

16/02/2019

Description

Qty.

1

CRN 5-13 A-FGJ-A-E-HQQE



Product No.: 96517192

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:

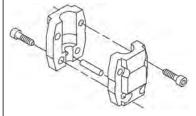
1) Alkaline-based cleaning.

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

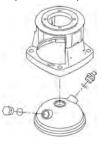
The colour code for the finished product is NCS 9000/RAL 9005.

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)



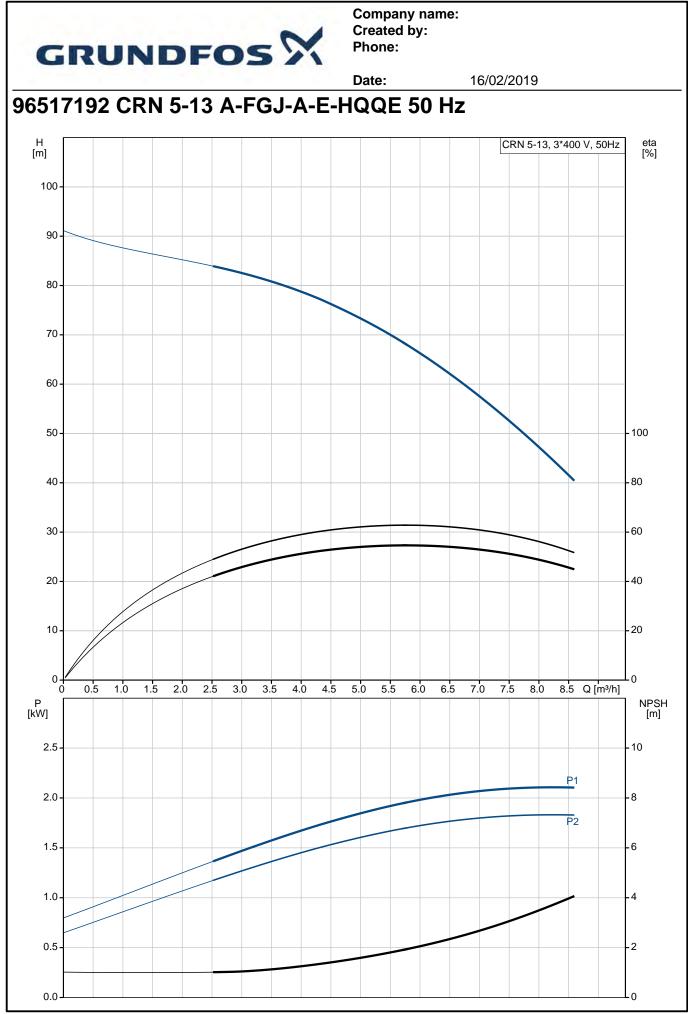
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16/02/2019

Stationary seat material: silicon carbide (SiC) 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 screwed into the pump head. 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 seperate base plate. This base and base plate are kept in position by the tension of the staybolts which hold the pump together. The outlet side of the base has a combined drain plug and bypass valve. The pump is secured to the foundation by four bolts through the base plate. The flanges and base are cast in one piece and prepared for connection by means of DIN, ANSI or JIS. 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 does not incorporate motor protection and must be connected to a motor-protective circuit breaker which can be manually reset. The motor-protective circuit breaker must be set according to the rated current of the motor (11/1). 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: Water Liquid temperature range: -20 .. 120 °C Liquid temperature during operation: 20 °C Density: 998.2 kg/m3 Technical: Pump speed on which pump data are based: 2899 rpm Rated flow: 5.8 m³/h Rated head: 66.1 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:



	Description	Date:	16/02/2019
-		Stainlaga atagl	
	Base:	Stainless steel EN 1.4408	
		AISI 316	
	Impeller:	Stainless steel	
		EN 1.4401	
		AISI 316	
	Bearing:	SIC	
	In stallation .		
	Installation:		
	Maximum ambient temperature:		
	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 25/32	
	Size of Infection.		
		1 1/4 inch	
	Size of outlet connection:	DN 25/32	
		1 1/4 inch	
1	Pressure rating for pipe connect	on: PN 25	
	Flange rating inlet:	300 lb	
	Flange size for motor:	FT115	
	Electrical data:		
	Motor standard:	IEC	
	Motor type:	90LC	
	IE Efficiency class:	IE3	
	Rated power - P2:	2.2 kW	
	Power (P2) required by pump:	2.2 kW	
	Mains frequency:	50 Hz	
	Rated voltage:	3 x 220-240D/380-415Y V	
	Rated current:	7.70/4.45 A	
	Starting current:	850-950 %	
	Cos phi - power factor:	0.89-0.87	
	Rated speed:	2890-2910 rpm	
	Efficiency:	IE3 85,9%	
	Motor efficiency at full load:	85.9 %	
	Motor efficiency at 3/4 load:	86.8 %	
	Motor efficiency at 1/2 load:	86.0 %	
	Number of poles:	2	
	Enclosure class (IEC 34-5):	55 Dust/Jetting	
	Insulation class (IEC 85):	F	
	Others:		
	Minimum efficiency index, MEI â	‰¥: 0.57	
	Net weight:	42.7 kg	
	NOL WOIGHL.	42.7 kg 45.6 kg	
	Gross weight: Shipping volume:	0.13 m ³	

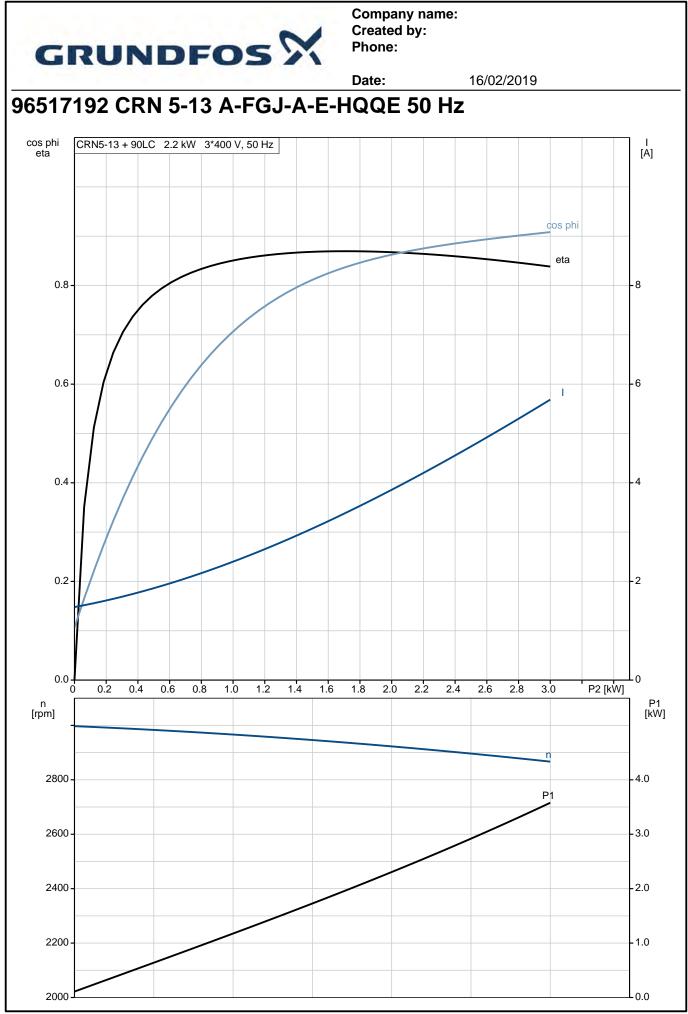


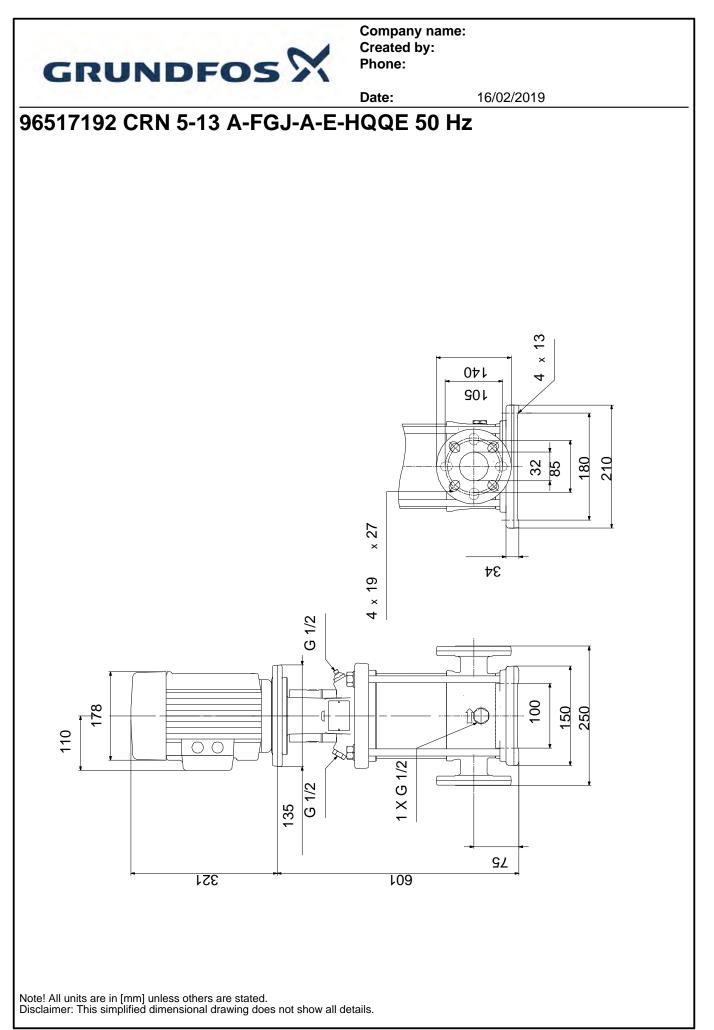


		Date:	16/02	2/2019		
Description	Value	H [m]		CRN 5-13, 3	*400 V, 50Hz	eta [%]
General information:		100 -				
Product name:	CRN 5-13 A-FGJ-A-E-HQQE	90 -				
Product No:	96517192					
EAN number:	5700396758022	80 -				
Technical:		70 -				
Pump speed on which pump data are based:	2899 rpm	60 -				-
Rated flow:	5.8 m³/h					
Rated head:	66.1 m	50 -			\mathbf{N}	- 100
Head max:	88.4 m	— <u> </u>				
Stages:	13	40 -				- 80
Impellers:	13	30 -				- 60
Number of reduced-diameter impellers:	0	30-			\geq	L on
Low NPSH:	N	20 -				- 40
	Vertical	/				Ē
Pump orientation:		10-				- 20
Shaft seal arrangement:	Single					
Code for shaft seal:	HQQE		2 3 4	5 6 7	Q [m³/h]	L ₀
Approvals on nameplate:	CE, EAC,ACS		2 3 4	<u> </u>	ູ [ເກະ/ກ]	
Curve tolerance:	ISO9906:2012 3B	[kW]				[m]
Pump version:	A	2.5 -				- 10
Model:	A	2.0			P1	- 8
Materials:		2.0			P2	ľ
Base:	Stainless steel	1.5 -				-6
	EN 1.4408					
	AISI 316	1.0 -				- 4
Impeller:	Stainless steel	0.5				-2
	EN 1.4401	0.0 -		-		
	AISI 316	• 0.0				Lo
Material code:	A					
Code for rubber:	E		110			
Bearing:	SIC	[r	178			
Installation:						
Maximum ambient temperature:	60 °C					
Maximum operating pressure:	25 bar	~~ ~~	우!!!!!			
Max pressure at stated temp:	25 bar / 120 °C					
	25 bar / -20 °C	<u> </u>	G 1/2			
Type of connection:	DIN / ANSI / JIS	į į		× 27		
Size of inlet connection:	DN 25/32	8 <u>1 X G 1/2</u>				
	1 1/4 inch					
Size of outlet connection:	DN 25/32			E E E E E E E E E E E E E E E E E E E		
	1 1/4 inch			32 4 × 1	3	
Pressure rating for pipe connection:	PN 25	[L	150	4 × 1.	-	
	300 lb		-	210		
Flange rating inlet:						
Flange size for motor:	FT115		LOW VOLTAGE			
Connect code:	FGJ		TION OF ROTATION			
Liquid:						
Pumped liquid:	Water					
Liquid temperature range:	-20 120 °C		K K K			
Liquid temperature during operation:	20 °C	│	(U1) $(V1)$ $(W1)$			
Density:	998.2 kg/m³					
Electrical data:			LI L2 L3			
Motor standard:	IEC		H VOLTAGE IN OF ROTATION			
Motor type:	90LC]			
IE Efficiency class:	IE3					
Rated power - P2:	2.2 kW		(w2+U2+(v2)			
Power (P2) required by pump:	2.2 kW		<u>M</u> M M			
Mains frequency:	50 Hz	──│⊺┖┸				



		Date:	16/02/2019
Description	Value		
Rated voltage:	3 x 220-240D/380-415Y V	-	
Rated current:	7.70/4.45 A		
Starting current:	850-950 %		
Cos phi - power factor:	0.89-0.87		
Rated speed:	2890-2910 rpm		
Efficiency:	IE3 85,9%		
Motor efficiency at full load:	85.9 %		
Motor efficiency at 3/4 load:	86.8 %		
Motor efficiency at 1/2 load:	86.0 %		
Number of poles:	2		
Enclosure class (IEC 34-5):	55 Dust/Jetting		
Insulation class (IEC 85):	F		
Motor protec:	NONE		
Motor No:	85U05908		
Controls:			
Frequency converter:	NONE		
Others:			
Minimum efficiency index, MEI ≥:	0.57		
Net weight:	42.7 kg		
Gross weight:	45.6 kg		
Shipping volume:	0.13 m ³		



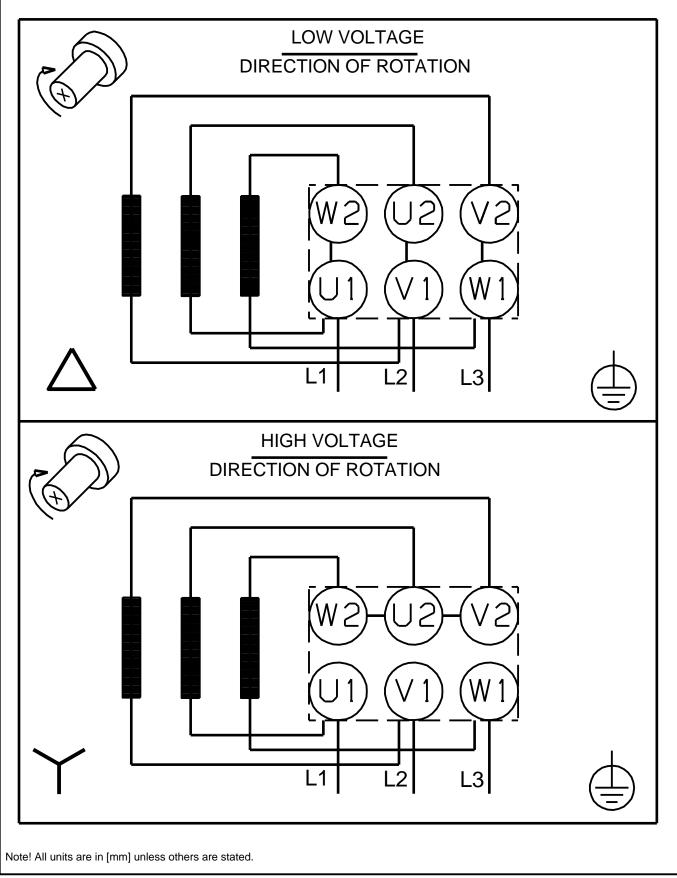




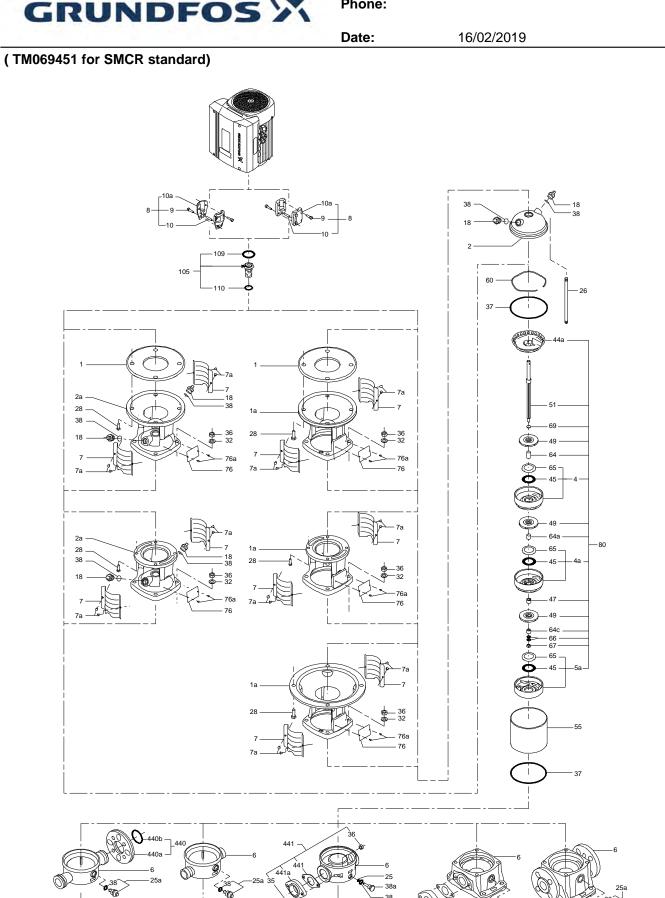
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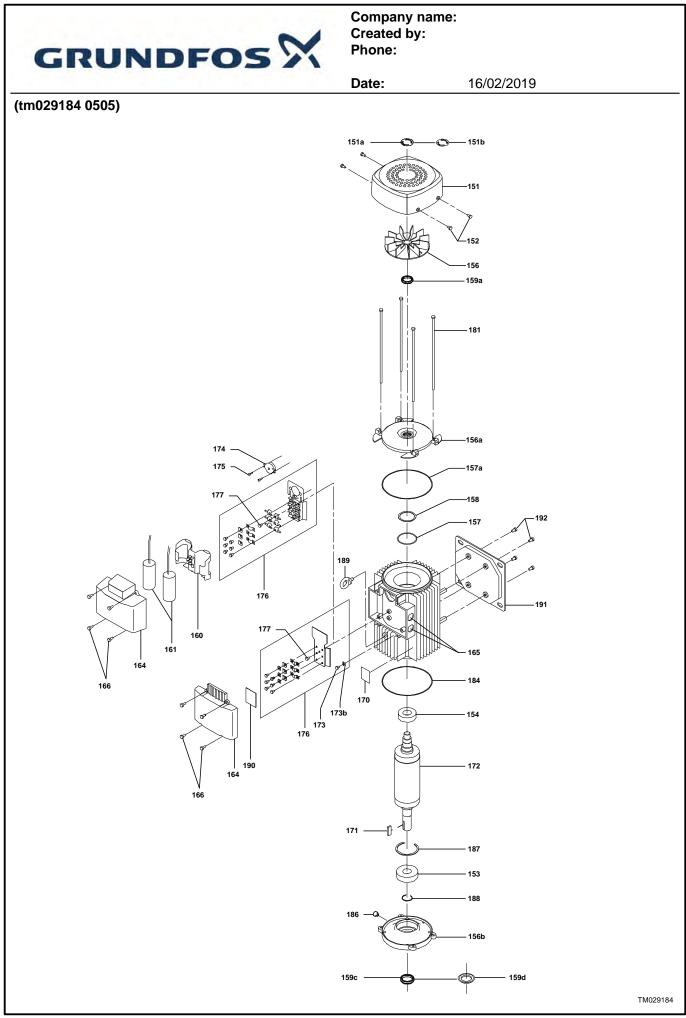
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96517192 CRN 5-13 A-FGJ-A-E-HQQE 50 Hz



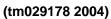


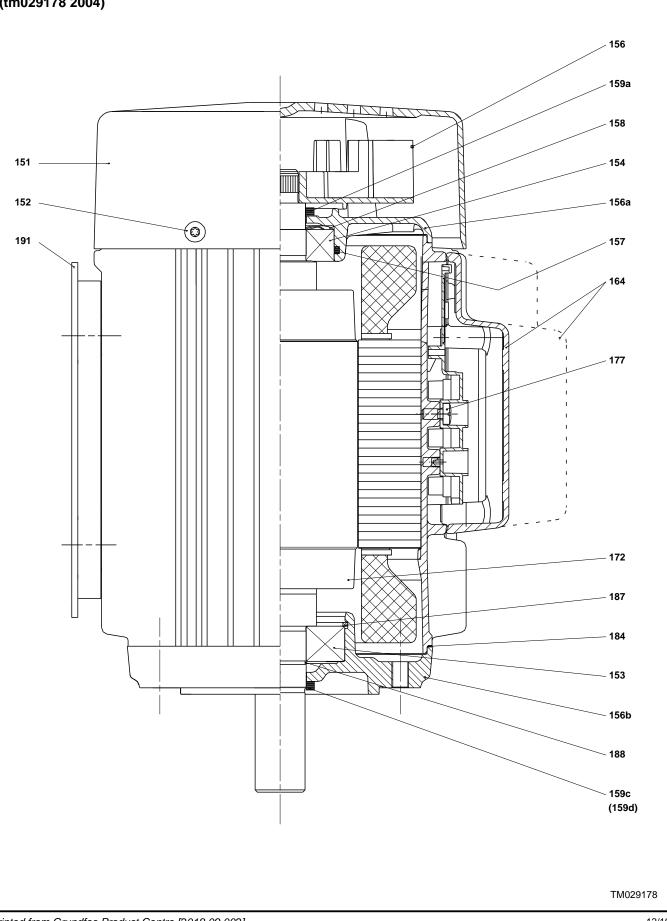






16/02/2019







16/02/2019

Spare parts CRN 5-13, Product No. 96517192 Valid from 1.1.2011 (1152)

Pos	Description	Annotation		Part no.	Qty	
80	Kit, chamber stack		Bearing type: SILICON CARBIDE	96453609	1	pcs
4a	Chamber w. bearing cpl.					3
	Chamber					
45	Neck ring					
65	Neck ring retainer					
4	Chamber cpl.					9
	Chamber					
45	Neck ring					
65	Neck ring retainer					
5a	Chamber cpl.					1
	Chamber					
45	Neck ring					
65	Neck ring retainer					
44a	Guide vane					1
ττα	Plate					•
	Guide vane					
50	Top plate					
47	Bearing ring, rotating					3
49	Impeller cpl.					13
51	Shaft, spline, cpl.					1
64c	Clamp, splined		Internal diameter: 8,5			1
			Outer diameter: 15			_
64a	Spacing pipe		Length (mm): 13.00			3
64	Spacing pipe		Length (mm): 26.0			9
66	Wedge lock washer					1
67	Lock nut		Thread: M8			1
69	Spacing pipe		Length (mm): 2.00			1
	Kit, coupling			00415062	1	pcs
9	Hex socket head cap screw		Designation: DIN 912			4
			Length (mm): 25			
			Thread: M8			
10a	Coupling half					2
10	Shaft pin		Diameter: 5			1
			Length (mm): 26			
	Kit, coupling guard			96505131	1	pcs
7.a	Combi Slot Torx screw					4
7	Coupling guard					2
	Kit, gaskets			96455090	1	pcs
37	O-ring					2
38	O-ring		Diameter: 16,3			1
	5		Material type: EPDM			
			Thickness: 2,4			
38	O-ring		Diameter: 16,3			2
	09		Material type: EPDM			-
			Thickness: 2,4			
109	O-ring		Diameter: 22,00			1
103	C mig		Material type: EPDM			•
			Thickness: 2,75			
	Kit plug		1110A11855. 2,70	06505400	1	n 00
40	Kit, plug			96505133		pcs
18	Air vent screw					1
	Spindle					
	Plug					
23b	Spindle					1



Pos	Description	Annotation	Classification Data	Part no. Qt	y. Unit
25	Plug				1
25	Plug				1
38	O-ring		Diameter: 16,3		1
			Material type: FKM		
			Thickness: 2,4		
38	O-ring		Diameter: 16,3		2
00	Ching		Material type: FKM		2
			Thickness: 2,4		
38	O ring		Diameter: 16,3		1
30	O-ring		•		I
			Material type: EPDM		
~~			Thickness: 2,4		_
38	O-ring		Diameter: 16,3		2
			Material type: EPDM		
			Thickness: 2,4		
	Kit, shaft seal HQQE			96455086 1	pcs
105	Shaft seal		Material type: HQQE		1
	Kit, wear parts		Material type: SIC	96455098 1	pcs
4a	Chamber w. bearing cpl.				3
	Chamber				
45	Neck ring				
65	Neck ring retainer				
45	Neck ring				13
47	Bearing ring, rotating				3
-47 64c	Clamp, splined		Internal diameter: 8,5		1
040	Clamp, spilled		Outer diameter: 15		1
64-	Creating size				0
64a	Spacing pipe		Length (mm): 13.00		3
65	Neck ring retainer				13
66	Wedge lock washer				1
67	Lock nut		Thread: M8		1
441b	Gasket				2
	Motor			85903722 1	pcs
	Kit, bearing cpl.			96279794	1
111	Ball bearing				
111	Ball bearing				
157	O-ring		Diameter: 52		
			Material type: NBR		
			Thickness: 3		
158	Waved washer				
187	Retaining ring				
188	Retaining ring				
.00	Kit, end shield			96279789	1
156a	End shield			30213109	I
	Gasket		Internal diameters 4	11.2	
157a	Gaskel		Internal diameter: 1	41,2	
			Outer diameter: 145,5		
			Thickness: 0,2		
157	O-ring		Diameter: 52		
			Material type: NBR		
			Thickness: 3		
158	Waved washer				
159a	Seal ring				
	Kit, fan			96279757	1
156	Fan				
159a	Seal ring				
1000	Kit, fan cover			96279755	1
151	Fan cover			30213133	I
151					
152	Pan head thread forming screw			~~~~~~	4
	Kit, flange			96279777	1
156b	Flange				
159.c	Seal ring				



Pos	Description	Annotation	Classification Data	Part no.	Qty. Unit
184	Gasket		Internal diameter		
			Outer diameter: 145,5		
			Thickness: 0,2		
186	Drain plug				
	Kit, retaining ring			962797	'98 1
187	Retaining ring				
188	Retaining ring				
	Kit, shaft seal			962797	61 1
159c	Seal ring				
159a	Seal ring				
	Kit, staybolts			962797	92 1
181	Pan head staybolt				
	Kit, terminal board			962797	69 1
173a	Base				
173	Pan head thread forming screw		Designation: CO	MBI TORX T25	
176	Slot cheese head screw		Designation: CO		
			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			302191	<i>r</i> 1 1
166					
166 1a	Pan head thread forming screw Pump head			98906053	1
1a 2					
	Pump cover			96588244	
4a	Bulk, Chamber w. bearing cpl. (5 pcs)			96547653	
4a	Chamber w. bearing cpl.			98371281	
4	Chamber cpl.			98371279	
45	Bulk, Neck ring (24 pcs)			965476	
5a	Chamber cpl.			98371278	
6	Base			96588143	•
7.a	Bulk, Combi Slot Torx screw (1000 pcs)			96886324	1
7	Bulk, Coupling guard (10 pcs)			96603690	2 pcs
10	Bulk, Shaft pin (10 pcs)		Diameter: 5	96536473	1 pcs
			Length (mm): 26		
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
25a	Drain plug w/bypass valve			96588243	1 pcs
38	Bulk, O-ring (10 pcs)		Diameter: 16,3	991988	15 1
			Material type: EPDM		
			Thickness: 2,4		
38	Bulk, O-ring (50 pcs)		Diameter: 16,3	994127	27 1
			Material type: EPDM		
			Thickness: 2,4		
26	Staybolt		Length (mm): 448	98986266	4 pcs
	- ··· / ··· ··		Thread: M12	0000200	
37	Bulk, O-ring (24 pcs)			96547656	2 pcs
38	Bulk, O-ring (10 pcs)		Diameter: 16,3	99198815	
50			Material type: EPDM	33130013	~ pus
20	Rulk O ring (50 pee)		Thickness: 2,4	00440707	2
38	Bulk, O-ring (50 pcs)		Diameter: 16,3	99412727	2 pcs
			Material type: EPDM		
			Thickness: 2,4		
44a	Guide vane			98902003	1 pcs



				Date:	16/02/2019		
	Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
	47	Bulk, Bearing ring, rotating (10 pcs)			97905743	3	pcs
	47	Bearing ring, rotating			96547649	3	pcs
+	49	Bulk, Impeller cpl. (10 pcs)			97643331	13	pcs
+	49	Bulk, Impeller cpl. (24 pcs)			96547650	13	pcs
+	49	Impeller cpl.			98394423	13	pcs
	51	Shaft, spline, cpl.			98368520	1	pcs
	56	Base plate			96588141	1	pcs
	60	Formed wire spring			96547664	1	pcs
	64c	Bulk, Clamp, splined (5 pcs)		Internal diameter: 8,5	98496968	1	pcs
				Outer diameter: 15			
	64a	Bulk, Spacing pipe (24 pcs)		Length (mm): 13.00	96536452	3	pcs
	64a	Spacing pipe		Length (mm): 13.00	98520104	3	pcs
	64	Bulk, Spacing pipe (24 pcs)		Length (mm): 26.0	96536304	9	pcs
	66	Bulk, Wedge lock washer (10 pcs)			96536157	1	pcs
	67	Bulk, Lock nut (10 pcs)		Thread: M8	98277008	1	pcs
	69	Bulk, Spacing pipe (10 pcs)		Length (mm): 2.00	96536451	1	pcs
+	105	Bulk, Shaft seal (15 pcs)		Material type: HQQE	96983415	1	pcs
	440b	Bulk, Lock ring (2 pcs)			98918331	2	pcs
	440a	Flange			99037117	2	pcs