

CR20-01 A-A-A-E-HQQE 3x230/400 50 HZ

Grundfos pump 96500338



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<https://www.lenntech.com/grundfos/CR020/96500338/CR-20-1-A-A-A-E-HQQE.html>

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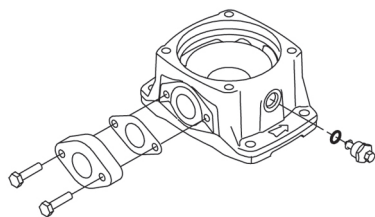
Position	Qty.	Description
	1	CR 20-1 A-A-A-E-HQQE  Product No.: On request Vertical, multistage centrifugal pump with inlet and outlet ports on same the level (inline). The pump head and base are in cast iron – all other wetted parts are in stainless steel. A cartridge shaft seal ensures high reliability, safe handling, and easy access and service. Power transmission is via a rigid split coupling. Pipe connection is via oval flanges with internal Rp threads. 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. 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, pump head cover and flange for motor mounting is made in one piece. 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.

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 base is made of cast iron. The oval flanges are bolted to the base. The outlet side of the base has a drain plug. The pump is secured to the foundation by four bolts through the base plate.



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).

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:

Rated flow: 21 m³/h
Rated head: 9.9 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:

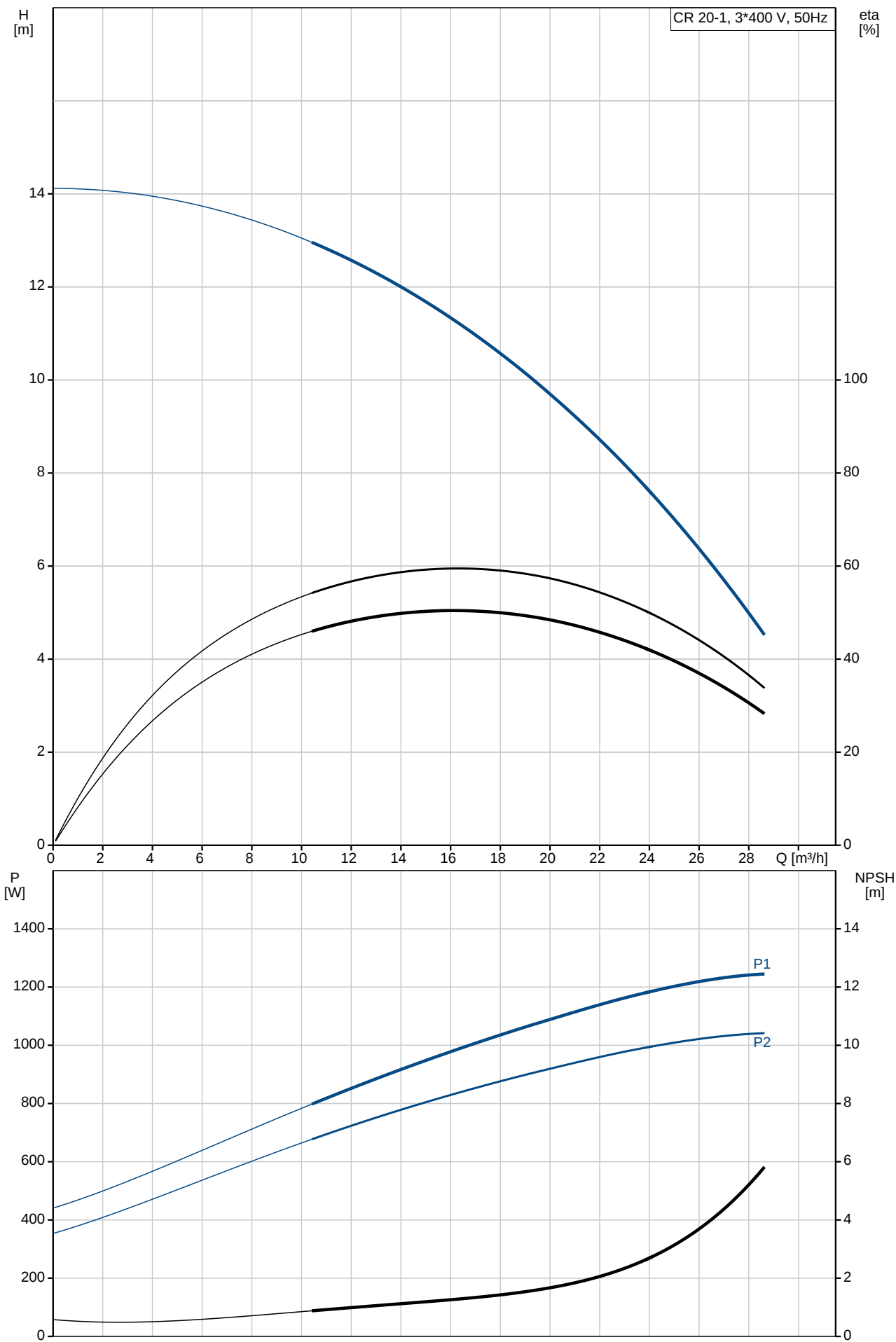
Base: Cast iron
EN 1561 EN-GJL-200
ASTM A48-25B
Impeller: Stainless steel
EN 1.4301
AISI 304
Bearing: SIC

Installation:

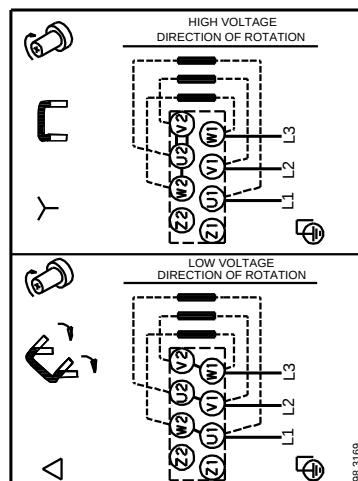
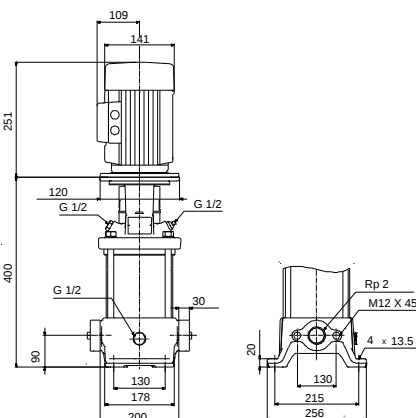
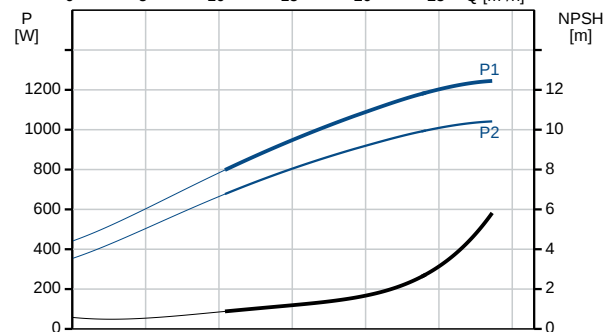
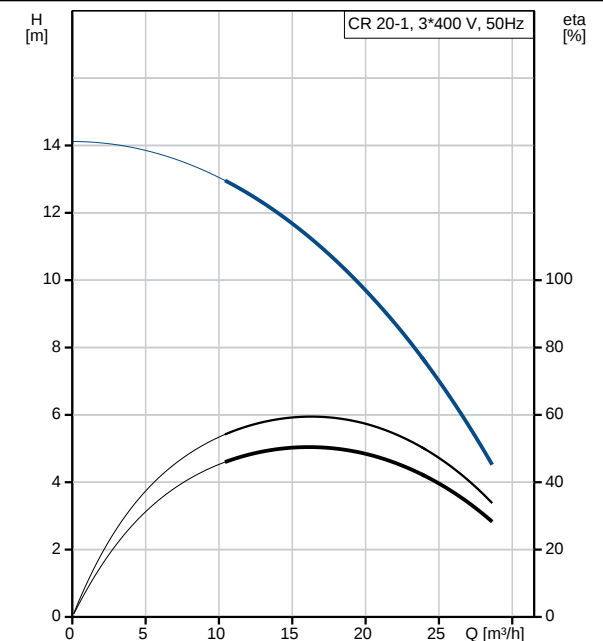
Maximum ambient temperature: 60 °C

Position	Qty.	Description
		Maximum operating pressure: 10 bar Max pressure at stated temp: 10 bar / 120 °C 10 bar / -20 °C Type of connection: Oval / Rp Size of inlet connection: 2 inch Size of outlet connection: 2 inch Pressure rating for pipe connection: PN 10 Flange size for motor: FT100 Electrical data: Motor standard: IEC Motor type: 80C IE Efficiency class: IE3 Rated power - P2: 1.1 kW Power (P2) required by pump: 1.1 kW Mains frequency: 50 Hz Rated voltage: 3 x 220-240D/380-415Y V Rated current: 4.35/2.50 A Starting current: 450-500 % Cos phi - power factor: 0.83-0.76 Rated speed: 2840-2870 rpm Efficiency: IE3 82,7% Motor efficiency at full load: 82.7 % Motor efficiency at 3/4 load: 84.6 % Motor efficiency at 1/2 load: 85.4 % Number of poles: 2 Enclosure class (IEC 34-5): 55 Dust/Jetting Insulation class (IEC 85): F Others: Minimum efficiency index, MEI ≥: 0.7 Net weight: 41 kg Gross weight: 45 kg Shipping volume: 0.094 m³ Danish VVS No.: 385905010

On request CR 20-1 A-A-A-E-HQQE 50 Hz

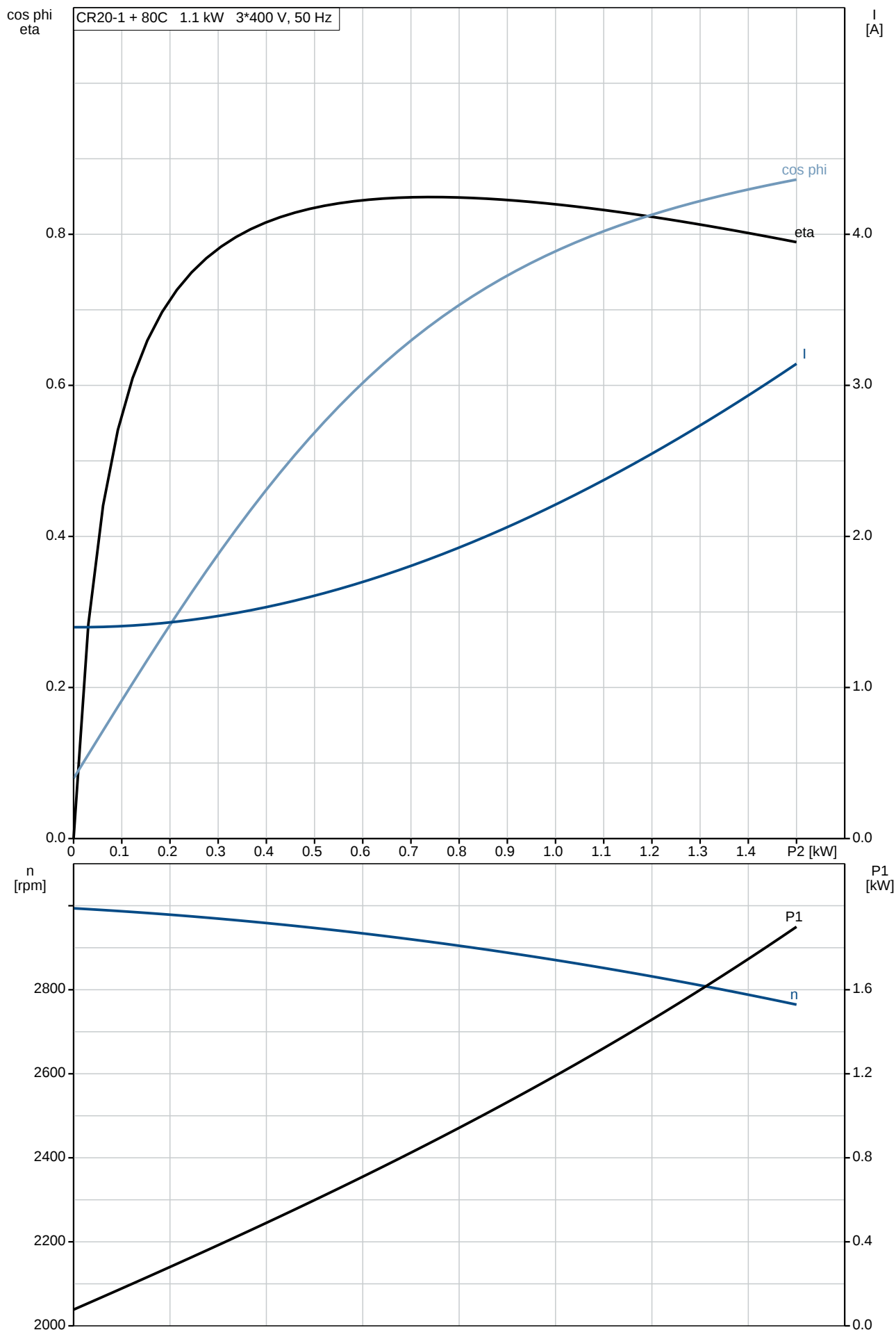


Description	Value
General information:	
Product name:	CR 20-1 A-A-A-E-HQQE
Product No:	On request
EAN number:	On request
Technical:	
Rated flow:	21 m ³ /h
Rated head:	9.9 m
Stages:	2
Impellers:	1
Number of reduced-diameter impellers:	0
Low NPSH:	N
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQE
Approvals on nameplate:	CE, EAC, ACS
Curve tolerance:	ISO9906:2012 3B
Pump version:	A
Model:	A
Materials:	
Base:	Cast iron
	EN 1561 EN-GJL-200
	ASTM A48-25B
Impeller:	Stainless steel
	EN 1.4301
	AISI 304
Material code:	A
Code for rubber:	E
Bearing:	SIC
Installation:	
Maximum ambient temperature:	60 °C
Maximum operating pressure:	10 bar
Max pressure at stated temp:	10 bar / 120 °C
	10 bar / -20 °C
Type of connection:	Oval / Rp
Size of inlet connection:	2 inch
Size of outlet connection:	2 inch
Pressure rating for pipe connection:	PN 10
Flange size for motor:	FT100
Connect code:	A
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 standard:	IEC
Motor type:	80C
IE Efficiency class:	IE3
Rated power - P2:	1.1 kW
Power (P2) required by pump:	1.1 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 220-240D/380-415Y V
Rated current:	4.35/2.50 A
Starting current:	450-500 %
Cos phi - power factor:	0.83-0.76
Rated speed:	2840-2870 rpm
Efficiency:	IE3 82,7%
Motor efficiency at full load:	82.7 %
Motor efficiency at 3/4 load:	84.6 %
Motor efficiency at 1/2 load:	85.4 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F

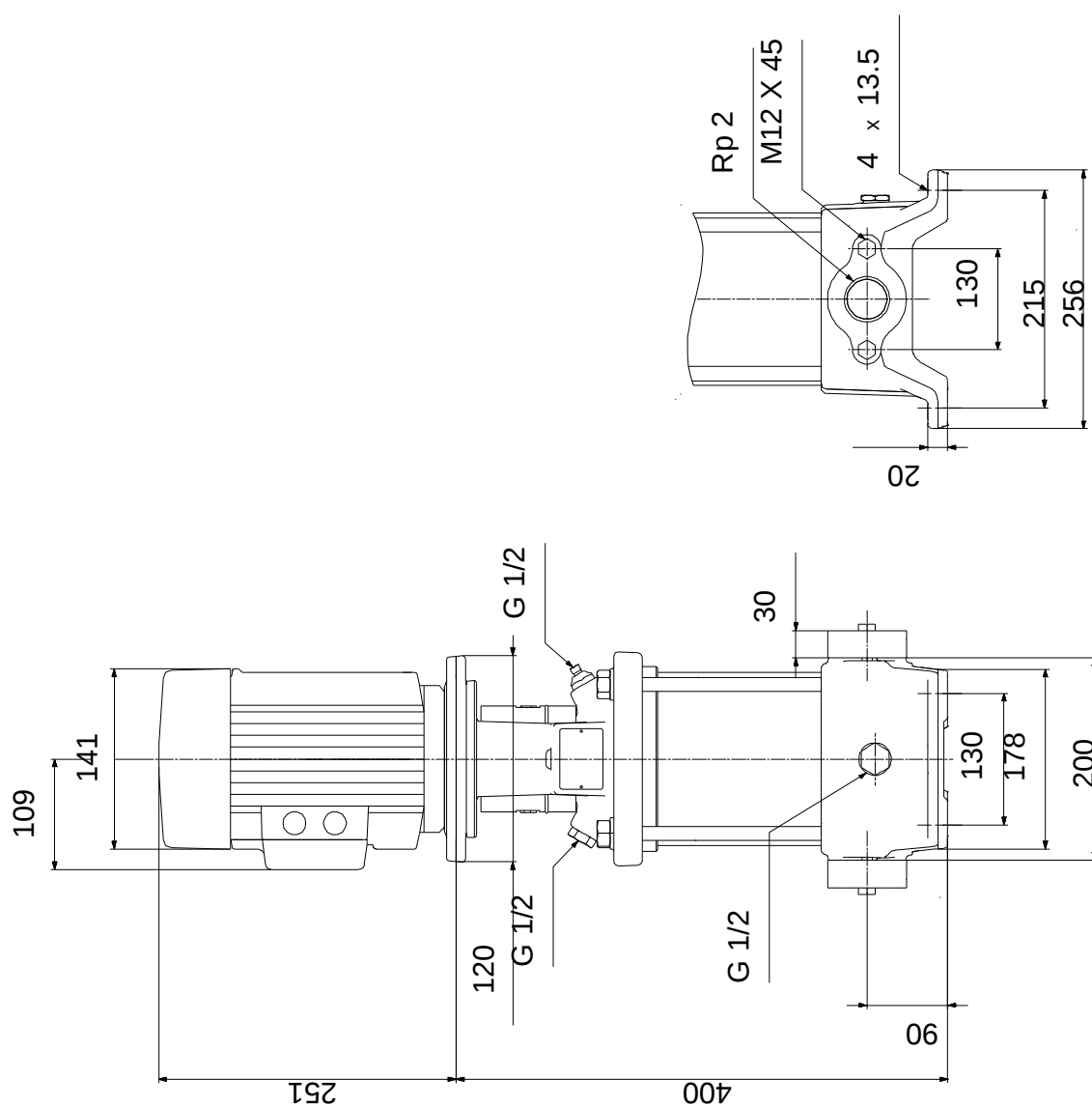


Description	Value
Motor protec:	NONE
Motor No:	85U05105
Controls:	
Frequency converter:	NONE
Others:	
Minimum efficiency index, MEI ≥:	0.7
Net weight:	41 kg
Gross weight:	45 kg
Shipping volume:	0.094 m ³
Danish VVS No.:	385905010

On request CR 20-1 A-A-A-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 CR 20-1, Product No. On request
Valid from 1.1.2011 (1152)

Pos	Description	Annotation	Données de classification	Référence	Quantité	Unité
+	Motor				1	pcs
-	Base cpl.				1	pcs
6	Base				1	
12	Flange				2	
25	Drain plug				1	
35	Hex head screw				4	
-	Rubber module				1	pcs
20	Spring				4	
37	O-ring				2	
38a	O-ring		Diameter: 5,3 Material type: EPDM Thickness: 2,4		1	
100	O-ring		Diameter: 16,3 Material type: EPDM Thickness: 2,4		3	
- 2	Pump head cpl.				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	
23	Plug				1	
28	Hex head screw		Length (mm): 25 MM Thread: M6		4	
76	Nameplate				1	
76a	Rivet				2	
- 8	Coupling cpl.				1	pcs
9	Hex socket head cap screw		Designation: DIN 912 Length (mm): 20 Thread: M6		4	
10	Shaft pin		Diameter: 5 Length (mm): 26		1	
10a	Coupling half				2	
26	Staybolt		Length (mm): 163 Thread: M16		4	pcs
36	Hex nut		Thread: M16		4	pcs
55	Outer sleeve				1	pcs
66a	Washer		Designation: DIN 125 A Internal diameter: 17 Outer diameter: 30 Thickness: 3		4	pcs
- 80	Chamber stack				1	pcs
- 4	Upper chamber cpl.				1	
4	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	
26.c	Washer		Designation: DIN 125A Thickness: 1,6		2	
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	

Pos	Description	Annotation	Données de classification	Référence	Quantité	Unité
44b	Inlet part				1	
47a	Bearing ring				1	
- 49	Impeller cpl.				1	
	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		Length (mm): 29.05		1	
69	Spacing pipe		Internal diameter: 17,5		1	
			Length (mm): 17			
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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