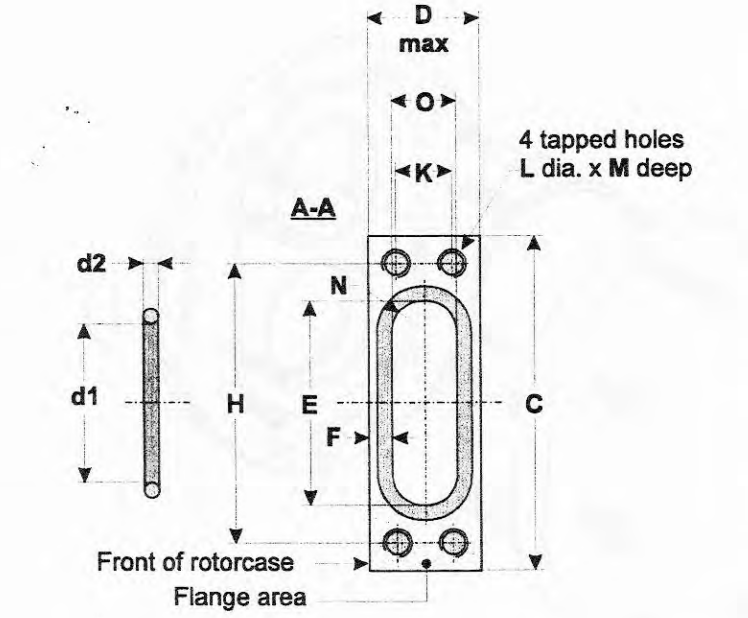
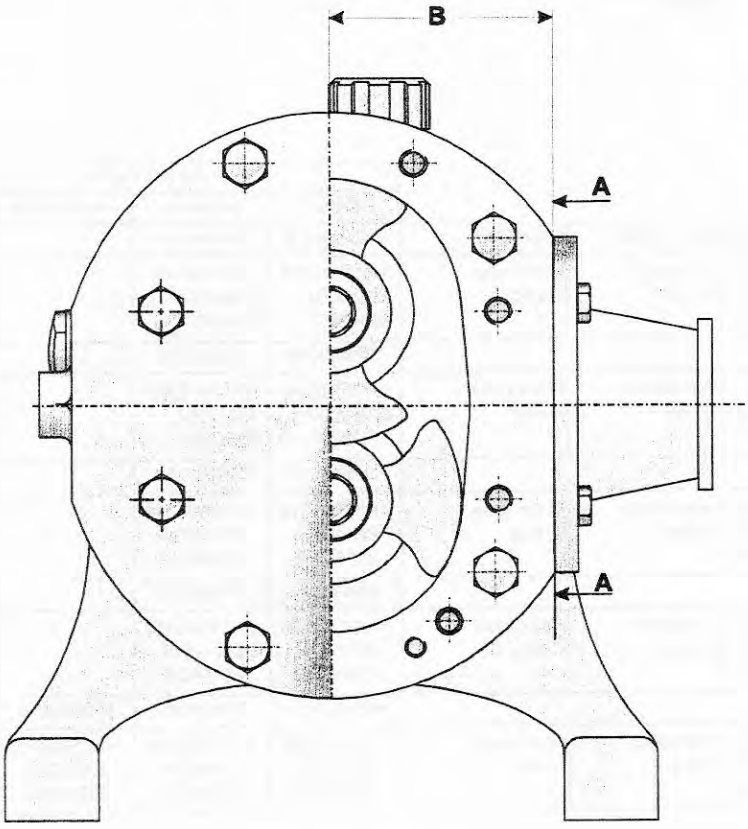
8. Pumpe med rektangulært indløb / Pump with rectangular inlet



					Del nr. / Part No.			
					Piston	Short lobe	Medium lobe	Long lobe
Pos	Stk/Qty	Material	Benævnelse	Description	DW1/003/7.5	DW1/004/15	-	DW1/007/7
13	1	316L	Pumpehus	Rotor case	AR17001003	AR17001003		AR17001006
53	1	EPDM	O-ring	O-ring	25049004	25049004		25039004
-	-	Viton	-	-	25049002	25049002		25039002
					DW2/006/10	DW2/007/20	-	DW2/013/10
13	1	316L	Pumpehus	Rotor case	AR17002006	AR17002006		AR17002013
53	1	EPDM	O-ring	O-ring	25040004	25040004		25041004
-	-	Viton	-	-	25040002	25040002		25041002
					DW3/014/10	DW3/017/20	-	DW3/030/10
13	1	316L	Pumpehus	Rotor case	AR17003014	AR17003014		AR17003030
53	1	EPDM	O-ring	O-ring	25042004	25042004		25043004
-	-	Viton	-	-	25042002	25042002		25043002
					DW4/033/10	DW4/039/20	-	DW4/073/10
13	1	316L	Pumpehus	Rotor case	AR17004033	AR17004033		AR17004073
53	1	EPDM	O-ring	O-ring	25044004	25044004		25045004
-	-	Viton	-	-	25044002	25044002		25045002
					DW5/080/12.5	DW5/093/25	DW5/142/15	DW5/256/7
13	1	316L	Pumpehus	Rotor case	AR17005080	AR17005080	AR17005142	AR17005256
53	1	EPDM	O-ring	O-ring	25046004	25046004	25047004	25048004
-	-	Viton	-	-	25046002	25046002	25047002	25048002

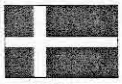
8. Målskitse - rektangulært indløb / Dimensions sketch - rectangular inlet





8. Målskitse - rektangulært indløb / Dimensions sketch - rectangular inlet

Pump model	B	C	D	E	F	H	K	L	M	N	O	Area (mm	O-Ring (d1 x d2)
DW1/003/7.5	66	71	23.7	43	4.7	59	12	M6	10	R7	15.5	630	34.59 x 2.62
DW1/004/15	66	71	23.7	43	4.7	59	12	M6	10	R7	15.5	630	34.59 x 2.62
DW1/007/7	66	71	32	43	5.1	59	20	M6	10	R8	21	852	37.77 x 2.62
DW2/006/10	78	80	31.7	52	4.7	68	20	M6	10	R10	22.2	1069	41.60 x 2.4
DW2/007/20	78	80	31.7	52	4.7	68	20	M6	10	R10	22.2	1069	41.60 x 2.4
DW2/013/10	78	80	41.4	52	4.8	68	30	M6	10	R10	31.9	1573	49.60 x 2.4
DW3/014/10	87	98	41.9	62	6.6	82	26	M8	12	R10	28.8	1697	53.64 x 2.62
DW3/017/20	87	98	41.9	62	6.6	82	26	M8	12	R10	28.8	1697	53.64 x 2.62
DW3/030/10	87	98	57.5	62	6.6	82	42	M8	12	R10	44.4	2665	63.17 x 2.62
DW4/033/10	105	117	54.6	81	5.6	101	39	M8	13	R17	43.5	3272	71.12 x 2.62
DW4/039/20	105	117	54.6	81	5.6	101	39	M8	13	R17	43.5	3272	71.12 x 2.62
DW4/073/10	105	118	80	80	9	102	64	M8	13	R17	62.1	4782	82.22 x 2.62
DW5/080/12.5	135	155	69.6	110	8.3	133	50	M10	15	R17	53.5	5637	94.84 x 3.53
DW5/093/25	135	155	69.6	110	8.3	133	50	M10	15	R17	53.5	5637	94.84 x 3.53
DW5/142/15	135	154	91.1	110	9.6	135	71	M10	15	R17	72	7672	107.54 x 3.53
DW5/256/7	135	158	140.9	114	6.7	132	121	M10	15	R18	127.5	13747	142.47 x 3.53



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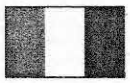

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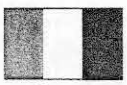

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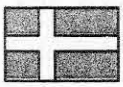

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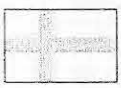

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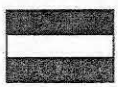

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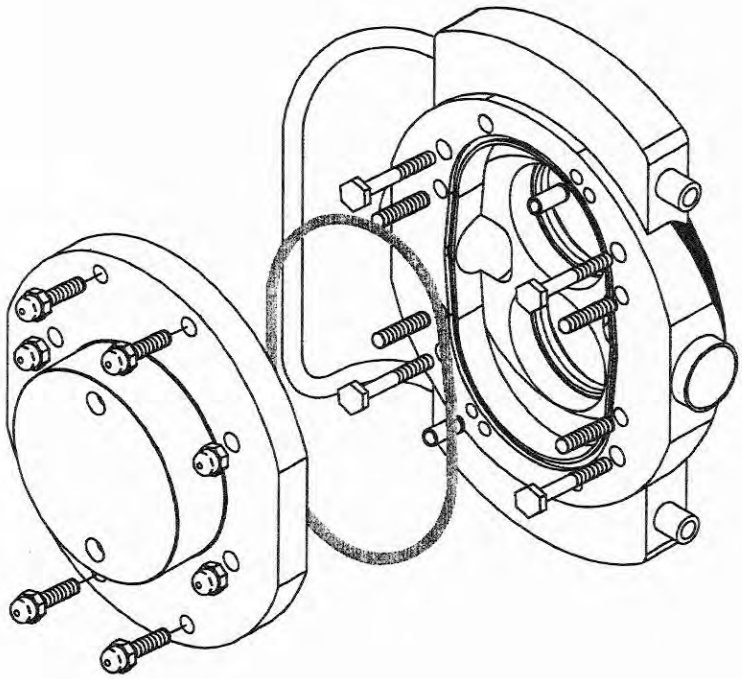

Køle-varme kappe komplet / Termal jacket complete
DW pumpe

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Indhold / Contents:

8. Introduktion til Køle-varme kappe

DW

1 Funktionsbeskrivelse

Ved anvendelse af køle- varme kappen er det muligt enten at forvarme eller køle pumpekammeret, inden produktet kommer ind i pumpen. Derefter holdes temperaturen konstant.

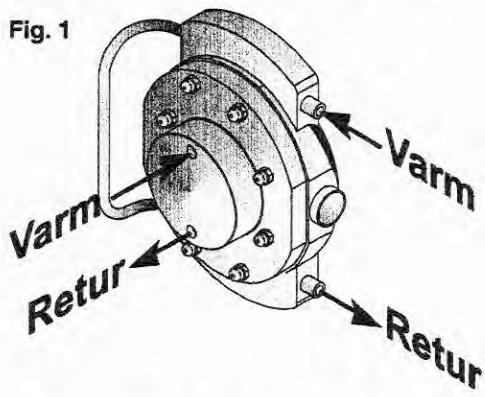
Høj viskose produkttyper som fedt, glukose, karamel osv. bliver tyndere og lettere at pumpe hvis der anvendes varmekappe på pumpen.

Hvis produktets kogepunkt ligger under omgivelses temperaturen, vil anvendelse af kølekappe på pumpen forhindre produktet i at fordampe i pumpen og forårsage kavitation.

2 Tilslutning

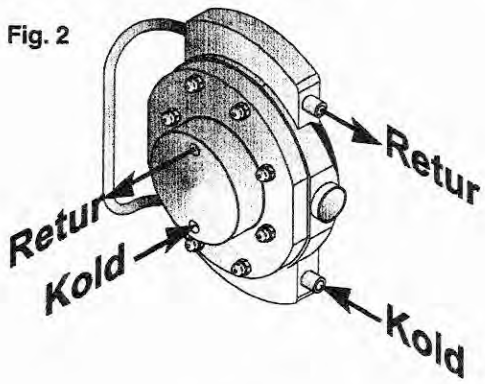
Anvendes køle- varme kappen som varmekappe skal det varme- førende medie tilsluttes de øverste tilslutninger, og returrøret tilsluttes nederste tilslutning.
Som vist på fig 1.

Fig. 1



Anvendes køle- varme kappen som kølekappe skal det kulde- førende medie tilsluttes de nederste tilslutninger, og returrøret tilsluttes øverste tilslutning.
Som vist på fig. 2.

Fig. 2



3 Køle- varme medie:

Som varme- køle førende medie kan der fx anvendes:
Damp, Olie, Vand eller kølevæske.

4 Cirkulations tid.

Der anbefales at køle- varme mediet skal cirkulere i 30 min. før pumpen startes.

5 Max temperatur og max tryk.

Det varme- køle førende medie må max antage en temperatur på 180°C og et max tryk på 10 bar.

8. Introduction to the Termal jacket

1 Method of operation

The thermal jackets facilitate the heating or cooling of the pump chamber prior to product entry. Thereafter the temperature is kept constant.

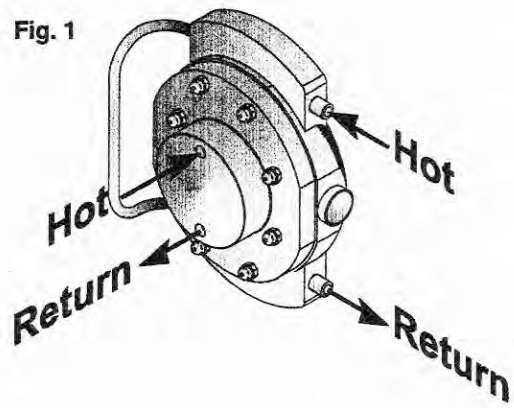
Very high viscous liquids such fats, glucose, toffee, resins etc. Become more easily pumped if the viscosity is reduced by the introduction of heat.

Where liquids have a boiling point below ambient temperature, the introduction of a cooling media will prevent the liquid from evaporating in the pump.

2 Connecting the Thermal jackets

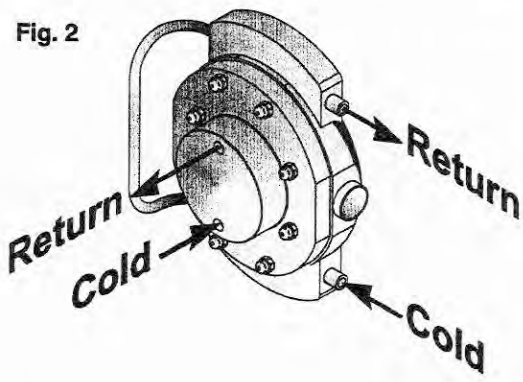
When the jacket is used for heating purposes, the heat transferring media must be connected to the top jacket connection. The return pipe must be connected to the bottom jacket connection.
As shown on fig. 1.

Fig. 1



When the jacket is used for cooling purposes, the cooling media must be connected to the bottom jacket connection. The return pipe must be connected to the top jacket connection.
As shown on fig. 2.

Fig. 2



3 Heat/cooling transferring media

Various media can be used for heating and cooling the pump rotorcase and frontcover, e.g. steam, oil, water or refrigerants.

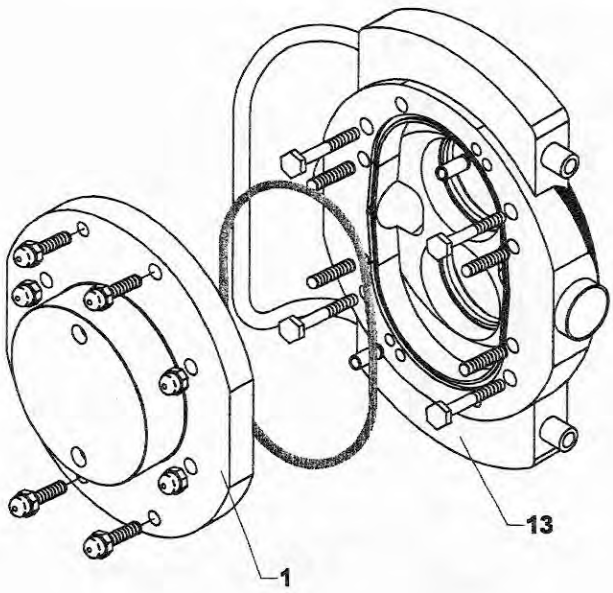
4 Circulation time

The recommended circulation time prior to start-up is 30 minutes.

5 Max temperature and max pressure

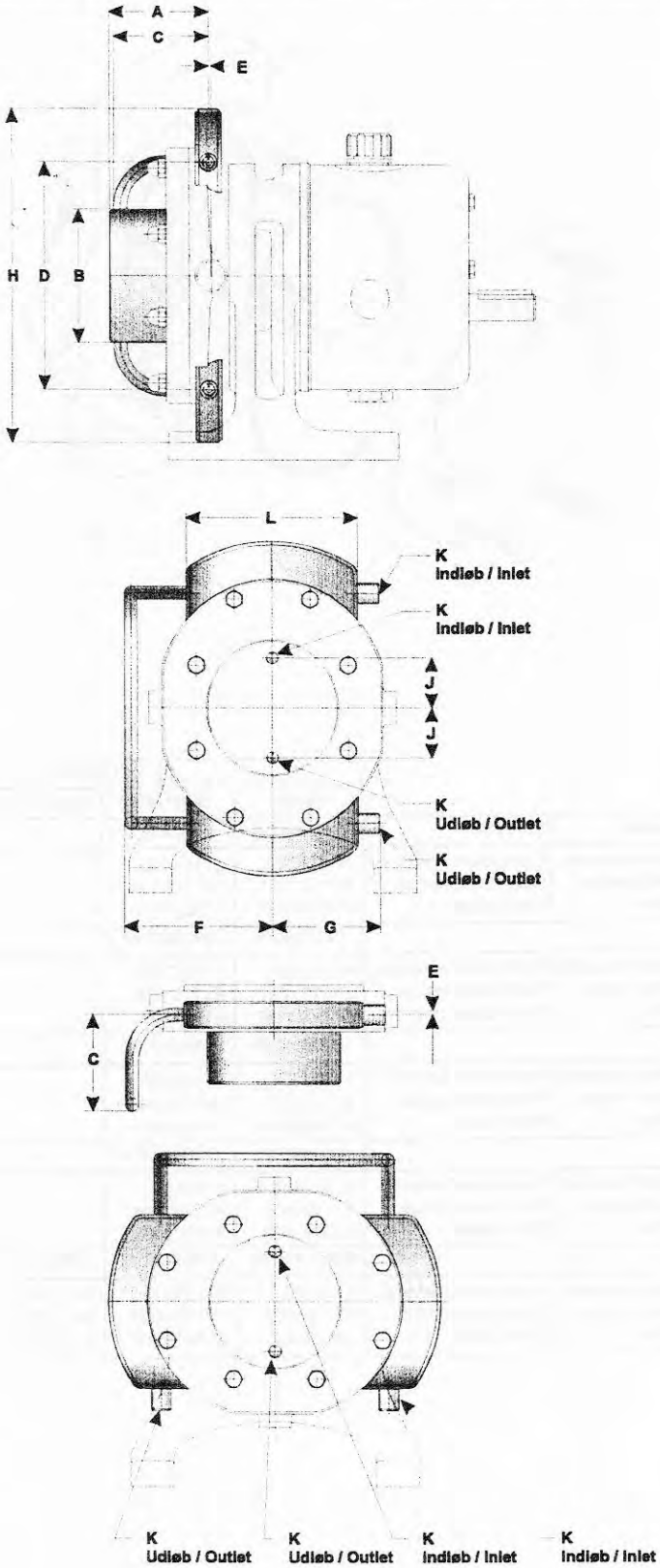
The maximum temperature allowed for the heating/cooling transferring media is 180°C and the maximum pressure is 10 bars.

8. Køle-varme kappe komplet / Termal jacket complete



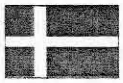
					Del nr. / Part No.			
					Piston	Short lobe	Medium lobe	Long lobe
Pos	Stk/Qty	Material	Benævnelse	Description	DW1/003/7.5	DW1/004/15	-	DW1/007/7
1	1	316L	Frontplade horisontal Frontplade vertikal	Front cover horizontal Front cover vertical	A1101101 AV1101101	A1101100 AV1101100		A1101100 AV1101100
13	1	316L	Pumpehus	Rotor case	A17031003	A17031003		A17031006
					DW2/006/10	DW2/007/20	-	DW2/013/10
1	1	316L	Frontplade horisontal Frontplade vertikal	Front cover horizontal Front cover vertical	A1101201 AV1101201	A1101200 AV1101200		A1101200 AV1101200
13	1	316L	Pumpehus	Rotor case	A17032006	A17032006		A17032013
					DW3/014/10	DW3/017/20	-	DW3/030/10
1	1	316L	Frontplade horisontal Frontplade vertikal	Front cover horizontal Front cover vertical	A1101301 AV1101301	A1101300 AV1101300		A1101300 AV1101300
13	1	316L	Pumpehus	Rotor case	A17033014	A17033014		A17033030
					DW4/033/10	DW4/039/20	-	DW4/073/10
1	1	316L	Frontplade horisontal Frontplade vertikal	Front cover horizontal Front cover vertical	A1101401 AV1101401	A1101400 AV1101400		A1101400 AV1101400
13	1	316L	Pumpehus	Rotor case	A17034033	A17034033		A17034073
					DW5/080/12.5	DW5/093/25	DW5/142/15	DW5/256/7
1	1	316L	Frontplade horisontal Frontplade vertikal	Front cover horizontal Front cover vertical	A1101501 AV1101501	A1101500 AV1101500	A1101500 AV1101500	A1101500 AV1101500
13	1	316L	Pumpehus	Rotor case	A17035080	A17035080	A17035142	A17035256

8. Målskitse- Køle/varme kappe / Dimensions sketc - Heating/cooling jacket



8. Målskitse- Køle/varme kappe / Dimensions sketc - Heating/cooling jacket

Pump model	A	B	C	D	E	F	G	H	J	K RG ISO 228-1	L
DW1/003/7.5	58.5	Ø90	75	164	1.3	107.3	76	234	31	1/8"	112
DW1/004/15	58.5	Ø90	75	164	1.3	107.3	76	234	31	1/8"	112
DW1/007/7	62	Ø90	75	164	0.6	107.3	76	234	31	1/8"	112
DW2/006/10	66	Ø106	75.5	180	0.6	116	85	263	39	1/8"	130
DW2/007/20	66	Ø106	75.5	180	0.6	116	85	263	39	1/8"	130
DW2/013/10	72	Ø106	75.5	180	0.6	116	85	263	39	1/8"	130
DW3/014/10	78	Ø123	75	208	1	126	95	301	47	1/8"	150
DW3/017/20	78	Ø123	75	208	1	126	95	301	47	1/8"	150
DW3/030/10	84.5	Ø123	75	208	0.8	126	95	301	47	1/8"	150
DW4/033/10	85.5	Ø160	75.5	248	0.8	142.2	111	347	65	1/8"	188
DW4/039/20	93.5	Ø160	75.5	248	0.8	142.2	111	347	65	1/8"	188
DW4/073/10	101	Ø160	75.5	248	6	142.2	111	347	65	1/8"	188
DW5/080/12.5	110.5	Ø214	85.5	300	2.5	170.8	139.5	424	92.5	1/8"	245
DW5/093/25	110.5	Ø214	85.5	300	2.5	170.8	139.5	424	92.5	1/8"	245
DW5/142/15	120	Ø214	89	300	2.5	170.8	139.5	424	92.5	1/8"	245
DW5/256/7	137	Ø214	128	300	4.5	170.8	139.5	424	92.5	1/8"	245



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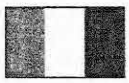

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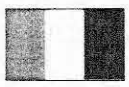

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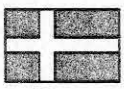

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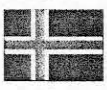

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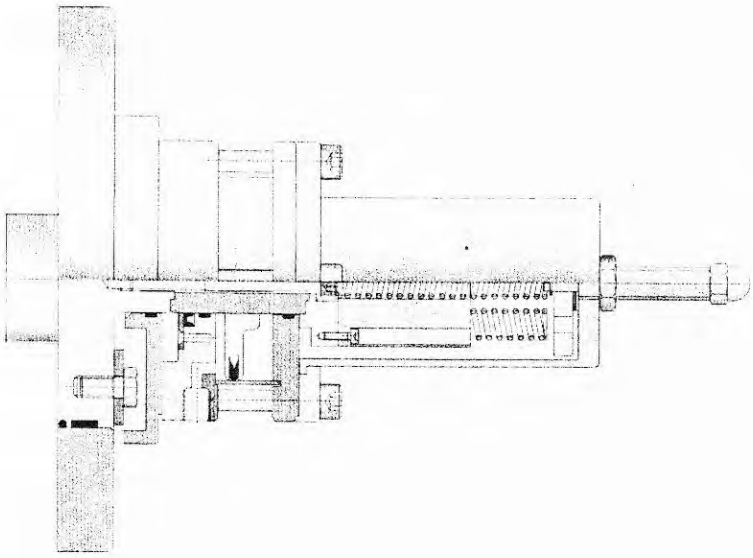

Overtryksventil / Relief Valve DW pumpe

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Indhold / Contents:

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8. Montage vejledning for Overtryksventil

Advarsel skru altid justerskrue (1) helt ud således at fjedrene afspændes før afmontage af fjedrehuset.

Afmontage af fjedrehuset sker ved at løsne de 4 skruer i flancen(2) , herefter fjernes fjedrene (3) og der er nu adgang til den skruen i midten (4) der holder akslen sammen.
Alle dele er herefter til at adskille .Husk at mærke stemplet inden afmontage da der kan være forskel på sims justeringen i de respektive ender .

Hvis der monteres et nyt stempel eller lignende skal stempelenderne justeres om , det gøres ved at montere stemplet uden sims og herefter måle afstanden fra frontdæksel overflade til stempel overflade herefter monteres der det antal sims der kræves for at stemplet kommer til at befinde sig mellem 0,03 til 0,05 mm under frontdæksel overfladen.
Montagen sker i omvendt rækkefølge

Justering af åbningstrykket sker på følgende måde:

1) Der skal være et manometer monteret på tryksiden så der er mulighed for at følge med i trykforløbet.

2) Der skal være en ventil på tryksiden der kan lukkes og hermed få trykket til at stige.

3) Justerskruen (1) skal være skruet helt ud så overtryksventilen er helt åben.

4) Ventilen på tryksiden lukkes herefter næsten (der skal altid være en lille gennemstrømning til køling af pumpen)

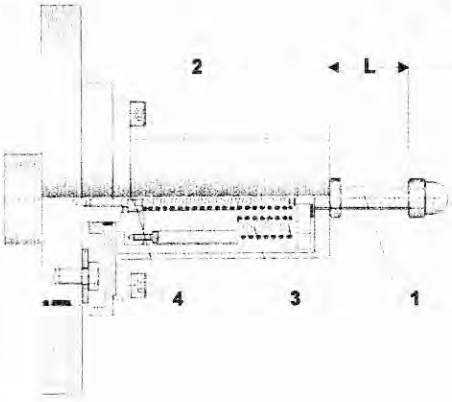
5) Justerskruen strammes herefter til at trykket stiger til det ønskede.

6) Åben og luk ventilen på tryksiden for at undersøge om trægheden (forskel på åbne og lukke trykket) er som ønsket.

7) Der er mulighed for at ændre fjedre karekterestikken ved at fjerne eller tilføje fjedre.
Hovedreglen er at hvis L er under 10 mm tilføjes en fjeder og er den over 20 mm fjernes en fjeder.

Hvis det ønskede tryk ikke kan opnås kan det være nødvendig at øge fjeder kraften ved at komme flere fjedre i, det for lave tryk kan skyldes at viskositeten er for lav eller omdr. tallet er for lav. Det kan ligeledes skyldes at tilløbstrykket ikke er omkring 1 bar, hvis indløbstrykket stiger kræves der et højere fjedertryk der skal kompensere for trykbidrag som sugesiden på stemplet bidrager med.

Der må forventes et øget flow tab på ca. 5 % for væsker med lav viskositet, tabet kommer fra området over o-ringen.



Maks. anbefalede viskositet er 30.000 cp.

Pumpe	Maks opnåelig tryk pr. fjeder Bar	* Maks tryk med 7 fjedre Bar
DW1	2.25	15
DW2	2.85	20
DW3	2.85	20
DW4	2.85	20
DW5	3.6	25

* Ved 1 bars tilløbstryk

8 .Assembly instructions for Relief Valve

Caution: Always unscrew the adjusting screw (1) completely so the springs are released from tension before removal of the spring housing.

The spring housing is removed by loosening the four screws in the flange (2), then the springs (3) are removed. Now you have access to the screw in the middle (4), which holds the shaft together.
All parts can now be dismantled.

Re-assemble in the opposite order.

Adjust the opening pressure as follows:

1) You must have a pressure gauge mounted on the pressure side so you can observe the changes in pressure.

2) There must be a valve on the pressure side that can be closed to make the pressure rise.

3) The adjusting screw (1) must be screwed all the way out so the overpressure valve is completely open.

4) Then the valve on the pressure side must be closed almost completely (there must always be a slight flow to cool the pump).

5) Then tighten the adjusting screw until the pressure rises to the required level.

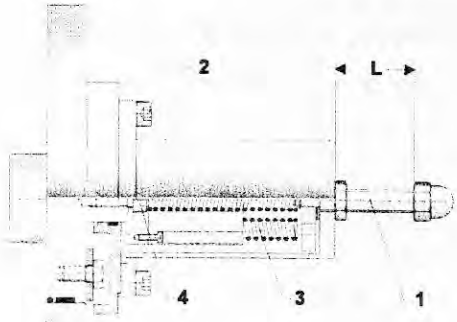
6) Open and close the valve on the pressure side to find out whether the inertia (difference between the opening and closing pressure) is as required.

7) It is possible to alter spring characteristics by removing or adding springs. The main rule is that if L is under 10 mm, a spring should be added, and if over 20 mm, a spring should be removed.

If the desired pressure cannot be achieved, it may be necessary to increase spring power by adding more springs, since excessively low pressure may be due to viscosity or rotational speed being too low. It may also be due to the feed pressure not being around 1 bar, and if feed pressure rises, a higher spring pressure will be required to compensate for the pressure component exerted on the piston by the suction side.

In the case of low viscosity liquids, an extra flow loss of around 5% must be expected. The loss comes from the area over the o-ring.

Max. recommended viscosity is 30,000 cp.



Pump	Max pressure per spring Bar	*Max pressure with 7 spring Bar
DW1	2.25	15
DW2	2.85	20
DW3	2.85	20
DW4	2.85	20
DW5	3.6	25

* At 1 bar feed pressure.

8. Montageanleitung für Überdruckventil

Warnung! Die Einstellschraube (1) immer ganz abschrauben, damit die Federn vor der Demontage des Federgehäuses entspannt sind.

Die Demontage des Federgehäuses erfolgt durch Lösen der 4 Schrauben im Flansch (2); dann werden die Federn (3) entfernt und ermöglichen so den Zugang zur Schraube (4) in der Mitte, die die Welle zusammenhält. Jetzt lassen sich alle Teile zerlegen.

Die Montage erfolgt in umgekehrter Reihenfolge.

Die Justierung des Öffnungsdrucks wird folgendermaßen vorgenommen:

1) Ein Manometer muß druckseitig montiert sein, damit der Druck kontrolliert werden kann.

2) Druckseitig muß ein Ventil montiert sein, das geschlossen werden kann und somit eine Drucksteigerung ermöglicht.

3) Die Justierschraube (1) muß ganz abgeschraubt sein, damit das Überdruckventil ganz offen ist.

4) Das Ventil auf der Druckseite dann fast ganz schließen (ein kleiner Durchfluß zur Kühlung der Pumpe muß immer gewährleistet sein).

5) Die Justierschraube festschrauben, bis der Druck den Solldruck erreicht.

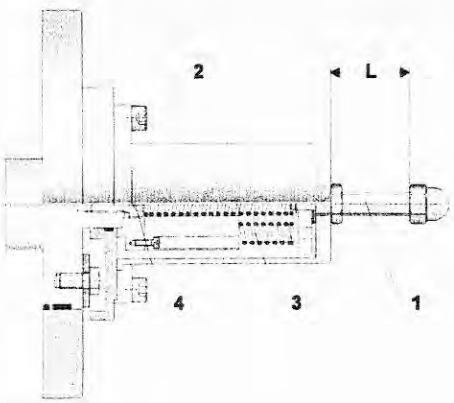
6) Das Ventil druckseitig öffnen und schließen, um die Trägheit (Unterschied zwischen Öffnungs- und Schließdruck) auf Funktion zu prüfen.

7) Es ist möglich, die Federcharakteristik durch Entfernen oder Hinzufügen von Federn zu ändern.
Als Hauptregel gilt: wenn L 10 mm unterschreitet wird eine Feder hinzugefügt, wenn L 20 mm überschreitet wird eine Feder entfernt.

Lässt sich der gewünschte Druck nicht aufbauen, kann es erforderlich sein, die Federkraft durch Hinzufügen weiterer Federn zu erhöhen. Ein zu niedriger Druck kann darauf zurückzuführen sein, dass die Viskosität oder die Drehzahl zu niedrig ist; es kann auch darauf zurückzuführen sein, dass der Einlaufdruck nicht bei ca. 1 bar liegt. Wenn der Einlaufdruck steigt, wird eine höhere Federkraft benötigt, um den an der Ansaugseite des Kolbens anliegenden Druckbeitrag auszugleichen.

Es ist mit einem erhöhten Strömungsverlust von ca. 5% für Flüssig-keiten mit niedriger Viskosität zu rechnen; der Verlust stammt aus dem Bereich über dem O-Ring.

Die max. empfohlene Viskosität beträgt 30.000 cp.



Pumpe	Max. erreichbarer Federdruck Bar	*max. Druck mit 7 Federn Bar
DW1	2.25	15
DW2	2.85	20
DW3	2.85	20
DW4	2.85	20
DW5	3.6	25

* Bei einem Einlaufdruck von 1 bar

8. Instructions de montage pour soupape de surpression

Attention, dévissez toujours à fond la vis de réglage (1) afin que les ressorts soient détendus avant le démontage du barillet de ressort.

Le démontage du barillet de ressort s'effectue en dévissant les 4 vis placées sur la bride (2), retirez ensuite les ressorts (3) et vous aurez ainsi accès à la vis située au centre (4) qui permet de maintenir l'ensemble de l'arbre.
Par la suite, toutes les pièces pourront être démontées.

Le remontage s'effectue en sens inverse.

Le réglage de la pression d'ouverture se fait comme suit:

1) Un manomètre doit être installé sur le côté refoulement afin de pouvoir suivre l'évolution de la pression.

2) Une soupape pouvant être fermée doit être installée sur le côté refoulement pour que la pression puisse augmenter si nécessaire.

3) La vis de réglage (1) doit être dévissée à fond pour permettre à la soupape de surpression d'être entièrement ouverte.

4) Ensuite la soupape sur le côté refoulement doit être presque refermée (laissez toujours un petit passage pour le refroidissement de la pompe)

5) Puis serrez la vis de réglage afin d'augmenter et d'atteindre le niveau de pression désiré.

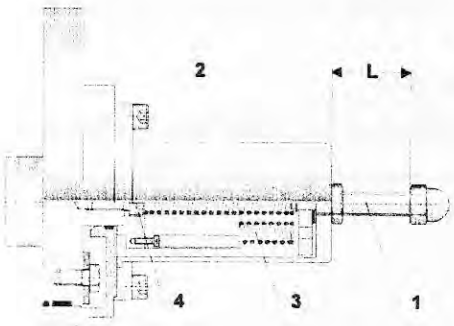
6) Ouvrez et fermez la soupape sur le côté refoulement afin de vérifier si l'inertie obtenue (différence entre pression d'ouverture et de fermeture) est correcte.

7) Il est possible de modifier la caractéristique des ressorts soit en enlevant ou en ajoutant des ressorts.
En règle générale si L est inférieure à 10 mm, ajoutez un ressort et si L est supérieure à 20 mm, retirez un ressort.

Au cas où il ne serait pas possible d'obtenir la pression souhaitée il est alors nécessaire d'augmenter l'effet de ressort en ajoutant des ressorts supplémentaires. La cause d'une pression trop basse peut être une viscosité trop basse, un nombre de tours trop bas ou bien encore une pression d'entrée qui n'est pas d'environ 1 bar. Si la pression d'entrée augmente, la pression de ressort doit être supérieure et doit pouvoir compenser la pression fournie au niveau du côté d'aspiration sur le piston.

Il faudra prévoir une augmentation de la perte de débit d'environ 5% pour les liquides ayant une viscosité basse, la perte se situe au niveau de la bague "O".

La viscosité maximale recommandée est de 30.000 cp.



Pumpe	Pression maximum du ressort réalisable Bar	* pression max. avec 7 ressorts Bar
DW1	2.25	15
DW2	2.85	20
DW3	2.85	20
DW4	2.85	20
DW5	3.6	25

* Avec une pression d'entrée d'1 bar.

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8. Instrucciones de montaje para válvula de carga

Aviso! Destornille siempre por completo el tornillo de ajuste (1), de manera que se aflojan los resortes antes de desmontar la caja de resorte.

Se desmonte la caja de resorte por medio de aflojar los cuatro tornillos de la brida (2), luego se sacan los resortes (3) para tener acceso al tornillo en el centro (4) que mantiene el eje.
Luego pueden separarse todas las partes.

El montaje tiene lugar en orden inverso.

Ajuste la presión de abertura de la manera siguiente:

1) Monte un manómetro en el lado de presión, de manera que puede vigilarse el estado de la presión.

2) Una válvula, que puede cerrarse, ha de encontrarse en el lado de presión. Con esta válvula puede aumentarse la presión.

3) Destornille por completo el tornillo de ajuste (1), de manera que la válvula de descarga está totalmente abierta.

4) No cierre por completo la válvula del lado de presión (permita siempre un pequeño paso de corriente para enfriar la bomba)

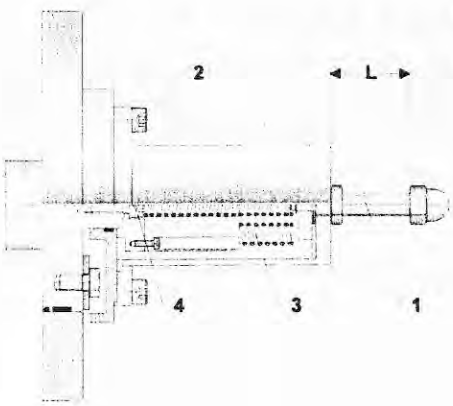
5) Tiense luego el tornillo de ajuste hasta que la presión llegue a la presión deseada.

6) Abra y cierre la válvula del lado de presión para asegurar la inercia (la diferencia entre la presión abierta y cerrada) correcta.

7) Puede sustituirse el número de muelles por medio de sacar o añadir muelles.
Según la regla general, se añade un muelle si L es menos de 10 mm y se saca un muelle si es más de 20 mm.

Si no puede conseguirse la presión deseada, puede ser que sea necesario aumentar la fuerza de muelle por medio de añadir más muelles, la presión demasiada baja puede ser causada por una viscosidad demasiada baja o un número de revoluciones demasiado bajo. También puede ser causado por el hecho de que la presión de entrada no se encuentre alrededor de 1 bar. Si la presión de entrada sube, se requiere una presión más alta de muelle para compensar por la contribución de presión procedente del lado de succión del pistón.

Ha de calcularse con una pérdida de flujo de aprox. el 5 % en el caso de líquidos con una viscosidad baja. La pérdida procede del área sobre el anillo obturador toroidal.



Viscosidad recomendada máx: 30.000 cp.

Pumpe	Presión máx. alcanzable del resorte Bar	*presión máx. con 7 resortes Bar
DW1	2.25	15
DW2	2.85	20
DW3	2.85	20
DW4	2.85	20
DW5	3.6	25

* Con una presión de entrada de 1 bar

8. Instruções de montagem para a válvula de descarga

Cuidado: Antes da desmontagem do alojamento das molas desaperte sempre completamente o parafuso de ajuste (1) de modo a soltar as molas.

Para desmontar o alojamento das molas desaperte os quatro parafusos na flange (2), retirando em seguida as molas (3). Você terá agora acesso ao parafuso no centro (4), o qual mantém preso o eixo.
Em seguida poderão ser desmontadas todas as peças.

Para remontar, siga a descrição em ordem inversa.

Procedimento para ajustar a pressão de abertura:

1) É necessário ter-se previamente montado um manómetro do lado da pressão, de modo a poder observar as alterações na pressão.

2) Deverá igualmente haver uma válvula do lado da pressão, a qual possa ser fechada de modo a fazer aumentar a pressão.

3) O parafuso de ajuste (1) deverá ser desatarraxado completamente para fora, de modo que a válvula de descarga fique completamente aberta.

4) Em seguida a válvula no lado da pressão deverá ser fechada completamente (atenção: deverá sempre estar presente um ligeiro fluxo, para arrefecer a bomba).

5) Aperte agora o parafuso e ajuste o mesmo até que a pressão atinja o nível desejado.

6) Abra e feche a válvula do lado da pressão de modo a verificar se a inércia (ou seja, a diferença entre pressão de abertura e pressão de fecho) está conforme necessário.

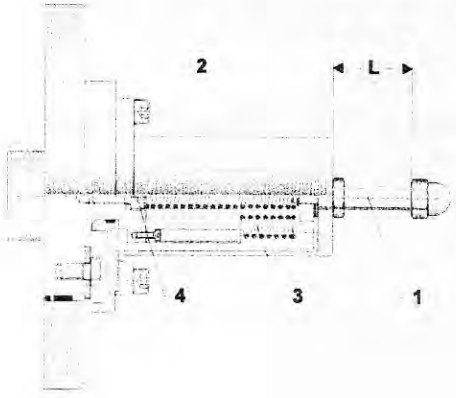
7) É possível alterar as características das molas, por meio da adição ou remoção de elementos individuais.

Como regra geral vale o seguinte: se L for inferior a 10 mm, adicione um elemento; se L for superior a 20 mm, retire um elemento.

Se não for possível obter a pressão desejada, poderá ser necessário aumentar a força das molas adicionando mais elementos. Uma baixa pressão poderá ser motivada por uma viscosidade baixa demais, ou por uma rotação (r.p.m.) baixa demais; ela poderá também ser motivada por uma pressão de entrada inferior a aprox. 1 bar. Quando a pressão de entrada aumentar, será necessário uma pressão maior da mola, a fim de compensar o valor da pressão no lado de sucção do pistão.

No caso de líquidos com baixa viscosidade deve-se contar com uma significativa perda de fluxo, da ordem de aprox. 5%; esta perda ocorre na região sobre o anel "O".

A viscosidade máx. recomendada é de 30.000 cp.



Pumpe	Pressão máxima que se pode obter na mola Bar	*Pressão máxima com 7 molas Bar
DW1	2.25	15
DW2	2.85	20
DW3	2.85	20
DW4	2.85	20
DW5	3.6	25

* Com uma pressão de entrada de 1 bar

8. Istruzioni per il montaggio della valvola di sovrapressione

Avvertenza: svitare sempre completamente la vite di regolazione (1) in modo che le molle siano del tutto rilassate prima dello smontaggio dell'alloggiamento delle molle.

Lo smontaggio dell'alloggiamento delle molle avviene allentando le 4 viti della flangia (2), do-podichè si tolgono le molle (3) e si può così accedere alla vite centrale (4), che tiene l'asse.
In seguito si possono smontare tutte le parti.

Il montaggio avviene in ordine inverso.

La regolazione della pressione di apertura avviene nel modo seguente:

1) Sul lato pressione deve essere montato un manometro in modo che si possa seguire l'andamento della pressione.

2) Sul lato pressione deve anche essere montata una valvola che possa essere chiusa, ed in tal modo fare in modo che la pressione aumenti.

3) La vite di regolazione (1) deve essere svitata del tutto, in modo che la valvola di sovrapres-sione sia completamente aperta.

4) La valvola sul lato pressione va poi chiusa quasi completamente (si deve lasciare sempre un piccolo flusso attraverso la valvola per il raffreddamento della pompa).

5) Ora si stringe la vite di regolazione fino a che la pressione raggiunga il livello desiderato.

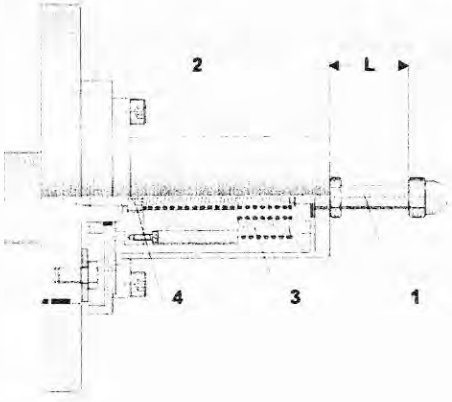
6) Aprire e chiudere la valvola sul lato pressione per verificare se l'isteresi (differenza delle pressioni di apertura e chiusura) sia come desiderata..

7) Si può variare la caratteristica delle molle aggiungendo o togliendo alcune molle.
La regola principale è che se L è minore di 10 mm si aggiunge una molla e se è maggiore di 20 mm si toglie una molla.

Se la pressione desiderata non può essere ottenuta, può essere necessario aumentare la forza delle molle usando un numero maggiore di molle. Per basse pressioni ciò può essere causato dal fatto che la viscosità è troppo bassa, oppure il numero di giri troppo limitato, ma può anche essere causato dal fatto che la pressione di alimentazione non è circa 1 bar. Se la pressione di alimentazione aumenta si richiede una maggiore pressione delle molle per compensare il contributo di pressione prestato dal lato aspirazione del pistone.

Si deve prevedere un aumento di perdita di flusso di ca. il 5% per liquidi a bassa viscosità, perdita che proviene dalla zona attorno all'o-ring.

La max viscosità raccomandata è 30.000 cp.



Pumpe	max pressione delle molle ottenibile Bar	*max pressione con 7 molle Bar
DW1	2.25	15
DW2	2.85	20
DW3	2.85	20
DW4	2.85	20
DW5	3.6	25

* Per pressione di alimentazione di 1 bar

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8. Montagevägledning för övertrycksventil

Varning - skruva alltid ut justerskruven (1) helt för att lätta fjäderns spänning före demontering av fjäderhuset.

Demontering av fjäderhuset sker genom att de 4 skruvarna i flänsen (2) lossas. Därefter avlägsnas fjädrarna (3) så att skruven i mitten (4) som håller samman axeln blir åtkomlig.
Samtliga delar kan nu skiljas åt.

Monteringen sker i omvänd ordning.

Justering av öppningstrycket sker på följande sätt:

1) Det skall finnas en manometer monterad på trycksidan som ger möjlighet att följa tryckförloppet.

2) Det skall finnas en ventil på trycksidan som kan stängas för att få trycket att stiga.

3) Justerskruven (1) skall vara helt utskruvad så att övertrycksventilen är helt öppen.

4) Ventilen på trycksidan stängs därefter nästan helt (en mindre genomströmning skall finnas för kylning af pumpen).

5) Justerskruven dras sedan åt tills trycket stiger till det önskade.

6) Öppna och stäng ventilen på trycksidan för att kontrollera att trögheten (skillnaden mellan öppnings- och stängningstryck) är det önskade.

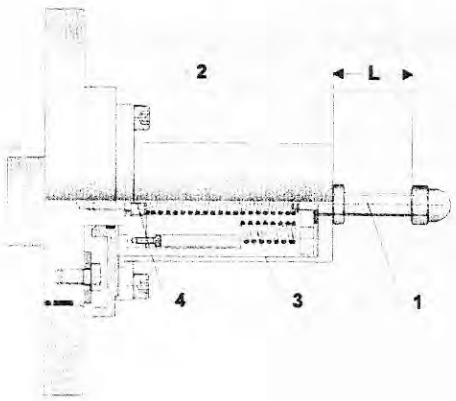
7) Det är möjligt att ändra fjäderkarakteristiken genom av ta bort eller lägga till fjädrar.

Huvudregeln är att om L är mindre än 10 mm lägger man till en fjäder och om det är över 20 mm tar man bort en fjäder.

Om det önskade trycket inte uppnås kan det bli nödvändigt att öka fjädertrycket genom att lägga till fler fjädrar. Lågt tryck kan bero på att viskositeten är för låg eller att varvtalet är för lågt. Det kan även bero på att tilloppstrycket inte ligger på ca 1 bar. Om inloppstrycket stiger krävs högre fjäderkraft för att motverka trycket som sugsidan på kolven bidrar med.

Man bör räkna med en ökad flödesförlust på ca. 5 % för vätskor med låg viskositet. Denna förlust härrör från området över O-ringen.

Högsta rekommenderade viskositet är 30.000 cP.



Pumpe	Max. tryck per fjäder Bar	*max. tryck med 7 fjädrar Bar
DW1	2.25	15
DW2	2.85	20
DW3	2.85	20
DW4	2.85	20
DW5	3.6	25

* Vid 1 bars tilloppstryck.

8. Monteringsanvisning for overtrykksventil

Advarsel: Skru alltid justeringsskrue (1) helt ut slik at fjærene avspennes før demontering av fjærhuset.

Fjærhuset demonteres ved å løsne de 4 skruene i flensen (2). Deretter fjernes fjærene (3), og det er nå tilgang til den midtskruen (4) som holder akselen sammen.
Alle delene kan nå demonteres.

Montering skjer i omvendt rekkefølge.

Åpningstrykket justeres på følgende måte:

1) På trykksiden skal det være montert et manometer, slik at det er mulig å følge med i trykkforløpet.

2) På trykksiden skal det være en ventil, som kan lukkes for å få trykket til å øke.

3) Justeringsskruen (1) skal være skrudd helt ut, slik at overtrykksventilen er helt åpen.

4) Ventilen på trykksiden lukkes deretter nesten (det skal alltid være en liten gjennomstrømning til kjøling av pumpen).

5) Justeringsskruen strammes så til trykket er økt til det ønskede.

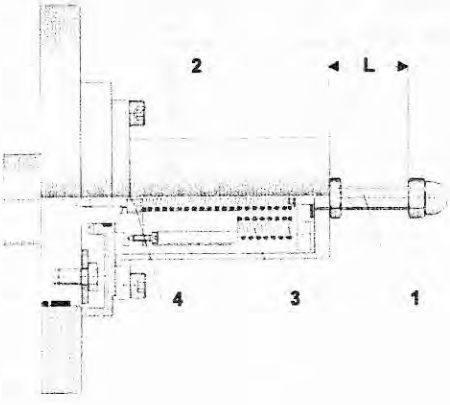
6) Ventilen på trykksiden åpnes og lukkes for å undersøke om tregheten (forskjellen mellom åpne- og lukketrykket) er som ønsket.

7) Der er mulig å endre fjærkarakteristikken ved å fjerne eller tilføye fjærer. Hovedregelen er at hvis L er under 10 mm, tilføyes en fjær, og er den over 20 mm, fjernes en fjær.

Hvis ønsket trykk ikke kan oppnås, kan det være nødvendig å øke fjærkraften ved å sette inn flere fjærer. For lavt trykk kan skyldes for lav viskositet eller for lavt omdreiningstall. Det kan også skyldes at innløpstrykket ikke er omkring 1 bar. Hvis innløpstrykket øker, kreves høyere fjærtrykk for å kompensere for trykk forårsaket av stempelets sugeside.

Det kan ventes et økt flyttap på ca. 5 % for væsker med lav viskositet. Tapet kommer fra området over o-ringen.

Maks. anbefalt viskositet er 30 000 cp.



Pumpe	maks. oppnåelig fjærtrykk Bar	*maks. trykk med 7 fjærer Bar
DW1	2.25	15
DW2	2.85	20
DW3	2.85	20
DW4	2.85	20
DW5	3.6	25

* Ved innløpstrykk 1 bar

8. Paineenalennusventtiilin asennusohjeet

Huom: Kierrä säätöruuvi (1) aina kokonaan auki, jotta jouset löystyvät, ennen kuin poistat jousipesän.

Jousipesä poistetaan irrottamalla laipassa (2) olevat neljä ruuvia, sen jälkeen irrotetaan jouset (3). Nyt pääset käsiksi keskimmäiseen ruuviin (4), joka pitää akselia koossa.
Voit nyt irrottaa kaikki osat.

Kokoa päinvastaisessa järjestyksessä.

Säädä avautumispaine seuraavalla tavalla:

1) Painemittarin on oltava asennettu painepuolelle, jotta voit tarkkailla paineessa tapahtuvia muutoksia.

2) Painepuolella on oltava venttiili, joka voidaan sulkea paineen nostamiseksi.

3) Säätöruuvi (1) on kierrettävä kokonaan auki, jotta paineenalennusventtiili saadaan auki kokonaan.

4) Sen jälkeen painepuolella oleva venttiili on suljettava lähes kokonaan (venttiilissä on aina oltava kevyt virtaus pumpun jäähdyttämiseksi).

5) Kiristä sitten säätöruuvia, kunnes paine nousee haluamallesi tasolle.

6) Avaa ja sulje painepuolen venttiili selvittääksesi, onko inertia (avautumis- ja sulkeutumispaineen välinen ero) oikea.

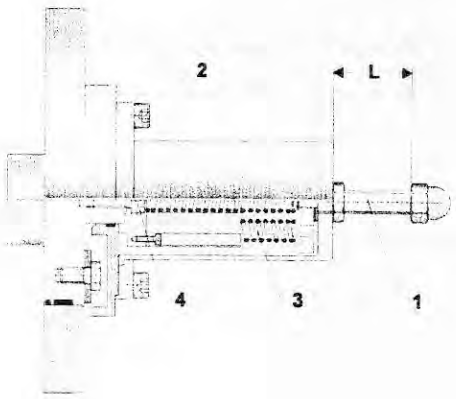
7) Jousien ominaisuuksia on mahdollista muuttaa poistamalla tai lisäämällä niitä.

Pääsääntö on, että jos L on alle 10 mm, tulisi lisätä jousi, jos yli 20 mm, tulisi poistaa jousi.

Jos tavoitepaineeseen ei päästä, jousivoimaa voi olla tarpeellista kasvattaa lisäämällä uusia jousia, koska epätavallisen matala paine voi johtua viskositeetista tai liian matalasta pyörimisnopeudesta. Se voi myös johtua siitä, että syöttöpaine ei ole 1 barin tienoilla, ja jos syöttöpaine kasvaa, tarvitaan korkeampi jousipaine sen osapaineen kompensoimiseksi, joka männän imupuolelle kohdistuu.

Viskositeetiltaan matalissa nesteissä on odotettavissa noin 5 %:n suuruinen virtaushäviö. Häviö on peräisin O-renkaan yläpuolella olevalta alueelta.

Suositeltu viskositeetin yläraja on 30 000 cP



Pumpe	jousen suurin saavutettava paine Bar	*maksimipaine käytettäessä 7 jousta Bar
DW1	2.25	15
DW2	2.85	20
DW3	2.85	20
DW4	2.85	20
DW5	3.6	25

* 1 barin syöttöpaineella.

8. Montagehandleiding voor ontlastklep

Waarschuwing: Draai de stelschroef (1) altijd volledig los, zodat de veren ontspannen voordat u het veerhuis demonteert.

Demonteer het veerhuis door de 4 schroeven in de flens (2) los te draaien. Verwijder de veren (3). U kunt nu bij de schroef in het midden (4) waarmee de as vastzit.
Hierna kunt u alle onderdelen van elkaar scheiden.

Het monteren vindt in de omgekeerde volgorde plaats.

Stel de openingsdruk op de volgende manier af:

1) Zorg dat er een manometer aan de drukzijde gemonteerd is, zodat u het drukverloop kunt volgen.

2) Zorg dat er een klep aan de drukzijde gemonteerd is. Deze klep moet kunnen worden gesloten waardoor de druk stijgt.

3) De stelschroef (1) moet volledig losgedraaid zijn, zodat de ontlastklep volledig open is.

4) De klep aan de drukzijde wordt hierna bijna gesloten (er moet altijd een kleine doorstroom aanwezig zijn voor het koelen van de pomp).

5) Draai vervolgens de stelschroef aan, zodat de druk tot het gewenste niveau stijgt.

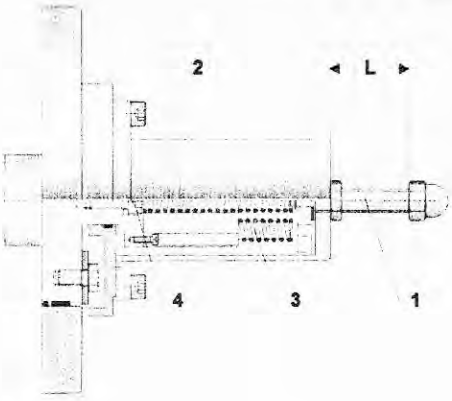
6) Open en sluit de klep aan de drukzijde om te onderzoeken of de traagheid (verschil openen en sluiten druk) zoals gewenst is.

7) De veereigenschappen kunnen worden gewijzigd door veren te verwijderen of toe te voegen.
De hoofdregel is: voeg een veer toe als L kleiner dan 10 mm is en verwijder een veer als L groter dan 20 mm is.

Als de gewenste druk niet kan worden bereikt, kan het nodig zijn de veerkracht te verhogen door veren toe te voegen. De te lage druk kan te wijten zijn aan een te lage viscositeit, een te laag toerental of het feit dat de persdruk niet ca. 1 bar is. Als de persdruk toeneemt, is een hogere veerdruk nodig om de drukbijdrage te compenseren.

De verwachting is een toegenomen flow verlies van ca. 5 % voor vloeistoffen met een lage viscositeit. Het verlies is afkomstig uit het gebied boven de o-ring.

De max. aanbevolen viscositeit is 30.000 cp.

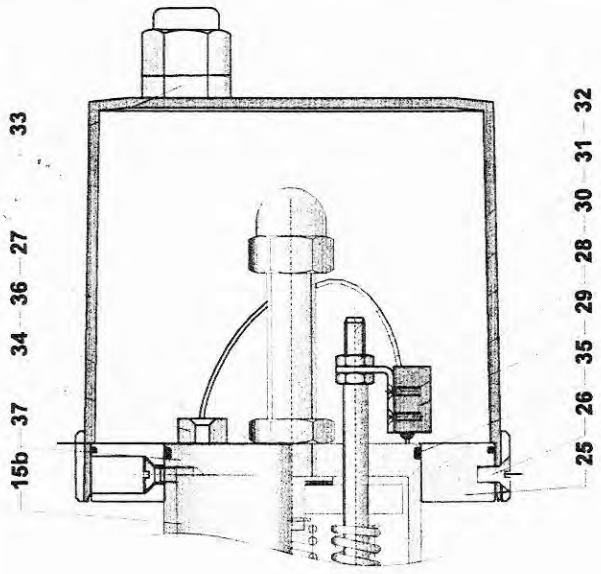


Pumpe	Maximaal haalbare druk van veer Bar	*maximumdruk met 7 veren Bar
DW1	2.25	15
DW2	2.85	20
DW3	2.85	20
DW4	2.85	20
DW5	3.6	25

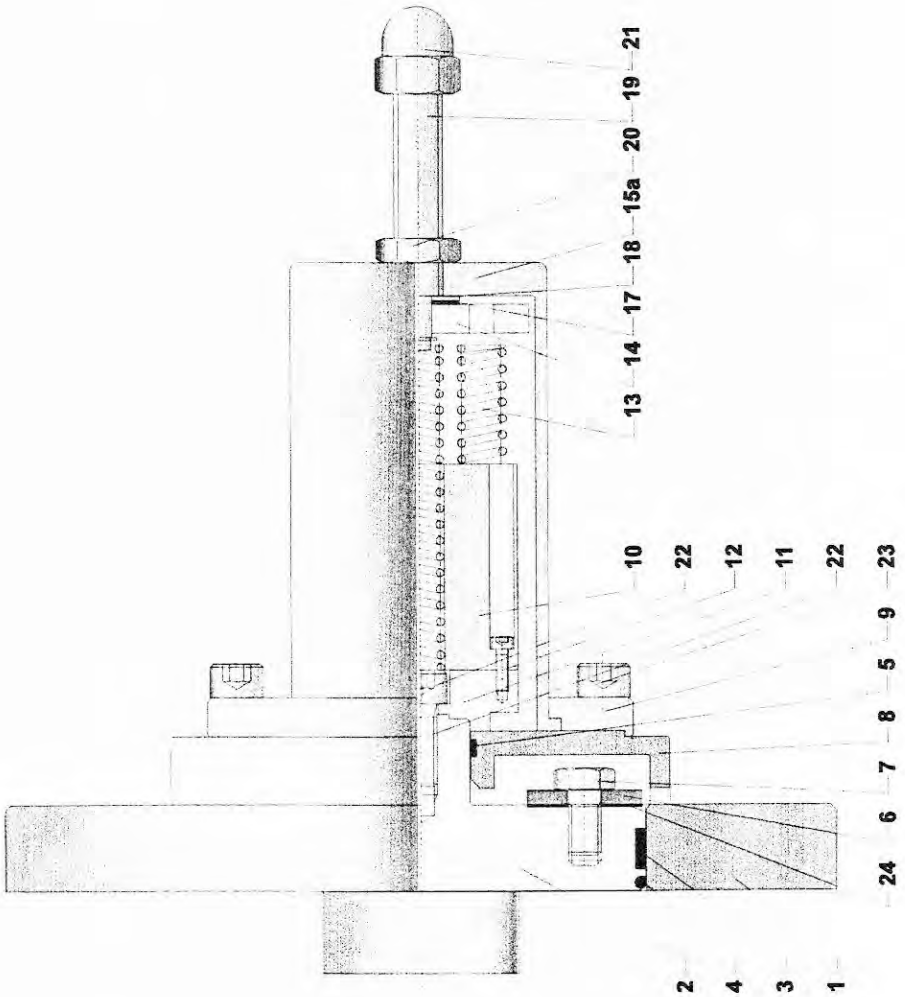
* Bij een persdruk van 1 bar

8. Overtryksventil -standard / Relief Valve -standard

Overtryksventil - Standard med tilbagemelder
Relief Valve - Standard with signal back unit



Overtryksventil - Standard
Relief Valve - Standard

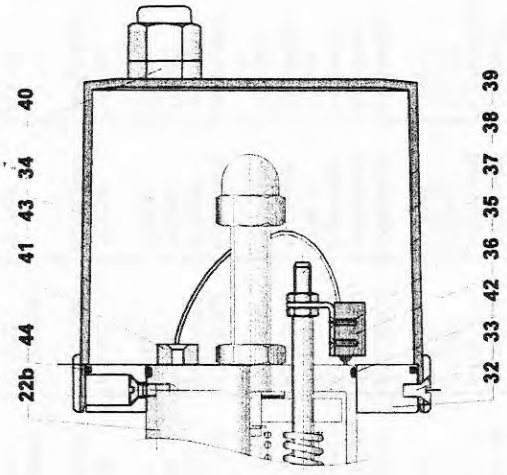


8. Overtryksventil -standard / Relief Valve -standard

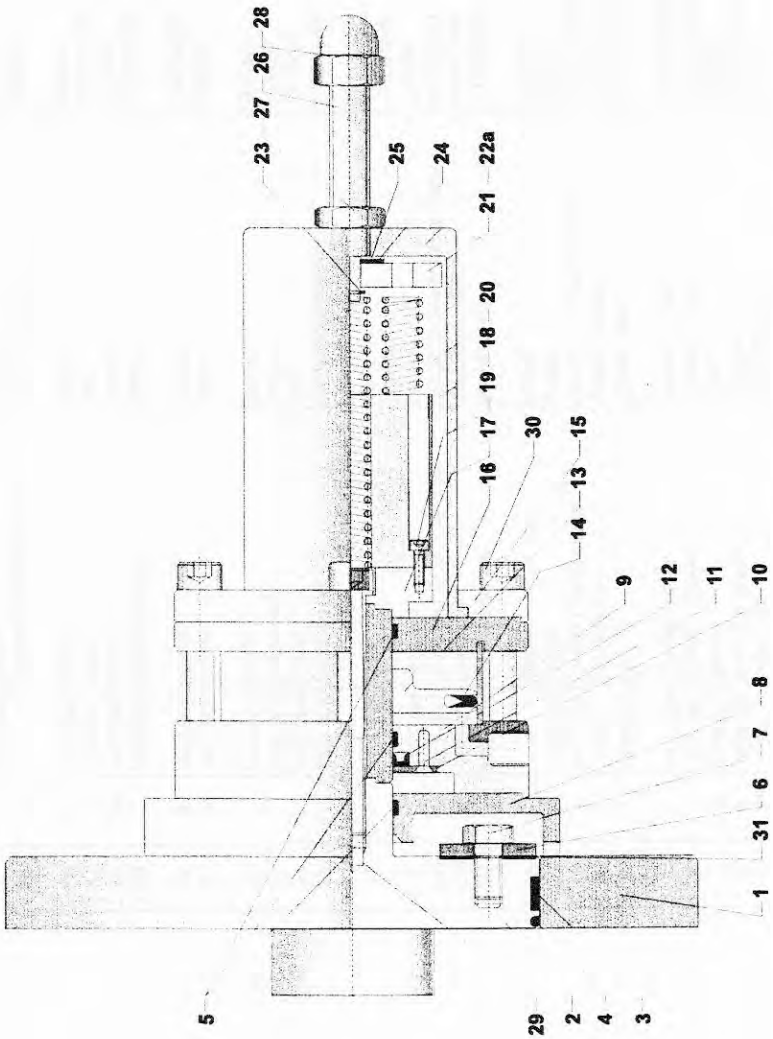
Pos	Stk/Qty	Materiel	Benævnelse	Description	DW1	DW2	DW3	DW4	DW5
					Del nr./ Part No.				
1	1	AISI316L	Frontcover - Piston	ShimsFrontcover - Piston	A1105/101	A1105/201	A1105/301	A1105/401	A1105/501
		AISI316L	Frontcover - Lobe	Frontcover - Lobe	A1105/100	A1105/200	A1105/300	A1105/400	A1105/500
2	1	AISI316L	Ventilstempel - Piston	Valve piston - Piston	A1106/101	A1106/201	A1106/301	A1106/401	A1106/501
		AISI316L	Ventilstempel - Lobe	Valve piston - Lobe	A1106/100	A1106/200	A1106/300	A1106/400	A1106/500
3	1	T51	Leje strip -Piston	Bearing strip - Piston	773544	773546	773547	773548	773549
		T51	Leje strip - Lobe	Bearing strip - Lobe	773545	773546	773547	773548	773549
4	1	Viton	O-ring	O-ring	25056/102	25056/202	25056/302	25056/402	25056/502
		EPDM	O-ring	O-ring	25056/104	25056/204	25056/304	25056/404	25056/504
5	1	T51	Leje strip	Bearing strip	773535	773535	773535	773535	773535
6	2	AISI 303	Skive for shims	Washer	A2165/005	A2165/000	A2165/006	A2165/000	A2165/000
7	2	AISI 304	Skrue	Screw	700690	700690	700690	700690	700690
8	1	AISI 304	Flange - Piston	Flange - Piston	A1211/200	A1211/200	A1211/300	A1211/400	A1211/500
		AISI 304	Flange - Lobe	Flange - Lobe	A1211/100	A1211/200	A1211/300	A1211/400	A1211/500
9	1	AISI 304	Flange	Clamp plate	A1210/100	A1210/100	A1210/100	A1210/400	A1210/400
10	1	PA6	Fjederholder	Spring holder	A1352/100	A1352/100	A1352/100	A1352/400	A1352/400
11	1	AISI 304	Flange f. fjederholder	Flange for spring housing	A1351/100	A1351/100	A1351/100	A1351/400	A1351/400
12	2	AISI 304	Skrue	Screw	773557	773557	773557	771902	771902
13	1-7		Fjeder	Spring	773538	773538	773538	773542	773543
14	1	AISI 304	Fjederstrammer	Spring plate	A1353/100	A1353/100	A1353/100	A1353/400	A1353/400
15a	1	AISI 304	Fjederhus	Spring housing	A1361/100	A1361/100	A1361/100	A1361/400	A1361/400
15b	1	AISI 304	Fjederhus, tilbagemelder	Spring housing, signal back	A1361/101	A1361/101	A1361/101	A1361/401	A1361/401
16	1	AISI 304	Låsering	Locking ring	773539	773539	773539	773539	773539
17	1	PTFE	Skive	Washer	A2175/000	A2175/000	A2175/000	A2175/000	A2175/000
18	1	AISI 304	Skive	Washer	A2165/001	A2165/001	A2165/001	A2165/001	A2165/001
19	1	AISI 303	Justerskrue	Adjustment screw	A1051/100	A1051/100	A1051/100	A1051/400	A1051/400
20	1	AISI 304	Møtrik	Nut	2116500	2116500	2116500	2116500	2116500
21	1	AISI 304	Kalotmørik	Cap nut	773456	773456	773456	773456	773456
22	1	AISI 304	Skrue	Screw	701581	701581	701581	701581	701581
23	4	AISI 304	Skrue	Screw	773555	773555	773555	770533	770533
24	2	AISI 304	Shims	Shims	A2659/000	A2659/000	A2659/000	A2659/000	A2659/000
25	1	AISI 304	Afstandsstykkke	Spacer	A2762/006	A2762/006	A2762/006	-	-
26	3-6	AISI 304	Skrue	Screw	771166	771166	771166	771166	771166
27	1	PA12	Hætte	Cap	A1362/400	A1362/400	A1362/400	A1362/400	A1362/400
28	2	AISI 304	Skrue	Screw	706159	706159	706159	706159	706159
29	1	-	Tilbagemelderenhed	Signal back unit	705809	705809	705809	705809	705809
30	1	AISI 304	Beslag	Bracket	A2762/004	A2762/004	A2762/004	A2762/005	A2762/005
31	2	AISI 304	Møtrik	Nut	701449	701449	701449	700240	700240
32	1	AISI 303	Indikator stang	Indicator pin	A1161/100	A1161/100	A1161/100	A1161/400	A1161/400
33	1	PP	Kabelforskruning	Cable Inlet	773221	773221	773221	773221	773221
34	1	-	Kronemuffe	Terminal block	773540	773540	773540	773540	773540
35	1	NBR	O-ring	O-ring	773504	773504	773504	773505	773505
36	1	AISI 304	Skrue	Screw	770405	770405	770405	770405	770405
37	1	NBR	O-ring	O-ring	773505	773505	773505	773505	773505

8. Overtryksventil -pneumatisk / Relief Valve -pneumatic

Overtryksventil - pneumatisk med tilbagemelder
Relief Valve - pneumatic with signal back unit



Overtryksventil - pneumatisk
Relief Valve - pneumatic

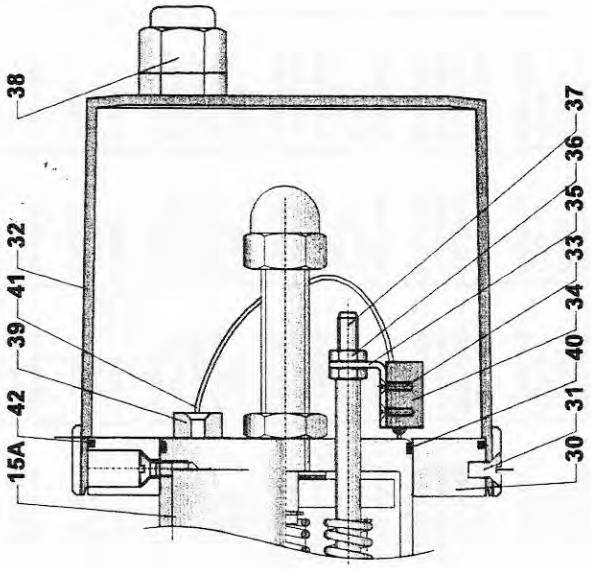


8. Overtryksventil -pneumatisk / Relief Valve -pneumatic

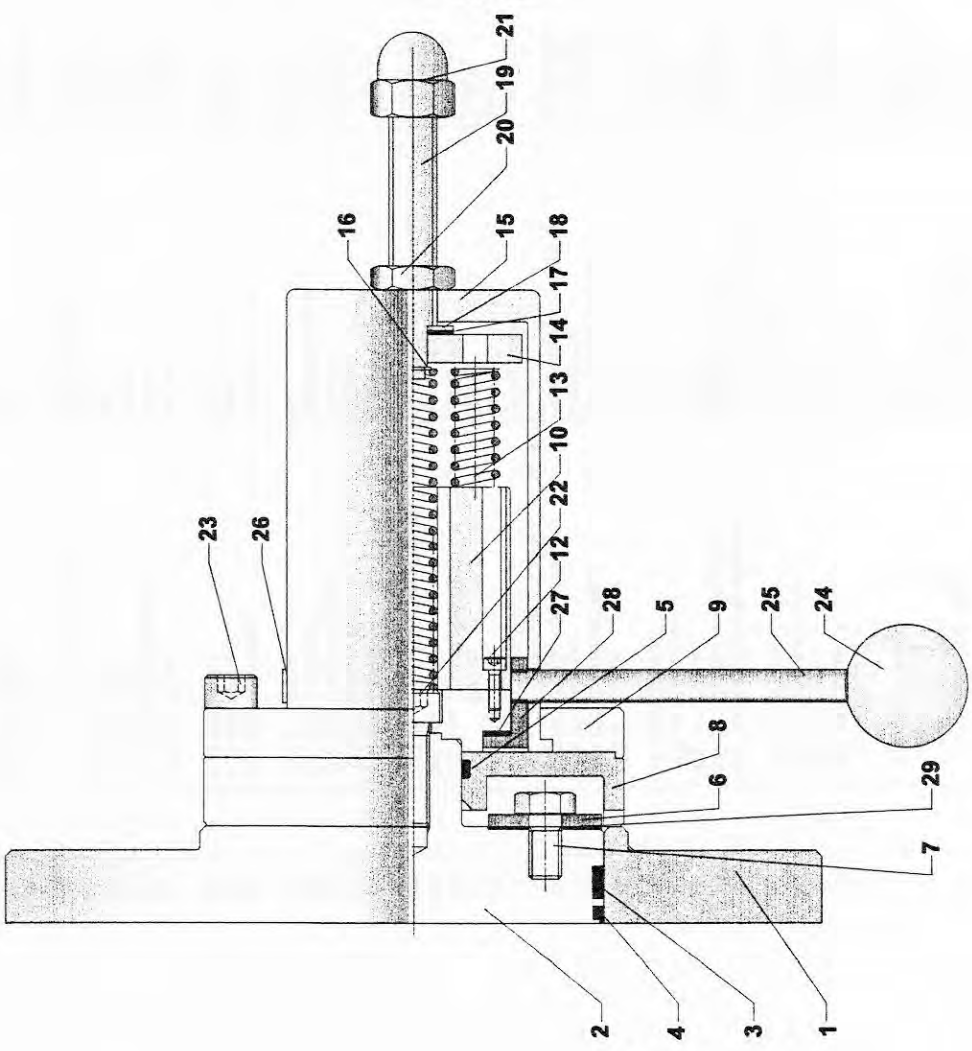
Pos	Stk/Qty	Material	Benævnelse	Description	DW1	DW2	DW3	DW4	DW5
					Del nr. / Part No.				
1	1	AISI 316L	Frontdæksel - Piston	Frontcover - Piston	A1105/101	A1105/201	A1105/301	A1105/401	A1105/501
		AISI 316L	Frontdæksel - Lobe	Frontcover - Lobe	A1105/100	A1105/200	A1105/300	A1105/400	A1105/500
2	1	AISI 316L	Ventilstempel - Piston	Valve piston - Piston	A1106/101	A1106/201	A1106/301	A1106/401	A1106/501
		AISI 316L	Ventilstempel - Lobe	Valve piston - Lobe	A1106/100	A1106/200	A1106/300	A1106/400	A1106/500
3	1	T51	Leje strip -Piston	Bearing strip - Piston	773544	773546	773547	773548	773549
		T51	Leje strip - Lobe	Bearing strip - Lobe	773545	773546	773547	773548	773549
4	1	Viton	O-ring	O-ring	25056/102	25056/202	25056/302	25056/402	25056/502
		EPDM	O-ring	O-ring	25056/104	25056/204	25056/304	25056/404	25056/504
5	3	T51	Leje strip	Bearing strip	773535	773535	773535	773535	773535
6	2	AISI 303	Skive for shims	Washer	A2165/005	A2165/000	A2165/006	A2165/000	A2165/000
7	2	AISI 304	Skrue	Screw	700690	700690	700690	700690	700690
8	1	AISI 304	Flange - Piston	Flange - Piston	A1211/200	A1211/200	A1211/300	A1211/400	A1211/500
		AISI 304	Flange - Lobe	Flange - Lobe	A1211/100	A1211/200	A1211/300	A1211/400	A1211/500
9	1	AISI 304	Underpart for aktuator	Bottom part for actuator	A1209/101	A1209/101	A1209/101	A1209/401	A1209/401
10	1	AISI 304	Holder for U-manchet	Holder for U-sleeve	A2165/002	A2165/002	A2165/002	A2165/002	A2165/002
11	2	AISI 304	Skrue	Screw	771902	771902	771902	771902	771902
12	1	NBR 85	U-manchet	U-Sleeve	773541	773541	773541	773541	773541
13	1	AISI 304	Stempel	Piston	A1855/100	A1855/100	A1855/100	A1855/400	A1855/400
14	1	Nitril	K-ring	K-ring	58-01-767/83	58-01-767/83	58-01-767/83	58-01-768/83	58-01-768/83
15	1	AISI 304	Fjederhus flange	Spring housing flage	A1210/100	A1210/100	A1210/100	A1210/400	A1210/400
16	1	AISI 304	Flange	Clamp Plate	A1212/100	A1212/100	A1212/100	A1212/400	A1212/400
17	1	AISI 304	Flange f. fjederholder	Flange for spring housing	A1351/100	A1351/100	A1351/100	A1351/400	A1351/400
18	1	PA6	Fjederholder	Spring holder	A1352/100	A1352/100	A1352/100	A1352/400	A1352/400
19	2	AISI 304	Skrue	Screw	773557	773557	773557	771902	771902
20	1		Fjeder	Spring	773538	773538	773538	773542	773543
21	1	AISI 304	Fjederstrammer	Spring Plate	A1353/100	A1353/100	A1353/100	A1353/400	A1353/400
22a	1	AISI 304	Fjederhus	Spring housing	A1361/100	A1361/100	A1361/100	A1361/400	A1361/400
22b	1	AISI 304	Fjederhus, tilbagemelder	Spring housing, signal back	A1361/101	A1361/101	A1361/101	A1361/401	A1361/401
23	1	AISI 304	Låsering	Locking ring	773539	773539	773539	773539	773539
24	1	PTFE	Skive PTFE	Washer	A2175/000	A2175/000	A2175/000	A2175/000	A2175/000
25	1	AISI 304	Skive AISI 304	Washer	A2165/001	A2165/001	A2165/001	A2165/001	A2165/001
26	1	AISI 304	Justerskrue	Adjustment screw	A1051/100	A1051/100	A1051/100	A1051/400	A1051/400
27	1	AISI 303	Møtrik	Nut	2116500	2116500	2116500	2116500	2116500
28	1	AISI 304	Kalotmørik	Cap nut	773456	773456	773456	773456	773456
29	1	AISI 304	Skrue	Screw	705240	705240	705240	772080	772080
30	4	AISI 304	Skrue	Screw	773572	773572	773572	772080	772080
31	2	AISI 304	Shims	Shims	A2659/000	A2659/000	A2659/000	A2659/000	A2659/000
32	1	AISI 304V	Afstandsstykkke	Spacer	A2762/006	A2762/006	A2762/006	-	-
33	3-6	AISI 304	Skrue	Screw	771166	771166	771166	771166	771166
34	1	PA12	Hætte	Cap	A1362/400	A1362/400	A1362/400	A1362/400	A1362/400
35	2	AISI 304	Skrue	Screw	706159	706159	706159	706159	706159
36	1	-	Tilbagemelderenhed	Signal back unit	705809	705809	705809	705809	705809
37	1	AISI 304	Beslag	Bracket	A2762/004	A2762/004	A2762/004	A2762/005	A2762/005
38	2	AISI 304	Møtrik	Nut	701449	701449	701449	700240	700240
39	1	AISI 303	Indikator stang	Indicator pin	A1161/100	A1161/100	A1161/100	A1161/400	A1161/400
40	1	PP	Kabelforskruning	Cable Inlet	773221	773221	773221	773221	773221
41	1	-	Kronemuffe	Terminal block	773540	773540	773540	773540	773540
42	1	NBR	O-ring	O-ring	773504	773504	773504	773505	773505
43	1	AISI 304	Skrue	Screw	770405	770405	770405	770405	770405
44	1	NBR	O-ring	O-ring	773505	773505	773505	773505	773505

8. Overtryksventil -håndbetjent / Relief Valve -manual

Overtryksventil - Håndbetjent med tilbagemelder
Relief Valve - Manual with signal back unit



Overtryksventil - Håndbetjent
Relief Valve - Manual



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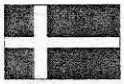
8. Overtryksventil -håndbetjent / Relief Valve -manual

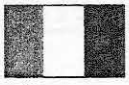
Pos	Stk/Qty	Meterial	Benævnelse	Description	DW1	DW2	DW3	DW4	DW5
					Del nr. / Part No.				
1	1	AISI 316L	Frontcover - Piston	Frontcover - Piston	A1105/101	A1105/201	A1105/301	A1105/401	A1105/501
		AISI 316L	Frontcover - Lobe	Frontcover - Lobe	A1105/100	A1105/200	A1105/300	A1105/400	A1105/500
2	1	AISI 316L	Ventilstempel - Piston	Valve piston - Piston	A1106/101	A1106/201	A1106/301	A1106/401	A1106/501
		AISI 316L	Ventilstempel - Lobe	Valve piston - Lobe	A1106/100	A1106/200	A1106/300	A1106/400	A1106/500
3	1	T51	Leje strip -Piston	Bearing strip - Piston	773544	773546	773547	773548	773549
		T51	Leje strip - Lobe	Bearing strip - Lobe	773545	773546	773547	773548	773549
4	1	Viton	O-ring	O-ring	25056/102	25056/202	25056/302	25056/402	25056/502
		EPDM	O-ring	O-ring	25056/104	25056/204	25056/304	25056/404	25056/504
5	1	T51	Leje strip	Bearing strip	773535	773535	773535	773535	773535
6	2	AISI 303	Skive for shims	Washer	A2165/005	A2165/000	A2165/006	A2165/000	A2165/000
7	2	AISI 304	Skrue	Screw	700690	700690	700690	700690	700690
8	1	AISI 304	Flange - Piston	Flange - Piston	A1211/200	A1211/200	A1211/300	A1211/400	A1211/500
		AISI 304	Flange - Lobe	Flange - Lobe	A1211/100	A1211/200	A1211/300	A1211/400	A1211/500
9	1	AISI 304	Flange	Clamp Plate	A1210/100	A1210/100	A1210/100	A1210/400	A1210/400
10	1	PA6	Fjederholder	Spring holder	A1352/100	A1352/100	A1352/100	A1352/400	A1352/400
11	1	AISI 304	Flange f. fjederholder	Flange for spring housing	A1351/100	A1351/100	A1351/100	A1351/400	A1351/400
12	2	AISI 304	Skrue	Screw	773557	773557	773557	771902	771902
13	1-7		Fjeder	Spring	773538	773538	773538	773542	773543
14	1	AISI 304	Fjederstrammer	Spring Plate	A1353/100	A1353/100	A1353/100	A1353/400	A1353/400
15	1	AISI 304	Fjederhus	Spring housing	A1361/102	A1361/102	A1361/102	A1361/402	A1361/402
15a	1	AISI 304	Fjeder hus, tilbagemelder	Spring housing, signal back	A1361/103	A1361/103	A1361/103	A1361/403	A1361/403
16	1	AISI 304	Låsering	Locking ring	773539	773539	773539	773539	773539
17	1	PTFE	Skive	Washer	A2175/000	A2175/000	A2175/000	A2175/000	A2175/000
18	1	AISI 304	Skive	Washer	A2165/001	A2165/001	A2165/001	A2165/001	A2165/001
19	1	AISI 303	Justerskrue	Adjustment screw	A1051/100	A1051/100	A1051/100	A1051/400	A1051/400
20	1	AISI 304	Møtrik	Nut	2116500	2116500	2116500	2116500	2116500
21	1	AISI 304	Kalotmørik	Cap nut	773456	773456	773456	773456	773456
22	1	AISI 304	Skrue	Screw	701581	701581	701581	701581	701581
23	4	AISI 304	Skrue	Screw	773555	773555	773555	773556	773556
24	1		Knop	Knob	2105300	2105300	2105300	2105300	2105300
25	1	AISI 304	Løftestang	Lever	A1051/101	A1051/101	A1051/101	A1051/101	A1051/101
26	1	AISI 304	Løfteskrue	Lever screw	A1051/102	A1051/102	A1051/102	A1051/102	A1051/102
27	1	PTFE	Skive	Washer	A2165/003	A2165/003	A2165/003	A2165/004	A2165/004
28	1	AISI 304	Løftering	Lever ring	A1351/101	A1351/101	A1351/101	A1351/401	A1351/401
29	2	AISI 304	Shims	Shims	A2659/000	A2659/000	A2659/000	A2659/000	A2659/000
30	1	AISI 304	Afstandsstykkke	Spacer	A2762/006	A2762/006	A2762/006	-	-
31	3-6	AISI 304	Skrue	Screw	771166	771166	771166	771166	771166
32	1	PA12	Hætte	Cap	A1362/400	A1362/400	A1362/400	A1362/400	A1362/400
33	2	AISI 304	Skrue	Screw	706159	706159	706159	706159	706159
34	1	-	Tilbagemelderenhed	Signal back unit	705809	705809	705809	705809	705809
35	1	AISI 304	Beslag	Bracket	A2762/004	A2762/004	A2762/004	A2762/005	A2762/005
36	2	AISI 304	Møtrik	Nut	701449	701449	701449	700240	700240
37	1	AISI 303	Indikator stang	Indicator pin	A1161/100	A1161/100	A1161/100	A1161/400	A1161/400
38	1	PP	Kabelforskruning	Cable Inlet	773221	773221	773221	773221	773221
39	1	-	Kronemuffe	Terminal block	773540	773540	773540	773540	773540
40	1	NBR	O-ring	O-ring	773504	773504	773504	773505	773505
41	1	AISI 304	Skrue	Screw	770405	770405	770405	770405	770405
42	1	NBR	O-ring	O-ring	773505	773505	773505	773505	773505



DK

UK

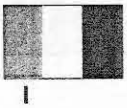
D



F

E

P



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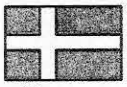
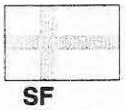


S

N



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APV

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Operating Manual, Appendix

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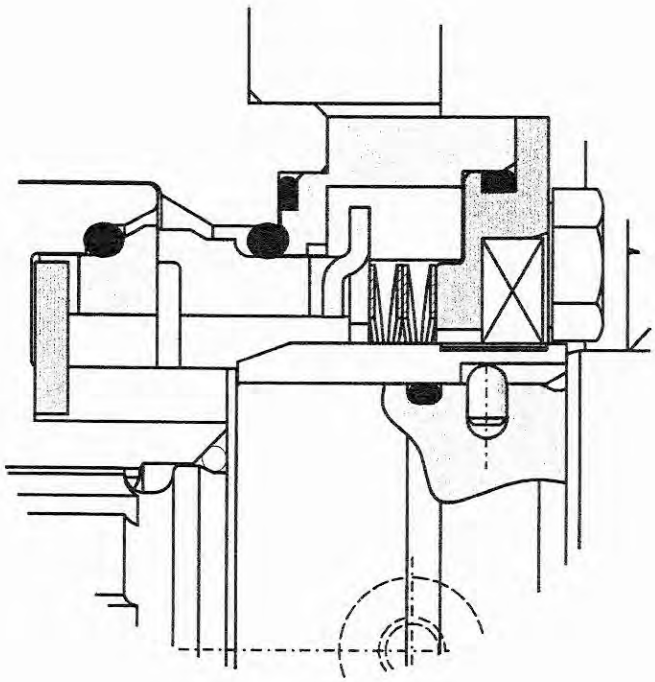
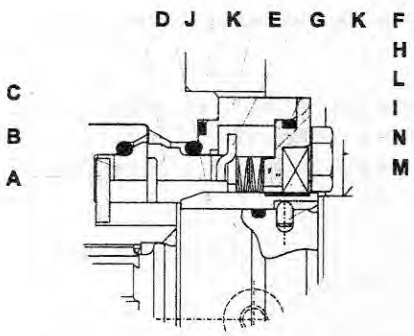


Shaft seal DW pumpe

Process to Boardroom Automation sm

Contents:

8. 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
F: Clamp plate
G: Stationary drive ring
H: Wawe spring
I: Screw, seal housing
J: Sleeve
K: "O"-ring, clamp plate
L: Lipseal
M: Pin
N: "O"-ring, sleeve

8.1 Replacement of single mechanical shaft seal with single mechanical shaft seal with water flush

It is possible to change from a standard single mechanical shaft seal to a mechanical shaft seal with flush.

The sectional drawing shows the locations of the various components mentioned in this procedure.

To change the shaft seal it is necessary to disassemble the pump as described in the following.
Use the sectional drawing as a reference.

1. Remove the front panel (11) as described in Section 4.1.
2. Remove the rotors (6) as described in Section 4.2.
3. Remove the stator rings (D) and the o-rings (C) with the fingers
4. Remove the pump housing (46) as described in Section 4.3
5. Remove the holding device from the single mechanical shaft seal.
6. Position the shafts (31, 36) such that the holes for the guide pins (M) face upwards.
7. Insert the guide pins (M) in the holes
8. Seat the O-rings (N) in the shaft grooves.
9. Position the shaft sleeves (J) on the shafts (31, 36). Check that the key in the sleeve fits over the guide pin (M) - 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 mounting plate (F). Position a new lip seal (L) with the smooth side facing upwards and press home into the mounting plate.
    Position the seal housing in the recess on the rear of the pump housing. Mount the drive ring (G) first and then the spring (H) in the seal housing.
11. Position the mounting plate (F) on the seal housing (E) once more and tighten the screws (I) by the indicated torque - see Section 6.1
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 10.
13. Cut a 1 meter hose into 25 cm pieces.
14. Press the hose pieces into the bends.

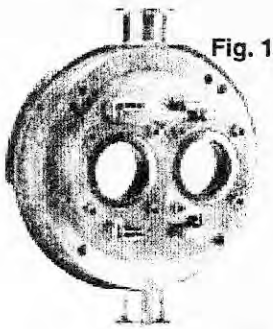


Fig. 10

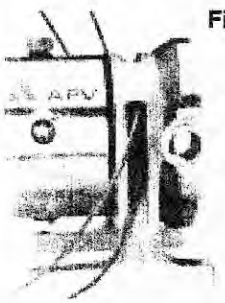


Fig. 11

8. Single mechanical shaft seal with water flush

15. Apply food-quality grease to the shaft seals before pushing the rotor housing into place.

16. Position the pump housing (46) over the guide pin in the foot (1) and carefully tap into position with a plastic mallet. Check that the hose-ends are positioned between the two rings forming the foot - see fig. 11.

17. Tighten the bolts (7) which fix the pump housing (46) to the foot (1) by the indicated torque - see Section 6.1.

18. Check the shaft seal's contact surfaces (B, D) for dirt and scratches. Mount the stator rings (D) (the stator rings are the longer of the two shaft seal parts) in the pump housing without using tools. The keyways in the stator rings 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.

19. Mount the rotors (6) as described in Section 4.2.1.

20. Mount the front panel (11) as described in Section 4.1.1.

21. Check that the rotors turn freely.

8.2.1 Replacement of shaft seal stator ring (D) and rotor ring (B).

See Section 5 of manual (single mechanical shaft seal).

8.2.2 Replacement of lip seal (L).

For a single mechanical shaft seal with flush, see Section 8.1, inspect the stator ring (D) and rotor ring (B) on the shaft seal for wear and scratches and decide whether they need replacing.

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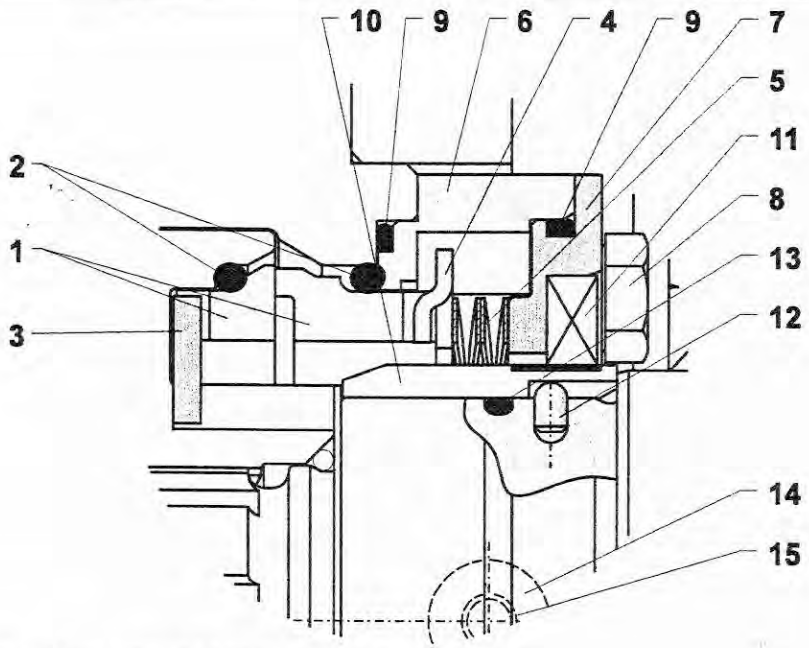
8. Single mechanical shaft seal with water flush



NOTE: Der indgår til en pumpe det dobbelte antal kit = de valgte dele x 2
For a pump twice the number of kits are required = the parts chosen x 2.

* Flush Kit : Bøsning, læbetætning, driv-pind, 3 O-ringe, seal service kit, Akseltætningshus, monteringsplade og skrue.
Sleeve, varillip seal, drive-pin, 3 O-rings, Seal service kit, seal Housing, Back plate and screw.

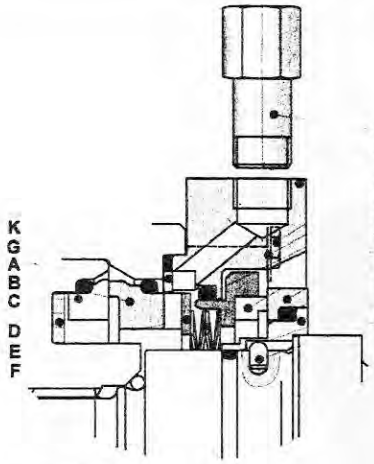
** Seal Face Kit : Statorring, rotorring & 2 O-ringe
Statorring, rotorring and 2 off O-rings

Pos.	Stk./ Qty.	Material	Benævnelse	Description	Pumpe type / Pump type DW1	DW2	DW3	DW4	DW5
					Del nr. / Part No.				
1-2	1	SIC/C-EPDM	Seal face kit**	Seal face kit**	A2355104	A2355204	A2355304	A2355404	A2355504
1-2	1	SIC/C-Viton	Seal face kit**	Seal face kit**	A2355102	A2355202	A2355302	A2355402	A2355502
1-2	1	SIC/SIC-EPDM	Seal face kit**	Seal face kit**	A2356104	A2356204	A2356304	A2356404	A2356504
1-2	1	SIC/SIC-Viton	Seal face kit**	Seal face kit**	A2356102	A2356202	A2356302	A2356402	A2356502
3-13	1	PTFE - EPDM	Kit til vandskyl*	Flush Kit*	A2391104	A2391204	A2391304	A2391404	A2391504
3-13	1	PTFE - Viton	Kit til vandskyl*	Flush Kit*	A2391102	A2391202	A2391302	A2391402	A2391502
			Tilslutning for skyl	**Connection for flush**					
14	2	Plated	Fitting Standard 1/8"	Fittings Standard 1/8"	2297000	2297000	2297000	2297000	2297000
14a	2	Plated	Fitting 1/4"	Fittings 1/4"	773593	773593	773593	773593	773593
15	2	Nylon	Rør Ø6	Pipe Ø6	2298100	2298100	2298100	2298100	2298100
15a	2	Nylon	Rør 1/4"	Pipe 1/4"	2298101	2298101	2298101	2298101	2298101

Følgende er typisk reservedele / Following is typical spare parts					DW1	DW2	DW3	DW4	DW5
Pos.	Stk./ Qty.	Material	Benævnelse	Description	Del nr. / Part No.				
2	1	EPDM	O-rings kit	O-ring kit	A2310104	A2310204	A2310304	A2310404	A2310504
	1	Viton	O-rings kit	O-ring kit	A2310102	A2310202	A2310302	A2310402	A2310502
9	2	EPDM	O-ring hus	O-ring	2597004	25016004	25031004	2552004	25037004
	2	Viton	O-ring hus	O-ring	2597002	25016002	25031002	2552002	25037002
11	1	PTFE	Lip-seal	Lip seal	23111A100	23111A200	23111A300	23111A400	23111A500
10	1	Rst	Bøsning	Sleeve	A1800100	A1800200	A1800300	A1800400	A1800500
12	1	Rst	Driv-pind	Drive-pin	1371100	1371100	1371100	1371100	1371100
13	1	EPDM	O-ring bøsning	O-ring sleeve	2511004	2544004	25032004	2549004	25012004
13	1	Viton	O-ring bøsning	O-ring sleeve	2511002	2544002	25032002	2549002	25012002

UK

8. Dual mechanical shaft seal



A: O-ring kit
B: Stator ring, product side
C: Rotorring, product side
D: Carrier
E: Stationary drive ring
F: Spring
G: Ring
H: Stopring
I: Drivepin
J: Screw
K: O-ring
L: Locking washer
M: O-ring, statorring
N: Statorring, atmosphere side
O: Rotorring, atmosphere side
P: O-ring, rotorring
Q: O-ring, shaft
R: Seal housing
S: Pipe unions

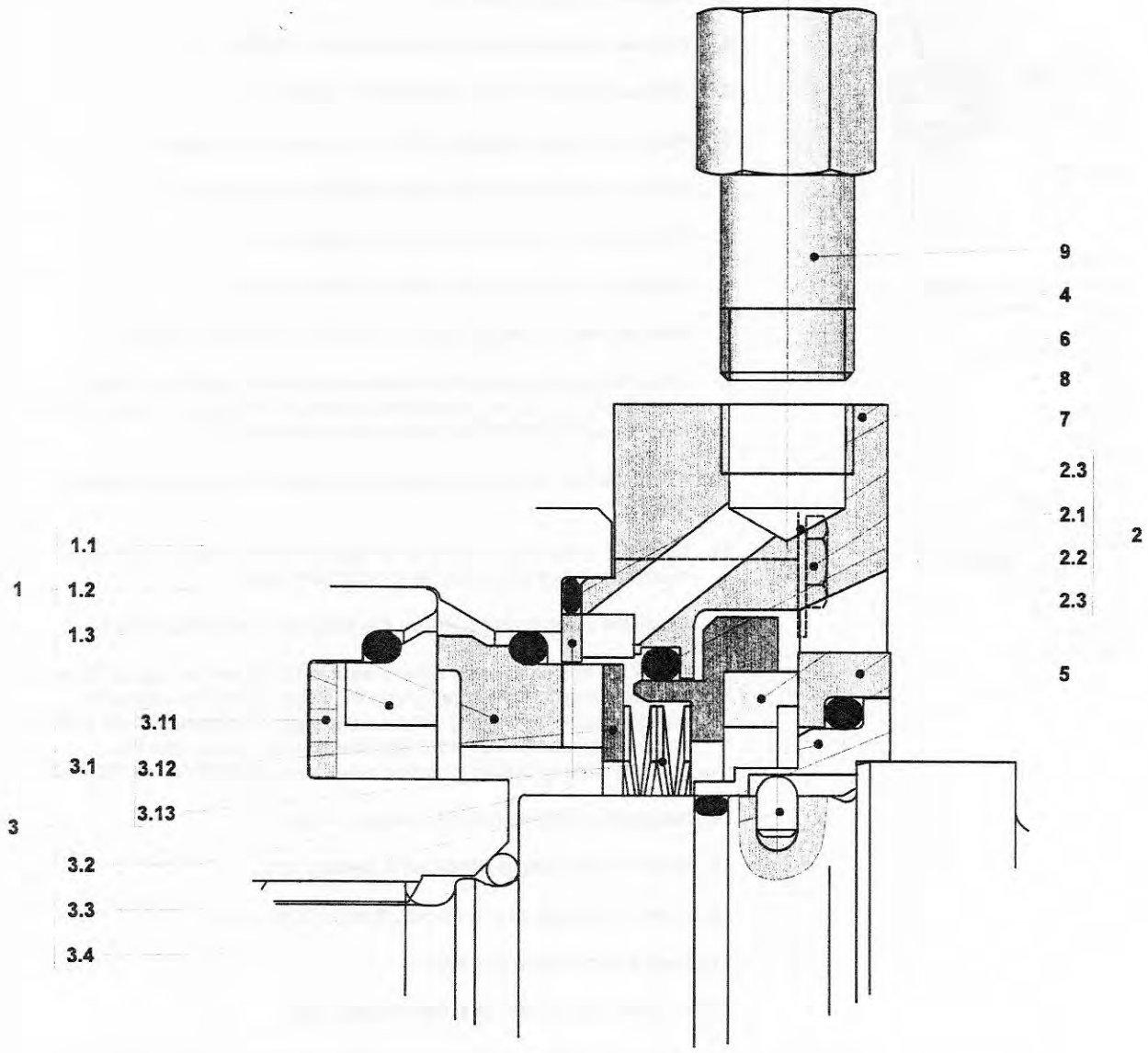
8.3 Replacement of dual mechanical shaft seal

It is possible to replace a dual mechanical shaft seal on the pump.
The sectional drawing shows the position of components.
To change the shaft seal it is necessary to disassemble the pump as described in the following.
Use the sectional drawings as a reference.

1. Remove the pipe unions (S)
2. Remove the front panel (11) as described in Section 4.1.
3. Remove the rotors (6) as described in Section 4.2.
4. Remove the stator ring (B) and the o-ring (A) with the fingers.
5. Remove the pump housing (46) as described in Section 4.3.
6. Undo screws (J) and remove locking washers (L).
7. Remove the stator ring (N), spring (F) and o-ring (M).
8. Remove the rotor ring (O) and o-ring (P) from the stop ring (H).
9. Check that the stop ring (H) is clean and correctly positioned on the shaft (items 31, 36 on the sectional drawing of the pump). The stop ring must be pushed all the way back to the shaft shoulder.
10. Mount the new o-ring (P) followed by the new rotor ring (O) on the stop ring.
11. Place the o-ring (M), spring (F) and the new stator ring (N) in the seal housing and lock by turning the locking washers (L).
12. Mount the pump housing (46) on the foot (19), - see Section 4.3.1.
13. Check the new shaft seal's contact surface for dirt and scratches. Mount the stator ring (B) (the stator ring is the longer of the two shaft seal parts) in the pump housing without using tools. The keyway in the stator ring must fit over the cut-out in the drive ring (E). Check that it is correctly fitted by feeling for spring power when pushed in over the shaft.
14. Change the rotor ring (C) and o-ring (A) in the rotor.
15. Mount the rotors (6) as described in Section 4.2.1.
16. Mount the front panel (11) as described in Section 4.1.1.
17. Check that the rotors turn freely.
18. Place the pipe unions (S) in the threaded holes.

NB: *All types of shaft seal (single lip seal, triple lip seal, single mechanical shaft seal, single mechanical shaft seal with water flush, dual mechanical shaft seal and packed gland) (packing thread) can all be mounted on the same pump.*
This requires only the correct shaft seal kit.
These kits are described under Accessories.

8. Dual mechanical shaft seal



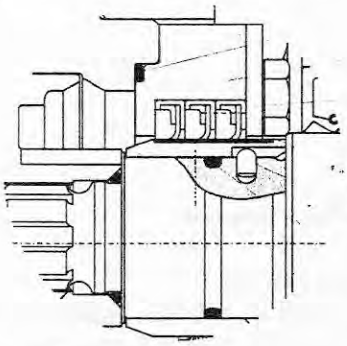
8. Dual mechanical shaft seal

NOTE: Der indgår til en pumpe det dobbelte antal kit = de valgte dele x 2
For a pump twice the number of kits are required = the parts chosen x 2.

* Typiske reservedele
Typical spare part

Pos.	Stk./ Qty.	Benævnelse	Description	Matr.	Pumpe type / Pump type DW1	DW2	DW3	DW4	DW5
					Del nr. / Part No.				
1*	**1**	**Sealface kit,prod.side**	**Sealface kit,prod.side**	**SiC/C, EPDM**	**A2357/104**	**A2357/204**	**A2357/304**	**A2357/404**	**A2357/504**
		Komplet	Complete	**SiC/C, FKM**	**A2357/102**	**A2357/202**	**A2357/302**	**A2357/402**	**A2357/502**
				SiC/SiC, EPDM	**A2358/104**	**A2358/204**	**A2358/304**	**A2358/404**	**A2358/504**
				SiC/SiC, FKM	**A2358/102**	**A2358/202**	**A2358/302**	**A2358/402**	**A2358/502**
1.1*	1	O-ring kit	O-ring	EPDM	A2310104	A2310204	A2310304	A2310404	A2310504
				FKM	A2310102	A2310202	A2310302	A2310402	A2310502
1.2	1	Stator	Stator	C or SiC					
1.3	1	Rotor	Rotor	SiC					
2*	**1**	**Sealface kit,atm.side**	**Sealface kit, atm.side**	**SiC/C, EPDM**	**A2359/104**	**A2359/204**	**A2359/304**	**A2359/404**	**A2359/504**
		Komplet	Complete	**SiC/C, FKM**	**A2359/102**	**A2359/202**	**A2359/302**	**A2359/402**	**A2359/502**
2.1	1	Stator	Stator	Carbon					
2.2	1	Rotor	Rotor	SiC					
2.3*	1	O-ring kit	O-ring kit	EPDM	25060/104	25060/204	25060/304	25060/404	25060/504
				FKM	25060/102	25060/202	25060/302	25060/402	25060/502
3	**1**	**Seal service kit**	**Seal service kit**	**AISI 316**	**A2361/100**	**A2361/200**	**A2361/300**	**A2361/400**	**A2361/500**
3.1	-	-	-	-	A2362/100	A2362/200	A2362/300	A2362/400	A2362/500
3.1.1	*1*	*Medbringer*	Driving plate	*AISI 316*					
3.1.2	*1*	*Trykring*	Pressure ring	*AISI 316*					
3.1.3	*1*	*Fjeder*	Spring	*AISI 316*					
3.2	1	Ring	Ring	AISI 316	A1215/100	A1215/200	A1215/300	A1215/400	A1215/500
3.3	1	Stopring	Stopring	AISI 316	A1214/100	A1214/200	A1214/300	A1214/400	A1214/500
3.4	1	Drivpind	Drivepin	AISI 316	1371100	1371100	1371100	1371100	1371100
4	**1**	**Tætningshus**	**Seal hausing**	**AISI 316**	**A1213/100**	**A1213/200**	**A1213/300**	**A1213/400**	**A1213/500**
5*	**1**	**O-ring**	**O-ring**	**EPDM**	**2511004**	**2544004**	**25032004**	**2549004**	**25012004**
				FKM	**2511002**	**2544002**	**25032002**	**2549002**	**25012002**
6*	**1**	**O-ring**	**O-ring**	**EPDM**	**2597004**	**25016004**	**25031004**	**2552004**	**25037004**
				FKM	**2597002**	**25016002**	**25031002**	**2552002**	**25037002**
7	**4**	**Skrue M6**	**Screw**	**AISI 316**	**700678**	**700678**	**700678**	**700234**	**701686**
8	**2**	**Skive**	**Washer**		**A2349100**	**A2349100**	**A2349100**	**A2349400**	**A2349500**
9	**2**	**Rør forskruning 1/8"**	**Fittings 1/8"**	**AISI 316**	**2299100**	**2299200**	**2299300**	**2299400**	**2299500**

8. Triple shaft seal



O: "O"-ring, seal housing
P: Seal housing
Q: Clamp plate
R: Screw
S: Lipseal
T: Sleeve
U: Pin
V: "O"-ring, sleeve

O P Q R S U V T

8.4 Replacement of triple shaft seal

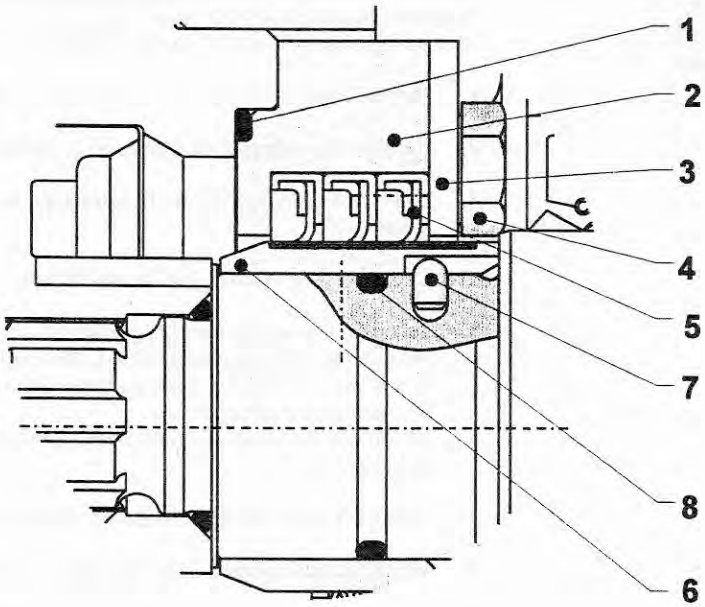
It is possible to replace the triple shaft seal on the pump.
The sectional drawing shows the siting of the different components referred to in the procedure below.

To replace the triple shaft lip seal, the pump must be disassembled as described in the following procedure. Fold out the sectional drawing and use it as a reference.

1. Remove the front panel (11) as described in Section 4.1.
2. Remove the rotors (6) as described in Section 4.2.
3. Remove the pump housing (46) as described in Section 4.3.
4. Loosen and remove the screws (R) which attach the mounting plate (Q) and the seal housing (P) to the pump housing.
5. Remove the mounting plate (Q) and seal housing (P).
6. Remove the lip seals (S) from the seal housing (P).
7. Fill the new lip seals (S) with food-quality grease and press them into the seal housing (P). Check that the lip seals have been installed with the correct side foremost - see sectional drawing.
8. Check that the shaft sleeve (T) is clean and correctly positioned on the shaft (31, 36). The sleeve must be pushed all the way back to the shaft shoulder.
9. Mount the shaft seal housing (P) and mounting plate (Q) on the pump housing (46) and tighten the screws (R) by the indicated torque - see Section 6.1.
10. Mount the pump housing (46) as described in Section 4.3.1.
11. Mount the rotors (6) as described in Section 4.2.1.
12. Mount the front panel (11) as described in Section 4.1.1.
13. Check that the rotors turn freely.

NB: *All types of shaft seal (single lip seal, triple lip seal, single mechanical shaft seal, single mechanical shaft seal with water flush, dual mechanical shaft seal and packed gland) (packing thread) can all be mounted on the same pump.*

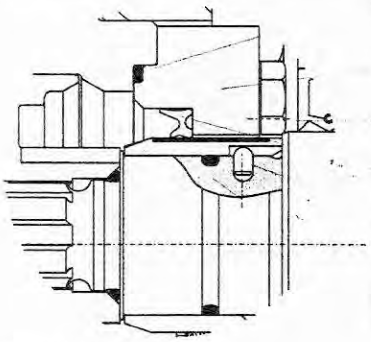
8. Single shaft lip seal



NOTE: Der indgår til en pumpe det dobbelte antal kit = de valgte dele x 2
For a pump twice the number of kits are required = the parts chosen x 2

Læbetætning triple / Lip seal triple Ikke velegnet til CIP-rengøring / Not recomended for Cip-claning					**Pumpe type / Pump type**				
					DW1	**DW2**	**DW3**	**DW4**	**DW5**
Pos.	**Stk/Qty**	**Material**	**Benævnelse**	**Description**	**Del nr. / Part No.**				
1	1	EPDM	O-ring, tætningshus	O-ring, seal housing	2597004	25016004	25031004	2552004	25037004
	1	Viton	O-ring, tætningshus	O-ring, seal housing	2597002	25016002	25031002	2552002	25037002
2	1	316S.S.	Tætningshus	Seal housing	A1202100	A1202200	A1202300	A1202400	A1202500
3	1	316S.S.	Tætningsplade	Clamp plate	A1203100	A1203200	A1203300	A1203400	A1203500
4	4	304S.S.	Skrue	Screw, seal house	700678	700678	700678	700234	701686
5	3	PTFE	Læbetætning	Varilip seal	23111A100	23111A200	23111A300	23111A400	23111A500
6	1	316S.S.	Muffe, hærdet	Sleeve, hardcoated	A1800100	A1800200	A1800300	A1800400	A1800500
7	1	316S.S.	Styrepind	Pin	1371100	1371100	1371100	1371100	1371100
8	1	EPDM	O-ring, muffe	O-ring, sleeve	2511004	2544004	25032004	2549004	25012004
	1	Viton	O-ring, muffe	O-ring, sleeve	2511002	2544002	25032002	2549002	25012002

8. Single shaft lip seal



O: "O"-ring, seal housing
P: Seal housing
R: Screw
S: Lipseal
T: Sleeve
U: Pin
V: "O"-ring, sleeve

O P R X U V T

8.5 Replacement of single shaft lip seal

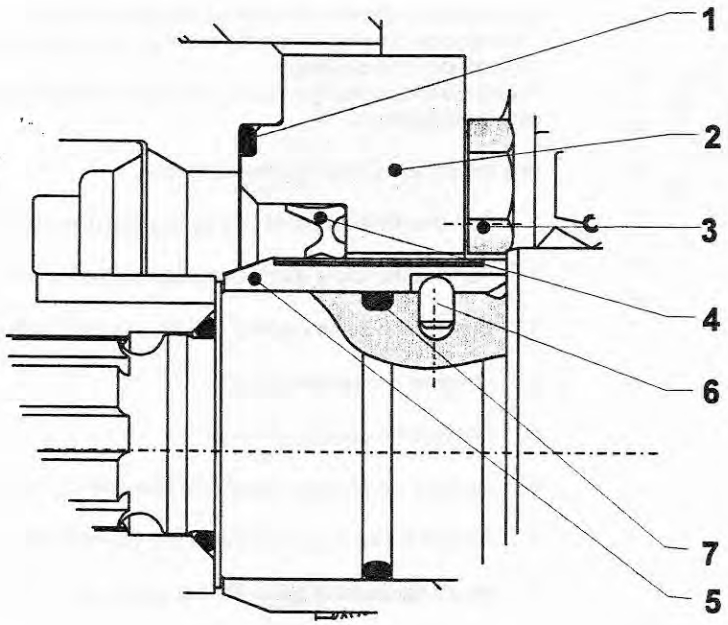
It is possible to replace the shaft lip seal on the pump. The sectional drawing shows the position of the various components mentioned in this procedure. To replace the single shaft lip seal it is necessary to disassemble the pump as described below. Fold the sectional drawing out and use it as a reference.

1. Remove the front panel (11) as described in Section 4.1.
2. Remove the rotors (6) as described in Section 4.2.
3. Use a hook, pliers or similar to extract the lip seal (X) from the shaft seal housing (P).
4. Clean the area in which the lip seal (X) sits.
5. Lubricate the new lip seal (X) generously with a food-quality grease and bring the lip seal over the shaft (31, 36) onto the seal housing (P). Check that the seal has been installed with the correct side uppermost - see sectional drawing.
6. Check that the lip seal (X) has been pushed all the way back to the shaft seal housing (P).
7. Mount the rotors (6) as described in Section 4.2.1.
8. Mount the front panel (11) as described in Section 4.1.1.
9. Check that the rotors turn freely.

NB: *All types of shaft seal (single lip seal, triple lip seal, single mechanical shaft seal, single mechanical shaft seal with water flush, dual mechanical shaft seal and packed gland) (packing thread) can all be mounted on the same pump.*

This requires only the correct shaft seal kit.
These kits are described in the Spare Parts Section of this Manual.

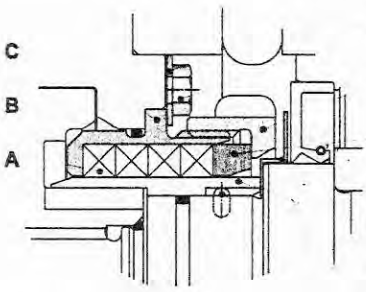
8. Single shaft lip seal



NOTE: Der indgår til en pumpe det dobbelte antal kit = de valgte dele x 2
For a pump twice the number of kits are required = the parts chosen x 2

Enkelt akseltætning / Single lip seal					Pumpe type / Pump type				
					DW1	DW2	DW3	DW4	DW5
Pos.	Stk/Qty	Material	Benævnelse	Description	Del nr. / Part No.				
1	1	EPDM	O-ring, tætningshus	O-ring, seal housing	2597004	25016004	25031004	2552004	25037004
	1	Viton	O-ring, tætningshus	O-ring, seal housing	2597002	25016002	25031002	2552002	25037002
2	1	316S.S.	Tætningshus	Seal housing	A1204100	A1204200	A1204300	A1204400	A1204500
3	4	304S.S.	Skrue, akseltætningshus	Screw, seal housing	700678	700678	700678	700234	701686
4	1	EPDM	Gummi læbetætning	Rubber lipseal	2312A104	2312A204	2312A304	2312A404	2312A504
5	1	316S.S.	Muffe, hærdet	Sleeve, hardcoated	A1800100	A1800200	A1800300	A1800400	A1800500
6	1	316S.S.	Styrepind	Pin	1371100	1371100	1371100	1371100	1371100
7	1	EPDM	O-ring, muffe	O-ring, sleeve	2511004	2544004	25032004	2549004	25012004
	1	Viton	O-ring, muffe	O-ring, sleeve	2511002	2544002	25032002	2549002	25012002

8. Packing thread in gland seal



A: Packing thread
B: O-ring
C: Seal housing
D: Washer
E: Screw
F: Nut
G: Packing gland
H: Deflector
I: Sleeve
J: Pin
K: O-ring

8.6 Replacement of packed gland in gland seal.

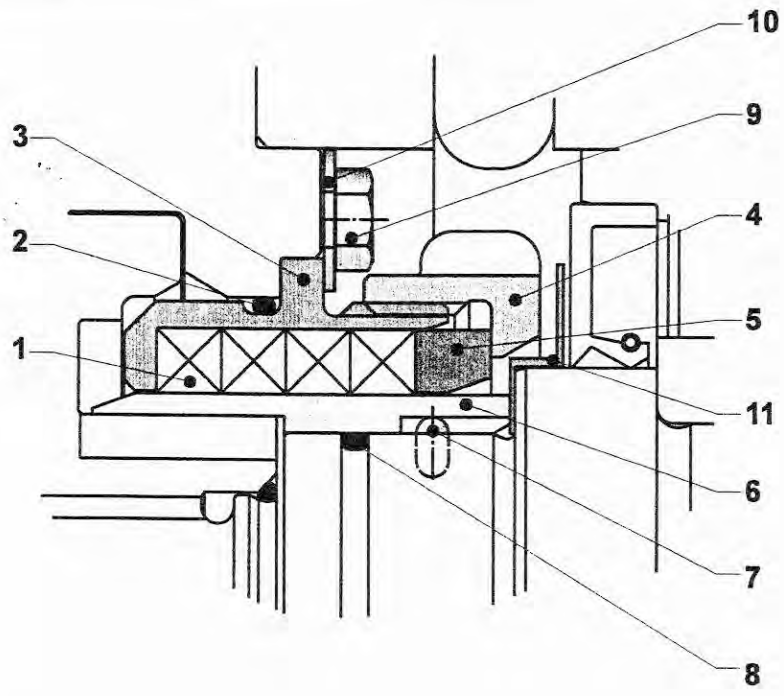
It is possible to replace the packed gland on the pump.
The sectional drawing shows the position of the various components mentioned in this procedure.
To replace the packed gland it is necessary to disassemble the pump as described below.

Use the sectional drawings as reference.

1. Remove the front panel (11) as described in Section 4.1.
2. Remove the rotors (6) as described in Section 4.2.
3. Remove the pump housing (46) as described in Section 4.3.
4. Unscrew and remove nut (F).
5. Remove the packing gland (G)
6. Remove the packing threads (A) from the seal housing (C).
7. Press the new packung threads (A) into the seal housing (C).
8. Mount the packing gland (G) and tighten the nut (F).
9. Check that the deflector (H) is lying correctly against the shaft shoulder and that the shaft sleeve (I) is clean and correctly positioned on the shaft (31, 36). The sleeve must be pushed all the way back to the deflector (H).
10. Mount the pump housing (46) as described in Section 4.3.1.
11. Mount the rotors (6) as described in Section 4.2.1.
12. Mount the front panel (11) as described in Section 4.1.1.
13. Check that the rotors turn freely.
14. If necessary tighten the coupling (F) when the pump is activated.

NB: *All types of shaft seal (single lip seal, triple lip seal, single mechanical shaft seal, single mechanical shaft seal with water flush, dual 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 under Accessories.

8. Packing thread in gland seal



NOTE: Der indgår til en pumpe det dobbelte antal kit = de valgte dele x 2
For a pump twice the number of kits are required = the parts chosen x 2.

Ikke velegnet til CIP-rengøring
Not recomended for Cip-claning

* Paksnor 3 stk. / Packing 3 Qty.
** Paksnor 4 stk. / Packing 4 Qty.

Pos.	Stk./ Qty.	Material	Benævnelse	Description	Pumpe type / Pump type				
					DW1	DW2	DW3	DW4	DW5
					Del nr. / Part No.				
1	1*	PTFE	Paksnor	Packing	-	-	-	-	A2242500
	1**	-	-	-	A2242100	A2242200	A2242300	A2242400	-
2	1	EPDM	O-ring	O-Ring	A2310104	A2310204	A2310304	A2310404	A2310504
	1	Viton	O-ring	O-Ring	A2310102	A2310202	A2310302	A2310402	A2310502
3	1	SS	Tætningshus	Stuffing box	A1205100	A1205200	A1205300	A1205400	A1205500
4	1	SS	Omløber	Nut	A1207100	A1207200	A1207300	A1207400	A1207500
5	1	SS	Brille	Follower	A1802100	A1802200	A1802300	A1802400	A1802500
6	1	SS	Bøsning	Shaft sleeve	A1206100	A1206200	A1206300	A1206400	A1206500
7	1	SS	Pind	Pin	1371100	1371100	1371100	1371100	1371100
8	1	EPDM	O-ring	O-Ring	2511004	2544004	25032004	2549004	25012004
	1	Viton	O-ring	O-Ring	2511002	2544002	25032002	2549002	25012002
9	4	SS	Skrue	Screw	701517	770138	770138	700690	700690
10	4	SS	Skive	Washer	280444	280444	280444	280445	280445
11	1	SS	Slyngring	Deflector	A1208100	A1208200	A1208300	A1208400	A1208500