
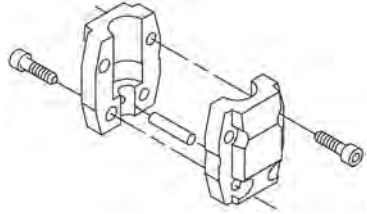
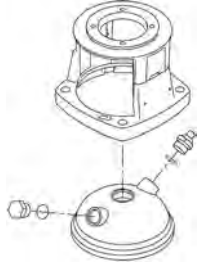


Qty.	Description
1	<p data-bbox="199 336 526 369">CRN 3-21 A-FGJ-A-E-HQQE</p>  <p data-bbox="199 660 470 694">Product No.: 96516841</p> <p data-bbox="199 716 1404 817">Vertical, multistage centrifugal pump with inlet and outlet ports on same the level (inline). Pump materials in contact with the liquid 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.</p> <p data-bbox="199 862 933 896">The pump is fitted with a 3-phase, fan-cooled asynchronous motor.</p> <p data-bbox="199 918 518 952">Further product details</p> <p data-bbox="199 952 1428 1064">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="199 1064 694 1187" 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="199 1187 909 1220">The colour code for the finished product is NCS 9000/RAL 9005.</p> <p data-bbox="199 1243 287 1276">Pump</p> <p data-bbox="199 1276 1388 1332">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.</p>  <p data-bbox="199 1579 1372 1635">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.</p>  <p data-bbox="199 1926 1460 2027">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="199 2038 351 2072">Primary seal:</p> <ul data-bbox="239 2072 805 2105" style="list-style-type: none"> • Rotating seal ring material: silicon carbide (SiC)

Qty. Description

- 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 separate 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 (I₁/1).

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

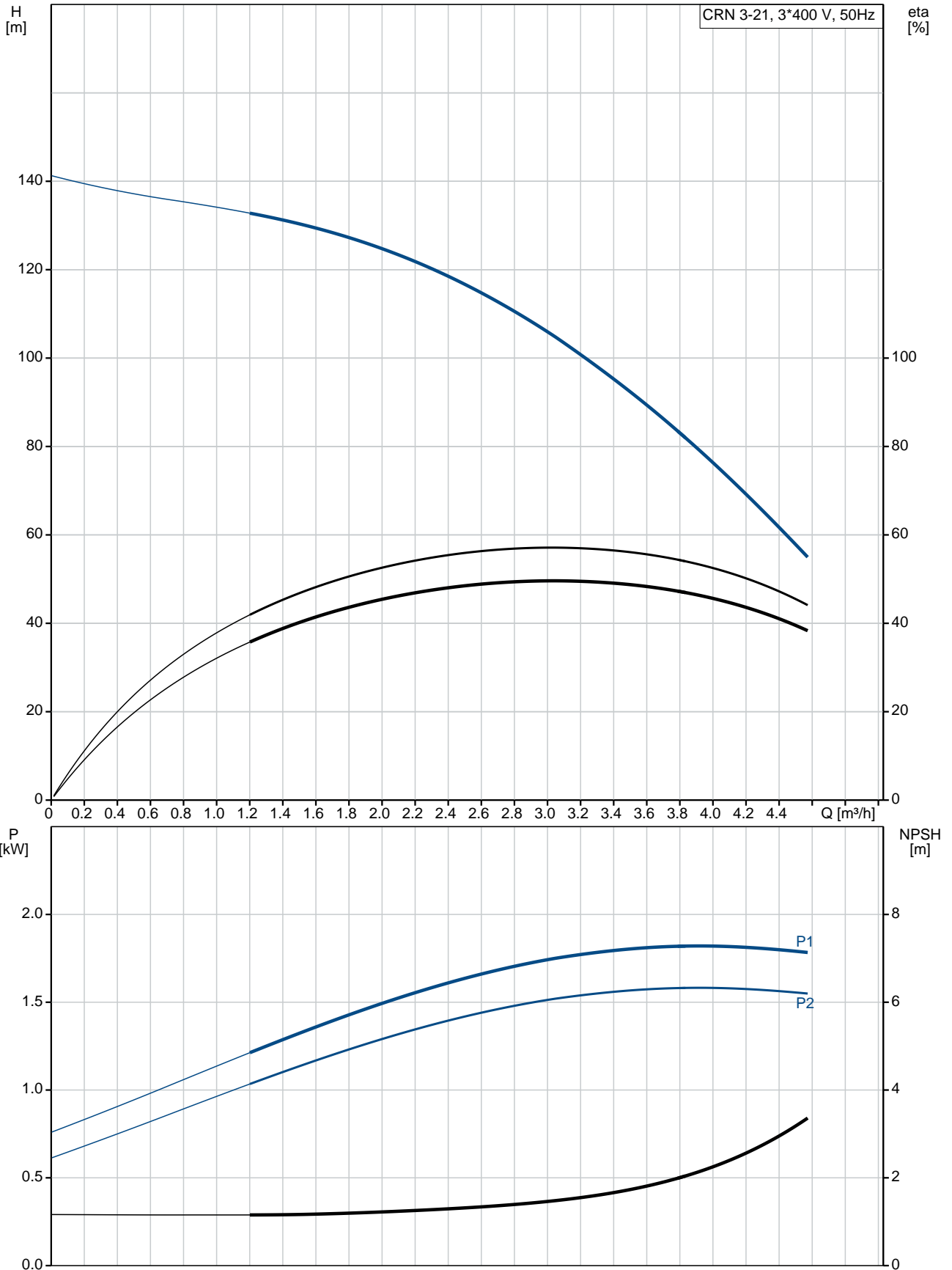
Technical:

Pump speed on which pump data are based: 2899 rpm
 Rated flow: 3 m³/h
 Rated head: 103.6 m
 Pump orientation: Vertical
 Shaft seal arrangement: Single
 Code for shaft seal: HQQE
 Approvals on nameplate: CE, EAC, ACS
 Curve tolerance: ISO9906:2012 3B

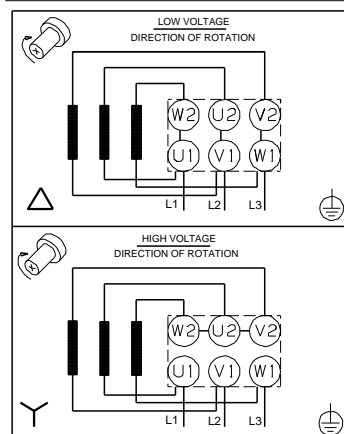
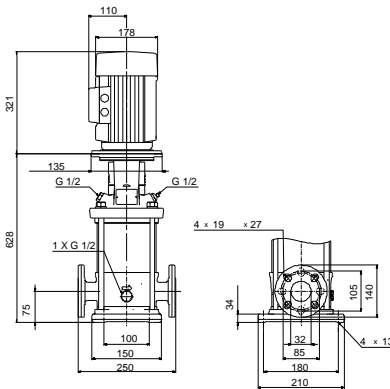
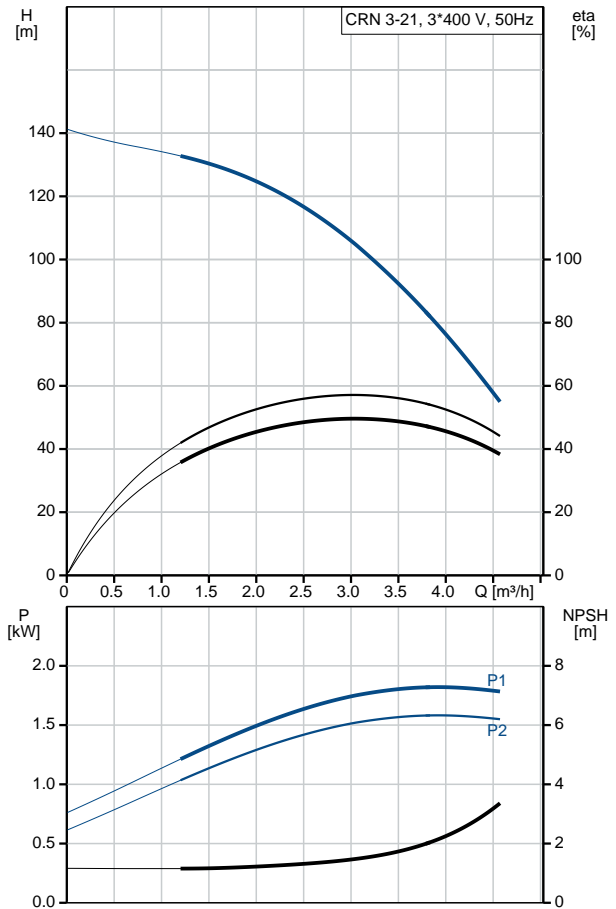
Materials:

Qty.	Description
	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 25/32 1 1/4 inch Size of outlet connection: DN 25/32 1 1/4 inch Pressure rating for pipe connection: 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 $\hat{\alpha}\%$: 0.70 Net weight: 43.8 kg Gross weight: 46.7 kg Shipping volume: 0.13 m ³

96516841 CRN 3-21 A-FGJ-A-E-HQQE 50 Hz



Description	Value
General information:	
Product name:	CRN 3-21 A-FGJ-A-E-HQQE
Product No:	96516841
EAN number:	5700396750798
Technical:	
Pump speed on which pump data are based:	2899 rpm
Rated flow:	3 m³/h
Rated head:	103.6 m
Head max:	139.9 m
Stages:	21
Impellers:	21
Number of reduced-diameter impellers:	0
Low NPSH:	N
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQE
Approvals on nameplate:	CE, EAC, ACS
Curve tolerance:	ISO9906:2012 3B
Pump version:	A
Model:	A
Materials:	
Base:	Stainless steel EN 1.4408 AISI 316
Impeller:	Stainless steel EN 1.4401 AISI 316
Material code:	A
Code for rubber:	E
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 25/32 1 1/4 inch
Size of outlet connection:	DN 25/32 1 1/4 inch
Pressure rating for pipe connection:	PN 25
Flange rating inlet:	300 lb
Flange size for motor:	FT115
Connect code:	FGJ
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-20 .. 120 °C
Liquid temperature during operation:	20 °C
Density:	998.2 kg/m³
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





Company name:

Created by:

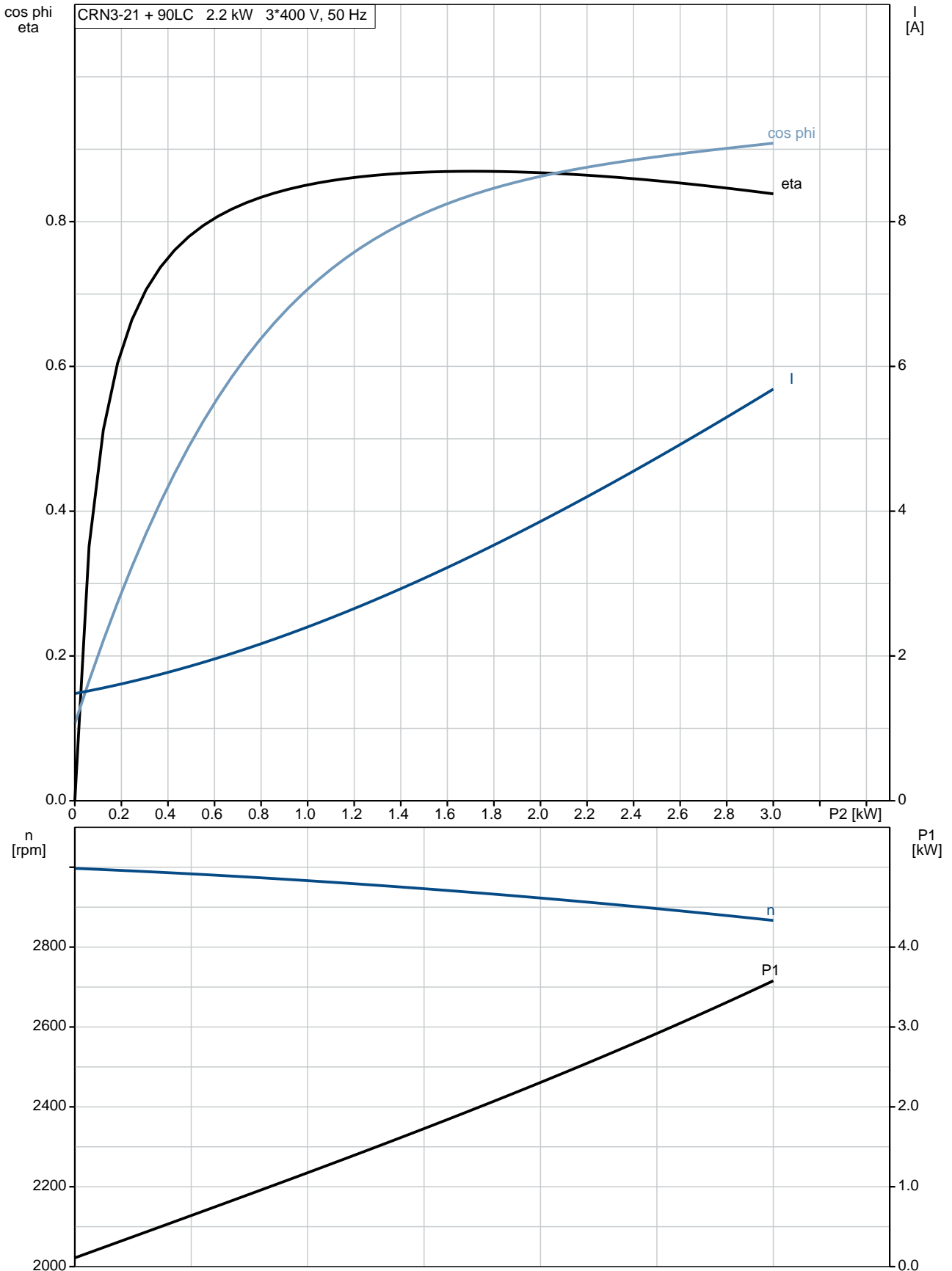
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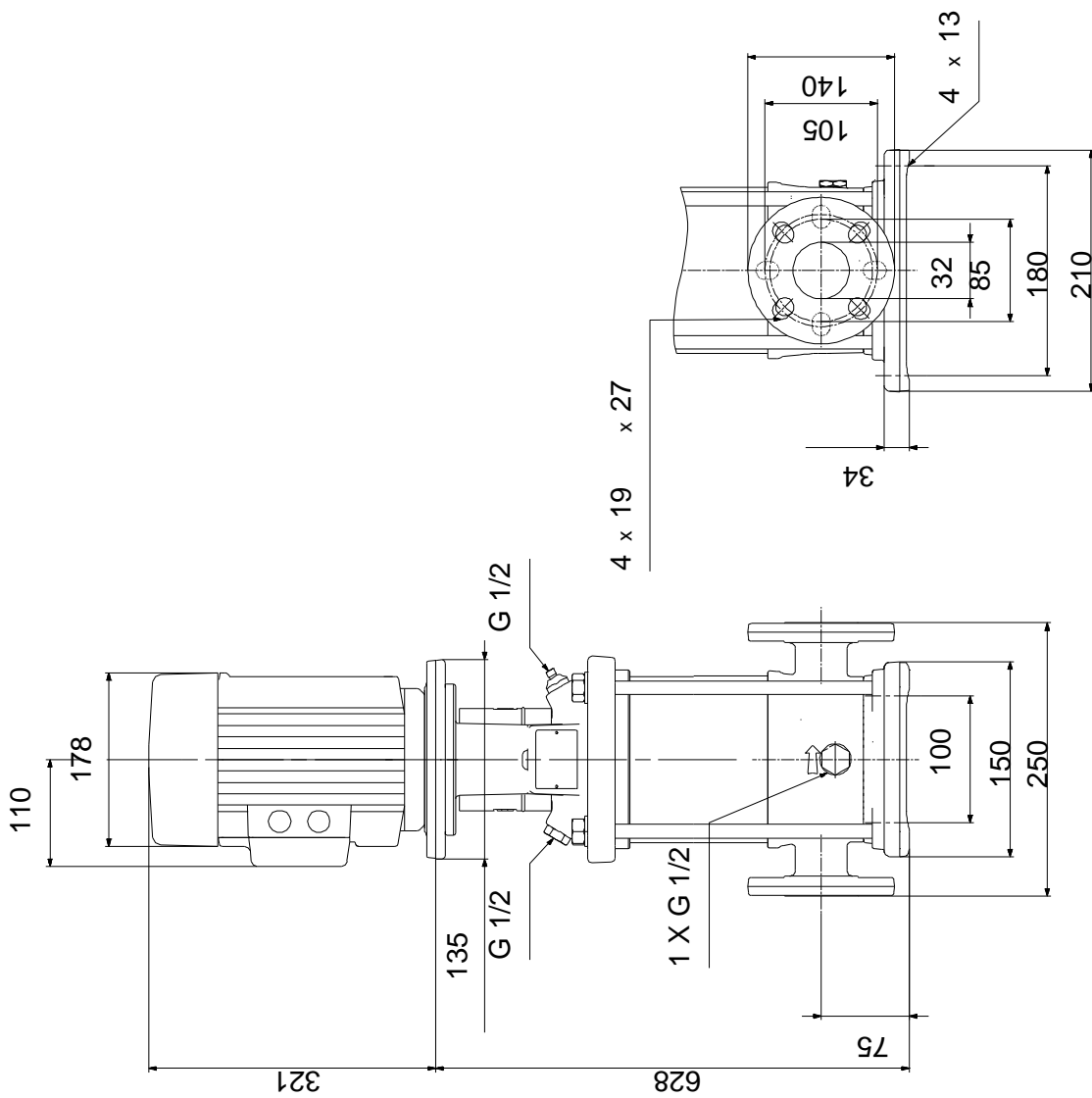
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Description	Value
Rated voltage:	3 x 220-240D/380-415Y V
Rated current:	7.70/4.45 A
Starting current:	850-950 %
Cos phi - power factor:	0.89-0.87
Rated speed:	2890-2910 rpm
Efficiency:	IE3 85,9%
Motor efficiency at full load:	85.9 %
Motor efficiency 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 $\hat{\alpha}\%$:	0.70
Net weight:	43.8 kg
Gross weight:	46.7 kg
Shipping volume:	0.13 m ³

96516841 CRN 3-21 A-FGJ-A-E-HQQE 50 Hz

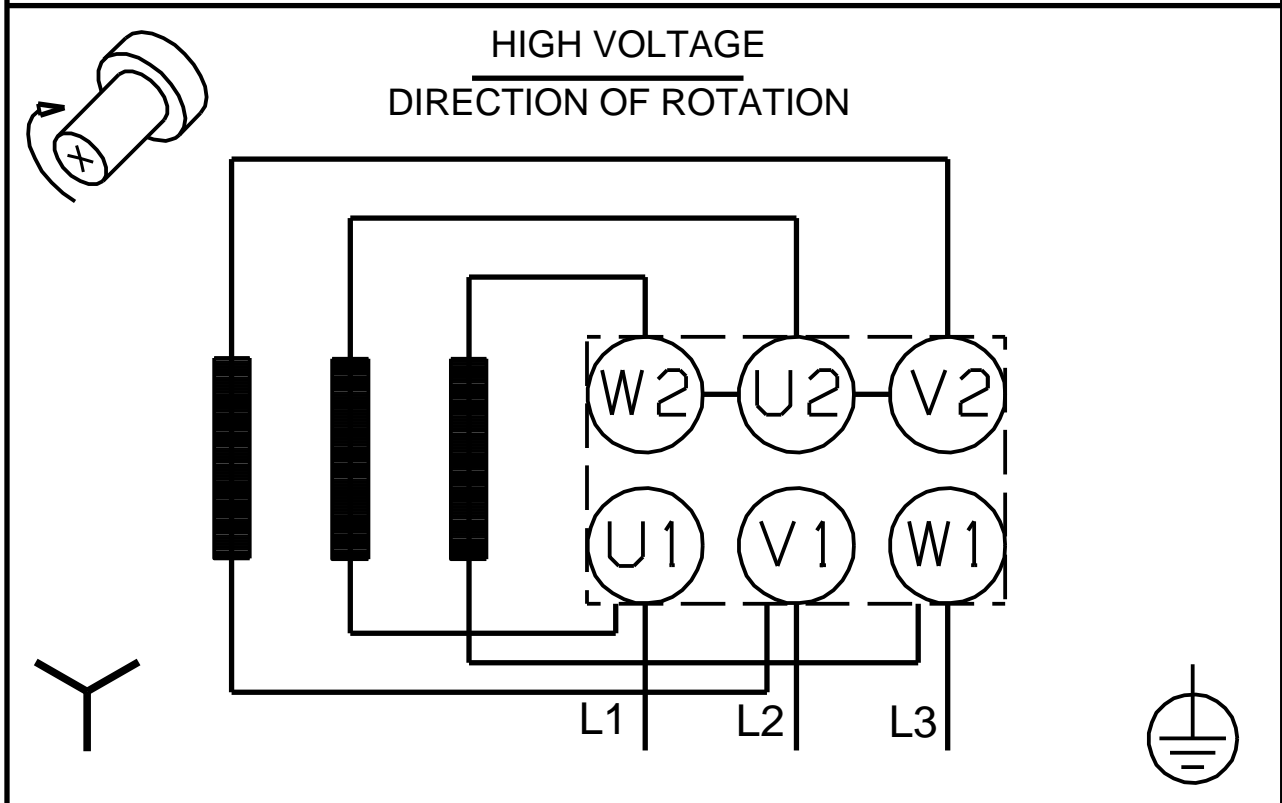
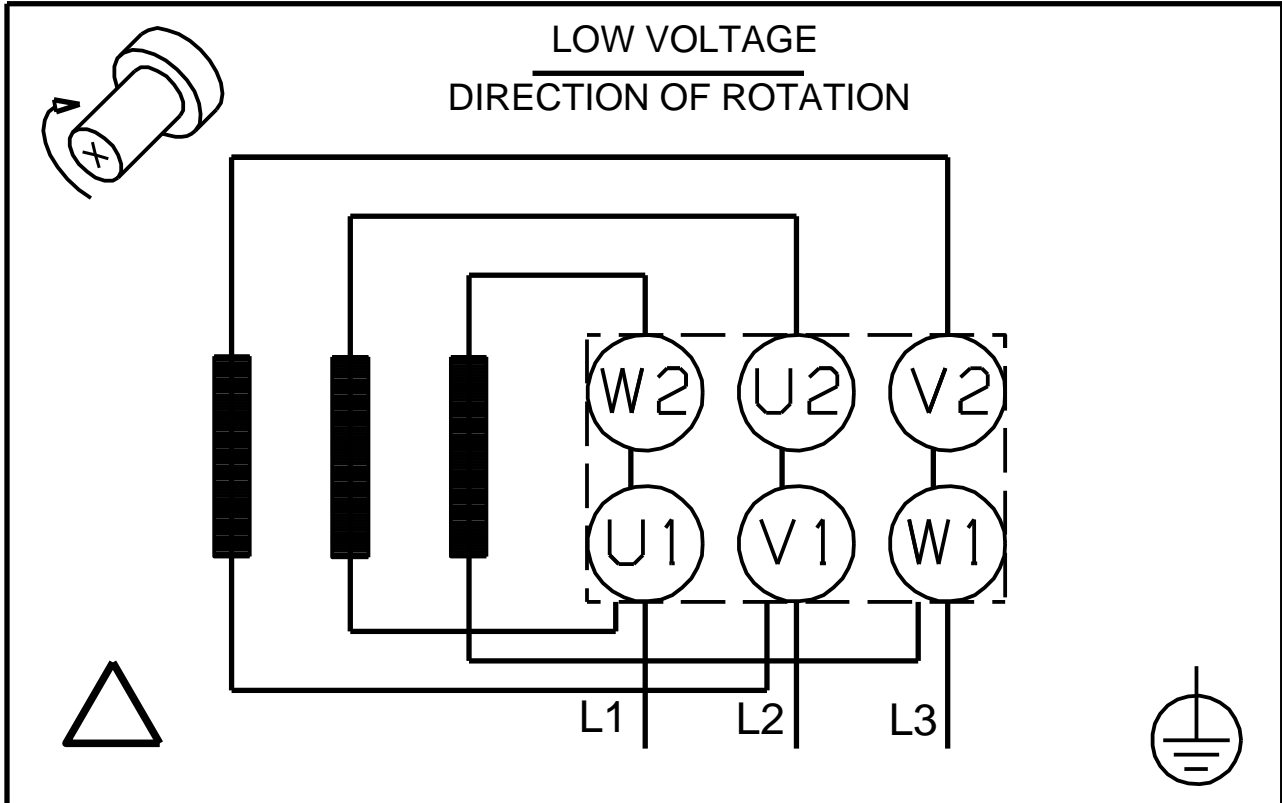


96516841 CRN 3-21 A-FGJ-A-E-HQQE 50 Hz



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

96516841 CRN 3-21 A-FGJ-A-E-HQQE 50 Hz



Note! All units are in [mm] unless others are stated.

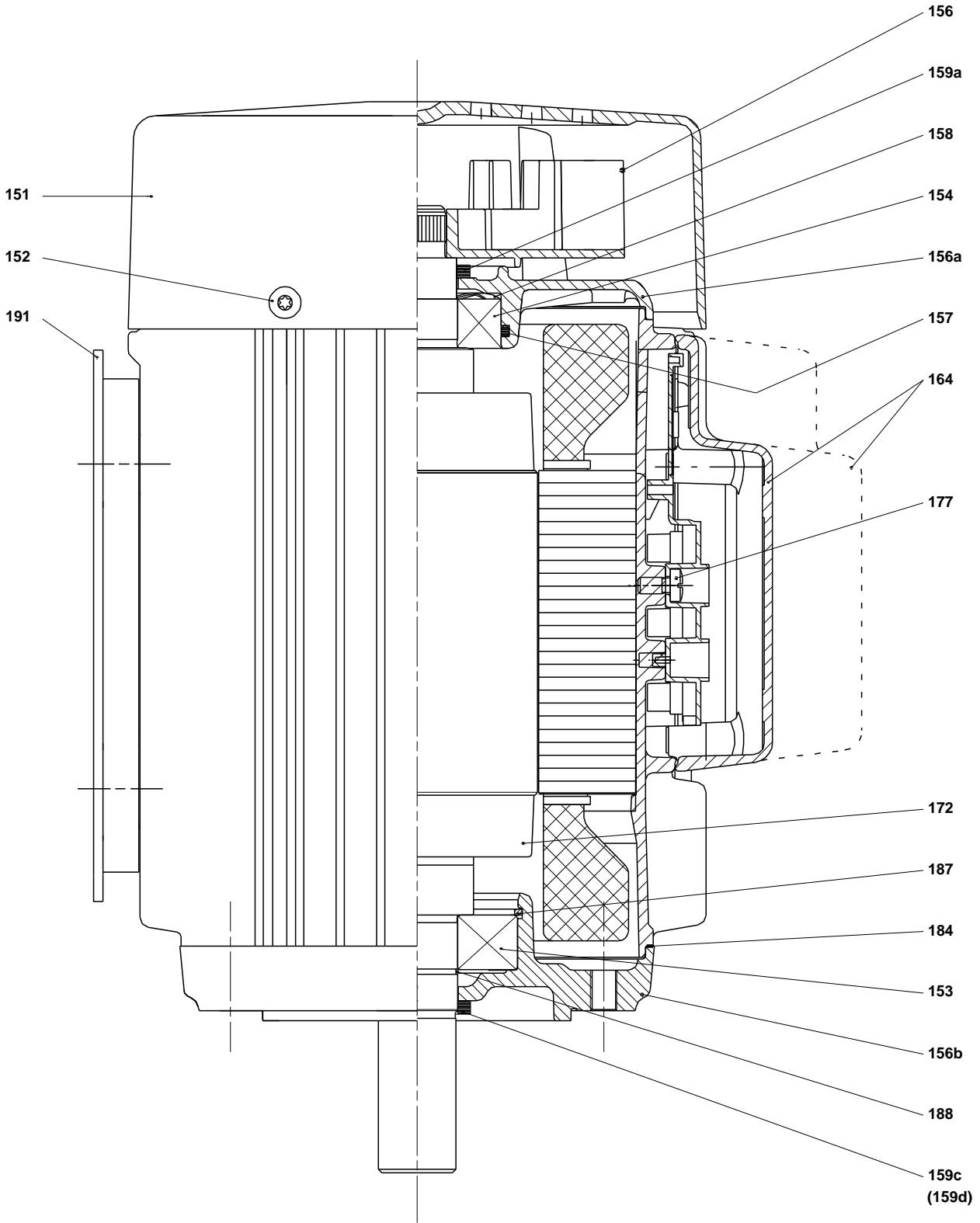
(TM069451 for SMCR standard)



(tm029184 0505)



(tm029178 2004)



Parts list CRN 3-21, Product No. 96516841
Valid from 1.1.2011 (1152)

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
+	Motor				1	pcs
-	Base cpl.				1	pcs
6	Base				1	
56	Base plate				1	
440a	Flange				2	
440b	Lock ring				2	
-	Sealing parts				1	pcs
- 25a	Drain plug w/bypass valve				1	
38	O-ring		Diameter: 16,3			
			Material type: EPDM			
			Thickness: 2,4			
37	O-ring				2	
38	O-ring		Diameter: 16,3		2	
			Material type: EPDM			
			Thickness: 2,4			
- 2	Pump head cpl.				1	pcs
1a	Pump head				1	
2	Pump cover				1	
7	Coupling guard				2	
7.a	Combi Slot Torx screw				4	
- 18	Air vent screw				1	
	Plug					
	Spindle					
25	Plug				1	
28	Hex head screw		Length (mm): 20		4	
			Thread: M8			
60	Formed wire spring				1	
- 8	Coupling cpl.				1	pcs
9	Hex socket head cap screw		Designation: DIN 912		4	
			Length (mm): 25			
			Thread: M8			
10	Shaft pin		Diameter: 5		1	
			Length (mm): 26			
10a	Coupling half				2	
26	Staybolt		Length (mm): 475		4	pcs
			Thread: M12			
32	Washer		Designation: DIN 125 A2		4	pcs
			Internal diameter: 13			
			Outer diameter: 24			
			Thickness: 2,5			
36	Nut		Thread: M12		4	pcs
55	Outer sleeve				1	pcs
- 80	Chamber stack				1	pcs
- 4	Chamber cpl.				17	
4a	Intermediate chamber					
45	Neck ring					
65	Neck ring retainer					
- 4a	Chamber w. bearing cpl.				3	
4a	Intermediate chamber					
45	Neck ring					
65	Neck ring retainer					
- 5a	Chamber cpl.				1	
4a	Intermediate chamber					



Company name:

Created by:

Phone:

Date:

15/02/2019

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
45	Neck ring					
65	Neck ring retainer					
- 44a	Guide vane cpl.				1	
	Guide vane					
	Plate					
50	Top plate					
47	Bearing ring, rotating				3	
49	Impeller cpl.				21	
51	Shaft, spline, cpl.				1	
64a	Spacing pipe				17	
64c	Clamp, splined		Internal diameter: 8,5		1	
			Outer diameter: 15			
64d	Spacing pipe		Internal diameter: 12,85		3	
			Outer diameter: 15,85			
			Length (mm): 4,50			
66	Wedge lock washer				1	
67	Lock nut		Thread: M8		1	
+ 105	Shaft seal		Material type: HQQE		1	pcs