

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

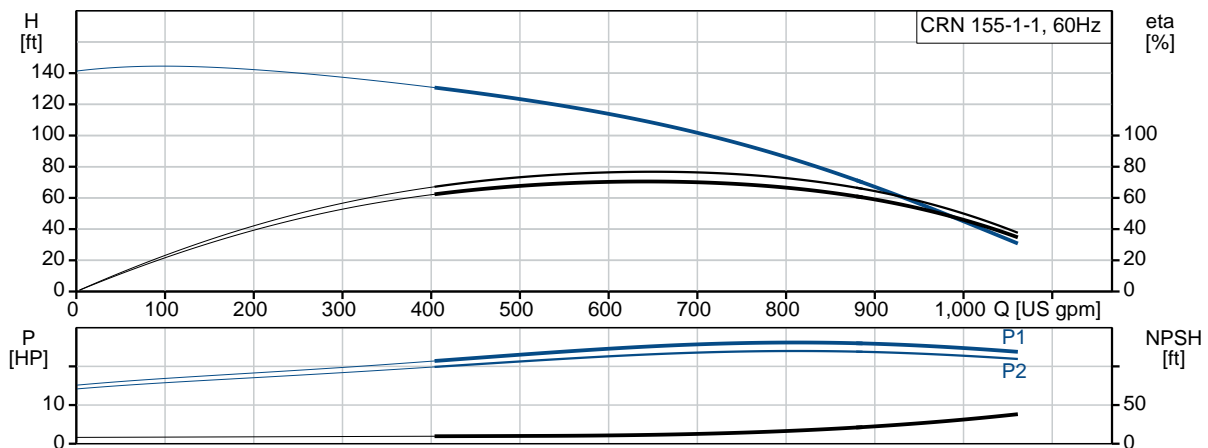


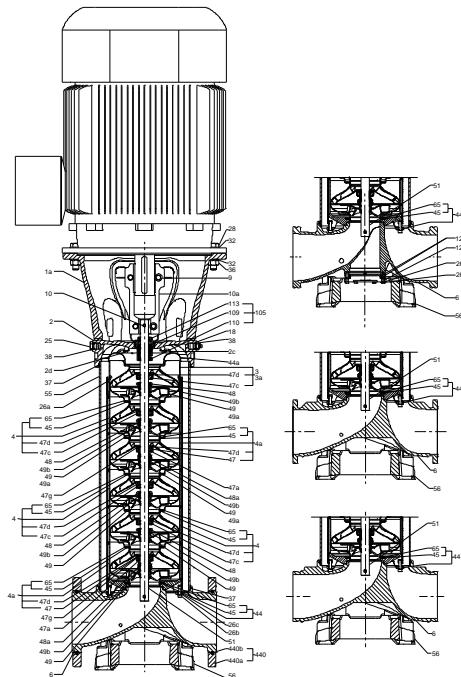
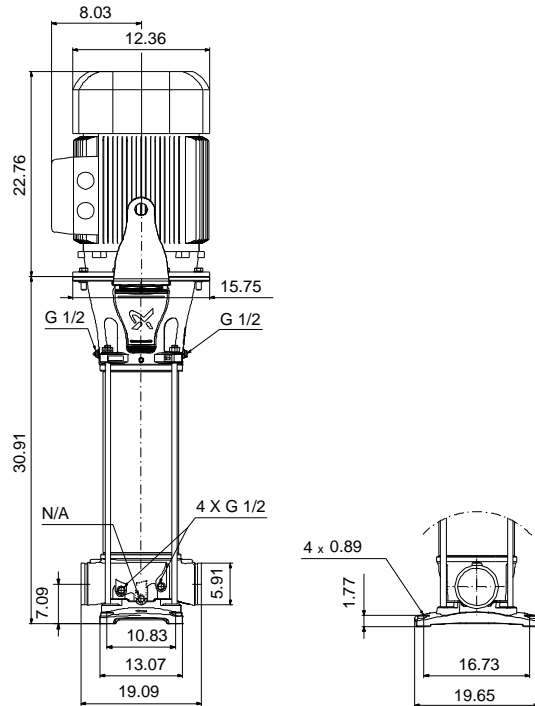
### CRN 155-1-1 A-P-A-E-HQQE

Vertical, multistage centrifugal pump with suction and discharge ports on the same level. The pump head and base are in cast iron. All other wetted parts are in stainless steel (EN 1.4301)

Product photo could vary from the actual product


Conditions of Service	Pump Data	Motor Data
Flow: _____	Liquid temperature range: -40 .. 248 °F	Rated power - P2: 25 HP
Head: _____	Maximum ambient temperature: 104 °F	Rated voltage: 208-230DD/460D V
Efficiency: _____	Shaft seal: HQQE	Main frequency: 60 Hz
Liquid: Water	Product number: 99145282	Enclosure class: 55 Dust/Jetting
Temperature: 68 °F		Insulation class: F
NPSH required: ft		Motor protection: PTC
Viscosity: _____		Motor type: 160AC
Specific Gravity: 1.000		Motor_efficiency: 91.0-91.7 %

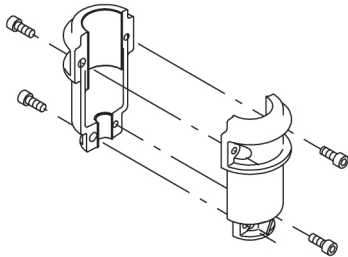




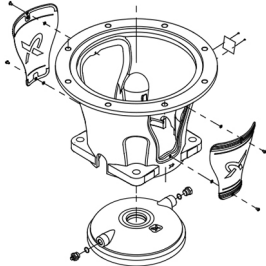
**Materials:**

Base: Stainless steel  
EN 1.4408  
ASTM A351 CF8M  
Impeller: Stainless steel  
AISI 316  
EN 1.4401  
Material code: A  
Code for rubber: E

Count	Description
1	<p><b>CRN 155-1-1 A-P-A-E-HQQE</b></p>  <p>Product photo could vary from the actual product</p> <p>Product No.: <a href="#">99145282</a></p> <p>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. The Grundfos 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>The pump is fitted with a 3-phase, fan-cooled asynchronous motor.</p> <p><b>Further product details</b></p> <p>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 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>The colour code for the finished product is NCS 9000/RAL 9005.</p> <p><b>Pump</b></p> <p>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.</p>



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.

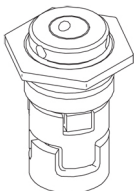
Primary seal:

- 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)

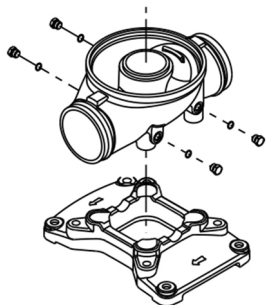
EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.



The shaft seal is screwed into the pump head.

The chambers and impellers are made of stainless-steel sheet. The chambers are provided with a PEEK 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 cast-iron 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 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 efficiency is classified as premium efficiency in accordance with EISA2007.

The motor has thermistors (PTC sensors) in the windings in accordance with DIN 44081/DIN 44082. The protection reacts to both slow- and quick-rising temperatures, e.g. constant overload and stalled conditions.

Thermal switches must be connected to an external control circuit in a way which ensures that the automatic reset cannot cause accidents. The motors must be connected to a motor-protective circuit breaker according to local regulations.

The motor can be connected to a variable speed drive for adjustment of pump performance to any duty point. Grundfos CUE offers a range of variable speed drives. Please find more information in Grundfos Product Center.

## Technical data

### Controls:

Frequency converter: NONE

### Liquid:

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

### Technical:

Rated pump speed: 3533 rpm  
Rated flow: 820 US gpm  
Rated head: 82.68 ft  
Pump orientation: Vertical  
Shaft seal arrangement: Single  
Code for shaft seal: HQQE



Company name: PFC EQUIPMENT

Created by:

Phone:

Date: 3/19/2019

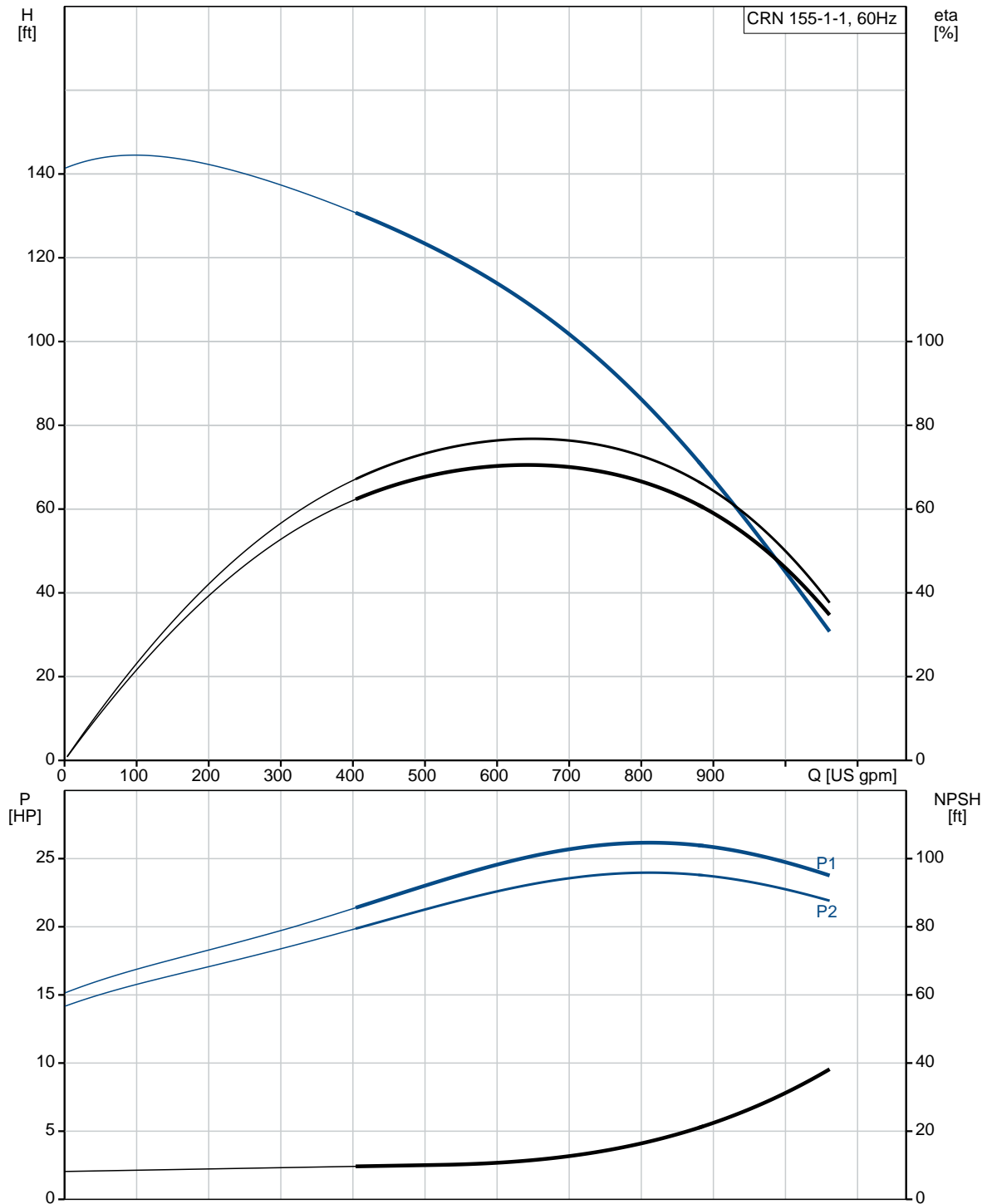
Count	Description
	Curve tolerance: ISO9906:2012 3B
	<b>Materials:</b>
	Base: Stainless steel EN 1.4408 ASTM A351 CF8M
	Impeller: Stainless steel EN 1.4401 AISI 316
	Bearing: WC/WC
	Support bearing: Graflon
	Material certified according to: European standards
	<b>Installation:</b>
	Maximum ambient temperature: 104 °F
	Maximum operating pressure: 232 psi
	Max pressure at stated temperature: 232 psi / 250 °F
	Type of connection: PJE
	Size of suction port: 6 inch
	Size of outlet port: 6 inch
	Pressure rating for pipe connection: 1000 psi
	Flange size for motor: 284TC
	<b>Electrical data:</b>
	Motor standard: NEMA
	Motor type: 160AC
	IE Efficiency class: NEMA Premium / IE3 60Hz
	Rated power - P2: 25 HP
	Power (P2) required by pump: 25 HP
	Main frequency: 60 Hz
	Rated voltage: 3 x 208-230DD/460D V
	Service factor: 1.15
	Rated current: 62,0-56,0/28,0 A
	Starting current: 550-750 %
	Cos phi - power factor: 0.92-0.91
	Rated speed: 3490-3530 rpm
	IE efficiency: IE3 91,7%
	Motor efficiency at full load: 91.0-91.7 %
	Motor efficiency at 3/4 load: 93.2 %
	Motor efficiency at 1/2 load: 93.7 %
	Number of poles: 2
	Enclosure class (IEC 34-5): 55 Dust/Jetting
	Insulation class (IEC 85): F
	<b>Others:</b>
	Net weight: 538 lb
	Gross weight: 800 lb
	Shipping volume: 44.2 ft³
	Thrust handling device: N
	Approvals: NSF/ANSI 61, NSF/ANSI 372, CE



Company name: PFC EQUIPMENT  
Created by:  
Phone:

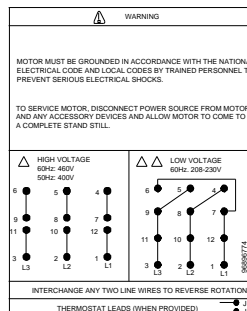
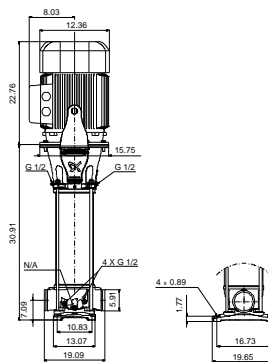
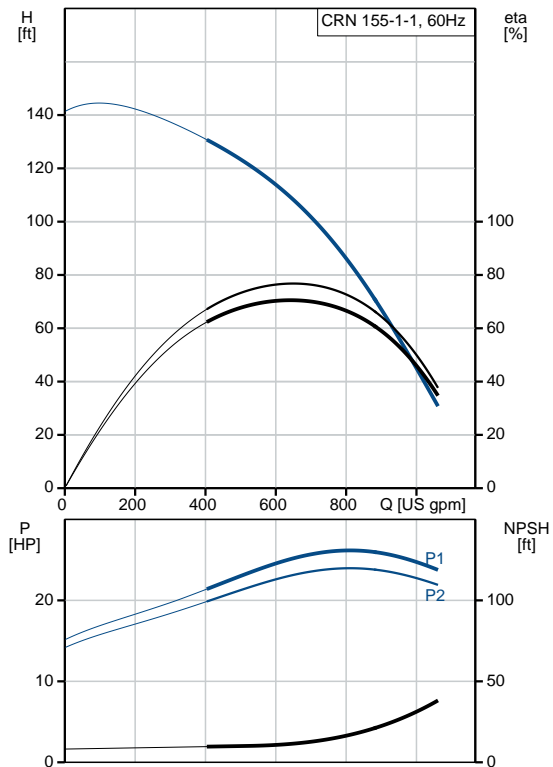
Date: 3/19/2019

## 99145282 CRN 155-1-1 A-P-A-E-HQQE 60 Hz



**Date:** 3/19/2019

Description	Value
<b>General information:</b>	
Product name:	CRN 155-1-1 A-P-A-E-HQQE
Product No.:	<a href="#">99145282</a>
EAN:	5712607594817
<b>Technical:</b>	
Rated pump speed:	3533 rpm
Rated flow:	820 US gpm
Rated head:	82.68 ft
Head max:	144.4 ft
Stages:	1
Impellers:	1
Number of reduced-diameter impellers:	1
Low NPSH:	N
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQE
Curve tolerance:	ISO9906:2012 3B
Pump version:	A
Model:	A
Cooling:	TEFC
<b>Materials:</b>	
Base:	Stainless steel EN 1.4408 ASTM A351 CF8M
Impeller:	Stainless steel EN 1.4401 AISI 316
Material code:	A
Code for rubber:	E
Bearing:	WC/WC
Support bearing:	Graflon
Material certified according to:	European standards
<b>Installation:</b>	
Maximum ambient temperature:	104 °F
Maximum operating pressure:	232 psi
Max pressure at stated temperature:	232 psi / 250 °F
Type of connection:	PJE
Size of suction port:	6 inch
Size of outlet port:	6 inch
Pressure rating for pipe connection:	1000 psi
Flange size for motor:	284TC
Connect code:	P
<b>Liquid:</b>	
Pumped liquid:	Water
Liquid temperature range:	-40 .. 248 °F







Company name: PFC EQUIPMENT

Created by:

Phone:

Date: 3/19/2019

Description	Value
Liquid temperature during operation:	68 °F
Density:	62.29 lb/ft³
<b>Electrical data:</b>	
Motor standard:	NEMA
Motor type:	160AC
IE Efficiency class:	NEMA Premium / IE3 60Hz
Rated power - P2:	25 HP
Power (P2) required by pump:	25 HP
Main frequency:	60 Hz
Rated voltage:	3 x 208-230DD/460D V
Service factor:	1.15
Rated current:	62,0-56,0/28,0 A
Starting current:	550-750 %
Load current:	71,5-64,5/32,0 A
Cos phi - power factor:	0.92-0.91
Rated speed:	3490-3530 rpm
IE efficiency:	IE3 91,7%
Motor efficiency at full load:	91.0-91.7 %
Motor efficiency at 3/4 load:	93.2 %
Motor efficiency at 1/2 load:	93.7 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protection:	PTC
Motor Number:	85903413
<b>Controls:</b>	
Frequency converter:	NONE
<b>Others:</b>	
Net weight:	538 lb
Gross weight:	800 lb
Shipping volume:	44.2 ft³
Thrust handling device:	N
Approvals:	NSF/ANSI 61, NSF/ANSI 372, CE



Company name: PFC EQUIPMENT

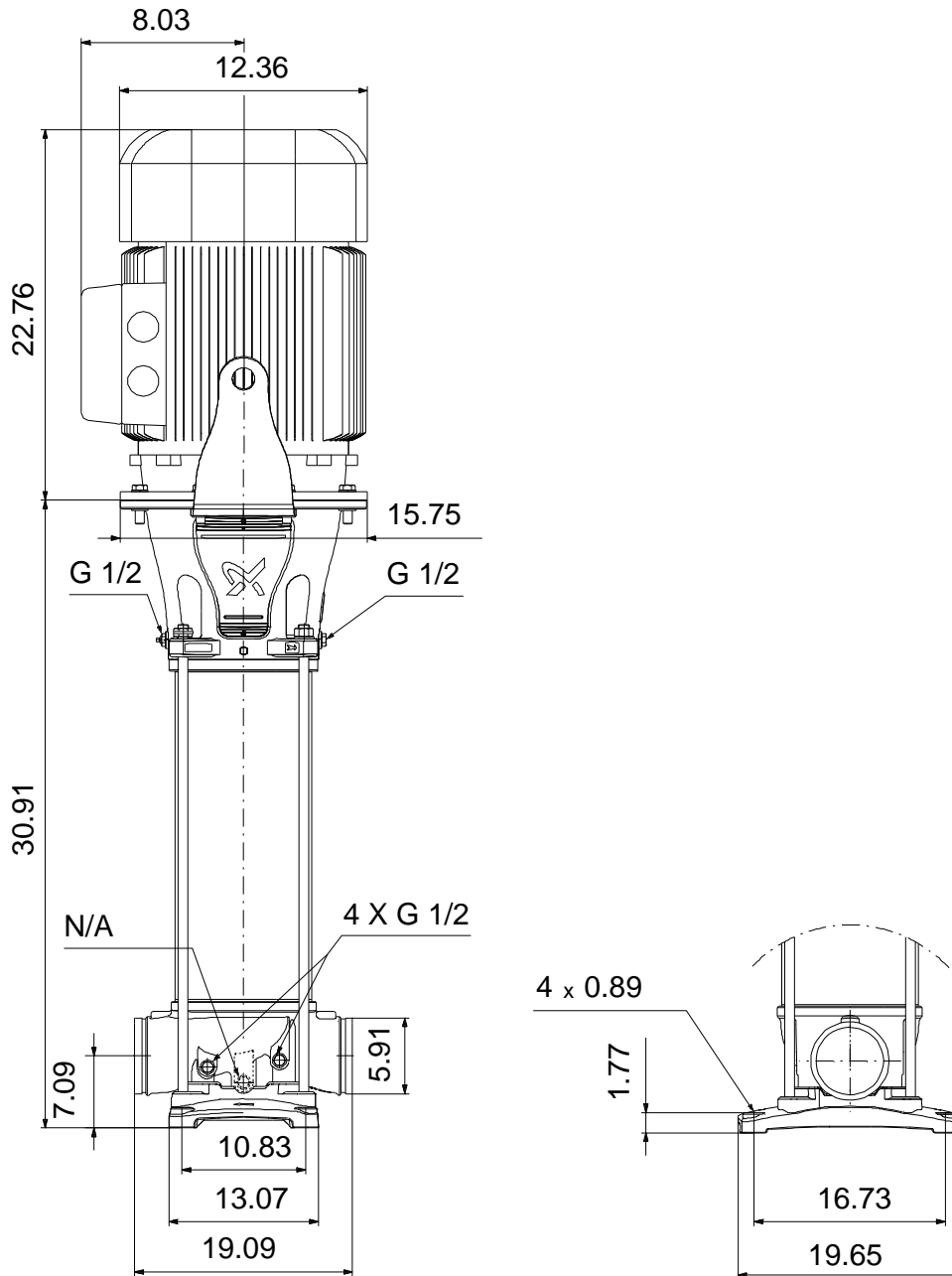
Created by:

Phone:

Date:

3/19/2019

## 99145282 CRN 155-1-1 A-P-A-E-HQQE 60 Hz



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

## 99145282 CRN 155-1-1 A-P-A-E-HQQE 60 Hz



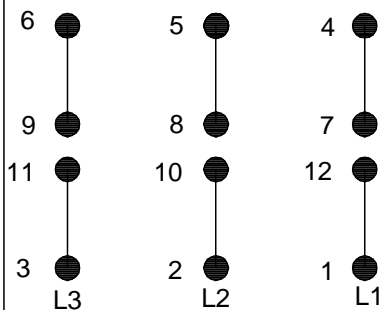
### WARNING

MOTOR MUST BE GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL CODES BY TRAINED PERSONNEL TO PREVENT SERIOUS ELECTRICAL SHOCKS.

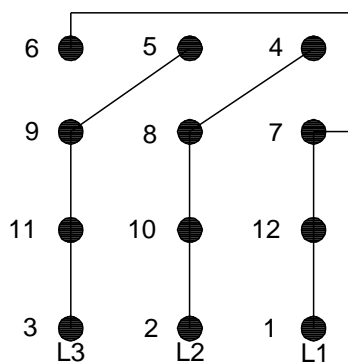
TO SERVICE MOTOR, DISCONNECT POWER SOURCE FROM MOTOR AND ANY ACCESSORY DEVICES AND ALLOW MOTOR TO COME TO A COMPLETE STAND STILL.



**HIGH VOLTAGE**  
60Hz: 460V  
50Hz: 400V



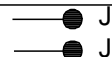
**LOW VOLTAGE**  
60Hz: 208-230V



96896774

INTERCHANGE ANY TWO LINE WIRES TO REVERSE ROTATION

THERMOSTAT LEADS (WHEN PROVIDED)



All units are [mm] unless otherwise presented.