GRUNDFOS

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

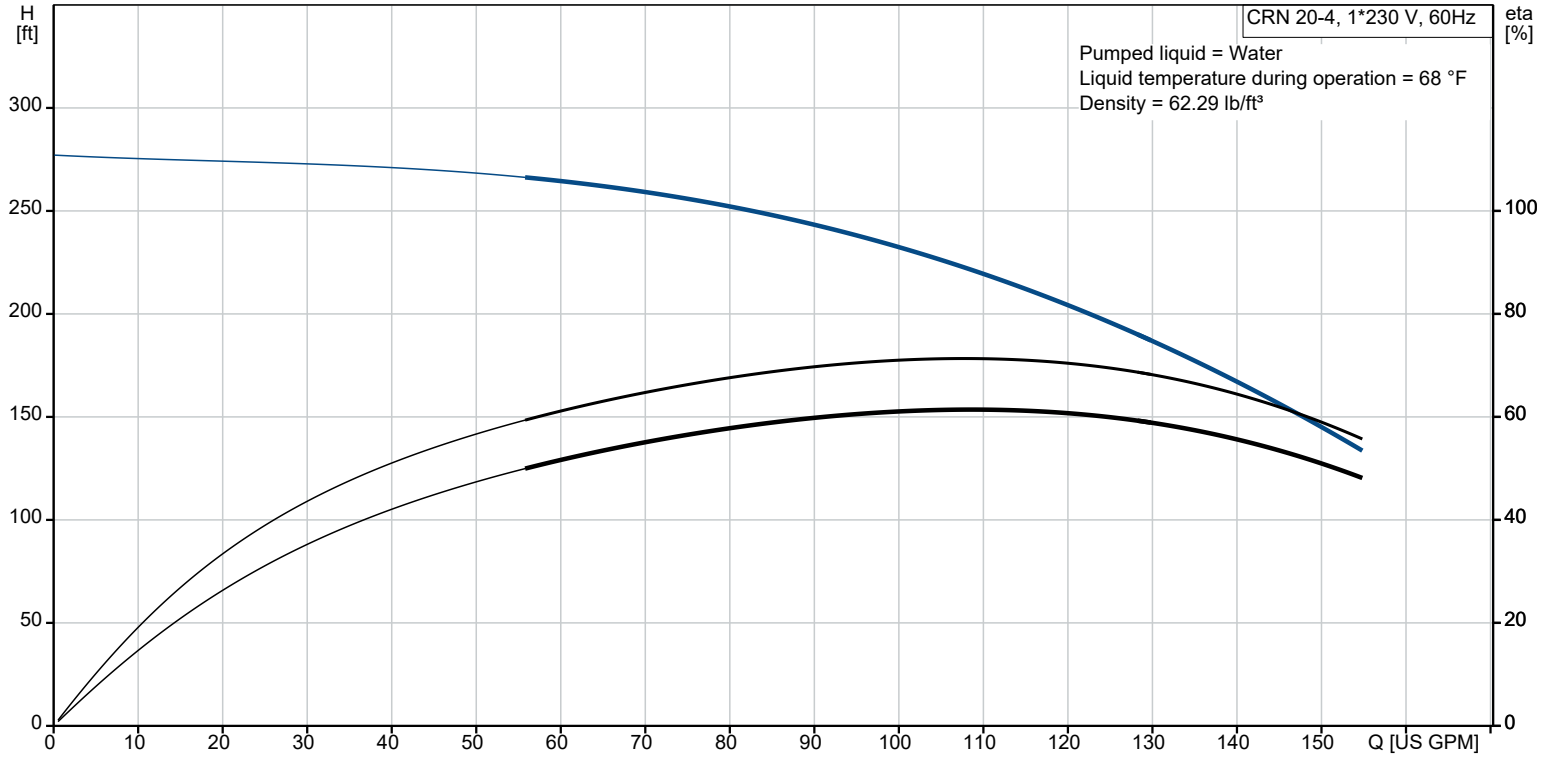
CRN 20-4 A-P-A-V-HQQV

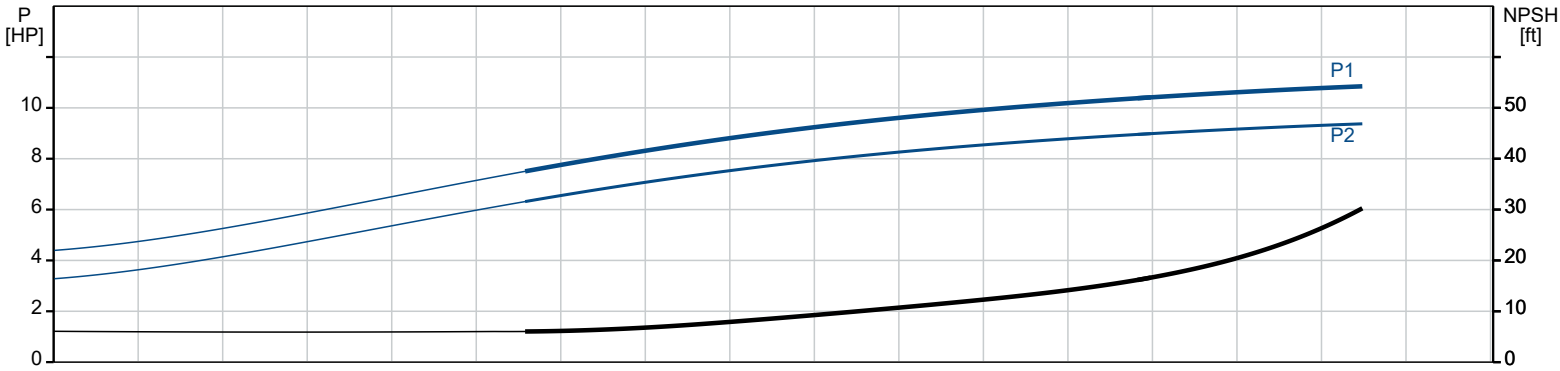
Vertical, multistage centrifugal pump with suction and discharge ports on the same level. Pump materials in contact with the liquid are in high-grade stainless steel (EN 1.4401)

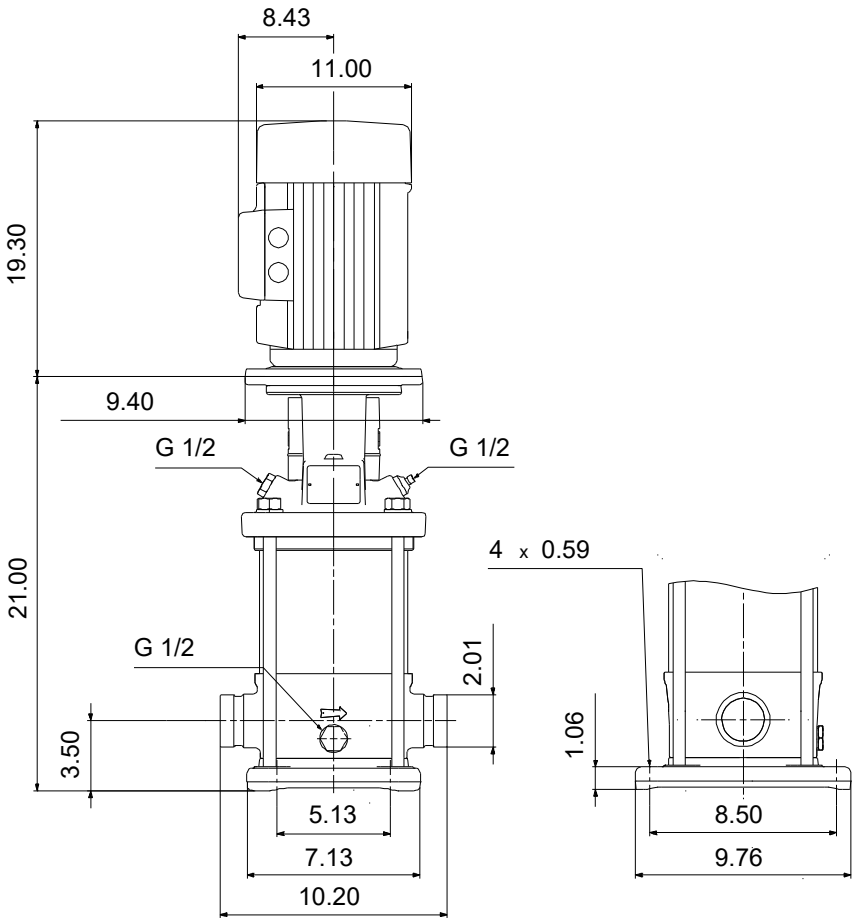
Conditions of Service	
Liquid:	Water
Temperature:	68 °F
Specific Gravity:	1.000

Pump Data	
Max pressure at stated temp:	363 psi / 194 °F
Liquid temperature range:	-4 .. 194 °F
Maximum ambient temperature:	104 °F
Shaft seal:	HQQV
Product number:	99917860

Motor Data	
Rated power - P2:	10 HP
Rated voltage:	208-230 V
Mains frequency:	60 Hz
Enclosure class:	IP55
Insulation class:	F
Motor protection:	NONE
Motor type:	WEG
Eta 1/1:	86.5 %







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:	V

GRUNDFOS

Company name:
Created by:
Phone:

Date: 31/01/2023

Qty.	Description
1	**CRN 20-4 A-P-A-V-HQQV**

Product No.: 99917860

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.

The pump is fitted with a 1-phase, fan-cooled asynchronous motor.

Further product details

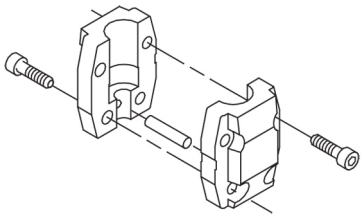
Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process.
CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface.
An 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.

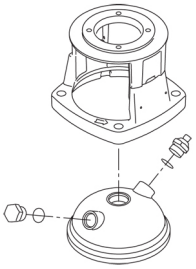
The colour code for the finished product is NCS 9000/RAL 9005.

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 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.

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

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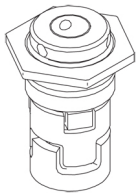
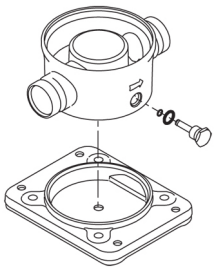
Qty.	Description
1	



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 drain plug.
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 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 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).

The motor has built-in thermal protection (PTO current and temperature sensors) in accordance with IEC 60034-11 and requires no further motor protection. The protection reacts to both slow- and quick-rising temperatures, e.g. constant overload and stalled conditions.

As the thermal protection incorporates automatic reset, the motor must be connected in a way which ensures that the automatic reset cannot cause accidents.

Technical data

Liquid:

Pumped liquid:	Water
Liquid temperature range:	-4 .. 194 °F
Selected liquid temperature:	68 °F
Density:	62.29 lb/ft³

Technical:

Pump speed on which pump data are based:	3500 rpm
Rated flow:	111 US GPM
Rated head:	210.3 ft
Actual impeller diameter:	4.13 in
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQV
Approvals:	CURUS
Curve tolerance:	ISO9906:2012 3B

Materials:

Base:	Stainless steel EN 1.4408 AISI 316
Impeller:	Stainless steel EN 1.4401 AISI 316

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Company name:
Created by:
Phone:

Date: 31/01/2023

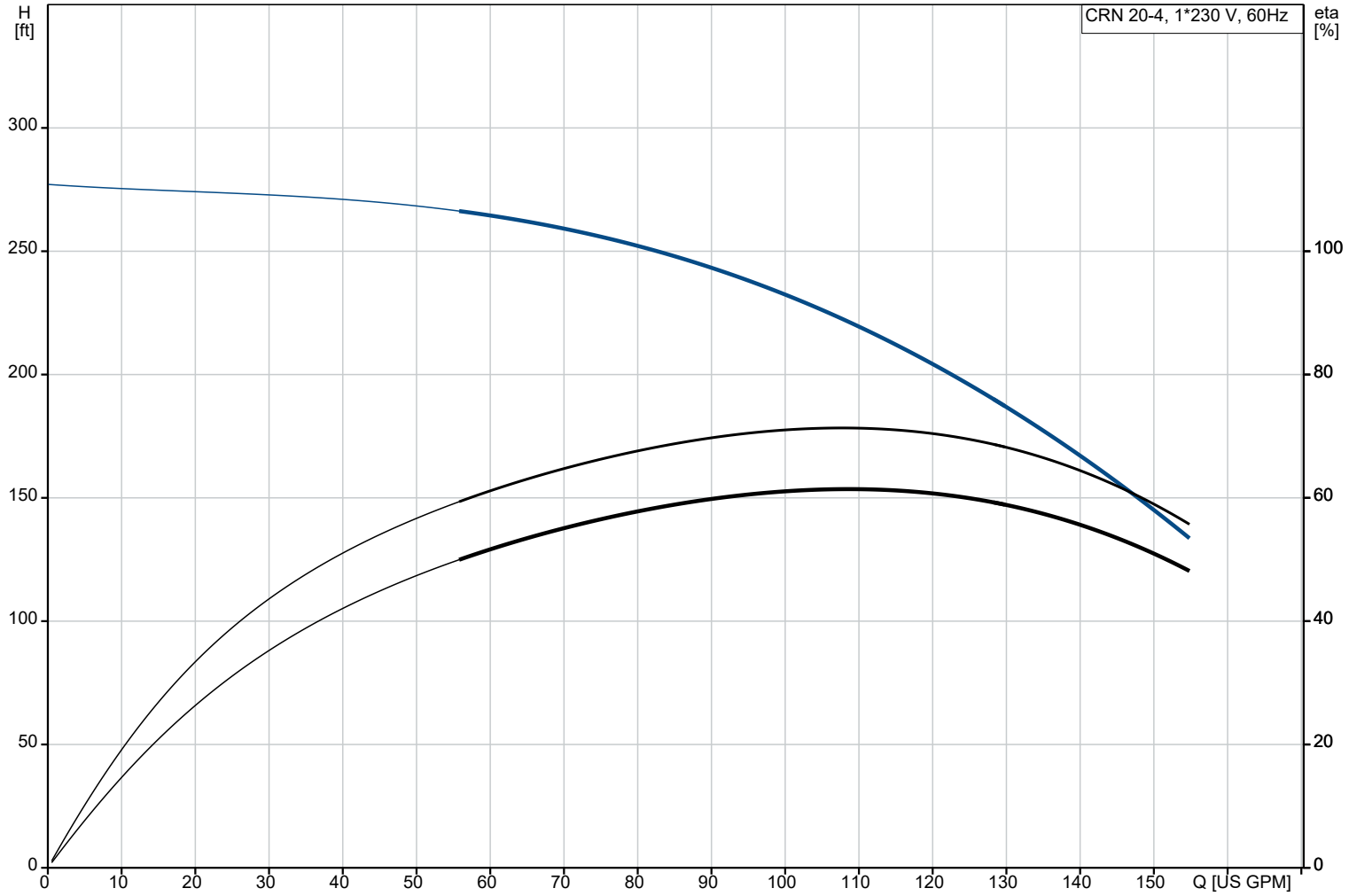
Qty.	Description	
1	Bearing:	SIC
	Installation:	
	t max amb:	104 °F
	Maximum operating pressure:	362.59 psi
	Max pressure at stated temp:	363 psi / 194 °F
		363 psi / -4 °F
	Type of connection:	PJE
	Size of inlet connection:	DN 50
	Size of outlet connection:	DN 50
	Pressure rating for connection:	PN 50
	Flange size for motor:	213TC
	Electrical data:	
	Motor standard:	NEMA
	Motor type:	WEG
	Rated power - P2:	10 HP
	Power (P2) required by pump:	10 HP
	Mains frequency:	60 Hz
	Rated voltage:	1 x 208-230 V
	Service factor:	1.15
	Rated current:	42.5-38.1 A
	Starting current:	720-720 %
	Cos phi - power factor:	0.99
	Rated speed:	3510 rpm
	IE efficiency:	86.5%
	Motor efficiency at full load:	86.5 %
	Motor efficiency at 3/4 load:	85.5 %
	Motor efficiency at 1/2 load:	81.5 %
	Number of poles:	2
	Enclosure class (IEC 34-5):	IP55
	Insulation class (IEC 85):	F
	Motor No:	99883306
	Controls:	
	Frequency converter:	NONE
	Others:	
	DOE Pump Energy Index CL:	0.91
	Net weight:	243 lb
	Gross weight:	262 lb
	Shipping volume:	13.1 ft³

GRUNDFOS

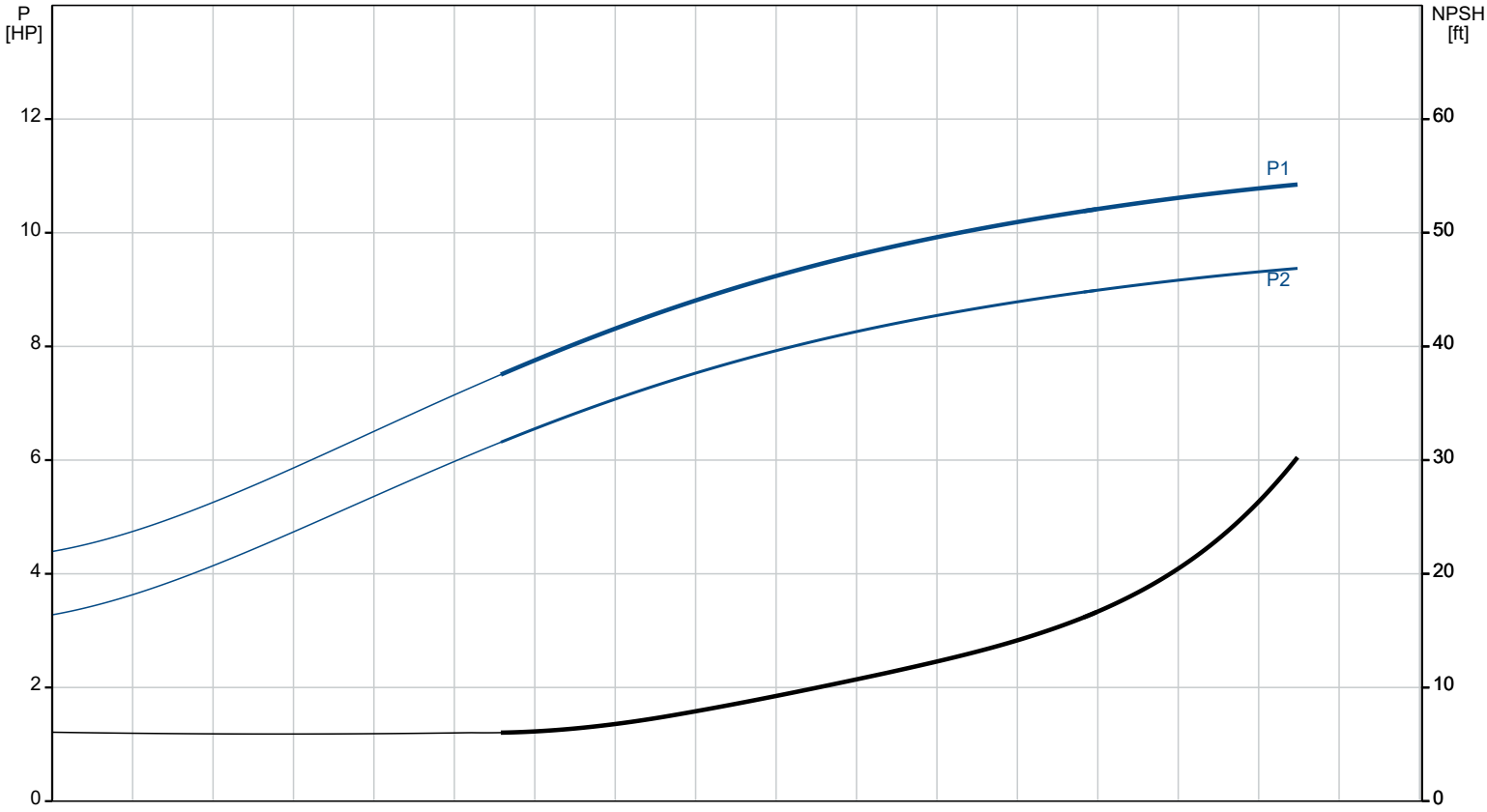
Company name:
Created by:
Phone:

Date: 31/01/2023

99917860 CRN 20-4 A-P-A-V-HQQV 60 Hz



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



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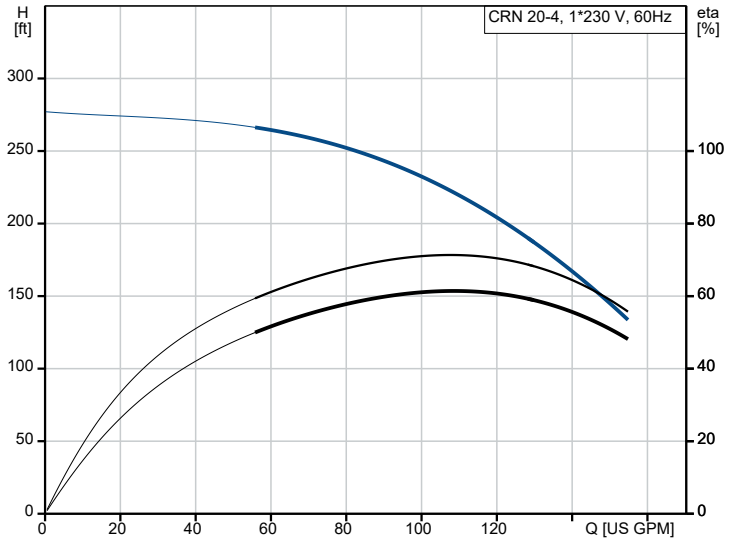
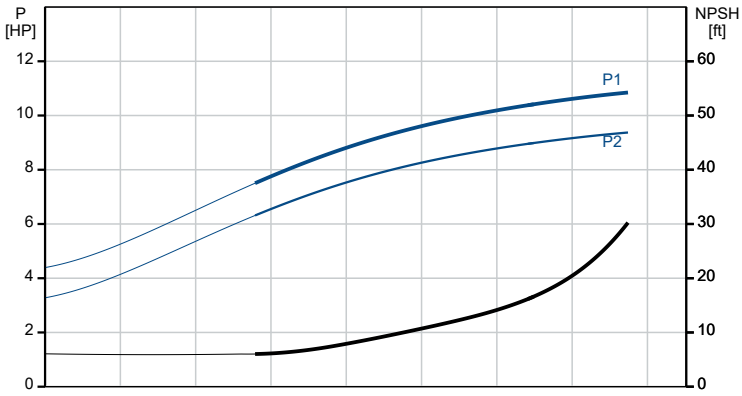
Company name:
Created by:
Phone:

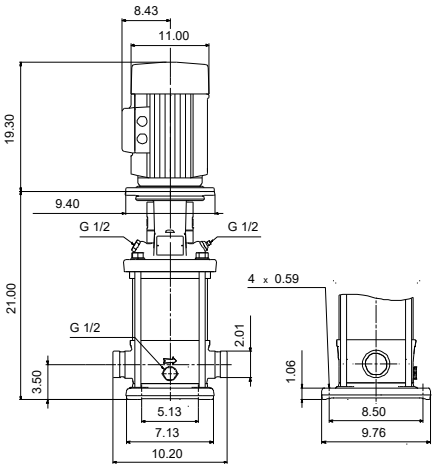
Date: 31/01/2023

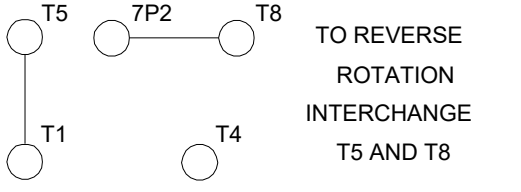
Description	Value
General information:	
Product name:	CRN 20-4 A-P-A-V-HQQV
Product No:	99917860
EAN number:	5715114126885
Technical:	
Pump speed on which pump data are based:	3500 rpm
Rated flow:	111 US GPM
Rated head:	210.3 ft
Maximum head:	274.3 ft
Actual impeller diameter:	4.13 in
Stages:	4
Impellers:	4
Number of reduced-diameter impellers:	0
Low NPSH:	N
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQV
Approvals:	CURUS
Curve tolerance:	ISO9906:2012 3B
Pump version:	A
Model:	A
Cooling:	IC 411
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:	V
Bearing:	SIC
Installation:	
t max amb:	104 °F
Maximum operating pressure:	362.59 psi
Max pressure at stated temp:	363 psi / 194 °F
Max pressure at stated temp:	363 psi / -4 °F
Type of connection:	PJE
Size of inlet connection:	DN 50
Size of outlet connection:	DN 50
Pressure rating for connection:	PN 50
Flange size for motor:	213TC
Connect code:	P
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-4 .. 194 °F
Selected liquid temperature:	68 °F
Density:	62.29 lb/ft³
Electrical data:	
Motor standard:	NEMA
Motor type:	WEG
Rated power - P2:	10 HP
Power (P2) required by pump:	10 HP
Mains frequency:	60 Hz
Rated voltage:	1 x 208-230 V
Service factor:	1.15
Rated current:	42.5-38.1 A
Starting current:	720-720 %
Full load SF current:	42.5/43.8 A
Cos phi - power factor:	0.99
Rated speed:	3510 rpm
IE efficiency:	86.5%
Motor efficiency at full load:	86.5 %
Motor efficiency at 3/4 load:	85.5 %
Motor efficiency at 1/2 load:	81.5 %



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







T1- BLUE T4-YELLOW T5-BLACK
T8-RED 7P2-BROWN

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Company name:
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Phone:

Date: 31/01/2023

Description	Value
Number of poles:	2
Enclosure class (IEC 34-5):	IP55
Insulation class (IEC 85):	F
Built-in motor protection:	NONE
Motor No:	99883306
Controls:	
Frequency converter:	NONE
Others:	
DOE Pump Energy Index CL:	0.91
Net weight:	243 lb
Gross weight:	262 lb
Shipping volume:	13.1 ft³

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Company name:
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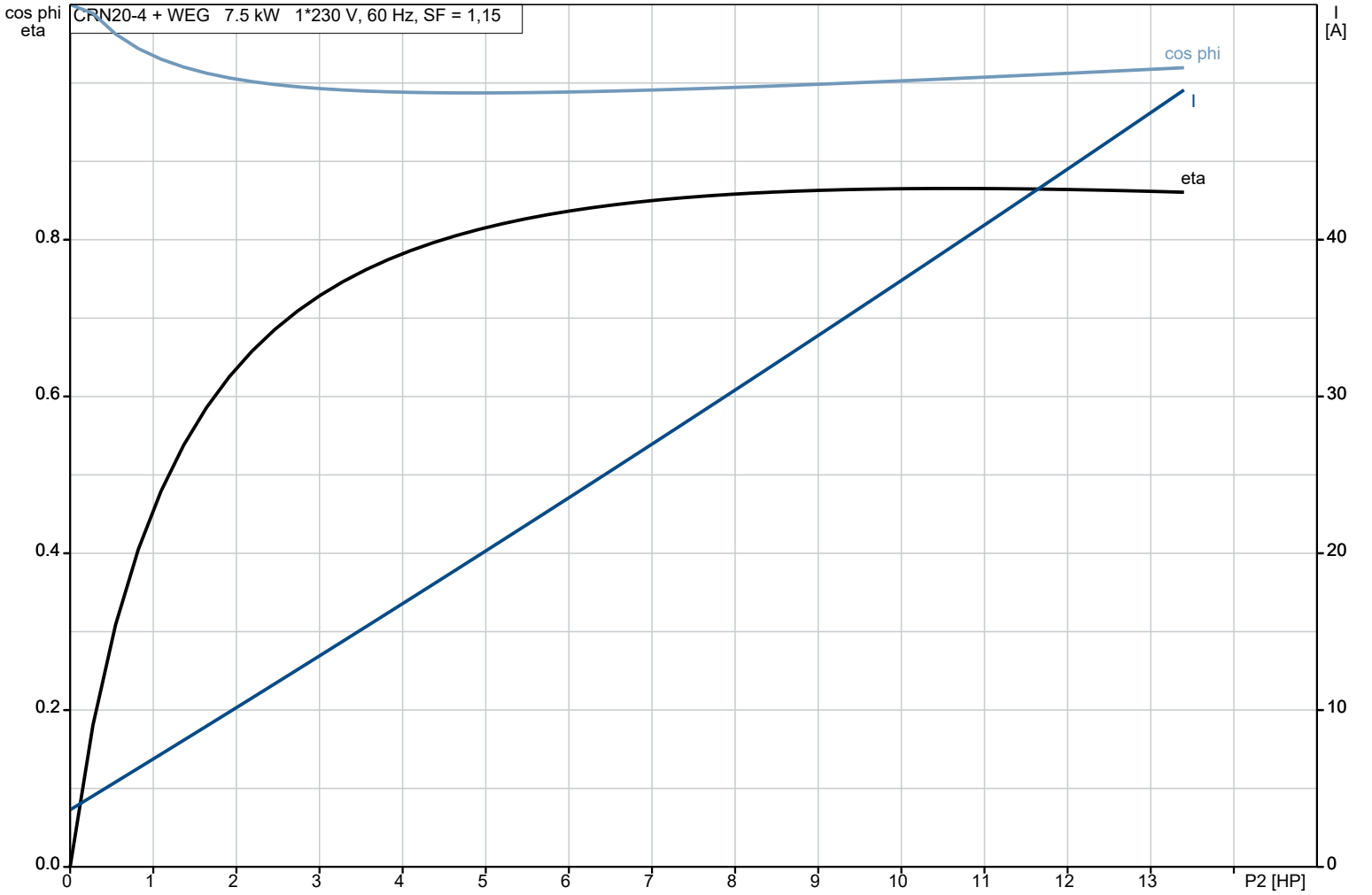
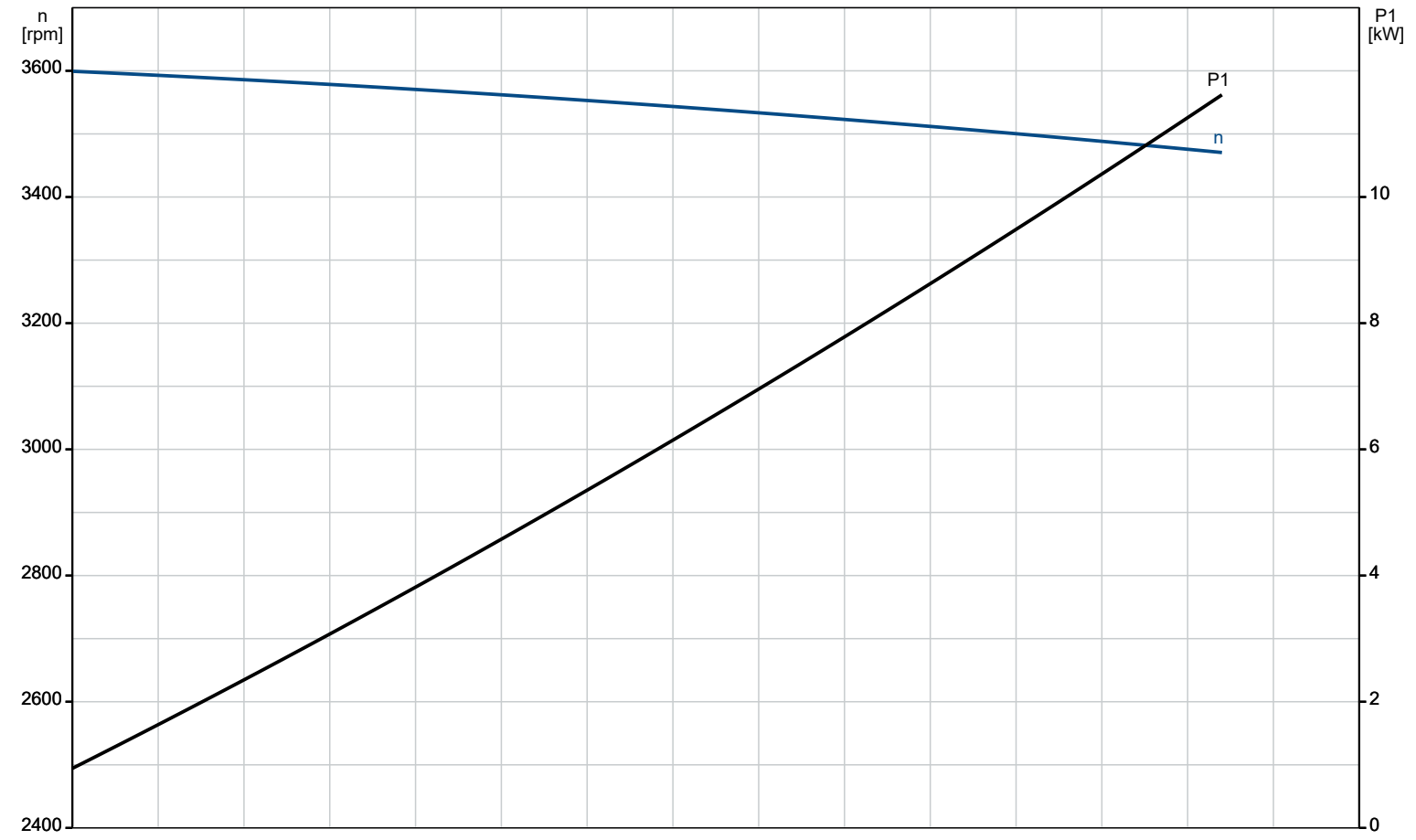
Date: 31/01/2023

99917860 CRN 20-4 A-P-A-V-HQQV 60 Hz

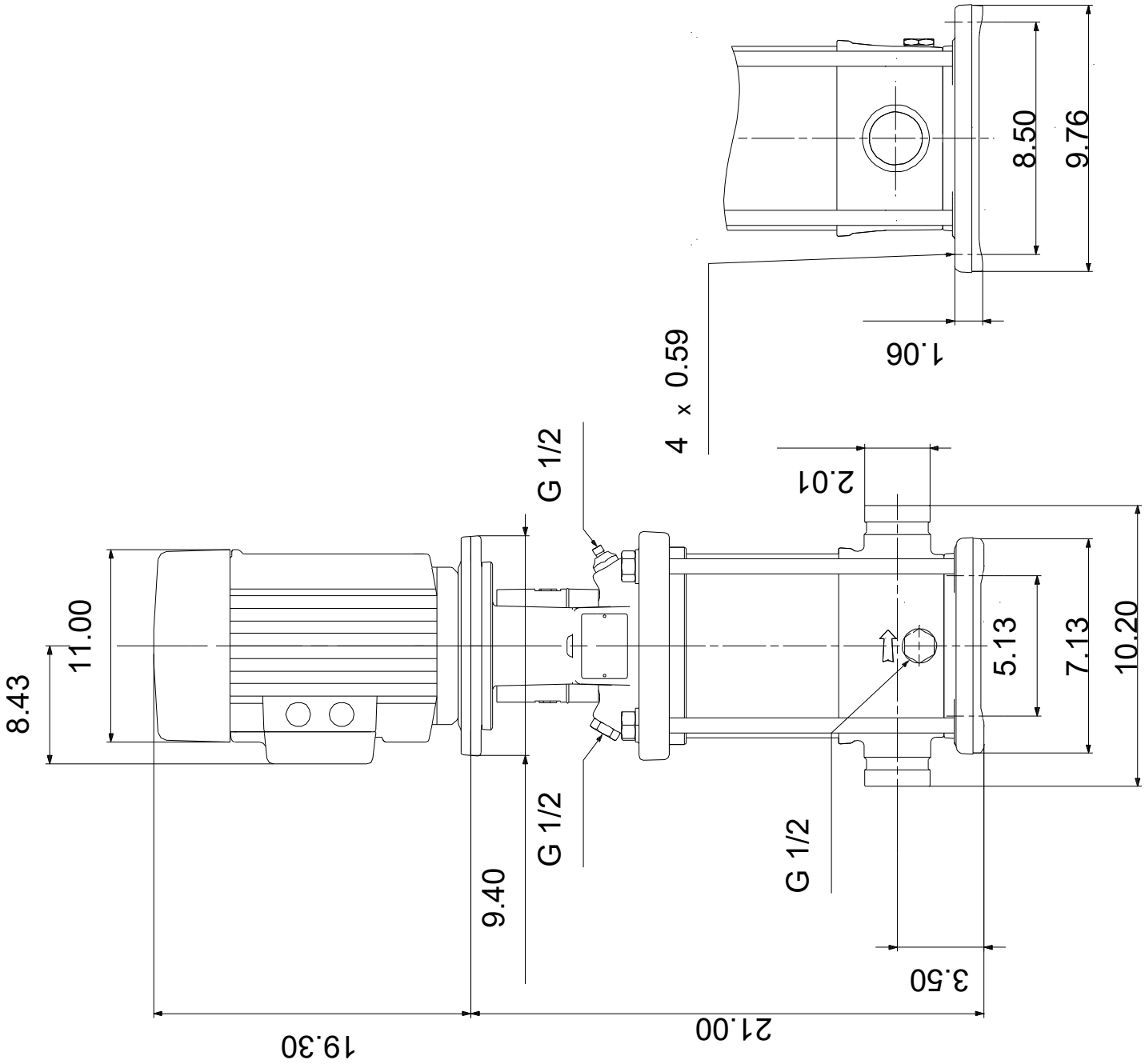




Company name:
Created by:
Phone:

Date: 31/01/2023

99917860 CRN 20-4 A-P-A-V-HQQV 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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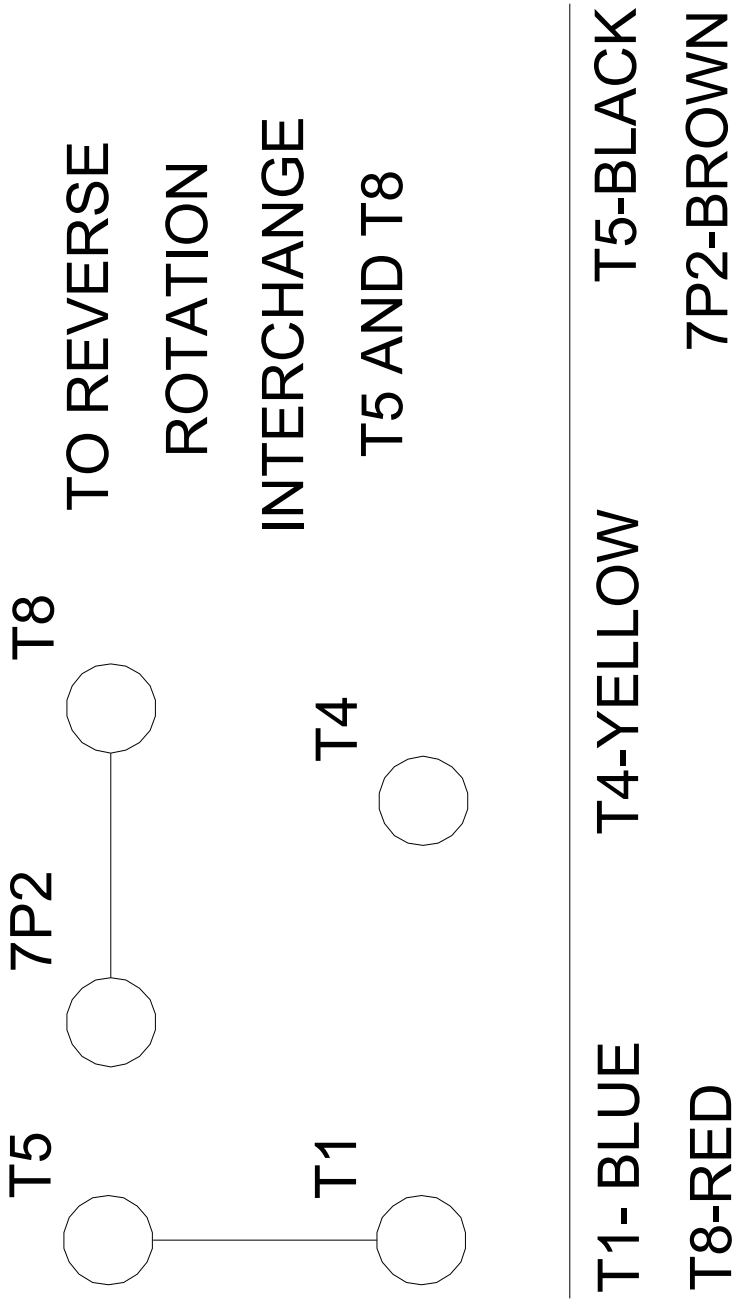
Phone:

Date: 31/01/2023

99917860 CRN 20-4 A-P-A-V-HQQV 60 Hz



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