

# Submittal Data

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

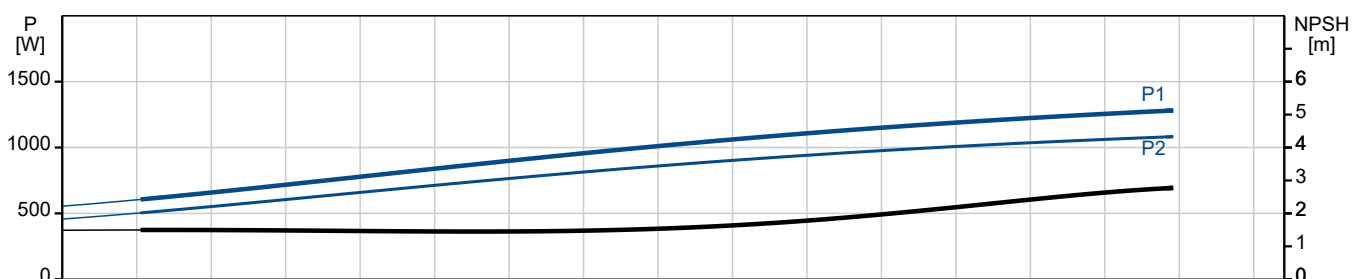
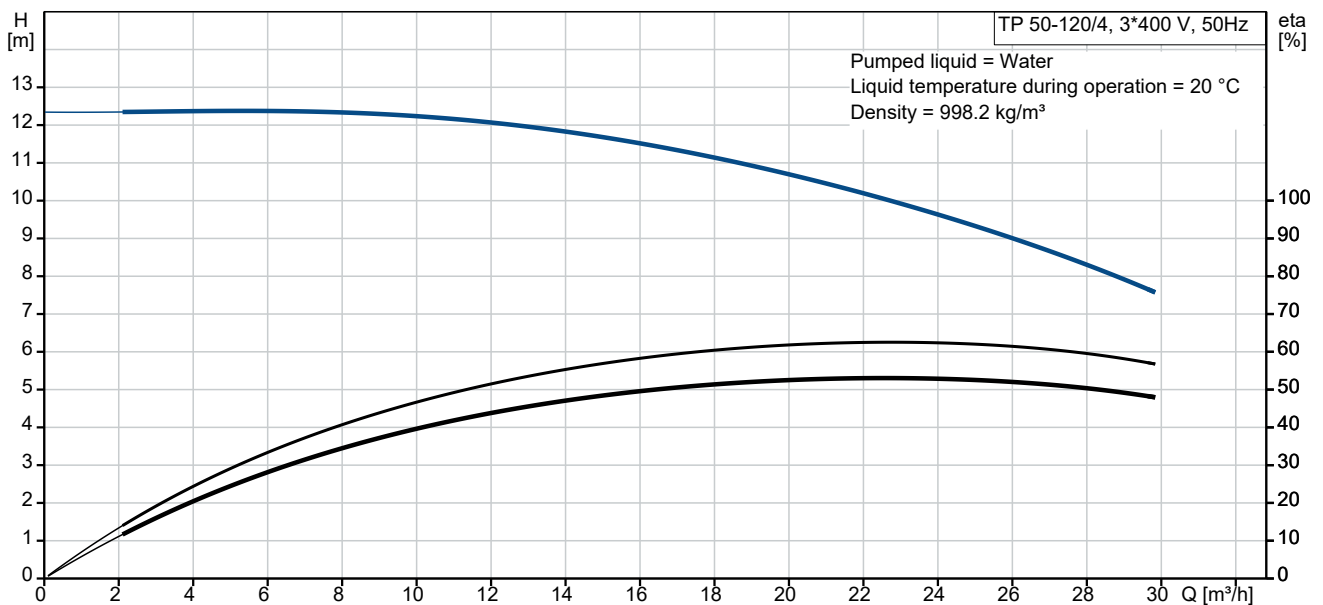


## TP 50-120/4 A-F-A-BQQE-GW3

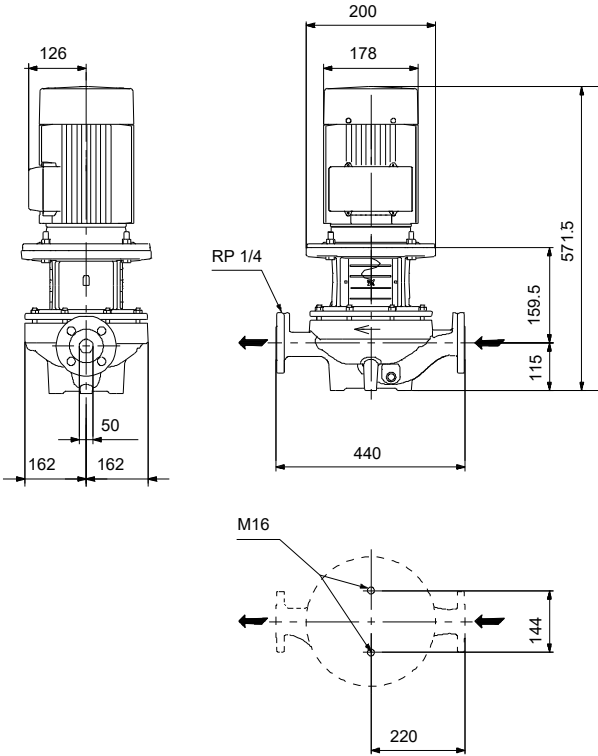
Grundfos TP pumps are single-stage, close-coupled in-line centrifugal pumps with mechanical shaft seal and primely for applications such as heating/cooling/district energy. The pumps are fitted with fixed speed motors.

Note! Product picture may differ from actual product

Conditions of Service	Pump Data	Motor Data
	Max pressure at stated temp: 16 bar / 120 °C Liquid temperature range: -25 .. 120 °C Maximum ambient temperature: 55 °C Shaft seal: BQQE Product number: On request	Rated voltage: 220-240D/380-420Y V Mains frequency: 50 Hz Enclosure class: IP55 Insulation class: F Motor protection: NONE Motor type: SIEMENS Eta 1/1: 84.1-84.1 %



# Submittal Data



- Materials:**
- Pump housing: Cast iron
  - Pump housing: ASTM class 35
  - Impeller: Cast iron
  - Impeller: ASTM class 30
  - Impeller: EN-GJL-200
  - Material code: A

**Qty. Description**

1 TP 50-120/4 A-F-A-BQQE-GW3



**Note! Product picture may differ from actual product**

Product No.: On request

Single-stage, close-coupled, volute pump with in-line suction and discharge ports of identical diameter. The pump is of the top-pull-out design, i.e. the power head (motor, pump head and impeller) can be removed for maintenance or service while the pump housing remains in the pipework.

The pump is fitted with an unbalanced rubber bellows seal. The shaft seal is according to EN 12756. Pipework connection is via PN 16 DIN flanges (EN 1092-2 and ISO 7005-2).

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

The product's minimum efficiency index (MEI) is greater or equal to 0.70. This is by the Commission Regulation (EU) considered as an indicative benchmark for best-performing water pump available on the market as from 1 January 2013.

Cast-iron parts 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.

**Pump**



- 1: Pump housing
- 2: Impeller
- 3: Stub shaft
- 4: Pump head/motor stool
- 5: Wear rings

The pump housing is provided with a replaceable brass neck ring to reduce the amount of liquid running from the outlet side of the impeller to the inlet side.

The impeller is secured to the shaft with a nut.

The pump is fitted with an unbalanced rubber bellows seal with torque transmission across the spring and around the bellows. Due to the bellows, the seal does not wear the shaft, and the axial movement is not prevented by deposits on the shaft.

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)

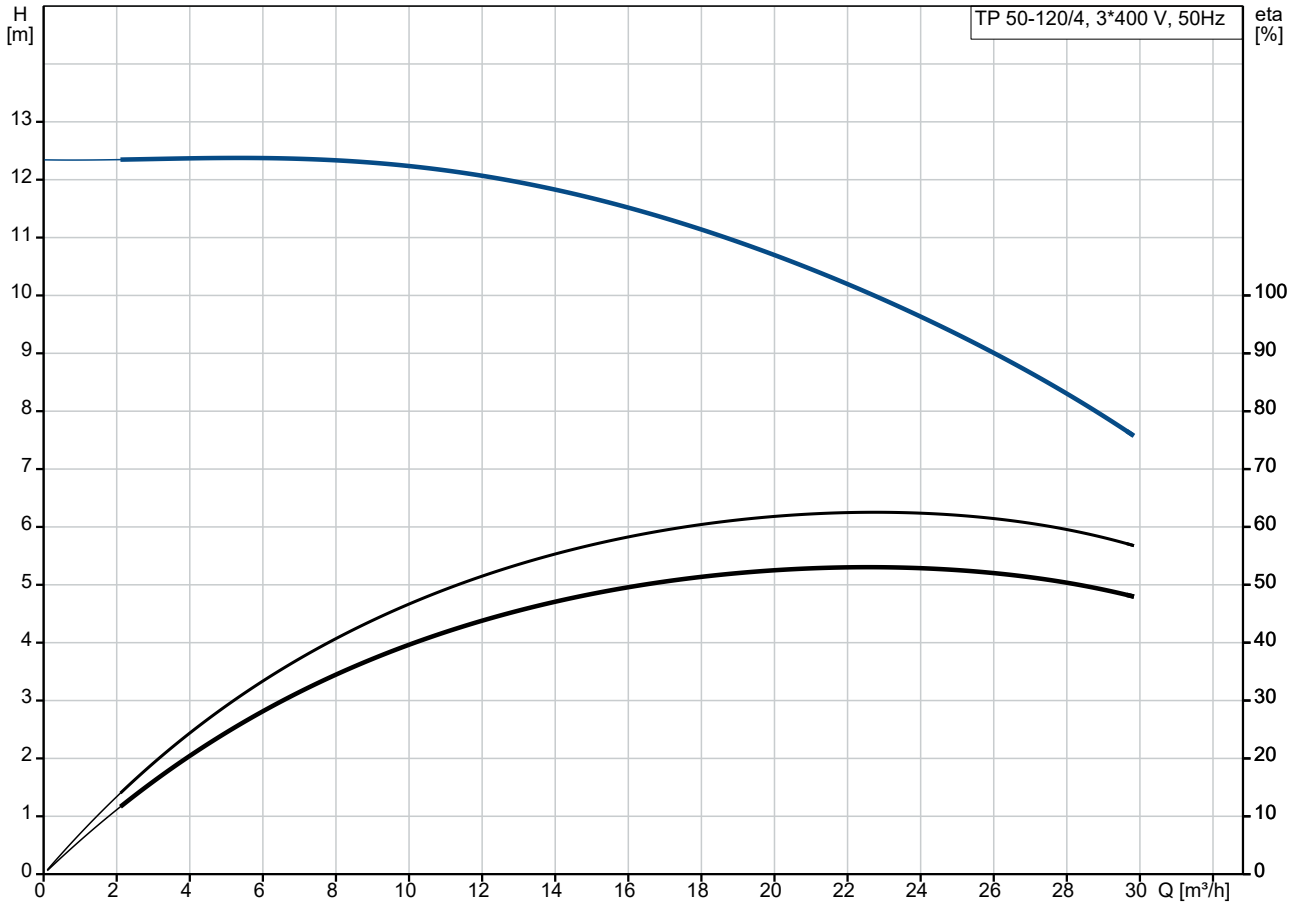
**Qty. Description**

1	<p>EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils. A circulation of liquid through the duct of the air vent screw ensures lubrication and cooling of the shaft seal. The flanges have tappings for mounting of pressure gauges. The motor stool forms connection between the pump housing and the motor, and is equipped with a manual air vent screw for venting of the pump housing and the shaft seal chamber. The sealing between motor stool and pump housing is an O-ring. The central part of the motor stool is provided with guards for protection against the shaft and coupling. The pump shaft is fastened directly on the motor shaft with key and set screws.</p> <p><b>Motor</b></p> <p>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 is flange-mounted with free-hole flange (FF). Motor-mounting designation in accordance with IEC 60034-7: IM B 5, IM V 1 (Code I) / IM 3001, IM 3011 (Code II).</p> <p>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/I1). 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.</p> <p><b>Further product details</b></p> <p>Cast-iron parts 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.</p> <p><b>Technical data</b></p> <p>Controls: Frequency converter:                      None</p> <p>Liquid: Liquid temperature range:                -25 .. 120 °C</p> <p>Technical: Pump speed on which pump data are based:    1450 rpm Rated flow:                                    22.9 m<sup>3</sup>/h Rated head:                                    9.77 m Actual impeller diameter:                    198 mm Code for shaft seal:                        BQQE Curve tolerance:                            ISO9906:2012 3B2</p> <p>Materials: Pump housing:                                Cast iron     EN-GJL-250     ASTM class 35 Impeller:                                        Cast iron     EN-GJL-200     ASTM class 30</p> <p>Installation: Range of ambient temperature:            -20 .. 55 °C Maximum operating pressure:            16 bar Max pressure at stated temp:            16 bar / 120 °C Type of connection:                        DIN Size of connection:                         DN 50</p>
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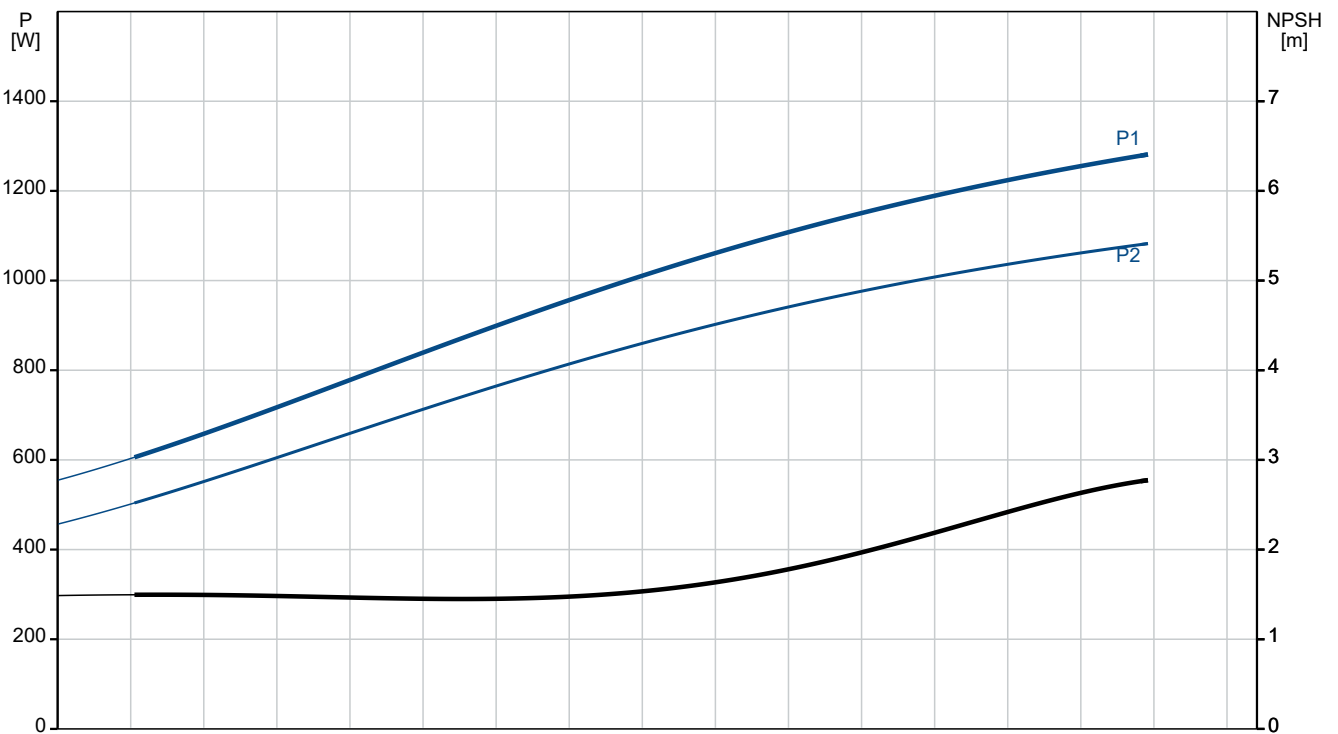
**Qty. Description**

1	<p>Pressure rating for connection: PN 16          Port-to-port length: 440 mm          Flange size for motor: FF165</p> <p>Electrical data:</p> <p>Motor type: SIEMENS          Rated power - P2: 1.1 kW          Mains frequency: 50 Hz          Rated voltage: 3 x 220-240D/380-420Y V          Rated current: 4.2/2.4 A          Starting current: 690-690 %          Cos phi - power factor: 0.78          Rated speed: 1440 rpm          IE efficiency: IE3 84,1%          IE Efficiency class: IE3          Motor efficiency at full load: 84.1-84.1 %          Motor efficiency at 3/4 load: 84.7-84.7 %          Motor efficiency at 1/2 load: 83.4-83.4 %          Number of poles: 4          Enclosure class (IEC 34-5): IP55          Insulation class (IEC 85): F          Motor No: 83V02205</p> <p>Others:</p> <p>Minimum efficiency index, MEI ≥: 0.70          Net weight: 62.1 kg          Gross weight: 81 kg          Shipping volume: 0.39 m<sup>3</sup>          Danish VVS No.: 381713120          Finnish LVI No.: 4616050          Norwegian NRF no.: 9043562          Country of origin: HU          Custom tariff no.: 84137051</p>
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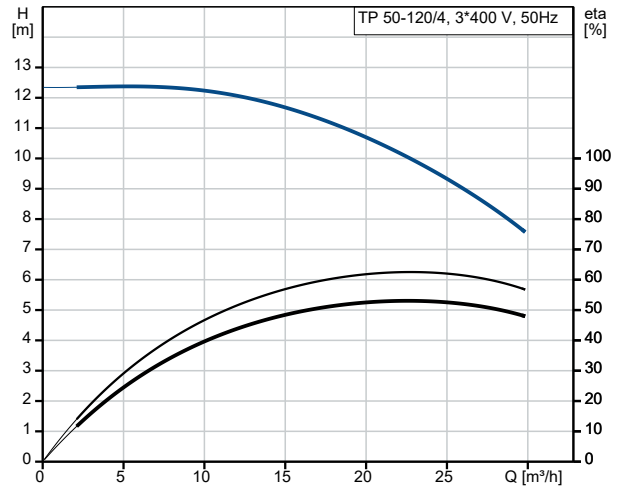
## On request TP 50-120/4 A-F-A-BQQE-GW3 50 Hz



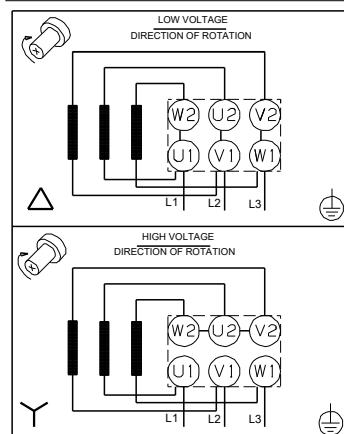
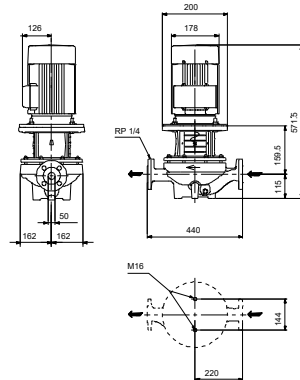
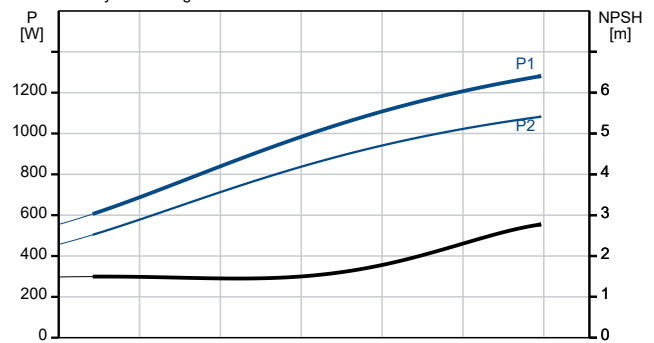
Pumped liquid = Water  
 Liquid temperature during operation = 20 °C  
 Density = 998.2 kg/m³



Description	Value
<b>General information:</b>	
Product name:	TP 50-120/4 A-F-A-BQQE-GW3
Product No:	On request
EAN number:	On request
<b>Technical:</b>	
Pump speed on which pump data are based:	1450 rpm
Rated flow:	22.9 m <sup>3</sup> /h
Rated head:	9.77 m
Maximum head:	120 dm
Actual impeller diameter:	198 mm
Code for shaft seal:	BQQE
Curve tolerance:	ISO9906:2012 3B2
Pump version:	A
<b>Materials:</b>	
Pump housing:	Cast iron
Pump housing:	EN-GJL-250
Pump housing:	ASTM class 35
Impeller:	Cast iron
Impeller:	EN-GJL-200
Impeller:	ASTM class 30
Material code:	A
<b>Installation:</b>	
Range of ambient temperature:	-20 .. 55 °C
Maximum operating pressure:	16 bar
Max pressure at stated temp:	16 bar / 120 °C
Type of connection:	DIN
Size of connection:	DN 50
Pressure rating for connection:	PN 16
Port-to-port length:	440 mm
Flange size for motor:	FF165
Connect code:	F
<b>Liquid:</b>	
Liquid temperature range:	-25 .. 120 °C
<b>Electrical data:</b>	
Motor type:	SIEMENS
Rated power - P2:	1.1 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 220-240D/380-420Y V
Rated current:	4.2/2.4 A
Starting current:	690-690 %
Cos phi - power factor:	0.78
Rated speed:	1440 rpm
IE efficiency:	IE3 84,1%
IE Efficiency class:	IE3
Motor efficiency at full load:	84.1-84.1 %
Motor efficiency at 3/4 load:	84.7-84.7 %
Motor efficiency at 1/2 load:	83.4-83.4 %
Number of poles:	4
Enclosure class (IEC 34-5):	IP55
Insulation class (IEC 85):	F
Built-in motor protection:	NONE
Motor No:	83V02205
<b>Controls:</b>	
Frequency converter:	None
<b>Others:</b>	
Minimum efficiency index, MEI ≥:	0.70



Pumped liquid = Water  
Liquid temperature during operation = 20 °C  
Density = 998.2 kg/m<sup>3</sup>





Company name:

Created by:

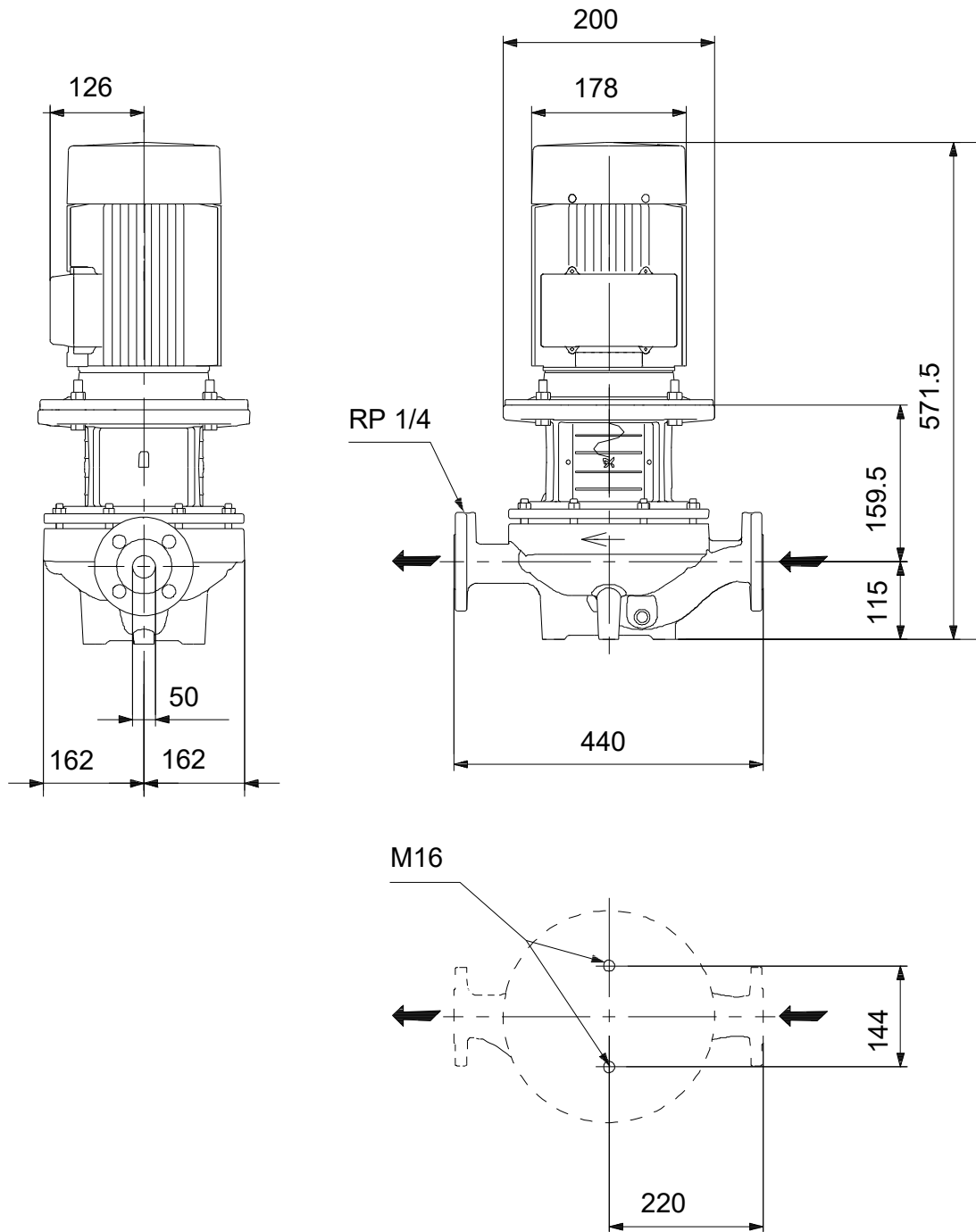
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Date:

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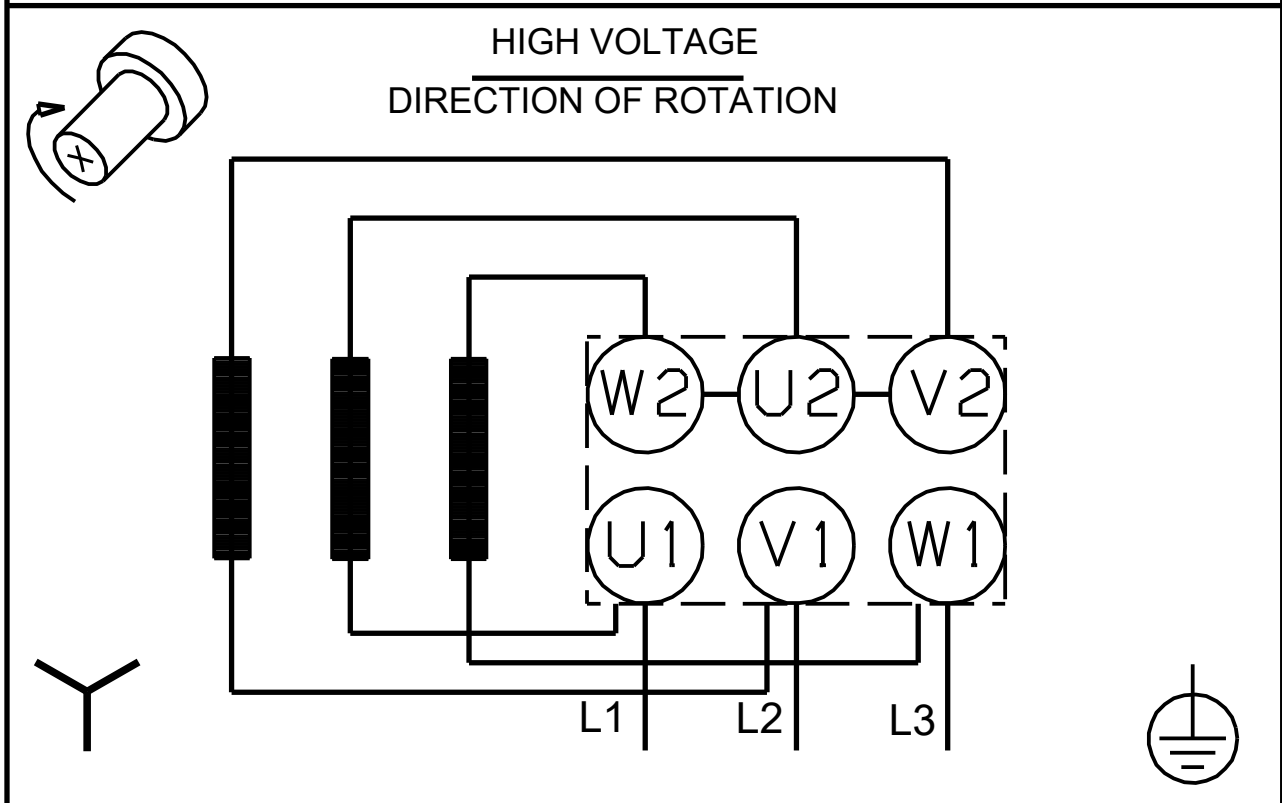
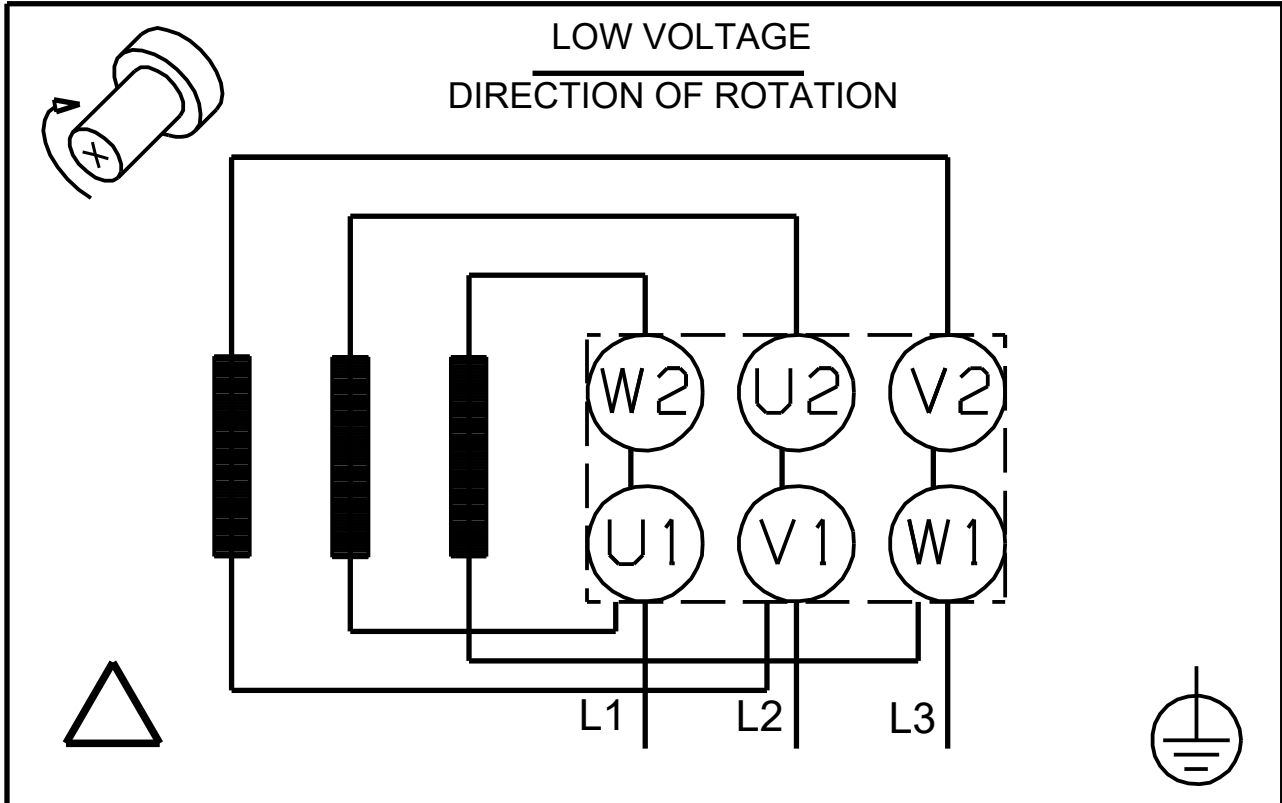
Description	Value
Net weight:	62.1 kg
Gross weight:	81 kg
Shipping volume:	0.39 m <sup>3</sup>
Danish VVS No.:	381713120
Finnish LVI No.:	4616050
Norwegian NRF no.:	9043562
Country of origin:	HU
Custom tariff no.:	84137051

## On request TP 50-120/4 A-F-A-BQQE-GW3 50 Hz



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

**On request TP 50-120/4 A-F-A-BQQE-GW3 50 Hz**



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

