Submittal Data

PROJECT:	UNIT TAG:	QUANTITY:
	TYPE OF SERVICE:	
REPRESENTATIVE:	SUBMITTED BY:	DATE:
ENGINEER:	APPROVED BY:	DATE:
CONTRACTOR:	ORDER NO.:	DATE:

Note! Product picture may differ from actual product

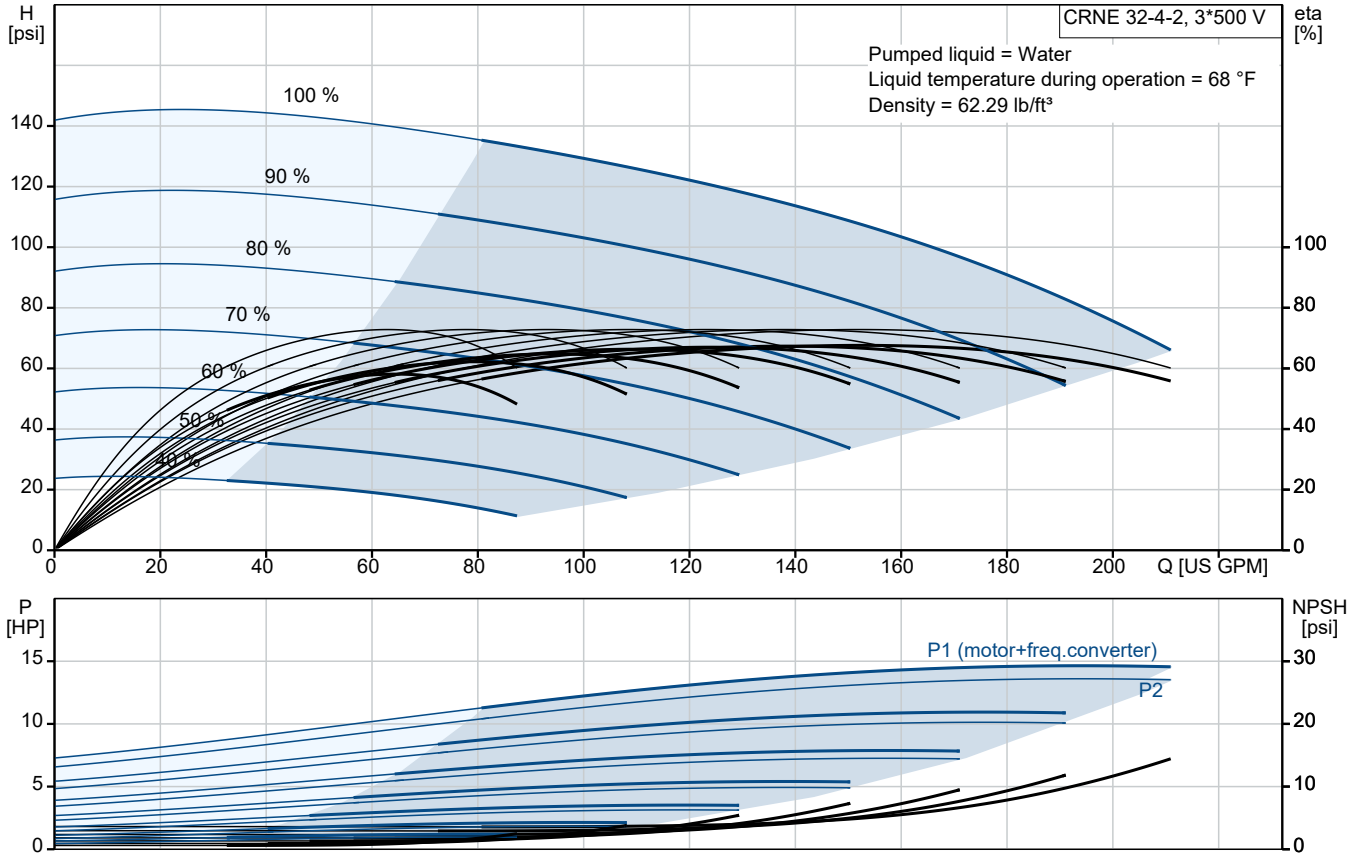
CRNE 32-4-2 N-G-A-E-HQQE

Vertical, multistage centrifugal pump with integrated frequency converter. Pump materials in contact with the liquid are in high-grade stainless steel (EN 1.4401)

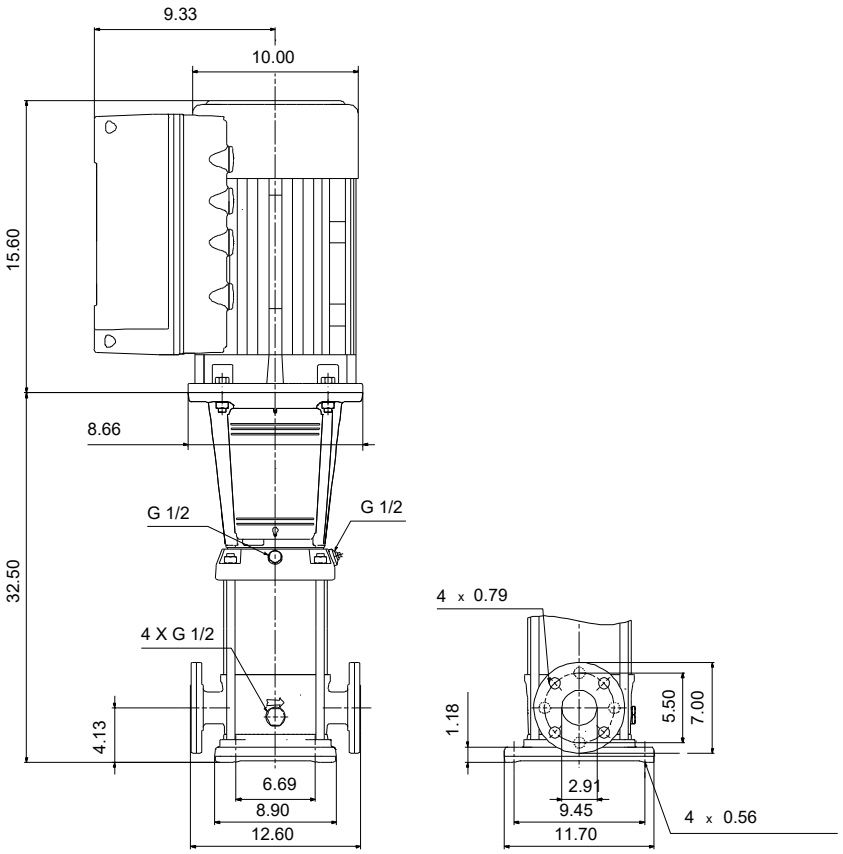
Conditions of Service	
Liquid:	Water
Temperature:	68 °F
Specific Gravity:	1.000

Pump Data	
Max pressure at stated temp:	232 psi / 250 °F
Liquid temperature range:	-40 .. 248 °F
Maximum ambient temperature:	122 °F
Shaft seal:	HQQE
Product number:	99076550

Motor Data	
Rated power - P2:	15 HP
Rated voltage:	440-480 V
Mains frequency:	60 Hz
Enclosure class:	IP55
Insulation class:	F
Motor protection:	ELEC
Motor type:	160H
Eta 1/1:	93.2 %



Submittal Data



Materials:

Base:	Stainless steel
Base:	EN 1.4408
Base:	AISI 316
Impeller:	Stainless steel
Impeller:	AISI 316
Impeller:	EN 1.4401
Material code:	A
Code for rubber:	E

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Qty.	Description
1	**CRNE 32-4-2 N-G-A-E-HQQE**

Note! Product picture may differ from actual product

Product No.: 99076550

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 ANSI 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. The operating panel on the motor terminal box features a four-inch TFT display, push-buttons and the Grundfos Eye indicator.

The display gives an intuitive and user-friendly interface to all functions.
The push-buttons are used to navigate through the menu structure to access pump and performance data on site and enable 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 also 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:

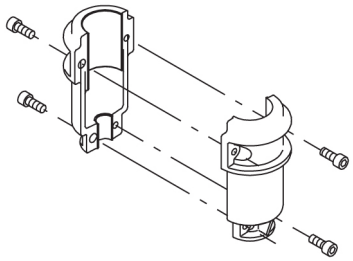
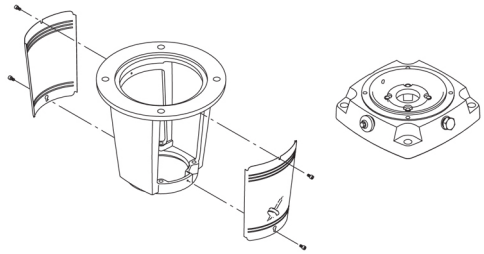
- two dedicated digital inputs
- three analog inputs, 0(4)-20 mA, 0-5 V, 0-10 V, 0.5 - 3.5 V; the factory-fitted pressure sensor is connected to one of these inputs
- 5 V voltage supply to potentiometer and sensor
- one analog output, 0-10 V, 0(4)-20 mA
- two configurable digital inputs or open-collector 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.

The operating panel on the motor terminal box features a four-inch TFT display, push-buttons and the Grundfos Eye indicator.

The display gives an intuitive and user-friendly interface to all functions.

Qty.	Description
1	The push-buttons are used to navigate through the menu structure to access pump and performance data on site and enable 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 also 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 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. Seal faces: • 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)

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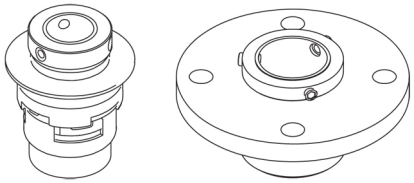
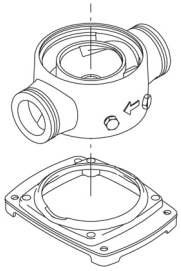
Qty.	Description
1	EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.



The shaft seal is retained in the pump head by a cover and screws. It can be replaced without removing the motor.

The 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.
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. The motor is flange-mounted with free-hole flange (FF).

Motor-mounting designation in accordance with IEC 60034-7: IM B 5 (Code I) / IM 3001 (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

Liquid:

Pumped liquid:	Water
Liquid temperature range:	-40 .. 248 °F
Selected liquid temperature:	68 °F
Density:	62.29 lb/ft³

Technical:

Pump speed on which pump data are based:	3444 rpm
Rated flow:	159 US GPM
Rated head:	108.2 psi
Actual impeller diameter:	4.66 in
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQE
Approvals:	CURUS
Approvals for drinking water:	NSF/ANSI 61
Curve tolerance:	ISO9906:2012 3B

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Qty.	Description	
1	Materials:	
	Base:	Stainless steel
		EN 1.4408
		AISI 316
	Impeller:	Stainless steel
		EN 1.4401
		AISI 316
	Bearing:	SIC
	Support bearing:	Graflon
	Installation:	
	Maximum ambient temperature:	122 °F
	Maximum operating pressure:	232.06 psi
	Max pressure at stated temp:	232 psi / 250 °F
		232 psi / -40 °F
	Type of connection:	ANSI
	Size of inlet connection:	2 1/2 inch
	Size of outlet connection:	2 1/2 inch
	Pressure rating for connection:	PN 16
	Flange rating inlet:	150 lb
	Flange size for motor:	254TC
	Electrical data:	
	Motor standard:	NEMA
	Motor type:	160H
	Rated power - P2:	15 HP
	Power (P2) required by pump:	15 HP
	Over/undersize motor:	Standard motor size
	Mains frequency:	60 Hz
	Rated voltage:	3 x 440-480 V
	Service factor:	1.15
	Rated current:	17.9-16.6 A
	Cos phi - power factor:	0.92-0.91
	Rated speed:	360-4000 rpm
	IE Efficiency class:	IE5
	Motor efficiency at full load:	93.2 %
	Enclosure class (IEC 34-5):	IP55
	Insulation class (IEC 85):	F
	Motor No:	99256777
	Controls:	
	Frequency converter:	Built-in
	Pressure sensor:	Y
	Others:	
	Terminal box position:	6
	DOE Pump Energy Index VL:	0.40
	Net weight:	275 lb
	Gross weight:	293 lb
	Shipping volume:	17.5 ft³
	Country of origin:	US
	Custom tariff no.:	8413.70.2040

Company name:
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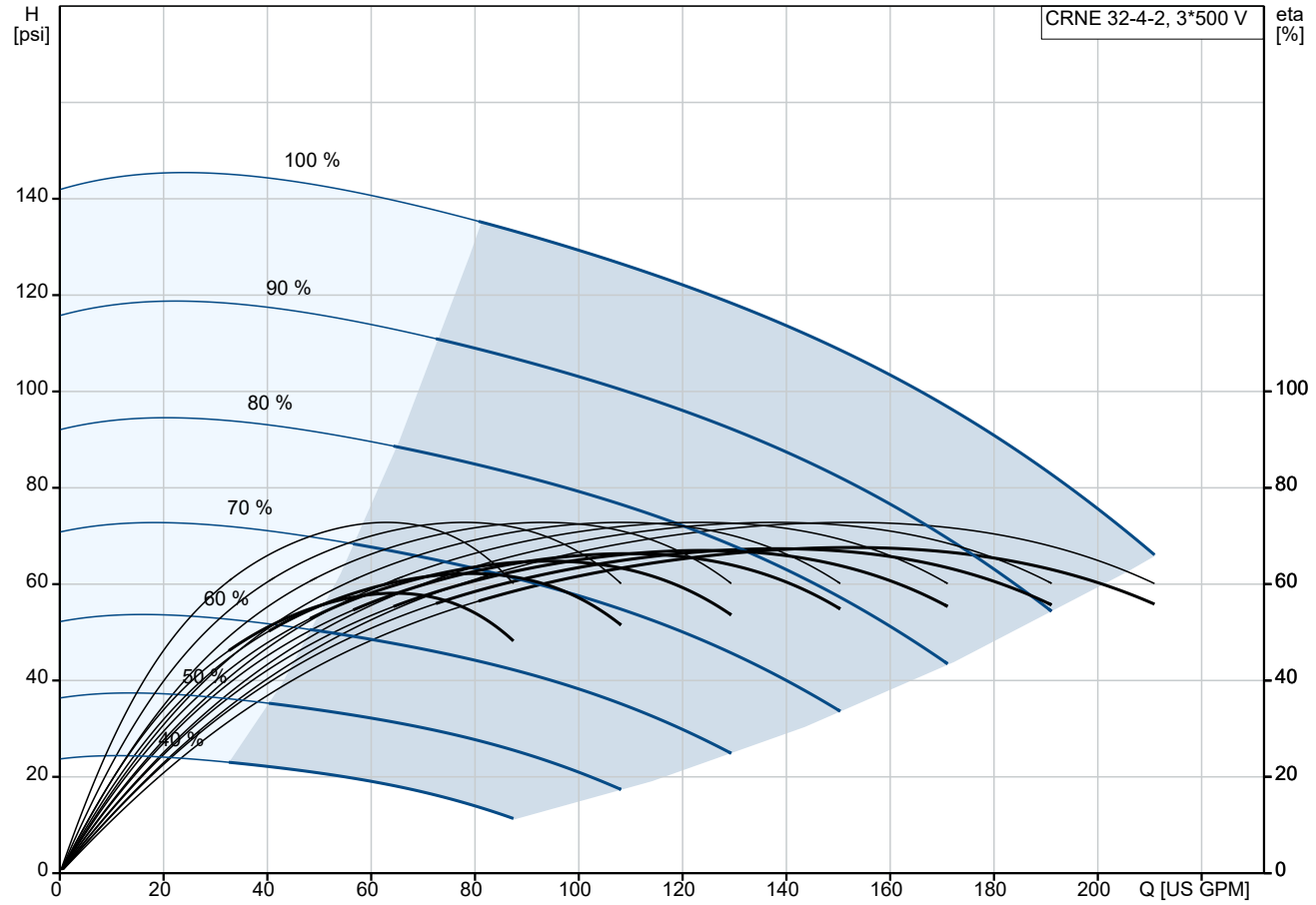
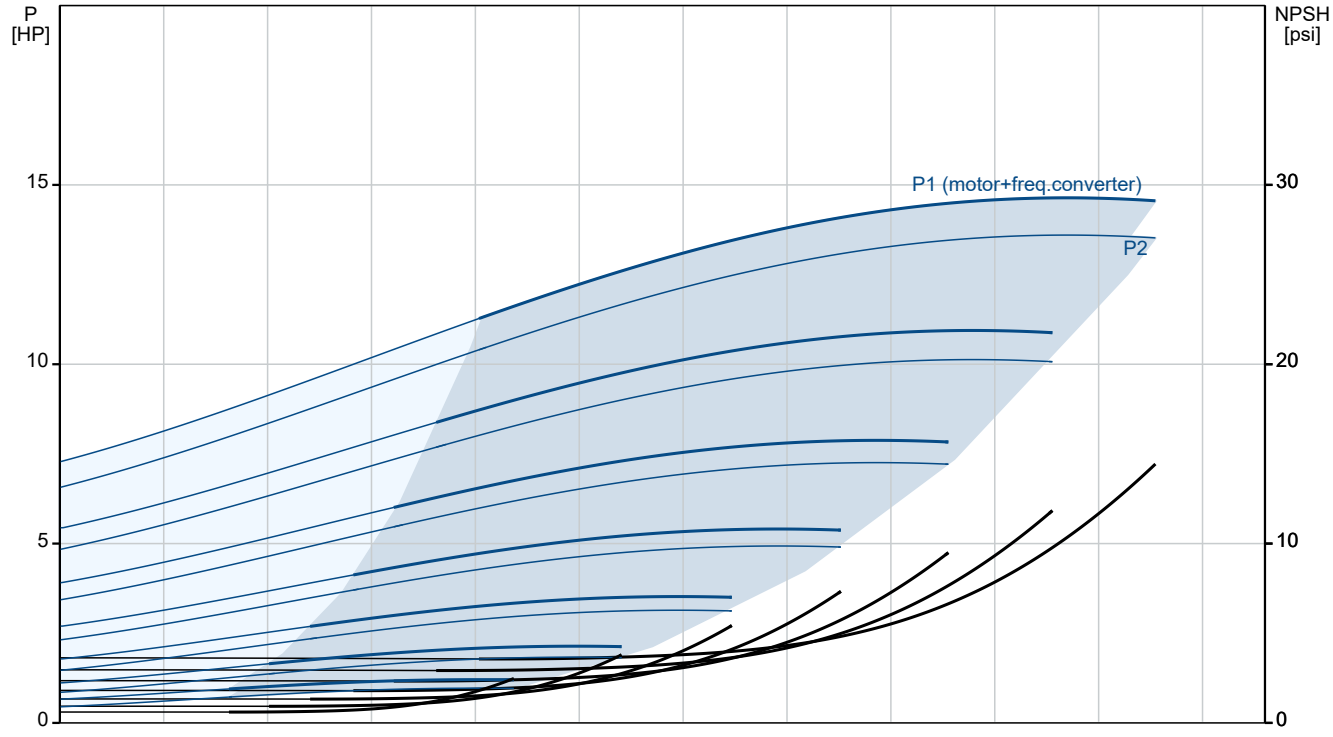
Date: 11/10/2024

99076550 CRNE 32-4-2 N-G-A-E-HQQE 60 Hz



Pumped liquid = Water
Liquid temperature during operation = 68 °F
Density = 62.29 lb/ft³



Company name:
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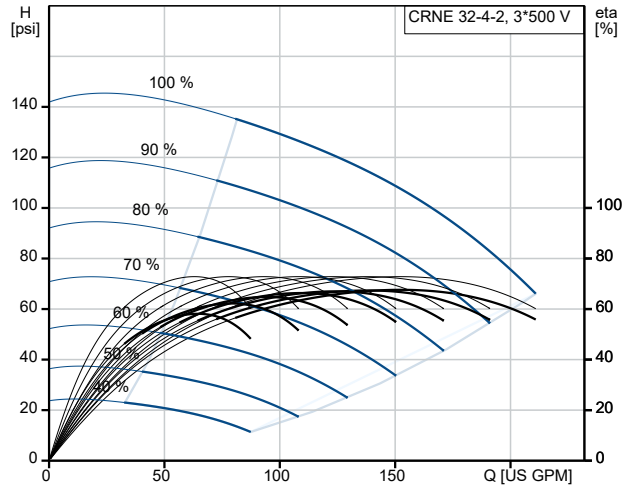
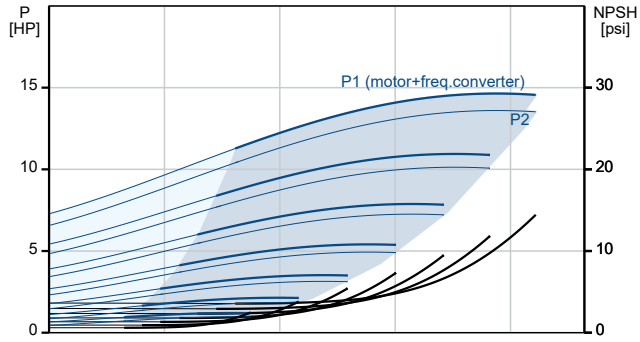
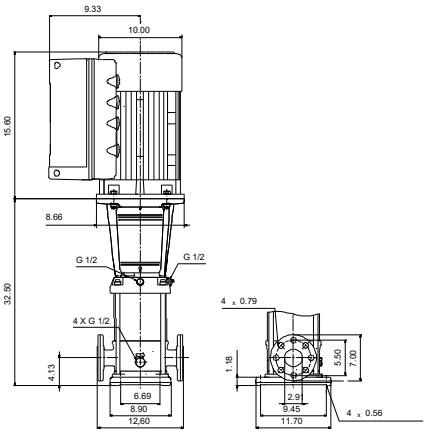
Date: 11/10/2024

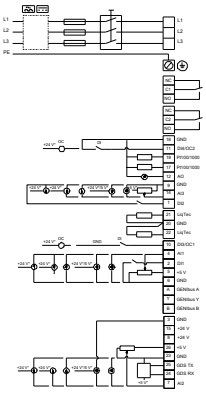
Description	Value
General information:	
Product name:	CRNE 32-4-2 N-G-A-E-HQQE
Product No:	99076550
EAN number:	5712606286256
Technical:	
Pump speed on which pump data are based:	3444 rpm
Rated flow:	159 US GPM
Rated head:	108.2 psi
Maximum head:	144.7 psi
Actual impeller diameter:	4.66 in
Stages:	4
Impellers:	4
Number of reduced-diameter impellers:	2
Low NPSH:	N
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQE
Approvals:	CURUS
Approvals for drinking water:	NSF/ANSI 61
Curve tolerance:	ISO9906:2012 3B
Pump version:	N
Model:	B
Materials:	
Base:	Stainless steel
Base:	EN 1.4408
Base:	AISI 316
Impeller:	Stainless steel
Impeller:	EN 1.4401
Impeller:	AISI 316
Material code:	A
Code for rubber:	E
Bearing:	SIC
Support bearing:	Graflon
Installation:	
Maximum ambient temperature:	122 °F
Maximum operating pressure:	232.06 psi
Max pressure at stated temp:	232 psi / 250 °F
Max pressure at stated temp:	232 psi / -40 °F
Type of connection:	ANSI
Size of inlet connection:	2 1/2 inch
Size of outlet connection:	2 1/2 inch
Pressure rating for connection:	PN 16
Flange rating inlet:	150 lb
Flange size for motor:	254TC
Connect code:	G
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-40 .. 248 °F
Selected liquid temperature:	68 °F
Density:	62.29 lb/ft³
Electrical data:	
Motor standard:	NEMA
Motor type:	160H
Rated power - P2:	15 HP
Power (P2) required by pump:	15 HP
Over/undersize motor:	Standard motor size



Pumped liquid = Water
Liquid temperature during operation = 68 °F
Density = 62.29 lb/ft³







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Description	Value
Mains frequency:	60 Hz
Rated voltage:	3 x 440-480 V
Service factor:	1.15
Rated current:	17.9-16.6 A
Cos phi - power factor:	0.92-0.91
Rated speed:	360-4000 rpm
IE Efficiency class:	IE5
Motor efficiency at full load:	93.2 %
Enclosure class (IEC 34-5):	IP55
Insulation class (IEC 85):	F
Built-in motor protection:	ELEC
Motor No:	99256777
Controls:	
Control panel:	Graphical
Function Module:	FM300 - Advanced
Frequency converter:	Built-in
Pressure sensor:	Y
Others:	
Terminal box position:	6
DOE Pump Energy Index VL:	0.40
Net weight:	275 lb
Gross weight:	293 lb
Shipping volume:	17.5 ft³
Config. file no:	99074295
Country of origin:	US
Custom tariff no.:	8413.70.2040

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Created by:
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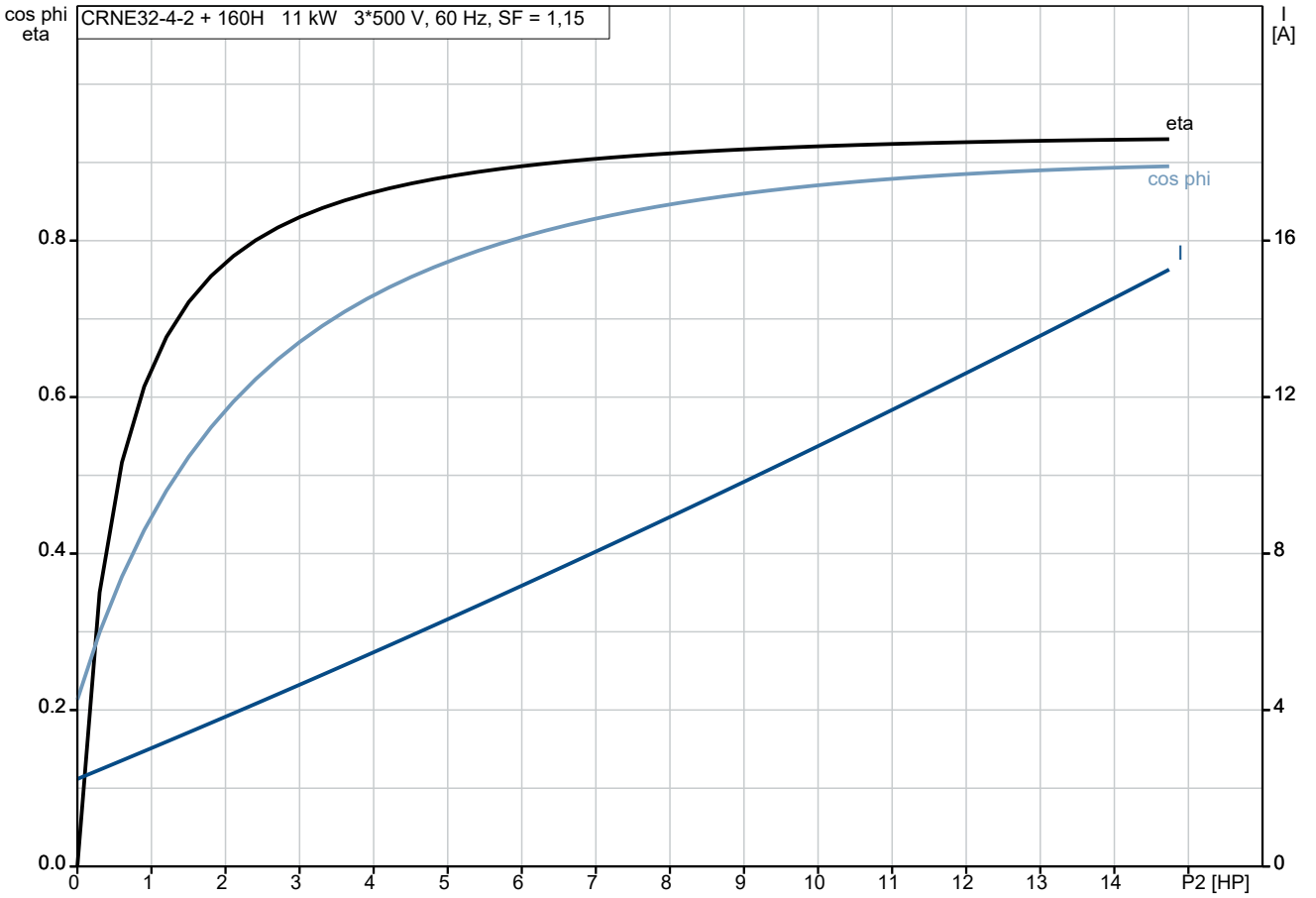
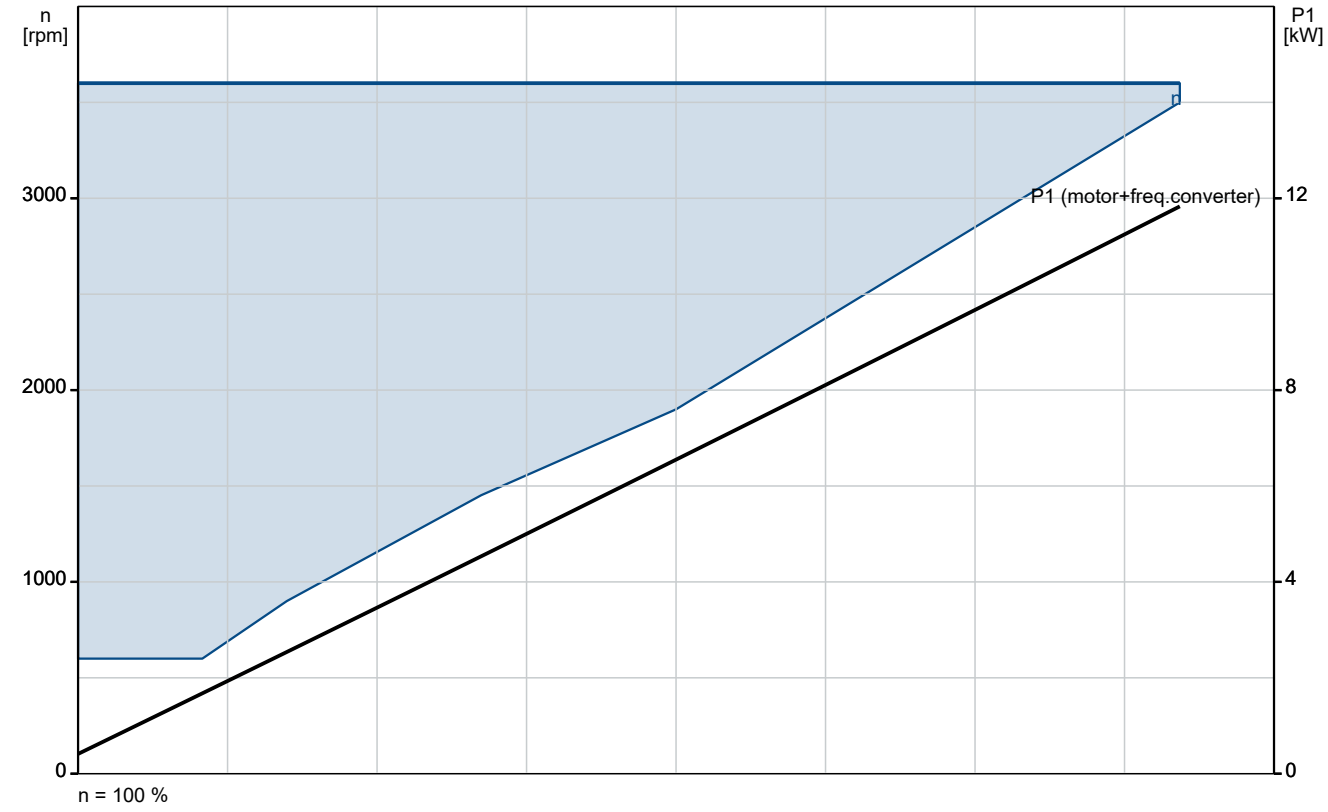
99076550 CRNE 32-4-2 N-G-A-E-HQQE 60 Hz





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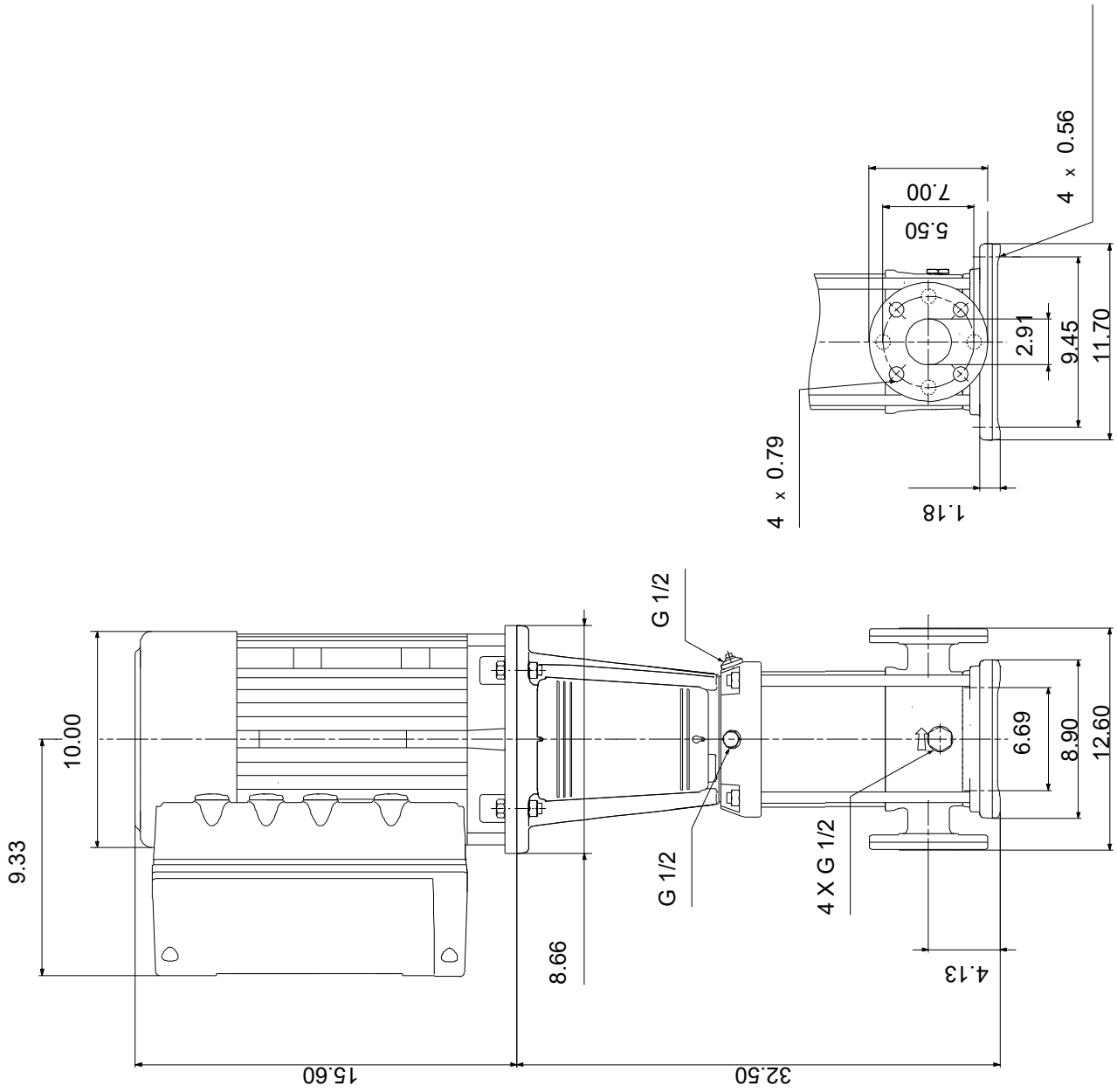
99076550 CRNE 32-4-2 N-G-A-E-HQQE 60 Hz



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

Company name:
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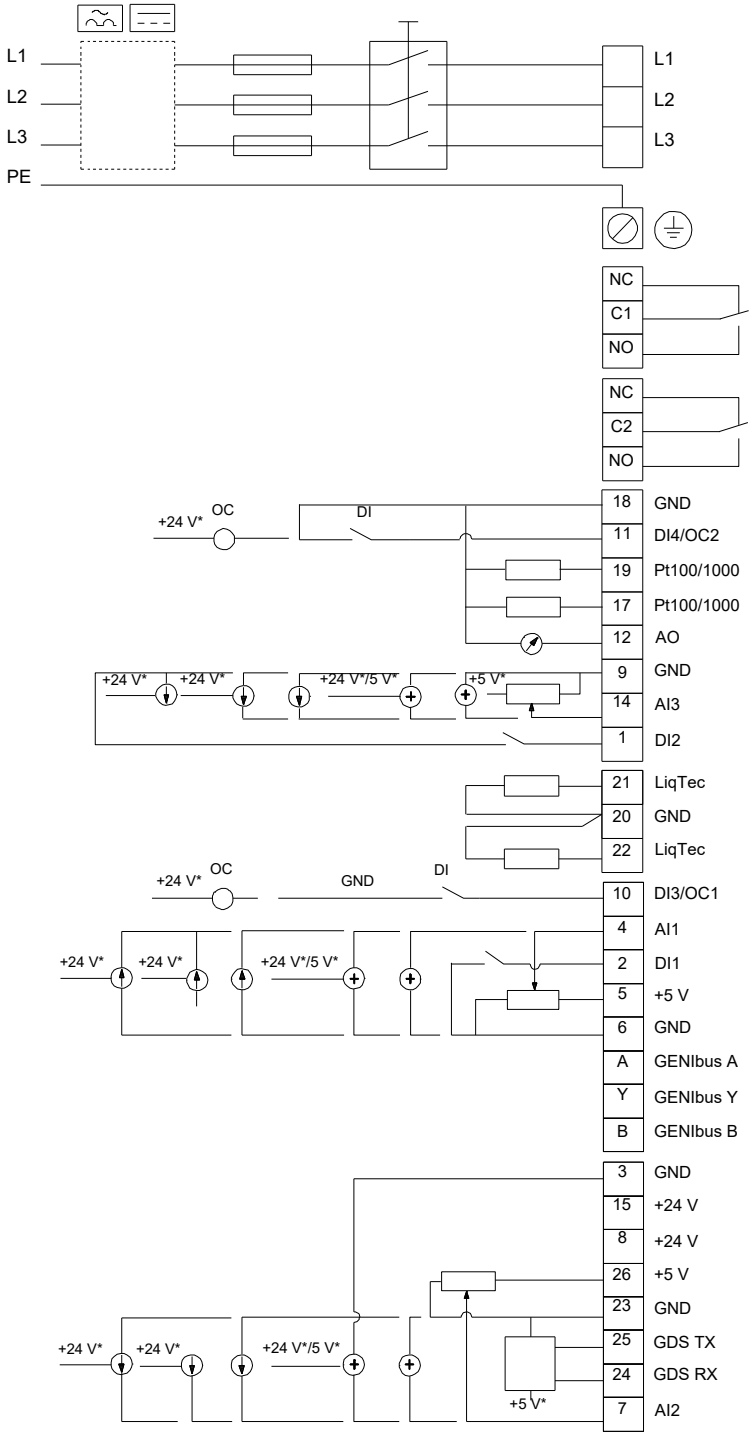
Date: 11/10/2024

99076550 CRNE 32-4-2 N-G-A-E-HQQE 60 Hz



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