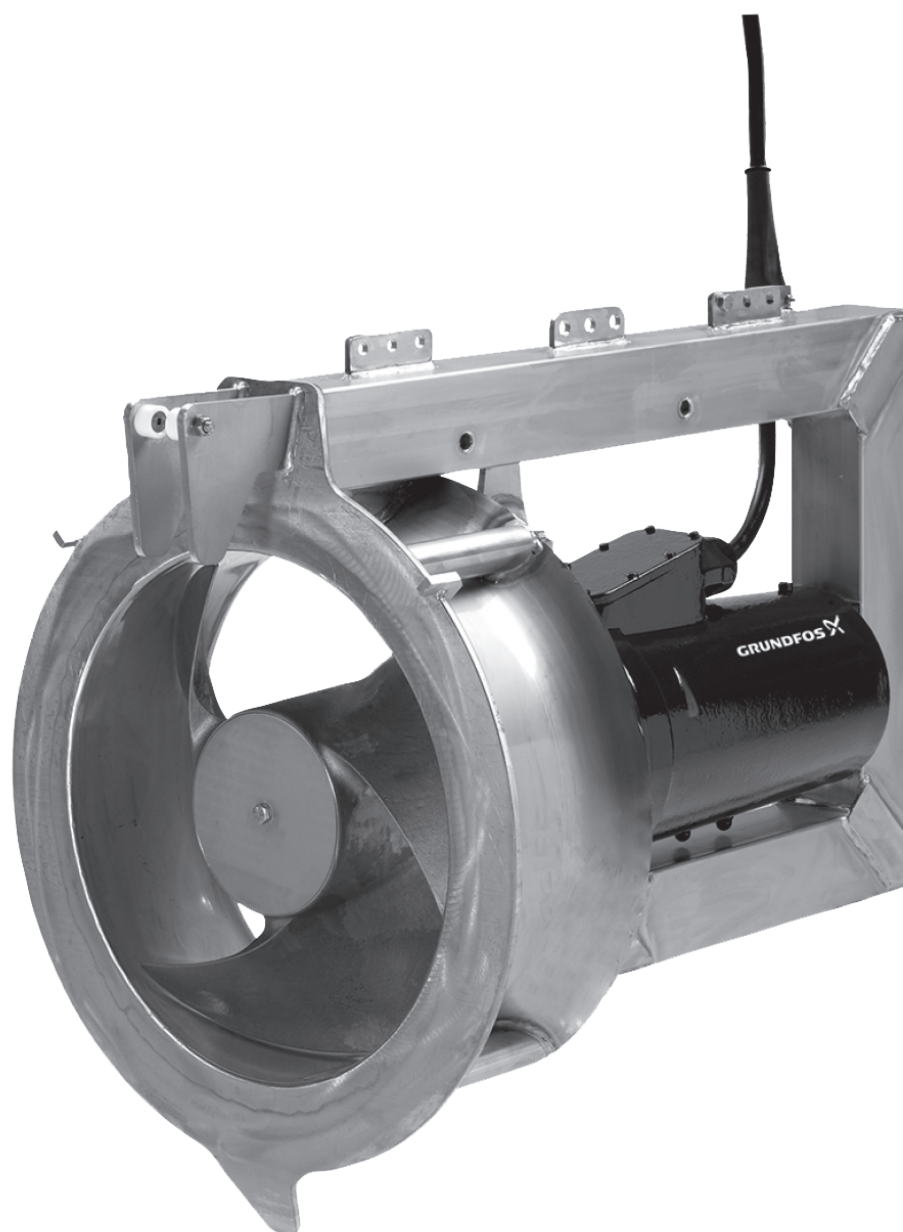


SRG

50/60 Hz DIN/ANSI

Service instructions



SRG

English (GB)

Service instructions	4
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Original service instructions

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1. Symbols used in this document



Warning

If these safety instructions are not observed, it may result in personal injury.



Warning

These instructions must be observed for explosion-proof pumps. We recommend that you also follow these instructions for standard pumps.

Caution

If these safety instructions are not observed, it may result in malfunction or damage to the equipment.

Note

Notes or instructions that make the job easier and ensure safe operation.

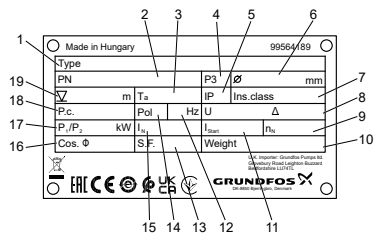
2. Identification

This section shows the nameplate, the type key and the codes that can appear in the variant code.



As codes can be combined, a code position may contain more than one code (letter).

2.1 Nameplate



Nameplate

Pos.	Description
1	Type designation
2	Product number and serial number
3	Liquid temperature range
4	Production site
5	Enclosure class according to IEC
6	Propeller diameter
7	Insulation class
8	Rated voltage
9	Rated speed, propeller
10	Weight
11	Starting current
12	Frequency
13	Safety factor
14	Number of poles
15	Rated current
16	Power factor
17	Motor power P1/P2
18	Production code
19	Maximum installation depth

TM062568

2.2 Type key

50 and 60 Hz

Example: **SRG.70.30.814.25.Ex.5.1A.A.**

Code	Explanation
SRG.	Type range Submersible recirculation pump
70.	Motor output power P2 Code from type designation/10 [kW] 7.0 kW
30.	Propeller diameter 30 cm
814.	Propeller speed 814 min ⁻¹
25.	Propeller blade pitch 25 °
[-] Ex.	Explosion protection Non-explosion-proof Explosion-proof
5. 6.	Frequency 50 Hz 60 Hz
0B. 1B. 0K. 1K. 0P. 1P. 0Z. 1Z.	Supply voltage and starting method 400-415 V, DOL 400-415 V, Y/D 380 V, DOL 380 V, Y/D 440-480 V, DOL 440-480 V, Y/D Special, DOL Special, Y/D
[-] A. B.	Generation First generation Second generation Third generation

60 Hz ANSI

Example: **SRG.11.12.524.08.6.0P.**

Code	Explanation
SRG.	Type range Submersible recirculation pump
11.	Motor output power P2 Code from type designation/10 [hp] 1.1 hp
12.	Propeller diameter 12 inches
524.	Propeller speed 524 rpm
08.	Propeller blade pitch 8 °
[-]	Explosion protection Non-explosion-proof
6.	Frequency 60 Hz
0P. 1P. 0Z. 1Z.	Voltage and starting method 440-480 V, DOL 440-480 V, Y/D Special, DOL Special, Y/D
[-] A. B.	Generation First generation Second generation Third generation

3. Tools

Description	Pump type	Product number
Socket	TMFS6 Propeller SRG.xx.30.xx, 35.50.xx SRG.xx.12, 48.20	50/60 Hz DIN 60 Hz ANSI 95035457
	TMFS7 Bearings in gear head SRG.xx.30.xx, 35.50.xx SRG.xx.12, 48.20	50/60 Hz DIN 60 Hz ANSI 95035458
	TMFS8 Propeller SRG.50-100.50, 70-100.80, 130.80 SRG.68-135.20.xx, 95-135.20, 175.32	50/60 Hz DIN 60 Hz ANSI 96257444
	TMFS9 Bearings in gear head SRG.50-100.50, 70-100.80, 130.80 SRG.68-135.20, 95-135.20, 175.32	50/60 Hz DIN 60 Hz ANSI 95035454
	TMFS10 Propeller SRG.120.80.xx, 160.80, 180-240.80.xx SRG.160.32, 200-320.32	50/60 Hz DIN 60 Hz ANSI 95035455
	TMFS12 Bearings in gear head SRG.120.80.xx, 160.80, 180-240.80.xx SRG.160.32, 200-320.32	50/60 Hz DIN 60 Hz ANSI 95035456
TMFT 36 Bearing-fitting tool kit	All	97905585

4. Torques and lubricants

Pos.	Description	Quantity	Dimensions	Torque		Lubricant
				[Nm]	[ft-lbs]	
1008	Screw		M6	8.8	6.5	Loctite 243
			M8	21.4	15.8	
			M10	44	32.5	
			M12	74	54.6	
			M16	183	135	
1020	Motor flange	1				Loctite MR 5923
1021	Screw			By hand		
1022	O-ring	2				Loctite MR 5923
1023	Terminal box cover	1				Loctite MR 5923
1024	Screw		M6	8.8	6.5	Loctite 243
			M8	21.4	15.8	
			M10	44	32.5	
			M12	74	54.6	
			M16	183	135	
1025	O-ring	1				Loctite MR 5923
1028	Screw			By hand		
1041	Screw	1	M6	8.8	6.5	Loctite 511
			M8	21.4	15.8	
			M10	44	32.5	
			M12	74	54.6	
			M16	183	135	
1044	Screw			By hand		
1049	Water-in-oil sensor	1				Loctite 511
1052	Plug	1		8	6	PTFE tape
1064	Screw		M4	3	2.2	Loctite 243
			M5	5.9	4.4	
			M6	10	7.4	
			M8	25	18.4	
			M10	49	36.1	
			M12	85	62.7	
1090	Slotted nut	1		70	51.6	
1097	Wear ring	1				Loctite 648
1098	Shaft seal	Stationary part	Outside			Soapy water or cream
			Seal face			Loctite 7063
		Rotating part	Inside			Soapy water or cream
1099	Screw		M6	8.8	6.5	Loctite 243
			M8	21.4	15.8	
			M10	44	32.5	
			M12	74	54.6	
			M16	183	135	
1102	Plug			By hand		PTFE tape
1104	Lip seal	Outside and inside				Shell Cassida grease
1106	Slotted nut			70	51.6	
1111	Screw		M6	8.8	6.5	Loctite 511
			M8	21.4	15.8	
			M10	44	32.5	
			M12	74	54.6	
			M16	183	135	
1158	Nut			30	22.1	

5. Oil types and quantity

Type	Gear casing [l] ISO VG 68	Type	Gear casing [fl oz] ISO VG 68
SRG.08.30.526.08		SRG.11.12.524.08.6.0P	
SRG.10.30.606.08		SRG.15.12.628.08.6.0P	
SRG.13.30.678.08		SRG.20.12.720.08.6.0P	
SRG.16.30.745.08		SRG.26.12.805.08.6.0P	
SRG.18.30.806.08		SRG.30.12.883.08.6.0P	
SRG.30.30.517.25	1.2	SRG.40.12.513.25.6.1P	40.5
SRG.40.30.593.25		SRG.55.12.607.25.6.1P	
SRG.50.30.684.25		SRG.75.12.722.25.6.1P	
SRG.60.30.752.25		SRG.95.12.805.25.6.1P	
SRG.70.30.814.25		SRG.48.20.254.27.6.1P	
SRG.35.50.257.27		SRG.68.20.299.27.6.1P	
SRG.50.50.291.27		SRG.95.20.363.27.6.1P	
SRG.65.50.343.27		SRG.95.32.260.11.6.1P	
SRG.80.50.378.27		SRG.135.20.406.27.6.1P	84.5
SRG.100.50.412.27	2.5	SRG.160.32.308.11.6.1P	
SRG.70.80.263.11		SRG.175.32.355.11.6.1P	
SRG.100.80.303.11		SRG.200.32.334.11.6.1P	
SRG.120.80.323.11	4.0	SRG.240.32.381.11.6.1P	
SRG.130.80.340.11		SRG.240.32.422.11.6.1P	135.3
SRG.130.80.375.11	2.5	SRG.270.32.374.11.6.1P	
SRG.160.80.355.11		SRG.320.32.418.11.6.1P	
SRG.180.80.387.11			
SRG.180.80.417.11	4.0		
SRG.200.80.388.11			
SRG.240.80.417.11			

6. Dismantling and assembling the product

WARNING



Before starting service work, remove the fuses or switch off the power supply. Make sure that the power supply cannot be accidentally switched on.

Disconnect the power supply cable in accordance with local regulations.



Make sure that all rotating parts have stopped moving.

WARNING



All regulations applying to mixers or flowmakers installed in potentially explosive environments must be observed. Make sure that no work is carried out in potentially explosive environment.

Before starting any work on mixers or flowmakers used in liquids which could constitute a hazard to health, carry out thorough cleaning and venting of mixer or flowmaker, tank, etc. according to local regulations.

Spare parts

Replace defective parts by new parts. Motor parts must not be reconditioned by machining, retapping, welding, etc.

6.1 General information

Position numbers of parts (digits) refer to sections [9. Sectional drawings](#) and [10. Exploded drawings](#).

Before assembling the product

- Clean and check all parts.
- Replace defective parts by new parts.
- Order the necessary service kits.
- Always replace gaskets and O-rings.

During assembly

- Lubricate and tighten screws and nuts according to section [4. Torques and lubricants](#).

Related information

- [4. Torques and lubricants](#)
- [9. Sectional drawings](#)
- [10. Exploded drawings](#)

6.2 Dismantling the product

6.2.1 Propeller

1. Remove the screw (pos. 1111), the washer (pos. 1110), the hub cover (pos. 1109) and the O-ring (pos. 1108).
2. Fit an eyebolt in the threaded hole in the end of the gear shaft (pos. 1093).
3. Support the venturi in upright position in such way that the SRG can be lifted out of the rack using the eyebolt.
4. Remove the screws from the cable clamp and remove cable from the cable clamp.
5. Remove the pump from the rack.
6. Lift the pump out of the rack by means of a crane and the eyebolt.
7. Place the pump in horizontal position.
8. Remove the plug (pos. 1102).
9. Remove the plug (pos. 1101) and drain the oil into a suitable container.
10. Remove the outer slotted nut (pos. 1106) with a suitable tool.
11. Remove the inner slotted nut (pos. 1106).
12. Gently tap on the back of the propeller with a plastic hammer to remove it from the shaft.

6.2.2 Sealing system of propeller hub and gear casing

1. Remove the lip seals (pos. 1104) from the inside of the hub.
2. Remove the key (pos. 1105) from the shaft.

Caution Take care not to damage the surface of the wear ring.
3. Remove the rotating shaft seal part (pos. 1098) from the gear shaft (pos. 1093).
4. Gently tap on the side of the wear ring to remove it from the gear casing.
5. Remove the stationary shaft seal part (pos. 1098) from the wear ring (pos. 1097).
6. Remove the intermediate ring (pos. 1095) from the wear ring.

These pumps have no intermediate ring:

Note SRG.50-100.50, 70-130.80 [DIN]
SRG.68-135.20, 95-175.32 [ANSI].

6.2.3 Motor and cable

1. Place the motor in horizontal position with the terminal box upwards.
2. Remove the screws (pos. 1024).
3. Cut with a knife along the terminal box cover (pos. 1023) to protect the paint.
4. Remove the terminal box cover and the O-ring (pos. 1025).
5. Write down the numbers on the wires to ensure correct connection.
6. Disconnect the cable conductors from the motor windings including the screw (pos. 1028).
7. Remove the cable relief (pos. 1009) from the cable (pos. 1001).
8. Cut with a knife between the terminal box and the cable flange (pos. 1002) to protect the paint.
9. Remove the screws (pos. 1008), the cable flange (pos. 1002) and the cable (pos. 1001).
10. Remove the small cable seal (pos. 1006), the thrust washer (pos. 1005), the large cable seal (pos. 1004), the cable guide (pos. 1003) and the cable flange (pos. 1002) with the O-ring (pos. 1007).
11. Place the motor in vertical position with the shaft upwards.
12. Remove the screws (pos. 1021).
13. Cut with a knife between the motor flange (pos. 1020) and the motor housing (pos. 1017) to protect the paint.
14. Screw two screws into the threaded holes of the motor flange to separate the motor flange and motor housing.
15. Remove the motor flange with rotor (pos. 1019) from the motor housing.

Note Take care not to damage the wires of the water-in-oil sensor (pos. 1049).
16. Remove the locking ring (pos. 1051) and the spacer ring (pos. 1050).
17. Remove the rotating shaft seal part (pos. 1048).
18. Remove the rotor flange (pos. 1020) from the rotor.
19. Push the stationary shaft seal part (pos. 1048) out of the motor flange (pos. 1020).
20. Remove the water-in-oil sensor (pos. 1049).
21. Remove the seal washer (pos. 1173) from the water-in-oil sensor.
22. Place the motor in horizontal position.
23. Remove the compensation disc (pos. 1038) from the N-end of the motor housing.
24. Remove the bearings (pos. 1039 and 1047) from the rotor shaft (pos. 1019).

25. Remove the O-ring (pos. 1022) from the motor flange.
26. Remove the nut (pos. 1158), the seal washer (pos. 1056) and the screw (pos. 1044) from the motor housing and mark the stator position.
27. Remove the stator from the motor housing.

Note Take care not to damage any wires.

6.2.4 Gear casing

1. Cut with a knife between the motor housing (pos. 1017) and the gear casing (pos. 1088) to protect the paint.
2. Remove the screws (pos. 1021).
3. Lift the unit with a crane and knock the motor housing free of the gear casing.
4. Remove the gear casing.
5. Remove the planet carrier (pos. 1067 or 1083) and the sun wheel (pos. 1060 or 1076).
6. Remove the O-ring (pos. 1022) from the motor flange (pos. 1020).
7. Remove the shaft seal from the motor shaft.
8. Remove the screws (pos. 1064) from the ring gear (pos. 1062).
9. Remove the ring gear.

SRG.xx.30, SRG.35.50 [DIN] / SRG.xx.12, SRG.48.20 [ANSI]

1. Remove the locking ring (pos. 1089) from the gear shaft (pos. 1093).
2. Unlock the lock washer (pos. 1091).
3. Remove the slotted nut (pos. 1090).
4. Remove the lock washer (pos. 1091).

SRG.50-100, 70-130.80 [DIN] / SRG.68-135.20, 95-175.32 [ANSI]

1. Remove the locking ring (pos. 1089) from the gear shaft (pos. 1093).
2. Remove the slotted nut (pos. 1090).

SRG.120.80, SRG.160-240.80 [DIN] / SRG.160.32, SRG.220-320.32 [ANSI]

1. Unlock the lock washer (pos. 1091).
2. Remove the slotted nut (pos. 1090).
3. Remove the lock washer (pos. 1091).

All types

1. Knock the shaft out of the gear casing using a plastic hammer. The inner bearing ring (pos. 1092) is removed at the same time.
2. Remove the outer bearing rings (pos. 1092 and 1094).
3. Remove the inner bearing rings (pos. 1094) from the shaft by means of a puller.

6.2.5 Stator

1. Remove the nut (pos. 1046) from the motor housing (pos. 1017).
2. Remove the screw (pos. 1044) from the motor housing.
3. Disconnect the stator wires from the motor housing and pull the stator (pos. 1018) out of the motor housing.

6.3 Assembling the product

6.3.1 Motor

Note Make sure that the rotor is positioned correctly.

Caution Do not use a hammer.

1. Heat the bearings (pos. 1039 and 1047) and fit them on the ends of the rotor shaft.

Caution If you use a bearing heater, make sure that the temperature does not exceed 80 °C (176 °F).

Note Use a hydraulic press if a bearing heater is not available.

2. Fit the seal washer (pos. 1173) on the water-in-oil sensor (pos. 1049) and lubricate the washer and threads with Loctite 511.
3. Fit the water-in-oil sensor into the motor flange (pos. 1020) and tighten it a little by hand.

Note Keep the wires of the water-in-oil sensor away from the bearing, for instance by means of a plastic strip.

4. Lubricate the groove for the O-ring (pos. 1022) on the motor side of the motor flange (pos. 1020) with Loctite MR 5923.
5. Fit and lubricate the O-ring with Loctite MR 5923.
6. Insert the rotor (pos. 1019) into the motor flange (pos. 1020).
7. Place the rotor with the motor flange upwards.
8. Fit the stationary shaft seal part (pos. 1048) into the motor flange (pos. 1020).
9. Clean the shaft and the seal face of the shaft seal.
10. Fit the rotating shaft seal part (pos. 1048) on the stationary shaft seal part.
11. Fit the spacer ring (pos. 1050) and the locking ring (pos. 1051).
12. Fit and lubricate the O-ring with Loctite MR 5923.
13. Insert the stator into the motor housing (pos. 1017).

Note Make sure that the fixation holes for alignment are positioned correctly.

Caution Take care not to damage any wires.

14. Fit the screw (pos. 1044), the seal washer (pos. 1056) and the nut (pos. 1158), and tighten the nut. See section [Torques and lubricants](#).
 15. Lead the wires into the terminal box.
 16. Place the motor housing (pos. 1017) in vertical position.
 17. Fit the compensation disc (pos. 1038) in the N-end of the motor housing.
 18. Insert the rotor into the motor housing. Connect the wires of the water-in-oil sensor (pos. 1049) before the rotor is fully inserted.
- Note** Align the motor flange with the water-in-oil sensor pointing downwards/away from the terminal box.
19. Fit the screws (pos. 1021), tighten them a little by hand, and fit the shaft seal.
 20. Place the motor in horizontal position.
 21. Fit the cable flange (pos. 1002) and the O-ring (pos. 1007) on the cable (pos. 1001).
 22. Lubricate the O-ring with soapy water or cream and fit it into the cable flange.
 23. Fit the cable guide (pos. 1003), the large cable seal (pos. 1004), the thrust washer (pos. 1005) and the small cable seal (pos. 1006) on the cable (pos. 1001).
 24. Lubricate the complete seal unit with soapy water or cream and insert it into the terminal box.
 25. Lubricate the threads of the screws (pos. 1008) with Loctite 243.

26. Fit the screws into the cable flange and tighten them. See section [Torques and lubricants](#).
27. Fit the cable relief (pos. 1009) on the cable.
28. Fit the screw (pos. 1028) and the lock washer (pos. 1029).

Note Make sure that you have enough cable in the terminal box before tightening the cable relief.
29. Connect the wires according to the notes you made during dismantling. Secure connections with terminal tubes and shrink-on sleeves.
30. Remove the screw (pos. 1041) and the washer (pos. 1040) from the motor housing.
31. Wrap PTFE tape around the plug (pos. 1052).
32. Fit the plug into the motor housing and tighten it. See section [Torques and lubricants](#).
33. Lubricate the screw (pos. 1041) with Loctite 511 and fit the washer (pos. 1040) on the screw.
34. Fit the screw into the motor housing (pos. 1017) and tighten it. See section [Torques and lubricants](#).
35. Lubricate the groove in the terminal box cover (pos. 1023) with Loctite MR 5923.
36. Fit and lubricate the O-ring with Loctite MR 5923.
37. Fit the terminal box cover (pos. 1023).
38. Lubricate the threads of the screws (pos. 1024) with Loctite 243 and tighten the screws. See section [Torques and lubricants](#).

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11.

Related information[4. Torques and lubricants](#)**6.3.2 Gear casing**

1. Fit the ring gear (pos. 1062 or 1079) into the gear casing (pos. 1088).
2. Lubricate the threads of the screws (pos. 1064) with Loctite 243 and tighten the screws. See section [Torques and lubricants](#).
3. Fit the outer bearing ring (pos. 1092) into the gear casing.
4. Heat the inner bearing ring (pos. 1094) using a bearing heater and fit it on the shaft.

Caution If you use a bearing heater, make sure that the temperature does not exceed 80 °C (176 °F).

Note Use a hydraulic press if a bearing heater is not available.

1. Fit the shaft (pos. 1093) into the gear casing.
2. Heat the inner bearing ring (pos. 1092) using a bearing heater and fit it on the shaft.

SRG.xx.30, SRG.35.50 [DIN] / SRG.xx.12, SRG.48.20 [ANSI]

1. Fit the lock washer (pos. 1091) and the slotted nut (pos. 1090) on the shaft, and tighten the slotted nut. See section [Torques and lubricants](#).
2. Lock the slotted nut with the lock washer.
3. Fit the locking ring (pos. 1089).

SRG.50 - SRG.100, SRG.70 - SRG.130.80 [DIN] / SRG.68 - SRG.135.20, SRG.95 - SRG.175.32 [ANSI]

1. Fit the slotted nut (pos. 1090) on the shaft, and tighten the slotted nut. See section [Torques and lubricants](#).
2. Fit the locking ring (pos. 1089).

SRG.120.80, SRG.160 - SRG.240.80 [DIN] / SRG.160.32, SRG.220 - SRG.320.32 [ANSI]

1. Fit the lock washer (pos. 1091) and the slotted nut (pos. 1090) on the shaft, and tighten the slotted nut. See section [Torques and lubricants](#).
2. Lock the slotted nut with the lock washer.

All types

1. Wrap PTFE tape around the plug (pos. 1101).
2. Fit the plug into the gear casing and tighten it.
3. Fit the sun wheel (pos. 1060 or 1076).
4. Lubricate the O-ring with oil and fit it on the shaft.

Note Check that the shaft seal (pos. 1048) is intact and that the shaft can rotate freely.

1. Fit the planet carrier (pos. 1067 or 1083) and place the gear casing on the motor flange.
2. Lubricate the threads of the screws (pos. 1099) with Loctite 243 and fasten the gear casing on the motor flange. See section [Torques and lubricants](#).
3. Apply a new coat of paint if the coat is damaged.

Related information[4. Torques and lubricants](#)**6.3.3 Sealing system of propeller hub and gear casing**

1. Lubricate the wear ring (pos. 1097) with Loctite 648 and fit it in the propeller end of the gear casing.
2. Insert the intermediate ring (pos. 1095) into the wear ring if the version requires an additional ring.
3. Lubricate the stationary shaft seal part (pos. 1098) with soapy water or cream and fit it into the wear ring.
4. Remove surplus soapy water or cream and clean the surface of the stationary part by means of Loctite 7063.
5. Remove the inner ring from the rotating shaft seal part and fit the rotating shaft seal part (pos. 1098).

6. Lubricate the inner lip seal (pos. 1104) with Shell Cassida grease and fit it into the hub with the open side pointing away from the hub.
7. Lubricate the inner lip seal with Shell Cassida grease, and fit and lubricate the outer lip seal.
8. Fit the key (pos. 1105) into the gear shaft.
9. Lubricate the shaft with Shell Cassida grease and fit the hub on the shaft.
10. Fit the slotted nut on the shaft with the chamfered end pointing away from the hub and tighten it. See section *Torques and lubricants*.
11. Fit the other slotted nut on the shaft with the chamfered end towards the hub and tighten it. See section *Torques and lubricants*.
12. Fill the hub top partly with gear oil. See section *Oil types and quantity*.
13. Fit the O-ring (pos. 1108) and the hub cover (pos. 1109).
14. Lubricate the threads of the screw (pos. 1111) with washer (pos. 1110) with Loctite 511.
15. Fit the screw and tighten it. See section *Oil types and quantity*.
16. Wrap PTFE tape around the plug (pos. 1101).
17. Fit the plug into the gear casing and tighten it.
18. Fill the gear casing with oil through the hole for the plug (pos. 1102). See section *Oil types and quantity*.
19. Wrap PTFE tape around the plug (pos. 1102).
20. Fit the plug into the gear casing and tighten it.
21. Apply a new coat of paint if the coat is damaged.

Related information

4. *Torques and lubricants*
5. *Oil types and quantity*

6.3.4 Cable entry

1. Fit the cable flange (pos. 1002) and the cable guide (pos. 1003) on the motor cable.
2. Lubricate the cable with soapy water or cream and fit the cable entry (pos. 1004), the thrust washer (pos. 1005) and the cable entry (pos. 1006) on the motor cable.
3. Lead the cable into the terminal box on the motor housing (pos. 1017).

Caution Make sure that the cable entry is fitted correctly in the cable hole of the motor housing.

4. Fit the screws (pos. 1008) with the washers into the cable flange and cross-tighten the screws. See section *Torques and lubricants*.
5. Lubricate the groove for the O-ring (pos. 1025) with Loctite MR 5923 and fit the O-ring.
6. Connect the wires according to the notes you made during dismantling. Secure connections with terminal tubes and shrink-on sleeves.
7. Fit the earth conductor and the washer (pos. 1029) on the screw (pos. 1028).
8. Fit the screw into the terminal box on the motor housing and tighten it.

Caution Take care not to damage any wires.

9. Mount the motor bracket and fit the cable clamp with the conical shape upwards using the screws and the washers.

Related information

4. *Torques and lubricants*

7. Testing the AL05 Ex leakage sensor

WARNING



If the sensor has been or is to be incorporated in an explosion-proof product, you must not carry out the tests described below. The intrinsically safe sensor (EN 60079-11) loses the explosions-proof aspect if it is connected to non-intrinsically safe devices.

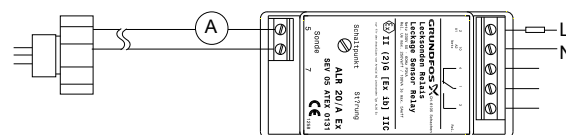
The AL05 Ex leakage sensor is integrated in a submerged agitator and connected to the ALR 20/A Ex leakage sensor relay via two wires. The relay supplies the sensor with power and receives a current signal from the sensor. The signal depends on the amount of water in the gear oil.

The current signal decreases as the amount of water in the oil increases and is compared to a manually adjustable switching point. If the switching point is exceeded, the relay switches to fault mode.

In case of a short circuit or a cable breakage the relay also automatically switches to fault mode.

Leakage sensor with relay

In order to test the sensor and the relay, measure the current flowing through the sensor and compare it to the values in the table below.



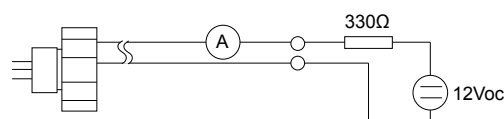
TM064366

Current measured [mA]	Cause	Status of relay
< 0.5	No current	Cable breakage Fault
0.5 - 5	Low current	Water in the oil Fault
5-11	Normal value	A little or no water in the oil Depends on the switching point of the relay.
> 11	Too high current	The power supply cable is short-circuited. Fault

Leakage sensor without relay

If no relay is available or the sensor is to be tested separately, you can replace the relay by a direct-current supply of 12 V. In this case a 330 Ω resistor must be added to the circuit.

Now, the measured current is comparable to the table above.



TM064367

8. Winding resistance and stator sizes

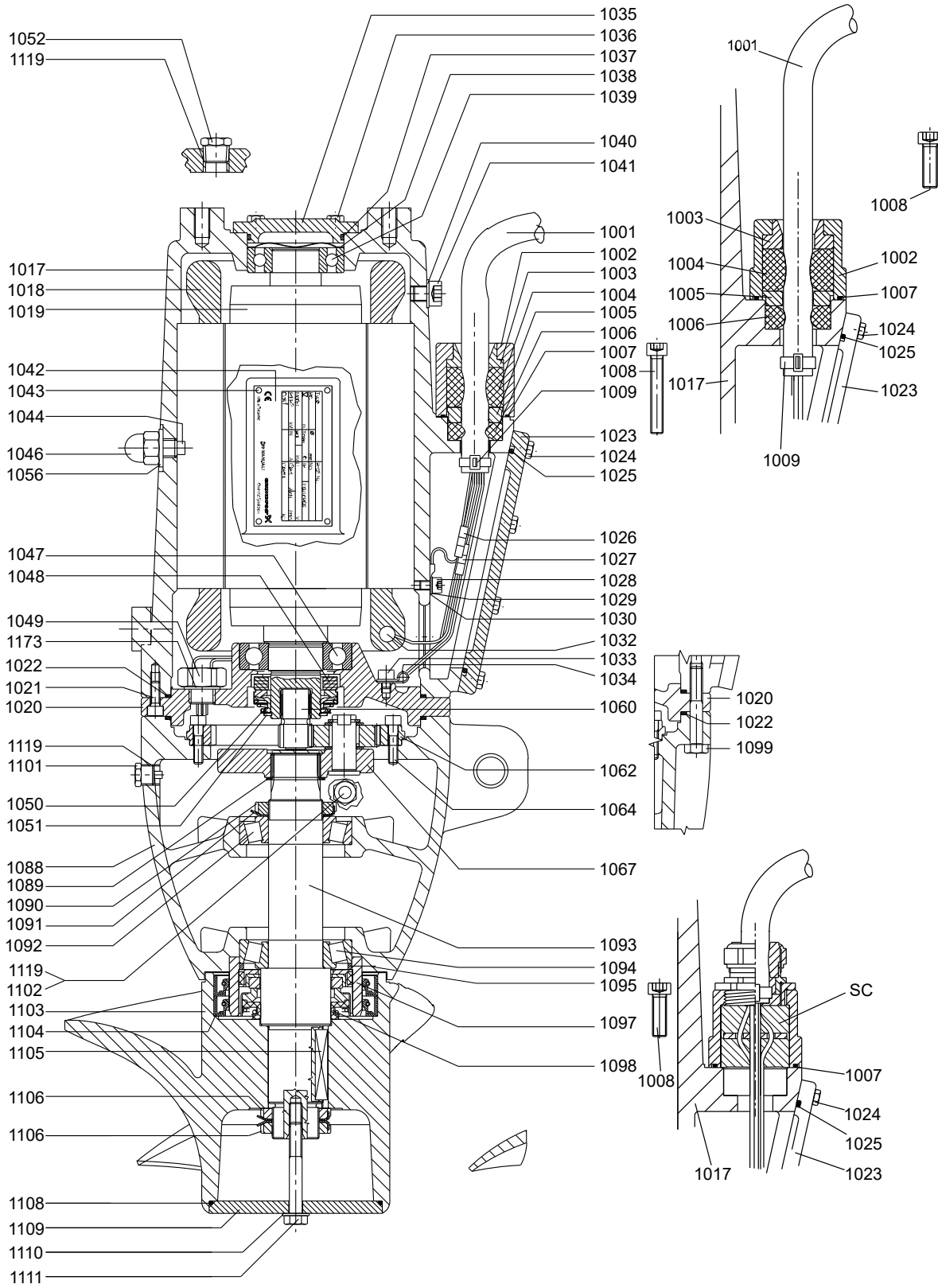
Pump type			Stator winding				No-load current **			Connection	Product number	
50 Hz	60 Hz	60 Hz ANSI	Poles	Winding resistance *	Length	Outer diameter	Inner diameter	50 Hz, 400 V	60 Hz, 380 V	60 Hz, 460 V		Motor kit
				[Ω]	[mm]	[mm]	[mm]	[A]	[A]	[A]		
SRG.08.30	SRG.08.30	SRG.11.12										
SRG.10.30	SRG.11.30	SRG.15.12										
SRG.13.30	SRG.14/15.30	SRG.20.12	2	2.4	90	155	83	1.6	1.3	1.5	Y	95039705
SRG.16.30	SRG.18/19.30	SRG.26.12										
SRG.18.30	SRG.22.30	SRG.30.12										
SRG.30.30	SRG.23.30											
SRG.40.30	SRG.30.30	SRG.40.12	2	3.5	120	155	83	3.0	2.1	2.7	Δ	95039706
SRG.50.30	SRG.40.30	SRG.55.12										
SRG.60.30	SRG.55.30	SRG.75.12	2	1.5	170	152	80	10.0	5.0	8.8	Δ	95039738
SRG.70.30	SRG.70.30	SRG.95.12										
SRG.35.50	SRG.35.50	SRG.48.20	4	5.1	155	155	100	2.8	1.8	2.5	Δ	95039701
SRG.50.50	SRG.50.50	SRG.68.20										
SRG.65.50	SRG.70.50	SRG.95.20	4	1.3	185	200	125	8.4	5.1	6.9	Δ	95039702
SRG.70.80	SRG.70.80	SRG.95.32										
SRG.80.50	-	-										
SRG.100.50	SRG.100.50	SRG.135.20										
SRG.100.80	SRG.120.80	SRG.160.32	4	0.74	280	200	125	12.9	8.2	10.6	Δ	95039703
SRG.130.80	SRG.130.80	SRG.175.32										
SRG.130.80	-	-										
SRG.120.80	-	-										
SRG.160.80	SRG.150.80	SRG.200.32	4	0.40	270	240	150	18.8	11.6	14.6	Δ	95039704
SRG.200.80	SRG.180/200.80	SRG.270.32										
SRG.240.80	SRG.180/240.80	SRG.320.32										

* Resistance of one phase winding without power supply cable. Tolerances: ± 0.2 for values greater than 1 and ± 0.1 for values less than 1.

** No-load current at a specific power supply ($\pm 10\%$).

9. Sectional drawings

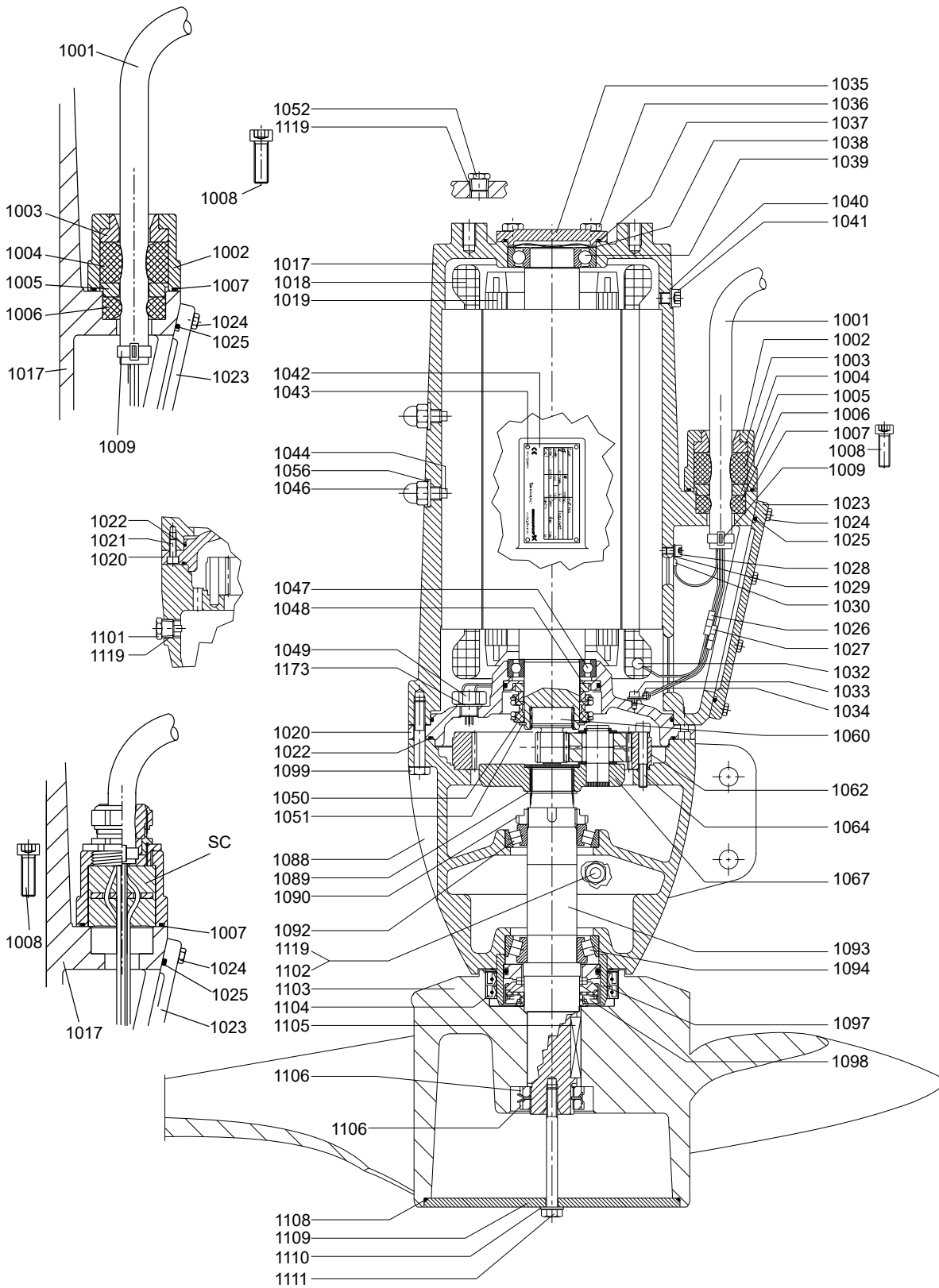
9.1 SRG.xx.30, SRG.35.50.xxx



Pos.	Description
SC	Screened cable complete (cast in the cable entry)

TM035379

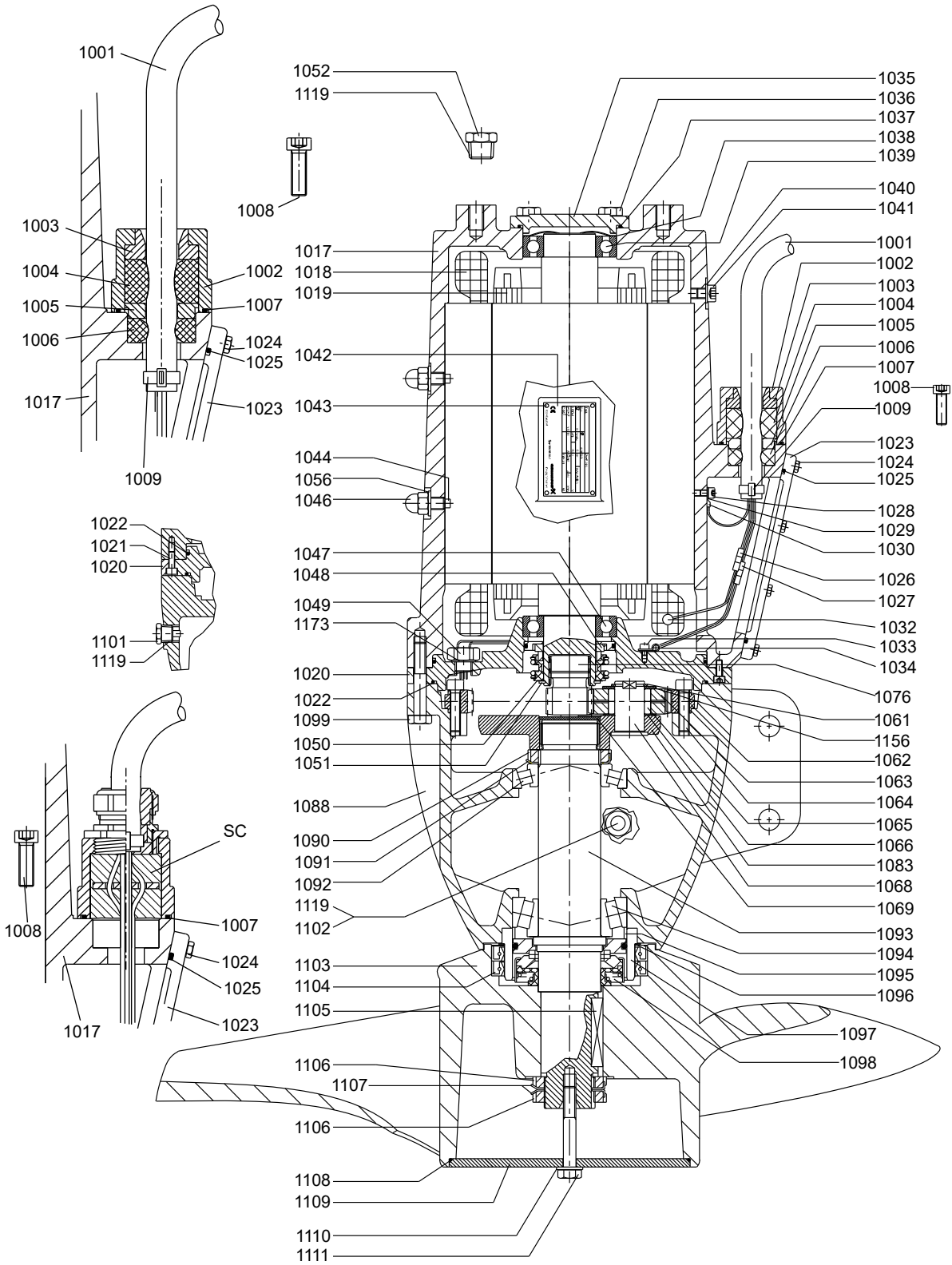
9.2 SRG.50.50.xxx, SRG.65.50.xxx, SRG.80.50.xxx, SRG.100.50.xxx



Pos.	Description
SC	Screened cable complete (cast in the cable entry)

TM035382

9.4 SRG.120.80.xxx, SRG.160.80.xxx, SRG.180.80.xxx, SRG.200.80.xxx, SRG.240.80.xxx

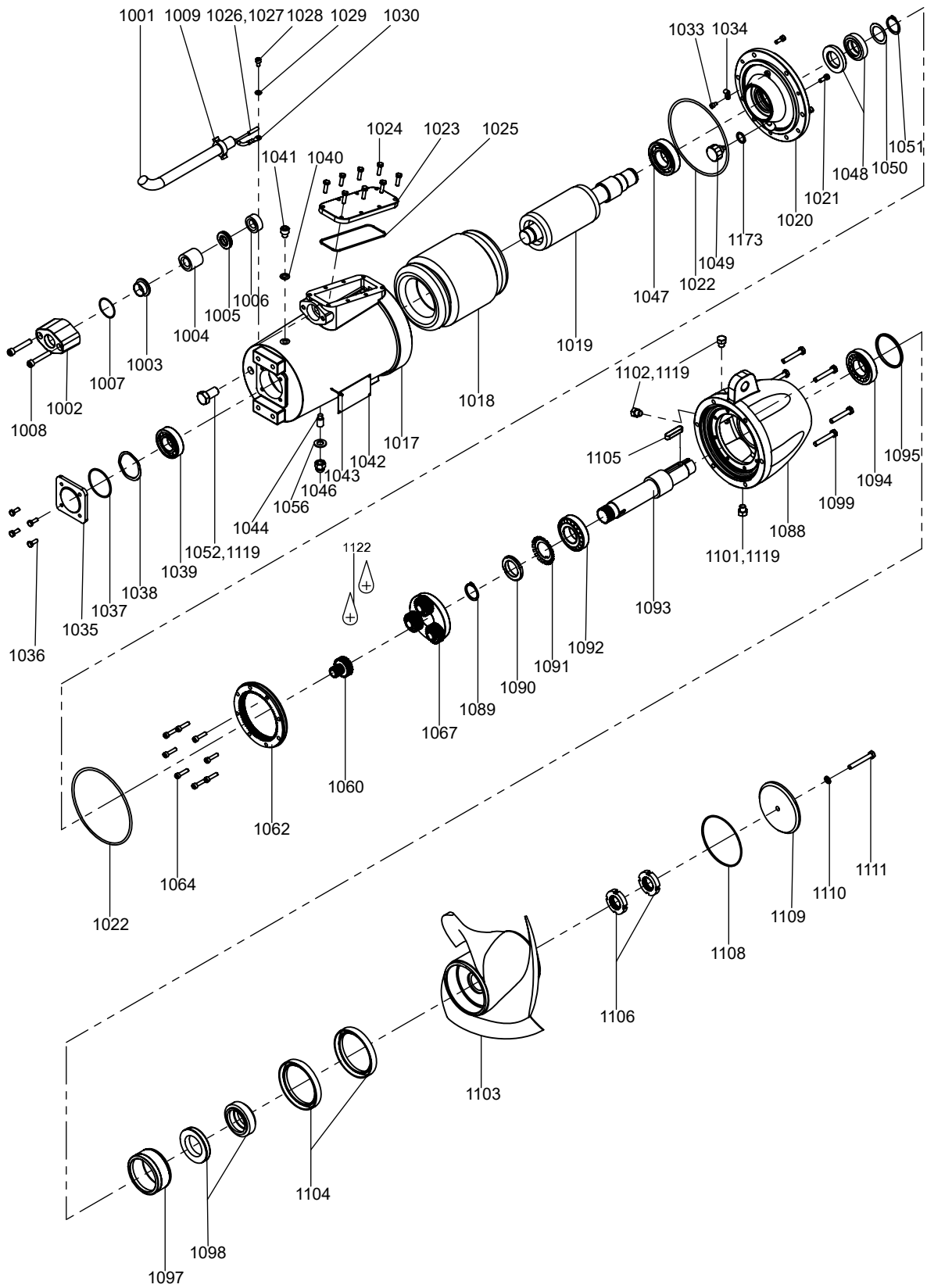


Pos.	Description
SC	Screened cable complete (cast in the cable entry)

TM035470

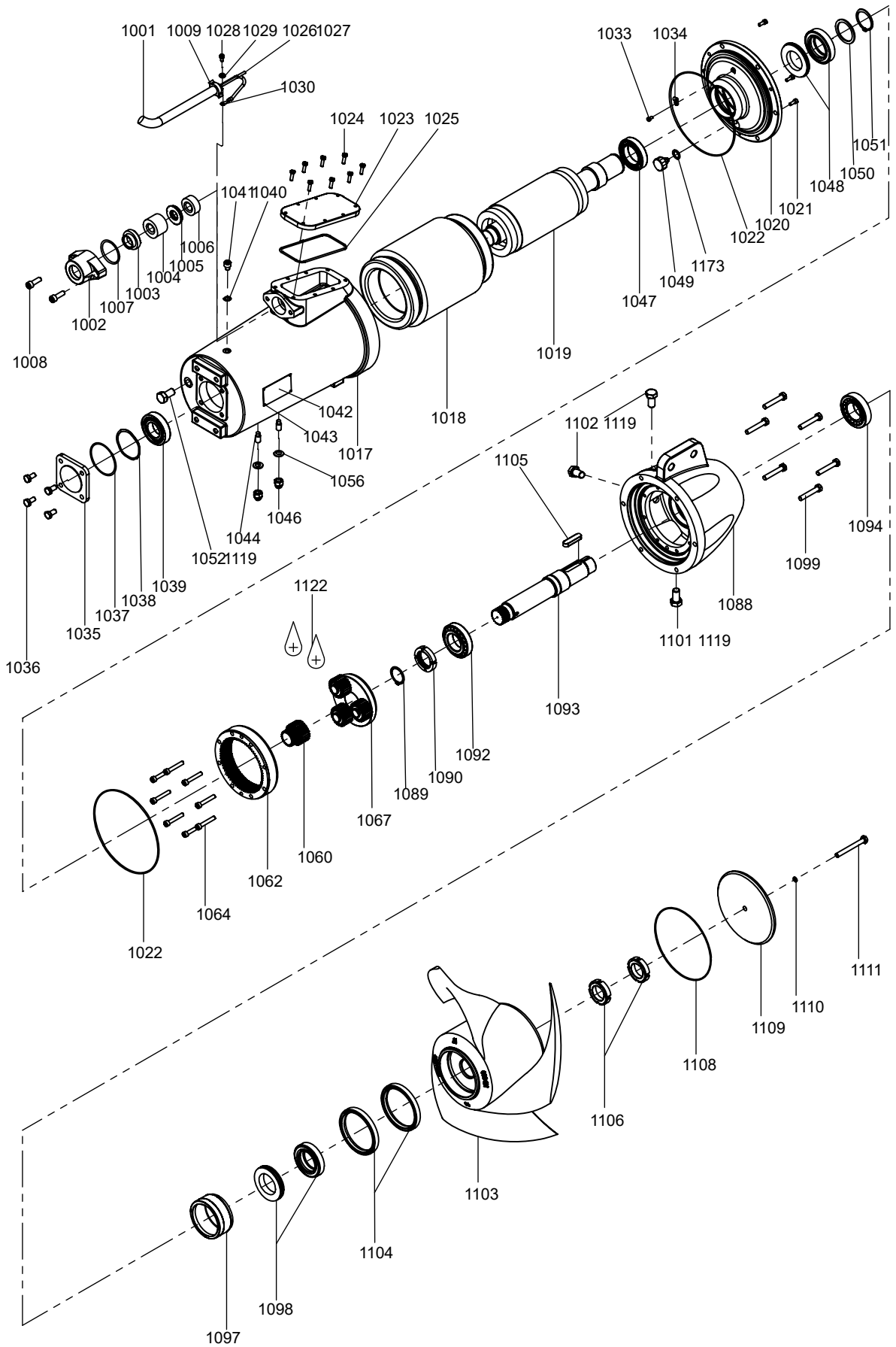
10. Exploded drawings

10.1 SRG.xx.30, SRG.35.50 [DIN] / SRG.xx.12, SRG.48.20 [ANSI]



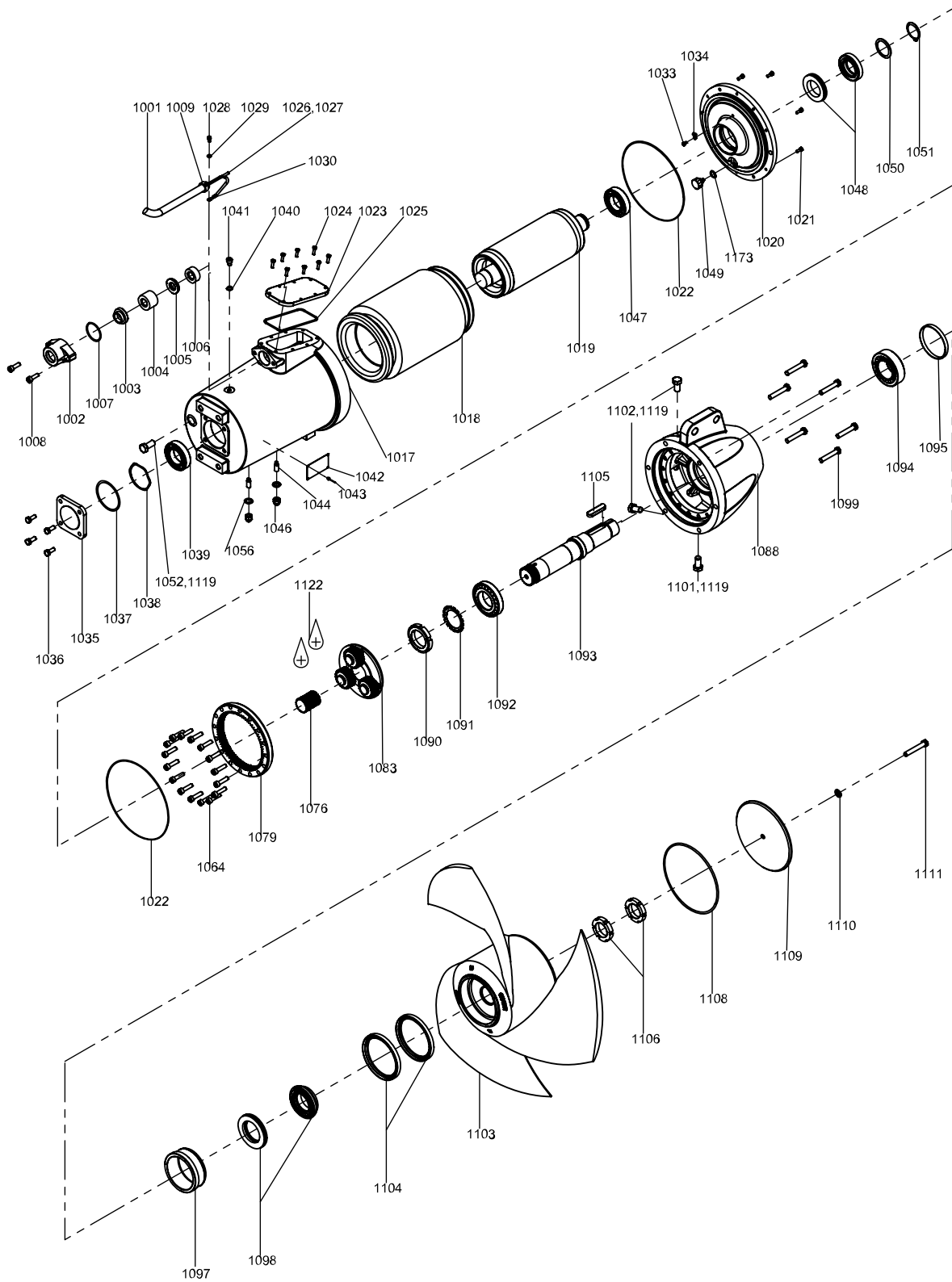
TM062752

10.2 SRG.50-100.50, SRG.70-100.80, SRG.130.80 [DIN] / SRG.68-135.20, SRG.95-135.32, SRG.175.32 [ANSI]



TM062750

10.3 SRG.120.80, SRG.160-240.80 [DIN] / SRG.160.32, SRG.220-320.32 [ANSI]



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