

16/02/2019

Qty. | Description

1

CRN 32-2-2 A-F-A-E-HQQE



Product No.: 96122296

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 DIN 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:

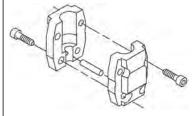
1) Alkaline-based cleaning.

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

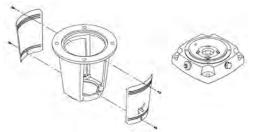
The colour code for the finished product is NCS 9000/RAL 9005.

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 motor stool connects the pump head and motor. 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)
- Stationary seat material: silicon carbide (SiC)



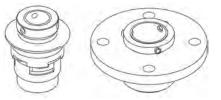
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Qty. | Description
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This material pairing is used where higher corrosion resistance is required. The high hardness of this material

pairing offers good resistance against abrasive particles. Secondary seal material: EPDM (ethylene-propylene rubber)

EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.



The shaft seal is retained in the pump head by a cover and screws. It can be replaced without removing the motor.

The chambers and impellers are made of stainless-steel sheet. The chambers are provided with a PTFE neck ring offering improved sealing and high efficiency. The impellers have smooth surfaces, and the shape of the blades ensure a high efficiency.

The pump has a stainless-steel base mounted on a separate base plate. The base and base plate are kept in position by the tension of the staybolts which hold the pump together. Both the inlet and the outlet side of the base have two pressure gauge tappings. The pump is secured to the foundation by four bolts through the base plate. The flanges are fastened to the base by means of locking rings.



Motor

The motor is a totally enclosed, fan-cooled motor with principal dimensions to IEC and DIN standards. The motor is flange-mounted with tapped-hole flange (FT).

Motor-mounting designation in accordance with IEC 60034-7: IM B 14 (Code I) / IM 3601 (Code II).

Electrical tolerances comply with IEC 60034.

The motor efficiency is classified as IE3 in accordance with IEC 60034-30-1.

The motor has thermistors (PTC sensors) in the windings in accordance with DIN 44081/DIN 44082. The protection reacts to both slow- and quick-rising temperatures, e.g. constant overload and stalled conditions. Thermal switches must be connected to an external control circuit in a way which ensures that the automatic reset

cannot cause accidents. The motors must be connected to a motor-protective circuit breaker according to local regulations.

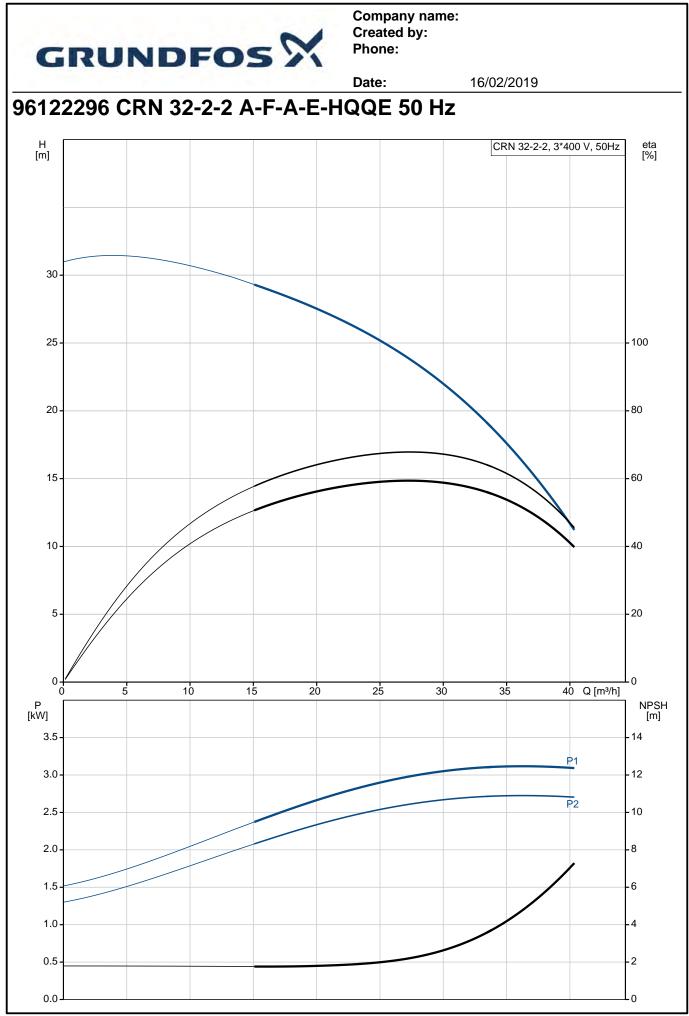
The motor can be connected to a variable speed drive for adjustment of pump performance to any duty point. Grundfos CUE offers a range of variable speed drives. Please find more information in Grundfos Product Center.

Technical data

Controls: Frequency converter:	NONE
Liquid: Pumped liquid: Liquid temperature range: Liquid temperature during of Density:	Water -40 120 °C operation: 20 °C 998.2 kg/m ³

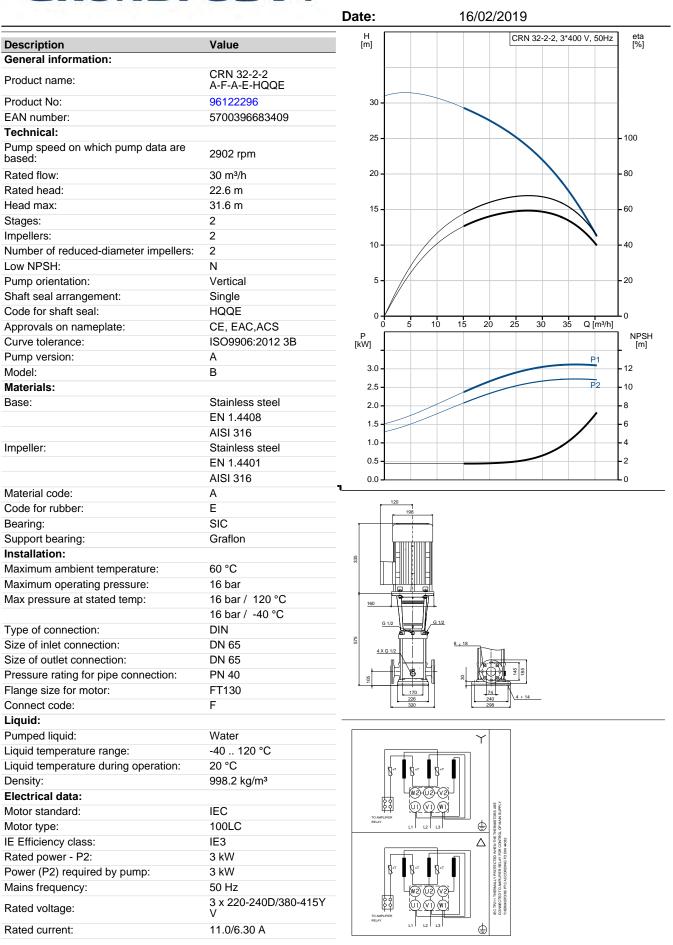


		Dat	ie:	16/02/2019
-	Description			
	Technical:			
	Pump speed on which pump dat	a are based: 2902 rpm		
	Rated flow:	30 m³/h		
	Rated head:	22.6 m		
	Pump orientation:	Vertical		
	Shaft seal arrangement:	Single		
	Code for shaft seal:	HQQE		
	Approvals on nameplate:	CE, EAC,ACS		
	Curve tolerance:	ISO9906:2012 3B		
	Materials:			
	Base:	Stainless steel		
		EN 1.4408		
		AISI 316		
	Impeller:	Stainless steel		
		EN 1.4401		
		AISI 316		
	Bearing:	SIC		
	Support bearing:	Graflon		
	Support bearing.	Granon		
	Installation:	co % O		
	Maximum ambient temperature:			
	Maximum operating pressure:	16 bar		
	Max pressure at stated temp:	16 bar / 120 °C		
		16 bar / -40 °C		
	Type of connection:	DIN		
	Size of inlet connection:	DN 65		
	Size of outlet connection:	DN 65		
	Pressure rating for pipe connect			
	Flange size for motor:	FT130		
	Electrical data:			
	Motor standard:	IEC		
	Motor type:	100LC		
	IE Efficiency class:	IE3		
	Rated power - P2:	3 kW		
	Power (P2) required by pump:	3 kW		
	Mains frequency:	50 Hz		
		3 x 220-240D/380-415Y V	/	
	Rated voltage:	3 x 220-240D/380-415Y V 11.0/6.30 A	/	
	Rated voltage: Rated current:	11.0/6.30 A	/	
	Rated voltage: Rated current: Starting current:	11.0/6.30 A 840-920 %	/	
	Rated voltage: Rated current: Starting current: Cos phi - power factor:	11.0/6.30 A 840-920 % 0.87-0.82	1	
	Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed:	11.0/6.30 A 840-920 % 0.87-0.82 2900-2920 rpm	/	
	Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency:	11.0/6.30 A 840-920 % 0.87-0.82 2900-2920 rpm IE3 87,1%	/	
	Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load:	11.0/6.30 A 840-920 % 0.87-0.82 2900-2920 rpm IE3 87,1% 87.1 %	1	
	Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load:	11.0/6.30 A 840-920 % 0.87-0.82 2900-2920 rpm IE3 87,1% 87.1 % 88.0 %	,	
	Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load:	11.0/6.30 A 840-920 % 0.87-0.82 2900-2920 rpm IE3 87,1% 87.1 % 88.0 % 87.7 %	,	
	Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: Number of poles:	11.0/6.30 A 840-920 % 0.87-0.82 2900-2920 rpm IE3 87,1% 87.1 % 88.0 % 87.7 % 2	,	
	Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load:	11.0/6.30 A 840-920 % 0.87-0.82 2900-2920 rpm IE3 87,1% 87.1 % 88.0 % 87.7 %	,	
	Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: Number of poles: Enclosure class (IEC 34-5): Insulation class (IEC 85):	11.0/6.30 A 840-920 % 0.87-0.82 2900-2920 rpm IE3 87,1% 87.1 % 88.0 % 87.7 % 2 55 Dust/Jetting	/	
	Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: Number of poles: Enclosure class (IEC 34-5): Insulation class (IEC 85): Others:	11.0/6.30 A 840-920 % 0.87-0.82 2900-2920 rpm IE3 87,1% 87.1 % 88.0 % 87.7 % 2 55 Dust/Jetting F	/	
	Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: Number of poles: Enclosure class (IEC 34-5): Insulation class (IEC 85): Others: Minimum efficiency index, MEI â	11.0/6.30 A 840-920 % 0.87-0.82 2900-2920 rpm IE3 87,1% 87.1 % 88.0 % 87.7 % 2 55 Dust/Jetting F	/	
	Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: Number of poles: Enclosure class (IEC 34-5): Insulation class (IEC 85): Others: Minimum efficiency index, MEI â Net weight:	11.0/6.30 A 840-920 % 0.87-0.82 2900-2920 rpm IE3 87,1% 87.1 % 88.0 % 87.7 % 2 55 Dust/Jetting F \$\$\$ 0.70 77 kg	/	
	Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: Number of poles: Enclosure class (IEC 34-5): Insulation class (IEC 85): Others: Minimum efficiency index, MEI â Net weight: Gross weight:	11.0/6.30 A 840-920 % 0.87-0.82 2900-2920 rpm IE3 87,1% 87.1 % 88.0 % 87.7 % 2 55 Dust/Jetting F \$\$\$ 0.70 77 kg 99.9 kg	/	
	Rated voltage: Rated current: Starting current: Cos phi - power factor: Rated speed: Efficiency: Motor efficiency at full load: Motor efficiency at 3/4 load: Motor efficiency at 3/4 load: Motor efficiency at 1/2 load: Number of poles: Enclosure class (IEC 34-5): Insulation class (IEC 85): Others: Minimum efficiency index, MEI â Net weight:	11.0/6.30 A 840-920 % 0.87-0.82 2900-2920 rpm IE3 87,1% 87.1 % 88.0 % 87.7 % 2 55 Dust/Jetting F \$\$\$ 0.70 77 kg	/	



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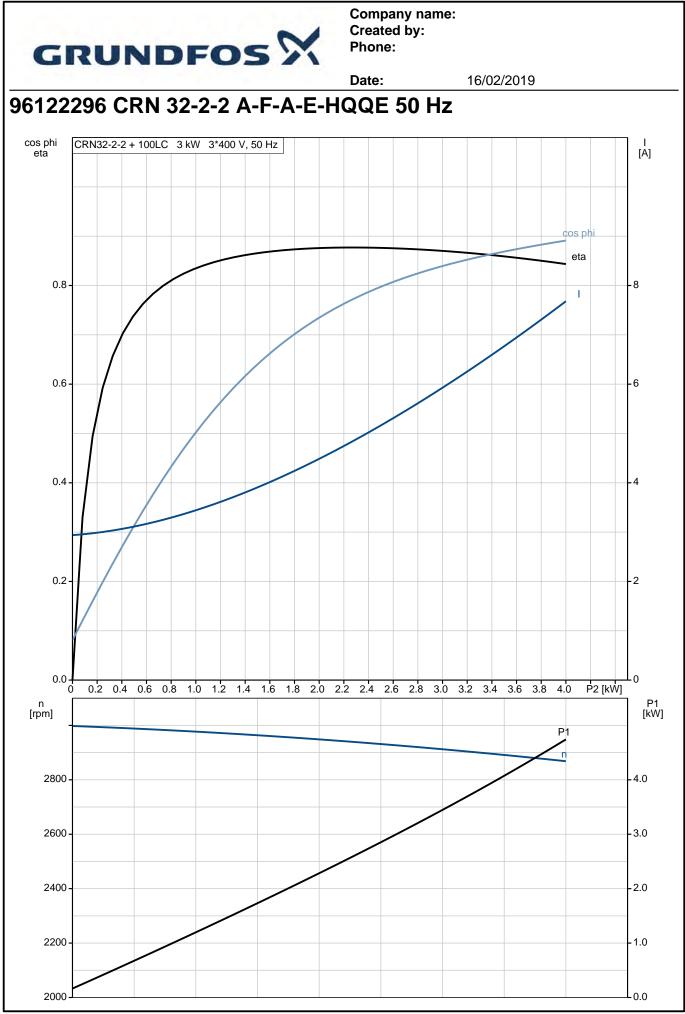


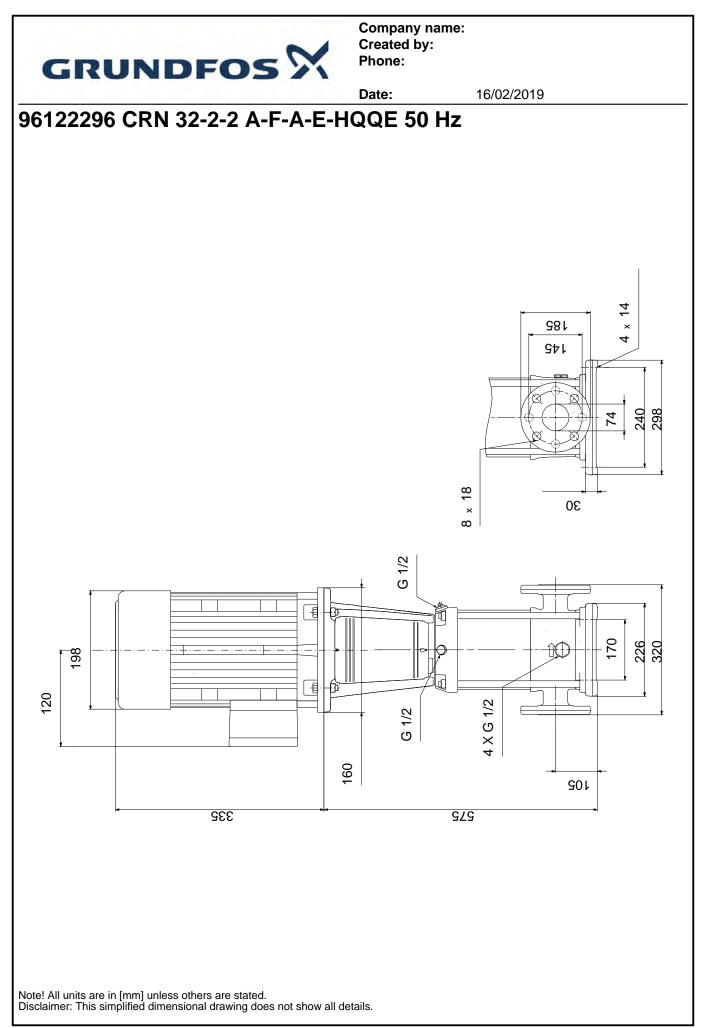


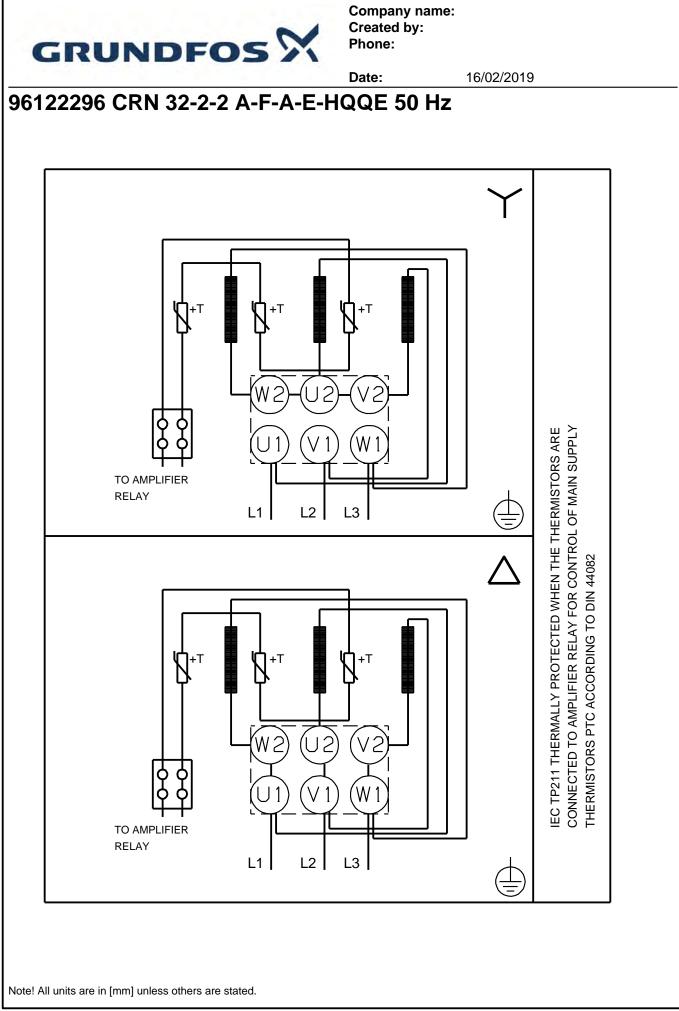
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		Date:	16/02/2019	
Description	Value			
Starting current:	840-920 %			
Cos phi - power factor:	0.87-0.82			
Rated speed:	2900-2920 rpm			
Efficiency:	IE3 87,1%			
Motor efficiency at full load:	87.1 %			
Motor efficiency at 3/4 load:	88.0 %			
Motor efficiency at 1/2 load:	87.7 %			
Number of poles:	2			
Enclosure class (IEC 34-5):	55 Dust/Jetting			
Insulation class (IEC 85):	F			
Motor protec:	PTC			
Motor No:	85U05510			
Controls:				
Frequency converter:	NONE			
Others:				
Minimum efficiency index, MEI ≥:	0.70			
Net weight:	77 kg			
Gross weight:	99.9 kg			
Shipping volume:	0.309 m ³			
Danish VVS No.:	385916022			



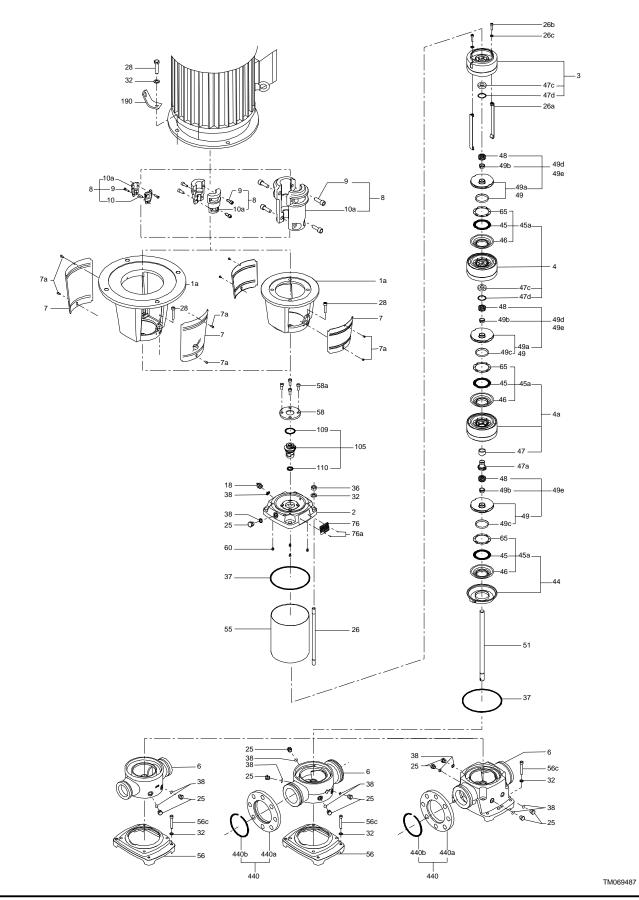




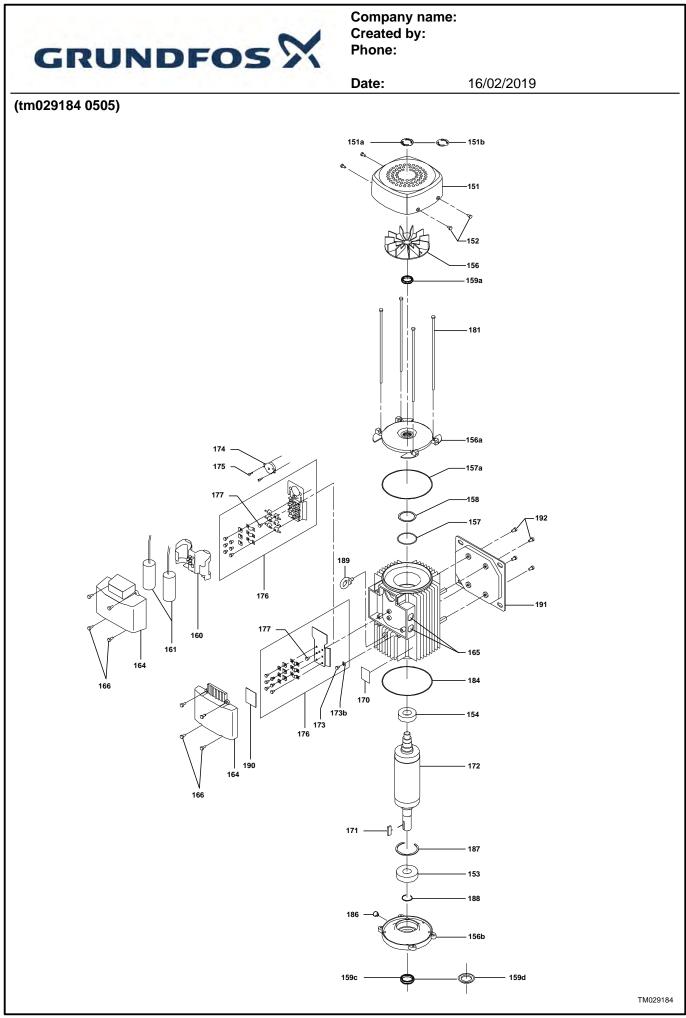


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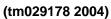


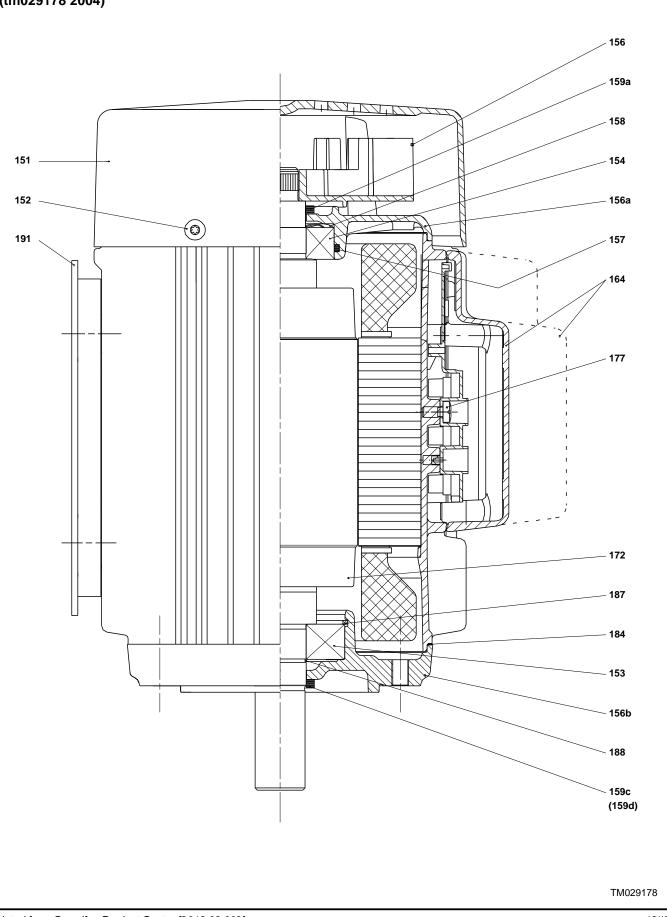
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16/02/2019







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Spare parts CRN 32-2-2, Product No. 96122296 Valid from 3.3.2014 (1410)

Pos	Description	Annotation	Classification Data	Part no.	Qty.	
	Base			98925061	1	pcs
6	Base				1	
80	Kit, chamber stack			96416918	1	pcs
80	Chamber stack				1	
3	Upper chamber cpl.					
	Guide cup					
	Guide cup					
	Cone					
	Guide					
	Chamber					
	Chamber					
47d	Lock ring					
47c	Bush					
4a	Intermediate chamber cpl.					
	Guide cup					
	Guide cup					
	Cone					
	Guide					
	Chamber					
	Chamber					
45a	Neck ring cpl.					
47	Bearing					
26c	Washer		Designation: DIN 125A			
			Thickness: 1,6			
26b	Hex socket head cap screw					
26a	Strap cpl.		Length (mm): 149			
204			Thread: M8			
44	Suction interconnector cpl.					
44a	Suction interconnector					
45	Seal ring					
46	Neck ring					
65	Top f/neck ring					
47a	Bearing cpl.					
41a	Driver					
	Holder					
	Disc spring					
	Bearing ring					
40 d						
49d	Impeller cpl. reduced diameter					
48	Nut					
49b	Split cone					
49a						
10	Impeller hub					
49c	Wear ring					
51	Shaft			00000700		
	Kit, chambers			98633738		pcs
4a	Intermediate chamber cpl.				1	
	Guide cup					
	Guide cup					
	Cone					
	Guide					
	Chamber					
	Chamber					
45a	Neck ring cpl.					



Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
47	Bearing					
47a	Bearing cpl.				1	
	Driver					
	Holder					
	Disc spring					
	Bearing ring					
	Kit, coupling			96416590	1	pcs
	Adjusting fork				1	•
9	Hex socket head cap screw		Designation: DIN 912		4	Ļ
	•		Length (mm): 25			
			Thread: M10			
10a	Coupling				1	
	Kit, coupling guard			96505134		pcs
7a	Socket button head screw			00000101	4	•
7	Coupling guard				2	
'	Kit, cover			98832448		
58a			Designation: DIN 912	30032440		pcs
209	Hex socket head cap screw		-		4	r
			Length (mm): 25			
50	Cavar		Thread: M10			
58	Cover			00440505	1	
	Kit, gaskets			96416597		pcs
~-	Adjusting fork				1	
37	O-ring				2	
38	O-ring		Diameter: 16,3		2	2
			Material type: EPDM			
			Thickness: 2,4			
38	O-ring		Diameter: 16,3		4	ŀ
			Material type: EPDM			
			Thickness: 2,4			
60	Spring				4	ŀ
109	O-ring				1	
110	O-ring		Diameter: 21,2		1	
			Material type: EPDM			
			Thickness: 3,55			
	Kit, Impeller, reduced diamete			98633836	1	pcs
48	Nut				1	
48	Nut				1	
49b	Split cone				1	
49a	Impeller				1	
-	Impeller hub					
49c	Wear ring					
	Kit, plug			96505136	1	pcs
18	Air vent screw				. 1	•
	Spindle					
	Plug					
25	Plug				4	L
25 25	Plug				1	
25 38	O-ring		Diameter: 16,3		2	
50	O-ming		Material type: FKM		2	-
20	O ring		Thickness: 2,4			1
38	O-ring		Diameter: 16,3		4	ŀ
			Material type: FKM			
			Thickness: 2,4			
38	O-ring		Diameter: 16,3		6	6
			Material type: FKM			
			Thickness: 2,4			
38	O-ring		Diameter: 16,3		2	2
			Material type: EPDM			



os	Description	Annotation Classification Data	Part no. Qt	y. Unit
		Thickness: 2,4		
38	O-ring	Diameter: 16,3		4
		Material type: EPDM		
		Thickness: 2,4		
I	Kit, shaft seal HQQE		96525458 1	pcs
	Grinding device			1
105	Shaft seal	Material type: HQQ		1
	Adjusting fork			
109	O-ring			
110	O-ring	Diameter: 21,5		
		Material type: EPDM		
		Thickness: 4,25		
	Kit, wear parts		98497130 1	pcs
45	Seal ring			2
47d	Lock ring			2
47c	Bush			1
49c	Wear ring			2
65	Top f/neck ring			2
	Motor		85903730 1	pcs
	Kit, Ball bearing		96279795	•
99a	Retaining ring			
99	Retaining ring			
111	Ball bearing			
111	Ball bearing			
157	O-ring	Diameter: 52		
	g	Material type: NBR		
		Thickness: 3		
158	Waved washer	THORICOS. 0		
	Kit, end shield		96279831	1
156a	End shield		00270001	
150a 157	O-ring	Diameter: 52		
107	O-mig	Material type: NBR		
		Thickness: 3		
158	Waved washer	THICKNESS. 5		
158 159a				
1598	Seal ring		96279757	4
450	Kit, fan		96279757	
156	Fan			
159a	Seal ring			4
4 = 41	Kit, fan cover		96279826	1
151b	Label			
151	Fan cover			
152	Pan head thread forming screw			
	Kit, flange		96279828	1
156b	Flange			
156.c	Drain plug			
159.c	Seal ring			
	Kit, retaining ring		96279799	1
99	Retaining ring			
188	Retaining ring			
	Kit, shaft seal		96279762	1
159c	Seal ring			
159a	Seal ring			
	Kit, staybolts		96279832	1
181	Pan head staybolt			
	Kit, terminal board		96279769	1
173a	Base			
173	Pan head thread forming screw	Designation: CC	MBI TORX T25	
176	Slot cheese head screw	Designation: CC		



Pos	Description	Annotation	Classification Data	Part no.	Qty	. Unit
			Length (mm): 10 Thread: M5			
176	Terminal					
176	Connecting piece					
176	Wire clamp					
176	Terminal board					
177	Pan head screw					
	Kit, terminal box			962797	71	1
164	Terminal box cover w/gasket					
166	Pan head thread forming screw					
1a	Motor stool			96587723	1	pcs
2	Pump head			98593646		pcs
3	Upper chamber cpl.			98633870		pcs
3 47с	Bulk, Bush (10 pcs)			993211		•
470 4a				99262783		
	Bulk, Intermediate chamber cpl. (5 pcs)					pcs
45a	Bulk, Neck ring cpl. (10 pcs)			965473		
6b	Base cpl.		Rubber type: EPDM	96587693		pcs
25	Bulk, Plug (10 pcs)			965360		
37	Bulk, O-ring (10 pcs)			965361		
38	Bulk, O-ring (10 pcs)		Diameter: 16,3	991988	315	4
			Material type: EPDM			
			Thickness: 2,4			
38	Bulk, O-ring (50 pcs)		Diameter: 16,3	994127	27	4
			Material type: EPDM			
			Thickness: 2,4			
56	Base plate			965876	91	1
7a	Bulk, Socket button head screw (10 pcs)			96549696	4	pcs
7	Bulk, Coupling guard (10 pcs)			96603300	2	pcs
18	Bulk, Air vent screw (5 pcs)			96547461	1	pcs
18	Air vent screw			95061351	1	pcs
25	Bulk, Plug (10 pcs)			96536013	1	pcs
26c	Bulk, Washer (4 pcs)		Designation: DIN 125A	99262704		pcs
	,		Thickness: 1,6		_	P
26c	Washer		Designation: DIN 125A	96586880	2	pcs
			Thickness: 1,6			1
26b	Bulk, Hex socket head cap screw (10 pcs)			98931380	2	pcs
26a	Strap cpl.		Length (mm): 149	98983857		pcs
200			Thread: M8	0000001	2	poo
26	Staybolt		Length (mm): 352	98976682	1	nce
20	Staybolt		Thread: M16	90970002	4	pcs
28	Bulk, Hex socket head cap screw (10 pcs)		Designation: DIN 912	96536147	4	000
20	Buik, Hex socket head cap screw (10 pcs)			90550147	4	pcs
			Length (mm): 50			
07			Thread: M10	00500440	4	
37	Bulk, O-ring (10 pcs)		D	96536149		pcs
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			
44	Suction interconnector cpl.			98633886	1	pcs
45	Bulk, Seal ring (10 pcs)			979152	217	1
65	Bulk, Top f/neck ring (10 pcs)			965349	31	1
47a	Bulk, Bearing cpl. (5 pcs)			99366796	1	pcs
47a	Bulk, Bearing cpl. (10 pcs)			96534932		pcs
49d	Impeller cpl. reduced diameter			98394466		pcs
48	Bulk, Nut (3 pcs)			992626		•
48 48						



			Date:	16/02/2019
Po	os Description	Annotation	Classification Data	Part no. Qty. Unit
48	Bulk, Nut (10 pcs)			96536016 1
49	b Bulk, Split cone (10 pcs)			96536010 1
- 49	a Impeller			96547325 1
49	c Bulk, Wear ring (10 pcs)			96534930
55	Outer sleeve		Outer diameter: 197	99001103 1 pcs
			Length (mm): 165,5	
58	Cover			98893158 1 pcs
60	Bulk, Spring (20 pcs)			96536032 4 pcs
- 10	5 Bulk, Shaft seal (12 pcs)		Material type: HQQE	96984086 1 pcs
	Adjusting fork			96587896 1
10	9 Bulk, O-ring (10 pcs)			96547586 1
+ 10	5 Bulk, Shaft seal (12 pcs)		Material type: HQQE	96984070 1 pcs
20	3 Bulk, Lock ring (4 pcs)			96534918 1 pcs