

CRN15-16 SF-P-G-E-HQQE 3x380-415D 50 HZ

Grundfos pump 96512213




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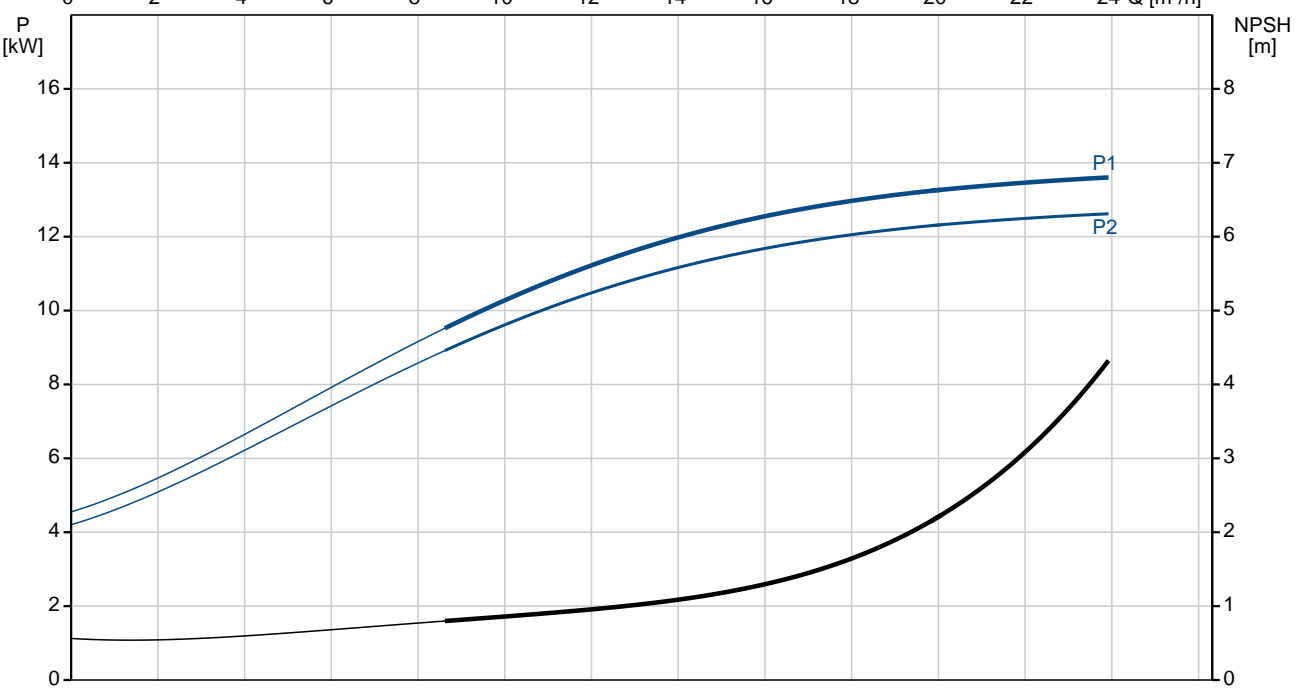
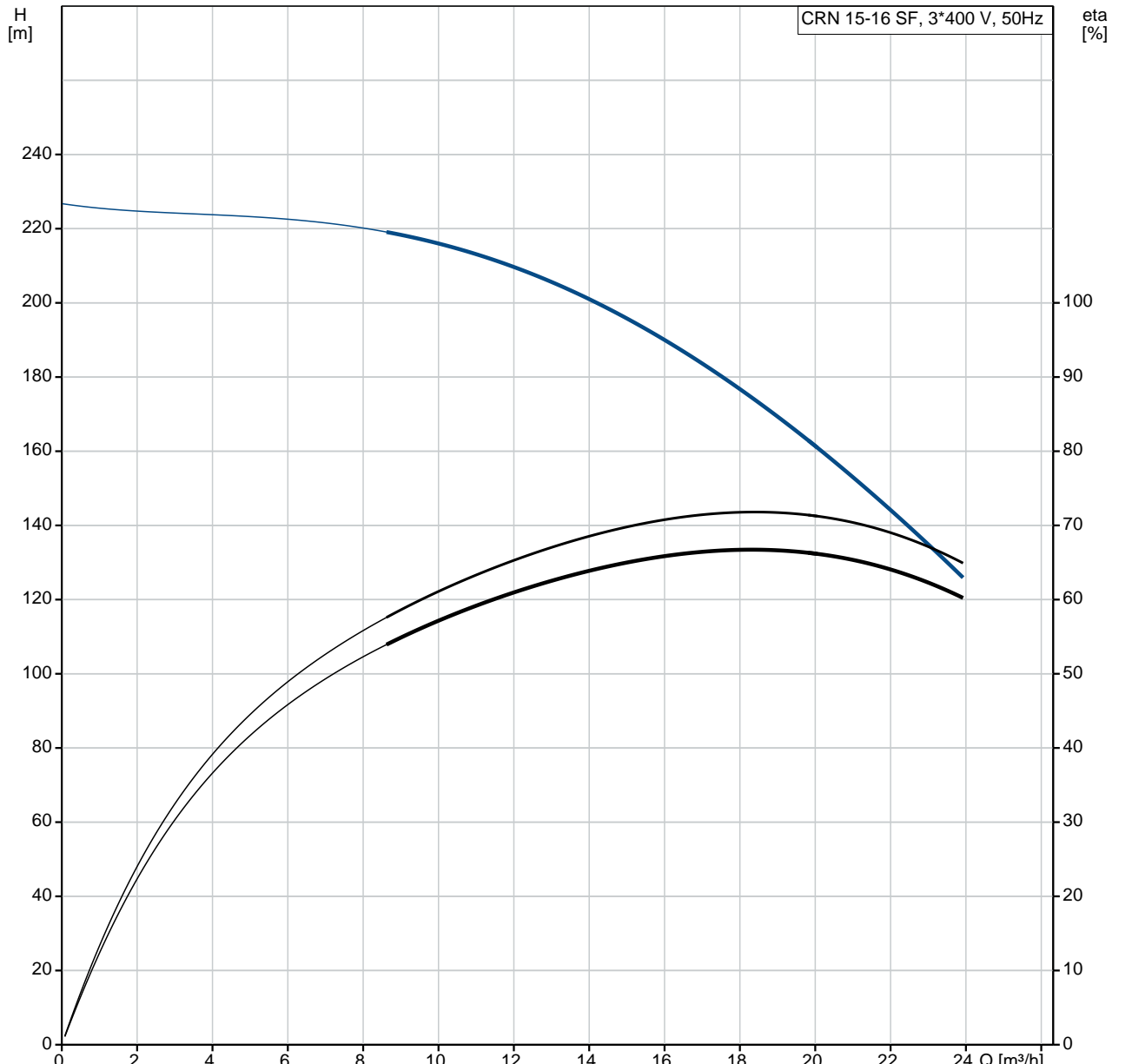
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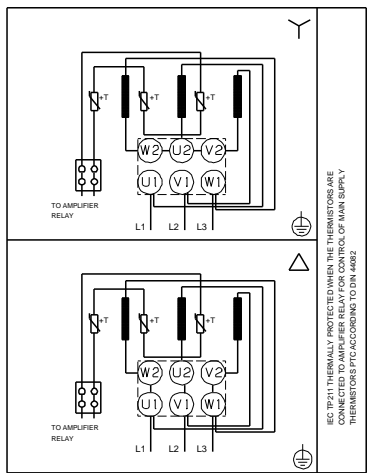
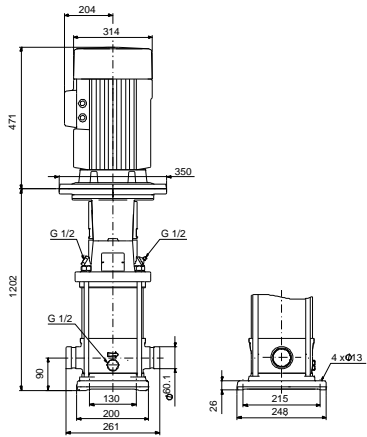
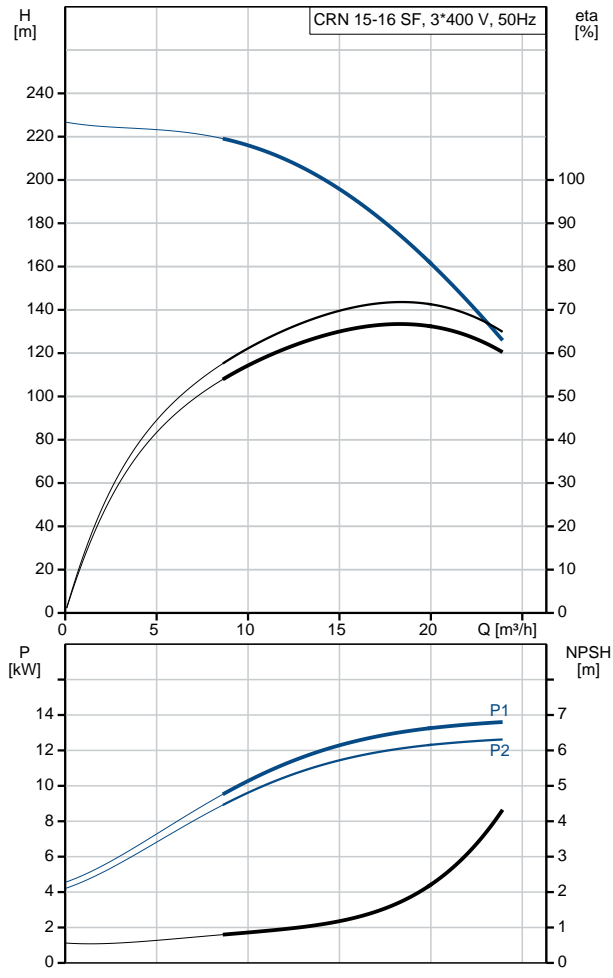
Position	Qty.	Description
	1	<p data-bbox="320 163 683 194">CRN 15-16 SF SF-P-G-E-HQQE</p>  <p data-bbox="320 483 600 515">Product No.: On request</p> <p data-bbox="320 544 1460 669">Vertical, non-self-priming, high-pressure multistage centrifugal pump with suction and discharge ports on the same level (in-line) enabling installation in a horizontal one-pipe system. The chamber stack is turned upside-down to ensure that the shaft seal is not affected by the high pump discharge pressure. A cartridge shaft seal ensures high reliability, safe handling and easy service and access. Power transmission is via a split coupling. Pipe connection is via PJE (Victaulic®) couplings.</p> <p data-bbox="320 683 1054 714">The pump is fitted with a 3-phase, fan-cooled asynchronous motor.</p> <p data-bbox="320 741 639 772">Further product details</p> <p data-bbox="320 779 1449 927">This pump is a part of a double-pump system consisting of two pumps connected in series. The direction of rotation is the opposite of that of standard pumps as the chamber stack is turned upside-down. Consequently, the pumped liquid flows in the opposite direction inside the pump. This special design of the high-pressure pump ensures that only the discharge pressure from the connected feed pump affects the shaft seal. The performance curve only shows the high-pressure pump, not the double-pump system.</p> <p data-bbox="320 947 1449 1048">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:</p> <ol data-bbox="320 1059 810 1176" style="list-style-type: none"> 1) alkaline-based cleaning. 2) zinc phosphating. 3) cathodic electro-deposition. 4) curing to a dry film thickness 18-22 my m. <p data-bbox="320 1178 1027 1209">The colour code for the finished product is NCS 9000/RAL 9005.</p> <p data-bbox="320 1236 403 1267">Pump</p> <p data-bbox="320 1274 1422 1375">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.</p> <p data-bbox="320 1388 467 1420">Primary seal:</p> <ul data-bbox="355 1417 919 1473" style="list-style-type: none"> • Rotating seal ring material: silicon carbide (SiC) • Stationary seat material: silicon carbide (SiC) <p data-bbox="320 1476 1425 1529">This material pairing is used where higher corrosion resistance is required. The high hardness of this material pairing offers good resistance against abrasive particles.</p> <p data-bbox="320 1534 986 1565">Secondary seal material: EPDM (ethylene-propylene rubber)</p> <p data-bbox="320 1568 1219 1599">EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.</p> <p data-bbox="320 1624 1457 1702">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.</p> <p data-bbox="320 1738 403 1769">Motor</p> <p data-bbox="320 1776 1434 1830">The motor is a totally enclosed, fan-cooled motor with principal dimensions to IEC and DIN standards. The motor is flange-mounted with free-hole flange (FF).</p> <p data-bbox="320 1832 1390 1863">Motor-mounting designation in accordance with IEC 60034-7: IM B 5 (Code I) / IM 3001 (Code II).</p> <p data-bbox="320 1865 1414 1919">Electrical tolerances comply with IEC 60034. The motor efficiency is classified as IE3 in accordance with IEC 60034-30-1.</p> <p data-bbox="320 1921 523 1953">Technical data</p> <p data-bbox="320 2011 826 2101">Liquid: Pumped liquid: Water Liquid temperature range: -20 .. 120 °C</p>

Position	Qty.	Description
		<p>Liquid temperature during operation: 20 °C Density: 998.2 kg/m³</p> <p>Technical: Rated flow: 17 m³/h Rated head: 181.1 m Primary shaft seal: HQQE Approvals on nameplate: CE,TR Curve tolerance: ISO9906:2012 3B</p> <p>Materials: Pump housing: Stainless steel DIN W.-Nr. 1.4408 ASTM A 351 CF 8M Impeller: Stainless steel DIN W.-Nr. 1.4401 AISI 316</p> <p>Installation: Maximum ambient temperature: 60 °C Max pressure at stated temp: 50 bar / 120 °C 50 bar / -20 °C Flange standard: PJE Pipe connection: 60,1 mm Flange size for motor: FF300</p> <p>Electrical data: Motor type: 160MD IE Efficiency class: IE3 Rated power - P2: 15 kW Power (P2) required by pump: 15 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-415D/660-690Y V Rated current: 28,0-26,0/16,2-15,6 A Starting current: 660-780 % Cos phi - power factor: 0.89-0.87 Rated speed: 2930-2950 rpm Efficiency: IE3 91,9% Motor efficiency at full load: 91.9-91.9 % Motor efficiency at 3/4 load: 92.4 % Motor efficiency at 1/2 load: 92.4 % Number of poles: 2 Enclosure class (IEC 34-5): 55 Dust/Jetting Insulation class (IEC 85): F</p> <p>Others: Minimum efficiency index, MEI : 0.70 Net weight: 146 kg Gross weight: 178 kg</p>

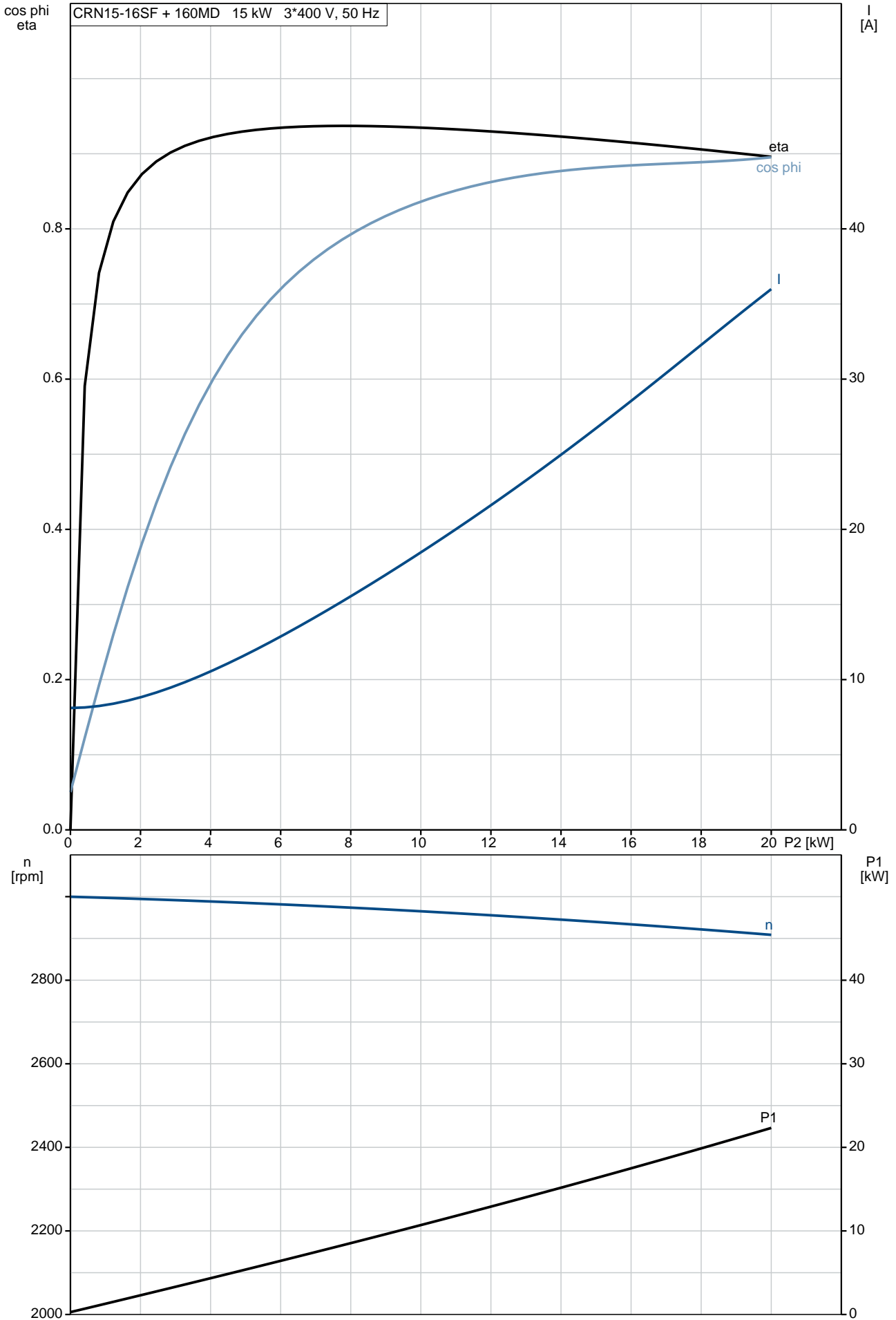
On request CRN 15-16 SF SF-P-G-E-HQQE 50 Hz



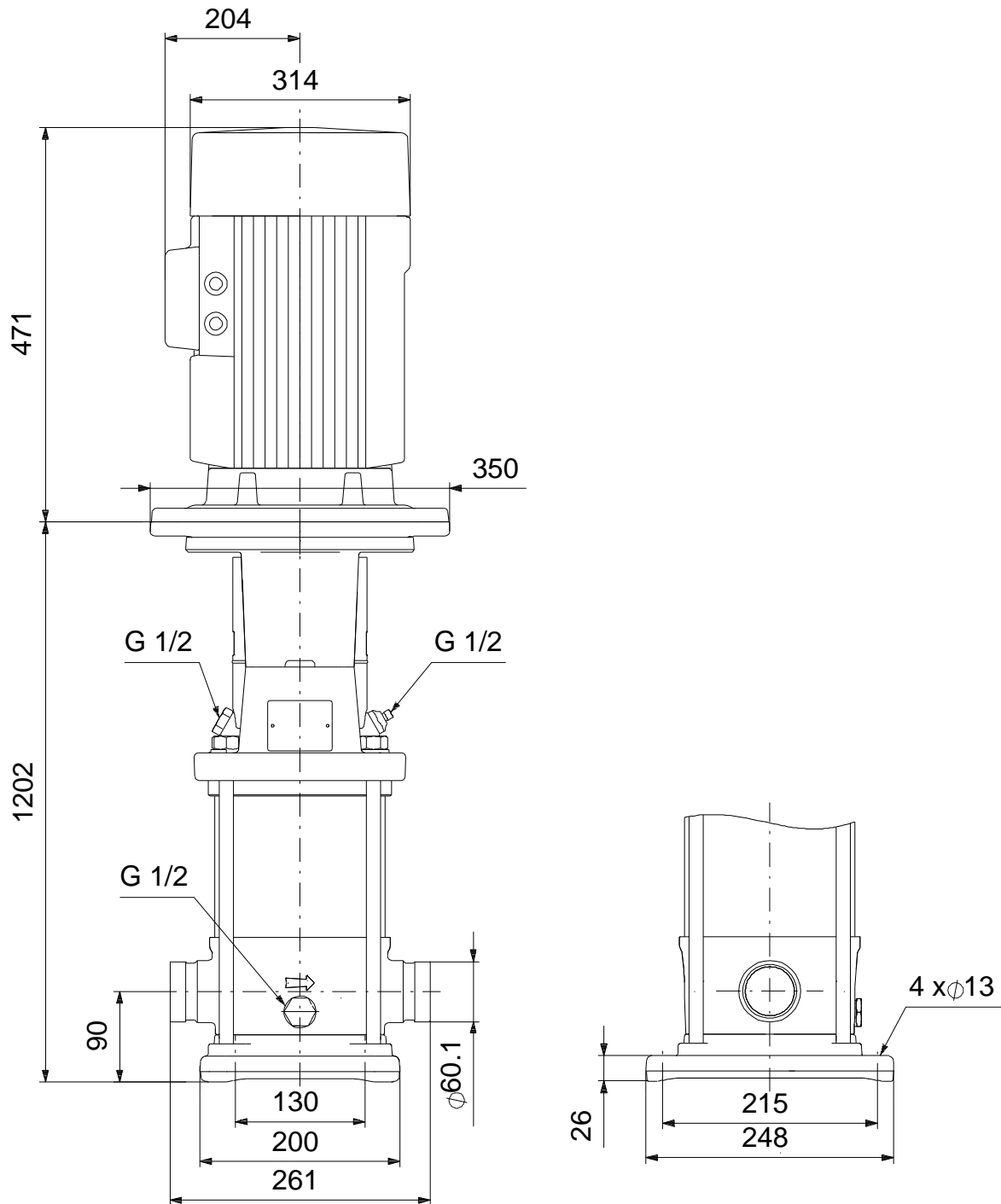
Description	Value
General information:	
Product name:	CRN 15-16 SF
Product No:	SF-P-G-E-HQQE
EAN number:	On request
Technical:	
Rated flow:	17 m ³ /h
Rated head:	181.1 m
Stages:	16
Impellers:	16
Primary shaft seal:	HQQE
Approvals on nameplate:	CE,TR
Curve tolerance:	ISO9906:2012 3B
Pump version:	SF
Model:	A
Materials:	
Pump housing:	Stainless steel
	DIN W.-Nr. 1.4408
	ASTM A 351 CF 8M
Impeller:	Stainless steel
	DIN W.-Nr. 1.4401
	AISI 316
Material code:	G
Code for rubber:	E
Installation:	
Maximum ambient temperature:	60 °C
Max pressure at stated temp:	50 bar / 120 °C
	50 bar / -20 °C
Flange standard:	PJE
Pipe connection:	60,1 mm
Flange size for motor:	FF300
Connect code:	P
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-20 .. 120 °C
Liquid temperature during operation:	20 °C
Density:	998.2 kg/m ³
Electrical data:	
Motor type:	160MD
IE Efficiency class:	IE3
Rated power - P2:	15 kW
Power (P2) required by pump:	15 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-415D/660-690Y V
Rated current:	28,0-26,0/16,2-15,6 A
Starting current:	660-780 %
Cos phi - power factor:	0.89-0.87
Rated speed:	2930-2950 rpm
Efficiency:	IE3 91,9%
Motor efficiency at full load:	91.9-91.9 %
Motor efficiency at 3/4 load:	92.4 %
Motor efficiency at 1/2 load:	92.4 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	PTC
Motor No:	85905162
Others:	
Minimum efficiency index, MEI :	0.70
Net weight:	146 kg
Gross weight:	178 kg



On request CRN 15-16 SF SF-P-G-E-HQQE 50 Hz

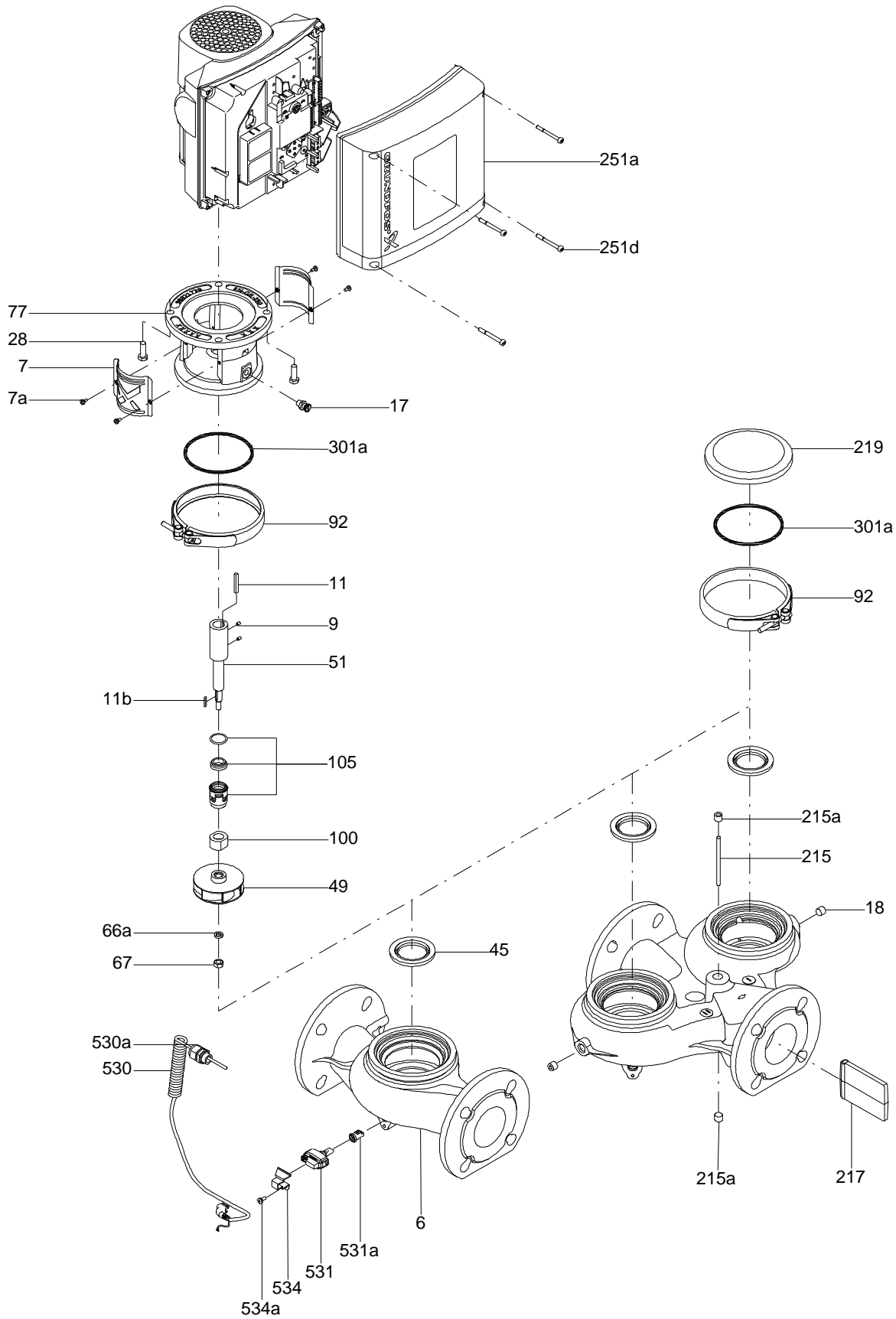


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Note! All units are in [mm] unless others are stated.
Disclaimer: This simplified dimensional drawing does not show all details.

Exploded view

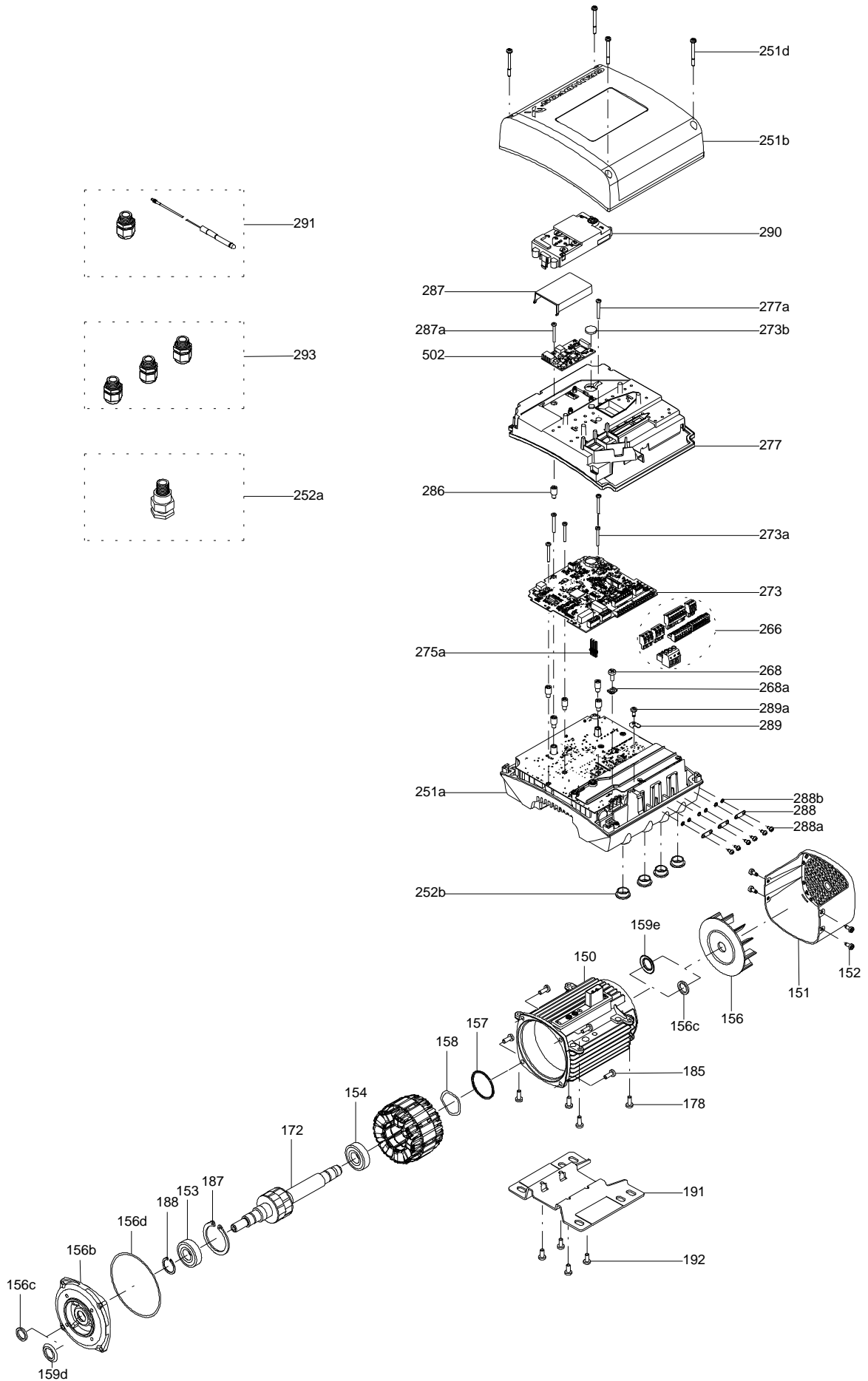


Sectional drawing (TM058200 for TPE2,TPE3)



TM058200

Exploded view (TM057026 for MGE model H/I)



Parts list CRN 15-16 SF, Product No. On request
Valid from 1.4.2011 (1113)

Pos	Description	Annotation	Données de classification	Référence	Quantité	Unité
+	Motor				1	pcs
-	Base cpl.				1	pcs
6	Base				1	
6e	Formed wire spring				1	
25	Drain plug				1	
56	Base plate				1	
-	Rubber module				1	pcs
37	O-ring				2	
38	O-ring		Diameter: 16,3 Material type: EPDM Thickness: 2,4		1	
38a	O-ring		Diameter: 5,3 Material type: EPDM Thickness: 2,4		1	
46a	O-ring				1	
46b	O-ring		Diameter: 85 Material type: EPDM Thickness: 4		1	
100	O-ring		Diameter: 16,3 Material type: EPDM Thickness: 2,4		2	
- 2	Pump head cpl.				1	pcs
1	Flange				1	
2	Pump head				1	
7	Coupling guard				2	
- 18	Air vent screw				1	
	Plug				1	
	Spindle				1	
23	Plug				1	
28	Hex head screw		Length (mm): 25 Thread: M12		4	
28a	Hex head screw		Length (mm): 45 Thread: M16		4	
36	Hex nut		Thread: M16		4	
37.a	O-ring				1	
76	Nameplate				1	
76a	Rivet				1	
77	Pump cover				1	
- 8	Coupling				1	pcs
9	Hex socket head cap screw		Designation: DIN 912 Length (mm): 25 Thread: M10		4	
10	Shaft pin		Diameter: 5 Length (mm): 26		1	
10a	Coupling half				2	
26	Staybolt		Length (mm): 945		1	pcs
36	Nut		Thread: M16		1	pcs
55	Outer sleeve				1	pcs
66.a	Washer		Designation: DIN 125 A2 Internal diameter: 17 Outer diameter: 30 Thickness: 3		1	pcs
- 80	Chamber stack				1	pcs
- 4	Intermediate chamber cpl.				13	
	Intermediate chamber				1	
45	Neck ring cpl.				1	
65	Retainer				1	
4.c	Intermediate chamber cpl.				1	
- 4a	Intermediate chamber cpl.				2	

Pos	Description	Annotation	Données de classification	Référence	Quantité	Unité
	Guide vane				10	
	Bearing plate				1	
	Bearing bush				1	
	Intermediate chamber				1	
	Guide cup				1	
	Sand Lifter				1	
45	Neck ring cpl.				1	
65	Retainer				1	
26.b	Hex head screw				4	
26.c	Washer		Designation: DIN 125A Thickness: 1,6		4	
26a	Strap cpl.				4	
36	Lock nut		Thread: M8		1	
44	Inlet part				1	
- 44a	Inlet part cpl.				1	
45	Neck ring cpl.				1	
65	Retainer				1	
46	Discharge part				1	
47a	Bearing ring				3	
- 49	Impeller cpl.				16	
	Impeller				1	
49c	Wear ring				1	
- 51	Shaft, spline, cpl.				1	
62	Stop ring				1	
64c	Spacing pipe		Length (mm): 12,7		1	
64c	Spacing bush				2	
64d	Spacing pipe		Length (mm): 10,6		3	
66	Wedge lock washer				1	
69	Spacing pipe		Length (mm): 43,6		13	
69	Spacing pipe		Length (mm): 58,6		1	
105	Shaft seal		Material type: HQQE		1	pcs

Disclaimer: The information about the Grundfos pump in this document may be outdated.

Data may be subject to alterations without further notice.

Please contact us to verify the data above is still accurate/up-to-date.

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