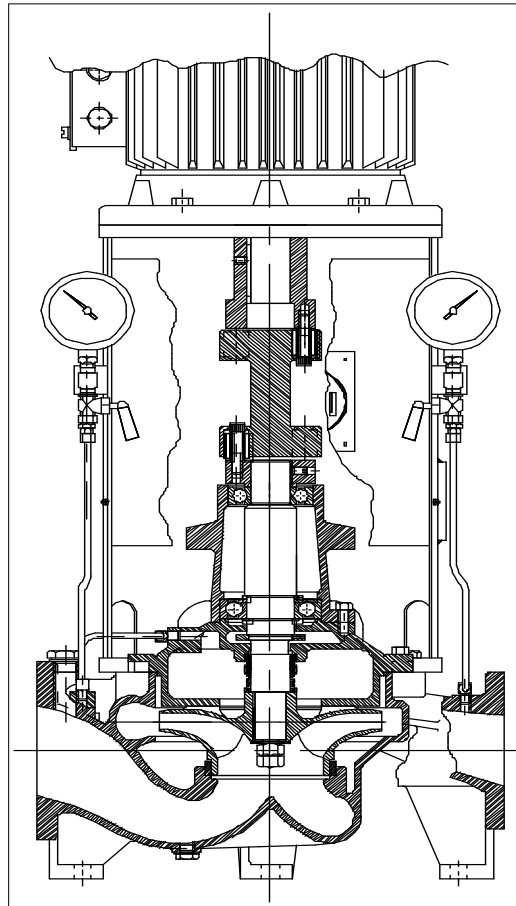


## OPERATION AND MAINTENANCE INSTRUCTIONS

### DESMI "in-line" centrifugal pump

#### SL Spacer



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Special pump No I.....



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## 1. PRODUCT DESCRIPTION

These operation and maintenance instructions apply to the DESMI SL-pump series, type Spacer. The pumps are available in sizes ranging from 70 mm to 250 mm on the pressure flange. The suction flange is bigger than the pressure flange.

DESMI SL is a single-stage centrifugal pump with stainless steel shaft, mechanical shaft seal, and closed impeller.

The pump is a so-called "in-line" type, which means that suction and pressure branches are mounted on the centre line. It is vertical with impeller of the single-suction type with double-curved blades, and it has a helical pump casing in one casting.

Max. temperature for standard type is 80° C. With special shaft seal up to 140° C.

Max. number of revolutions is 1800 RPM for pumps with light bearing housing and 3600 RPM for pumps with heavy bearing housing. See table in paragraph 2.4.

The pump is driven by an electric motor, which may be a standard AC motor or a DC motor.

### 1.1.DELIVERY

-Check on delivery that the shipment is complete and undamaged.

-Defects and damages, if any, to be reported to the carrier or the supplier immediately in order that a claim can be advanced.

## 2. TECHNICAL DATA

The pumps are manufactured in various material combinations which appear from the type number on the name plate. See paragraph 2.3.

### 2.1.ACCESSORIES

As extra equipment the pump may be equipped with a self-priming pump of the water-ring type, complete with filter and feed water tank, or it may be delivered with an ejector pump.

Manometers are standard equipment. Manometer cocks are extra equipment.

### 2.2.SPACE AROUND THE PUMP

The construction of the SL Spacer pump allows dismantling of impeller and shaft without dismantling the electric motor. Consequently, no minimum distance is required above the electric motor except what is required for ventilation. It should, however, be possible to dismantle the entire pump, if required.

There is to be sufficient space in front of the pump at the coupling guard to permit free inspection of the shaft seal for leaks as well as dismantling of the coupling and the internal parts of the pumps.

## 2.3.EXPLANATION OF THE TYPE NUMBER

All the SL-pumps are provided with a name plate.  
The type number indicated on the name plate is built up as follows:

SL XXX-YYY/M/R

SL:SL-pump.

XXX:Diameter DN (mm) of the pressure branch (70, 80, 100, 125, 150, 200, 250).

YYY:Diameter (mm) of standard impeller (215, 265, 330, 415).

M:The material combination of the pump (A, C, D, or Q). See the table below.

R:The assembly combination of the pump.

The letters used have the following meaning:

- a.Spacer, light bearing housing for floor.k:Identical suction and pressure flanges.
- b:Spacer, light bearing housing for bulkhead.l: Other stuffing box.
- c: Spacer, heavy bearing housing for floor. m:BS-flanges.
- d:Spacer, heavy bearing housing for bulkhead.n:ANSI-flanges.
- e:Spacer, heavy bearing housing, heavy motor bracket.o:Shock-proof combination.
- i:TN16 flanges.p:Other combination.
- j:TN25 flanges.q:JIS-flanges.

Material Combination	A	C	D	Q
Pump casing	Cast iron	Cast iron	Bronze	See note 1)
Impeller	Bronze	Cast iron	Alu-bronze	See note 1)
Sealing ring	Bronze	Cast iron	Alu-bronze	See note 1)
Rear cover	Cast iron	Cast iron	Bronze	See note 1)
Shaft	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Shaft seal	Mechanical	Mechanical	Mechanical	Mechanical
Elastomer	Nitrile	Nitrile	Nitrile	Nitrile

Note 1): The pumps are available in other material combinations at request.

Before putting a pump into operation, the suitability of the material combination of the pump must always be taken into consideration. In case of doubt, contact the supplier.

The pump is particularly suitable for the pumping of water for cooling of diesel engines and cooling units, as bilge pump, ballast pump, fire pump, for irrigation, fish farms, water works, water lowering, and much more.

Pumps in material combinations A and C are primarily used for fresh water.

Pumps in material combination D are primarily used for sea water.

Pumps in material combination Q are used for specific tasks requested by the customer.

If the pumps are designed for special purposes, the following is to be indicated:

Pump No. : \_\_\_\_\_  
 Pump type: \_\_\_\_\_  
 Application : \_\_\_\_\_  
 Comment : \_\_\_\_\_

## 2.4. TECHNICAL DESCRIPTION

The following table indicates the max. permissible numbers of revolution for each individual pump type:

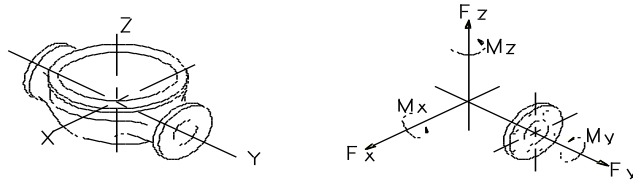
Pump Type	Motors: 4-pole at 50 Hz 4-pole at 60 Hz	Motors: 2-pole at 50 Hz 2-pole at 60 Hz See note 1)
SL 70-215		X
SL 70-265		X
SL 80-215		X
SL 80-265		X
SL 80-330		X
SL 100-215		X
SL 100-265		X
SL 100-330	X	
SL 125-215	X	
SL 125-265	X	
SL 125-330	X	
SL 125-415	X	
SL 150-265	X	
SL 150-330	X	
SL 150-415	X	
SL 200-265	X	
SL 200-330	X	
SL 200-415	X	
SL 250-330	X	
SL 250-415	X	

Note 1: The pump sizes SL 70-215 to SL 100-265 are available with light bearing housing (see paragraph 2.3) for 4-pole motors. These pumps must be rebuilt to heavy bearing housing if they are to be mounted with 2-pole motors.

The noise level of the pump depends on the motor type supplied, as the noise from the pump can be calculated as the noise level of the motor + 2dB(A).

The capacity of the pump appears on the name plate on the pump. If the pump has been delivered without motor, the pump capacity is to be indicated on the plate when mounting the motor.

The permissible loads on the flanges appear from the following table:



Pump Types	DN	Forces (N)				Torques (Nm)			
		Fy	Fz	Fx	Σ F	My	Mz	Mx	Σ Mt
SL 70-215 SL 70-265	70	700	840	750	1340	510	310	380	700
SL 80-215 SL 80-265 SL 80-330	80	800	950	850	1500	550	350	400	750
SL 100-215 SL 100-265 SL 100-330	100	1000	1250	1150	2000	650	400	500	900
SL 125-215 SL 125-265 SL 125-330 SL 125-415	125	1250	1600	1430	2500	830	520	650	1160
SL 150-265 SL 150-330 SL 150-415	150	1500	1900	1700	2950	1000	650	800	1400
SL 200-265 SL 200-330 SL 200-415	200	2000	2520	2260	3920	1330	860	1060	1860
SL 250-330 SL 250-415	250	2500	3150	2820	4900	1770	1140	1400	2470

In connection with the permissible loads on the flanges according to the above table the following is to be observed:

$$\left( \frac{\sum F_{calc}}{\sum F} \right)^2 + \left( \frac{\sum M_{calc}}{\sum M_t} \right)^2 < 2$$

where index "calc" is the values calculated by the user.

## 3. INSTALLATION

### 3.1.MOUNTING/FASTENING

Normally, the pump is placed vertically with the motor upwards. If you should require another position, contact DESMI for acceptance.

There are 2 possible installation methods:

1. Floor installation - supporting feet on pump casing or motor bracket.
2. Bulkhead mounting - fittings on motor bracket.

The pump should be mounted and fastened on a solid base plate with a flat and horizontal surface to avoid distortion.

The max. permissible loads on the flanges stated in paragraph 2.4 are to be observed.



At installations pumping hot or very cold liquids the operator must be aware that it is dangerous to touch the pump surface, and, consequently, he must take the necessary safety measures.

### 3.2.WIRING



Wiring to be carried out by authorized skilled workmen according to the rules and regulations in force.

## 4. TRANSPORT/ STORAGE

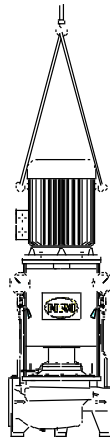
The pumps are to be lifted as shown below. The weights of the pumps, without motor, appear from the table below:

Type	Weight in kg A/D-combination	Type	Weight in kg A/D-combination
SL 70-215	155/170	SL 125-330	335/350
SL 70-265	175/190	SL 125-415	395/420
SL 80-215	160/175	SL 150-265	305/320
SL 80-265	190/200	SL 150-330	390/445
SL 80-330	245/260	SL 150-415	445/480
SL 100-215	165/180	SL 200-265	385/430
SL 100-265	205/220	SL 200-330	445/500
SL 100-330	275/290	SL 200-415	530/575
SL 125-215	185/200	SL 250-330	500/550
SL 125-265	220/240	SL 250-415	690/760

The pump is to be stored in a dry area.

Before shipment the pump is to be fastened securely on pallets or the like.

The pump is to be lifted as shown below:



The lifting straps must not bear against sharp edges and corners.

## 5. DISMANTLING

The main components of the pump are:

1. Pump casing (A) (not to be loosened from the pipe flanges at the dismantling).
2. Parts removed as a unit: Shaft (E), impeller (C), rear cover (B), bearing housing (D), etc.
3. Motor bracket (X) carrying the motor.
4. Coupling (BD).

### 5.1.ACCESS TO IMPELLER AND BEARINGS

Remove the guard (N). To dismantle the coupling (BD), which consists of 3 main parts: a pump half, a motor half, and a spacer shaft, remove the screws (BD4) at each end of the coupling, after which the spacer shaft (BD3) can be taken out. Now dismantle the pump.

Remove the copper pipe (AT) between suction side and rear cover (B).

Remove the set screws (AH) that fasten rear cover (B) to pump casing (A).

Lift the bearing housing (D) with shaft (E) and rear cover (B), etc., as a unit, vertically off the the pump casing. Now dismantle the unit.

In order to obtain access to the bearings (S, T or S, R) pull the coupling half (BD5) off the shaft (E), remove the set screws (AK) of the bearing housing and then pull off the bearing housing.

### 5.2.DISMANTLING SHAFT SEAL

Remove nuts (AO). Pull off the impeller (C) and remove the key (AF).

Loosen the pointed screw (AP) in the labyrinth ring (P) through the opening in the rear cover (B).



Pull the shaft (E) out of the rear cover, by which the shaft seal (V) and the labyrinth ring are pulled off the shaft. The seat is pressed out from behind the rear cover.

## 5.3.INSPECTION

When the pump has been dismantled check the following parts for wear and damage:

- Sealing ring/impeller:Clearance max. 0.4 - 0.5 mm measured in radius.
- Shaft seal/rear cover:Check seat for flatness and cracks.  
Check rubber parts for elasticity.
- Bearings : Replace in case of wear and noise.

## 6. ASSEMBLING

### 6.1.FITTING SEALING RING

When fitted the sealing ring (J) is to bear against the shoulder of the pump casing (A).

### 6.2.FITTING SHAFT WITH BEARINGS

Lead shaft (E) with bearings into the bearing housing (D). Fit key (AF, AG).

### 6.3.FITTING SHAFT SEAL

Before fitting the seat, clean the recess in the rear cover. When fitting the seat, remove the protective coating without scratching the lapped surface. Dip the outer rubber ring of the seat in olive oil (or another neutral oil). Now press the seat into place with the fingers, and check that all parts are correctly imbedded. If it is necessary to use fitting tools, then protect the sliding surface of the seat to prevent it from being scratched or cut. Lubricate the inner diameter of the rubber bellows on the slide ring with olive oil and push it over the shaft. The use of a fitting bush as shown on the assembly drawing is recommended to avoid that the rubber bellows is cut. Push the slide ring over the shaft with the hand. If the rubber bellows is tight, use a fitting tool and take care that the slide ring is not damaged.

If the carbon ring is not fixed, it is important to check that it is fitted correctly, i.e. the chamfered/lapped side is to face the seat. The carbon ring can be held by a little grease. When using oil on the shaft, the bellows will settle and seat in about 15 minutes and until then tightness should not be expected. After start, check by viewing the leak hole that there are no leaks.

### 6.4.FITTING IMPELLER

Fit the key (AF) in the shaft and lead the impeller (C) towards the shoulder on the shaft (E). Take care that the ring at the end of the shaft seal spring locates in the recess of the impeller. Secure the impeller with a distance ring (K) and 2 nuts (AO).

## 6.5.FITTING BEARING HOUSING AND REAR COVER

Place the gasket (L) between pump casing (A) and rear cover (B) on the rear cover where it can be held with a little grease. Fit and fasten bearing housing (D) with rear cover. Note that the copper pipe connection faces the suction side. Fit copper pipe (AT).

## 6.6.SHAFT

When the pump has been assembled, check that the shaft (E) rotates freely.

## 6.7.FITTING SPACER COUPLING

When the spacer coupling (BD3) has been dismantled, for instance for servicing the pump, it is important, for safety reasons as well as for the faultless operation of the pump, that it is fitted correctly again.

The following procedure is recommended:

1. Inspect Allen screws (BD4) and coupling bushes (BD6) for damage and clean them with a cloth. Replace screws or bushes, if they are damaged.
2. Degrease the screw threads with for instance benzine and clean also the thread holes in the coupling half pump and coupling half motor with compressed air. If new coupling halves are mounted at the same time, degrease also thread holes with benzine.
3. Place the coupling bushes (BD6) in the top holes of the spacer (BD3), the chamfering on the bushes to face downwards. Then place the coupling bush (BD6) in the bottom holes of the spacer (BD3), the chamfering on the bushes to face upwards.
4. Hold your hand under the spacer (BD3) and the bottom coupling bushes (BD6), and push the spacer (BD3) into place carefully.
5. Apply screw locking to the screws (BD4) - LOCTITE type 242 is recommended as it allows dismantling - and fit and fasten all the screws with the hand. It might be necessary to push the spacer a little until the screws catch the thread and you feel that the spacer has found its right place.
6. Now tighten the screws with a torque wrench (55 Nm for 12 mm screws). As the motor shaft/pump shaft will rotate during this operation, it is necessary to hold the spacer by wedging a mandrel, a piece of flat iron or the like in between the two following screw heads in order to lock the system while tightening the screws.
7. When the coupling guard (N) has been mounted, and the procedure in paragraph 6.1 has been followed, the pump is ready for start.

## 6.8.GUARD

The guard (N) protects against unintentional access to the shaft (E) and coupling (BD). The pump must not be started if the guard (N) is dismantled.

The guard (N) is open at the bottom for inspection of possible leaks at the shaft seal (V).

Furthermore, for pumps with heavy bearing housing construction, it is possible to lubricate the bearings without dismantling the guard. Regarding lubrication, see paragraph 11.

## 7. FROST PROTECTION

Pumps which are not in operation during frost periods are to be drained to avoid frost damage. Remove the plug at the bottom to empty the pump. Alternatively, it is possible to use anti-freeze liquids in normal constructions.

## 8. DISMANTLING



Before dismantling the pump make sure that it has stopped. Empty the pump of liquid before it is dismantled from the piping system. If the pump has been pumping dangerous liquids you are to be aware of this and take the necessary safety measures.

If the pump has been pumping hot liquids, take great care that it is drained before it is removed from the piping system.

## 9. START-UP



A centrifugal pump will not function until it has been filled with liquid between the foot valves up to somewhat above the impeller.

The liquid also serves as coolant for the shaft seal. In order to protect the shaft seal the pump must not run dry.

### ATTENTION

For safety reasons the pump is only allowed to operate against closed discharge valve for a short time (max. 5 minutes and at a max. temperature of 80°C for standard pumps). Otherwise there is a risk of damage to the pump and, at worst, of a steam explosion. If the pump is not monitored, the installation of a safety device is recommended.

### 9.1. STARTING

Before starting the pump check that:

- the shaft rotates freely without jarring sounds.
- the pump casing and the suction line are filled with liquid.

Start the pump for a moment to check the direction of rotation. If the direction is correct (i.e. in the direction of the arrow) the pump may be started.

## 10. SYSTEM BALANCING

It is often difficult to calculate a manometric delivery head in advance. It is, however, decisively important to the quantity of liquid delivered.

A considerably smaller delivery head than expected will increase the quantity of liquid delivered, causing increased power consumption and perhaps cavitation in pump and piping. In the pump the impeller may show signs of heavy erosion caused by cavitation (corrosion) which may at times render an impeller unfit for use in a very short time. Not unusually do similar erosions occur in pipe bends and valves elsewhere in the piping system.

Therefore, after start-up, it is necessary to check either the quantity of liquid delivered or the power consumption of the pump, e.g. by measuring the current intensity of the connected motor. Together with a reading of the differential pressure the quantity of water delivered can be determined against the characteristics of the pump.

Should the pump not function as intended, please proceed according to the fault-finding list. Bear in mind, though, that the pump was carefully checked and tested at the factory and that the majority of faults stem from the piping system.

FAULT	CAUSE	REMEDY
The pump has no or too low capacity	<ol style="list-style-type: none"> <li>1. Wrong direction of rotation</li> <li>2. Piping system choked</li> <li>3. The pump is choked</li> <li>4. Suction line leaks Pump takes air</li> <li>5. Suction lift too high</li> <li>6. Pump and piping system wrongly dimensioned</li> </ol>	Change direction of rotation to clockwise when viewed from shaft end (the direction of the arrow) Clean or replace Clean the pump Find the leakage, repair the fault, non-return valve not submerged Check data sheet Q/H curve and NPSH or contact DESMI As 5
The pump uses too much power	<ol style="list-style-type: none"> <li>1. Counter-pressure too low</li> <li>2. The liquid is heavier than water</li> <li>3. Foreign body in pump</li> <li>4. Electric motor is running on 2 phases</li> </ol>	Insert orifice plate or check valve/Contact DESMI  Contact DESMI  Dismantle the pump, remove the cause Check fuses, cable connection, and cable
The pump makes noise	<ol style="list-style-type: none"> <li>1. Cavitation in pump</li> </ol>	Suction lift too high/ Suction line wrongly dimensioned/Liquid temperature too high

## 11. INSPECTION AND MAINTENANCE

Inspect the shaft seal for leaks at regular intervals.

-Before inspection of a pump without guard check that the unit cannot be started unintentionally.

-The system is to be without pressure and drained of liquid.

-The repairman must be familiar with the type of liquid which has been pumped as well as the safety measures he is to take when handling the liquid.

### 11.1.DRAINING THE PUMP

When the piping system has been drained, note that there is still liquid left in the pump. Remove most of the liquid by dismantling the pipe plug (AQ) at the bottom of the pump. Remove the remaining liquid by tilting the pump casing (A) towards one of the flanges.

### 11.2.LUBRICATING BEARINGS

#### 11.2.1.BEARINGS IN LIGHT BEARING HOUSING

The bearings (S,R) in light housing (D) do not require any attention as they are closed and lubricated for life.

The bearings (S,R) must not be cleaned with kerosene or other cleaning liquids.

The grease of life-time lubricated ball bearings (type RS) is constant up to 125°C

#### 11.2.2.BEARINGS IN HEAVY BEARING HOUSING

The angular contact ball bearings (T) are designed to absorb axial loads in both directions as well as radial loads.

The construction is based on bearings type "BG", as these bearings have been ground to such dimensions that they can always be fitted in pairs without adjustment shims.

Always replace the bearings (T) in sets.

When mounting the bearings, see to it that they are placed correctly in relation to each other. The bearings are to be arranged face-to-face, i.e. the wide sides of the inner raceways are to face each other.

Lubricating procedure:

1. If the bearing has just been cleaned or if it is a new bearing, fill bearing completely and bearing housing 30-50% with grease.
2. Use a recommended lithium-based grease quality.
3. After lubrication the temperature will often rise. However, if the bearing has not been over-greased the temperature will fall to normal in a few hours.

Lubricate the bearings at the following intervals:

Pump with 2-pole motor: 2500 hours

Pump with 4-pole motor: 4500 hours

Grease quantity for both motor types: 25 g.

Use one of the recommended types of grease or other lithium-based types of grease.

Recommended types of grease:

ESSO	Beacon 2
BP	Energrease EP grease 2
Shell	Alvania grease 2
Mobil	Mobil lux grease EP 2
Castrol	Spherol AP 2
Texaco	Multifak EP 2
Q8	Rembrandt EP 2 and Rubens
Statoil	Statoil Uniway u2

If the pump liquid temperature is above 80 °C, high-temperature grease is recommended, e.g. SKF LGH Q3.

### 11.3.DETAILED INSTRUCTION FOR GREASE VALVE

In pumps with heavy bearing housing, the bearing housing is provided with a grease valve (O), which has the effect that superfluous grease is automatically thrown out of the bearing.

The valve is working by means of a disc (O) fixed to the shaft (E) the extended hub of which is pressed towards the bearings (T). The grease is thrown off the rotating disc through an opening in the bearing housing (D).

If a container has been placed below this opening to collect the grease, it is important that it is emptied now and then. The opening itself is also to be kept clean.

## 12. REPAIRS

### 12.1.ORDERING SPARE PARTS

When ordering spare parts please always state pump type and serial No. See the name plate of the pump and the spare parts drawing with item Nos. See assembly drawing.

## 13. OPERATING DATA

The powers indicated in the table below are the max. power consumption of the pump.  
The following working pressures are allowed:

Type	Pressure bar	Power kW 1450/1750/2950/3 500	Type	Pressure bar	Power kW 1450/1750
SL 70-215	16	1.9/3.2/16.5/28	SL 125-330	10	29/48
SL 70-265	16	4.0/7.4/33/48	SL 125-415	12	45/81
SL 80-215	10	3.3/6.0/27/47	SL 150-265	6,5	18,4/31
SL 80-265	16	5.9/10.1/43/79	SL 150-330	9	35/61
SL 80-330	16	11.2/19.6/79/124	SL 150-415	10	62/107
SL 100-215	14	5.5/9.6/48/83	SL 200-265	6	24/41
SL 100-265	14	10.5/17.5/74/119	SL 200-330	9	47/80
SL 100-330	11	18.4/31/--/--	SL 200-415	10	75/147
SL 125-215	8	6.8/11,6/--/--	SL 250-330	6	78/135
SL-125-265	9	14.3/25/--/--	SL 250-415	10	121/210

The above-mentioned max. working pressure is **NOT** valid for pumps approved by a classification society. Pumps approved by classification societies have been pressure tested according to the requirements of these societies, i.e. a test pressure of 1.5 x the permissible working pressure. The test pressure is stated in the test certificate and stamped into the discharge flange of the pump.

## 14. EU DECLARATION OF CONFORMITY

DESMI PUMPING TECHNOLOGY A/S, hereby declare that our pumps of the type SL Spacer are manufactured in conformity with the following essential safety and health requirements in the COUNCIL DIRECTIVE 2006/42/EC on machines, Annex 1.

The following harmonized standards have been used:

EN/ISO 13857:2008	Safety of machinery. Safety distances to prevent danger zones being reached by the upper limbs
EN 809:1998 + A1:2009	Pumps and pump units for liquids – Common safety requirements
EN12162:2001+A1:2009	Liquid pumps – Safety requirements – Procedure for hydrostatic testing
EN 60204-1:2006/A1:2009	Safety of machinery – Electrical equipment of machines (item 4, General requirements)

Pumps delivered by us connected with prime movers are CE-marked and comply with the above requirements.

Pumps delivered by us without prime movers (as partly completed machinery) must only be used when the prime mover and the connection between prime mover and pump comply with the above requirements.

Nørresundby, March 05 2019



Henrik Mørkholt Sørensen  
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Tagholm 1  
9400 Nørresundby

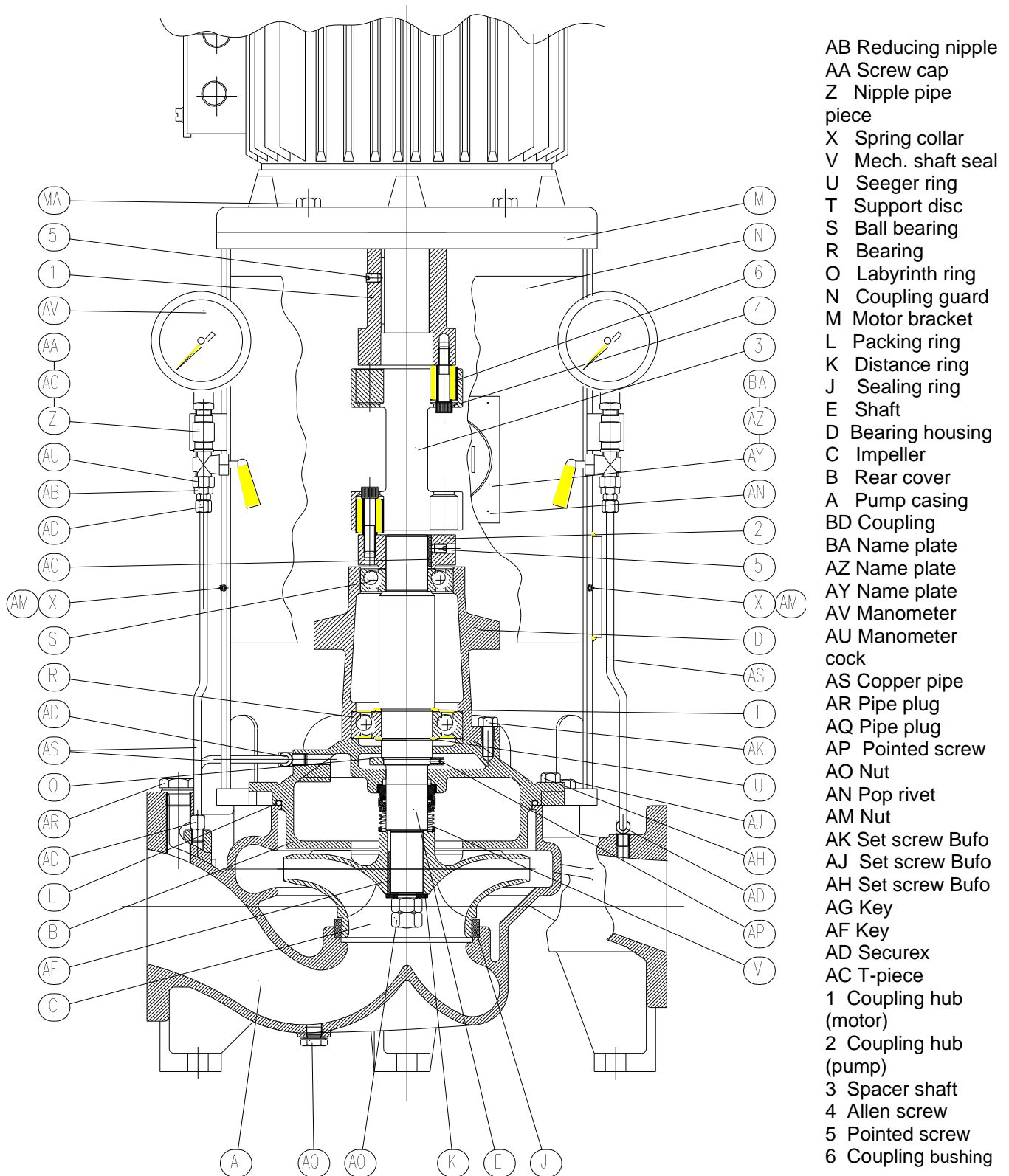


## 15. INFORMATION RELEVANT FOR DISASSEMBLY OR DISPOSAL AT END-OF-LIFE

No damage materials are used in DESMI pumps – please refer to DESMI Green Passport (can be sent on request – contact a DESMI sales office) – i.e. common recycling companies can handle the disposal at end-of-life. Alternatively the pump and motor can be returned to DESMI at end-of-life for safe recycling.

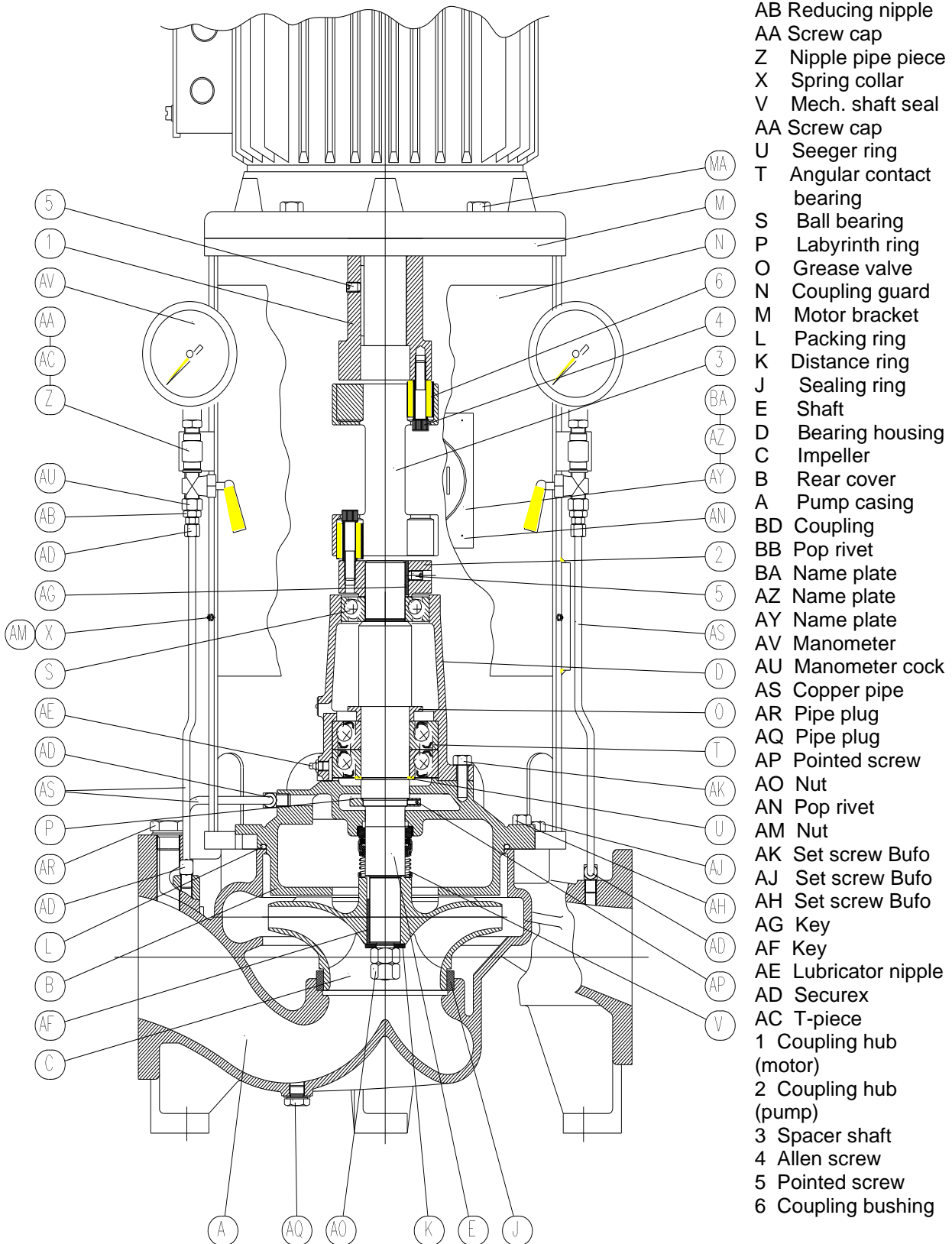
## 16. ASSEMBLY DRAWING (LIGHT BEARING HOUSING)

### Spare parts List



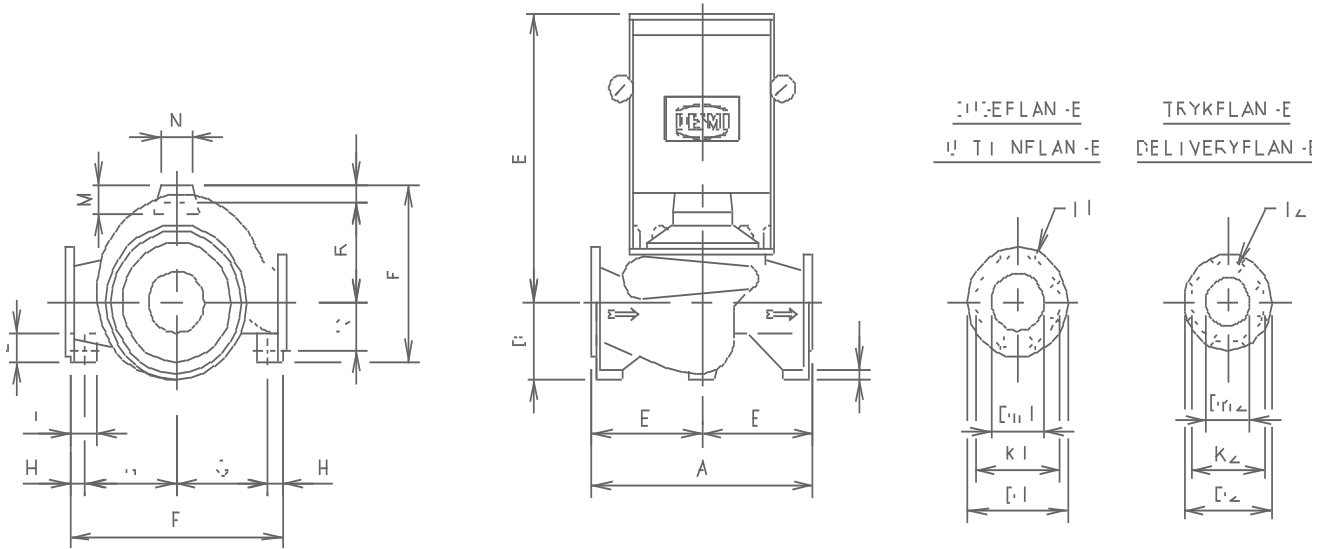
## 17. ASSEMBLY DRAWING (HEAVY BEARING HOUSING)

### SPARE PARTS LIST



- AB Reducing nipple
- AA Screw cap
- Z Nipple pipe piece
- X Spring collar
- V Mech. shaft seal
- AA Screw cap
- U Seeger ring
- T Angular contact bearing
- S Ball bearing
- P Labyrinth ring
- O Grease valve
- N Coupling guard
- M Motor bracket
- L Packing ring
- K Distance ring
- J Sealing ring
- E Shaft
- D Bearing housing
- C Impeller
- B Rear cover
- A Pump casing
- BD Coupling
- BB Pop rivet
- BA Name plate
- AZ Name plate
- AY Name plate
- AV Manometer
- AU Manometer cock
- AS Copper pipe
- AR Pipe plug
- AQ Pipe plug
- AP Pointed screw
- AO Nut
- AN Pop rivet
- AM Nut
- AK Set screw Bufo
- AJ Set screw Bufo
- AH Set screw Bufo
- AG Key
- AF Key
- AE Lubricator nipple
- AD Securex
- AC T-piece
- 1 Coupling hub (motor)
- 2 Coupling hub (pump)
- 3 Spacer shaft
- 4 Allen screw
- 5 Pointed screw
- 6 Coupling bushing

## 18. DIMENSIONAL SKETCH



See also table on the next page

Type	Dn1	D1	K1	l1	Dn2	D2	K2	l2	A	B	C	D	E
SL 70-215	80	200	160	4x18	70	185	145	4x18	500	250	20	140	655
SL 70-265	80	200	160	4x18	70	185	145	4x18	500	250	20	140	714
SL 80-215	100	220	180	8x18	80	200	160	4x18	500	250	20	160	672
SL 80-265	100	220	180	8x18	80	200	160	4x18	560	280	20	160	720
SL 80-330	100	220	180	8x18	80	200	160	4x18	630	315	20	160	713
SL 100-215	125	250	210	8x18	100	220	180	8x18	500	250	20	180	687
SL 100-265	125	250	210	8x18	100	220	180	8x18	560	280	20	180	735
SL 100-330	125	250	210	8x18	100	220	180	8x18	630	315	25	180	730
SL 125-215	150	285	240	8x22	125	250	210	8x18	560	280	25	200	700
SL 125-265	150	285	240	8x22	125	250	210	8x18	630	315	25	200	748
SL 125-330	150	285	240	8x22	125	250	210	8x18	710	355	25	200	743
SL 125-415	150	285	240	8x22	125	250	210	8x18	800	400	25	200	875
SL 150-265	200	340	295	8x22	150	285	240	8x22	710	355	25	225	770
SL 150-330	200	340	295	8x22	150	285	240	8x22	800	400	25	225	901
SL 150-415	200	340	295	8x22	150	285	240	8x22	900	450	25	225	892
SL 200-265	250	395	350	12x22	200	340	295	8x22	800	400	25	250	934
SL 200-330	250	395	350	12x22	200	340	295	8x22	900	450	25	250	924
SL 200-415	250	395	350	12x22	200	340	295	8x22	1000	500	30	250	1024
SL 250-330	300	445	400	12x22	250	395	350	12x22	1000	500	30	280	947
SL 250-415	300	445	400	12x22	250	395	350	12x22	1120	560	30	280	1039

Type	F	G	H	J	L	M	N	P	Q	R	S
SL 70-215	476	195	43	70	65	70	85	345	95	180	40
SL 70-265	480	195	45	70	65	60	85	355	95	200	35
SL 80-215	476	195	33	55	50	55	65	350	100	195	30
SL 80-265	536	225	43	65	60	60	85	370	100	210	35
SL 80-330	606	260	43	75	70	70	80	405	100	235	40
SL 100-215	476	195	43	65	60	70	90	390	110	215	40
SL 100-265	536	225	43	65	60	70	90	410	110	235	40
SL 100-330	606	260	43	65	60	70	90	445	110	260	45
SL 125-215	536	225	43	70	65	75	90	440	125	245	40
SL 125-265	606	260	43	75	75	75	90	460	125	260	45
SL 125-330	686	295	48	75	75	75	90	480	125	280	45
SL 125-415	776	340	48	75	75	75	90	510	125	310	45
SL 150-265	686	300	43	70	65	75	90	515	145	290	50
SL 150-330	776	340	48	70	65	65	90	510	145	295	40
SL 150-415	876	390	48	70	65	65	90	530	145	315	40
SL 200-265	772	340	46	75	65	65	90	560	170	325	35
SL 200-330	872	390	46	75	65	65	90	565	170	330	35
SL 200-415	972	440	46	75	65	65	90	590	170	355	35
SL 250-330	972	440	46	75	65	65	90	635	200	370	35
SL 250-415	1092	500	46	75	65	65	90	655	200	390	35