Instruction Manual

Sanitary Pumps

SFP 51-51-142, SFP 63-51-142, SFP 63-51-175, SFP 76-63-175, SFP 63-51-210, SFP 76-63-210

Contents

1. General

1.1 General Description

1.1 General description of the pump:

1.1 The pumps are designed to be used in the food industri and subsequently cleaned with CIP (Cleaning in place).

1.2 The pumps are designed to work within following delineation:

Temperature of the media	-20° -> 140°
Ambient temperature-20°	-> 40°
System pressure max.	10 bar

1.3 The working pressure depends on the pump.

2. Safety
2.1 Important Information
2.2 Warning Signs

Unsafe practices and other important information are emphasized in this manual.
Warnings are emphasized by means of special signs.

Always read the manual before using the pump!

WARNING!
This indicates that special procedures must be followed to avoid severe personal injury.

CAUTION!
This indicates that special procedures must be followed to avoid damage to the pump.

NOTE!
Indicates important information to simplify or clarify.

Warning signs

General warning

Dangerous electrical voltage

Caustic agents

2.Safety

2.3 Safety Precautions

All warnings in the manual are summarized on this page.
Pay special attention to the instructions below so that severe personal injury and/or damage to the pump are avoided.

<u>Installation</u>:

- ✓ *Always* read the technical data thoroughly. (See chapter 8).
- ✓ *Always* use a lifting crane when handing the pump.

All sanitary pumps:

- ✓ *Never* start in the wrong direction of rotation with liquid in the pump.

- ✓ *Always* have the pump electrically connected by authorized personnel. (See the motor instructions).

<u>Operation</u>:

- ✓ *Always* read the technical data thoroughly. (See chapter 8).
- ✓ *Never* touch the pump or the pipelines when pumping hot liquids or when sterilizing.
- ✓ *Never* run the pump with both the suction side and the pressure side blocked.

- ✓ *Always* handle lye and acid with great care.

<u>Maintenance</u>:

- ✓ *Always* read the technical data thoroughly. (See chapter 8).
- ✓ *Never* start the pump if the impeller is fitted and the pump casing is removed.
- ✓ *Never* service the pump, when pump and pipelines are under pressure.

- ✓ Always disconnect the power supply when servicing the pump.

3. Installation

3.1 Unpacking/Delivery

3.2 Handling

The instruction manual is part of the delivery. Study the instructions carefully.
The standard delivery does not include the test certificate. This can be supplied on request.

Step 1

Check the delivery for:

1. Complete pump
2. Delivery note
3. Motor instructions
4. Test certificate

Step 2 The large pump types are very heavy.
Danpumps therefore recommends the use of a lifting crane, when handling the pump.

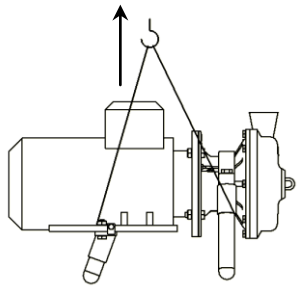
CAUTION!

- ✓ *Always* use a lifting crane, when handling the pump (See technical data).

Danpumps cannot be held responsible for incorrect unpacking.

Handling

- ✓ *Always* remove the shroud (if fitted), before lifting the pump.



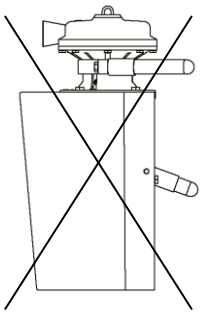
Remove the shroud before lifting!

3. Installation

3.2 Handling

Step 4

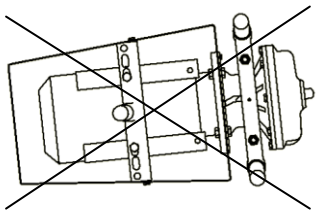
5. *Never* place the pump on the back end of the shroud.



Do not place the pump in this position

Step 5

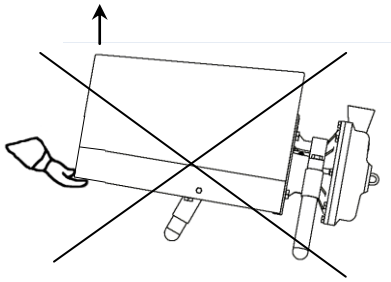
6. *Never* place the pump on any sides of the shroud



Do not place the pump in this position

Step 6

7. *Never* grab the shroud to lift up the pump

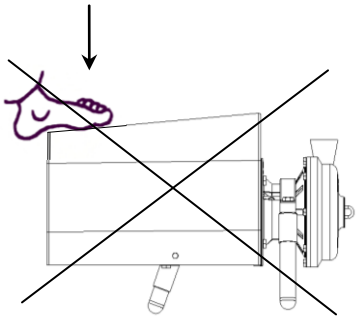


Do *not* lift the pump this way

3. Installation

Step 7

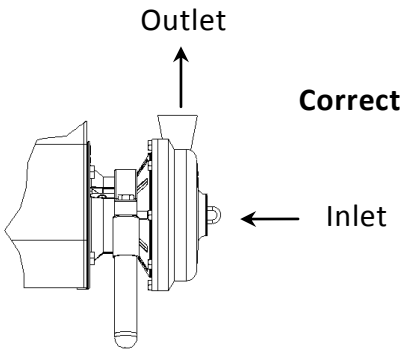
8. *Never* step on the shroud/the pump.



Do not treat the pump this way

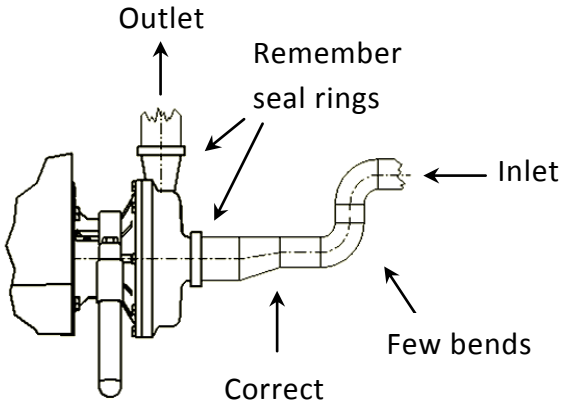
Step 8

1. Check that the flow direction is correct



Step 9

1. Ensure that the pipelines are routed correctly.
2. Ensure that the connections are tight.

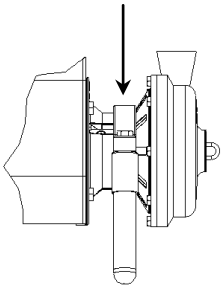


3. Installation

Step 10

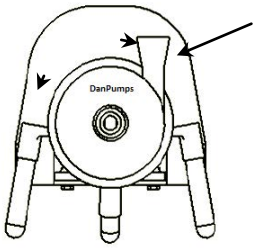
Rotate outlet

1. Loosen the screw



2. Choose direction

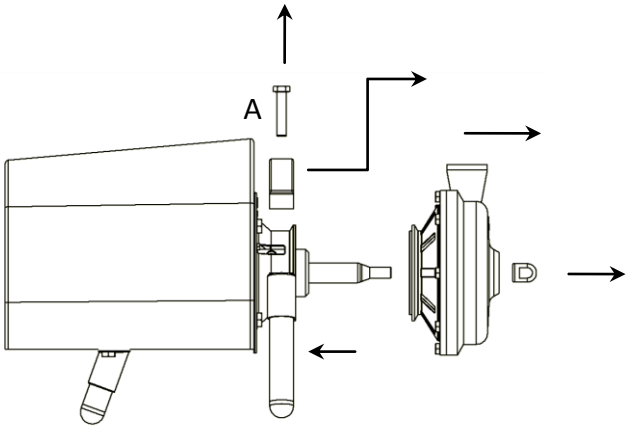
Outlet can be placed 0-360°



Step 11

Dismount the pump from the engine

Loosen the screw A
Remove the bracket
Move the legs nearer the engine
Tighten the screw (item A)
Move the pump from the engine

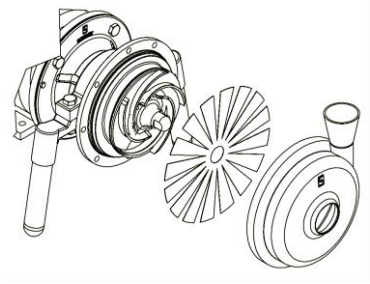


4. Installation

4.1 Pre-use check – Pump with/without impeller screw

Study the instructions carefully and pay special attention to the warnings!
Check the direction of rotation of the impeller before operation.
See the indication label on the pump.

Step 1

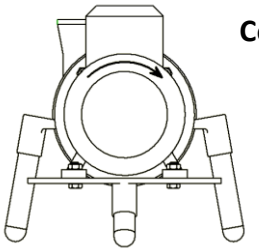


1. Remove pump house
2. Install the star
3. Move the shaft forwards and fasten
4. Dismount the pump house and remove the star
5. Mount the pump house

Pump with impeller screw
Step 1

✓ *Never* start in the wrong direction of rotation with liquid in the pump

See the indication label!

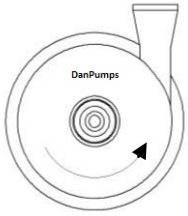


Correct

1. Start and stop the engine momentarily
2. Ensure that the direction of rotation of the engine fan is *clockwise* (See the view from the rear end of the engine)

View from rear end of engine

Rotation of the impeller!



Rotating direction

5. Operation

5.1 Operation/Control

Study the instructions carefully
The pump is fitted with a warning label indicating correct throttling

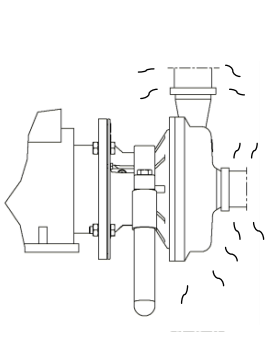
Step 1

✓ *Always* read the technical data thoroughly (See chapter 8)

CAUTION!
Danpumps cannot be held responsible for incorrect operation/control!

Step 2

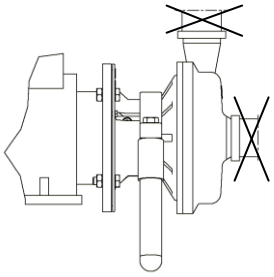
✓ *Never* touch the pump or the pipelines, when pumping hot liquids or when sterilizing.



Burning danger

Step 3

✓ *Never* run the pump with both the suction and the pressure side



Explosion danger

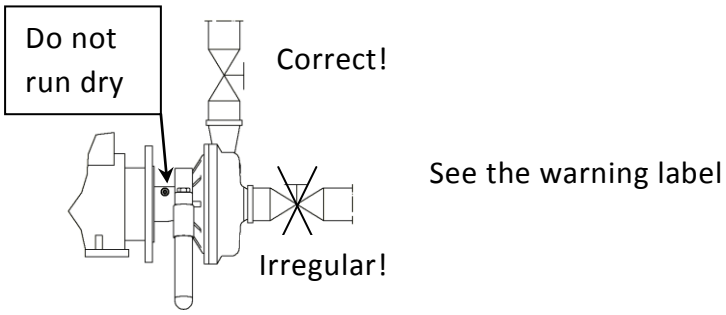
5. Operation

Step 4

CAUTION!

Single mechanical seal:

- ✓ The shaft seal *must never* run dry
- ✓ *Never* throttle the inlet side

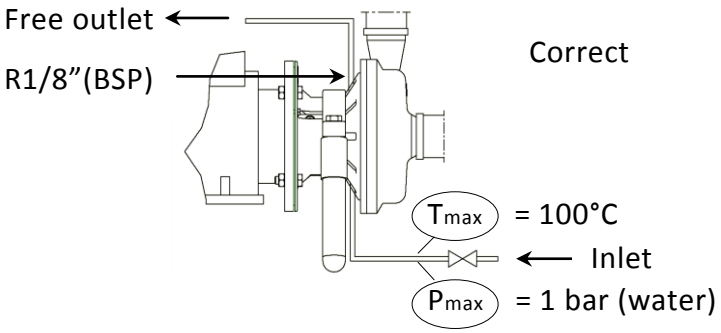


Step 5

Flushed shaft seal:

Double mechanical seal:

- ✓ *Never* run without flush
- ✓ Connect the inlet of the flushing liquid correctly
- ✓ Regulate the water and steam supply correctly
- ✓ Observe the steam data

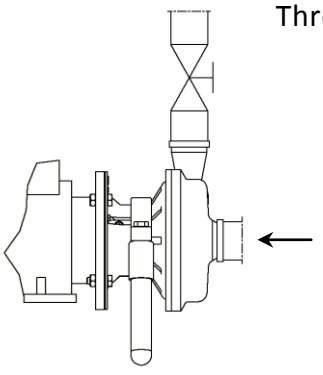


Step 6

Control:

Reduce the capacity and the power consumption by means of:

- ✓ Throttling the pressure side of the pump
- ✓ Reducing the impeller diameter
- ✓ Reducing the speed of the engine



6. Operation

6.1 Trouble shooting

Pay attention to possible faults
Study the instructions carefully

Note!
Study the maintenance instructions carefully, before replacing worn parts (See section 6)

Problem	Cause/result	Remedy
Overloaded engine	Pumping of viscous liquids	Larger engine or smaller impeller
	Pumping of liquids with high density	
	Low outlet pressure (counter pressure)	Higher counter pressure (throttling)
	Lamination of precipitates from the liquid	Frequent cleaning
Cavitation	Low inlet pressure	Increase the inlet pressure
Damage	High liquid temperature	Reduce the liquid temperature
Pressure reduction (sometimes to zero)		Reduce the pressure drop before the pump
Increasing of the noise level		Reduce speed
Leaking shaft seal	Dry run (See chapter 5)	Replace: All wearing parts (See chapter 7)
	Incorrect rubber grade	If necessary: Select a different rubber grade
	Abrasive particles in the liquid	Select stationary and rotating seal ring in silicon carbide/silicon carbide
Leaking seals	Incorrect rubbber grade	Replace with seals of a different rubber grade

6. Operation

6.2 Recommended cleaning

The pump is designed for cleaning in place (CIP) CIP = Cleaning In Place.
Study the instructions carefully and pay special attention to the warnings.

NaOH = Caustic soda
HNO_3 = Nitric acid

Step 1

✓ *Always* handle lye and acid with great care.

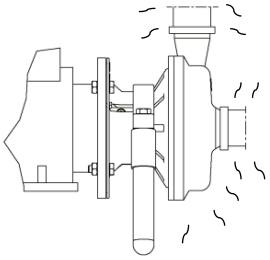
Caustic danger!

Always use goggles

Always use rubber gloves

Step 2

✓ *Never* touch the pump or the pipelines, when sterilizing



Burning danger!

Step 3

1. Avoid excessive concentration of the cleaning agent

   ➢ Dose gradually

2. Adjust the cleaning flow to the process

   Sterilization of milk/viscous liquids

   ➢ Increase the cleaning flow

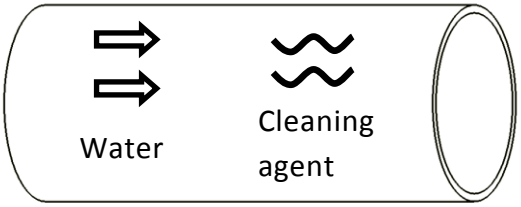
6. Operation

Step 4

✓ *Always* rinse well with clean water, after the cleaning.

NOTE!

The cleaning agents must be kept according to current rules/directives



Always rinse

6.3 General maintenance

Maintain the pump carefully. Study the instructions carefully and pay special attention to the warnings.

Always keep spare shaft seals and rubber seals in stock. (See separate engine instructions).

STEP 1

✓ *Always* read the technical data thoroughly (See chapter 8)

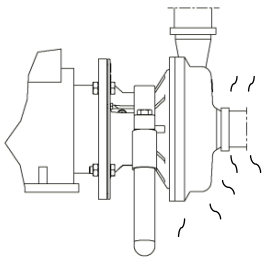
✓ *Always* disconnect the power supply, when servicing the pump.

NOTE!

All scrap must be kept in according to current rules/directives.

STEP 2

✓ *Never* service the pump, when it is hot.



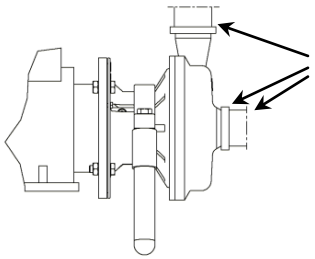
Burning danger!

Step 3

***NEVER* SERVICE THE PUMP WITH PUMP AND PIPELINES UNDER PRESSURE**

CAUTION!

Fit the electrical connections correctly, if they have been removed from the engine during service (See pre-use check in chapter 4).



Step 4

Recommended spare parts:

1. Service kits (See chapter 7).
2. Ordering service kits from the service equipment list (See chapter 7).

Ordering spare parts:

1. Contact the sales department.

6. Operation

6.4 Maintenance

Maintain the pump carefully. Study the instructions carefully.
Always keep spare shaft seals and rubber seals in stock.
See separate engine instructions.
Check the pump for smooth operation after service.

	Shaft seal	Rubber seals	Engine bearings
Preventive maintenance	Replace after 12 months: (one-shift) complete shaft seal	Replace when replacing the shaft seal	
Maintenance after leakage (leakage normally starts slowly)	Replace at the end of the day: Complete shaft seal	Replace when replacing the shaft seal	
Planned maintenance	-Regular inspection for leakage and smooth operation -Keep a record of the pump -Use the statistics for planning of inspections Replace after leakage: Complete shaft seal	Replace when replacing the shaft seal	Yearly inspection is recommended -Replace complete bearing if worn -Ensure that the bearing is axially locked (see engine instructions)
Lubrication	Before fitting Lubricate the o-rings with silicone grease or silicone oil	Before fitting Silicone grease or silicone oil	See chapter 6

Pre-use check

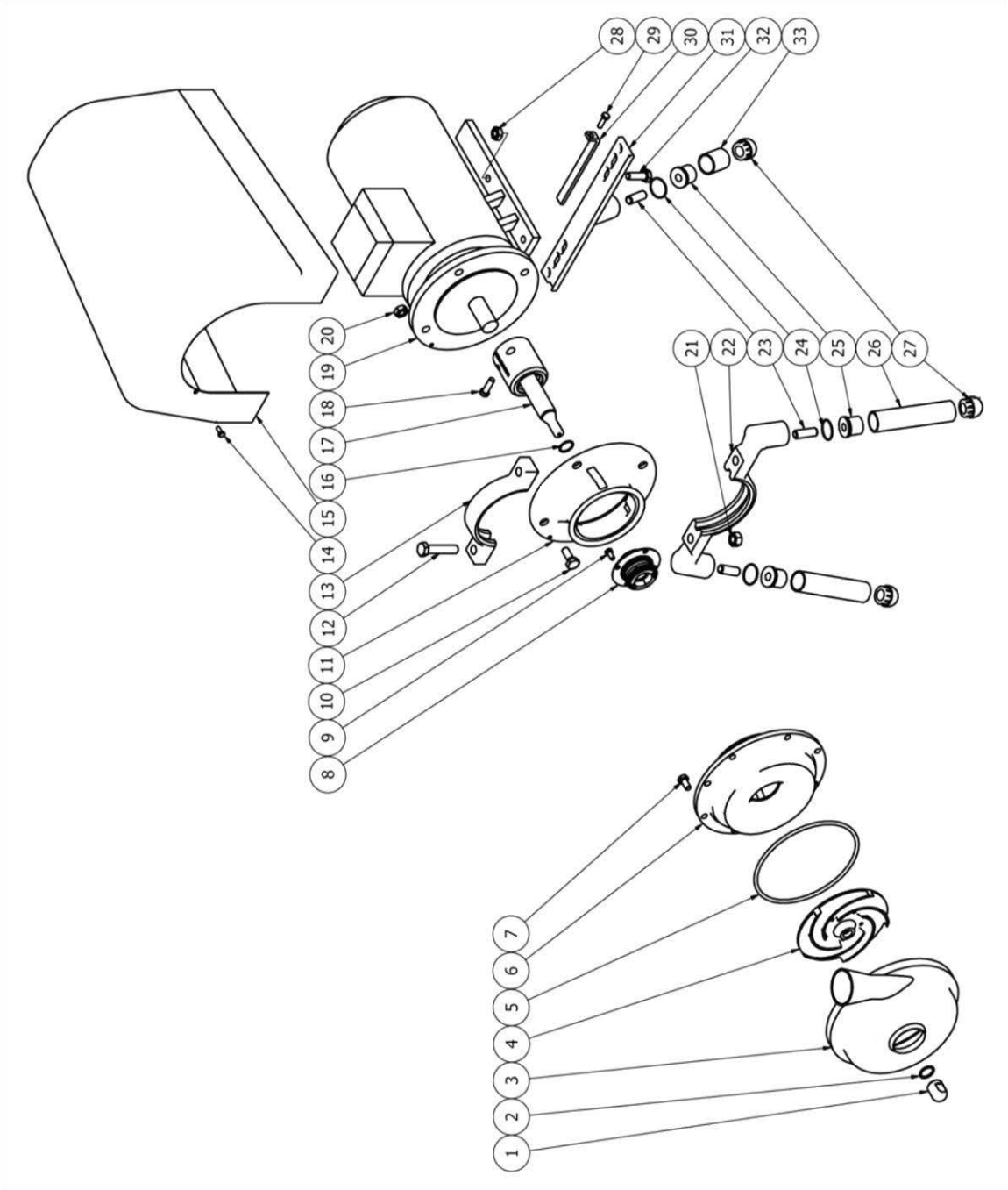
CAUTION!
Fit the electrical connections correctly, if they have been removed from the engine during service (See pre-use check in chapter 4).

Pay special attention to the warnings!

- ✓ Start and stop the engine momentarily.
- ✓ Ensure that the pump operates smoothly.

7. Parts list

7.1 Drawing



7. Parts list

7.2 Schedule

Item	Qty.	Description	Size/Matr.	SFP 51-51-142	SFP 63-51-142	SFP 63-51-175	SFP 76-63-175	SFP 63-51-210	SFP 76-63-210
4	1	Impeller	Full size	F011601100012	F011601100013	F011601100001	F011601100010	F011601100008	F011601100015
4	1	Impeller	ø210/AISI 316					F011601100008	F011601100015
4	1	Impeller	ø200/AISI 316					F011601100039	F011601100044
4	1	Impeller	ø190/AISI 316					F011601100040	F011601100045
4	1	Impeller	ø180/AISI 316					F011601100041	F011601100046
4	1	Impeller	ø175/AISI 316			F011601100001	F011601100010		
4	1	Impeller	ø170/AISI 316					F011601100042	F011601100047
4	1	Impeller	ø165/AISI 316			F011601100029	F011601100034		
4	1	Impeller	ø160/AISI 316					F011601100043	F011601100048
4	1	Impeller	ø155/AISI 316			F011601100030	F011601100035		
4	1	Impeller	ø150/AISI 316						
4	1	Impeller	ø145/AISI 316			F011601100031	F011601100036		
4	1	Impeller	ø142/AISI 316	F011601100012	F011601100013				
4	1	Impeller	ø140/AISI 316						
4	1	Impeller	ø135/AISI 316			F011601100032	F011601100037		
4	1	Impeller	ø130/AISI 316	F011601100019	F011601100024				
4	1	Impeller	ø125/AISI 316			F011601100033	F011601100038		
4	1	Impeller	ø120/AISI 316	F011601100020	F011601100025				
4	1	Impeller	ø110/AISI 316	F011601100021	F011601100026				
4	1	Impeller	ø100/AISI 316	F011601100022	F011601100027				
4	1	Impeller	ø95/AISI 316	F011601100023	F011601100028				

				Pump type/part no.					
Item	Qty.	Description	Size/Matr.	SFP 51-51-142	SFP 63-51-142	SFP 63-51-175	SFP 76-63-175	SFP 63-51-210	SFP 76-63-210
1	1	Cap nut	M14/SS	F011602100003	F011602100003	F011602100003	F011602100003	F011602100003	F011602100003
2	1	Sealing ring	EPDM	F013101100004	F013101100004	F013101100004	F013101100004	F013101100004	F013101100004
2A	1	Sealing ring	Viton	F013001100004	F013001100004	F013001100004	F013001100004	F013001100004	F013001100004
3	1	Pump house	AISI 316L	F011601100004	F011601100014	F011601100003	F011601100011	F011601100009	F011601100016
5	1	Sealing ring	EPDM	F013101100005	F013101100005	F013101100006	F013101100006	F013101100007	F013101100007
5A	1	Sealing ring	Viton	F013001100005	F013001100005	F013001100006	F013001100006	F013001100007	F013001100007
6	1	Back plate	AISI 316	F011601100005	F011601100005	F011601100002	F011601100002	F011601100007	F011601100007
7	4	Hex. screw	M8x16/SS	800008001622	800008001622	800008001622	800008001622	800008001622	800008001622

7. Parts list
7.2 Schedule

				Engine sizes					
Item	**Qty.**	**Description**	**Size/Matr.**	**M90**	**M100**	**M112**	**M132**	**M160**	**M180**
8	1	Mech. seal - SiC/C-EPDM	Single complet	F010000000019	F010000000019	F010000000019	F010000000019	F010000000019	F010000000019
8	1	Mech. seal - SiC/C-Viton	Single complet	F010000000032	F010000000032	F010000000032	F010000000032	F010000000032	F010000000032
8	1	Mech. seal - SiC/SiC-EPDM	Single complet	F010000000031	F010000000031	F010000000031	F010000000031	F010000000031	F010000000031
8	1	Mech. seal - SiC/SiC-Viton	Single complet	F010000000033	F010000000033	F010000000033	F010000000033	F010000000033	F010000000033
8A	1	Mech. seal - SiC/C-EPDM	Double complet	F010000000029	F010000000029	F010000000029	F010000000029	F010000000029	F010000000029
8A	1	Mech. seal - SiC/C-Viton	Double complet	F010000000038	F010000000038	F010000000038	F010000000038	F010000000038	F010000000038
8A	1	Mech. seal - SiC/SiC-EPDM	Double complet	F010000000036	F010000000036	F010000000036	F010000000036	F010000000036	F010000000036
8A	1	Mech. seal - SiC/SiC-Viton	Double complet	F010000000037	F010000000037	F010000000037	F010000000037	F010000000037	F010000000037
9	4	Hex. screw	M8x12/SS	800008001222	800008001222	800008001222	800008001222	800008001222	800008001222
9A	4	Unbraco	M8x12/SS	810008001222	810008001222	810008001222	810008001222	810008001222	810008001222
10	4	Hex. screw	Various/SS	800010002522	800010002522	800014003022	800014003522	800018005022	800018005022
11	1	Extension frame	AISI 304	F010401200002	F010401200002	F010401200003	F010401200004	F010401200005	F010401200005
12	2	Hex. screw	M12x55/SS	800012005522	800012005522	800012005522	800012005522	800012005522	800012005522
13	1	Over part frame	AISI 304	F010403100004	F010403100004	F010403100004	F010403100004	F010403100004	F010403100004
14	1	Hex. screw	M6x12/SS	800006001222	800006001222	800006001222	800006001222	800006001222	800006001222
15	1	Shroud	AISI 304	F010403100001	F010403100001	F010403100011	F010403100012	F010403100013	F010403100013
16	1	Sealing ring	EPDM	F013101100004	F013101100004	F013101100004	F013101100004	F013101100004	F013101100004
16A	1	Sealing ring	Viton	F013001100004	F013001100004	F013001100004	F013001100004	F013001100004	F013001100004
17	1	Shaft	AISI 316	F011602100002	F011602100002	F011602100013	F011602100014	F011602100016	F011602100016
18	1	Unbraco	M8x25/SS	810008002522	810008002522	810008002522			
18A	2	Unbraco	M8x25/SS				810008002522	810008002522	810008002522
19	1	Engine		F500001000001	F500001000002	F500001000002	F500001000003	F500001000004	F500001000009
20	4	Hex. nut	Various/SS	880010000022	880012000022	880014000022	880014000022	880018000022	880018000022
21	2	Hex. Nut	M12/SS	880012000022	880012000022	880012000022	880012000022	880012000022	880012000022
22	1	Under part frame	AISI 304	F010403100003	F010403100003	F010403100003	F010403100003	F010403100003	F010403100003
23	3	Treaded bar	M12x35/SS	830012003522	830012003522	830012003522	830012003522	830012003522	830012003522
24	3	Sealing ring	EPDM	F013101100001	F013101100001	F013101100001	F013101100001	F013101100001	F013101100001
24A	3	Sealing ring	Viton	F013001100001	F013001100001	F013001100001	F013001100001	F013001100001	F013001100001
25	3	Screw bearing	AISi 304	F010401100001	F010401100001	F010401100001	F010401100001	F010401100001	F010401100001
26	2	Legs for engines	L=various/AISi 304	F010403200003	F010403200003	F010402100003	F010402100003	F010402100002	F010402100001
27	3	Foot	ø30/Polypropylen	F013301100001	F013301100001	F013301100001	F013301100001	F013301100001	F013301100001
28	2	Hex. nut	M10/SS	880010000022	880010000022	880010000022	880010000022	880014000022	880014000022
29	2	Hex. screw	M6x25/SS	800006002522	800006002522	800006002522	800006002522	800006002522	800006002522
30	2	Bracket for shrout	AISI 304	F010403100010	F010403100010	F010403100010	F010403100010	F010403100010	F010403100010
31	1	Support legs	AISI 304	F010403100005	F010403100005	F010403100005	F010403100005	F010403100005	F010403100005
32	2	Hex. screw	M10x30/SS	800010003022	800010003022	800010003022	800010004022	800014004022	800014004022
33	1	Leg for engine, back	AISI 304	F010402100001	F010402100001	F010402100001	F010402100001	F010402100001	F010402100001

8. Technical data

8.1 Sound pressure and sound effect level

Operating conditions	LpA			LwA		
	A	B	C	A	B	C
SFP 51-51-142	66	65	62	79	80	75
SFP 63-51-142	67	66	63	80	80	76
SFP 63-51-175	68	67	63	81	80	79
SFP 76-63-175	69	67	68	81	81	80
SFP 63-51-210	70	68	67	85	84	81
SFP 76-63-210	70	68	66	84	84	81

8.2 ISO standard

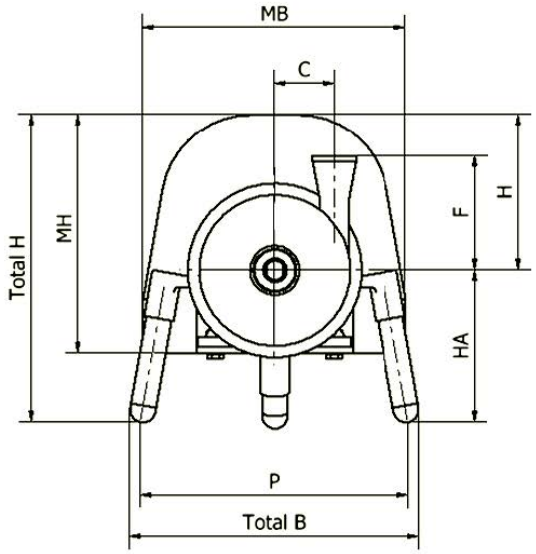
Sound pressure and sound effect level for Danpumps S-FP pumps
Measurements have been carried out in accordance with ISO 3743, Grade 2 and ISO 3746, Grade 3. Tolerance: ±3 dB.

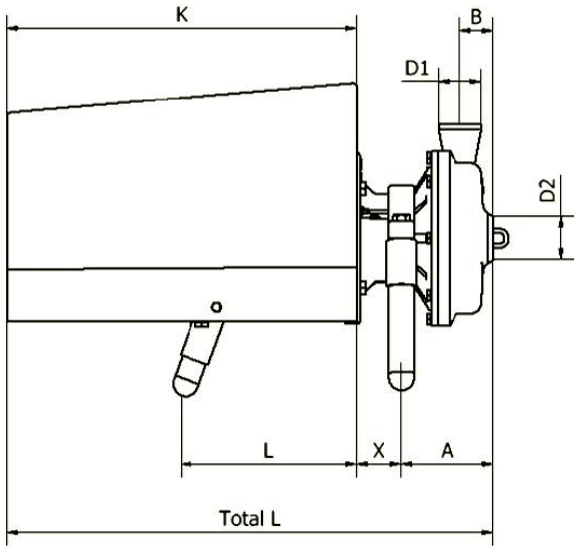
LpA in dB refers to the sound pressure level at a distance of one metre from the surface of the pump at a height of 1,6 m above floor level (cf. EC Directive (89/392/EEC) 1.7.4.).

LwA states the sound power level.
Operating conditions A, B and C are defined as follows:

A. Nominal flow and operating pressure
B. Nominal flow and 60% operating pressure
C. 60% flow and operating pressure

8.3 Dimensions





8. Technical data

8.4 Dimensions for pumps

		Pump					
	Pump/engine	**A**	**B**	**C**	**D1**	**D2**	**F**
	SFP 51-51-142 - M90L - 1,5kW	110	40	70	ø48,6	ø48,6	135
	SFP 51-51-142 - M90LB - 2,2kW	110	40	70	ø48,6	ø48,6	135
	SFP 51-51-142 - M100LB - 3,0kW	110	40	70	ø48,6	ø48,6	135
	SFP 51-51-142 - M112MB - 4,0kW	123	40	70	ø48,6	ø48,6	135
	SFP 51-51-142 - M132SB - 5,5kW	123	40	84	ø48,6	ø48,6	145
	SFP 51-51-142 - M132SC - 7,5kW	123	40	84	ø48,6	ø48,6	145
	SFP 51-51-142 - M112MB - 4,0kW	110	40	70	ø48,6	ø60,3	135
	SFP 63-51-175 - M90L - 1,5kW	110	52	70	ø48,6	ø60,3	135
	SFP 63-51-175 - M90LB - 2,2kW	110	52	70	ø48,6	ø60,3	135
	SFP 63-51-175 - M100LB - 3,0kW	110	52	70	ø48,6	ø60,3	135
	SFP 63-51-175 - M112MB - 4,0kW	110	52	70	ø48,6	ø60,3	135
	SFP 63-51-175 - M132SB - 5,5kW	123	52	84	ø48,6	ø60,3	145
	SFP 63-51-175 - M132SC - 7,5kW	123	52	84	ø48,6	ø60,3	145
	SFP 63-51-175 - M132SC - 7,5kW	123	52	84	ø48,6	ø60,3	145
	SFP 63-51-175 - M160MLA - 11,0kW	123	52	112	ø48,6	ø60,3	150
	SFP 63-51-175 - M160MLB - 15,0kW	123	52	112	ø48,6	ø60,3	150
	SFP 63-51-175 - M160MLC - 18,5kW	123	52	112	ø60,3	ø72,0	150
	SFP 76-63-175 - M90L - 1,5kW	110	52	70	ø60,3	ø72,0	135
	SFP 76-63-175 - M90LB - 2,2kW	110	52	70	ø60,3	ø72,0	135
	SFP 76-63-175 - M100LB - 3,0kW	110	52	70	ø60,3	ø72,0	135
	SFP 76-63-175 - M112MB - 4,0kW	110	52	70	ø60,3	ø72,0	135
	SFP 76-63-175 - M132SB - 5,5kW	123	52	84	ø60,3	ø72,0	145
	SFP 76-63-175 – M132SC - 7,5kW	123	52	84	ø60,3	ø72,0	145
	SFP 76-63-175 - M160MLA - 11,0kW	123	52	112	ø60,3	ø72,0	135
	SFP 76-63-175 - M160MLB – 15,0kW	123	52	112	ø60,3	ø72,0	145
	SFP 76-63-175 - M160MLC - 18,5kW	123	52	112	ø60,3	ø72,0	145
	SFP 63-51-210 - M100LB - 3,0kW	110	58	70	ø48,6	ø60,3	135
	SFP 63-51-210 - M112MB - 4,0kW	110	58	70	ø48,6	ø60,3	135
	SFP 63-51-210 - M132SB - 5,5kW	123	58	84	ø48,6	ø60,3	145
	SFP 63-51-210 - M132SC - 7,5kW	123	58	84	ø48,6	ø60,3	145
	SFP 63-51-210 - M160MLA - 11,0kW	123	58	112	ø48,6	ø60,3	150
	SFP 63-51-210 - M160MLB - 15,0kW	123	58	112	ø48,6	ø60,3	150
	SFP 63-51-210 - M160MLC - 18,5kW	123	58	112	ø48,6	ø60,3	150
	SFP 63-51-210 - M180MLA - 22,0kW	123	58	112	ø48,6	ø60,3	150
	SFP 76-63-51 - M100LB - 3,0kW	110	58	70	ø60,3	ø72,0	135
	SFP 76-63-210 - M112MB - 4,0kW	110	58	70	ø60,3	ø72,0	135
	SFP 76-63-51 - M132SB - 5,5kW	123	58	84	ø60,3	ø72,0	145
	SFP 76-63-51 - M132SC - 7,5kW	123	58	84	ø60,3	ø72,0	145
	SFP 76-63-51 - M160MLA - 11,0kW	123	58	112	ø60,3	ø72,0	150
	SFP 76-63-51 - M160MLB - 15,0kW	123	58	112	ø60,3	ø72,0	150
	SFP 76-63-51 - M160MLC - 18,5kW	123	58	112	ø60,3	ø72,0	150
	SFP 76-63-51 - M180MLA - 22,0kW	123	58	112	ø60,3	ø72,0	150

8. Technical data

8.5 Dimensions for engines

		Engine							
	Pump/engine	**H**	**HA**	**K**	**L**	**MB**	**MH**	**P**	**X**
	SFP 51-51-142 - M90L - 1,5kW	184	181	413	260	310	282	316	54
	SFP 51-51-142 - M90LB - 2,2kW	184	181	413	260	310	282	316	54
	SFP 51-51-142 - M100LB - 3,0kW	220	186	473	295	332	337	318	64
	SFP 51-51-142 - M112MB - 4,0kW	220	186	473	295	332	337	318	64
	SFP 51-51-142 - M132SB - 5,5kW	235	246	558	377	417	386	340	84
	SFP 51-51-142 - M132SC - 7,5kW	235	246	558	377	417	386	340	84
	SFP 63-51-142 - M112MB - 4,0kW	220	186	473	295	332	337	318	64
	SFP 63-51-175 - M90L - 1,5kW	184	181	413	260	310	282	316	54
	SFP 63-51-175 - M90LB - 2,2kW	184	181	413	260	310	282	316	54
	SFP 63-51-175 - M100LB - 3,0kW	220	186	473	295	332	337	318	64
	SFP 63-51-175 - M112MB - 4,0kW	220	186	473	295	332	337	318	64
	SFP 63-51-175 - M132SB - 5,5kW	235	246	558	377	417	386	340	84
	SFP 63-51-175 - M132SC - 7,5kW	220	246	558	377	417	386	340	84
	SFP 63-51-175 - M132SC - 7,5kW	235	246	558	377	417	386	340	84
	SFP 63-51-175 - M160MLA - 11,0kW	320	265	758	534	522	508	346	114
	SFP 63-51-175 - M160MLB - 15,0kW	320	265	758	534	522	508	346	114
	SFP 63-51-175 - M160MLC - 18,5kW	320	265	758	534	522	508	346	114
	SFP 76-63-175 - M90L - 1,5kW	184	181	413	260	310	282	316	54
	SFP 76-63-175 - M90LB - 2,2kW	184	181	413	260	310	282	316	54
	SFP 76-63-175 - M100LB - 3,0kW	220	186	473	295	332	337	318	64
	SFP 76-63-175 - M112MB - 4,0kW	220	186	473	295	332	337	318	64
	SFP 76-63-175 - M132SB - 5,5kW	235	246	558	377	417	386	340	84
	SFP 76-63-175 - M132SC - 7,5kW	235	246	558	377	417	386	340	84
	SFP 76-63-175 - M160MLA - 11,0kW	320	265	758	534	522	508	346	114
	SFP 76-63-175 - M160MLB - 15,0kW	320	265	758	534	522	508	346	114
	SFP 76-63-175 - M160MLC - 18,5kW	320	265	758	534	522	508	346	114
	SFP 63-51-210 - M100LB - 3,0kW	220	186	473	295	332	337	318	64
	SFP 63-51-210 - M112MB - 4,0kW	220	186	473	295	332	337	318	64
	SFP 63-51-210 - M132SB - 5,5kW	235	246	558	377	417	386	340	84
	SFP 63-51-210 - M132SC - 7,5kW	230	246	558	377	417	386	340	84
	SFP 63-51-210 - M160MLA - 11,0kW	320	265	758	534	522	508	346	114
	SFP 63-51-210 - M160MLB - 15,0kW	320	265	758	534	522	508	346	114
	SFP 63-51-210 - M160MLC - 18,5kW	320	265	758	534	522	508	340	114
	SFP 63-51-210 - M180MLA - 22,0kW	320	265	758	534	522	508	340	114
	SFP 76-63-210 - M100LB - 3,0kW	220	186	473	295	332	337	318	64
	SFP 76-63-210 - M112MB - 4,0kW	220	186	473	295	332	337	318	64
	SFP 76-63-210 - M132SB - 5,5kW	235	246	558	377	417	386	340	84
	SFP 76-63-210 - M132SC - 7,5kW	230	246	558	377	417	386	340	84
	SFP 76-63-210 - M160MLA - 11,0kW	320	265	758	534	522	508	346	114
	SFP 76-63-210 - M160MLB - 15,0kW	320	265	758	534	522	508	346	114
	SFP 76-63-210 - M160MLC - 18,5kW	320	265	758	534	522	508	346	114
	SFP 76-63-210 - M180MLA - 22,0kW	320	265	758	534	522	508	346	114

8. Technical data

8.6 Total dimensions

		Engine		
	Pump/engine	**Total B**	**Total H**	**Total L**
	SFP 51-51-142 - M90L - 1,5kW	344	365	573
	SFP 51-51-142 - M90LB - 2,2kW	344	365	573
	SFP 51-51-142 - M100LB - 3,0kW	346	406	644
	SFP 51-51-142 - M112MB - 4,0kW	346	406	644
	SFP 51-51-142 - M132SB - 5,5kW	369	481	763
	SFP 51-51-142 - M132SC - 7,5kW	369	481	763
	SFP 63-51-142 - M112MB - 4,0kW	346	406	644
	SFP 63-51-175 - M90L - 1,5kW	344	365	573
	SFP 63-51-175 - M90LB - 2,2kW	344	365	573
	SFP 63-51-175 - M100LB - 3,0kW	346	406	644
	SFP 63-51-175 - M112MB - 4,0kW	346	406	644
	SFP 63-51-175 - M132SB - 5,5kW	369	481	763
	SFP 63-51-175 - M132SC - 7,5kW	369	481	763
	SFP 63-51-175 - M132SC - 7,5kW	369	466	763
	SFP 63-51-175 - M160MLA - 11,0kW	374	585	993
	SFP 63-51-175 - M160MLB - 15,0kW	374	585	993
	SFP 63-51-175 - M160MLC - 18,5kW	374	585	993
	SFP 76-63-175 - M90L - 1,5kW	344	365	573
	SFP 76-63-175 - M90LB - 2,2kW	344	365	573
	SFP 76-63-175 - M100LB - 3,0kW	346	406	644
	SFP 76-63-175 - M112MB - 4,0kW	346	406	644
	SFP 76-63-175 - M132SB - 5,5kW	369	481	763
	SFP 76-63-175 - M132SC - 7,5kW	369	481	763
	SFP 76-63-175 - M160MLA - 11,0kW	374	585	993
	SFP 76-63-175 - M160MLB - 15,0kW	374	585	993
	SFP 76-63-175 - M160MLC - 18,5kW	374	585	993
	SFP 63-51-210 - M100LB - 3,0kW	346	406	644
	SFP 63-51-210 - M112MB - 4,0kW	346	406	644
	SFP 63-51-210 - M132SB - 5,5kW	369	481	763
	SFP 63-51-210 - M132SC - 7,5kW	369	476	763
	SFP 63-51-210 - M160MLA - 11,0kW	374	585	993
	SFP 63-51-210 - M160MLB - 15,0kW	374	585	993
	SFP 63-51-210 - M160MLC - 18,5kW	374	585	993
	SFP 63-51-210 - M180MLA - 22,0kW	374	585	993
	SFP 76-63-210 - M100LB - 3,0kW	346	406	644
	SFP 76-63-210 - M112MB - 4,0kW	346	406	644
	SFP 76-63-210 - M132SB - 5,5kW	369	481	763
	SFP 76-63-210 - M132SC - 7,5kW	369	481	763
	SFP 76-63-210 - M160MLA - 11,0kW	374	585	993
	SFP 76-63-210 - M160MLB - 15,0kW	374	585	993
	SFP 76-63-210 - M160MLC - 18,5kW	374	585	993
	SFP 76-63-210 - M180MLA - 22,0kW	374	585	993

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