

TP, TPD union and low head

50/60 Hz

1/3~

Service instructions



English (GB) Service instructions

Original service instructions.

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1. Symbols used in this document



Warning

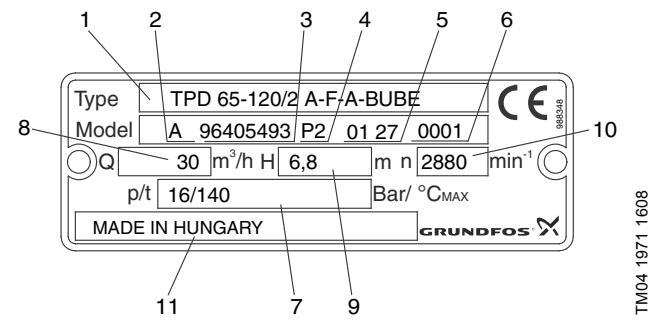
If these safety instructions are not observed, it may result in personal injury.

Note

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

2. Type identification

2.1 Nameplate



Pos.	Description
1	Type designation
2	Model
3	Product number
4	Place of production
5	Production year and week
6	Serial number
7	Maximum pressure and temperature
8	Rated flow rate
9	Head at rated flow rate
10	Speed
11	Country of production

2.2 Type key

Example	TP D 65 -120 /2 -A -F -A -BUBE
Type range	
Twin-head pump	
Nominal diameter of suction and pressure flanges (DN)	
Maximum head [dm]	
Number of motor poles	

Code for pump version

A = Basic version
I = PN 6 flange
X = Used when codes do not fully cover the actual version
U = NEMA standard

Code for pipe connection

F = DIN flange
J = JIS flange
G = ANSI flange
R = External thread

Code for materials

A = Basic version
Z = TP union and TP low head: Bronze pump housing and motor stool
B = TP high head: Bronze impeller

Code for shaft seal and plastic/rubber parts, excluding the neck ring

See section [2.2.1 Shaft seal](#).

2.2.1 Shaft seal

Mechanical shaft seal with assembly length to EN 12756.

The following variants are available as standard:

Pump	Shaft	Version*	Variant code
TP union			BUBE
TP 40-50/2	Ø12 mm	KU	BQQE
TP 40-90/2			GQQE
TP low head	Ø12 and Ø16 mm	NU	BUBE
			AUUE
			RUUE**

* KU = short version, NU = normal version.

** Bronze pumps are not available with RUUE shaft seal.

2.2.2 Codes for shaft seal

The positions (1) - (4) cover four pieces of information about the shaft seal:

Example	(1)	(2)	(3)	(4)
Grundfos type designation				
Material, rotating seal face				
Material, stationary seat				
Material, secondary seal and other rubber and plastic parts, excluding the neck ring				

The following table explains the positions (1), (2), (3) and (4).

Position	Type	Short description of seal
	A	O-ring seal with fixed driver
	B	Rubber bellows seal
(1)	G	Bellows seal, type B, with reduced sliding surfaces
	R	O-ring seal, type A, with reduced sliding surfaces
Position	Type	Short description of seal
(2) and (3)	B	Carbon, synthetic resin-impregnated
	U	Carbide, tungsten carbide
	Q	Silicon carbide
(4)	E	EPDM

3. Handling

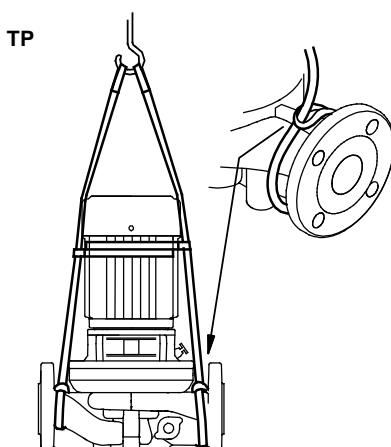
Warning

The lifting eyes can be used when lifting the pump head (motor, motor stool and impeller). The lifting eyes must not be used for lifting the entire pump.



TPD: The centrally positioned thread of the pump housing must not be used for lifting purposes as the thread is placed below the centre of gravity of the pump.

Pumps fitted with motors smaller than 4 kW should be lifted by means of nylon straps, see fig. 1.



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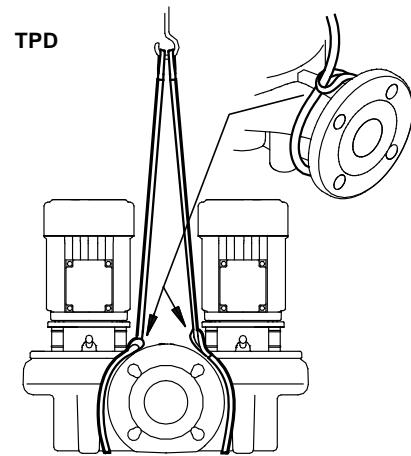
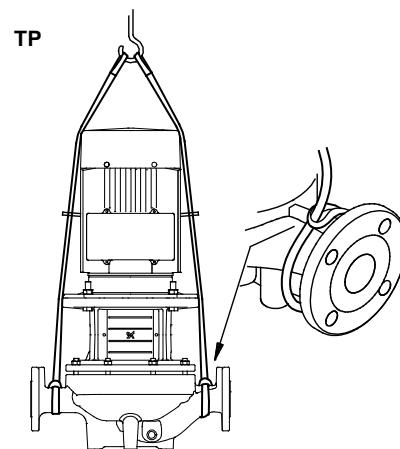


Fig. 1

TM02 5500 3302



TM02 5501 3302

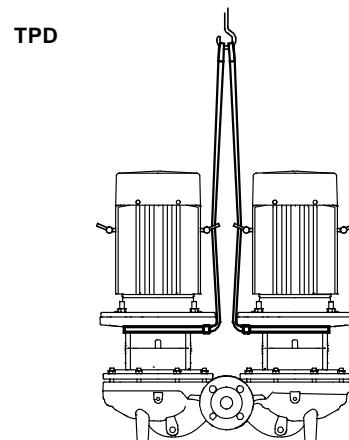


Fig. 2

TM02 5502 3302

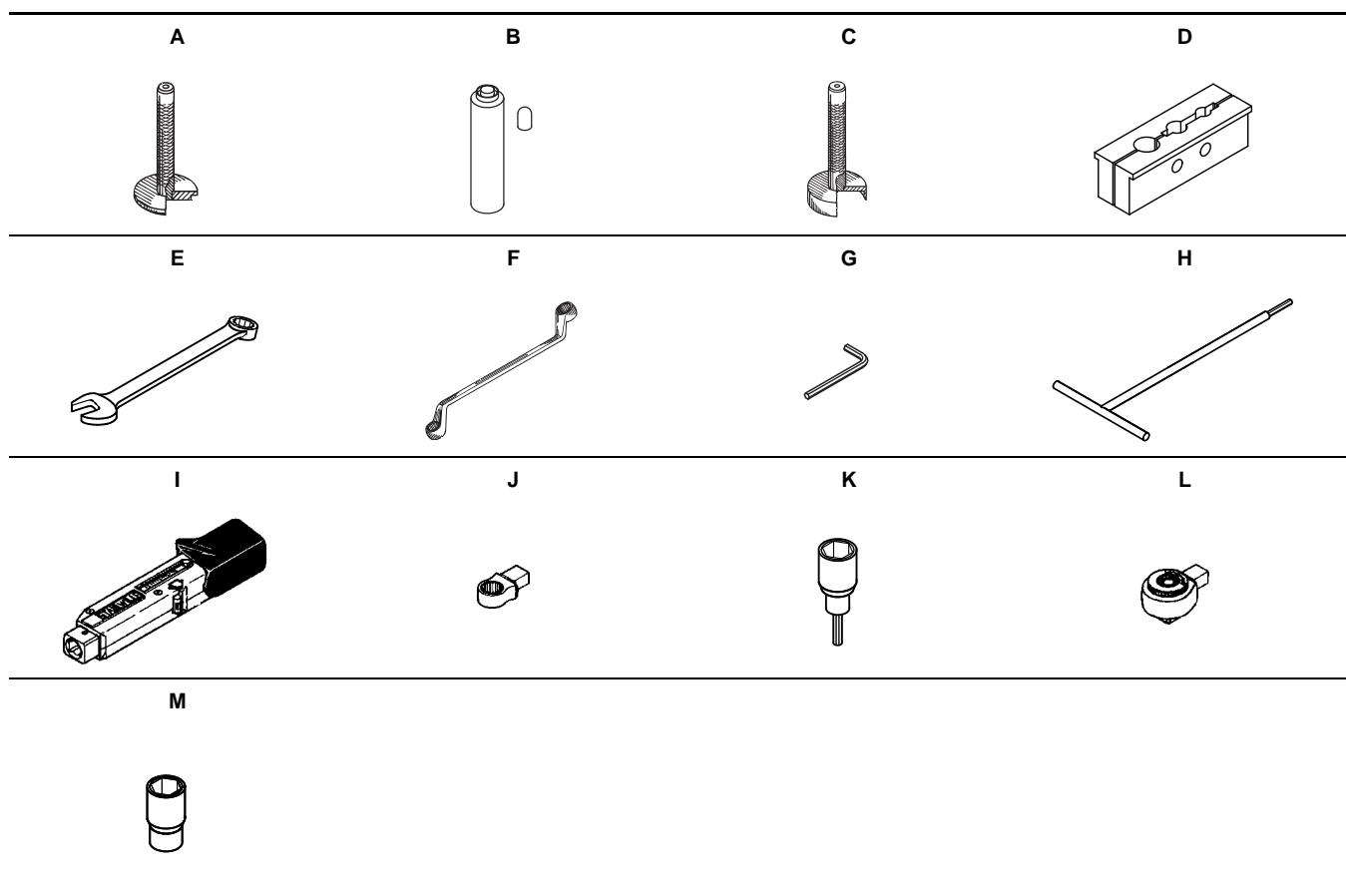
4. Torques and lubricants

Pos.	Designation	Dim.	Torque [Nm]	Lubricant
9	Hexagon socket screw	M6	13	Thread-Eze
		M8	31	
26	Screw	M6	6	Thread-Eze
		M8	17.5	
		M10	28	
28	Screw	M5	5	Thread-Eze
		M6	5	
		M8	12	
48	Split cone nut		35	Gardolube L6034

Thread-Eze, part no. SV9997 (0.5 l).

Gardolube L6034, part no. SV9995 (1 l).

5. Service tools



5.1 Special tools

Pos.	Designation	For pos.	Suppl. information	Part no.
A	Punch	71		SV0255
B	Mounting tool for bellows seal		Ø16 Ø62 Ø72 Ø77	SV0385 SV0896 SV0897 SV0898
C	Punch	45	Ø90 Ø106 Ø39 Ø50	SV0899 SV0900 SV0903 SV0904
D	Shaft holder			SV0040

5.2 Standard tools

Pos.	Designation	Bit no.	For pos.	Suppl. information	Part no.
		28		M5 - 8 mm	SV0273
		28		M6 - 10 mm	SV0083
E	Ring/open end spanner	26, 28		M8 - 13 mm	SV0055
		26		M10 - 17 mm	SV0056
		28g, 35		M12 - 19 mm	SV0054
		28g, 35		M16 - 24 mm	SV0122
F	Ring spanner	48		19 mm 20/22 mm	SV0063 SV0057
G	Hexagon key		19	1/4" - 6 mm	ID1204
			26	M6 - 5 mm	ID2110
H	Tee key		9	M6 - 5 mm M8 - 6 mm	SV0124 SV0050

5.3 Torque tools

Pos.	Designation	For pos.	Suppl. information	Part no.
I	Torque wrench		4-20 Nm 20-100 Nm	9 x 12 9 x 12
J	Ring insert tool	28 28 26, 28 26	M5 - 8 mm M6 - 10 mm M8 - 13 mm M10 - 17 mm	9 x 12 9 x 12 9 x 12 9 x 12
K	Hex head driver	J	9 x 12 -> 1/2"	SV0295
L	Ratchet insert tool	K, M	9 x 12 -> 1/2"	SV0295
M	Hex socket	48	19 mm 22 mm	1/2" - 1/2" 1/2" - 1/2"
				SV0419 SV0422

6. Dismantling and assembly

6.1 General information

Position numbers of parts (digits) refer to exploded views, sectional drawings and parts lists; position numbers of tools (letters) refer to section [5. Service tools](#).

6.1.1 Before dismantling

- Order the necessary service kits.
- Obtain a spare pump, if necessary.
- Disconnect the electricity supply to the motor.
- Close the isolating valves, if fitted.
- Remove the electric cable in accordance with local regulations.

6.1.2 Before assembly

Gaskets and O-rings should always be replaced when the pump is overhauled.

- Clean and check all parts.
- Replace defective parts by new parts.

6.1.3 During assembly

- Lubricate and tighten screws and nuts to the torque stated in section [4. Torques and lubricants](#).

6.1.4 After assembly

- Test the pump and flow rate according to the curve sheet.

6.2 Dismantling

6.2.1 Removing the pump housing

1. Remove the screws pos. 7a together with the coupling guard pos. 7.
2. Remove the screws pos. 26.
3. To loosen the pump housing, fit two of the screws removed in the two threaded holes (extraction holes) in the motor stool. Tighten the screws a little at a time until the pump head can be lifted out.
4. Lift the motor and the motor stool pos. 2 off the pump housing pos. 6.

6.2.2 Removing the shaft, impeller and shaft seal

Note *The impeller of TP 25-50, 25-90, 32-50, 32-90, 40-50 and 40-90 cannot be removed.*

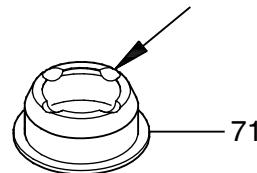
1. Remove the screws pos. 9, the coupling pos. 8 and the pin pos. 10.
2. Pull the shaft pos. 51, the rotating shaft seal part and the impeller pos. 49 up and free of the motor stool as one unit. The impeller is not to be removed if it is intact.
3. Place the shaft holder pos. D in the vice. Fit the pin pos. 10 in the shaft. Fit the shaft pos. 51 in the shaft holder. See section [5. Service tools](#).
4. Remove the nut pos. 48 (left-hand thread) together with the impeller pos. 49 and the split cone pos. 49b.
5. Slacken the vice and remove the shaft pos. 51 and the pin pos. 10.
6. Fit the other end of the shaft pos. 51 in the shaft holder (thread downwards).
7. Moisten the motor shaft/coupling pos. 51 with soapy water.
8. Remove the rotating shaft seal part from the shaft.

6.2.3 Removing the motor stool

1. Remove the O-ring pos. 72a.
2. Remove the screws pos. 28.
3. Remove the motor stool pos. 2.
4. Press the stationary shaft seal part out the motor stool using a punch.

6.2.4 Removing the distributing cup and the neck ring

1. Remove the distributing cup pos. 71 if it is defective, or the holes for circulation of liquid are choked. The distributing cup cannot be reused. See fig. 3.



TM00 3834 1294

Fig. 3

2. When the distributing cup has been removed, remove the air vent screw pos. 17.
3. Clean the air vent screw and the duct of the motor stool.
4. Remove the neck ring pos. 45 or the retainer pos. 65. The parts cannot be reused.

6.3 Assembly

6.3.1 Fitting the distributing cup and the neck ring

1. Fit the neck ring pos. 45 (steel) into the motor stool pos. 2 by means of the punch pos. C if it was removed.
2. Fit the neck ring with rubber seal in motor stool pos. 2 using the punch pos. B.
3. Moisten the recess of the motor stool and the neck ring with soapy water.
4. Press the neck ring (PTFE) pos. 45 so that it engages with the four legs of retainer pos. 65 if the pump incorporates a retainer.
5. Press the distributing cup pos. 71 into the recess of the motor stool pos. 2 using the punch pos. A. The distributing cup must be pressed home.

6.3.2 Fitting the motor stool

1. Fit the motor stool on the motor flange with the air vent screw pos. 17 in the direction required.
2. Fit the screw pos. 28 and tighten them diagonally to the torque stated, see section [4. Torques and lubricants](#).

6.3.3 Fitting the shaft, impeller and shaft seal

1. Place the shaft holder pos. *D* into the vice. Fit the pin pos. 10 in the shaft. Fit the shaft in the shaft holder (motor end upwards).
2. Fit the split cone pos. 46b, the impeller pos. 49 and the nut pos. 48 (left-hand thread) to the shaft and tighten the nut to 35 Nm.
3. Slacken the vice and remove the shaft pos. 51 and the pin pos. 10.
4. Moisten the shaft with soapy water.
5. Fit the rotating shaft seal part with O-ring to the shaft using the punch pos. *B*.
6. Compress the spring. The spring will then press the seal ring upwards to a neutral position.
7. Carefully pass the shaft pos. 51 with the rotating shaft seal part and the impeller down through the motor stool and home against the recess of the motor shaft.
8. Fit the coupling pos. 8, the pin pos. 10 and the screws pos. 9. Apply loctite and tighten the screws diagonally to the torque stated, see section *4. Torques and lubricants*.

If the pump is fitted with a NEMA motor, insert the adjusting for pos. 74 above the coupling, see fig. 4.

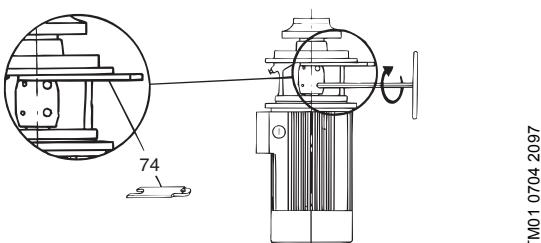


Fig. 4

9. Raise the coupling against the adjusting fork. The gaps either side of the coupling halves must be equal.
10. Remove the adjusting fork.

6.3.4 Fitting the impeller and pump housing

1. Fit the O-ring pos. 72a on the motor stool.
2. Lubricate the O-ring/pump housing with grease (ROCOL 22).
3. Fit the motor stool with motor and impeller on the pump housing pos. 6 with the air vent screw in the direction required.
4. Fit the screw pos. 26 and tighten them diagonally to the torque stated, see *4. Torques and lubricants*.
5. Check that the impeller rotates freely and noiselessly.
6. Fit the coupling guard pos. 7 and screw pos. 7a and tighten to 6 Nm.

Subject to alterations.

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