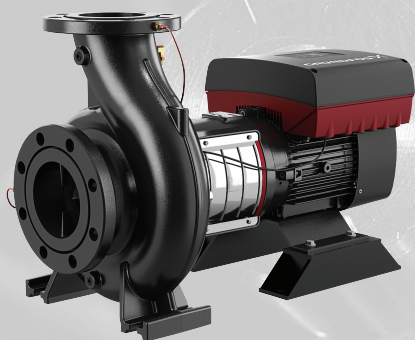


# Service Kit Catalogue

NBS, NBSE (60Hz)

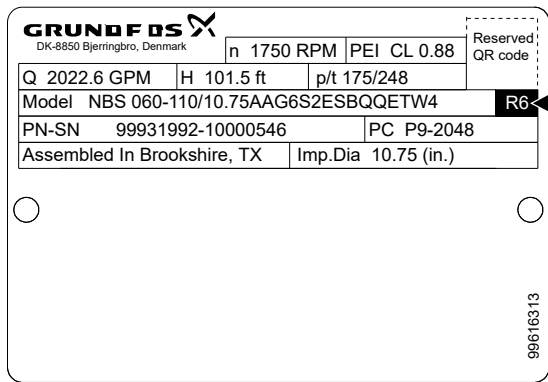


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# 1. Where does NBS, NBSE – Range 6 fit in the overall picture of end suction

The pump range can be identified via this field on the nameplate as shown below.

	Range		
	IEC motor		NEMA motor
	1	2	6
NB(E)	X		X
NBG(E)	X		
NBS(E)			X
NK(E)	X	X	X
NKG(E)	X		

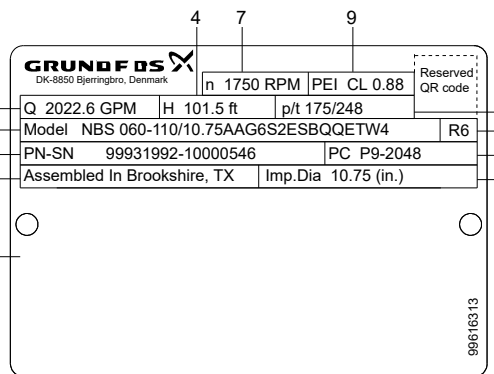
The nameplate image shows the following information:

- GRUNDFOS DK-8850 Bjerringbro, Denmark
- n 1750 RPM | PEI CL 0.88
- Reserved QR code
- Q 2022.6 GPM | H 101.5 ft | p/t 175/248
- Model NBS 060-110/10.75AAG6S2ESBQQETW4 **R6**
- PN-SN 99931992-10000546 | PC P9-2048
- Assembled In Brookshire, TX | Imp.Dia 10.75 (in.)
- 99616313

- 1) The motors fitted with the pumps are according to the IEC standard (International Electrotechnical Commission) for frame size, dimensions and connecting interfaces (flange and shaft).
- 2) The motors fitted with the pumps are according to the NEMA standard (National Electrical Manufacturers Association - USA) for frame size, dimensions and connecting interfaces (flange and shaft).

## How to search correct service parts

To search correct service parts, the information on the pump nameplate is vital. The pump nameplate contains all data required for this.



The nameplate image includes numbered callouts:

- 1: Model
- 2: PN-SN
- 3: Q
- 4: H
- 5: PC
- 6: R6
- 7: n
- 8: Imp.Dia
- 9: PEI CL
- 10: Assembled In
- 11: QR code
- 12: Range code

Example of NBS nameplate

Pos.	Description
1	Type designation
2	Identification code
	99931992                                  Product number
	10000546                                  Serial number
5	Production code - production site, year and week
12	Range identification (service range code)

These data above should be referenced whenever any replacement kit or spare is ordered.

When ordering replacement impellers, additional information like duty point and impeller trim (8) are required data.

## 2. Type key

**Example 1:** NBS 025-095/08.43AAEG6S3ESBQQETX2

**Example 2:** NBS 040-150/16.77AFEG7TBESDQQE1X4

**Example 3:** NBS 060-135/1291-1276AAEG7TBESDQQEWX4

**Example 4:** NBSE 025-110/11.02ASFEG6S2ESBQQENDA

**Example 5:** NBSE 030-110/1094-1063ACAEG7S7FSDAQFODA

Pos.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Example 1	NBS	025	-095	/08.43		A		AE	G	6	S3	E	S	BQQE	T	X	2
Example 2	NBS	040	-150	/16.77		A		FE	G	7	TB	E	S	DQQE	1	X	4
Example 3	NBS	060	-135	/1291-1276		A		AE	G	7	TB	E	S	DQQE	W	X	4
Example 4	NBSE	025	-110	/11.02		A	S	FE	G	6	S2	E	S	BQQE	N	D	A
Example 5	NBSE	030	-110	/1094-1063		A	C	AE	G	7	S7	F	S	DAQF	O	D	A

Pos.	Explanation
1	Type range
2	Nominal diameter of outlet port (DN)
3	Nominal impeller diameter [inch]
4	Actual impeller diameter [inch]
	<b>Impeller type</b>
5	'blank': Closed impeller, cylindrical trim. If one dimension is shown the impeller has a cylindrical trim, for example 11.02 'blank': Closed impeller, conical trim. If two dimensions are shown the impeller has a conical trim, for example 1094-1063 S: Special open impeller V: Super vortex impeller
	<b>Hydraulic version</b>
6	A: 1st version B: 2nd version C: 3rd version D: 4th version
	<b>Sensor/motor version</b>
7	'blank': Pump without sensor C: Without built-in sensor, one cable and one pressure sensor are supplied with the pump S: Pump with built-in differential-pressure sensor, Series 2000 G: Non -E pump/ -E pump with semi-integrated VFD/CUE: Motor with Grounding ring: Non drive-end
	<b>Code for pump version; the codes may be combined</b>
8	A: Basic version B: Oversize motor C: Without motor (+E): With ATEX approval, certificate or test report, the second character of the code for pump version is an E F: Design with base frame (+S): With support rails, the second character of the pump version code is an S X: Special version; used in case of further customization than already listed
	<b>Pipe connection</b>
9	G: ANSI flange
	<b>Flange pressure rating (PN - rated pressure)</b>
10	5: Other pressure rating 6: Class 125, 175 PSI 7: Class 300, 363 PSI

Pos.	Explanation				
	<b>Code for materials</b>				
	<b>Code</b>	<b>Pump housing</b>	<b>Impeller</b>	<b>Wear ring</b>	<b>Shaft</b>
	S2	A48 Class 35	304	No wear ring	420
	S3	A48 Class 35	304	No wear ring	304
	S4	A48 Class 35	304	No wear ring	316
	S5	A48 Class 35	304	No wear ring	SAF 2205
	S6	A48 Class 35	316	No wear ring	420
	S7	A48 Class 35	316	No wear ring	304
	S8	A48 Class 35	316	No wear ring	316
	S9	A48 Class 35	316	No wear ring	SAF 2205
11	SA	70-50-05	304	No wear ring	420
	SB	70-50-05	304	No wear ring	304
	SC	70-50-05	304	No wear ring	316
	SD	70-50-05	304	No wear ring	SAF 2205
	SE	70-50-05	316	No wear ring	420
	SF	70-50-05	316	No wear ring	304
	SG	70-50-05	316	No wear ring	316
	SH	70-50-05	316	No wear ring	SAF 2205
	T2	A48 Class 35	CD4MCuN/A890	No wear ring	SAF 2205
	TA	70-50-05	CD4MCuN/A890	No wear ring	SAF 2205
	X	Special version			
	<b>Rubber parts in pump</b>				
	E: EPDM				
	F: FXM (Fluoraz®)				
12	K: FFKM (Kalrez®)				
	M: FEPS (PTFE-sheathed silicone O-ring)				
	O: HNBR				
	V: FKM (Viton®)				
	<b>Shaft seal arrangement</b>				
13	S: Single seal				
	<b>Shaft seal in pump</b>				
14	Letter code for mechanical shaft seal and shaft seal rubber parts. See Letter codes for shaft seals.				
15	Code for rated motor power [kW]. See Codes for rated motor power.				
16	Code for DOE identification. See Code for DOE identification.				
17	Code for speed variant [rpm]. See Codes for speed variant.				

## Letter codes for shaft seals

Pos. 14 in NBS type key example.

Code exam ple	Description	Code explanation
B	Shaft seal type	A: O-ring seal with fixed driver B: Rubber bellows seal D: O-ring seal, balanced
Q	Material of rotating seal face	A: Carbon, metal-impregnated with antimony which is not approved for potable water B: Carbon, resin-impregnated Q: Silicon carbide
Q	Material of stationary seal	A: Carbon, metal-impregnated with antimony which is not approved for potable water Q: Silicon carbide
E	Material of secondary seal and other rubber and composite parts, except the wear ring	E: EPDM V: FKM (Viton®) F: FXM (Fluoraz®) K: FFKM (Kalrez®) X: HNBR U: Dynamic O-rings in FFKM and static O-rings in PTFE

## Codes for rated motor power

Pos. 15 in NBS type key example.

Code	Description	
	[hp]	[kW]
A	0.16	0.12
B	0.25	0.18
C	0.33	0.25
D	0.5	0.37
E	0.75	0.55
F	1	0.75
G	1.5	1.1
H	2	1.5
I	3	2.2
J	4	3
K	5 (5.5 <sup>3)</sup> )	3.7 (4 <sup>3)</sup> )
L	7.5	5.5
M	10	7.5
N	15	11
O	20	15
P	25	18.5
Q	30	22
R	40	30
S	50	37
T	60	45
U	75	55
V	100	75
W	125	90
X	Bare shaft pump	
Y	> 200 <sup>4)</sup>	> 150 <sup>4)</sup>
1	150	110
2	175	132
3	200	150
4	215 <sup>5)</sup>	160 <sup>5)</sup>
5	250 <sup>5)</sup>	185 <sup>5)</sup>
6	-	26

<sup>3)</sup> Value in bracket is for the standard IEC motor size. Value outside bracket is for the motor size according to NEMA standards.

<sup>4)</sup> Used for pumps where the pump shaft input power exceeds 200 hp (150 kW) and is not regulated under the DOE pump rule.

<sup>5)</sup> Special cases with power sizes above 200 hp (150 kW) which are still regulated under the DOE pump rule. For example: Pump has a P2 value of 198 hp (147.6 kW) in its duty point (in DOE scope) but customer wants the 215 hp (160 kW) motor instead of the 200 hp (150 kW). The pump is in scope of the DOE regulation and requires a PEI value and a motor code.

## Code for DOE identification

Pos. 16 in NBS type key example.

Code	Description
A	DOE reported with E-motor (ECM <sup>6)</sup> ), 1 x 200-240 V
B	DOE reported with E-motor (ECM <sup>6)</sup> ), 3 x 200-240 V
C	DOE reported with E-motor (ECM <sup>6)</sup> ), 3 x 440-480 V
D	DOE reported with E-motor (ECM <sup>6)</sup> ), 3 x 380-500 V
W	In DOE scope but not compliant with or not for sale in North America
X	DOE reported, sell as bare shaft pump or DOE regulated Motor (CC marked motor)
Y	Pumps not subject to the DOE regulation
Z	DOE reported with Asynchronous E-Motor

<sup>6)</sup> ECM: Electronically Commutated Motor.

## Codes for speed variant

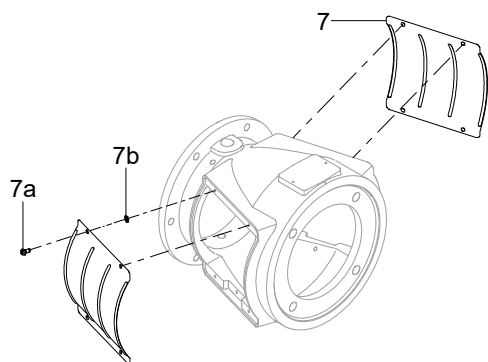
Pos. 17 in NBS type key example.

Code	Description
A	1450-2200 RPM, E-motor (ECM <sup>7)</sup> )
B	2900-4000 RPM, E-motor (ECM <sup>7)</sup> )
C	4000-5900 RPM, E-motor (ECM <sup>7)</sup> )
1	2-pole, 50 Hz (Asynchronous motor)
2	2-pole, 60 Hz (Asynchronous motor)
3	4-pole, 50 Hz (Asynchronous motor)
4	4-pole, 60 Hz (Asynchronous motor)
5	6-pole, 50 Hz (Asynchronous motor)
6	6-pole, 60 Hz (Asynchronous motor)
7	8-pole, 50 Hz (Asynchronous motor)
8	8-pole, 60 Hz (Asynchronous motor)

<sup>7)</sup> ECM: Electronically Commutated Motor.

## 3. Service kits and spares

### Kit, Coupling guard



TM078546

#### Kit, Coupling guard

- 7: 2 x Coupling guard  
 7a: 8 x Hex socket head cap screw  
 7b: 8 x Lock washer M5

#### Step 1: Find the motor frame size on the motor nameplate.

CAT.NO.	EM25254T-4	SPEC NO.	P44G1775
HP	250	AMPS	275
VOLTS	460	DESIGN	B
<b>FRAME</b>	<b>447T</b>	RPM	1785
HZ	60	AMB	40
SF	1.15	INSUL.CLASS	F
DRIVE END BEARING	90BC03J30X	PHASE	3
OPP D.E. BEARING	90BC03J30X	DUTY	CONT
SER.NO.		ENCL	DP
POWER FACTOR	88	CODE	G
NEMA-NOM-EFFICIENCY	96.2	MAX CORR KVAR	40.0
GUARANTEED EFFICIENCY	95.8	NEMA NOM/CSA QUOTED EFF	
MOTOR WEIGHT	2015		

TM086550

#### Step 2: Find the pump size and motor frame size, then note the coupling guard code.

Pump size	Motor frame size									
	143TC	145TC	182TC	184TC	213TC	215TC	254TC	256TC	284TC	284TSC
012-070	B2	B2	B4	B4	B4	B4	B4			
015-070	B2	B2	B4	B4	B4	B4	B4	B4		
015-090		B2	B4	B4		B4	B5	B5		C3
015-095		B2	B4	B4	B4	B4	B5	B5		C3
020-095		B2	B4	B4	B4	B4	B5	B5		C3
020-110			B4	B4	B4	B4	B4			
020-135					C4	C4	C4	C4	C3	
025-070	B2	B2	B4	B4	B4	B4	B4	B4		C3
025-095	B2	B2	B4	B4	B4	B4		B5		C3
025-110				C4	C4	C4	C4			
030-070		B2	B4	B4		B4	B4	B4		C3
030-095			B4	B4	B4	B4	B4			
030-110					C4	C4	C4	C4		
030-135						C4	C4	C4	C3	
040-070	B2	B2	B4	B4	B4		B5	B5		C3
040-095				B4	B4	B4	B4	B4		
040-110					C4	C4	C4	C4	C3	
040-135						C4	C4	C4	C3	
040-150									D3	
050-070	B2	B2	B4	B4	B4	B4	B5	B5		C3



Pump size	Motor frame size									
	143TC	145TC	182TC	184TC	213TC	215TC	254TC	256TC	284TC	284TSC
050-095					B5	B5	B5	B5	C5	
050-110						C4	C4	C4	C3	
050-135								D2	D3	
060-095						B5	B5	B5	C5	
060-110							D2	D2	D3	
060-135								D2	D3	
080-135									D3	

Pump size	Motor frame size									
	286TC	286TSC	324TC	324TSC	326TC	326TSC	364TC	364TSC	365TC	365TSC
015-090		C3		D1						
015-095		C3		D1		D1				
020-095		C3		D1		D1		D1		
025-070		C3								
025-095		C3		D1		D1		D1		D1
030-070		C3		D1						
030-095		C3		D1		D1		D1		D1
030-135	C3		D3							
040-070		C3		D1		D1				
040-095						D1		D1		D1
040-110	C3									
040-135	C3		D3		D3					
040-150	D3		D4		D4		D4		D4	
050-070		C3		D1		D1		D1		D1
050-095	C5									
050-110	C3		D3							
050-135	D3		D4		D4		D4		D4	
050-150			D4		D4		D4		D4	
060-095	C5		D4							
060-110	D3		D4		D4		D4			
060-135	D3		D4		D4		D4		D4	
060-150							D6		D6	
080-135	D3		D4		D4		D4		D4	
080-150							D6		D6	
100-150									D6	

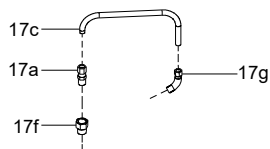
Pump size	Motor frame size									
	404TC	404TSC	405TC	405TSC	444TC	444TSC	445TC	447TC	449TC	
030-095		D1		D1		C3				
040-095		D1		D1		C3				
040-150	D6		D6		E1		E1			
050-150	D6		D6		E1		E1			
060-135	D6		D6		E1					
060-150	D6		D6		E1		E1	E1	E1	
080-135	D6		D6		E1		E1			
080-150	D6		D6		E1		E1	E1	E1	
100-150	D6		D6		E1		E1	E1	E1	

**Step 3: Use coupling guard code to find the correct coupling guard.**

Coupling guard code	Kit, Coupling guard	Coupling guard code	Kit, Coupling guard
B2	<a href="#">92521760</a>	D1	<a href="#">92521746</a>
B4	<a href="#">92521761</a>	D2	<a href="#">92521747</a>
B5	<a href="#">92521762</a>	D3	<a href="#">92521748</a>

Coupling guard code	Kit, Coupling guard	Coupling guard code	Kit, Coupling guard
C3	92521763	D4	92521765
C4	92521764	D6	92521766
C5	92521767	E1	92521749

### Kit, Flushing line



TM078549

#### Kit, Flushing line

- 17c: Tube
- 17a: Connector, 1/4" tube x 1/4" NPT
- 17f: Flow control adapter
- 17g: Connector, elbow, 45°, 1/4" tube x 1/8" NPT

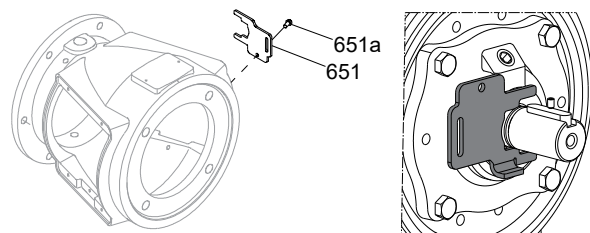
**Step 1: Find the pump size and note the flushing line code.**

Pump size	Flushing line code	Pump size	Flushing line code
012-070	A	040-110	B
015-070	A	040-135	B
015-090	A	040-150	B
015-095	A	050-070	A
020-095	A	050-095	B
020-110	B	050-110	B
020-135	B	050-135	B
025-070	A	050-150	B
025-095	A	060-095	B
025-110	B	060-110	B
030-070	A	060-135	B
030-095	A	060-150	B
030-110	B	080-135	B
030-135	B	080-150	B
040-070	A	100-150	B
040-095	B		

**Step 2: Use the flushing line code and the tube type to find the correct kit.**

Flushing line code	Tube length [inch]	Tube type		
		Nylon	Copper	Stainless steel
A	24	92521740	92521742	92521744
B	36	92521741	92521743	92521745

### Kit, Fork tool (positioning tool for pump shaft)



#### Kit, Fork tool

- 651: Fork tool
- 651a: Position screw

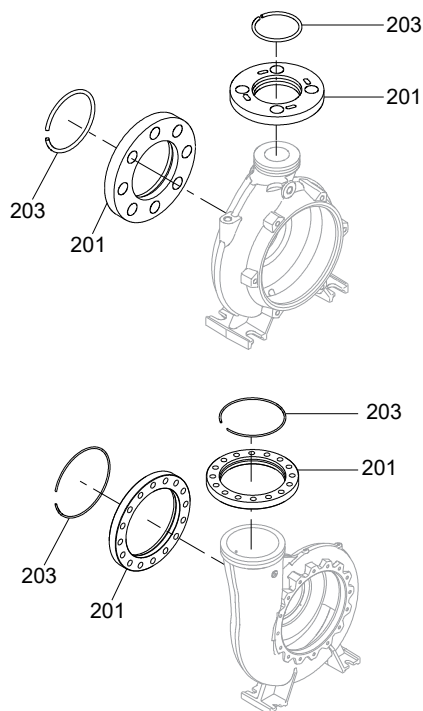
**Step 1: Find the pump size and note the fork tool code.**

Pump size	Fork tool code	Pump size	Fork tool code
012-070	B1	040-110	B1
015-070	B1	040-135	B1
015-090	B1	040-150	C1
015-095	B1	050-070	B1
020-095	B1	050-095	C1
020-110	B1	050-110	B1
020-135	B1	050-135	C1
025-070	B1	050-150	C1
025-095	B1	060-095	C1
025-110	B1	060-110	C1
030-070	B1	060-135	C1
030-095	B1	060-150	C1
030-110	B1	080-135	C1
030-135	B1	080-150	C1
040-070	B1	100-150	C1
040-095	B1		

**Step 2: Use the fork tool code to find the correct fork tool.**

Fork tool code	Kit, Fork tool
B1	92521501
C1	92521502

## Kit, Loose flange(s)



TM078770

### Kit, Flange for inlet

201: Flange  
203: Lock ring

### Kit, Flange for outlet

201: Flange  
203: Lock ring

**Step 1: Check with pump in the list and note inlet and outlet sizes of the flanges.**

<b>GRUNDFOS</b> DK-8850 Bjerringbro, Denmark		n 1750 RPM	PEI CL 0.88	Reserved QR code
Q 2022.6 GPM	H 101.5 ft	p/t 175/248		
Model NBS 060-110/10.75AAG6S2ESBQQETW4	R6			
PN-SN 99931992-10000546	PC P9-2048			
Assembled In Brookshire, TX	Imp.Dia 10.75 (in.)			

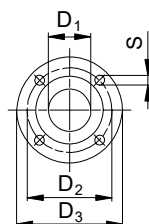
### Pump size

Pump size	Flange size (inch)		
	Inlet	Outlet	Nom. Imp.
015-070	2.5	1.5	7.0
015-090	2.5	1.5	9.0
015-095	2.5	1.5	9.5
020-095	2.5	2.0	9.5
020-110	2.5	2.0	11.0
020-135	3.0	2.0	13.5
025-070	3.0	2.5	7.0
025-095	3.0	2.5	9.5
025-110	3.0	2.5	11.0
030-070	4.0	3.0	7.0
030-095	4.0	3.0	9.5
030-110	4.0	3.0	11.0
030-135	4.0	3.0	13.5
040-070	5.0	4.0	7.0

Pump size	Flange size (inch)		
	Inlet	Outlet	Nom. Imp.
040-095	5.0	4.0	9.5
040-110	5.0	4.0	11.0
040-135	5.0	4.0	13.5
040-150	5.0	4.0	15.0
050-070	6.0	5.0	7.0
050-095	6.0	5.0	9.5
050-110	6.0	5.0	11.0
050-135	6.0	5.0	13.5
050-150	6.0	5.0	15.0
060-095	8.0	6.0	9.5
060-110	8.0	6.0	11.0
060-135	8.0	6.0	13.5
060-150	8.0	6.0	15.0
080-135	10.0	8.0	13.5
080-150	10.0	8.0	15.0
100-150	12.0	10.0	15.0

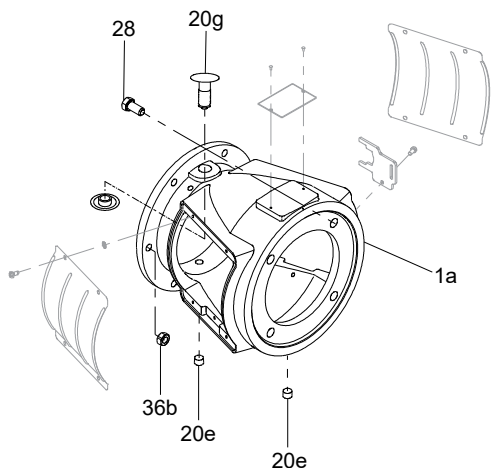
**Step 2: Use size of flange inlet/outlet to find the loose flange kit.**

**NOTE!** Only class 300 loose flanges are available in this service range.



Inlet/outlet flange	Kit - Loose flange	D1 [inch]	D2 [inch]	D3 [inch]	S
	Class 300				
1.5	<a href="#">98329969</a>	1 1/2	4 1/2	6 1/8	4 x Ø7/8
2	<a href="#">98329970</a>	2	5	6 1/2	8 x Ø3/4
2.5	<a href="#">92526537</a>	2 1/2	5 7/8	7 1/2	8 x Ø7/8
3	<a href="#">98254163</a>	3	6 5/8	8 1/4	8 x Ø7/8
4	<a href="#">98254164</a>	4	7 7/8	10	8 x Ø7/8
5	<a href="#">98254165</a>	5	9 1/4	11	8 x Ø7/8
6	<a href="#">98254166</a>	6	10 5/8	12 1/2	12 x Ø7/8
8	<a href="#">98254167</a>	8	13	15	12 x Ø1
10	<a href="#">92526538</a>	10	15 1/4	17 1/2	16 x Ø1 1/8
12	<a href="#">92526539</a>	12	17 3/4	20 1/2	16 x Ø1 1/4

### Kit, Motor stool



TM078542

**Kit, Motor stool**

- 1a: Motor stool
- 36b: Needed number of nuts for mounting the pump and cover
- 28: Needed number of bolts for mounting the motor
- 20e: Needed number of pipe plugs
- 20g: Hole plug

**Step 1: Find the motor frame size on the motor nameplate.**

CAT.NO.	EM25254T-4	SPEC NO.	P44G1775
HP	250	AMPS	275
<b>FRAME</b>	<b>447T</b>	RPM	1785
DRIVE END BEARING	90BC03J30X	PHASE	3
OPP D.E. BEARING	90BC03J30X	TYPE	P
SER.NO.		POWER FACTOR	88
		NEMA-NOM-EFFICIENCY	96.2
		MAX CORR KVAR	40.0
		GUARANTEED EFFICIENCY	95.8
		NEMA NOM/CSA QUOTED EFF	
		MOTOR WEIGHT	2015

**Step 2: Find the pump size and motor frame size, then note the motor stool code.**

Pump size	Motor frame size									
	143TC	145TC	182TC	184TC	213TC	215TC	254TC	256TC	284TC	284TSC
012-070	A1	A1	B2	B2	B2	B2	B2			
015-070	A1	A1	B2	B2	B2	B2	B2	B2		
015-090		A1	B2	B2		B2	B1	B1		D2
015-095		A1	B2	B2	B2	B2	B1	B1		D2
020-095		A1	B2	B2	B2	B2	B1	B1		D2
020-110			B2	B2	B2	B2	B2			
020-135					G1	G1	G1	G1	H1	
025-070	A1	A1	B2	B2	B2	B2	B2	B2		D2
025-095	A1	A1	B2	B2	B2	B2		B1		D2
025-110				G1	G1	G1	G1			
030-070		A1	B2	B2		B2	B2	B2		D2
030-095			B2	B2	B2	B2	B2			
030-110					G1	G1	G1	G1		
030-135						G1	G1	G1	H1	
040-070	A1	A1	B2	B2	B2		B1	B1		D2
040-095				B2	B2	B2	B2	B2		
040-110					G1	G1	G1	G1	H1	
040-135						G1	G1	G1	H1	
040-150									L1	

Pump size	Motor frame size									
	143TC	145TC	182TC	184TC	213TC	215TC	254TC	256TC	284TC	284TSC
050-070	A1	A1	B2	B2	B2	B2	B1	B1		D2
050-095					B1	B1	B1	B1	D1	
050-110						G1	G1	G1	H1	
050-135								K1	L1	
060-095						B1	B1	B1	D1	
060-110							K1	K1	L1	
060-135								K1	L1	
080-135									L1	

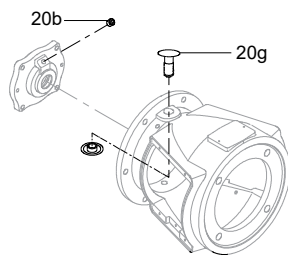
Pump size	Motor frame size									
	286TC	286TSC	324TC	324TSC	326TC	326TSC	364TC	364TSC	365TC	365TSC
015-090		D2		E2						
015-095		D2		E2		E2				
020-095		D2		E2		E2		E2		
025-070		D2								
025-095		D2		E2		E2		E2		E2
030-070		D2		E2						
030-095		D2		E2		E2		E2		E2
030-135	H1		J1							
040-070		D2		E2		E2				
040-095						E2		E2		E2
040-110	H1									
040-135	H1		J1		J1					
040-150	L1		M2		M2		M2		M2	
050-070		D2		E2		E2		E2		E2
050-095	D1									
050-110	H1		J1							
050-135	L1		M2		M2		M2		M2	
050-150			M2		M2		M2		M2	
060-095	D1		E1							
060-110	L1		M2		M2		M2			
060-135	L1		M2		M2		M2		M2	
060-150							P1		P1	
080-135	L1		M2		M2		M2		M2	
080-150							P1		P1	
100-150									P1	

Pump size	Motor frame size									
	404TC	404TSC	405TC	405TSC	444TC	444TSC	445TC	447TC	449TC	
030-095		E2		E2		F1				
040-095		E2		E2		F1				
040-150	M1		M1		N1		N1			
050-150	M1		M1		N1		N1			
060-135	M1		M1		N1					
060-150	P1		P1		Q1		Q1	Q1	Q1	
080-135	M1		M1		N1		N1			
080-150	P1		P1		Q1		Q1	Q1	Q1	
100-150	P1		P1		Q1		Q1	Q1	Q1	

**Step 3: Use the motor stool code to find the correct motor stool.**

Motor stool code	Kit, Motor stool	Motor stool code	Kit, Motor stool
A1	<a href="#">92521587</a>	H1	<a href="#">92521596</a>
B1	<a href="#">92521588</a>	J1	<a href="#">92521597</a>
B2	<a href="#">92521589</a>	K1	<a href="#">92521598</a>
D1	<a href="#">92521590</a>	L1	<a href="#">92521599</a>
D2	<a href="#">92521591</a>	M1	<a href="#">92521600</a>
E1	<a href="#">92521592</a>	M2	<a href="#">92521601</a>
E2	<a href="#">92521593</a>	N1	<a href="#">92521602</a>
F1	<a href="#">92521594</a>	P1	<a href="#">92521603</a>
G1	<a href="#">92521595</a>	Q1	<a href="#">92521604</a>

## Kit, Plugs for seal cover and motor stool



TM079088

### Kit, Plugs for seal cover and motor stool

17e: Pipe plug

20g: 2-part push-fit hole plug

Kit number: [99857724](#)

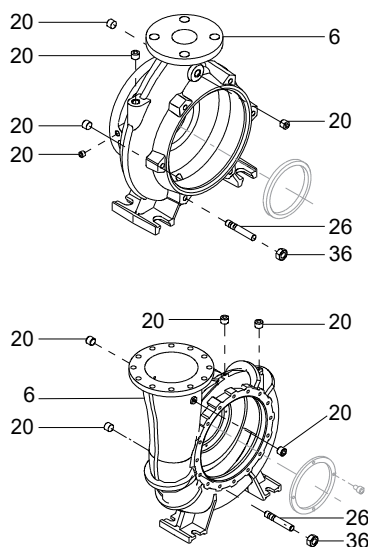
## Kit, Pump housing machined for wear ring

**IMPORTANT!** Pump housing kits are supplied without wear rings, Wear rings needed to be ordered separately.

**NOTE!** Plugs (20) in the pump housing are described in section 3.24 *Pump housing plugs*.

### Class 125

EN-GJL-250 / ASTM A48 class 35



#### Kit, Pump housing machined for wear ring, gray cast iron - low pressure (Class 125)

6: Pump housing

26: Needed number of stay bolts

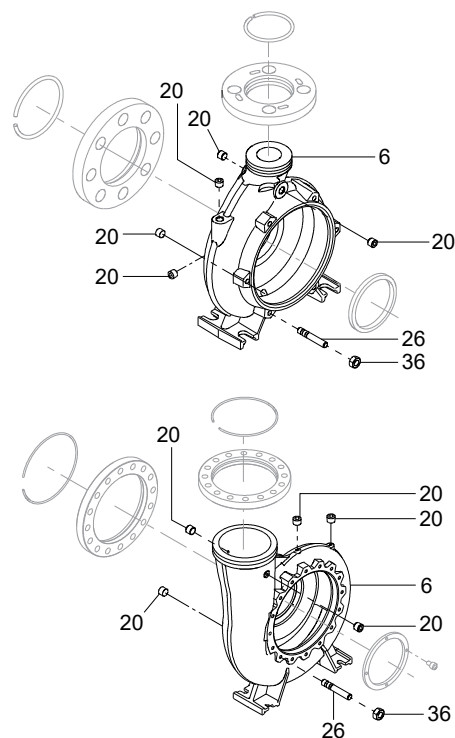
36: Needed number of nuts for stay bolts

20: Needed number of plugs (for filling, draining, flushing, and pressure outtake)

TM078535

### Class 300

EN-GJS-500-7 / ASTM 70-50-05



#### Kit, Pump housing machined for wear ring, ductile cast iron - high pressure (Class 300)

6: Pump housing

26: Needed number of stay bolts

36: Needed number of nuts for stay bolts

20: Needed number of plugs (for filling, draining, flushing, and pressure outtake)

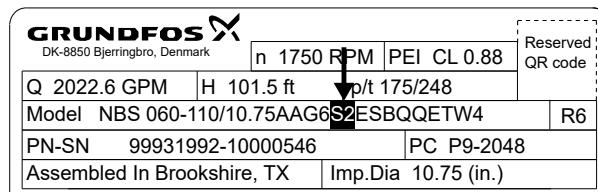
TM078536



**Step 1: Find the pump size and note the pump housing code.**

Pump size	Pump housing code	Pump size	Pump housing code
012-070	A1	040-110	C6
015-070	A2	040-135	D6
015-090	B2a	040-150	E6
015-095	B2	050-070	A6
020-095	B3	050-095	B7
020-110	C3	050-110	C7
020-135	D3	050-135	D7
025-070	A3	050-150	E7
025-095	B4	060-095	B8
025-110	C4	060-110	C8
030-070	A4	060-135	D8
030-095	B5	060-150	E8
030-110	C5	080-135	D9
030-135	D5	080-150	E9
040-070	A5	100-150	EA
040-095	B6		

**Step 2: Use the pump housing code and the material code to find the pump housing kit.**



*Material code*

Pump housing code	Material code	
	S2, S3, S4, S5, S6, S7, S8, S9, T2	SA, SB, SC, SE, SF, SG, SH, TA
	Gray cast iron EN-GJL-250	Ductile cast iron EN-GJS-500-7
	Class 125	Class 300
A1	92521490	92521494
A2	92521248	92521252
A3	92521266	92521270
A4	92521274	92521278
A5	92521282	92521286
A6	92521257	92521262
B2	92521290	92521294
B2a	92521298	92521302
B3	92521306	92521310
B4	92521314	92521318
B5	92521322	92521326
B6	92521330	92521334
B7	92521338	92521342
B8	92521346	92521350
C3	92521354	92521358
C4	92521362	92521366
C5	92521370	92521374
C6	92521378	92521382
C7	92521386	92521390
C8	92521394	92521398
D3	92521402	92521406
D5	92521410	92521414
D6	92521418	92521422
D7	92521426	92521430
D8	92521434	92521438
D9	92521442	92521446
E6	92521450	92521454
E7	92521458	92521462
E8	92521466	92521470
E9	92521474	92521478
EA	92521482	92521486

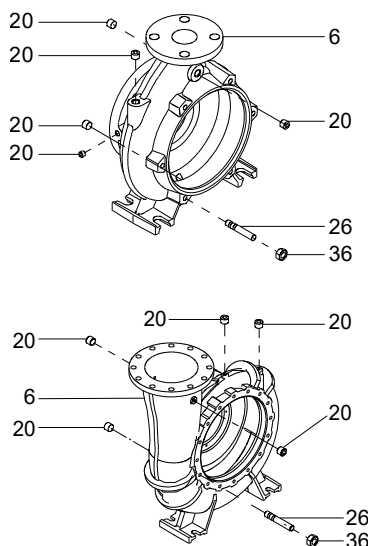
## Kit, Pump housing without wear ring

Pump housing without wear ring: The interface between the pump housing and the impeller is machined in the cast iron pump housing.

**NOTE!** Plugs (20) in the pump housing are described in section [3.24 Pump housing plugs](#).

### Class 125

#### EN-GJL-250 / ASTM A48 class 35



#### Kit - Pump housing without wear ring, gray cast iron - low pressure (Class 125)

6: Pump housing

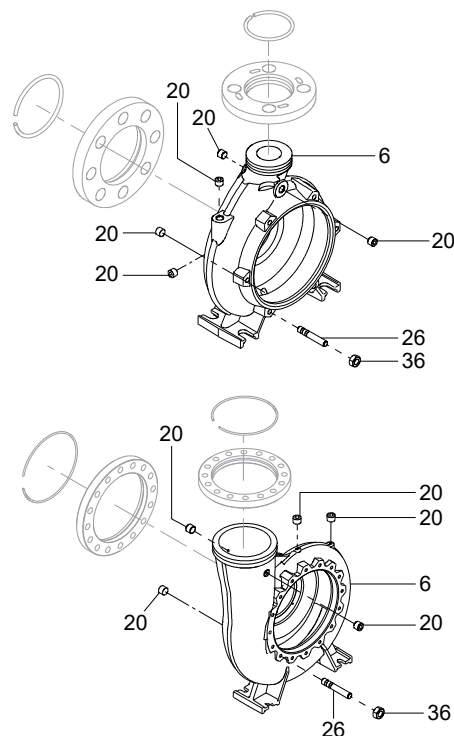
26: Needed number of stay bolts

36: Needed number of nuts for stay bolts

20: Needed number of plugs (for filling, draining, flushing, and pressure outtake)

### Class 300

#### EN-GJS-500-7 / ASTM 70-50-05



#### Kit - Pump housing without wear ring, ductile cast iron - high pressure (Class 300)

6: 1 x pump housing

26: Needed number of stay bolts

36: Needed number of nuts for stay bolts

20: Needed number of plugs (for filling, draining, flushing, and pressure outtake)

### Step 1: Find the pump size and note the pump housing code.

Pump size	Pump housing code	Pump size	Pump housing code
012-070	A1	040-110	C6
015-070	A2	040-135	D6
015-090	B2a	040-150	E6
015-095	B2	050-070	A6
020-095	B3	050-095	B7
020-110	C3	050-110	C7
020-135	D3	050-135	D7
025-070	A3	050-150	E7
025-095	B4	060-095	B8
025-110	C4	060-110	C8
030-070	A4	060-135	D8
030-095	B5	060-150	E8
030-110	C5	080-135	D9
030-135	D5	080-150	E9
040-070	A5	100-150	EA
040-095	B6		

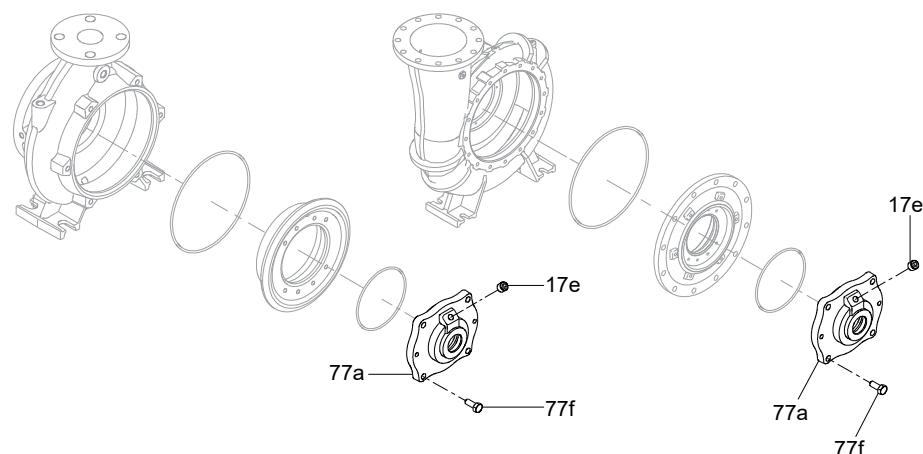
**Step 2: Use the pump housing code and the material code to find the pump housing kit.**

<b>GRUNDFOS</b> DK-8850 Bjerringbro, Denmark		n 1750 RPM	PEI CL 0.88	Reserved QR code
Q 2022.6 GPM	H 101.5 ft	p/t 175/248		
Model NBS 060-110/10.75AAG6S2ESBQQETW4			R6	
PN-SN 99931992-10000546		PC P9-2048		
Assembled In Brookshire, TX		Imp.Dia 10.75 (in.)		

Material code

Pump housing code	Material code					
	S2, S3, S4, S5, S6, S7, S8, S9, T2			SA, SB, SC, SE,SF, SG, SH, TA		
	Gray cast iron EN-GJL-250			Ductile cast iron EN-GJS-500-7		
	Class 125			Class 300		
	Uncoated	Coated	NSF approval	Uncoated	Coated	NSF approval
A1	92521491	92521492	92521493	92521495	92521496	92521497
A2	92521249	92521250	92521251	92521254	92521255	92521256
A3	92521267	92521268	92521269	92521271	92521272	92521273
A4	92521275	92521276	92521277	92521279	92521280	92521281
A5	92521283	92521284	92521285	92521287	92521288	92521289
A6	92521258	92521260	92521261	92521263	92521264	92521265
B2	92521291	92521292	92521293	92521295	92521296	92521297
B2a	92521299	92521300	92521301	92521303	92521304	92521305
B3	92521307	92521308	92521309	92521311	92521312	92521313
B4	92521315	92521316	92521317	92521319	92521320	92521321
B5	92521323	92521324	92521325	92521327	92521328	92521329
B6	92521331	92521332	92521333	92521335	92521336	92521337
B7	92521339	92521340	92521341	92521343	92521344	92521345
B8	92521347	92521348	92521349	92521351	92521352	92521353
C3	92521355	92521356	92521357	92521359	92521360	92521361
C4	92521363	92521364	92521365	92521367	92521368	92521369
C5	92521371	92521372	92521373	92521375	92521376	92521377
C6	92521379	92521380	92521381	92521383	92521384	92521385
C7	92521387	92521388	92521389	92521391	92521392	92521393
C8	92521395	92521396	92521397	92521399	92521400	92521401
D3	92521403	92521404	92521405	92521407	92521408	92521409
D5	92521411	92521412	92521413	92521415	92521416	92521417
D6	92521419	92521420	92521421	92521423	92521424	92521425
D7	92521427	92521428	92521429	92521431	92521432	92521433
D8	92521435	92521436	92521437	92521439	92521440	92521441
D9	92521443	92521444	92521445	92521447	92521448	92521449
E6	92521451	92521452	92521453	92521455	92521456	92521457
E7	92521459	92521460	92521461	92521463	92521464	92521465
E8	92521467	92521468	92521469	92521471	92521472	92521473
E9	92521475	92521476	92521477	92521479	92521480	92521481
EA	92521483	92521484	92521485	92521487	92521488	92521489

## Kit, Seal cover



TM078540

### Kit, Seal cover

77a: Seal cover

20b: Plug

77f: 4 x Hex head screw

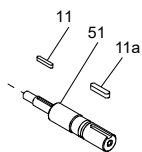
### Step 1: Find the pump size and note the seal cover code.

Pump size	Seal cover code	Pump size	Seal cover code
012-070-2P	B1	030-135	C3
012-070-4P	B1	040-070-2P	C5
015-070-2P	B2	040-070-4P	B2
015-070-4P	B1	040-095-2P	C1
015-090-2P	C5	040-095-4P	B2
015-090-4P	B2	040-110	C3
015-095-2P	C5	040-135	C3
015-095-4P	B2	040-150	D1
020-095-2P	C2	050-070-2P	C5
020-095-4P	B2	050-070-4P	B2
020-110	B2	050-095	D2
020-135	C3	050-110	C3
025-070-2P	B2	050-135	D1
025-070-4P	B1	050-150	D1
025-095-2P	C2	060-095	D2
025-095-4P	B2	060-110	D1
025-110	C3	060-135	D1
030-070-2P	B2	060-150	E1
030-070-4P	B1	080-135	D1
030-095-2P	C1	080-150	E1
030-095-4P	B2	100-150	E1
030-110	C3		

### Step 2: Use the seal cover code to find the correct seal cover kit.

Seal cover code	Kit, Seal cover	
	Uncoated	Coated
B1	<a href="#">92521659</a>	<a href="#">92521662</a>
B2	<a href="#">92521668</a>	<a href="#">92521671</a>
C1	<a href="#">92521677</a>	<a href="#">92521680</a>
C2	<a href="#">92521686</a>	<a href="#">92521689</a>
C3	<a href="#">92521695</a>	<a href="#">92521698</a>
C5	<a href="#">92521704</a>	<a href="#">92521707</a>
D1	<a href="#">92521713</a>	<a href="#">92521716</a>
D2	<a href="#">92521722</a>	<a href="#">92521725</a>
E1	<a href="#">92521731</a>	<a href="#">92521734</a>

### Kit, Shaft



TM078543

Kit, Shaft
51: Pump shaft
11: Key (impeller)
11a: Key (coupling)

#### Step 1: Find the pump size and note the shaft code.

Pump size	Shaft code	Pump size	Shaft code
012-070-2P	AB1	030-135	CCb1
012-070-4P	AB1	040-070-2P	BC1
015-070-2P	BB1	040-070-4P	BB1
015-070-4P	AB1	040-095-2P	CCb1
015-090-2P	BC1	040-095-4P	BB1
015-090-4P	BB1	040-110	CCb1
015-095-2P	BC1	040-135	CCb1
015-095-4P	BB1	040-150	DD1
020-095-2P	CCa1	050-070-2P	BC1
020-095-4P	BB1	050-070-4P	BB1
020-110	BB1	050-095	CD1
020-135	CCb1	050-110	CCb1
025-070-2P	BB1	050-135	DD1
025-070-4P	AB1	050-150	DD1
025-095-2P	CCa1	060-095	CD1
025-095-4P	BB1	060-110	DD1
025-110	CCb1	060-135	DD1
030-070-2P	BB1	060-150	ED1
030-070-4P	AB1	080-135	DD1
030-095-2P	CCb1	080-150	ED1
030-095-4P	BB1	100-150	ED1
030-110	CCb1		

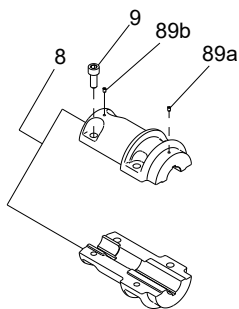
#### Step 2: Use the shaft code and material code to find the correct shaft.

<b>GRUNDFOS</b> DK-8850 Bjerringbro, Denmark		n 1750 RPM	PEI CL 0.88	Reserved QR code
Q 2022.6 GPM	H 101.5 ft	p/t 175/248		
Model NBS 060-110/10.75AAG6S2ESBQQETW4		R6		
PN-SN 99931992-10000546		PC P9-2048		
Assembled In Brookshire, TX		Imp.Dia 10.75 (in.)		

#### Material code

Shaft code	Shaft diameter [mm]	Material code			
		S3, S7, SB, SF	S4, S8, SC, SG	S5, S9, SD, SH, T2, TA	S2, S6, SA, SE
		Shaft material			
		304 (1.4301)	316 (1.4401)	SAF 2205 (1.4462)	420 (1.4021/1.4034)
AB1	15	92521605	92521606	92521608	92521607
BB1	22	92521609	92521610	92521611	92521612
BC1	22	92521613	92521614	92521616	92521615
CCa1	30	92521617	92521618	92521620	92521619
CCb1	30	92521621	92521622	92521624	92521623
CD1	30	92521625	92521626	92521628	92521627
DD1	38	92521629	92521630	92521632	92521631
ED1	44	92521633	92521634	92521636	92521635

## Kit, Split coupling



TM078544

### Kit, Coupling

- 8: 2 x Coupling half
- 9: 4 or 6 x Coupling screw
- 89a: Set screw
- 89b: Set screw

### Step 1: Find the motor frame size on the motor nameplate.

CAT.NO.	EM25254T-4		SPEC NO.	P44G1775	
HP	250	AMPS	275	VOLTS	460
DESIGN	B				
<b>FRAME</b>	<b>447T</b>	RPM	1785	HZ	60
DRIVE END BEARING	90BC03J30X	PHASE	3	DUTY	CONT
OPP D.E. BEARING	90BC03J30X	TYPE	P	ENCL	DP
SER.NO.		POWER FACTOR	88	CODE	G
		INSUL.CLASS	F	SF	1.15
		NEMA-NOM-EFFICIENCY	96.2	MAX CORR KVAR	40.0
		GUARANTEED EFFICIENCY	95.8	NEMA NOM/CSA QUOTED EFF	
		MOTOR WEIGHT	2015		

### Step 2: Find the pump size and motor frame size, then note the coupling code.

Pump size	Motor frame size									
	143TC	145TC	182TC	184TC	213TC	215TC	254TC	256TC	284TC	284TSC
012-070	B1a	B1a	B2a	B2a	B3a	B3a	B4a1			
015-070	B1a	B1a	B2a	B2a	B3a	B3a	B4a1	B4a1		
015-090		B1a	B2a	B2a		C3a	C4b	C4b		C4a
015-095		B1a	B2a	B2a	B3a	C3a	C4b	C4b		C4a
020-095		B1a	B2a	B2a	B3a	C3a	C4b	C4b		C4a
020-110			B2a	B2a	B3a	B3a	B4a1			
020-135					C3a	C3a	C4b	C4b	C5a1	
025-070	B1a	B1a	B2a	B2a	B3a	B3a	B4a1	B4a1		B4a2
025-095	B1a	B1a	B2a	B2a	B3a	B3a		C4b		C4a
025-110				C2a	C3a	C3a	C4b			
030-070		B1a	B2a	B2a		B3a	B4a1	B4a1		B4a2
030-095			B2a	B2a	B3a	B3a	B4a1			
030-110					C3a	C3a	C4b	C4b		
030-135						C3a	C4b	C4b	C5a1	
040-070	B1a	B1a	B2a	B2a	B3a		C4b	C4b		C4a
040-095				B2a	B3a	B3a	B4a1	B4a1		
040-110					C3a	C3a	C4b	C4b	C5a1	
040-135						C3a	C4b	C4b	C5a1	
040-150									D5a	
050-070	B1a	B1a	B2a	B2a	B3a	B3a	C4b	C4b		C4a
050-095					D3a	D3a	D4a	D4a	D5a	
050-110						C3a	C4b	C4b	C5a1	
050-135								D4a	D5a	
060-095						D3a	D4a	D4a	D5a	

Pump size	Motor frame size									
	143TC	145TC	182TC	184TC	213TC	215TC	254TC	256TC	284TC	284TSC
060-110							D4a	D4a	D5a	
060-135								D4a	D5a	
080-135									D5a	

Pump size	Motor frame size									
	286TC	286TSC	324TC	324TSC	326TC	326TSC	364TC	364TSC	365TC	365TSC
015-090		C4a		C5a2						
015-095		C4a		C5a2		C5a2				
020-095		C4a		C5a2		C5a2		C5a2		
025-070		B4a2								
025-095		C4a		C5a2		C5a2		C5a2		C5a2
030-070		B4a2		B5a						
030-095		C4a		C5a2		C5a2		C5a2		C5a2
030-135	C5a1		C6b							
040-070		C4a		C5a2		C5a2				
040-095						C5a2		C5a2		C5a2
040-110	C5a1									
040-135	C5a1		C6b		C6b					
040-150	D5a		D6a		D6a		D7a		D7a	
050-070		C4a		C5a2		C5a2		C5a2		C5a2
050-095	D5a									
050-110	C5a1		C6b							
050-135	D5a		D6a		D6a		D7a		D7a	
050-150			D6a		D6a		D7a		D7a	
060-095	D5a		D6a							
060-110	D5a		D6a		D6a		D7a			
060-135	D5a		D6a		D6a		D7a		D7a	
060-150							D7b		D7b	
080-135	D5a		D6a		D6a		D7a		D7a	
080-150							D7b		D7b	
100-150									D7b	

Pump size	Motor frame size									
	404TC	404TSC	405TC	405TSC	444TC	444TSC	445TC	447TC	449TC	
030-095		C6a		C6a		C7a				
040-095		C6a		C6a		C7a				
040-150	D8a		D8a		D9a		D9a			
050-150	D8a		D8a		D9a		D9a			
060-135	D8a		D8a		D9a					
060-150	D8a		D8a		D9b		D9b	D9b	D9b	
080-135	D8a		D8a		D9a		D9a			
080-150	D8a		D8a		D9b		D9b	D9b	D9b	
100-150	D8a		D8a		D9b		D9b	D9b	D9b	

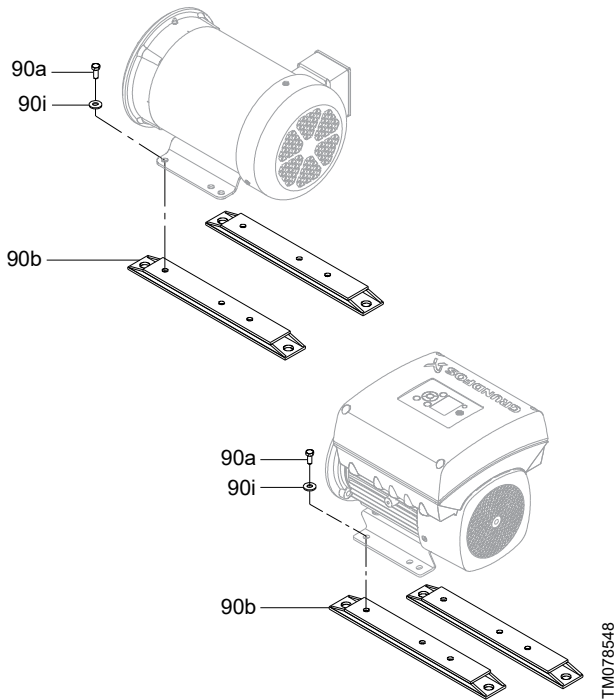
**Step 3: Use the coupling code to find the correct coupling.**

Coupling code	Kit, Coupling	Coupling code	Kit, Coupling
B1a	<a href="#">92521637</a>	C6a	<a href="#">92521647</a>
B2a	<a href="#">92521638</a>	C6b	<a href="#">92521648</a>
B3a	<a href="#">92521639</a>	C7a	<a href="#">92521649</a>
B4a1	<a href="#">92521640</a>	D3a	<a href="#">92521650</a>
B4a2	<a href="#">92521640</a>	D4a	<a href="#">92521651</a>
B5a	<a href="#">92521641</a>	D5a	<a href="#">92521652</a>
C2a	<a href="#">92521642</a>	D6a	<a href="#">92521653</a>

Coupling code	Kit, Coupling	Coupling code	Kit, Coupling
C3a	<a href="#">92521643</a>	D7a	<a href="#">92521654</a>
C4a	<a href="#">92521644</a>	D7b	<a href="#">92521655</a>
C4b	<a href="#">92521645</a>	D8a	<a href="#">92521656</a>
C5a1	<a href="#">92521646</a>	D9a	<a href="#">92521657</a>
C5a2	<a href="#">92521646</a>	D9b	<a href="#">92521658</a>



### Kit, Support rails under motor



**Kit, Support rails under motor**

- 90b: 2 x Support rail
- 90a: 4 x Hex screw
- 90i: 4 x Washer

**Step 1: Find the motor frame size on the motor nameplate.**

CAT.NO.	EM25254T-4	SPEC NO.	P44G1775
HP	250	AMPS	275
<b>FRAME</b>	<b>447T</b>	RPM	1785
DRIVE END BEARING	90BC03J30X	PHASE	3
OPP D.E. BEARING	90BC03J30X	TYPE	P
SER.NO.		POWER FACTOR	88
		MAX CORR KVAR	40.0
		NEMA-NOM-EFFICIENCY	96.2
		GUARANTEED EFFICIENCY	95.8
		NEMA NOM/CSA QUOTED EFF	
		MOTOR WEIGHT	2015

**Step 2: Find the pump size and motor frame size, then note the support rails code.**

Pump size	Motor frame size									
	143TC	145TC	182TC	184TC	213TC	215TC	254TC	256TC	284TC	284TSC
012-070	E1r	E1r	AC2r	AC2r	C2r	C2r	A2r			
015-070	E1r	E1r	AC2r	AC2r	C2r	C2r	A2r	A2r		
015-090		F1r	D1r	D1r		C2r	C3r	C3r		K1
015-095		F1r	D1r	D1r	C2r	C2r	C3r	C3r		K1
020-095		F1r	D1r	D1r	C2r	C2r	C3r	C3r		K1
020-110			D1r	D1r	C2r	C2r	A2r			
020-135					G1r	G1r	E3r	E3r	L1	
025-070	E1r	E1r	D1r	D1r	C2r	C2r	A2r	A2r		K1
025-095	H1r	H1r	F2r	F2r	E2r	E2r		C3r		K1
025-110				F2r	E2r	E2r	C3r			
030-070		E1r	D1r	D1r		C2r	A2r	A2r		K1
030-095			F2r	F2r	E2r	E2r	C3r			
030-110					E2r	E2r	C3r	C3r		
030-135						I1r	G2r	G2r	M1	
040-070	F1r	F1r	D1r	D1r	C2r		C3r	C3r		K1
040-095				H2r	G1r	G1r	E3r	E3r	L1	
040-110					G1r	G1r	E3r	E3r		
040-135						I1r	G2r	G2r	M1	
040-150									N1	
050-070	H1r	H1r	F2r	F2r	E2r	E2r	C3r	C3r		K1
050-095					I1r	I1r	G2r	G2r	M1	
050-110						I1r	G2r	G2r	M1	
050-135								I2r	N1	
060-095						J1r	I2r	I2r	N1	
060-110							I2r	I2r	N1	
060-135								I2r	N1	
080-135									Q1	

Pump size	Motor frame size									
	286TC	286TSC	324TC	324TSC	326TC	326TSC	364TC	364TSC	365TC	365TSC
015-090		K1		K2						
015-095		K1		K2		K2				
020-095		K1		K2		K2		K4		
025-070		K1								
025-095		K1		K2		K2		K4		K4
030-070		K1		K2						
030-095		K1		K2		K2		K4		K4
030-135	M1		L2							
040-070		K1		K2		K2				
040-095						K2		K4		K4
040-110	L1									
040-135	M1		L2		L2					
040-150	N1		M2		M2		L3		L3	
050-070		K1		K2		K2		K4		K4
050-095	M1									
050-110	M1		L2							
050-135	N1		M2		M2		L3		L3	
050-150			AA1		AA1		AB1		AB1	
060-095	N1		M2							
060-110	N1		M2		M2		L3			
060-135	N1		M2		M2		L3		L3	
060-150							AB1		AB1	

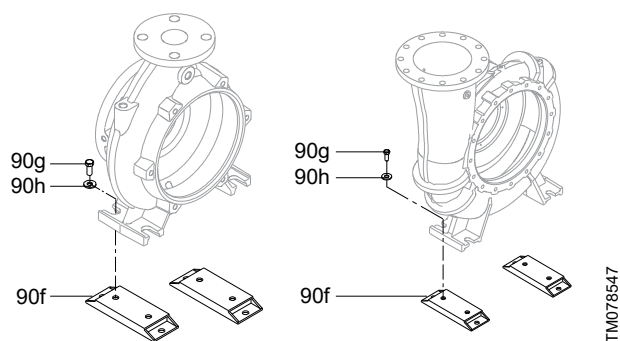
Pump size	Motor frame size									
	286TC	286TSC	324TC	324TSC	326TC	326TSC	364TC	364TSC	365TC	365TSC
080-135	Q1		P1		P1		O1		O1	
080-150							Q2		Q2	
100-150									S1	

Pump size	Motor frame size									
	404TC	404TSC	405TC	405TSC	444TC	444TSC	445TC	447TC	449TC	
030-095		K3		K3		K5				
040-095		K3		K3		K5				
040-150	K3		K3		K5		K5			
050-150	AC1		AC1		T1		T1			
060-135	K3		K3		K5					
060-150	AC1		AC1		T1		T1	T1	T1	
080-135	W1		W1		U1		U1			
080-150	P2		P2		V1		V1	V1	V1	
100-150	R1		R1		Y1		Y1	Y1	Y1	

### Step 3: Use the code of support rails to find the correct kit.

Code of support rails	Kit, Support rails	Code of support rails	Kit, Support rails	Code of support rails	Kit, Support rails
A2r	<a href="#">93196834</a>	J1r	<a href="#">92521518</a>	Q1	<a href="#">92521531</a>
C2r	<a href="#">92521504</a>	K1	<a href="#">93196835</a>	Q2	<a href="#">92521532</a>
C3r	<a href="#">92521505</a>	K2	<a href="#">92521520</a>	R1	<a href="#">92521533</a>
D1r	<a href="#">92521506</a>	K3	<a href="#">92521521</a>	S1	<a href="#">92521534</a>
E1r	<a href="#">92521507</a>	K4	<a href="#">92521543</a>	T1	<a href="#">92521535</a>
E2r	<a href="#">92521508</a>	K5	<a href="#">92521544</a>	U1	<a href="#">92521536</a>
E3r	<a href="#">92521509</a>	L1	<a href="#">92521522</a>	V1	<a href="#">92521537</a>
F1r	<a href="#">92521510</a>	L2	<a href="#">92521523</a>	W1	<a href="#">92521538</a>
F2r	<a href="#">92521511</a>	L3	<a href="#">92521524</a>	Y1	<a href="#">92521539</a>
G1r	<a href="#">92521512</a>	M1	<a href="#">92521525</a>	AA1	<a href="#">92521540</a>
G2r	<a href="#">92521513</a>	M2	<a href="#">92521526</a>	AB1	<a href="#">92521541</a>
H1r	<a href="#">92521514</a>	N1	<a href="#">92521527</a>	AC1	<a href="#">92521542</a>
H2r	<a href="#">92521515</a>	O1	<a href="#">92521528</a>	AC2r	<a href="#">92521545</a>
I1r	<a href="#">92521516</a>	P1	<a href="#">92521529</a>		
I2r	<a href="#">92521517</a>	P2	<a href="#">92521530</a>		

## Kit, Support rails under pump



### Kit, support rails under pump

90f: 2 x Support rail

90g: 4 x Hex screw

90h: 4 x Washer

### Step 1: Find the motor frame size on the motor nameplate.

CAT.NO.	EM25254T-4		SPEC NO.	P44G1775	
HP	250	AMPS	275	VOLTS	460
DESIGN	B				
<b>FRAME</b>	<b>447T</b>	RPM	1785	HZ	60
DRIVE END BEARING	90BC03J30X	PHASE	3	DUTY	CONT
OPP D.E. BEARING	90BC03J30X	TYPE	P	ENCL	DP
SER.NO.		POWER FACTOR	88	CODE	G
		NEMA-NOM-EFFICIENCY	96.2		
		MAX CORR KVAR	40.0	GUARANTEED EFFICIENCY	95.8
		NEMA NOM/CSA QUOTED EFF			
		MOTOR WEIGHT	2015		

### Step 2: Find the pump size and motor frame size, then note the support rails code.

Pump size	Motor frame size									
	143TC	145TC	182TC	184TC	213TC	215TC	254TC	256TC	284TC	284TSC
012-070	X8	X8	X9	X9	X9	X9	X9			
015-070	X8	X8	X9	X9	X9	X9	X9	X9		
015-090		X0	X0	X0		X0	X5	X5		X5
015-095		X0	X0	X0	X0	X0	X5	X5		X5
020-095		X0	X0	X0	X0	X0	X5	X5		X5
020-110			X0	X0	X0	X0	X0			
020-135					X0	X0	X0	X0	X0	
025-070	X0	X0	X1	X1	X1	X1	X1	X1		X7
025-095	X0	X0	X0	X0	X0	X0		X0		X0
025-110				X0	X0	X0	X0			
030-070		X0	X1	X1		X1	X1	X1		X7
030-095			X0	X0	X0	X0	X0			
030-110					X0	X0	X0	X0		
030-135						X0	X0	X0	X0	
040-070	X0	X0	X0	X0	X0		X5	X5		X5
040-095				X0	X0	X0	X0	X0		
040-110					X0	X0	X0	X0	X0	
040-135						X0	X0	X0	X0	
040-150									X0	
050-070	X0	X0	X0	X0	X0	X0	X0	X0		X0
050-095					X0	X0	X0	X0	X0	
050-110						X0	X0	X0	X0	
050-135								X0	X0	
060-095						X0	X0	X0	X0	

Pump size	Motor frame size									
	143TC	145TC	182TC	184TC	213TC	215TC	254TC	256TC	284TC	284TSC
060-110							X0	X0	X0	
060-135								X0	X0	
080-135									X0	

Pump size	Motor frame size									
	286TC	286TSC	324TC	324TSC	326TC	326TSC	364TC	364TSC	365TC	365TSC
015-090		X5		X6						
015-095		X5		X6		X6				
020-095		X5		X6		X6		X12		
025-070		X7								
025-095		X0		X2		X2		X3		X3
030-070		X7		X13						
030-095		X0		X2		X2		X3		X3
030-135	X0		X0							
040-070		X5		X6		X6				
040-095						X0		X2		X2
040-110	X0									
040-135	X0		X0		X0					
040-150	X0		X0		X0		X0		X0	
050-070		X0		X2		X2		X3		X3
050-095	X0									
050-110	X0		X0							
050-135	X0		X0		X0		X0		X0	
050-150			X0		X0		X0		X0	
060-095	X0		X0							
060-110	X0		X0		X0		X0			
060-135	X0		X0		X0		X0		X0	
060-150							X0		X0	
080-135	X0		X0		X0		X0		X0	
080-150							X0		X0	
100-150									X0	

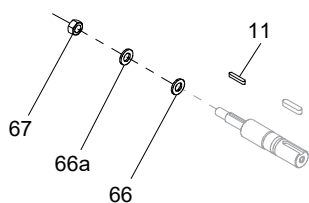
Pump size	Motor frame size									
	404TC	404TSC	405TC	405TSC	444TC	444TSC	445TC	447TC	449TC	
030-095		X4		X4		X11				
040-095		X3		X3		X4				
040-150	X0		X0		X10		X10			
050-150	X0		X0		X0		X0			
060-135	X0		X0		X10					
060-150	X0		X0		X0		X0	X0	X0	
080-135	X0		X0		X0		X0			
080-150	X0		X0		X0		X0	X0	X0	
100-150	X0		X0		X0		X0	X0	X0	

**Step 3: Use the code of support rails to find the correct kit.**

Code of support rails	Kit, Support rails	Code of support rails	Kit, Support rails
X0	No support rail required	X7	<a href="#">92521552</a>
X1	<a href="#">92521546</a>	X8	<a href="#">92521553</a>
X2	<a href="#">92521547</a>	X9	<a href="#">92521554</a>
X3	<a href="#">92521548</a>	X10	<a href="#">92521555</a>

Code of support rails	Kit, Support rails	Code of support rails	Kit, Support rails
X4	<a href="#">92521549</a>	X11	<a href="#">92521556</a>
X5	<a href="#">92521550</a>	X12	<a href="#">92521557</a>
X6	<a href="#">92521551</a>	X13	<a href="#">92521558</a>

### Kit, Nut, washer and key for impeller & Bulk, Nut



TM078538

#### Kit, Nut, washer and key for impeller

- 11: Needed number of keys
- 67: Hex nut
- 66a: Lock washer
- 66: Washer

#### Bulk, Nut

67: 5 x Nut

#### Step 1: Find the pump size and note the code.

Pump size	Code	Pump size	Code
012-070	A	030-135	C
015-070-2P	B	040-070	B
015-070-4P	A	040-095-2P	C
015-090	B	040-095-4P	B
015-095	B	040-110	C
020-095-2P	C	040-135	C
020-095-4P	B	040-150	D
020-110	B	050-070	B
020-135	C	050-095	C
025-070-2P	B	050-110	C
025-070-4P	A	050-135	D
025-095-2P	C	050-150	D
025-095-4P	B	060-095	C
025-110	C	060-110	D
030-070-2P	B	060-135	D
030-070-4P	A	060-150	E
030-095-2P	C	080-135	D
030-095-4P	B	080-150	E
030-110	C	100-150	E

Step 2: Use the code and material code to find the needed kit.

<b>GRUNDFOS</b> DK-8850 Bjerringbro, Denmark		n 1750 RPM	PEI CL 0.88	Reserved QR code
Q 2022.6 GPM	H 101.5 ft	p/t 175/248		
Model NBS 060-110/10.75AAG6S2ESBQQETW4		R6		
PN-SN 99931992-10000546		PC P9-2048		
Assembled In Brookshire, TX		Imp.Dia 10.75 (in.)		

Material code

#### Kit, Nut, washer and key for impeller

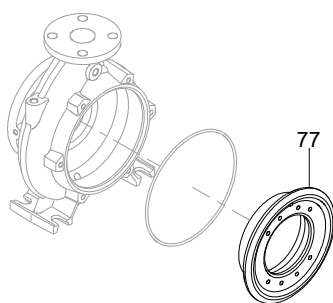
Code	Nut	Material code		
		S2, S3, S6, S7, SA, SB, SE, SF	S4, S8, SC, SG	S5, S9, SD, SH, T2, TA
		Nut, washer and key material		
		304 (1.4301)	316 ( 1.4401 )	SAF 2205 ( 1.4462 )
A	M12	<a href="#">92521562</a>	<a href="#">92521567</a>	<a href="#">92521572</a>
B	M14	<a href="#">95046321</a>	<a href="#">96939128</a>	<a href="#">96939129</a>
C	M18	<a href="#">95046322</a>	<a href="#">92521565</a>	<a href="#">96939131</a>
D	M24	<a href="#">95046323</a>	<a href="#">96939132</a>	<a href="#">96939133</a>
E	M27	<a href="#">92521563</a>	<a href="#">96939134</a>	<a href="#">96939135</a>

#### Bulk, Nut

Code	Nut	Material code		
		S2, S3, S6, S7, SA, SB, SE, SF	S4, S8, SC, SG	S5, S9, SD, SH, T2, TA
		Nut, washer and key material		
		304 (1.4301)	316 ( 1.4401 )	SAF 2205 ( 1.4462 )
A	M12	<a href="#">92526533</a>	<a href="#">92526536</a>	<a href="#">92579695</a>
B	M14	<a href="#">92526531</a>	<a href="#">92514630</a>	<a href="#">92514636</a>
C	M18	<a href="#">92526535</a>	<a href="#">92514631</a>	<a href="#">92514637</a>
D	M24	<a href="#">92526532</a>	<a href="#">92514632</a>	<a href="#">92514638</a>
E	M27	<a href="#">92526534</a>	<a href="#">92514633</a>	<a href="#">92514639</a>

## Kit/Spare, Cover

### Insert cover

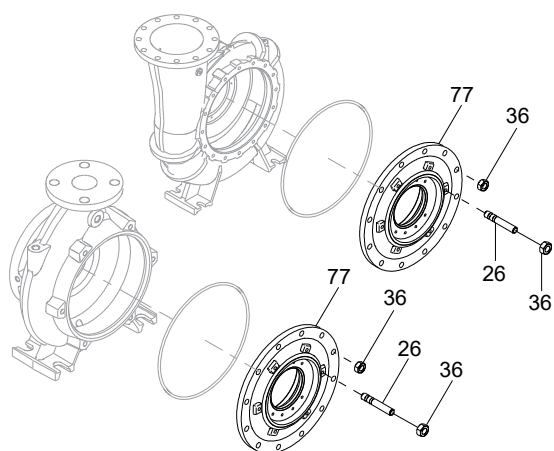


TM078539

#### Spare, Insert cover

77: Cover

### Bolt-in cover



TM1040597

#### Kit, Bolt-in cover

77: Cover

26: Needed number of stay bolts

36: Needed number of hex nuts

### Step 1: Find the pump size and note the cover code.

Pump size	Cover code	Pump size	Cover code
012-070	A	040-095-2P	F
015-070	A	040-095-4P	C
015-090	B	040-110	H
015-095	B	040-135	M
020-095-2P	E	040-150	Q
020-095-4P	B	050-070	A
020-110	B	050-095	D
020-135	L	050-110	H
025-070	A	050-135	N
025-095-2P	F	050-150	Q
025-095-4P	C	060-095	D
025-110	H	060-110	K
030-070	A	060-135	P
030-095-2P	F	060-150	T
030-095-4P	C	080-135	P
030-110	H	080-150	S
030-135	M	100-150	S
040-070	A		

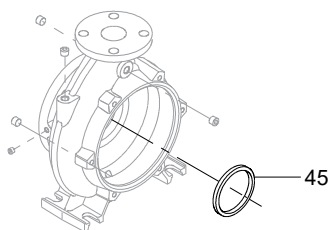
### Step 2: Use the cover code to find the correct cover kit.

Cover code	Insert cover		Bolt-in cover	
	Spare		Kit	
	CED	Coat	CED	Coat
A	<a href="#">92521769</a>	<a href="#">92526445</a>	-	-
B	-	-	<a href="#">92521585</a>	<a href="#">92526460</a>
C	-	-	<a href="#">92521580</a>	<a href="#">92526454</a>
D	-	-	<a href="#">92521581</a>	<a href="#">92526455</a>
E	-	-	<a href="#">92521584</a>	<a href="#">92526458</a>
F	-	-	<a href="#">92521579</a>	<a href="#">92526452</a>
H	-	-	<a href="#">92521582</a>	<a href="#">92526456</a>
K	<a href="#">92521768</a>	<a href="#">92526444</a>	-	-
L	-	-	<a href="#">92521586</a>	<a href="#">92526461</a>
M	-	-	<a href="#">92521583</a>	<a href="#">92526457</a>
N	-	-	<a href="#">92521574</a>	<a href="#">92526446</a>
P	-	-	<a href="#">92521575</a>	<a href="#">92526448</a>
Q	-	-	<a href="#">92521576</a>	<a href="#">92526449</a>
S	-	-	<a href="#">92521578</a>	<a href="#">92526451</a>
T	-	-	<a href="#">92521577</a>	<a href="#">92526450</a>



## Kit/Spare, Wear ring

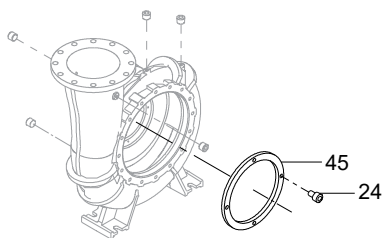
### Press fitted wear ring



TM076537

Spare, Wear ring
45: Wear ring

### Screw fitted wear ring



TM080477

Kit, Wear ring
45: Wear ring
24: 4 x Socket head cap screw

Step 1: Find the pump size and note the ID code of the wear ring.

Pump size	ID code	Pump size	ID code
012-070	63	040-110	130-2
015-070	90	040-135	144
015-090	76	040-150	174
015-095	76	050-070	144
020-095	112	050-095	174
020-110	95	050-110	154
020-135	95	050-135	154
025-070	90	050-150	185
025-095	100	060-095	185
025-110	100	060-110	185
030-070	112	060-135	200
030-095	112	060-150	210
030-110	112	080-135	224
030-135	122-2	080-150	222
040-070	122-1	100-150	240
040-095	130-1		

Step 2: Use the ID code and the material code to find the needed kit/spare. Make a control check by measuring the old wear ring dimensions.

<b>GRUNDFOS</b> DK-8850 Bjerringbro, Denmark		n 1750 RPM	PEI CL 0.88	Reserved QR code
Q 2022.6 GPM	H 101.5 ft	p/t 175/248		
Model NBS 060-110/10.75AAG6XESBQQETW4		R6		
PN-SN 99931992-10000546		PC P9-2048		
Assembled In Brookshire, TX		Imp.Dia 10.75 (in.)		

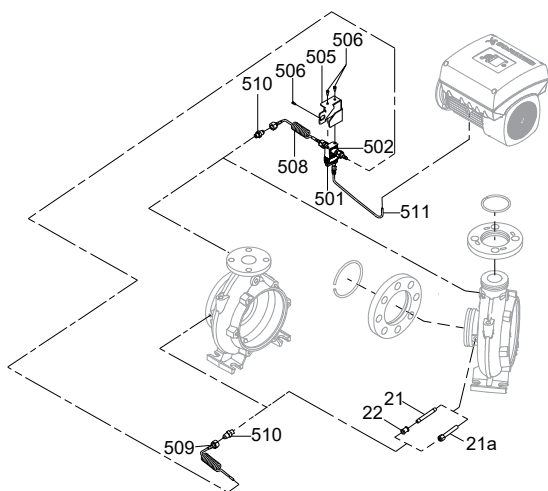
### Material code

ID	Wear ring dimensions	Material code					
		X		X		X	
		Wear ring material					
		Bronze		Cast iron		Brass	
		Spare	Kit	Spare	Kit	Spare	Kit
63	D63/D77x10	96810098	-	96810122	-	99208775	-
76	D76/D90x10	96810099	-	96810123	-	99208825	-
90	D90/D104x10	96810100	-	96810126	-	99208821	-
95	D95/D109x10	92526542	-	92526543	-	92526541	-
100	D100/D114x10	96810102	-	96810140	-	99208819	-
112	D112/D126x10	96810103	-	96810141	-	99208818	-
122-1	D122/D136x10	96810104	-	96939585	-	99208817	-
122-2	D122/D138x13	96810105	-	96939586	-	99208813	-
130-1	D130/D144x10	96810106	-	96939587	-	99208815	-
130-2	D130/D146x13	96797626	-	96939588	-	99208810	-
144	D144/D158x15	96810107	-	96939589	-	99208748	-
154	D154/D168x15	96797628	-	96939590	-	99208807	-
174	D174/D188x15	96810108	-	96939591	-	99208745	-
185	D185/D199x15	96810109	-	96939602	-	99208792	-
200	D200/D214x15	96810110	-	96939603	-	99208786	-
210	D210/D224x15	96810111	-	96939604	-	99208749	-

ID	Wear ring dimensions	Material code					
		X		X		X	
		Wear ring material					
		Bronze		Cast iron		Brass	
		Spare	Kit	Spare	Kit	Spare	Kit
222	D222/D272x15	-	-	-	96939606	-	96939611
224	D224/D238x15	96810112	-	96939605	-	99208743	-
240	D240/D290x15	-	92526540	-	6939608	-	96939613

<sup>8)</sup> The material code 'X' is shown in the type designation and indicates that the wear ring is a variant. Contact Grundfos service office to check for installed wear ring material.

## Kit/Spare, Sensor for NBSE Series 2000



TM1040122

**NOTE!** For all NBS, NBSE pump housings, the bores pos. 1+2+3+4+ (6 or 7) are drilled and plugged.

For more information, see section [3.24 Pump housing plugs](#)

### Kit, Differential-pressure sensor

- 501: Sensor
- 502: Sensor housing
- 505: Sensor bracket
- 506: 2 x screw
- 508+509: 2 x Capillary tube
- 510: 2 x Adapter plug
- 511: Cable

### Spare, Differential-pressure sensor

- 501: Sensor

### Spare, Bracket for sensor

- 505: Sensor bracket

### Kit, Capillary tube

- 508 + 509: 2 x Capillary tube
- 510: 2 x Adapter plug

### Spare, Cable

- 511: Cable (including connector to sensor)

### Kit, Extension pipe to connect capillary tube to inlet – loose flange

- 21: Connector pipe
- 22: Nipple piece

### Kit, Capillary tube

[92526544](#)

### Kit, Differential-pressure sensor

Cable length	0-4 bar	0-6 bar	0-10 bar
1.2 m	<a href="#">99562724</a>	<a href="#">99562725</a>	<a href="#">99562726</a>
2.0 m	<a href="#">93091516</a>	<a href="#">93091517</a>	<a href="#">93091518</a>

### Kit, Extension pipe to connect capillary tube to inlet – loose flange

[92720672](#)

### Spare, Differential-pressure sensor

0-4 bar	0-6 bar	0-10 bar
<a href="#">93103760</a>	<a href="#">93103327</a>	<a href="#">93103328</a>

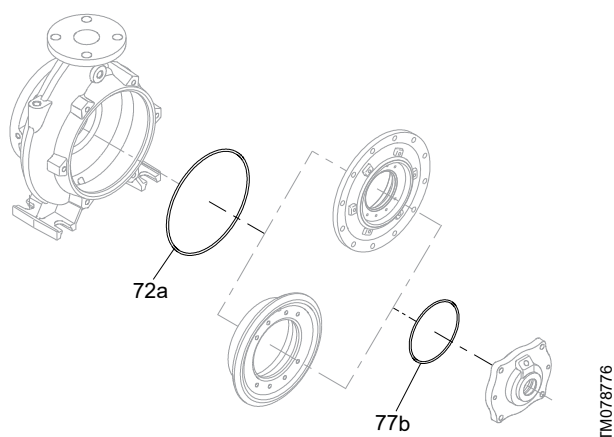
### Spare, Bracket for sensor

[99562727](#)

### Spare, Cable

Cable length	Spare, Sensor cable
1.2 m	<a href="#">99562728</a>
2.0 m	<a href="#">93091519</a>

## Spare/Bulk, O-ring for cover and seal cover



### Spare, O-ring (cover-pump housing)

72a: O-ring

### Bulk, O-ring (cover-pump housing)

72a: 5 x O-ring

### Spare, O-ring (seal cover-cover)

77b: O-ring

### Bulk, O-ring (seal cover-cover)

77b: 5 x O-ring

### Step 1: Find the pump size and note the O-ring code for Pos. 72a and 77b.

Pump size	O-ring code		Pump size	O-ring code	
	Pos. 72a	Pos. 77b		Pos. 72a	Pos. 77b
012-070	B	A	040-110	D	A
015-070	B	A	040-135	E	A
015-090	C	A	040-150	F	B
015-095	C	A	050-070	B	A
020-095	C	A	050-095	A	A
020-110	C	A	050-110	D	A
020-135	E	A	050-135	E	B
025-070	B	A	050-150	F	B
025-095	A	A	060-095	A	A
025-110	D	A	060-110	D	B
030-070	B	A	060-135	E	B
030-095	A	A	060-150	F	B
030-110	D	A	080-135	E	B
030-135	E	A	080-150	F	B
040-070	B	A	100-150	F	B
040-095	A	A			

**Step 2: Use the O-ring code and check the O-ring material in the pump to find the needed spare.**

<b>GRUNDFOS</b> DK-8850 Bjerringbro, Denmark		n 1750 RPM	PEI CL 0.88	Reserved QR code
Q 2022.6 GPM	H 101.5 ft	175/248		
Model NBS 060-110/10.75AAG6S2	SBQQETW4		R6	
PN-SN 99931992-10000546	PC P9-2048			
Assembled In Brookshire, TX	Imp.Dia 10.75 (in.)			

O-ring code

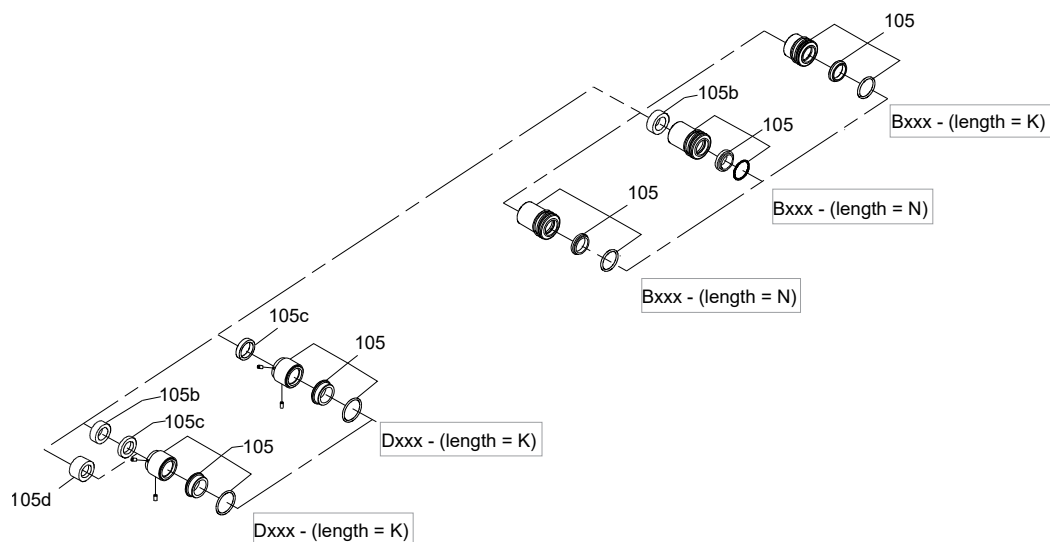
**Spare/bulk, O-ring for Pos. 72a**

		Pos. 72a					
O-ring code	O-ring description	Spare (1 pc)			Bulk (5 pcs)		
		Material			Material		
		E (EPDM)	E (EPDM-NSF)	V (Viton)	E (EPDM)	E (EPDM-NSF)	V (Viton)
A	243x3.5	92526496	92526499	92526497	92526507	92526519	92526513
B	171.04x3.53	97757659	92526500	92526498	92526508	92526520	92526514
C	253.6x3.53	97757672	92526501	97757699	92526509	92526521	92526515
D	278.99x3.53	97757673	92526502	97757703	92526510	92526522	92526516
E	329.79x3.53	97757675	92526503	97757705	92526511	92526523	92526517
F	430.66x3.53	97757676	92526504	97757707	92526512	92526524	92526518

**Spare/bulk, O-ring for Pos. 77b**

		Pos. 77b					
O-ring code	O-ring description	Spare (1 pc)			Bulk (5 pcs)		
		Material			Material		
		E (EPDM)	E (EPDM-NSF)	V (Viton)	E (EPDM)	E (EPDM-NSF)	V (Viton)
A	100x3.0	97761203	92526505	97761204	92526525	92526529	92526527
B	129.5 x 3.00	97757693	92526506	97757714	92526526	92526530	92526528

## Spare/Bulk, Shaft seal &amp; Spare, Spacer



TM083038

**Spare, Shaft seal**

105: Shaft seal

**Bulk, Shaft seal**

105: 5 x Shaft seal

**Spare, Spacer**

105b/105c/105d: Spacer

## Installation length


"X" ('Xtra short')	Types Bxxx			Types Dxxx
	"K" ('short')	"N" ('normal')	"K" ('short')	

**Step 1: Find the pump size and note the shaft seal/spacer code.**

Pump size	Seal inner dia. [inch]/[mm]	Spacer code	Pump size	Seal inner dia. [inch]/[mm]	Spacer code
012-070	1.10/28	B	040-070-4P	1.10/28	B
015-070	1.10/28	B	040-095-2P	1.50/38	C
015-090-2P	1.50/38	C	040-095-4P	1.10/28	B
015-090-4P	1.10/28	B	040-110	1.50/38	C
015-095-2P	1.50/38	C	040-135	1.50/38	C
015-095-4P	1.10/28	B	040-150	1.89/48	D
020-095-2P	1.50/38	C12	050-070-2P	1.50/38	C
020-095-4P	1.10/28	B	050-070-4P	1.10/28	B
020-110	1.10/28	B	050-095	1.89/48	D
020-135	1.50/38	C	050-110	1.50/38	C
025-070	1.10/28	B	050-135	1.89/48	D
025-095-2P	1.50/38	C12	050-150	1.89/48	D
025-095-4P	1.10/28	B	060-095	1.89/48	D
025-110	1.50/38	C	060-110	1.89/48	D
030-070	1.10/28	B	060-135	1.89/48	D

Pump size	Seal inner dia. [inch]/[mm]	Spacer code	Pump size	Seal inner dia. [inch]/[mm]	Spacer code
030-095-2P	1.50/38	C	060-150	2.17/55	E
030-095-4P	1.10/28	B	080-135	1.89/48	D
030-110	1.50/38	C	080-150	2.17/55	E
030-135	1.50/38	C	100-150	2.17/55	E
040-070-2P	1.50/38	C			

**Step 2: Use the seal inner dia. and standard shaft seal types to find the needed spare/bulk.**



DK-8850 Bjerringbro, Denmark

n 1750 RPM	PH	CL 0.88	Reserved QR code
Q 2022.6 GPM	H 101.5 ft	p/t 17.248	
Model NBS 060-110/10.75AAG6S2ESBQQETW4			R6
PN-SN 99931992-10000546		PC P9-2048	
Assembled In Brookshire, TX		Imp.Dia 10.75 (in.)	

Shaft seal type

**Standard shaft seal types**

Material	Shaft seal diameter [inch]/[mm]	BQQE						BQQV					
		Spare (1pc)			Bulk (5pcs)			Spare (1pc)			Bulk (5pcs)		
		X	K	N	X	K	N	X	K	N	X	K	N
GG	1.10/28	-	-	98434904	-	-	99380916	-	-	98434905	-	-	92514269
GG	1.50/38	-	-	98434906	-	-	92514302	-	-	98434908	-	-	92514301
GG	1.50/38	-	97904623	-	-	92526480	-	-	92526462	-	-	92526481	-
GG	1.89/48	-	-	98434909	-	-	92514334	-	-	98434941	-	-	92514333
GG	2.17/55	-	-	98434943	-	-	92514388	-	-	98434944	-	-	92514387

Material	Shaft seal diameter [inch]/[mm]	DAQF						DQQE						DQQE-NSF					
		Spare (1pc)			Bulk (5pcs)			Spare (1pc)			Bulk (5pcs)			Spare (1pc)			Bulk (5pcs)		
		X	K	N	X	K	N	X	K	N	X	K	N	X	K	N	X	K	N
GG	1.10/28	-	96548355	-	92514233	-	97769895	-	92514258	-	92526474	-	92526491	-					
GG	1.50/38	-	96548359	-	92514274	-	97769897	-	92514291	-	92526475	-	92526492	-					
GG	1.50/38	-	96548359	-	92514274	-	97769897	-	92514291	-	92526475	-	92526492	-					
GG	1.89/48	-	96658796	-	92514307	-	97685509	-	92514323	-	92526477	-	92526494	-					
GG	2.17/55	-	96658807	-	92514335	-	97685596	-	92514356	-	92526479	-	92526495	-					

**Variants shaft seal types**

Contact Grundfos for further information about delivery.


Material	Seal inner dia. [inch]/[mm]	BBQV						BQBE						DQQK					
		Spare (1 pcs)			Bulk (5 pcs)			Spare (1 pcs)			Bulk (5 pcs)			Spare (1 pcs)			Bulk (5 pcs)		
		X	K	N	X	K	N	X	K	N	X	K	N	X	K	N	X	K	N
GG	0.79/20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GG	1.10/28	-	-	97769885	-	-	92514267	-	-	96548351	-	-	-	97769911	-	-	92514260	-	-
GG	1.50/38	-	-	97769887	-	-	92514299	-	-	96548356	-	-	-	97769913	-	-	92514287	-	-
GG	1.89/48	-	-	97769889	-	-	92514331	-	-	-	-	-	-	97685516	-	-	92514315	-	-

Material	Seal inner dia. [inch] / [mm]	DQQV						DQQX						AQQE					
		Spare (1 pcs)			Bulk (5 pcs)			Spare (1 pcs)			Bulk (5 pcs)			Spare (1 pcs)			Bulk (5 pcs)		
		X	K	N	X	K	N	X	K	N	X	K	N	X	K	N	X	K	N
GG	0.79/20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GG	1.10/28	-	97769899	-	-	92514259	-	-	97769907	-	-	92514254	-	-	96551965	-	-	92514232	-
GG	1.50/38	-	97769901	-	-	92514292	-	-	97769909	-	-	92514286	-	-	96551960	-	-	92514273	-
GG	1.89/48	-	97685511	-	-	92514324	-	-	97685514	-	-	92514313	-	-	96658799	-	-	92514306	-

Material	Seal inner dia. [inch] / [mm]	AQKQ						AQQV						AQQX					
		Spare (1 pcs)			Bulk (5 pcs)			Spare (1 pcs)			Bulk (5 pcs)			Spare (1 pcs)			Bulk (5 pcs)		
		X	K	N	X	K	N	X	K	N	X	K	N	X	K	N	X	K	N
GG	0.79/20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GG	1.10/28	-	97769915	-	-	92514253	-	-	96551967	-	-	92514231	-	-	97769903	-	-	92514239	-
GG	1.50/38	-	97769917	-	-	92514285	-	-	96551962	-	-	92514272	-	-	97769905	-	-	92514280	-
GG	1.89/48	-	97685504	-	-	92514317	-	-	96658800	-	-	92514305	-	-	97685501	-	-	92514319	-

Material	Seal inner dia. [inch] / [mm]	AQAE						AQAV											
		Spare (1 pcs)			Bulk (5 pcs)			Spare (1 pcs)			Bulk (5 pcs)			Spare (1 pcs)			Bulk (5 pcs)		
		X	K	N	X	K	N	X	K	N	X	K	N	X	K	N	X	K	N
GG	0.79/20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GG	1.10/28	-	96551964	-	-	92514219	-	-	96551966	-	-	92514230	-	-	-	-	-	-	-
GG	1.50/38	-	96551929	-	-	92514270	-	-	96551961	-	-	92514271	-	-	-	-	-	-	-
GG	1.89/48	-	96658797	-	-	92514303	-	-	96658798	-	-	92514304	-	-	-	-	-	-	-

**Step 3: Use the spacer code and material code to find the needed spacer.**



DK-8850 Bjerringbro, Denmark

n 1750 RPM PEI CL 0.88 Reserved QR code

Q 2022.6 GPM H 101.5 ft p/t 175/248

Model NBS 060-110/10.75AAG6S2ESBQQETW4 R6

PN-SN 99931992-10000546 PC P9-2048

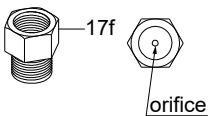
Assembled In Brookshire, TX Imp.Dia 10.75 (in.)

Material code

**Spare, Spacer**

Shaft seal/spacer code	Spacer thickness [mm]	Material code	
		S2, S4, S6, S8, SA, SC, SE, SG	S5, S9, SD, SH,T2,TA
B	7.5	96938597	96938598
C	10	96938599	96938600
C12	0	-	-
D	15	96938602	96938603
E	22.5	96938604	96938605

**Spare, Flow control adapter**



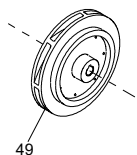
TM079087

**Spare, Flow control adapter**  
17f: Flow control adapter

Spare number: 99857726



### Spare, Impeller



TM078777

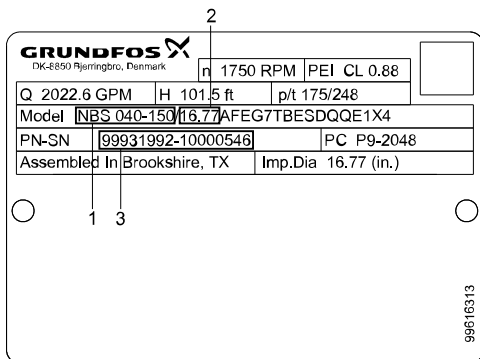
<b>Spare, Impeller</b>
49: Impeller

When ordering a spare impeller and the required trim falls between one of those mentioned in the overview, please inform Grundfos about the following nameplate data:

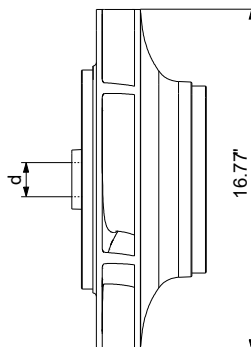
- pump type and size (pos.1)
- actual impeller trim, as indicated after the pump size (pos.2)
- product number and production serial number (PN-SN) (pos.3).

See the nameplate and impeller examples below. This enables Grundfos to produce an exact match of the installed impeller.

### Cylindrical trim impeller

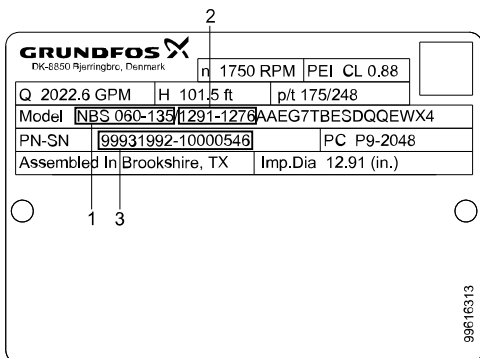


TM078938

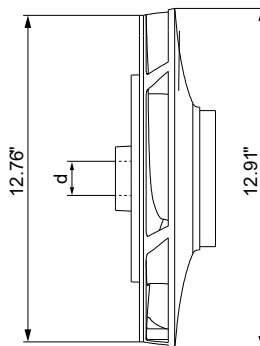


TM078940

### Angle trim impeller



TM078939



TM078941

Pump size	Pole	Actual impeller trim [inch]	Material code			Impeller bore, d [mm]
			S2, S3, S4, S5, SA, SB, SC, SD	S6, S7, S8, S9, SE, SF, SG, SH	T2, TA	
			Impeller material			
			304 (1.4308)	316 (1.4408)	904 (1.4517)	
NBS 012-070	2, 4	6.97	92526547	92526564	92553810	16
		6.65	92727446	92727449	92727462	16
		6.42	92600196	92600198	92600200	16
		6.10	92526549	92526566	92553812	16
		5.87	92526548	92526565	92553811	16
		5.71	92526560	92526567	92553813	16
		5.55	92526562	92526570	92553815	16
		5.47	92727445	92727448	92727461	16
		5.00	92526563	92526571	92553816	16
		4.92	92600195	92600197	92600199	16
		4.69	92727444	92727447	92727460	16
		4.29	92526561	92526568	92553814	16

Pump size	Pole	Actual impeller trim [inch]	Material code			Impeller bore, d [mm]
			S2, S3, S4, S5, SA, SB, SC, SD	S6, S7, S8, S9, SE, SF, SG, SH	T2, TA	
			Impeller material			
			304 (1.4308)	316 (1.4408)	904 (1.4517)	
NBS 015-070	2	6.93	92526572	92526584	92553817	24
		6.73	93056986	93056985	93056987	24
		6.30	92526573	92526585	92553818	24
		5.59	92526574	92526586	92553819	24
		5.04	92526576	92526587	92553820	24
	4.49	92526577	92526588	92553821	24	
	4	6.93	92526578	92526590	92553822	16
		6.54	92526579	92526591	92553823	16
		5.91	92526580	92526592	92553824	16
		5.12	92526581	92526593	92553825	16
4.65		92526582	92526594	92553826	16	
NBS 015-090	2	9.84	92526596	92526606	92553827	24
		8.82	92526597	92526608	92553828	24
		8.27	92526598	92526609	92553829	24
		7.80	92526599	92526610	92553830	24
		7.09	92526600	92526611	92553831	24
	4	9.84	92526602	92526612	92553832	24
		8.11	92526603	92526613	92553833	24
		7.24	92526604	92526614	92553834	24
		6.69	92526605	92526615	92553835	24
		9.69	92526616	92526626	92553836	24
NBS 015-095	2	8.82	92526617	92526627	92553837	24
		7.87	92526618	92526628	92553838	24
		7.48	92526619	92526629	92553839	24
		7.01	92526620	92526630	92553840	24
		6.46	92526621	92526631	92553841	24
	4	9.84	92526622	92526632	92553842	24
		8.82	92526623	92526633	92553843	24
		7.32	92526624	92526634	92553844	24
		6.54	92526625	92526635	92553845	24
		9.45	92526636	92526648	92553846	32
NBS 020-095	2	8.90	92526637	92526649	92553847	32
		8.58	92526638	92526650	92553848	32
		8.03	92526639	92526651	92553849	32
		7.17	92526640	92526652	92553850	32
		6.77	92526641	92526653	92553851	32
		6.30	92526642	92526654	92553852	32
		5.75	92526643	92526655	92553853	32
	4	9.45	92526644	92526656	92553854	24
		8.11	92526645	92526657	92553855	24
		6.61	92526646	92526658	92553856	24
NBS 020-110	4	5.83	92526647	92526659	92553857	24
		10.31	92526660	92526664	92553858	24
		9.92	92526661	92526665	92553859	24
		8.98	92526662	92526666	92553860	24
		8.11	92526663	92526667	92553861	24
NBS 020-135	4	13.39-13.23	92526668	92526673	92553884	32
		12.52	92526669	92526674	92553885	32
		11.42	92526670	92526675	92553886	32
		10.16	92526671	92526676	92553887	32
		9.29	92526672	92526677	92553888	32

Pump size	Pole	Actual impeller trim [inch]	Material code			Impeller bore, d [mm]
			S2, S3, S4, S5, SA, SB, SC, SD	S6, S7, S8, S9, SE, SF, SG, SH	T2, TA	
			Impeller material			
			304 (1.4308)	316 (1.4408)	904 (1.4517)	
NBS 025-070	2	6.77	92526678	92526689	92553889	24
		6.65	93056989	93056988	93056990	24
		6.61	92526679	92526690	92553890	24
		6.30	92526680	92526691	92553891	24
		5.67	92526681	92526692	92553892	24
		4.96	92526682	92526693	92553893	24
	4	4.57	92526683	92526694	92553895	24
		6.77	92526684	92526695	92553896	16
		6.61	92526685	92526696	92553897	16
		5.83	92526686	92526697	92553898	16
5.28		92526687	92526698	92553899	16	
NBS 025-095	2	4.65	92526688	92526699	92553900	16
		9.53	92526700	92526714	92553901	32
		9.37	92526701	92526715	92553902	32
		8.43	92526702	92526716	92553903	32
		7.80	92526703	92526717	92553904	32
		7.17	92526704	92526718	92553905	32
		6.30	92526705	92526719	92553906	32
	4	5.98	92526706	92526720	92553907	32
		9.53	92526707	92526721	92553908	24
		9.13	93013778	93013792	93014914	24
		8.43	92526708	92526722	92553909	24
		7.17	92526709	92526723	92553910	24
	6	5.98	92526710	92526724	92553911	24
		9.53	92526707	92526721	92553908	24
8.19		92526711	92526725	92553912	24	
7.17		92526709	92526723	92553913	24	
NBS 025-110	4	6.06	92526713	92526727	92553914	24
		11.02	92526728	92526733	92553915	32
		9.45	92526729	92526734	92553916	32
	6	8.58	92526730	92526735	92553917	32
		11.02	92526728	92526733	92553915	32
		9.61	92526731	92526736	92553918	32
NBS 030-070	2	8.43	92526732	92526737	92553919	32
		6.85	92526738	92526747	92553920	24
		6.30	92526739	92526748	92553921	24
		5.87	93013794	93013797	93014915	24
		5.83	92526740	92526749	92553922	24
		5.59	92526741	92526750	92553923	24
	4	5.04	92526742	92526751	92553925	24
		6.85	92526743	92526752	92553926	16
		5.83	92526744	92526753	92553927	16
		5.20	92526745	92526754	92553928	16
4.72	92526746	92526755	92553929	16		

Pump size	Pole	Actual impeller trim [inch]	Material code			Impeller bore, d [mm]	
			S2, S3, S4, S5, SA, SB, SC, SD	S6, S7, S8, S9, SE, SF, SG, SH	T2, TA		
			Impeller material				
			304 (1.4308)	316 (1.4408)	904 (1.4517)		
NBS 030-095	2	8.86	92526756	92526768	92553930	32	
		8.07	92526757	92526769	92553931	32	
		7.36	92526758	92526770	92553932	32	
		6.89	92526759	92526771	92553933	32	
		6.50	92526760	92526772	92553934	32	
		6.10	92526761	92526773	92553935	32	
	4	8.86	92526762	92526774	92553936	24	
		8.26	93056992	93056991	93056993	24	
		7.52	92526763	92526775	92553937	24	
		6.73	92526764	92526776	92553938	24	
		6.10	92526765	92526777	92553939	24	
	6	8.86	92526762	92526774	92553936	24	
		7.52	92526763	92526775	92553937	24	
		6.57	92526766	92526778	92553940	24	
		6.02	92526767	92526779	92553941	24	
	NBS 030-110	4	10.94-10.63	92526780	92526785	92553942	32
			9.76-9.45	92526781	92526786	92553943	32
			8.5-8.19	92526782	92526787	92553944	32
6		10.94-10.63	92526780	92526785	92553942	32	
		10.47-10.16	92526783	92526788	92553945	32	
		8.58-8.27	92526784	92526789	92553946	32	
NBS 030-135	4	12.91	92526800	92526807	92553947	32	
		11.26	92526801	92526808	92553948	32	
		10.63	92526802	92526809	92553949	32	
		9.92	92526803	92526810	92553950	32	
		8.98	92526804	92526811	92553951	32	
	6	12.91	92526800	92526807	92553947	32	
		11.73	92526805	92526812	92553952	32	
		10.55	92526806	92526813	92553953	32	
		8.98	92526804	92526811	92553951	32	
		6.77	92526814	92526827	92553954	24	
NBS 040-070	2	6.30	92526816	92526828	92553955	24	
		5.75	92526817	92526829	92553956	24	
		5.51	92526818	92526830	92553957	24	
		5.43-4.80	92526819	92526831	92553958	24	
		6.85	92526820	92526832	92553959	24	
	4	6.30	92526821	92526833	92553960	24	
		5.43	92526822	92526834	92553961	24	
		5.12-4.33	92526823	92526835	92553962	24	
		6.85	92526820	92526832	92553959	24	
	6	6.14	92526824	92526836	92553963	24	
		5.51	92526825	92526837	92553964	24	
		5.12-4.8	92526826	92526838	92553965	24	

Pump size	Pole	Actual impeller trim [inch]	Material code			Impeller bore, d [mm]
			S2, S3, S4, S5, SA, SB, SC, SD	S6, S7, S8, S9, SE, SF, SG, SH	T2, TA	
			Impeller material			
			304 (1.4308)	316 (1.4408)	904 (1.4517)	
NBS 040-095	2	8.35	92526839	92526849	92553966	32
		7.72	92526840	92526860	92553967	32
		6.93	92526841	92526861	92553968	32
		6.46	92526842	92526862	92553969	32
	4	9.37	92526843	92526863	92553980	24
		8.35	92526844	92526864	92553981	24
		7.09	92526845	92526865	92553982	24
		6.38	92526846	92526866	92553983	24
	6	9.37	92526843	92526863	92553980	24
		8.98	92526847	92526867	92553984	24
		7.09	92526845	92526865	92553982	24
		6.30	92526848	92526868	92553985	24
NBS 040-110	4	10.08	92526869	92526876	92553986	32
		9.45	92526870	92526877	92553987	32
		8.74	92526871	92526878	92553988	32
		8.11	92526872	92526879	92553989	32
	6	10.08	92526869	92526876	92553986	32
		9.37	92526873	92526880	92553990	32
		8.35	92526874	92526881	92553991	32
		7.17	92526875	92526882	92553992	32
NBS 040-135	4	12.83	92526883	92526892	92553993	32
		11.81	92526884	92526893	92553994	32
		10.94	92526885	92526894	92553996	32
		10.24	92526886	92526895	92553997	32
		9.29	92526887	92526896	92553998	32
	6	12.60	92526888	92526897	92553999	32
		11.18	92526889	92526898	92554000	32
		10.16	92526890	92526900	92554001	32
		8.74	92526891	92526901	92554002	32
		NBS 040-150	4	16.77	92526902	92526913
16.06	92526903			92526914	92554004	42
15.20	92526909			92526920	92554010	42
13.86	92526905			92526916	92554006	42
12.91	92526906			92526917	92554007	42
12.21	92526907			92526918	92554008	42
6	16.77		92526902	92526913	92554003	42
	15.28		92526904	92526915	92554005	42
	14.49		92526910	92526921	92554011	42
	13.39		92526911	92526922	92554012	42
	12.36		92526912	92526923	92554013	42
	11.97		92526908	92526919	92554009	42

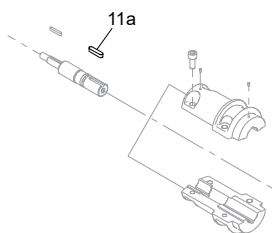
Pump size	Pole	Actual impeller trim [inch]	Material code			Impeller bore, d [mm]	
			S2, S3, S4, S5, SA, SB, SC, SD	S6, S7, S8, S9, SE, SF, SG, SH	T2, TA		
			Impeller material				
			304 (1.4308)	316 (1.4408)	904 (1.4517)		
NBS 050-070	2	6.93	92526924	92526937	92554014	24	
		6.77	92526925	92526938	92554015	24	
		6.46	92526926	92526939	92554016	24	
		6.06	92526927	92526940	92554017	24	
		5.98-4.88	92526928	92526941	92554018	24	
		5.59-4.49	92526929	92526942	92554019	24	
	4	6.93	92526931	92526944	92554021	24	
		6.85	93056995	93056994	93056996	24	
		6.61	92526932	92526945	92554022	24	
		6.06	92526933	92526946	92554023	24	
		5.43-4.33	92526934	92526947	92554024	24	
	6	6.93	92526931	92526944	92554021	24	
		6.61	92526932	92526945	92554022	24	
		6.06	92526933	92526946	92554023	24	
		5.59-4.49	92526929	92526942	92554019	24	
		5.28-4.17	92526936	92526949	92554026	24	
	NBS 050-095	4	9.13	92526950	92542914	92554027	32
			8.74	92526951	92542915	92554028	32
8.19			92526952	92542916	92554029	32	
7.67			93056997	93056998	93056999	32	
7.40			92526953	92542917	92554030	32	
6.85-6.06			92542912	92542918	92554031	36	
6		9.13	92526950	92542914	92554027	32	
		8.74	92526951	92542915	92554028	32	
		7.72	92542913	92542919	92554032	32	
		6.85-6.06	92542912	92542918	92554031	32	
NBS 050-110	4	10.63	92542920	92542927	92554033	32	
		9.61	92542921	92542928	92554034	32	
		9.06	92542922	92542929	92554036	32	
		8.35	92542923	92542930	92554037	32	
	6	10.63	92542920	92542927	92554033	32	
		10.00	92542924	92542931	92554038	32	
		8.90	92542925	92542932	92554039	32	
		8.11	92542926	92542933	92554040	32	
		13.11-12.95	92542934	92542943	92554041	42	
		12.01	92542935	92542944	92554042	42	
NBS 050-135	4	11.30	92542936	92542945	92554043	42	
		10.59	92542937	92542946	92554044	42	
		9.49	92542938	92542947	92554045	42	
		8.86	92542939	92542948	92554046	42	
		12.48	92542940	92542949	92554047	42	
		11.30	92542936	92542945	-	42	
	6	9.80	92542942	92542951	92554049	42	

Pump size	Pole	Actual impeller trim [inch]	Material code			Impeller bore, d [mm]
			S2, S3, S4, S5, SA, SB, SC, SD	S6, S7, S8, S9, SE, SF, SG, SH	T2, TA	
			Impeller material			
			304 (1.4308)	316 (1.4408)	904 (1.4517)	
NBS 050-150	4	14.96	92542952	92542961	92554050	42
		14.09	92542953	92542962	92554051	42
		12.99	92542954	92542963	92554052	42
		11.73	92542955	92542964	92554053	42
	6	16.14	92542956	92542965	92554054	42
		15.59	92542957	92542966	92554055	42
		14.49	92542958	92542967	92554056	42
		13.15	92542959	92542968	92554057	42
NBS 060-095	4	9.53	92542970	92542978	92554059	32
		8.90	92542971	92542979	92554060	32
		8.43	92542972	92542980	92554061	32
		7.95	92542973	92542981	92554062	32
	6	7.32	92542974	92542982	92554063	32
		9.53	92542970	92542978	92554059	32
		9.21	92542975	92542983	92554064	32
		8.35	92542976	92542984	92554065	32
NBS 060-110	4	7.56	92542977	92542985	92554066	32
		10.75	92542986	92542992	92554067	42
		10.20	92542987	92542993	92554068	42
		9.57	92542988	92542994	92554069	42
	6	8.78	92542989	92542995	92554070	42
		10.75	92542986	92542992	92554067	42
		10.20	92542987	92542993	92554068	42
		9.17	92542990	92542996	92554071	42
NBS 060-135	4	8.39	92542991	92542997	92554072	42
		12.91-12.76	92542998	92543009	92554073	42
		12.24	92542999	92543010	92554074	42
		11.22	92543000	92543011	92554075	42
	6	10.35	92543001	92543012	92554076	42
		9.96	92543002	92543013	92554077	42
		9.25	92543003	92543014	92554078	42
		12.48-12.32	92543004	92543015	92554079	42
NBS 060-150	4	11.54	92543005	92543016	92554080	42
		10.75	92543006	92543017	92554081	42
		9.80	92543007	92543018	92554082	42
		8.70	92543008	92543019	92554083	42
	6	15.83	92543020	92543028	92554084	48
		14.80	92543021	92543029	92554085	48
		12.83	92543022	92543030	92554086	48
		11.97	92543023	92543031	92554087	48
6	16.93	92543024	92543032	92554088	48	
	16.06	92557190	92557191	92557192	48	
	14.88	92543025	92543033	92554089	48	
	13.70	92543026	92543034	92554090	48	
		12.44	92543027	92543035	92554091	48

Pump size	Pole	Actual impeller trim [inch]	Material code			Impeller bore, d [mm]	
			S2, S3, S4, S5, SA, SB, SC, SD	S6, S7, S8, S9, SE, SF, SG, SH	T2, TA		
			Impeller material				
			304 (1.4308)	316 (1.4408)	904 (1.4517)		
NBS 080-135	4	12.60	92543036	92543046	92554092	42	
		11.89	92543037	92543047	92554093	42	
		11.26	92543038	92543048	92554094	42	
		10.31	92543039	92543049	92554095	42	
		9.84	92543040	92543050	92554096	42	
	6	13.15	92543041	92543051	92554097	42	
		12.28	92543042	92543052	92554098	42	
		11.26	92543038	92543048	92554094	42	
		10.79	92543043	92543053	92554099	42	
		10.16	92543044	92543054	92554100	42	
		9.29	92543045	92543055	92554101	42	
NBS 080-150	4	15.59	92543056	92543062	92554102	48	
		14.25	92543057	92543063	92554103	48	
		12.99	92543058	92543064	92554104	48	
		12.20	92543059	92543065	92554105	48	
	6	15.59	92543056	92543062	92554102	48	
		14.25	92543057	92543063	92554103	48	
		13.46	92543060	92543066	92554106	48	
		12.60	92543061	92543067	92554107	48	
NBS 100-150	4	14.76	92543068	92543075	92554108	48	
		13.66	92543069	92543076	92554109	48	
		12.48	92543070	92543077	92554110	48	
	6	16.34	92543071	92543078	92554111	48	
		14.92	92543072	92543079	92554112	48	
		13.82	92543073	92543080	92554113	48	
		12.95	92543074	92543081	92554114	48	



### Spare, Key for coupling (motor side)



TM087004

Spare, Key for coupling	
11a: Key	

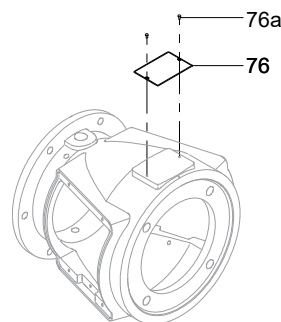
#### Step 1: Find the pump size and note the key code.

Pump size	Key code	Pump size	Key code
012-070	B	040-070-4P	B
015-070	B	040-095-2P	C
015-090-2P	C	040-095-4P	B
015-090-4P	B	040-110	C
015-095-2P	C	040-135	C
015-095-4P	B	040-150	D
020-095-2P	C	050-070-2P	C
020-095-4P	B	050-070-4P	B
020-110	B	050-095	D
020-135	C	050-110	C
025-070	B	050-135	D
025-095-2P	C	050-150	D
025-095-4P	B	060-095	D
025-110	C	060-110	D
030-070	B	060-135	D
030-095-2P	C	060-150	D
030-095-4P	B	080-135	D
030-110	C	080-150	D
030-135	C	100-150	D
040-070-2P	C		

#### Step 2: Use the key code to find the correct key.

Key code	Spare, Key for coupling
B	<a href="#">92521498</a>
C	<a href="#">92521499</a>
D	<a href="#">92521500</a>

### Pump nameplate



TM078936

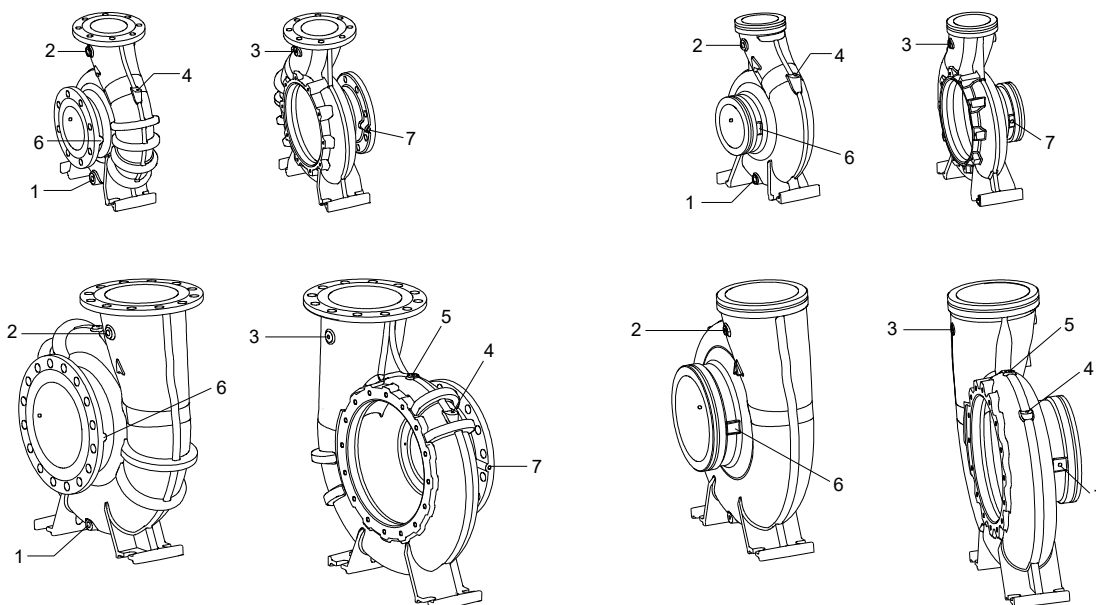
Nameplate
76: 1 x nameplate (72 x 50 mm), see section Nameplate for nameplate example
76a: 2 x rivet

When you require to replace a nameplate, take a picture of the existing one and send this to Grundfos. Based on this, it is normally possible to print a new copy. If the pump holds certain approvals, it may be a mandatory requirement to ship the complete unit back to Grundfos to check the pump, and to print and install a new nameplate in Grundfos facilities. This is to maintain the approval. Therefore, information of the installed pump is needed.

## Pump housing plugs

**NOTE!** This is only for your information. We do not offer plugs as service parts.

**NOTE!** For all NBS, NBSE pump housings, the bores pos. 1+2+3+4+ (6 or 7) are drilled and plugged.



TM1040331

### Pump housing plugs

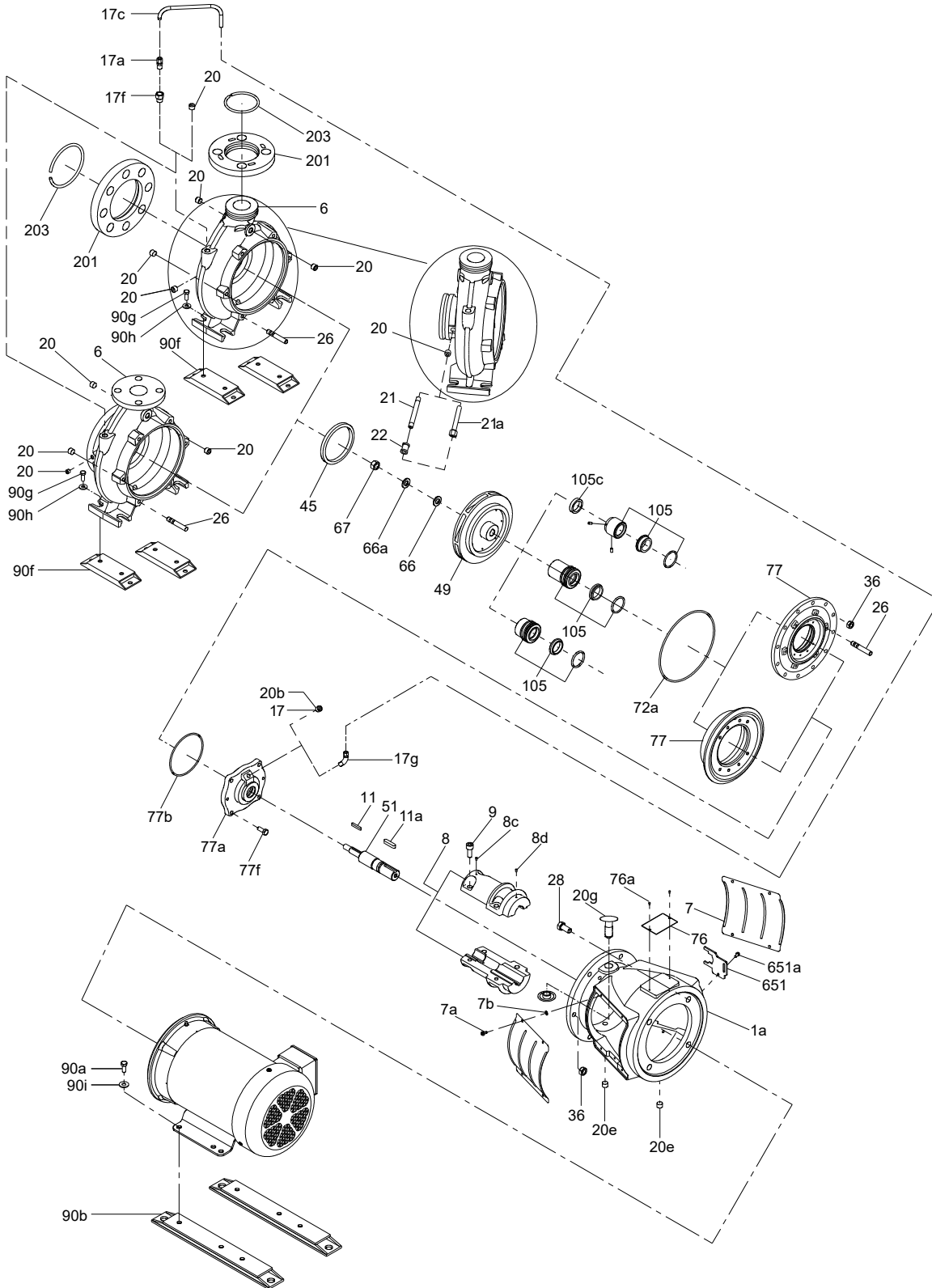
- 1: Bore for draining plug
- 2: Bore for filling plug
- 3: Bore for connecting Series 2000 capillary tube
- 4: Bore for flushing line
- 5: Bore for venting of pump housing
- 6: Bore for connecting Series 2000 capillary tube - or for mounting of an inlet pressure gauge
- 7: Bore for connecting Series 2000 capillary tube - or for mounting of an inlet pressure gauge

**IMPORTANT!** Bore 2 and bore 3 **CANNOT** be used for mounting of a discharge pressure gauge. The reading in this position of the pump housing will give an incorrect and useless pressure reading compared to what is shown in Sales tools (Grundfos Product Center and data booklets).

US versions	US pump size DN	EN pump size DN	Plug position on drawing - (all plugs are with NPT connections)									
			Inch	mm	1	2	3	4	5	6	7	
Inch - outlet	1 1/4	32	012	32	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
	1 1/2	40	015	40	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
	2	50	020	50	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
	2 1/2	65	025	65	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
	3	80	030	80	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
	4	100	040	100	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
	5	125	050	125	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
	6	150	060	150	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
	8	200	080	200	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
10	250	100	250	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	

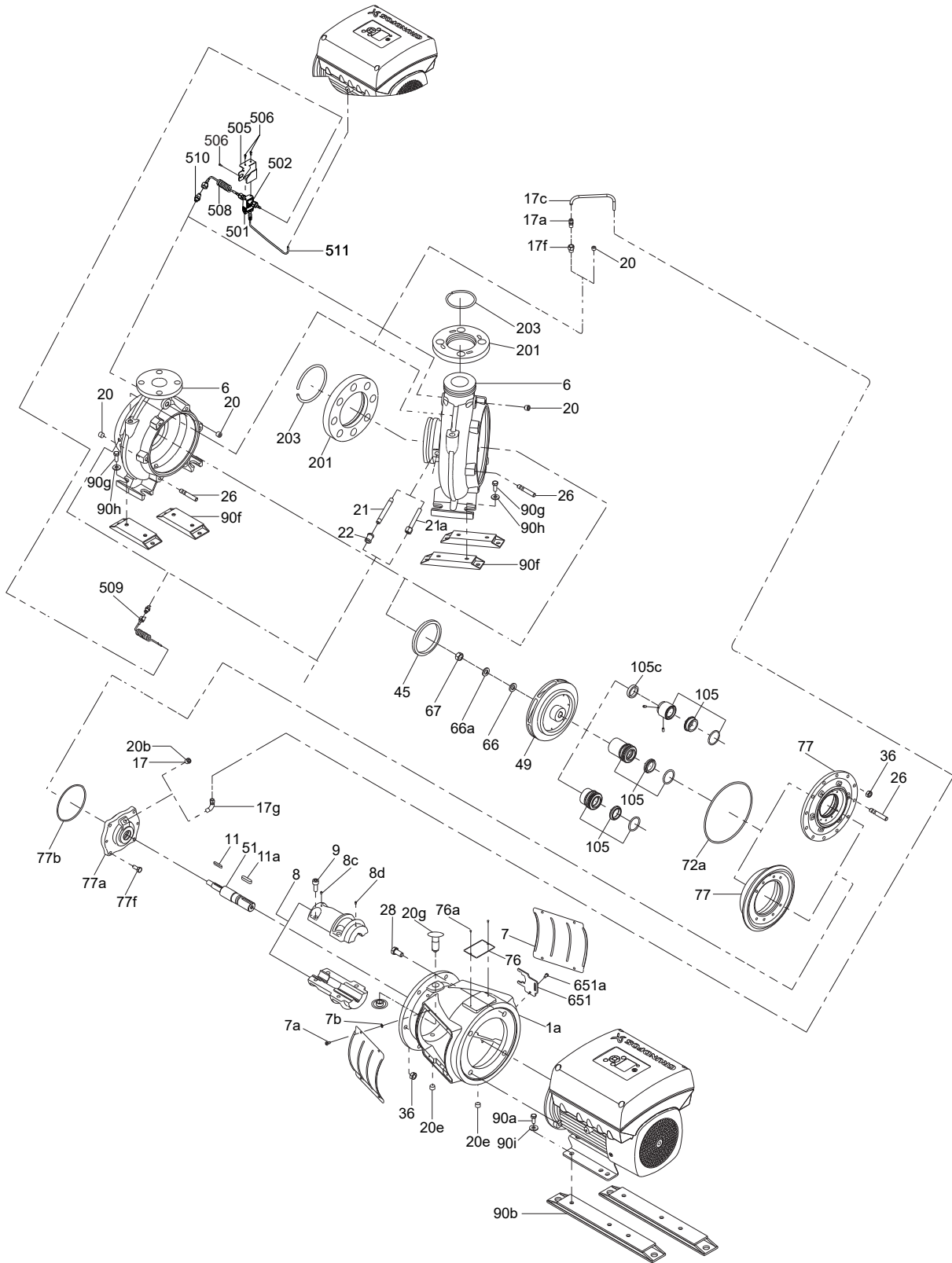
# 4. Exploded views

## Center-line outlet





NBSE



TM077568

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