

## CRN1-7 A-P-G-V-HQQV 3x230/400 50HZ Grundfos pump 96516513




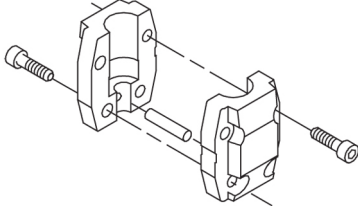
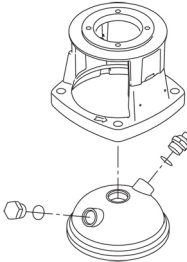
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<https://www.lenntech.com/grundfos/CRN01/96516513/CRN-1-7-A-P-G-V-HQQV.html>

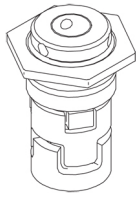
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Position	Qty.	Description
	1	<p data-bbox="320 163 600 194"><b>CRN 1-7 A-P-A-V-HQQV</b></p>  <p data-bbox="320 486 600 517">Product No.: On request</p> <p data-bbox="320 546 1445 647">Vertical, multistage centrifugal pump with inlet and outlet ports 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 PJE (Victaulic®) couplings.</p> <p data-bbox="320 685 1054 716">The pump is fitted with a 3-phase, fan-cooled asynchronous motor.</p> <p data-bbox="320 745 639 777"><b>Further product details</b></p> <p data-bbox="320 784 1445 884">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="320 898 1027 1039" style="list-style-type: none"> <li>1) Alkaline-based cleaning.</li> <li>2) Zinc phosphating.</li> <li>3) Cathodic electro-deposition.</li> <li>4) Curing to a dry film thickness 18-22 my m.</li> </ol> <p data-bbox="320 1014 1027 1046">The colour code for the finished product is NCS 9000/RAL 9005.</p> <p data-bbox="320 1075 400 1106"><b>Pump</b></p> <p data-bbox="320 1113 1414 1164">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="320 1404 1437 1482">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="320 1785 1422 1886">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 1899 464 1930">Primary seal:</p> <ul data-bbox="357 1928 919 1986" style="list-style-type: none"> <li>• Rotating seal ring material: silicon carbide (SiC)</li> <li>• Stationary seat material: silicon carbide (SiC)</li> </ul> <p data-bbox="320 1989 1422 2040">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 2042 895 2074">Secondary seal material: FKM (fluorocarbon rubber)</p>

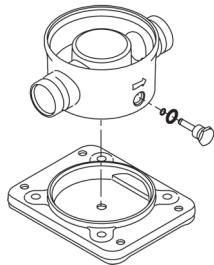
FKM has excellent resistance to oils and chemicals. Above 90 °C, FKM should only be used in media without water.



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. The 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 base is prepared for connection by means of PJE (Victualic®) couplings.



### 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 .. 90 °C  
Liquid temperature during operation: 20 °C  
Density: 998.2 kg/m<sup>3</sup>

#### Technical:

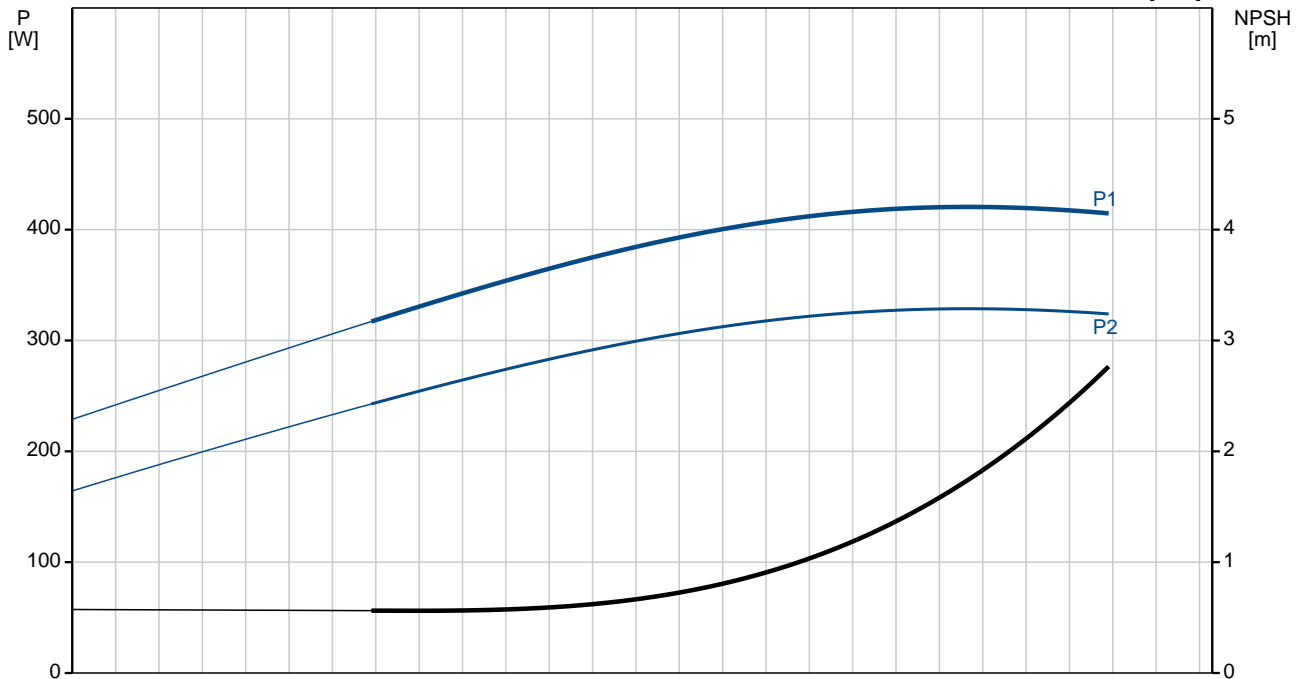
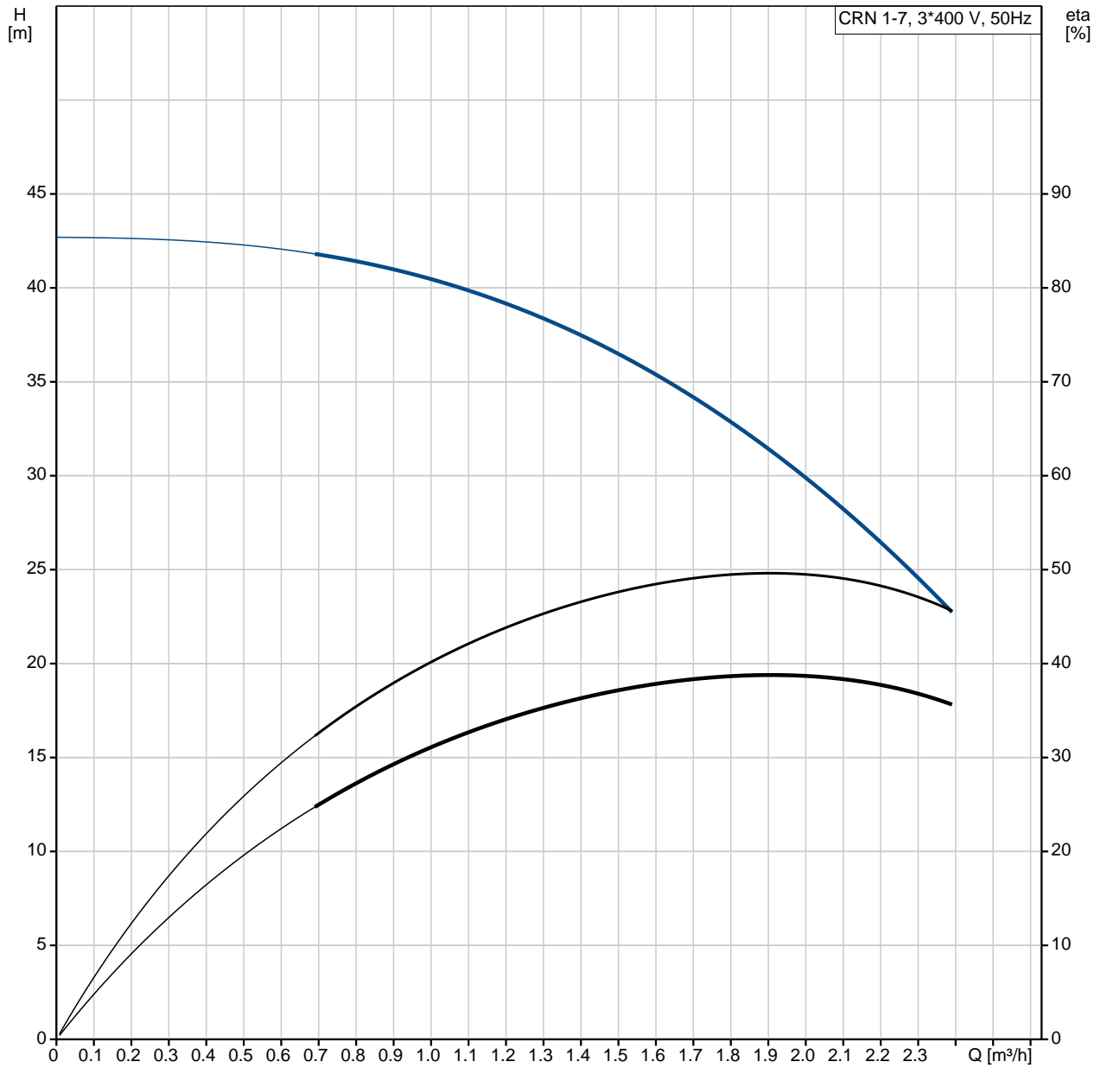
Rated flow: 1.8 m<sup>3</sup>/h  
Rated head: 33.6 m  
Pump orientation: Vertical  
Shaft seal arrangement: Single  
Code for shaft seal: HQQV  
Approvals on nameplate: CE, EAC  
Curve tolerance: ISO9906:2012 3B

#### Materials:

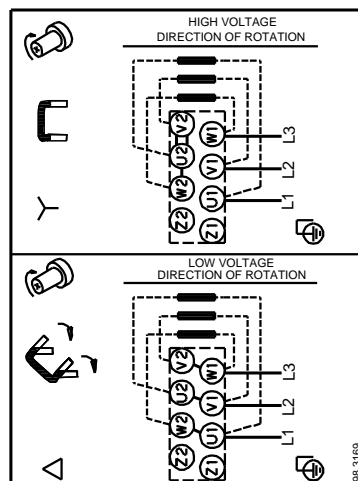
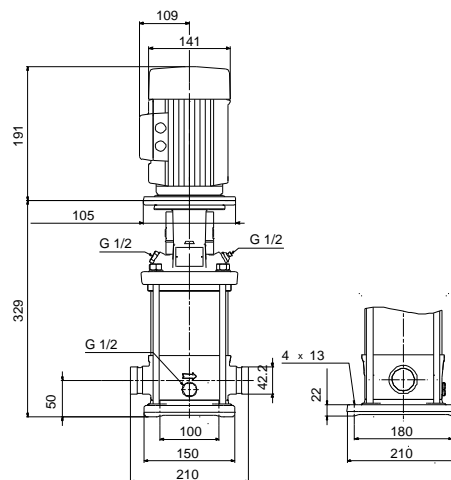
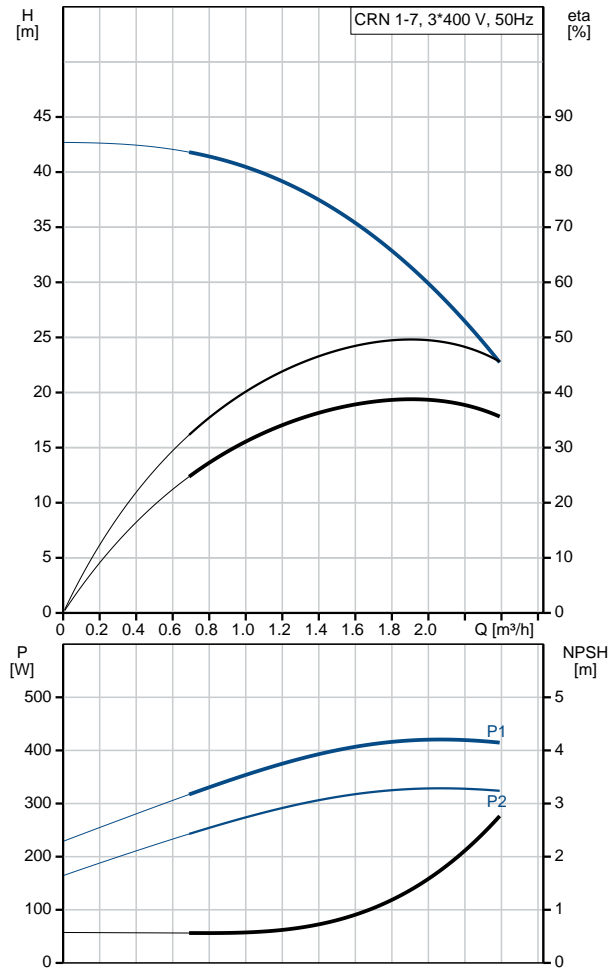
Base: Stainless steel  
EN 1.4408

Position	Qty.	Description
		<p>Impeller: AISI 316 Stainless steel EN 1.4401</p> <p>Bearing: AISI 316 SIC</p> <p><b>Installation:</b>  Maximum ambient temperature: 40 °C  Maximum operating pressure: 25 bar  Max pressure at stated temp: 25 bar / 90 °C  25 bar / -20 °C</p> <p>Type of connection: PJE  Size of inlet connection: DN 32  1 1/4 inch</p> <p>Size of outlet connection: DN 32  1 1/4 inch</p> <p>Pressure rating for pipe connection: PN 50  Flange size for motor: FT85</p> <p><b>Electrical data:</b>  Motor standard: IEC  Motor type: 71A  IE Efficiency class: IE3  Rated power - P2: 0.37 kW  Power (P2) required by pump: 0.37 kW  Mains frequency: 50 Hz  Rated voltage: 3 x 220-240D/380-415Y V  Rated current: 1.74/1.00 A  Starting current: 490-530 %  Cos phi - power factor: 0.80-0.70  Rated speed: 2850-2880 rpm  Efficiency: IE3 73,8%  Motor efficiency at full load: 73.8 %  Motor efficiency at 3/4 load: 79.0 %  Motor efficiency at 1/2 load: 75.5 %  Number of poles: 2  Enclosure class (IEC 34-5): 55 Dust/Jetting  Insulation class (IEC 85): F</p> <p><b>Others:</b>  Minimum efficiency index, MEI : 0.7  Net weight: 18.3 kg  Gross weight: 21 kg  Shipping volume: 0.063 m<sup>3</sup></p>

# On request CRN 1-7 A-P-A-V-HQQV 50 Hz



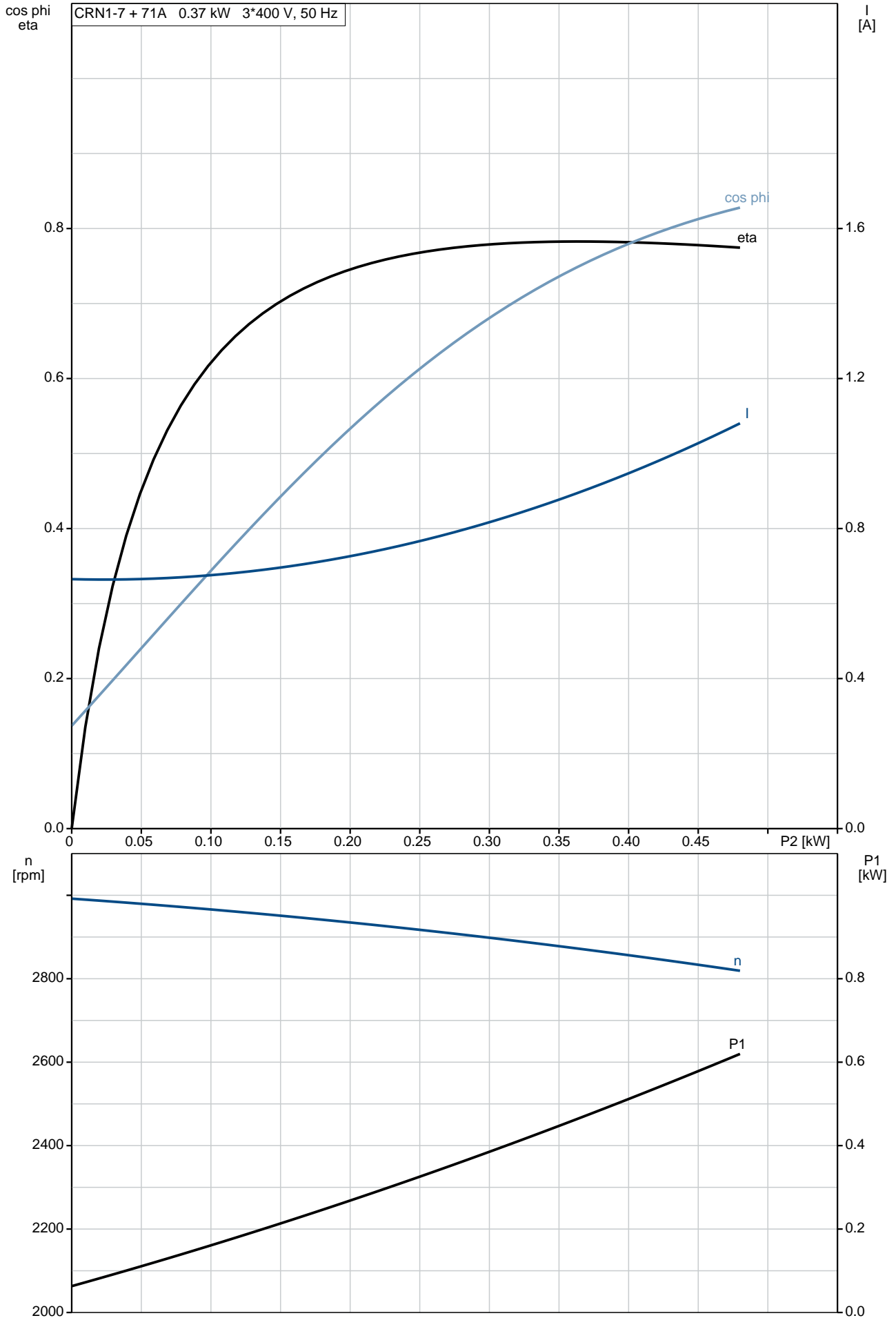
Description	Value
<b>General information:</b>	
Product name:	CRN 1-7 A-P-A-V-HQQV
Product No:	On request
EAN number:	On request
<b>Technical:</b>	
Rated flow:	1.8 m <sup>3</sup> /h
Rated head:	33.6 m
Stages:	7
Impellers:	7
Number of reduced-diameter impellers:	0
Low NPSH:	N
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQV
Approvals on nameplate:	CE, EAC
Curve tolerance:	ISO9906:2012 3B
Pump version:	A
Model:	A
<b>Materials:</b>	
Base:	Stainless steel
	EN 1.4408
	AISI 316
Impeller:	Stainless steel
	EN 1.4401
	AISI 316
Material code:	A
Code for rubber:	V
Bearing:	SIC
<b>Installation:</b>	
Maximum ambient temperature:	40 °C
Maximum operating pressure:	25 bar
Max pressure at stated temp:	25 bar / 90 °C
	25 bar / -20 °C
Type of connection:	PJE
Size of inlet connection:	DN 32
	1 1/4 inch
Size of outlet connection:	DN 32
	1 1/4 inch
Pressure rating for pipe connection:	PN 50
Flange size for motor:	FT85
Connect code:	P
<b>Liquid:</b>	
Pumped liquid:	Water
Liquid temperature range:	-20 .. 90 °C
Liquid temperature during operation:	20 °C
Density:	998.2 kg/m <sup>3</sup>
<b>Electrical data:</b>	
Motor standard:	IEC
Motor type:	71A
IE Efficiency class:	IE3
Rated power - P2:	0.37 kW
Power (P2) required by pump:	0.37 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 220-240D/380-415Y V
Rated current:	1.74/1.00 A
Starting current:	490-530 %
Cos phi - power factor:	0.80-0.70
Rated speed:	2850-2880 rpm
Efficiency:	IE3 73,8%
Motor efficiency at full load:	73.8 %
Motor efficiency at 3/4 load:	79.0 %
Motor efficiency at 1/2 load:	75.5 %
Number of poles:	2



Description	Value
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	NONE
Motor No:	85805102
<b>Controls:</b>	
Frequency converter:	NONE
<b>Others:</b>	
Minimum efficiency index, MEI :	0.7
Net weight:	18.3 kg
Gross weight:	21 kg
Shipping volume:	0.063 m <sup>3</sup>

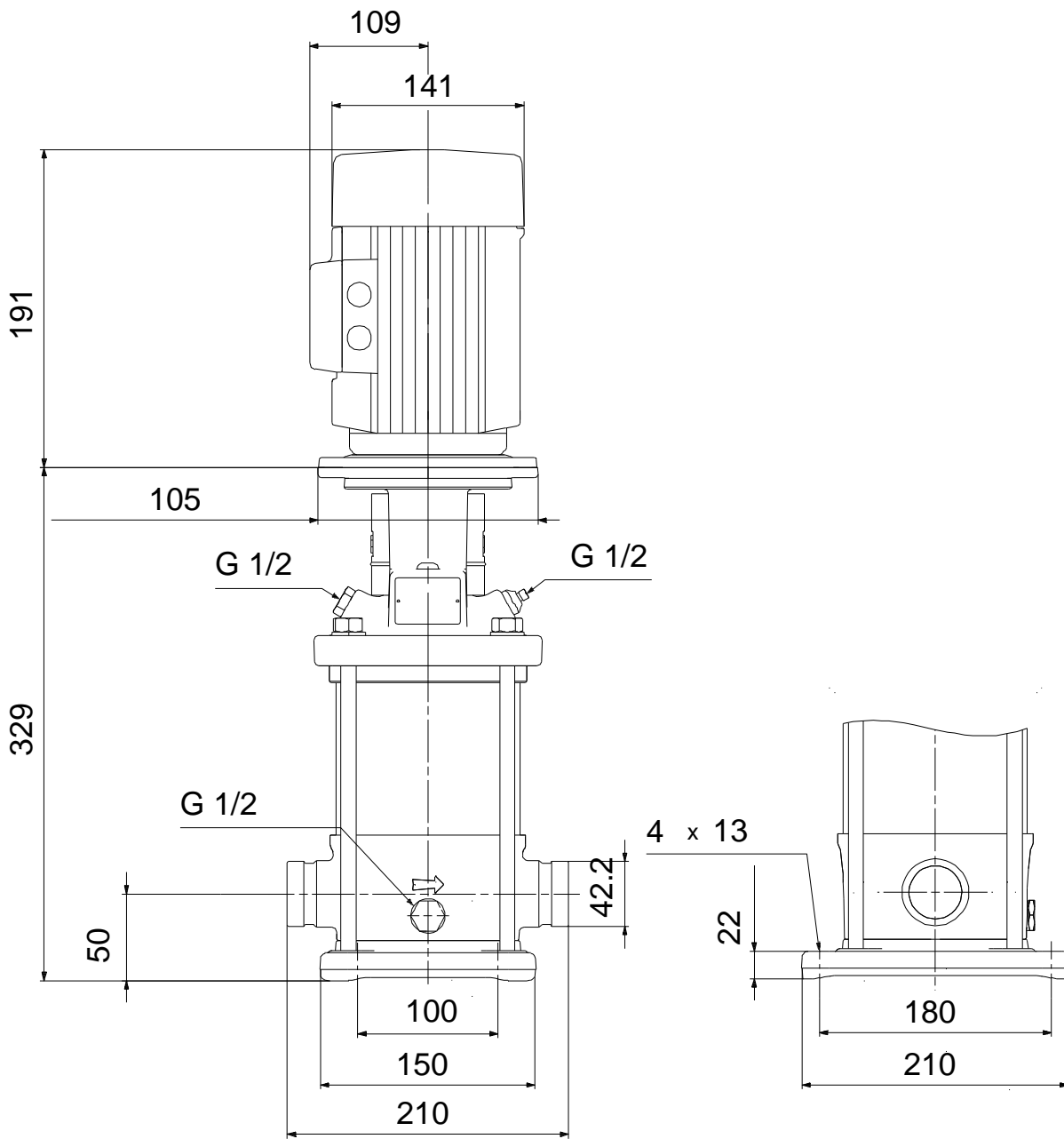
# On request CRN 1-7 A-P-A-V-HQQV 50 Hz

CRN1-7 + 71A 0.37 kW 3\*400 V, 50 Hz





# On request CRN 1-7 A-P-A-V-HQQV 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 CRN 1-7, 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	Plug				2	
56	Base plate				1	
-	Sealing parts				1	pcs
- 25	Drain plug w/bypass valve				1	
38	O-ring		Diameter: 16,3		1	
			Material type: FKM			
			Thickness: 2,4			
37	O-ring		Diameter: 137,5		2	
			Material type: FKM			
			Thickness: 3,3			
100	O-ring		Diameter: 16,3		2	
			Material type: FKM			
			Thickness: 2,4			
- 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	
23a	Plug				1	
28	Hex head screw		Length (mm): 20		4	
			Thread: M6			
60	Formed wire spring				1	
77	Pump cover				1	
- 8	Coupling				1	pcs
9	Hex socket head cap screw		Designation: DIN 912		4	
			Length (mm): 20			
			Thread: M6			
10	Shaft pin		Diameter: 5		1	
			Length (mm): 26			
10a	Coupling half				2	
26	Staybolt		Length (mm): 227		4	pcs
			Thread: M12			
36	Nut		Thread: M12		4	pcs
55	Outer sleeve				1	pcs
66a	Washer		Designation: DIN 125 A2		4	pcs
			Internal diameter: 13			
			Outer diameter: 24			
			Thickness: 2,5			
- 80	Chamber stack		Bearing type: SILICON CARBIDE		1	pcs
- 4	Chamber cpl.				5	
4a	Intermediate chamber				1	
45	Neck ring				1	
65	Neck ring retainer				1	
- 4a	Chamber w. bearing cpl.				1	
4a	Intermediate chamber				1	
45	Neck ring				1	
65	Neck ring retainer				1	
- 5a	Chamber cpl.				1	
4a	Intermediate chamber				1	
45	Neck ring				1	
65	Neck ring retainer				1	
36	Lock nut		Thread: M8		1	
47a	Bearing ring, rotating				1	
49	Impeller cpl.				7	

Pos	Description	Annotation	Données de classification	Référence	Quantité	Unité
- 50a	Guide vane				1	
	Plate				1	
50b	Top plate				1	
- 51	Shaft, spline, cpl.				1	
51	Shaft				1	
62	Stop ring				1	
64a	Spacing pipe				5	
64a	Spacing pipe		Internal diameter: 12,85		1	
			Outer diameter: 15,85			
			Length (mm): 4,50			
64c	Clamp, splined		Internal diameter: 8,5		1	
			Outer diameter: 15			
66	Wedge lock washer				1	
- 105	Shaft seal		Material type: HQQV		1	pcs
	O-ring				1	
	O-ring				1	
	O-ring				1	
	Seal driver, upper				1	
	Seal driver, lower				1	
	Spacer ring				1	
	Pipe				1	
	Plug				1	
	Plug				1	
	Compression spring				1	
	Socket set screw				3	
103	Seal ring, stationary				1	
105	Seal ring, rotating				1	
109	O-ring				1	
113	Driver				1	

*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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