

16/02/2019

Qty. | Description

1

CRN 20-7 A-FGJ-A-E-HQQE



Product No.: 96500574

Vertical, multistage centrifugal pump with inlet and outlet ports on same the level (inline). Pump materials in contact with the liquid are in high-grade stainless steel. A cartridge shaft seal ensures high reliability, safe handling, and easy access and service. Power transmission is via a rigid split coupling. Pipe connection is via combined DIN-ANSI-JIS flanges.

The pump is fitted with a 3-phase, fan-cooled asynchronous motor.

#### Further product details

Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface. An integral part of the process is a pretreatment. The entire process consists of these elements:

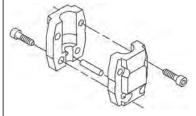
1) Alkaline-based cleaning.

- 2) Zinc phosphating.
- Cathodic electro-deposition.
- 4) Curing to a dry film thickness 18-22 my m.

The colour code for the finished product is NCS 9000/RAL 9005.

#### Pump

A standard split coupling connects the pump and motor shaft. It is enclosed in the pump head/motor stool by means of two coupling guards.



The pump head and flange for motor mounting is made in one piece (cast iron). The pump head cover is a separate component (stainless steel). The pump head has a combined 1/2" priming plug and vent screw.



The pump is fitted with a balanced O-ring seal unit with a rigid torque-transmission system. This seal type is assembled in a cartridge unit which makes replacement safe and easy. Due to the balancing, this seal type is suitable for high-pressure applications. The cartridge construction also protects the pump shaft from possible wear from a dynamic O-ring between pump shaft and shaft seal.

Primary seal:

Rotating seal ring material: silicon carbide (SiC)



Qtv.	Description
caty.	Description

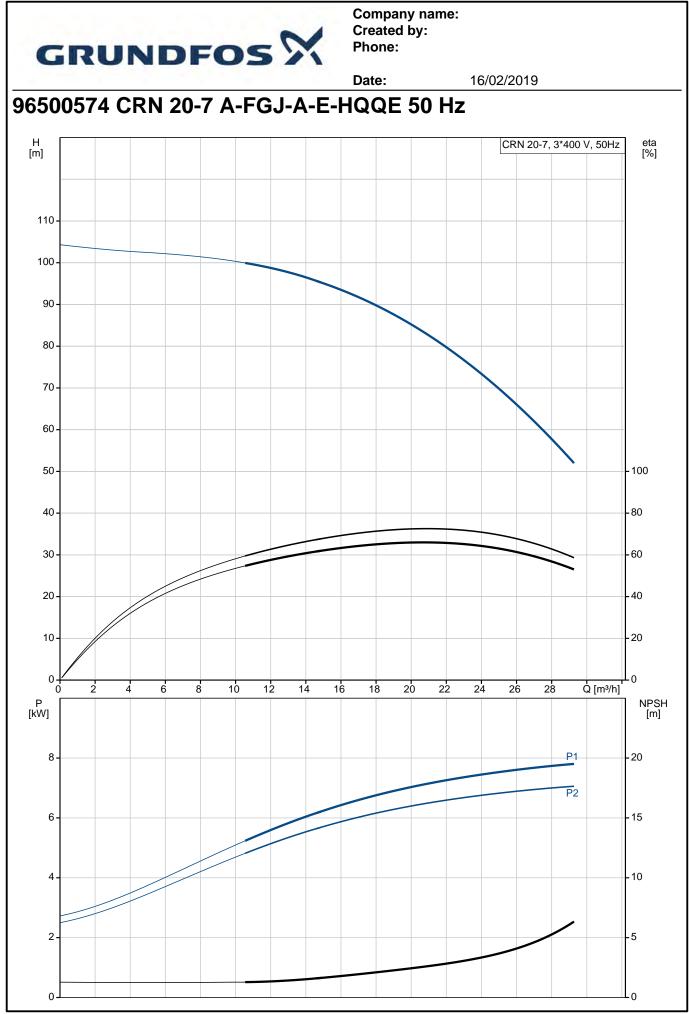
Dato:

16/02/2010

aterial pairing is used offers good resistance dary seal material: EP	rial: silicon carbide (SiC) where higher corrosion resistance is required. The high hardness of this material e against abrasive particles. PDM (ethylene-propylene rubber) nce to hot water. EPDM is not suitable for mineral oils.
aterial pairing is used offers good resistance dary seal material: EP	where higher corrosion resistance is required. The high hardness of this material e against abrasive particles. DM (ethylene-propylene rubber)
J	
aft seal is screwed int	to the pump head.
ambers and impellers g improved sealing and a high efficiency.	are made of stainless-steel sheet. The chambers are provided with a PTFE neck rir d high efficiency. The impellers have smooth surfaces, and the shape of the blades
n by the tension of the lug and bypass valve.	eel base mounted on a separate base plate. This base and base plate are kept in staybolts which hold the pump together. The outlet side of the base has a combiner . The pump is secured to the foundation by four bolts through the base plate. The one piece and prepared for connection by means of DIN, ANSI or JIS.
r Storio o totolly opology	ed, fan-cooled motor with principal dimensions to IEC and DIN standards. The motor
e-mounted with free-h	hole flange (FF). in accordance with IEC 60034-7: IM B 5 (Code I) / IM 3001 (Code II).
cal tolerances comply	
otor has thermistors (F ion reacts to both slov	PTC sensors) in the windings in accordance with DIN 44081/DIN 44082. The w- and quick-rising temperatures, e.g. constant overload and stalled conditions. onnected to an external control circuit in a way which ensures that the automatic res
cause accidents. The ions.	e motors must be connected to a motor-protective circuit breaker according to local
	t to a variable speed drive for adjustment of pump performance to any duty point. e of variable speed drives. Please find more information in Grundfos Product Center
nical data	
ols: ency converter:	NONE
:	
ed liquid:	Water
temperature range:	-20 120 °C
temperature during op	
y:	998.2 kg/m <sup>3</sup>
<b>ical:</b> speed on which pump	o data are based: 2919 rpm
flow:	21 m³/h
head:	81.7 m
orientation:	Vertical
eal arrangement:	Single
or shaft seal:	HQQE
-	CE, EAC,ACS
tolerance:	ISO9906:2012 3B
f c c c	low: nead: prientation: eal arrangement:



Description		
Materials:		
Base:	Stainless steel	
	EN 1.4408	
	AISI 316	
Impeller:	Stainless steel	
	EN 1.4401	
	AISI 316	
Bearing:	SIC	
Installation:		
Maximum ambient temperature:	60 °C	
Maximum operating pressure:	25 bar	
Max pressure at stated temp:	25 bar / 120 °C	
	25 bar / -20 °C	
Type of connection:	DIN / ANSI / JIS	
Size of inlet connection:	DN 50	
	2 inch	
Size of outlet connection:	DN 50	
Size of outlet connection:		
	2 inch	
Pressure rating for pipe connect		
Flange rating inlet:	300 lb	
Flange size for motor:	FF265	
Electrical data:		
Motor standard:	IEC	
Motor type:	132SB	
IE Efficiency class:	IE3	
Rated power - P2:	7.5 kW	
Power (P2) required by pump:	7.5 kW	
Mains frequency:	50 Hz	
Rated voltage:	3 x 380-415D/660-690Y V	
Rated current:	14,4-14,0/8,30-8,10 A	
Starting current:	780-910 %	
Cos phi - power factor:	0.88-0.82	
Rated speed:	2910-2920 rpm	
Efficiency:	IE3 90,1%	
Motor efficiency at full load:	90.1-90.4 %	
Motor efficiency at 3/4 load:	90.8 %	
Motor efficiency at 1/2 load:	90.8 %	
Number of poles:	2	
Enclosure class (IEC 34-5):	55 Dust/Jetting	
Insulation class (IEC 85):	F	
0.11		
Others: Minimum efficiency index, MEI á	9%-¥· 0.70	
Net weight:	101 kg	
Gross weight:	123 kg	
Shipping volume:	0.285 m <sup>3</sup>	

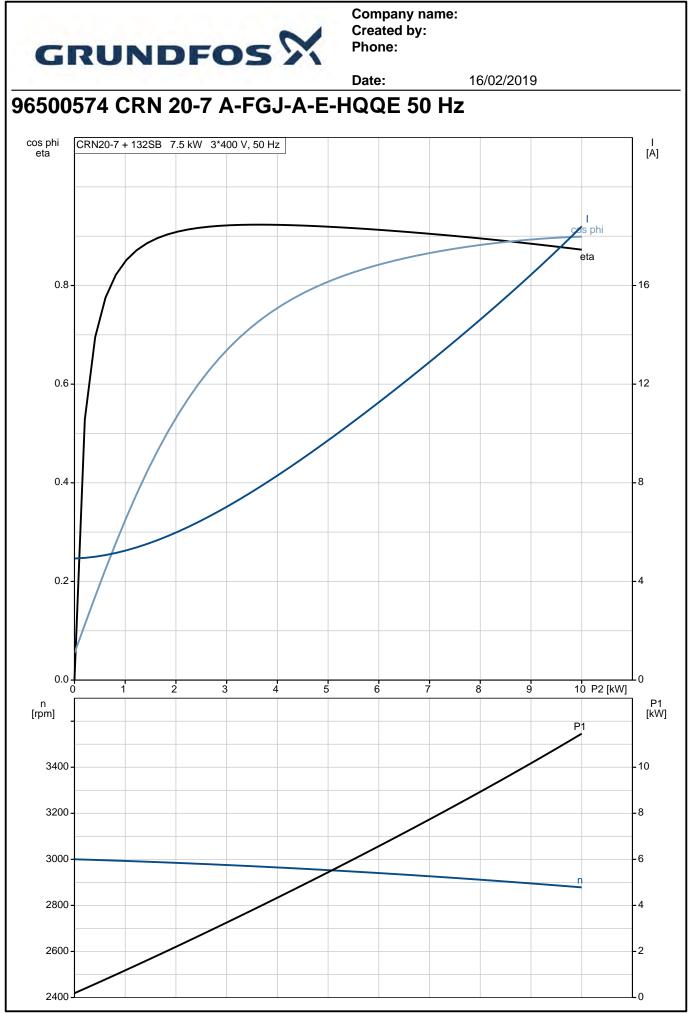




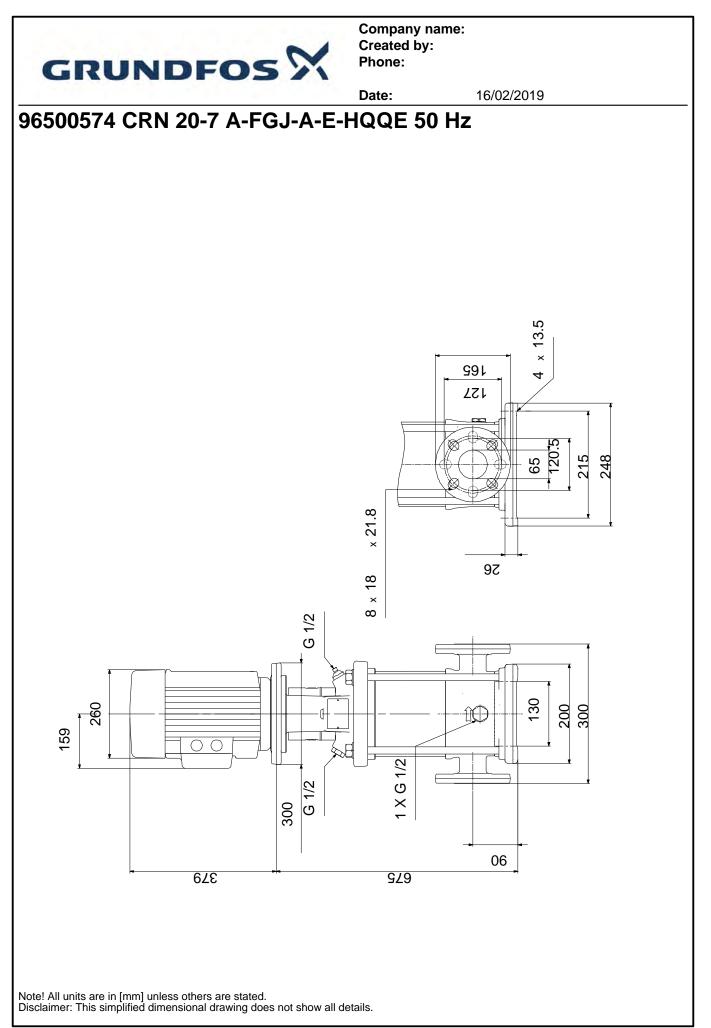
		Date:	16/02/2019
Description	Value	H [m]	CRN 20-7, 3*400 V, 50Hz [%]
General information:			
Product name:	CRN 20-7 A-FGJ-A-E-HQQE	110 -	
Product No:	96500574	100 -	
EAN number:	5700396204543	90 -	
Technical:	3700390204343	90 -	
Pump speed on which pump data are based:	2919 rpm	80 -	
Rated flow:	21 m³/h	///	
Rated head:	81.7 m	60 -	
Head max:	103 m	50 -	- 100
Stages:	7		
Impellers:	7	40 -	- 80
Number of reduced-diameter impellers:	0	30 -	60
Low NPSH:	N		
Pump orientation:	Vertical	20 -	- 40
Shaft seal arrangement:	Single	10 -	- 20
Code for shaft seal:	HQQE		
Approvals on nameplate:	CE, EAC,ACS		5 10 15 20 25 Q [m³/h]
Curve tolerance:	ISO9906:2012 3B	P [kW]	NPSH
Pump version:	A		[m]
Model:	A	8-	20
Materials:	••	6 -	P2 - 15
Base:	Stainless steel	0-	13
2400.	EN 1.4408		10
	AISI 316	4-	
Impeller:	Stainless steel	2-	
	EN 1.4401		3
	AISI 316		
Material code:	A	• • • • • • • • • • • • • • • • • • • •	-0
Code for rubber:	E		159
Bearing:	SIC		
Installation:	010		
Maximum ambient temperature:	60 °C	6/2	
Maximum operating pressure:	25 bar	<sup>16</sup>	
Max pressure at stated temp:	25 bar / 120 °C		
	25 bar / -20 °C	<u></u> <u></u> <u></u> <u></u> <u></u>	G 1/2
Type of connection:	DIN / ANSI / JIS		
Size of inlet connection:	DN 50	50 <u>1 X G 1/2</u>	
	2 inch	— I. N.	
Size of outlet connection:	DN 50	8	
	2 inch		
Pressure rating for pipe connection:	PN 25		200 380 215
Flange rating inlet:	300 lb		
Flange size for motor:	FF265		
Connect code:	FGJ		~
Liquid:	1.00	—	Y
Pumped liquid:	Water		
Liquid temperature range:	-20 120 °C	₿ <sup>+⊤</sup> ₿ ₿*	
Liquid temperature during operation:	20 °C	—   ∐ L₩a	
Density:	998.2 kg/m <sup>3</sup>		
Electrical data:	550.2 Kg/III	TO AMPLIFIER RELAY	
Motor standard:	IEC		
Motor type:	132SB		
IE Efficiency class:	IE3	N+т N+т	
Rated power - P2:			
	7.5 kW		
Power (P2) required by pump:	7.5 kW		
Mains frequency:	50 Hz	TO AMPLIFIER RELAY	

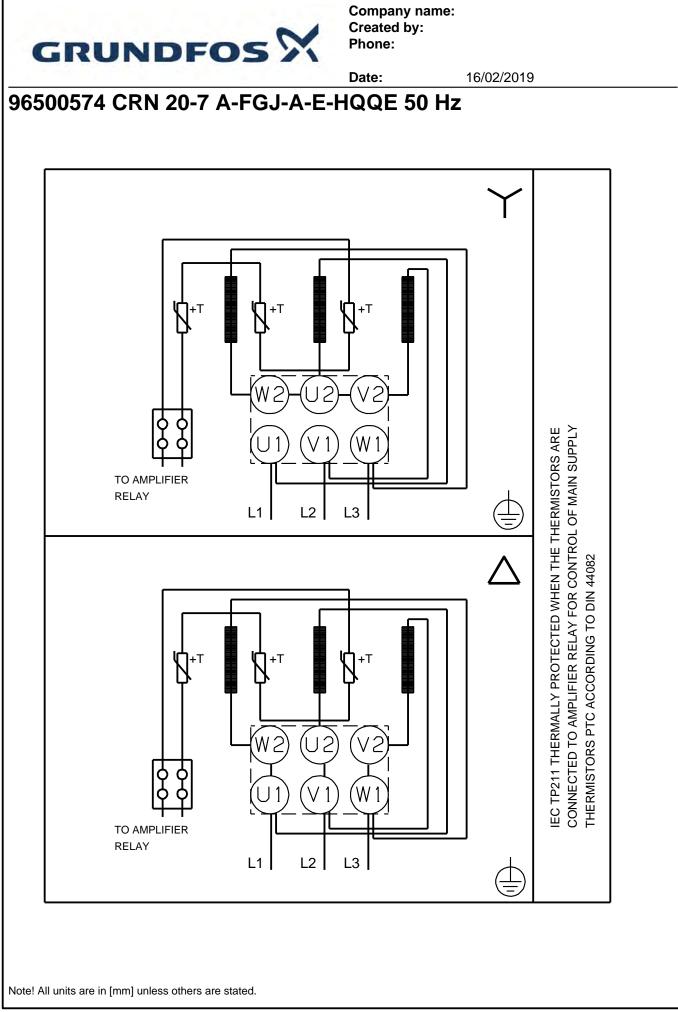


		Date:	16/02/2019
Description	Value		
Rated voltage:	3 x 380-415D/660-690Y V	-	
Rated current:	14,4-14,0/8,30-8,10 A		
Starting current:	780-910 %		
Cos phi - power factor:	0.88-0.82		
Rated speed:	2910-2920 rpm		
Efficiency:	IE3 90,1%		
Motor efficiency at full load:	90.1-90.4 %		
Motor efficiency at 3/4 load:	90.8 %		
Motor efficiency at 1/2 load:	90.8 %		
Number of poles:	2		
Enclosure class (IEC 34-5):	55 Dust/Jetting		
Insulation class (IEC 85):	F		
Motor protec:	PTC		
Motor No:	85U17522		
Controls:			
Frequency converter:	NONE		
Others:			
Minimum efficiency index, MEI ≥:	0.70		
Net weight:	101 kg		
Gross weight:	123 kg		
Shipping volume:	0.285 m³		

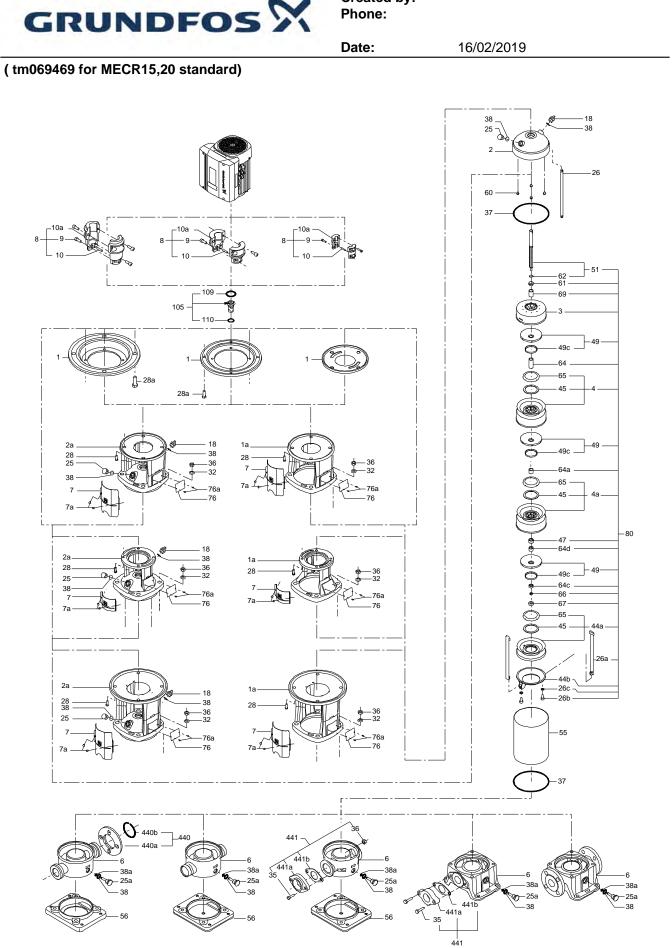


Printed from Grundfos Product Centre [2018.09.002]

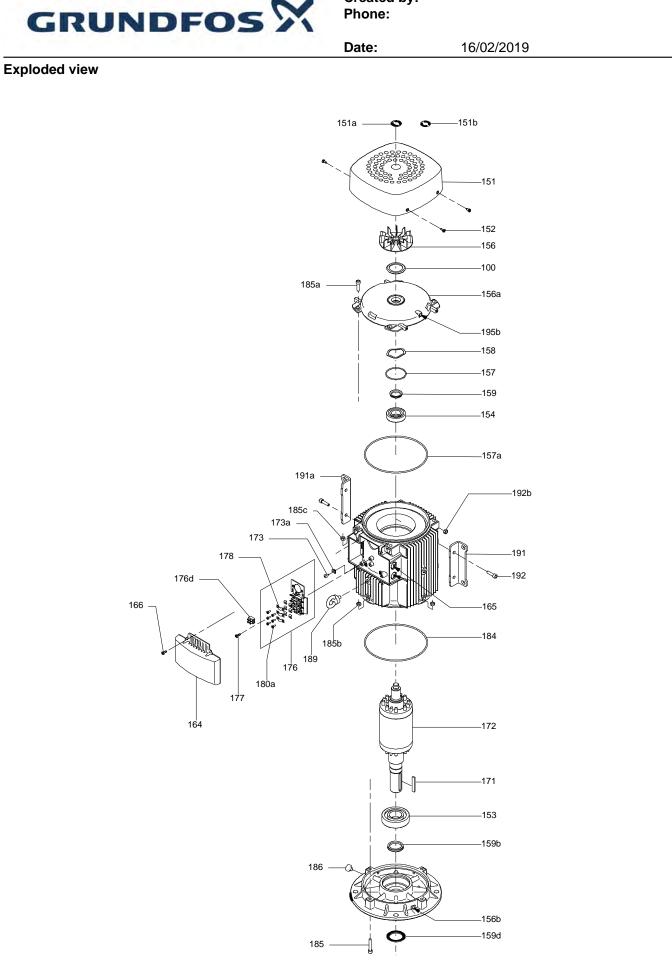






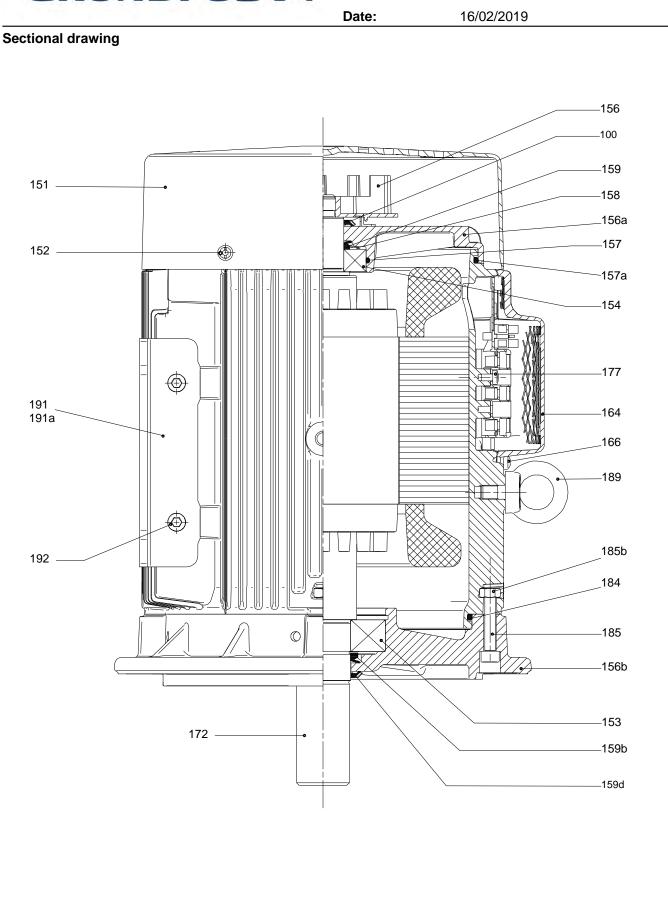




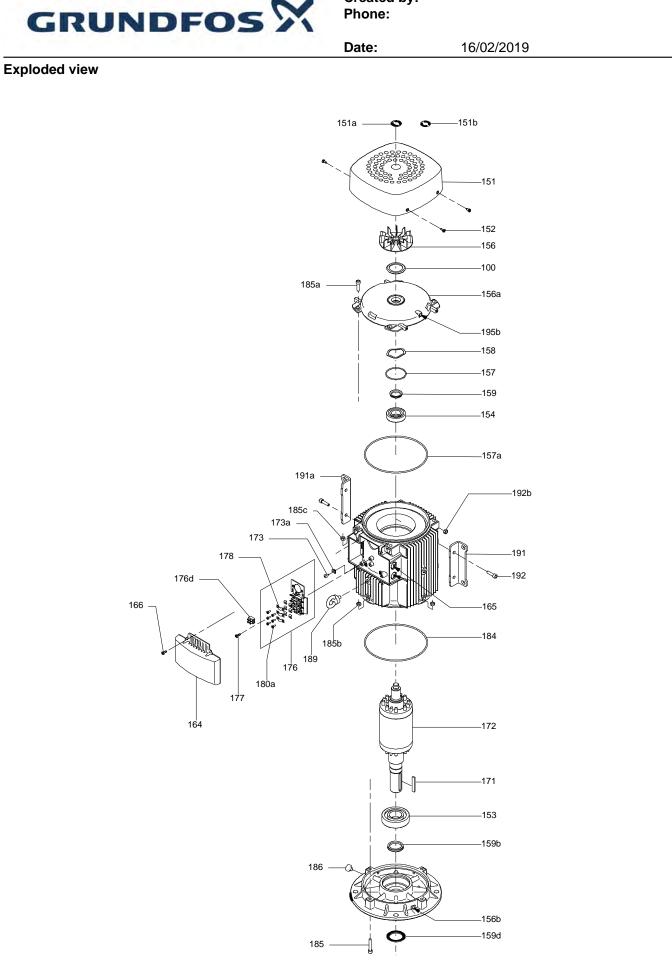




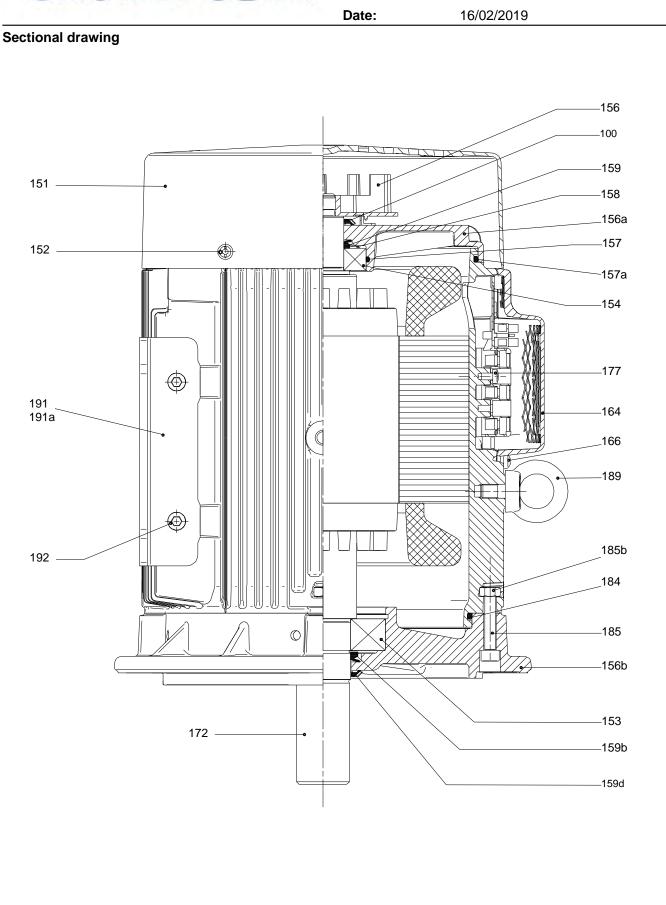
Phone:













16/02/2019

# Spare parts CRN 20-7, Product No. 96500574 Valid from 1.1.2011 (1152)

Ро	•	Annotation	Classification Data	Part no.	Qty.	
	Kit, chamber stack			96491790	1	pcs
80	Chamber stack				1	
3	Top intermediate chamber					
	Guide vane					
	Cover plate					
3	Intermediate chamber					
4a	Intermediate chamber cpl.					
	Sand Lifter					
	Guide cup					
	Bearing plate					
	Guide vane					
3	Intermediate chamber					
45	A Neck ring cpl.					
47	Bearing bush					
65	Retainer					
4	Intermediate chamber cpl.					
3	Intermediate chamber					
45						
65	Retainer					
26			Length (mm): 314MM			
26			Designation: DIN 125A			
			Thickness: 1,6			
26	b Hex head screw					
44						
44;						
45						
65	Retainer					
47	Bearing ring					
49	Impeller cpl.					
49						
49	Impeller					
51	Shaft, spline, cpl.					
01	Bar					
62	Stop ring					
64						
64			Length (mm): 12.7			
64			Internal diameter: 17,5			
0-10			Length (mm): 17			
64	Spacing pipe		Length (mm): 43.6			
66	Wedge lock washer		20.19th (1111). 70.0			
67	Lock nut		Thread: M8			
69	Spacing bush		Thicad. Wo			
03	Kit, coupling			96511351	1	pcs
	Adjusting fork			00011001	1	•
8	Coupling				1	
9	Hex socket head cap screw		Designation: DIN 912		•	
5	Her source head oup solew		Length (mm): 25			
			Thread: M10			
10	a Coupling half					
10	Shaft pin		Diameter: 5			
10	onartpin		Length (mm): 26			
	Kit, coupling guard			96509613	1	pcs
	Combi Slot Torx screw			00003013	4	•



Pos	Description	Annotation Classification Data	Part no.	Ofv	Unit
7	Coupling guard		i art no.	<b>Qiy.</b> 2	
	Kit, gaskets		96509609	1	pcs
	Gasket		0000000	. 2	•
24	O-ring			2	
37	O-ring			2	
38a	O-ring	Diameter: 5,3		1	
00a	O-inig	Material type: EPDM			
		Thickness: 2,4			
38	O-ring	Diameter: 16,3		1	
50	0-mig	Material type: EPDM		1	
		Thickness: 2,4			
38	O-ring	Diameter: 16,3		2	
00	O-mig	Material type: EPDM		2	
		Thickness: 2,4			
60	Spring	Thickness. 2,4		1	
60	Spring			4	
415	Gasket	Internal discontant AC		2	
441b	Gasket	Internal diameter: 49		2	
		Outer diameter: 92			
		Thickness: 2	00544045		
40	Kit, plug		96511312		pcs
18	Air vent screw			1	
	Spindle				
	Plug				
25a	Drain plug			1	
25	Plug			1	
38a	O-ring	Diameter: 5,3		1	
		Material type: FKM			
		Thickness: 2,4			
38a	O-ring	Diameter: 5,3		1	
		Material type: EPDM			
		Thickness: 2,4			
38	O-ring	Diameter: 16,3		1	
		Material type: FKM			
		Thickness: 2,4			
38	O-ring	Diameter: 16,3		2	
		Material type: FKM			
		Thickness: 2,4			
38	O-ring	Diameter: 16,3		1	
	-	Material type: EPDM			
		Thickness: 2,4			
38	O-ring	Diameter: 16,3		2	
	~	Material type: EPDM			
		Thickness: 2,4			
	Kit, shaft seal HQQE	<del>-</del> , -	96511844	1	pcs
	Emery cloth			. 1	•
	Grinding device			1	
105	Shaft seal	Material type: HQQE		. 1	
	Kit, wear parts		96511827		pcs
4a	Intermediate chamber cpl.		50511027	2	
ru	Sand Lifter			2	
	Guide cup				
	Bearing plate				
_	Guide vane				
3	Intermediate chamber				
45a	Neck ring cpl.				
47	Bearing bush				
65	Retainer				
26.c	Washer	Designation: DIN 125A		2	
		Thickness: 1,6			



		Date:	16/02/2019	
	Description	Annotation Classification Data	Part no. Qt	<del>y. U</del> nit
26.b	Hex head screw			2
45a	Neck ring cpl.			8
47	Bearing ring			2
49c	Wear ring			10
62	Retaining ring			1
64d	Spacing bush			2
64c	Spacing pipe	Length (mm): 12.7		1
64b	Spacing bush	Length (mm): 5.00		1
64a	Spacing pipe	Internal diameter: 17	,5	2
		Length (mm): 17		
65	Retainer			8
66	Wedge lock washer			1
67	Lock nut	Thread: M8		1
Ν	Notor		91333038 1	pcs
	Kit, bearing cpl.		96796642	1
111	Ball bearing	Designation: 620	6.2Z.C3.SYN	
153	Angular-contact bearing			
157	O-ring	Diameter: 62		
		Material type: NBR		
		Thickness: 3		
158	Waved washer			
159.b	V-ring			
159	V-ring			
	Kit, eyebolt		96279874	1
189	Lifting eye			
	Kit, fan		96796189	1
156	Fan			
	Kit, fan cover		96796188	1
151	Fan cover			
152	Pan head thread forming screw			
	Kit, flange		96796224	1
156.b	Flange			
159.b	V-ring			
185c	Nut			
185	Hex socket head cap screw			
186	Drain plug			
	Kit, gaskets		96798510	1
184	O-ring			
	Kit, ND-end shield cpl.		96796598	1
156.a	End shield NDE			
157	O-ring	Diameter: 62		
		Material type: NBR		
		Thickness: 3		
158	Waved washer			
159	V-ring			
185.c	Nut			
185.a	Hex socket head cap screw			
	Kit, shaft seal		96843458	1
159.b	V-ring			
159	V-ring			
	Kit, terminal board		96030209	1
176	Terminal			
176	Terminal board			
178	Connecting piece			
179	Cable shoe			
180a	Slot cheese head screw	Designation: CO	MBI TORX T25	
		Length (mm): 10		
		Thread: M5		
180	Wire clamp			

Printed from Grundfos Product Centre [2018.09.002]



os	Description	Annotation	Classification Data	Part no. Qty. Un
	Kit, terminal box cover			96796215 1
64	Terminal box cover w/gasket			
166	Pan head thread forming screw			
	Motor			85903585 1 pc
	Kit, bearing cpl.			96796642 1
11	Ball bearing		Designation: 620	
153	Angular-contact bearing		Designation. 020	0.22.03.31N
			Diamatan 00	
157	O-ring		Diameter: 62	
			Material type: NBR	
			Thickness: 3	
158	Waved washer			
159.b	V-ring			
159	V-ring			
	Kit, eyebolt			96279874 1
189	Lifting eye			
	Kit, fan			96796189 1
156	Fan			
	Kit, fan cover			96796188 1
151	Fan cover			
152	Pan head thread forming screw			
.02	Kit, flange			96796224 1
156.b	Flange			30130224 1
159.b	0			
185c	Nut			
185	Hex socket head cap screw			
186	Drain plug			
	Kit, gaskets			96798510 1
184	O-ring			
	Kit, ND-end shield cpl.			96796598 1
156.a	End shield NDE			
157	O-ring		Diameter: 62	
			Material type: NBR	
			Thickness: 3	
158	Waved washer			
159	V-ring			
185.c	Nut			
185.a				
105.4	Kit, shaft seal			96843458 1
159.b	-			90043438 1
	V-ring			
159	V-ring			00000000 4
.=	Kit, terminal board			96030209 1
176	Terminal			
176	Terminal board			
178	Connecting piece			
179	Cable shoe			
180a	Slot cheese head screw		Designation: CO	MBI TORX T25
			Length (mm): 10	
			Thread: M5	
180	Wire clamp			
	Kit, terminal box cover			96796215 1
164	Terminal box cover w/gasket			
166	Pan head thread forming screw			
100 1a	Pump head			98914854 1 pc
				•
1	Flange			99104283 1 pcs
2	Pump cover			98481138 1 pc
3	Bulk, Top intermediate chamber (3 pcs)			98371113 1 pc:
3	Top intermediate chamber			98734577 1 pcs
4a	Bulk, Intermediate chamber cpl. (10 pcs)			96538853 2 pc



	Pos	Description	Annotation	Classification Data	Part no.	Qtv.	Unit
+	4a	Intermediate chamber cpl.			98371117		pcs
-	4	Bulk, Intermediate chamber cpl. (10 pcs)			96538840	4	pcs
	3	Intermediate chamber			983711	143 1	•
	65	Retainer			965473	341 1	
+	4	Intermediate chamber cpl.			98371115	4	pcs
	6	Base			98482550	1	pcs
	10	Bulk, Shaft pin (10 pcs)		Diameter: 5	96536473	1	pcs
				Length (mm): 26			
t	18	Bulk, Air vent screw (5 pcs)			96547461	1	pcs
t	18	Air vent screw			95061351	1	pcs
	25	Bulk, Plug (10 pcs)			96536013	1	pcs
	26a	Strap cpl.		Length (mm): 314MM	98925044	2	pcs
	26.c	Bulk, Washer (4 pcs)		Designation: DIN 125A	99262704	2	pcs
				Thickness: 1,6			
	26.c	Washer		Designation: DIN 125A	96586880	2	pcs
				Thickness: 1,6			
	26	Staybolt			98982882	4	pcs
	37a	Bulk, O-ring (20 pcs)			96538857	1	pcs
	38a	Bulk, O-ring (10 pcs)		Diameter: 5,3	99198791	1	pcs
				Material type: EPDM			
				Thickness: 2,4			
	38	Bulk, O-ring (10 pcs)		Diameter: 16,3	99198815	2	pcs
				Material type: EPDM			
				Thickness: 2,4			
	38	Bulk, O-ring (50 pcs)		Diameter: 16,3	99412727	2	pcs
				Material type: EPDM			
				Thickness: 2,4			
	44b	Inlet part			98814593		pcs
t	44a	Inlet part cpl.			98818922		pcs
	47	Bulk, Bearing ring (10 pcs)			96538795		pcs
-	49	Bulk, Impeller cpl. (5 pcs)			98394310		pcs
	49c	Bulk, Wear ring (10 pcs)			965473		
t	49	Impeller cpl.			98394459		pcs
ł	51	Shaft, spline, cpl.			98368636		pcs
	55	Outer sleeve			98812641		pcs
	56	Base plate			98481136	-	pcs
	60	Bulk, Spring (20 pcs)			96538963		pcs
	64d	Bulk, Spacing bush (20 pcs)			96538947		pcs
	64c	Bulk, Spacing pipe (5 pcs)		Length (mm): 12.7	97980241		pcs
	64a	Bulk, Spacing pipe (10 pcs)		Internal diameter: 17,5	98417487	2	pcs
				Length (mm): 17			
	64	Bulk, Spacing pipe (20 pcs)		Length (mm): 43.6	96535107		pcs
	66	Bulk, Wedge lock washer (10 pcs)			96536157		pcs
	67	Bulk, Lock nut (10 pcs)		Thread: M8	98277008		pcs
	69	Bulk, Spacing bush (20 pcs)			96538949		pcs
	76a	Bulk, Rivet (100 pcs)			96620489		pcs
	105	Bulk, Shaft seal (11 pcs)		Material type: HQQE	96538914		pcs
	440b	Bulk, Lock ring (24 pcs)			96536453	2	pcs