

CRIE20-02 AN-FGJ-I-E-HQQE 3x380-500 60 H

Grundfos pump 99071694



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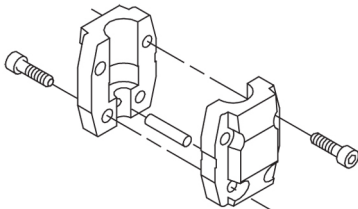
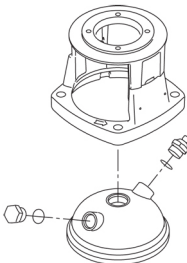
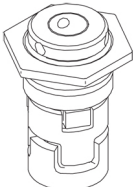
<https://www.lenntech.com/grundfos/CRIE20/99071694/CRIE-20-2-AN-FGJ-I-E-HQQE.html>

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Position	Qty.	Description
	1	CRIE 20-2 N-FGJ-A-E-HQQE  Note! Product picture may differ from actual product Product No.: On request Vertical, multistage centrifugal pump with inlet and outlet ports on same the level (inline). Pump materials in contact with the liquid are in 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, permanent-magnet, synchronous motor. The motor efficiency is classified as IE5 in accordance with IEC 60034-30-2. The motor includes a frequency converter and PI controller in the motor terminal box. This enables continuously variable control of the motor speed, which again enables adaptation of the performance to a given requirement. An operating panel on the motor terminal box enables setting of required setpoint as well as setting of pump to "Min." or "Max." operation or to "Stop". The Grundfos Eye indicator on the operating panel provides visual indication of pump status: • "Power on": Motor is running (rotating green indicator lights) or not running (permanently green indicator lights) • "Warning": Motor is still running (rotating yellow indicator lights) or has stopped (permanently yellow indicator lights) • "Alarm": Motor has stopped (flashing red indicator lights). Communication with the pump is possible by means of Grundfos GO Remote (accessory). The remote control enables further settings as well as reading out of a number of parameters such as "Actual value", "Speed", "Power input" and total "Power consumption". The terminal box has a number of inputs and outputs enabling the motor to be used in advanced applications where many inputs and outputs are required: • two dedicated digital inputs • three analog inputs, 0(4)-20 mA, 0-5 V, 0-10 V, 0.5 - 3.5 V; the factory-fitted pressure sensor is connected to one of these inputs • 5 V voltage supply to potentiometer and sensor • one analog output, 0-10 V, 0(4)-20 mA • two configurable digital inputs or open-collector outputs • two Pt100/Pt1000 inputs • LiqTec, dry-running protection sensor input • Grundfos Digital Sensor input and output • 24 V voltage supply for sensors • two signal-relay outputs (potential-free contacts) • GENIbus connection • interface for Grundfos CIM fieldbus module. Further product details The pump is equipped with a pressure sensor registering pump outlet pressure and enabling controlled pump operation based on constant pressure. An operating panel on the motor terminal box enables setting of required setpoint as well as setting of pump to "Min." or "Max." operation or to "Stop". The Grundfos Eye indicator on the operating panel provides visual indication of pump status:

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		• "Power on": Motor is running (rotating green indicator lights) or not running (permanently green indicator lights) • "Warning": Motor is still running (rotating yellow indicator lights) or has stopped (permanently yellow indicator lights) • "Alarm": Motor has stopped (flashing red indicator lights). Communication with the pump is possible by means of Grundfos GO Remote (accessory). The remote control enables further settings as well as reading out of a number of parameters such as "Actual value", "Speed", "Power input" and total "Power consumption". 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. 3) 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) • 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.

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		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 IE5 in accordance with IEC 60034-30-2. The motor requires no external motor protection. The motor control unit incorporates protection against slow- and quick-rising temperatures, e.g. constant overload and stalled conditions. Technical data Controls: <table><tr><td>Frequency converter:</td><td>Built-in</td></tr><tr><td>Pressure sensor:</td><td>Y</td></tr></table> Liquid: <table><tr><td>Pumped liquid:</td><td>Water</td></tr><tr><td>Liquid temperature range:</td><td>-20 .. 120 °C</td></tr><tr><td>Liquid temperature during operation:</td><td>20 °C</td></tr><tr><td>Density:</td><td>998.2 kg/m³</td></tr></table> Technical: <table><tr><td>Rated flow:</td><td>25.3 m³/h</td></tr><tr><td>Rated head:</td><td>32.5 m</td></tr><tr><td>Pump orientation:</td><td>Vertical</td></tr><tr><td>Shaft seal arrangement:</td><td>Single</td></tr><tr><td>Code for shaft seal:</td><td>HQQE</td></tr><tr><td>Approvals on nameplate:</td><td>CE, EAC,ACS</td></tr><tr><td>Curve tolerance:</td><td>ISO9906:2012 3B</td></tr></table> Materials: <table><tr><td>Base:</td><td>Stainless steel EN 1.4408 AISI 316</td></tr><tr><td>Impeller:</td><td>Stainless steel EN 1.4301 AISI 304</td></tr><tr><td>Bearing:</td><td>SIC</td></tr></table> Installation: <table><tr><td>Maximum ambient temperature:</td><td>50 °C</td></tr><tr><td>Maximum operating pressure:</td><td>16 bar</td></tr><tr><td>Max pressure at stated temp:</td><td>16 bar / 120 °C 16 bar / -20 °C</td></tr><tr><td>Type of connection:</td><td>DIN / ANSI / JIS</td></tr><tr><td>Size of inlet connection:</td><td>DN 50 2 inch</td></tr><tr><td>Size of outlet connection:</td><td>DN 50 2 inch</td></tr><tr><td>Pressure rating for pipe connection:</td><td>PN 25</td></tr><tr><td>Flange rating inlet:</td><td>300 lb</td></tr><tr><td>Flange size for motor:</td><td>FT130</td></tr></table> Electrical data: <table><tr><td>Motor standard:</td><td>IEC</td></tr></table>	Frequency converter:	Built-in	Pressure sensor:	Y	Pumped liquid:	Water	Liquid temperature range:	-20 .. 120 °C	Liquid temperature during operation:	20 °C	Density:	998.2 kg/m³	Rated flow:	25.3 m³/h	Rated head:	32.5 m	Pump orientation:	Vertical	Shaft seal arrangement:	Single	Code for shaft seal:	HQQE	Approvals on nameplate:	CE, EAC,ACS	Curve tolerance:	ISO9906:2012 3B	Base:	Stainless steel EN 1.4408 AISI 316	Impeller:	Stainless steel EN 1.4301 AISI 304	Bearing:	SIC	Maximum ambient temperature:	50 °C	Maximum operating pressure:	16 bar	Max pressure at stated temp:	16 bar / 120 °C 16 bar / -20 °C	Type of connection:	DIN / ANSI / JIS	Size of inlet connection:	DN 50 2 inch	Size of outlet connection:	DN 50 2 inch	Pressure rating for pipe connection:	PN 25	Flange rating inlet:	300 lb	Flange size for motor:	FT130	Motor standard:	IEC
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Position	Qty.	Description
		Motor type: 112MC IE Efficiency class: IE5 Rated power - P2: 4 kW Power (P2) required by pump: 4 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-500 V Rated current: 7.60-6.20 A Cos phi - power factor: 0.92-0.87 Rated speed: 360-4000 rpm Efficiency: 92.2% Motor efficiency at full load: 92.2 % Enclosure class (IEC 34-5): IP55 Insulation class (IEC 85): F Others: Minimum efficiency index, MEI $\geq$ 0.7 Net weight: 58 kg Gross weight: 86 kg Shipping volume: 0.37 m³

On request CRIE 20-2 N-FGJ-A-E-HQQE 50 Hz

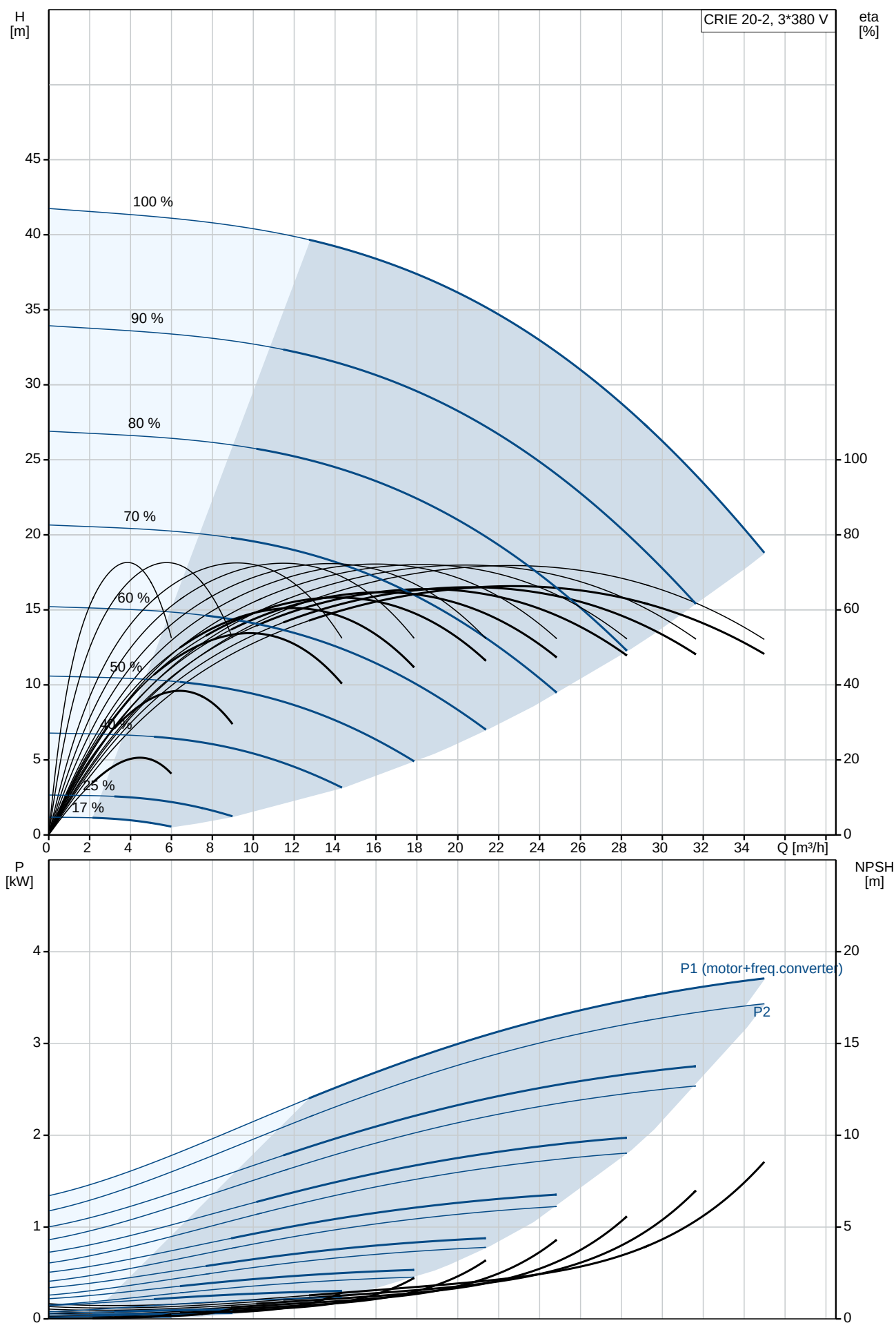
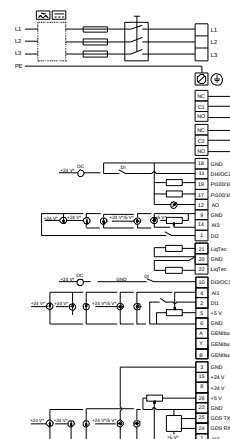
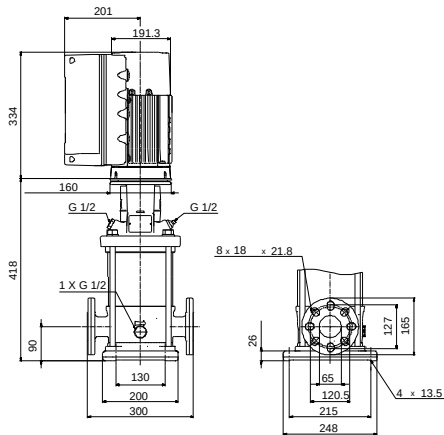


Figure 10 consists of two vertically stacked graphs sharing a common x-axis representing flow rate Q in m^3/h , ranging from 0 to 35.

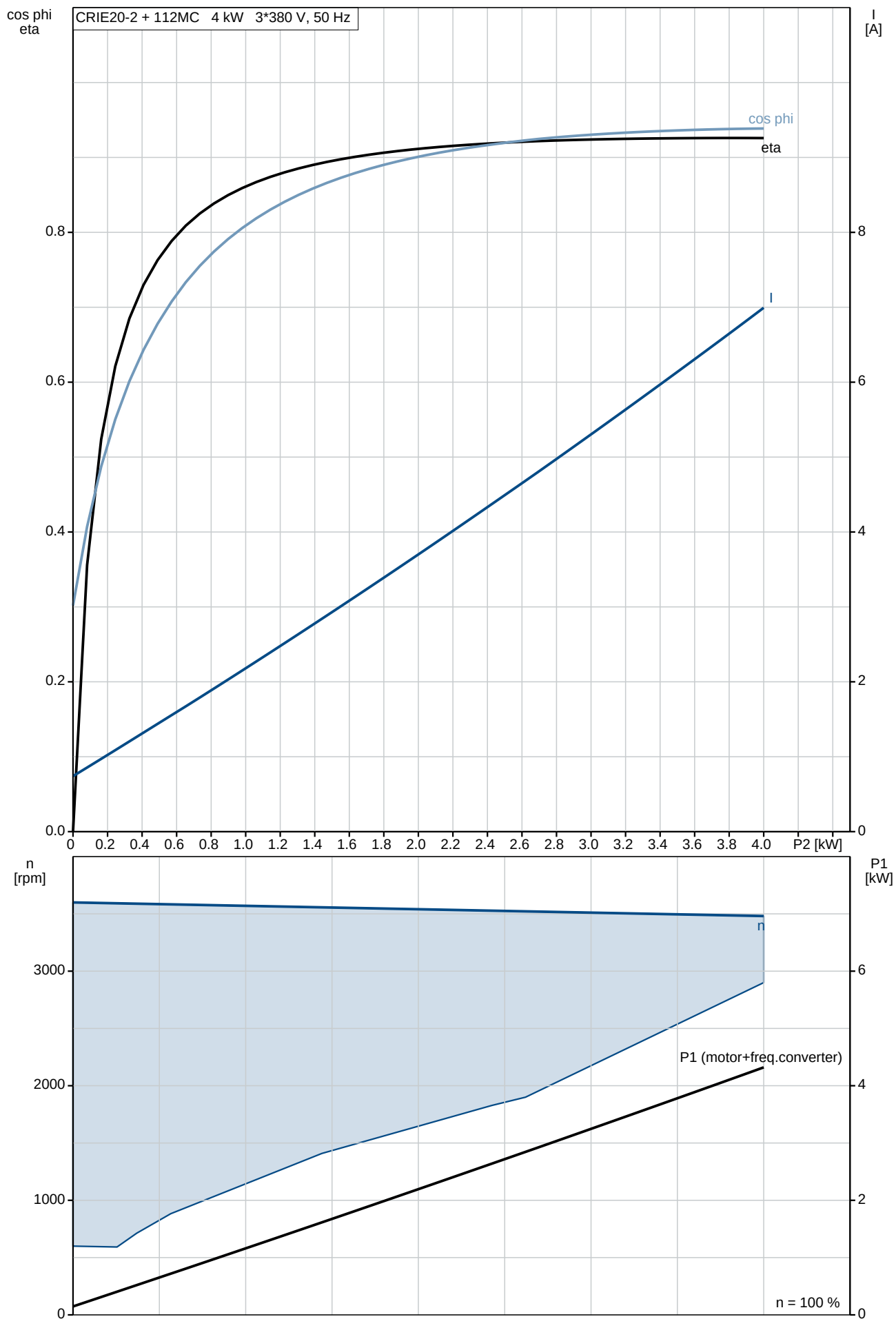
The top graph displays the head H in meters (left y-axis, 0 to 45) and efficiency η in percent (right y-axis, 0 to 100). It shows a series of curves for different flow rates: 100%, 90%, 80%, 70%, 60%, 50%, 40%, 30%, 25%, and 17%. A shaded blue region indicates the operating range, which is bounded by the 100% flow rate curve at high head and the 17% flow rate curve at low head. The efficiency curves are also shown, with the highest efficiency (around 90%) occurring at flow rates between 10 and 15 m^3/h .

The bottom graph displays the power P in kW (left y-axis, 0 to 4) and NPSH in meters (right y-axis, 0 to 20). It shows a series of curves for the same flow rates as the top graph. A shaded blue region indicates the operating range, which is bounded by the 100% flow rate curve at high power and the 17% flow rate curve at low power. The power curves show that power increases with flow rate, with the highest power (around 3.5 kW) occurring at flow rates between 10 and 15 m^3/h .

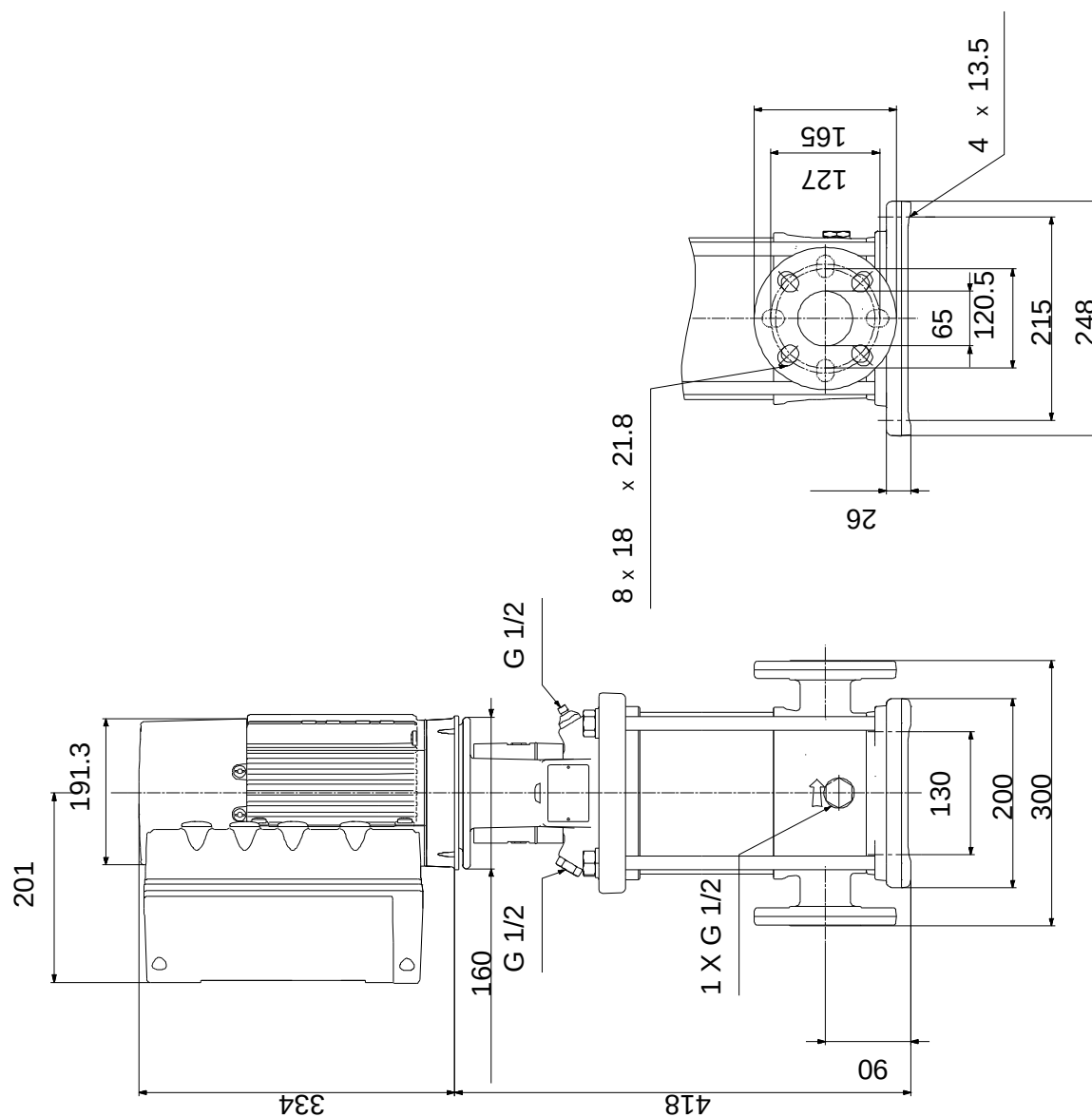


Description	Value
Motor protec:	YES
Motor No:	98971050
Controls:	
Control panel:	Standard
Function Module:	FM300 - Advanced
Frequency converter:	Built-in
Pressure sensor:	Y
Others:	
Minimum efficiency index, MEI ≥:	0.7
Net weight:	58 kg
Gross weight:	86 kg
Shipping volume:	0.37 m³

On request CRIE 20-2 N-FGJ-A-E-HQQE 50 Hz

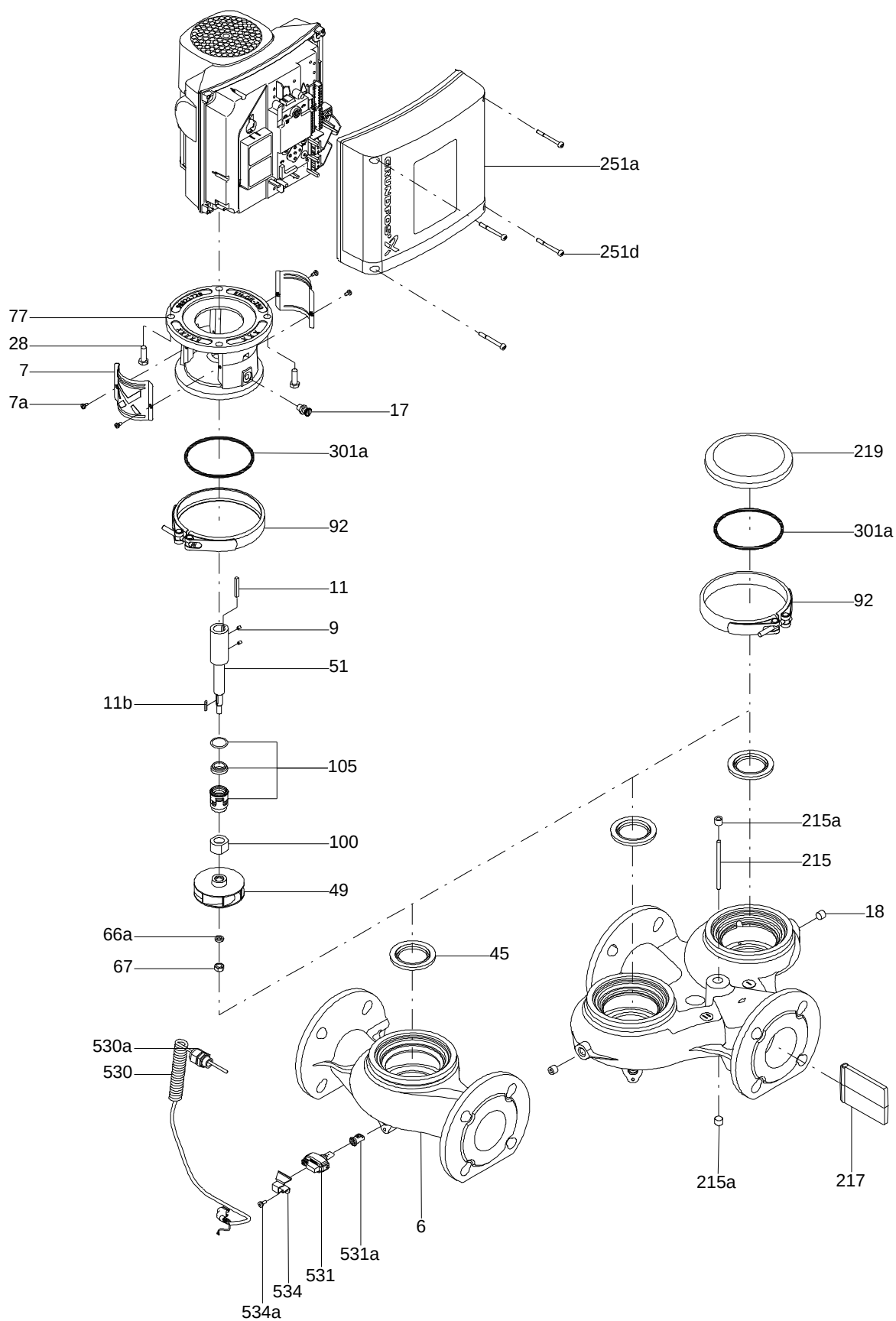


On request CRIE 20-2 N-FGJ-A-E-HQQE 50 Hz

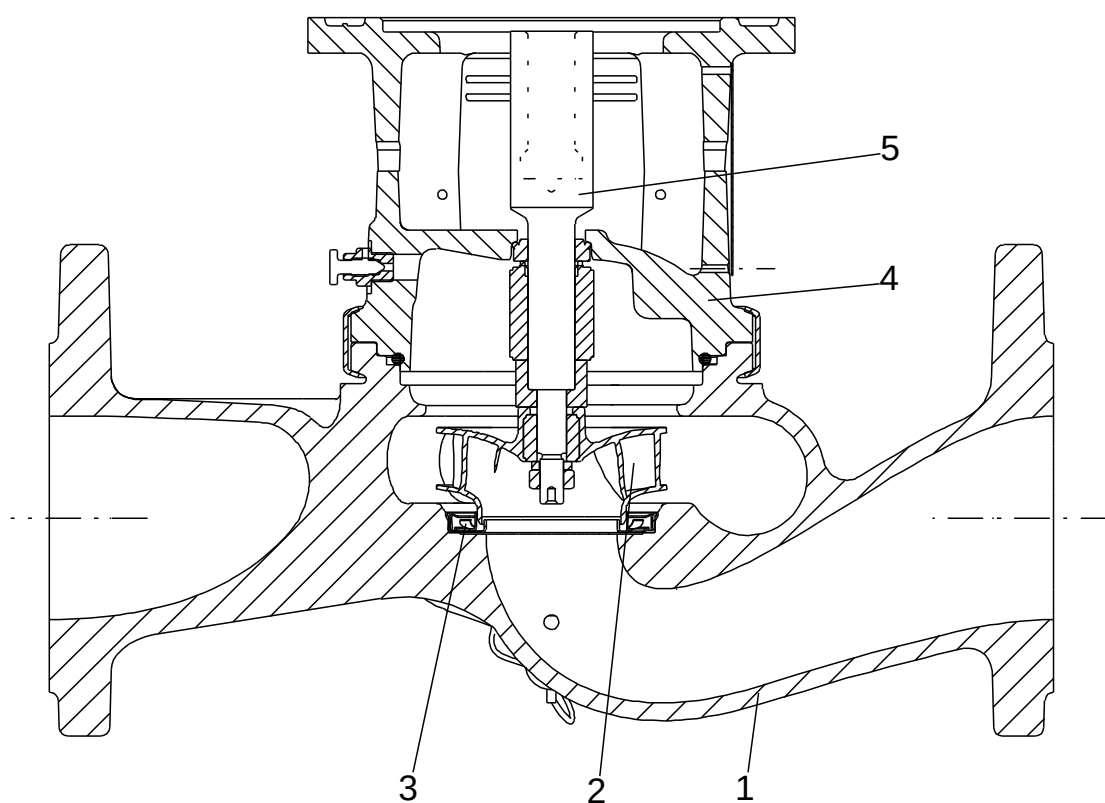


Note! All units are in [mm] unless others are stated.
Disclaimer: This simplified dimensional drawing does not show all details.

Exploded view

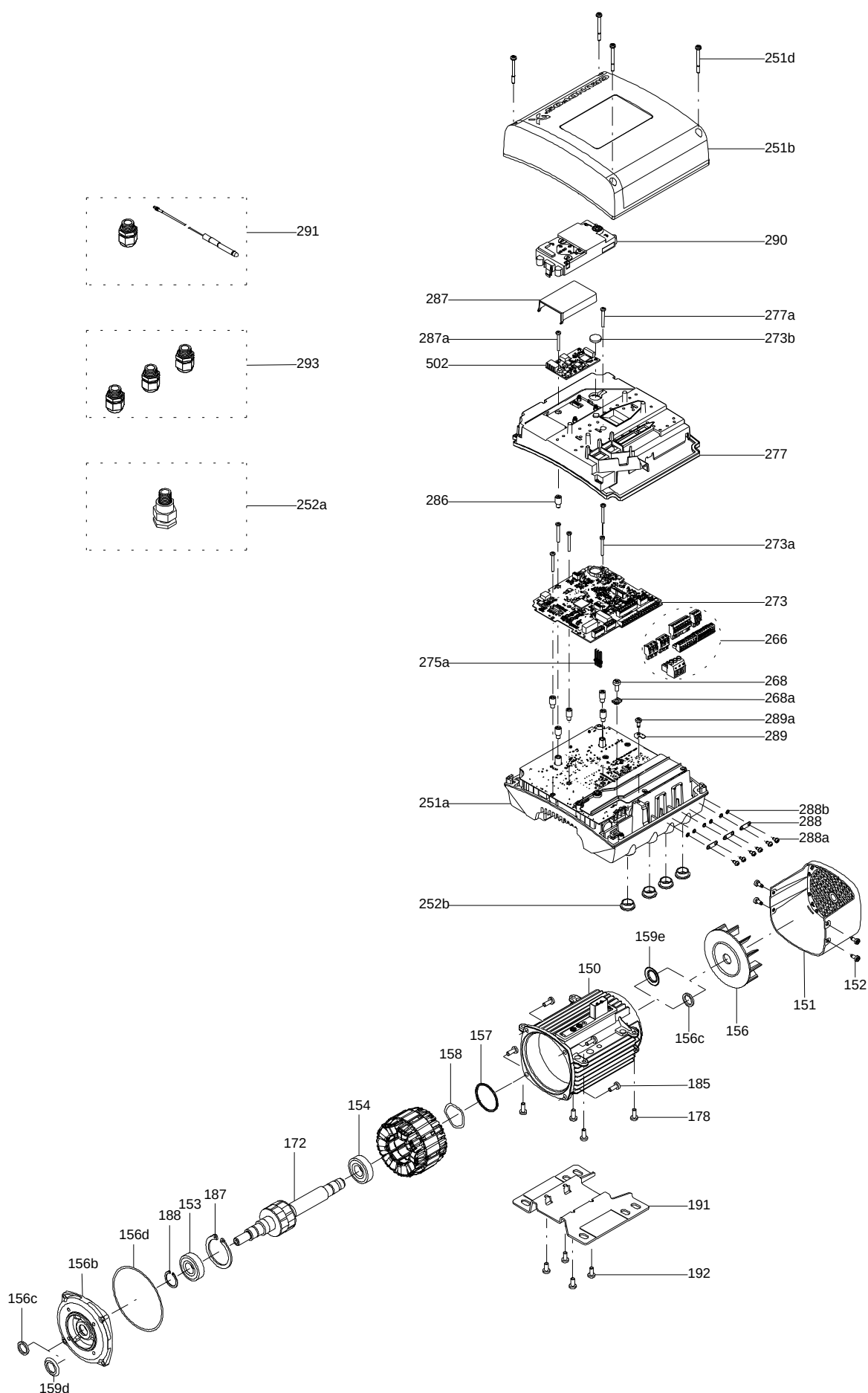


Sectional drawing (TM058200 for TPE2,TPE3)



TM058200

Exploded view (TM057026 for MGE model H/I)



Parts list CRIE 20-2, Product No. On request
Valid from 1.1.2004 (0401)

Pos	Description	Annotation	Données de classification	Référence	Quantité	Unité
+	Motor				1	pcs
-	Base cpl.				1	pcs
6	Base				1	
25	Drain plug				1	
56	Base plate				1	
201	Flange				2	
203	Lock ring				2	
	Pressure transmitter				1	pcs
-	Rubber module				1	pcs
20	Spring				4	
37	O-ring				2	
38	O-ring		Diameter: 16,3		1	
			Material type: EPDM			
			Thickness: 2,4			
38a	O-ring		Diameter: 5,3		1	
			Material type: EPDM			
			Thickness: 2,4			
100	O-ring		Diameter: 16,3		2	
			Material type: EPDM			
			Thickness: 2,4			
- 2	Pump head				1	pcs
2	Pump head				1	
7	Coupling guard				2	
7.a	Combi Slot Torx screw				4	
- 18	Air vent screw				1	
	Plug				1	
	Spindle				1	
28	Hex head screw		Length (mm): 25		4	
			Thread: M8			
37.a	O-ring				1	
76	Nameplate				1	
76a	Rivet				2	
77	Pump cover				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				4	pcs
36	Hex nut		Thread: M16		4	pcs
55	Outer sleeve				1	pcs
66a	Washer		Designation: DIN 125 A		4	pcs
			Internal diameter: 17			
			Outer diameter: 30			
			Thickness: 3			
- 80	Chamber stack				1	pcs
- 4	Intermediate chamber cpl.				1	
	Guide vane				10	
	Front plate				1	
3	Top intermediate chamber				1	
- 4a	Intermediate chamber cpl.				1	
	Bearing plate				1	
	Bearing bush				1	
3a	Intermediate chamber				1	
45	Neck ring cpl.				1	
65	Retainer for upper seal ring				1	
26.b	Hex head screw				2	

Pos	Description	Annotation	Données de classification	Référence	Quantité	Unité
26.c	Washer		Designation: DIN 125A		2	
			Thickness: 1,6			
26a	Strap cpl.				2	
36	Lock nut		Thread: M8		1	
- 44a	Inlet part cpl.				1	
45	Neck ring cpl.				1	
65	Retainer for upper seal ring				1	
44b	Inlet part				1	
47a	Bearing ring				1	
- 49	Impeller cpl.				2	
	Impeller plate				1	
	Impeller plate				1	
	Impeller blade				6	
49c	Wear ring				1	
- 51	Shaft, spline, cpl.				1	
	Bar				0	
62	Stop ring				1	
64b	Spacing bush		Length (mm): 5.00		1	
64b	Spacing bush				1	
64c	Spacing pipe		Length (mm): 12.7		1	
66	Wedge lock washer				1	
69	Spacing pipe		Internal diameter: 17,5		1	
			Length (mm): 17			
69	Spacing bush				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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