

Date:

26/11/2019

# Qty. Description

1

#### CRNE 32-4-2 N-F-A-E-HQQE



Note! Product picture may differ from actual product

Product No.: 99072003

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 DIN 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".

# 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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26/11/2019

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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:

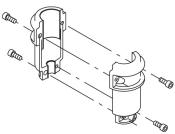
Date:

- 1) Alkaline-based cleaning.
- 2) Zinc phosphating.
- 3) Cathodic electro-deposition.
- 4) Curing to a dry film thickness 18-22 my m.

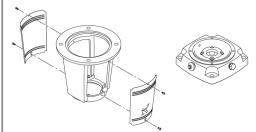
The colour code for the finished product is NCS 9000/RAL 9005.

# Pump

A long split coupling connects the pump and motor shaft. It is enclosed in the motor stool by means of two coupling guards. The long coupling makes it possible to replace the shaft seal without removing the motor from the pump.



The motor stool connects the pump head and motor. 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.

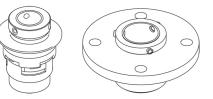
Primary seal:

- 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 retained in the pump head by a cover and screws. It can be replaced without removing the motor.

The pump has a special air-cooled shaft-seal chamber generating the same insulation effect as that of a vacuum flask. No external cooling is necessary; the ambient temperature is sufficient. An automatic vent vents the pump seal chamber.



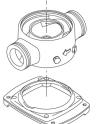
26/11/2019

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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.

Date:

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. Both the inlet and the outlet side of the base have two pressure gauge tappings. The pump is secured to the foundation by four bolts through the base plate. The flanges are fastened to the base by means of locking rings.



## Motor

The motor is a totally enclosed, fan-cooled motor with principal dimensions to IEC and DIN standards. 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.

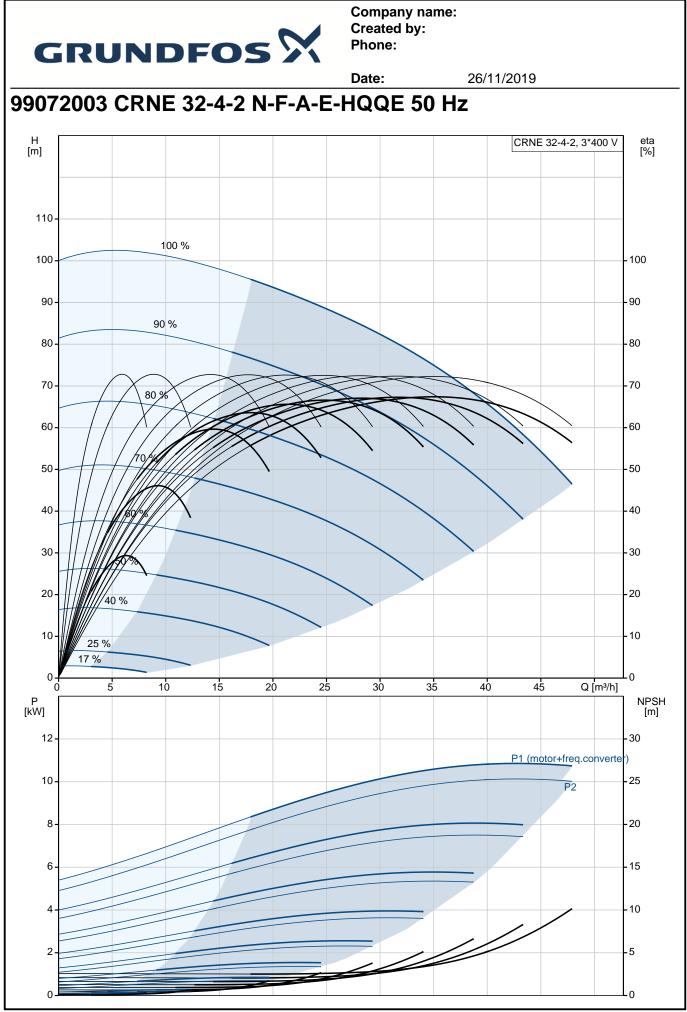
### **Technical data**

#### Controls:

Frequency converter: Pressure sensor:	Built-in Yes
Liquid: Pumped liquid: Liquid temperature range: Selected liquid temperature: Density at selected liquid tempe	Water -40 120 °C 20 °C rature: 998.2 kg/m³
<b>Technical:</b> Pump speed on which pump dat Rated flow: Rated head: Pump orientation: Shaft seal arrangement: Code for shaft seal: Approvals on nameplate: Curve tolerance:	ta are based: 3529 rpm 36 m³/h 78.2 m Vertical Single HQQE CE, EAC,ACS ISO9906:2012 3B
<b>Materials:</b> Base:	Stainless steel EN 1.4408 AISI 316
Impeller: Bearing:	Stainless steel EN 1.4401 AISI 316 SIC
Support bearing:	Graflon
Installation:	



Image:				Date:	26/11/2019	
Maximum operating pressure:16 barMax pressure at stated temp:16 bar / 120 °C 16 bar / -40 °CType of connection:DINSize of inlet connection:DN 65Size of outlet connection:DN 65Pressure rating for pipe connection:PN 40Flange size for motor:FF300Electrical data: $\mathbb{P}$ Motor standard:IECMotor type:160MHIE Efficiency class:IE5Rated power - P2:11 kWPower (P2) required by pump:11 kWPower (P2) required by pump:11 kWMains frequency:50 HzRated voltage:3 x 380-500 VRated speed:360-4000 rpmEfficiency:93.1%Motor No:98971053Others:Motor No:Minimum efficiency index, MEI :0.70Net weight:167 kgShipping volume:0.495 m³Danish VVS No.:386020181Country of origin:GB	y.	Description				
Max pressure at stated temp:16 bar / 120 °C 16 bar / -40 °CType of connection:DINSize of inlet connection:DN 65Size of outlet connection:DN 65Pressure rating for pipe connection:PN 40Flange size for motor:FF300Electrical data:IECMotor standard:IECMotor standard:IECMotor standard:IESRated power - P2:11 kWPower (P2) required by pump:11 kWMains frequency:50 HzRated voltage:3 x 380-500 VRated voltage:3 x 380-500 VRated speed:360-4000 rpmEfficiency:93.1%Motor ficiency at full load:93.1 %Enclosure class (IEC 34-5):IP55Insulation class (IEC 35):FMotor No:98971053Others:134 kgMinimum efficiency index, MEI:0.70Net weight:134 kgGross weight:167 kgShipping volume:0.495 m³Danish VVS No.:386020181Country of origin:GB		Maximum ambient temperature	: 50 °C			
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Custom tariff no.: 84137075						
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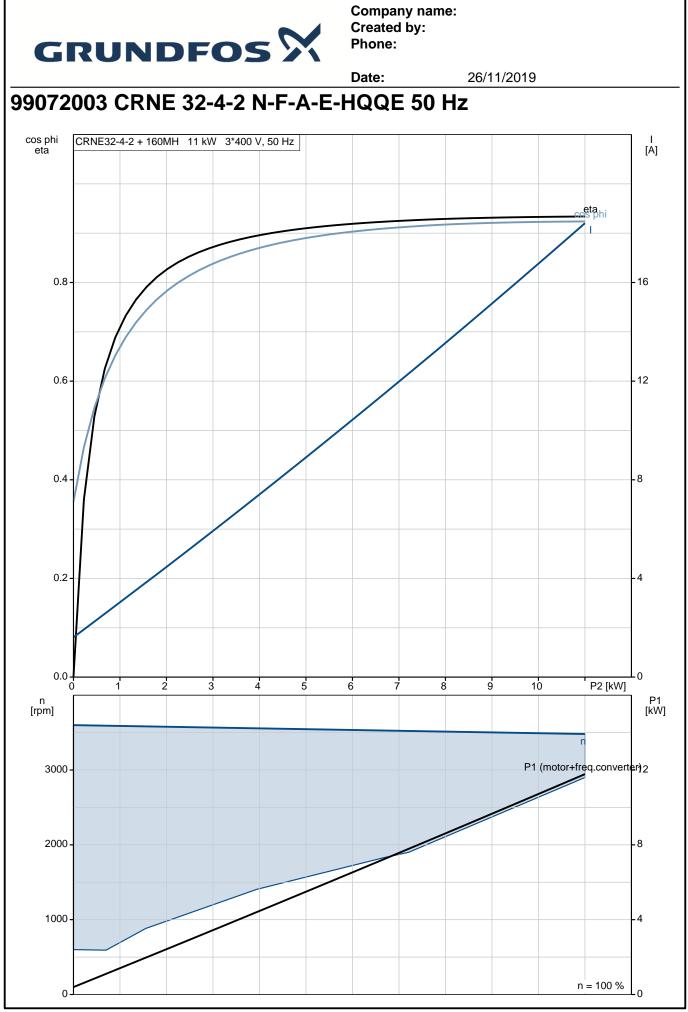


		Date:	26/11/2019
Description	Value	H [m]	CRNE 32-4-2, 3*400 V
General information:			
Product name:	CRNE 32-4-2	110 -	
Product name.	N-F-A-E-HQQE	100 %	
Product No:	99072003	100-	-10
EAN number:	5712606202324	90 -	90
	5712606202324	90 %	
Price:	8.968,00 GBP	80 -	- 80
Technical:		70- 80%	70
Pump speed on which pump data are based:	3529 rpm	60 -	60
Rated flow:	36 m³/h	50 - 70	
Rated head:	78.2 m		
Head max:	101.9 m	40 -	-40
Stages:	4	30 -	- 30
Impellers:	4		
Number of reduced-diameter impellers:	2	20 - 40 %	-20
Low NPSH:	No	10-25%	- 10
Pump orientation:	Vertical	17 %	
•		0 5 10 15	20 25 30 35 40 Q [m³/h]
Shaft seal arrangement:	Single	P	
Code for shaft seal:	HQQE	[kW]	
Approvals on nameplate:	CE, EAC,ACS		P1 (motor+freq.convert
Curve tolerance:	ISO9906:2012 3B	10 -	P2 -25
Pump version:	N	8-	20
Model:	В		
Materials:		6-	- 15
Base:	Stainless steel	4-	10
	EN 1.4408		
	AISI 316	2-	-5
Impeller:	Stainless steel		0
	EN 1.4401	1	
	AISI 316	237	
Material code:	Α		
Code for rubber:	E		
Bearing:	SIC		
Support bearing:	Graflon		
Installation:			
Maximum ambient temperature:	50 °C		
Maximum operating pressure:	16 bar	350	
Max pressure at stated temp:	16 bar / 120 °C	<u>G 1/2</u> G 1/2	
	16 bar / -40 °C		<u>x 18</u>
Type of connection:	DIN	4 X G 1/2	
Size of inlet connection:	DN 65		
Size of outlet connection:	DN 65		
	PN 40	226	
Pressure rating for pipe connection: Flange size for motor:		<u> </u>	<u> </u>
	FF300		
Connect code:	F		la la
Liquid:	14/		
Pumped liquid:	Water		
Liquid temperature range:	-40 120 °C	20 20 20	
Selected liquid temperature:	20 °C	20 20 20	
Density at selected liquid temperature:	998.2 kg/m <sup>3</sup>		Into CaloCa Pristrato
Electrical data:		<u>سمعدو ف سو هجا :</u>	AD GAD AI
Motor standard:	IEC	; 	ou Lufee ann
Motor type:	160MH		Lifes baocri At
IE Efficiency class:	IE5		
Rated power - P2:	11 kW	A V V	Globau A Globau Y Globau S
Power (P2) required by pump:	11 kW	2 15 1	640 -447 
Mains frequency:	50 Hz		ety dead dead for the
Rated voltage:	3 x 380-500 V	──────────────────────	006 Rx

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Date: 26/11/2019 Description Value 20.3-16.0 A Rated current: Cos phi - power factor: 0.93-0.90 Rated speed: 360-4000 rpm Efficiency: 93.1% Motor efficiency at full load: 93.1 % Enclosure class (IEC 34-5): IP55 Insulation class (IEC 85): F Motor protec: YES 98971053 Motor No: Controls: Control panel: Standard Function Module: 300 Frequency converter: Built-in Pressure sensor: Yes Others: Minimum efficiency index, MEI : 0.70 Net weight: 134 kg Gross weight: 167 kg Shipping volume: 0.495 m<sup>3</sup> Danish VVS No.: 386020181 Country of origin: GB Custom tariff no .: 84137075



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