

**Date:** 18/02/2019

Qty. | Description

1 | CRN 90-1 A-F-A-E-HQQE



Product No.: 96124225

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 asynchronous motor.

### Further product details

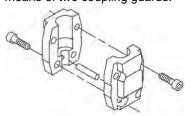
Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface. An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

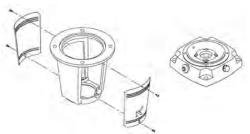
The colour code for the finished product is NCS 9000/RAL 9005.

### **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 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)



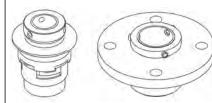
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This material pairing is used where higher corrosion resistance is required. The high hardness of this material pairing offers good resistance against abrasive particles.

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 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 IE3 in accordance with IEC 60034-30-1.

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 .. 120 °C
Liquid temperature during operation: 20 °C
Density: 998.2 kg/m³



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## Qty. | Description

#### Technical:

Pump speed on which pump data are based: 2919 rpm

Rated flow: 90 m³/h
Rated head: 20.2 m
Pump orientation: Vertical
Shaft seal arrangement: Single
Code for shaft seal: HQQE
Approvals on nameplate: CE, EAC,ACS
Curve tolerance: ISO9906:2012 3B

Materials:

Base: Stainless steel

EN 1.4408 AISI 316 Stainless steel

Impeller: Stainless stee

EN 1.4401 AISI 316

Bearing: SIC Support bearing: Graflon

Installation:

Maximum ambient temperature: 60 °C Maximum operating pressure: 16 bar

Max pressure at stated temp: 16 bar / 120 °C

16 bar / -40 °C

Type of connection: DIN
Size of inlet connection: DN 100
Size of outlet connection: DN 100
Pressure rating for pipe connection: PN 16
Flange size for motor: FF265

**Electrical data:** 

Motor standard: IEC
Motor type: 132SB
IE Efficiency class: IE3
Rated power - P2: 7.5 kW
Power (P2) required by pump: 7.5 kW
Mains frequency: 50 Hz

Rated voltage: 3 x 380-415D/660-690Y V Rated current: 14,4-14,0/8,30-8,10 A

Starting current: 780-910 %

Cos phi - power factor: 0.88-0.82

Rated speed: 2910-2920 rpm

Efficiency: IE3 90,1%

Motor efficiency at full load: 90.1-90.4 %

Motor efficiency at 3/4 load: 90.8 %

Motor efficiency at 1/2 load: 90.8 %

Number of poles: 2

Enclosure class (IEC 34-5): 55 Dust/Jetting

Insulation class (IEC 85): F

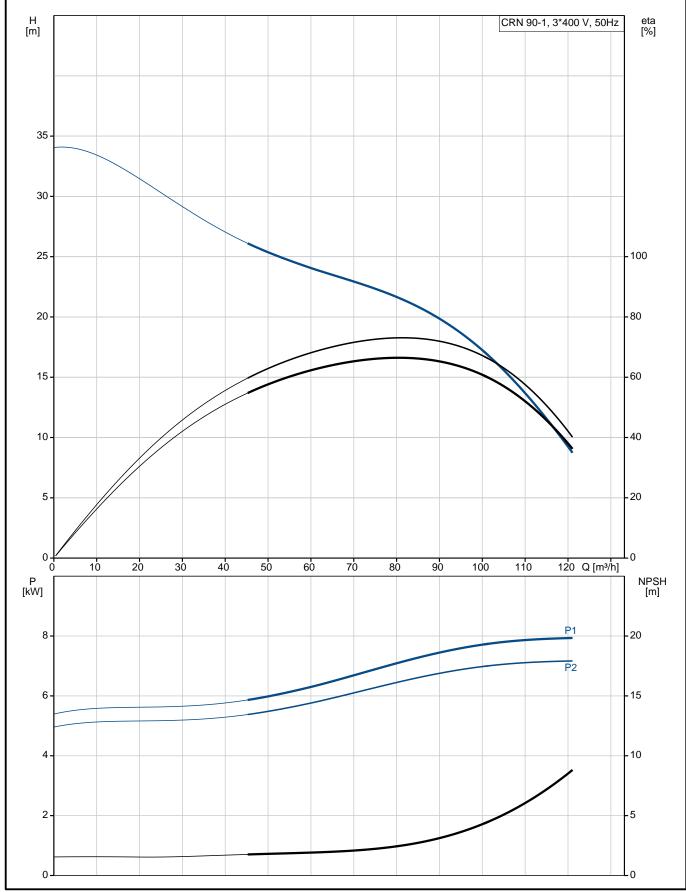
Others:

Minimum efficiency index, MEI ≥: 0.70
Net weight: 119 kg
Gross weight: 142 kg
Shipping volume: 0.309 m³
Danish VVS No.: 385919010



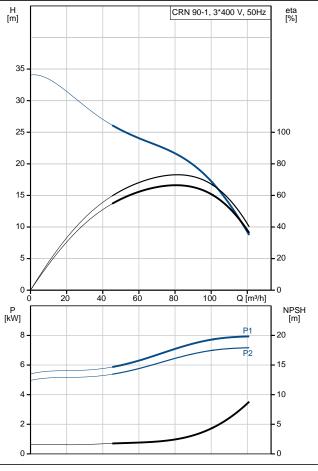
**Date:** 18/02/2019

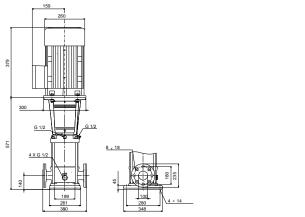
# 96124225 CRN 90-1 A-F-A-E-HQQE 50 Hz

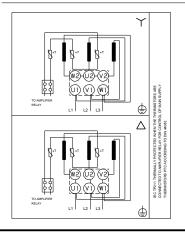




Description         Value           General information:         CRN 90-1 A-F-A-E-HQGE           Product name:         A-F-A-E-HQGE           Product No:         96124225           EAN number:         5700396705392           Technical:         2919 rpm           Pump speed on which pump data are based:         2919 rpm           Rated flow:         90 m³/h           Rated head:         20.2 m           Head max:         35.5 m           Stages:         1           Impellers:         0           Nomber of reduced-diameter impellers:         0           Low NPSH:         N           Number of reduced-diameter impellers:         0           Low NPSH:         N           Nump orientation:         Vertical           Shaft seal arrangement:         Single           Code for shaft seal:         HQQE           Approvals on nameplate:         CE, EAC,ACS           Curve tolerance:         ISO9906:2012 3B           Pump version:         A           Model:         B           Materials:         Stainless steel           Base:         Stainless steel           EN 1.4408         AISI 316           Impeller: </th <th></th> <th></th>		
Product name:         CRN 90-1 A-F-A-E-HQDE 96124225           EAN number:         5700396705392           Technical:         2919 rpm           Pump speed on which pump data are based:         2919 rpm           Rated flow:         90 m³/h           Rated head:         20.2 m           Head max:         35.5 m           Stages:         1           Impellers:         0           Nomber of reduced-diameter impellers:         0           Low NPSH:         N           Pump orientation:         Vertical           Shaft seal arrangement:         Single           Code for shaft seal:         HQQE           Approvals on nameplate:         CE, EAC, ACS           Curve tolerance:         ISO9906:2012 3B           Pump version:         A           Model:         B           Materials:         B           Base:         Stainless steel           EN 1.4408         AISI 316           Impeller:         Stainless steel           EN 1.4401         AISI 316           Material code:         A           Code for rubber:         E           Bearing:         SIC           Support bearing:         Graffon	Description	Value
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based:         2519 fpm           Rated flow:         90 m³/h           Rated head:         20.2 m           Head max:         35.5 m           Stages:         1           Impellers:         0           Low NPSH:         N           Pump orientation:         Vertical           Shaft seal arrangement:         Single           Code for shaft seal:         HQQE           Approvals on nameplate:         CE, EAC,ACS           Curve tolerance:         ISO9906:2012 3B           Pump version:         A           Model:         B           Materials:         B           Base:         Stainless steel           EN 1.4408         AISI 316           Impeller:         Stainless steel           EN 1.4401         AISI 316           Material code:         A           Code for rubber:         E           Bearing:         SIC           Support bearing:         Graflon           Installation:         Maximum ambient temperature:           Maximum apperating pressure:         16 bar           Max pressure at stated temp:         16 bar / 120 °C           Type of connection:         DN 100	Technical:	
based:         2519 fpm           Rated flow:         90 m³/h           Rated head:         20.2 m           Head max:         35.5 m           Stages:         1           Impellers:         0           Low NPSH:         N           Pump orientation:         Vertical           Shaft seal arrangement:         Single           Code for shaft seal:         HQQE           Approvals on nameplate:         CE, EAC,ACS           Curve tolerance:         ISO9906:2012 3B           Pump version:         A           Model:         B           Materials:         B           Base:         Stainless steel           EN 1.4408         AISI 316           Impeller:         Stainless steel           EN 1.4401         AISI 316           Material code:         A           Code for rubber:         E           Bearing:         SIC           Support bearing:         Graflon           Installation:         Maximum ambient temperature:           Maximum apperating pressure:         16 bar           Max pressure at stated temp:         16 bar / 120 °C           Type of connection:         DN 100	Pump speed on which pump data are	2010
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Number of reduced-diameter impellers:  Low NPSH:  Pump orientation:  Shaft seal arrangement:  Code for shaft seal:  Approvals on nameplate:  CIE, EAC,ACS  Curve tolerance:  ISO9906:2012 3B  Pump version:  Model:  B  Materials:  Base:  Stainless steel  EN 1.4408  AISI 316  Impeller:  Stainless steel  EN 1.4401  AISI 316  Material code:  A  Code for rubber:  Bearing:  Support bearing:  Maximum ambient temperature:  Maximum operating pressure:  Maximum operating pressure:  16 bar / 120 °C  Type of connection:  Size of inlet connection:  DN 100  Pressure rating for pipe connection:  PN 16  Flange size for motor:  FF265  Connect code:  Liquid:  Pumped liquid:  Water  Liquid temperature range:  Liquid temperature during operation:  Density:  Electrical data:  Motor standard:  Rated power - P2:  Power (P2) required by pump:  Rated voltage:  Vertical  Vertical  Vertical  Single  CE, EAC,ACS  CAS  A Mode:  B Number of reduce of EN 1.4408  Alsi 316  India of Stainless steel  EN 1.4408  AISI 316  India of Stainless steel  EN 1.4408  AISI 316  India of Stainless steel  EN 1.4408  AISI 316  India of Stainless steel  EN 1.4008  A Code for ruber  EC, EAC,ACS  CO, E, EAC,ACS  CO, E, EAC,ACS  Cone of C  Cone o	<u> </u>	•
Low NPSH: N   Pump orientation: Vertical   Shaft seal arrangement: Single   Code for shaft seal: HQQE   Approvals on nameplate: CE, EAC, ACS   ISO9906:2012 3B   Pump version: A   Model: B   Materials:   Base: Stainless steel   EN 1.4408   AISI 316   Impeller: Stainless steel   EN 1.4401   AISI 316   Impeller: Stainless steel   EN 1.4401   AISI 316   Material code: A   A   Code for rubber: E   Earnge: SIC   Support bearing: Graflon   Installation: Maximum ambient temperature: 60 °C   Maximum operating pressure: 16 bar / 120 °C   Type of connection: DN 100   Size of outlet connection: DN 100   Size of outlet connection: DN 100   Pressure rating for pipe connection: DN 100   Pressure rating for pipe connection: PN 16   Flange size for motor: FF265   Connect code: F   Liquid:   Umpel diquid:   Umpel diqui	•	•
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Approvals on nameplate: CE, EAC,ACS Curve tolerance: ISO9906:2012 3B Pump version: A Model: B Materials: Base: Stainless steel EN 1.4408 AISI 316 Impeller: Stainless steel EN 1.4401 AISI 316 Material code: A Code for rubber: E Bearing: SIC Support bearing: Graflon Installation: Maximum ambient temperature: 60 °C Maximum operating pressure: 16 bar Max pressure at stated temp: 16 bar / 120 °C Type of connection: DN 100 Size of outlet connection: DN 100 Pressure rating for pipe connection: PN 16 Flange size for motor: FF265 Connect code: F Liquid: Pumped liquid: Water Liquid temperature during operation: 20 °C Density: 998.2 kg/m³ Electrical data: Motor standard: IEC Motor type: 132SB IE Efficiency class: IE3 Rated power - P2: 7.5 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-415D/660-690Y Rated voltage: 3 x 380-415D/660-690Y Rated voltage: 3 x 380-415D/660-690Y		•
Curve tolerance:         ISO9906:2012 3B           Pump version:         A           Model:         B           Materials:         Stainless steel           EN 1.4408         AISI 316           Impeller:         Stainless steel           EN 1.4401         AISI 316           Material code:         A           Code for rubber:         E           Bearing:         SIC           Support bearing:         Graflon           Installation:         Graflon           Maximum ambient temperature:         60 °C           Maximum operating pressure:         16 bar           Max pressure at stated temp:         16 bar / 120 °C           Type of connection:         DIN           Size of inlet connection:         DN 100           Size of outlet connection:         DN 100           Pressure rating for pipe connection:         PN 16           Flange size for motor:         FF265           Connect code:         F           Liquid:         Water           Liquid temperature ange:         -40 120 °C           Liquid temperature during operation:         20 °C           Density:         998.2 kg/m³           Electrical data:         IEC		
Pump version:  Model:  Materials: Base:  Stainless steel  EN 1.4408  AISI 316  Impeller:  Stainless steel  EN 1.4401  AISI 316  Material code:  Code for rubber:  Bearing:  SIC  Support bearing:  Graflon  Installation:  Maximum ambient temperature:  Max pressure at stated temp:  Installation:  Maximum operating pressure:  Max pressure at stated temp:  Installation:  Maximum operating pressure:  In 6 bar / 120 °C  In 6 bar / -40 °C  Type of connection:  DIN  Size of inlet connection:  DN 100  Pressure rating for pipe connection:  PN 16  Flange size for motor:  FF265  Connect code:  Liquid:  Pumped liquid:  Liquid temperature ange:  Liquid temperature during operation:  Do C  Density:  Pass 2 kg/m³  Electrical data:  Motor standard:  Motor standard:  Motor type:  Isas 3  Rated power - P2:  7.5 kW  Power (P2) required by pump:  7.5 kW  Mains frequency:  Stainless steel  Extinued:  Stainless steel  En 1.4401  AlSI 316  AlSu 31  Al AC 120  C  C  C  C  D  Al C  C  C  A  C  C  C  C  A  C  C  C  C  C		
Model:BMaterials:Stainless steelBase:Stainless steelEN 1.4408AISI 316Impeller:Stainless steelEN 1.4401AISI 316Material code:ACode for rubber:EBearing:SICSupport bearing:GraflonInstallation:GraflonMaximum ambient temperature:60 °CMaximum operating pressure:16 barMax pressure at stated temp:16 bar / 120 °CType of connection:DINSize of inlet connection:DN 100Size of outlet connection:DN 100Pressure rating for pipe connection:PN 16Flange size for motor:FF265Connect code:FLiquid:WaterLiquid temperature range:-40 120 °CLiquid temperature during operation:20 °CDensity:998.2 kg/m³Electrical data:IECMotor type:132SBIE Efficiency class:IE3Rated power - P2:7.5 kWPower (P2) required by pump:7.5 kWMains frequency:50 HzRated voltage:3 x 380-415D/660-690Y		ISO9906:2012 3B
Materials:  Base: Stainless steel EN 1.4408 AISI 316 Impeller: Stainless steel EN 1.4401 AISI 316  Material code: EN 1.4401 AISI 316  Material code: A Code for rubber: E Bearing: SIC Support bearing: Graflon Installation:  Maximum ambient temperature: 60 °C Maximum operating pressure: 16 bar Max pressure at stated temp: 16 bar / 120 °C 16 bar / -40 °C  Type of connection: DIN Size of inlet connection: DN 100 Size of outlet connection: DN 100 Pressure rating for pipe connection: PN 16 Flange size for motor: FF265 Connect code: F Liquid: Pumped liquid: Water Liquid temperature range: -40 120 °C Liquid temperature during operation: 20 °C Density: 998.2 kg/m³  Electrical data: Motor standard: IEC Motor type: 132SB IE Efficiency class: IE3 Rated power - P2: 7.5 kW Power (P2) required by pump: 7.5 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-415D/660-690Y	Pump version:	Α
Base:  Stainless steel  EN 1.4408  AISI 316  Impeller:  Stainless steel  EN 1.4401  AISI 316  Material code:  Code for rubber:  Bearing:  SIC  Support bearing:  Maximum ambient temperature:  Maximum operating pressure:  Maximum operating pressure:  Max pressure at stated temp:  16 bar  16 bar / 120 °C  17 ype of connection:  DIN  Size of inlet connection:  DN 100  Size of outlet connection:  PN 16  Flange size for motor:  Fr265  Connect code:  Liquid:  Pumped liquid:  Water  Liquid temperature range:  Liquid temperature during operation:  Density:  998.2 kg/m³  Electrical data:  Motor standard:  Motor standard:  IEC  Motor type:  IE Efficiency class:  Rated power - P2:  Power (P2) required by pump:  Rated voltage:  Rated voltage:  SIC  Stainless steel  EN 1.4401  AISI 316  A  A  CO  C  C  C  C  C  C  C  C  C  C  C  C	Model:	В
EN 1.4408 AISI 316 Impeller: Stainless steel EN 1.4401 AISI 316  Material code: A Code for rubber: E Bearing: SIC Support bearing: Graflon Installation: Maximum ambient temperature: 60 °C Maximum operating pressure: 16 bar Max pressure at stated temp: 16 bar / 120 °C Type of connection: DIN Size of inlet connection: DN 100 Size of outlet connection: DN 100 Pressure rating for pipe connection: PN 16 Flange size for motor: FF265 Connect code: F Liquid: Pumped liquid: Water Liquid temperature range: -40 120 °C Liquid temperature during operation: 20 °C Density: 998.2 kg/m³ Electrical data: Motor standard: IEC Motor type: 132SB IE Efficiency class: IE3 Rated power - P2: 7.5 kW Power (P2) required by pump: 7.5 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-415D/660-690Y	Materials:	
AISI 316 Impeller: Stainless steel EN 1.4401 AISI 316  Material code: A Code for rubber: E Bearing: SIC Support bearing: Graflon Installation:  Maximum ambient temperature: 60 °C Maximum operating pressure: 16 bar Max pressure at stated temp: 16 bar / 120 °C 16 bar / -40 °C  Type of connection: DIN Size of inlet connection: DN 100 Size of outlet connection: DN 100 Pressure rating for pipe connection: PN 16 Flange size for motor: FF265 Connect code: F Liquid: Pumped liquid: Water Liquid temperature range: -40 120 °C Liquid temperature during operation: 20 °C Density: 998.2 kg/m³  Electrical data: Motor standard: IEC Motor type: 132SB IE Efficiency class: IE3 Rated power - P2: 7.5 kW Power (P2) required by pump: 7.5 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-415D/660-690Y	Base:	Stainless steel
Impeller:  Stainless steel  EN 1.4401  AISI 316  Material code:  Code for rubber:  Bearing: Support bearing:  Installation:  Maximum ambient temperature:  Maximum operating pressure:  Max pressure at stated temp:  Type of connection:  Size of inlet connection:  DIN  Size of outlet connection:  Pressure rating for pipe connection:  Pressure rating for pipe connection:  Fiange size for motor:  Fiquid:  Pumped liquid:  Liquid temperature during operation:  Density:  Density:		EN 1.4408
EN 1.4401 AISI 316  Material code: Code for rubber: Bearing: Support bearing: Installation:  Maximum ambient temperature: Maximum operating pressure: Max pressure at stated temp: Type of connection: Size of inlet connection: DIN Size of outlet connection: DN 100 Pressure rating for pipe connection: PN 16 Flange size for motor: FF265 Connect code: Fuiquid: Pumped liquid: Liquid temperature during operation: Density: Density		AISI 316
EN 1.4401 AISI 316  Material code: Code for rubber: Bearing: Support bearing: Installation:  Maximum ambient temperature: Maximum operating pressure: Max pressure at stated temp: Type of connection: Size of inlet connection: DIN Size of outlet connection: DN 100 Pressure rating for pipe connection: PN 16 Flange size for motor: FF265 Connect code: Fuiquid: Pumped liquid: Liquid temperature during operation: Density: Density	Impeller:	Stainless steel
Material code:  Code for rubber:  Bearing: SIC Support bearing:  Installation:  Maximum ambient temperature:  Maximum operating pressure:  Max pressure at stated temp:  Type of connection:  Size of inlet connection:  DN 100  Size of outlet connection:  Pressure rating for pipe connection:  PN 16  Flange size for motor:  Connect code:  Liquid:  Pumped liquid:  Liquid temperature range:  Liquid temperature during operation:  Desity:  Density:  Density:  Bectrical data:  Motor standard:  Motor type:  IE Efficiency class:  Rated power - P2:  Power (P2) required by pump:  Rated voltage:  Rated voltage:   SIC  SIC  Graflon  E Ham  Water  16 bar / 120 °C  16 bar / 120 °C  PN 100  PN 100  PN 100  PN 16  FF265  F  Liquid:  Water  Liquid:  Vater  Liquid temperature range:  -40 120 °C  Density:  998.2 kg/m³  Electrical data:  Motor standard:  IEC  Motor type:  132SB  IE 3  Rated power - P2:  7.5 kW  Power (P2) required by pump:  7.5 kW  Mains frequency:  SO Hz  Rated voltage:	F 2 2	EN 1.4401
Material code:  Code for rubber:  Bearing: SIC Support bearing:  Installation:  Maximum ambient temperature:  Maximum operating pressure:  Max pressure at stated temp:  Type of connection:  Size of inlet connection:  DN 100  Size of outlet connection:  Pressure rating for pipe connection:  PN 16  Flange size for motor:  Connect code:  Liquid:  Pumped liquid:  Liquid temperature range:  Liquid temperature during operation:  Desity:  Density:  Density:  Bectrical data:  Motor standard:  Motor type:  IE Efficiency class:  Rated power - P2:  Power (P2) required by pump:  Rated voltage:  Rated voltage:   SIC  SIC  Graflon  E Ham  Water  16 bar / 120 °C  16 bar / 120 °C  PN 100  PN 100  PN 100  PN 16  FF265  F  Liquid:  Water  Liquid:  Vater  Liquid temperature range:  -40 120 °C  Density:  998.2 kg/m³  Electrical data:  Motor standard:  IEC  Motor type:  132SB  IE 3  Rated power - P2:  7.5 kW  Power (P2) required by pump:  7.5 kW  Mains frequency:  SO Hz  Rated voltage:		AISI 316
Code for rubber:  Bearing: Support bearing:  Installation:  Maximum ambient temperature:  Max pressure at stated temp:  Type of connection:  Size of inlet connection:  Pressure rating for pipe connection:  Flange size for motor:  Connect code:  Liquid:  Pumped liquid:  Liquid temperature during operation:  Desity:  Density:  Petertrical data:  Motor standard:  Rated power - P2:  Power (P2) required by pump:  Rated voltage:   So C Candard  Graflon  Ho C  Water  16 bar / -40 °C  16 bar / -40 °C  DN 100  DN 100  PN 16  FF265  Connect code:  F  Liquid:  Water  Liquid:  Water  Liquid temperature range:  Liquid temperature during operation:  20 °C  Density:  998.2 kg/m³  EleC  Motor type:  132SB  IEC  Motor type:  132SB  IES  Rated power - P2:  7.5 kW  Power (P2) required by pump:  7.5 kW  Mains frequency:  So Hz  Rated voltage:	Material code:	
Bearing: SIC Support bearing: Graflon  Installation:  Maximum ambient temperature: 60 °C  Maximum operating pressure: 16 bar  Max pressure at stated temp: 16 bar / 120 °C  Type of connection: DIN Size of inlet connection: DN 100 Size of outlet connection: DN 100 Pressure rating for pipe connection: PN 16 Flange size for motor: FF265 Connect code: F  Liquid: Pumped liquid: Water Liquid temperature range: -40 120 °C Liquid temperature during operation: 20 °C Density: 998.2 kg/m³  Electrical data: Motor standard: IEC Motor type: 132SB IE Efficiency class: IE3 Rated power - P2: 7.5 kW Power (P2) required by pump: 7.5 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-415D/660-690Y		E
Support bearing:  Installation:  Maximum ambient temperature:  Maximum operating pressure:  Max pressure at stated temp:  Type of connection:  Size of inlet connection:  Pressure rating for pipe connection:  Flange size for motor:  Connect code:  Liquid:  Pumped liquid:  Liquid temperature range:  Liquid temperature during operation:  Density:  Pectrical data:  Motor standard:  Motor type:  IE Efficiency class:  Rated power - P2:  Passure rating:  Rated voltage:  Graflon  F  60 °C  Ches'  Con  Hober / -40 °C  DN 100  PN 16  FF265  F  Liquid:  F  Liquid:  Water  Liquid:  Vater  Liquid temperature during operation:  20 °C  Density:  998.2 kg/m³  EleCtrical data:  Motor standard:  Motor type:  132SB  IE3  Rated power - P2:  7.5 kW  Mains frequency:  50 Hz  Rated voltage:	Bearing:	SIC
Installation:  Maximum ambient temperature:  Maximum operating pressure:  Max pressure at stated temp:  Type of connection:  Size of inlet connection:  DN 100  Size of outlet connection:  PN 16  Flange size for motor:  Connect code:  Liquid:  Pumped liquid:  Liquid temperature range:  Liquid temperature during operation:  Desity:  Density:  Density:  Density:  Density:  Belectrical data:  Motor standard:  Motor type:  IEC  Motor type:  IES  Rated power - P2:  Power (P2) required by pump:  Rated voltage:  Maximum ambient temperature:  16 bar  16 bar  18 bar  18 bar  19 Wat  Water  Liquid  Water  Liquid:  Water  Liquid temperature during operation:  20 °C  Density:  Belectrical data:  Motor standard:  IEC  Motor type:  132SB  IE 3  Rated power - P2:  7.5 kW  Mains frequency:  50 Hz  Rated voltage:		Graflon
Maximum ambient temperature:  Maximum operating pressure:  Max pressure at stated temp:  16 bar / 120 °C  16 bar / -40 °C  Type of connection:  DIN  Size of inlet connection:  DN 100  Size of outlet connection:  Pressure rating for pipe connection:  Flange size for motor:  Connect code:  Liquid:  Pumped liquid:  Liquid temperature range:  Liquid temperature during operation:  Density:  Density:  Density:  Belectrical data:  Motor standard:  Motor type:  IEC  Motor type:  IES  Rated power - P2:  Power (P2) required by pump:  Rated voltage:  Rated voltage:  OIN  16 bar  16 bar  18 bar	· · ·	
Maximum operating pressure:  Max pressure at stated temp:  16 bar / 120 °C  16 bar / -40 °C  Type of connection:  DIN  Size of inlet connection:  DN 100  Size of outlet connection:  Pressure rating for pipe connection:  Flange size for motor:  Connect code:  Liquid:  Pumped liquid:  Liquid temperature range:  Liquid temperature during operation:  DN 100  PR 16  FF265  Connect code:  F  Liquid:  Pumped liquid:  Water  Liquid temperature ange:  Liquid temperature liquing operation:  Density:  998.2 kg/m³  Electrical data:  Motor standard:  Motor standard:  Motor type:  132SB  IE Efficiency class:  Rated power - P2:  Power (P2) required by pump:  7.5 kW  Mains frequency:  Rated voltage:  Rated voltage:		60 °C
Max pressure at stated temp:  16 bar / 120 °C  16 bar / -40 °C  Type of connection:  DIN  Size of inlet connection:  DN 100  Size of outlet connection:  Pressure rating for pipe connection:  Flange size for motor:  Connect code:  F  Liquid:  Pumped liquid:  Liquid temperature range:  Liquid temperature during operation:  Density:  Density:  Density:  Pelectrical data:  Motor standard:  Motor type:  IEC  Motor type:  IES  Rated power - P2:  Power (P2) required by pump:  Rated voltage:  IEA  Rated voltage:  IEA  Rated voltage:  IEA  Rated voltage:  IEA  Sa x 380-415D/660-690Y	<u> </u>	
Type of connection:  Type of connection:  DIN  Size of inlet connection:  DN 100  Size of outlet connection:  Pressure rating for pipe connection:  Flange size for motor:  Connect code:  F  Liquid:  Pumped liquid:  Liquid temperature range:  Liquid temperature during operation:  DN 100  PN 16  FF265  Connect code:  F  Liquid:  Pumped liquid:  Uater  Liquid temperature vange:  Liquid temperature during operation:  Density:  P98.2 kg/m³  Electrical data:  Motor standard:  Motor type:  132SB  IE Efficiency class:  Rated power - P2:  Power (P2) required by pump:  T.5 kW  Mains frequency:  Rated voltage:  V  Noter (P2)  Rated voltage:  So Hz  Rated voltage:  Noter (P2)  Rated voltage:	- · · · · · · · · · · · · · · · · · · ·	
Type of connection:  Size of inlet connection:  DN 100  Size of outlet connection:  Pressure rating for pipe connection:  Flange size for motor:  Connect code:  F  Liquid:  Pumped liquid:  Liquid temperature range:  Liquid temperature during operation:  Density:  Density:  Pelectrical data:  Motor standard:  Motor type:  IE Efficiency class:  Rated power - P2:  Power (P2) required by pump:  Rated voltage:  DN 100  DN 100  DN 100  DN 100  DN 100  PN 16  FF265  F  Liquid:  Water  Liquid:  Water  Liquid temperature during operation:  20 °C  998.2 kg/m³  Electrical data:  Motor standard:  IEC  Motor type:  132SB  IE 3  Rated power - P2:  7.5 kW  Power (P2) required by pump:  7.5 kW  Mains frequency:  So Hz  Rated voltage:	max procedure at stated temp.	
Size of inlet connection:  Size of outlet connection:  DN 100  Pressure rating for pipe connection:  Flange size for motor:  Connect code:  F  Liquid:  Pumped liquid:  Liquid temperature range:  Liquid temperature during operation:  Density:  Density:  Pelectrical data:  Motor standard:  Motor type:  IE Efficiency class:  Rated power - P2:  Power (P2) required by pump:  Rated voltage:  DN 100  N 100  DN 100  DN 100  PN 16  FF265  F  Liquid temperature verified supplied suppli	Type of connection:	
Size of outlet connection:  Pressure rating for pipe connection:  Flange size for motor:  Connect code:  F  Liquid:  Pumped liquid:  Liquid temperature range:  Liquid temperature during operation:  Density:  Pelectrical data:  Motor standard:  Motor type:  IEC  Motor type:  IES  Rated power - P2:  Power (P2) required by pump:  Rated voltage:  DN 100  PN 16  FF265  F  Water  Liquid temperature  -40 120 °C  20 °C  998.2 kg/m³  EIEC  Motor Standard:  IEC  Motor type:  132SB  IE 3  Rated power - P2:  7.5 kW  Power (P2) required by pump:  7.5 kW  Rated voltage:  Rated voltage:		
Pressure rating for pipe connection:  Flange size for motor:  Connect code:  F  Liquid:  Pumped liquid:  Liquid temperature range:  Liquid temperature during operation:  Density:  Pelectrical data:  Motor standard:  Motor type:  IE Efficiency class:  Rated power - P2:  Power (P2) required by pump:  Rated voltage:  PN 16  FF265  F  Value  FF265  F  Uate To Separate Temperature  FO C  Water  Liquid temperature during operation:  20 °C  998.2 kg/m³  ELEC  Motor type:  132SB  IE S  Rated power - P2:  7.5 kW  Power (P2) required by pump:  7.5 kW  Mains frequency:  So Hz  Rated voltage:  Rated voltage:		
Flange size for motor:  Connect code:  F  Liquid:  Pumped liquid:  Liquid temperature range:  Liquid temperature during operation:  Density:  Pelectrical data:  Motor standard:  Motor type:  IEC  Motor type:  IES  Rated power - P2:  Power (P2) required by pump:  Rated voltage:  FF265  F  Water  FF265  F  F  F265  F  F  F  F  F  F  F  F  F  F  F  F  F		
Connect code:  Liquid: Pumped liquid: Uiquid temperature range: Liquid temperature during operation: Density: D		
Liquid:Pumped liquid:WaterLiquid temperature range:-40 120 °CLiquid temperature during operation:20 °CDensity:998.2 kg/m³Electrical data:Motor standard:IECMotor type:132SBIE Efficiency class:IE3Rated power - P2:7.5 kWPower (P2) required by pump:7.5 kWMains frequency:50 HzRated voltage:3 x 380-415D/660-690Y		
Pumped liquid: Water Liquid temperature range: -40 120 °C Liquid temperature during operation: 20 °C Density: 998.2 kg/m³  Electrical data:  Motor standard: IEC Motor type: 132SB IE Efficiency class: IE3 Rated power - P2: 7.5 kW Power (P2) required by pump: 7.5 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-415D/660-690Y		
Liquid temperature range:  Liquid temperature during operation:  Density:  998.2 kg/m³  Electrical data:  Motor standard:  Motor type:  132SB  IE Efficiency class:  Rated power - P2:  Power (P2) required by pump:  Mains frequency:  Rated voltage:  -40 120 °C  20 °C  998.2 kg/m³  IEC  Motor type:  132SB  IE3  Rated yower - P2:  7.5 kW  Ains frequency:  50 Hz  Rated voltage:		10/-4
Liquid temperature during operation: 20 °C  Density: 998.2 kg/m³  Electrical data:  Motor standard: IEC  Motor type: 132SB  IE Efficiency class: IE3  Rated power - P2: 7.5 kW  Power (P2) required by pump: 7.5 kW  Mains frequency: 50 Hz  Rated voltage: 3 x 380-415D/660-690Y		
Density:         998.2 kg/m³           Electrical data:         IEC           Motor standard:         IEC           Motor type:         132SB           IE Efficiency class:         IE3           Rated power - P2:         7.5 kW           Power (P2) required by pump:         7.5 kW           Mains frequency:         50 Hz           Rated voltage:         3 x 380-415D/660-690Y		
Electrical data:           Motor standard:         IEC           Motor type:         132SB           IE Efficiency class:         IE3           Rated power - P2:         7.5 kW           Power (P2) required by pump:         7.5 kW           Mains frequency:         50 Hz           Rated voltage:         3 x 380-415D/660-690Y		
Motor standard:         IEC           Motor type:         132SB           IE Efficiency class:         IE3           Rated power - P2:         7.5 kW           Power (P2) required by pump:         7.5 kW           Mains frequency:         50 Hz           Rated voltage:         3 x 380-415D/660-690Y	·	998.2 kg/m³
Motor type:         132SB           IE Efficiency class:         IE3           Rated power - P2:         7.5 kW           Power (P2) required by pump:         7.5 kW           Mains frequency:         50 Hz           Rated voltage:         3 x 380-415D/660-690Y		
IE Efficiency class: Rated power - P2: Power (P2) required by pump: 7.5 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-415D/660-690Y		
Rated power - P2: 7.5 kW  Power (P2) required by pump: 7.5 kW  Mains frequency: 50 Hz  Rated voltage: 3 x 380-415D/660-690Y		
Power (P2) required by pump: 7.5 kW  Mains frequency: 50 Hz  Rated voltage: 3 x 380-415D/660-690Y	-	IE3
Mains frequency: 50 Hz Rated voltage: 3 x 380-415D/660-690Y		7.5 kW
Rated voltage: 3 x 380-415D/660-690Y V	Power (P2) required by pump:	7.5 kW
Rated voltage:	Mains frequency:	50 Hz
Rated current: 14,4-14,0/8,30-8,10 A	Rated voltage:	
	Rated current:	14,4-14,0/8,30-8,10 A







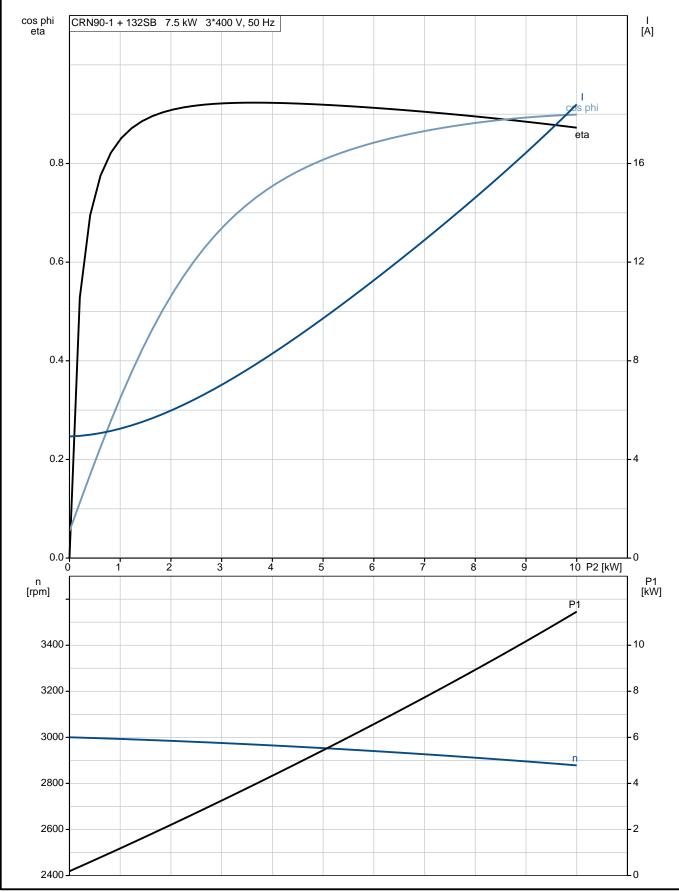


Description	Value
Starting current:	780-910 %
Cos phi - power factor:	0.88-0.82
Rated speed:	2910-2920 rpm
Efficiency:	IE3 90,1%
Motor efficiency at full load:	90.1-90.4 %
Motor efficiency at 3/4 load:	90.8 %
Motor efficiency at 1/2 load:	90.8 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	PTC
Motor No:	85U17522
Controls:	
Frequency converter:	NONE
Others:	
Minimum efficiency index, MEI ≥:	0.70
Net weight:	119 kg
Gross weight:	142 kg
Shipping volume:	0.309 m³
Danish VVS No.:	385919010



**Date:** 18/02/2019

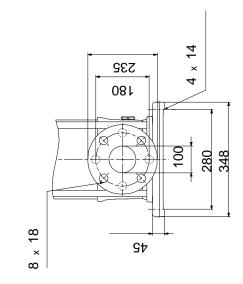
# 96124225 CRN 90-1 A-F-A-E-HQQE 50 Hz

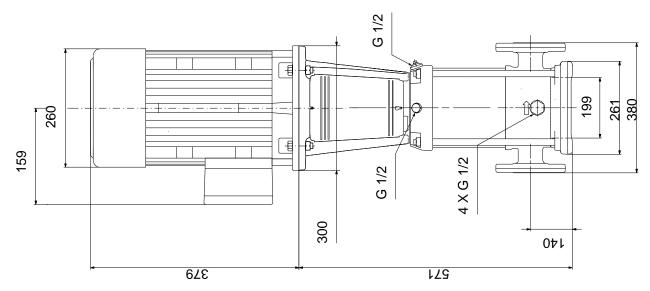




**Date:** 18/02/2019

# 96124225 CRN 90-1 A-F-A-E-HQQE 50 Hz



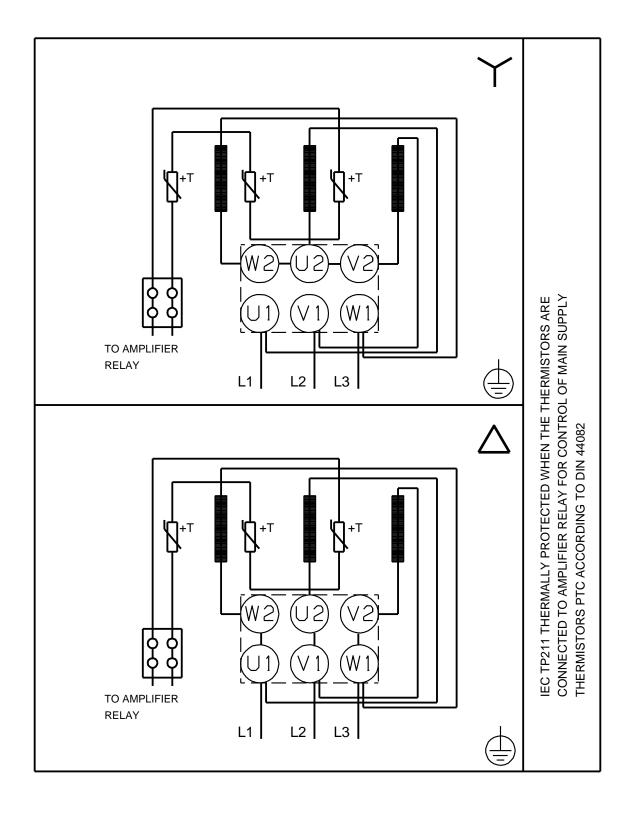


Note! All units are in [mm] unless others are stated. Disclaimer: This simplified dimensional drawing does not show all details.



**Date:** 18/02/2019

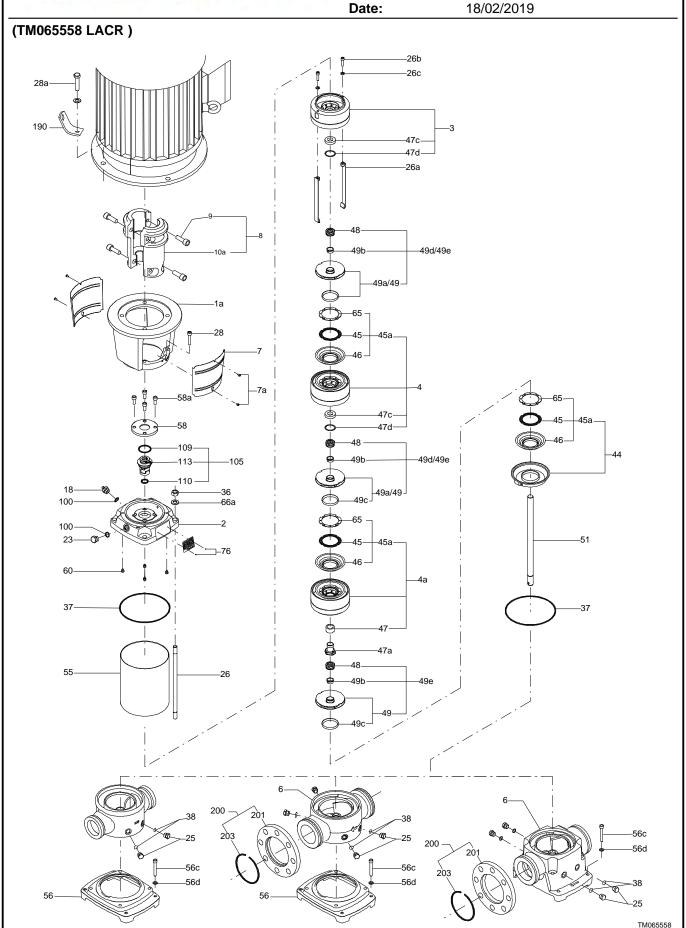
# 96124225 CRN 90-1 A-F-A-E-HQQE 50 Hz



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



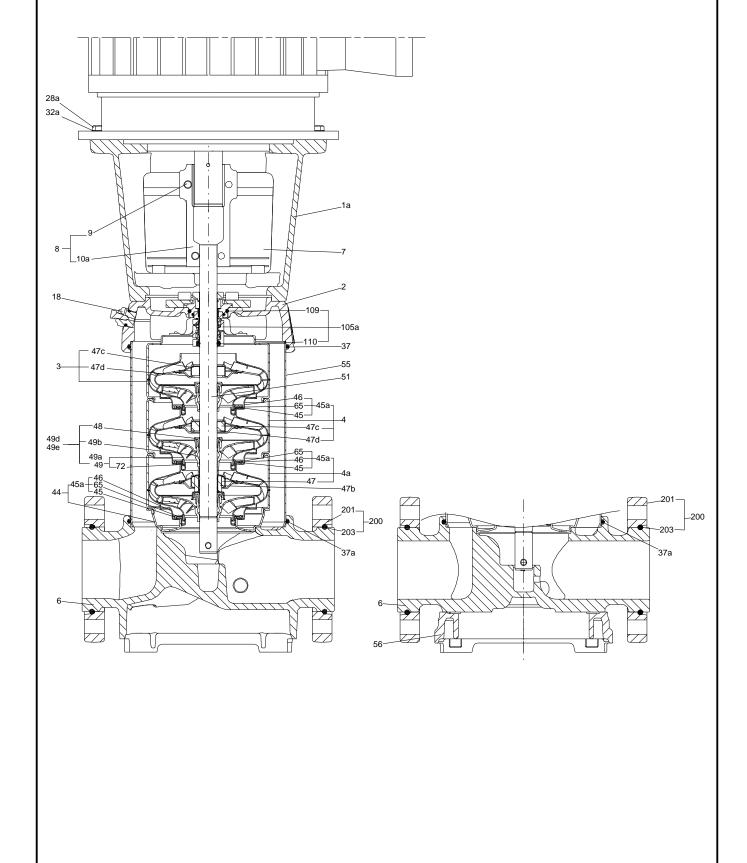
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**Date:** 18/02/2019

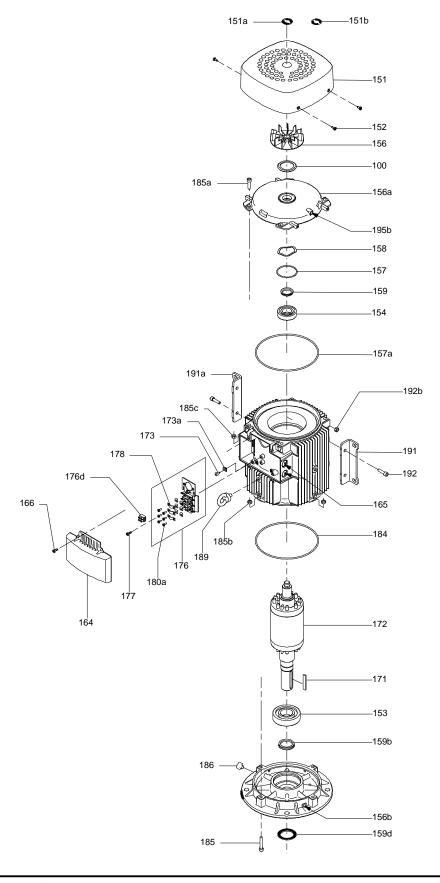
# (TM065571 LACR)



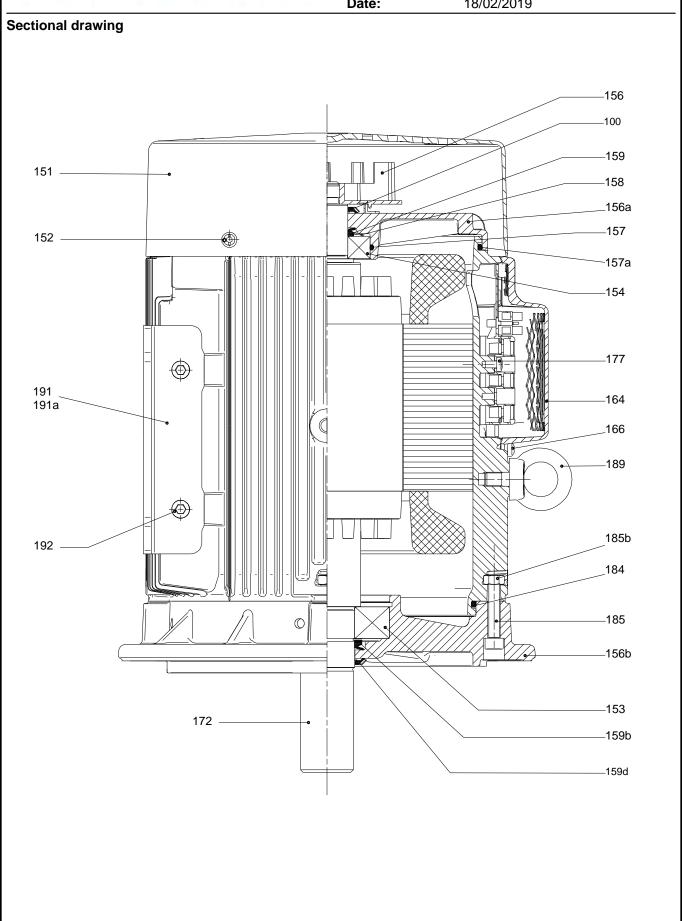


**Date:** 18/02/2019

## **Exploded view**









**Date:** 18/02/2019

# Spare parts CRN 90-1, Product No. 96124225 Valid from 3.3.2014 (1410)

	Pos	Description	Annotation	Classification Data	Part no.	Qty		Uni
		Base			96587699	1		pcs
	6	Base					1	
-		Kit, chambers			98635099	1		pcs
-	3	Upper chamber cpl.					1	
		Cone						
		Spare, turbulence optimizer KP						
		Spare, turbulence optimizer KP						
		Spare, turbulence optimizer KP						
		Spare, turbulence optimizer KP						
		Spare, turbulence optimizer KP						
	47	Bearing						
-	47a	Bearing					1	
		Driver						
		Holder						
		Disc spring						
		Bearing ring						
	47f	Hairpin clip						
-		Kit, coupling			96416591	1		pcs
		Adjusting fork					1	
	9	Hex socket head cap screw		Designation: DIN 912			4	
				Length (mm): 25				
				Thread: M10				
	10a	Coupling		Type: SPACER			1	
		Kit, coupling guard		. , , , , , , , , , , , , , , , , , , ,	96505134	1		pcs
	7a	Socket button head screw			00000101	•	4	poc
	7	Coupling guard					2	
_	'	Kit, cover			98832448	1		pcs
	58a	Hex socket head cap screw		Designation: DIN 912	30032440		4	pos
	Jua	Tiex socket flead cap screw		Length (mm): 25			_	
				Thread: M10				
	58	Cover		Tilledd. WiTo			1	
_	50	Kit, impeller			98593752	1		pcs
_	44	Suction interconnector cpl.			30333732		1	pos
	77	Suction interconnector						
	45a	Neck ring cpl.						
	43a 48	Nut					1	
		Impeller cpl.					1	
	49e 48							
	48 49b	Nut Split cono						
	49b 49	Split cone Impeller						
	49				09625400	1		nac
-	10	Kit, impeller			98635108	ı		pcs
	48	Nut					1	
	48	Nut					1	
	49b	Split cone					1	
-	49	Impeller					1	
	10	Impeller hub						
	49c	Wear ring			00505455	_		
-		Kit, plug			96505136	1		pcs
-	18	Air vent screw					1	
		Spindle						
		Plug						
	25	Plug					4	
	25	Plug					1	



				0,02,20.0	
Pos	Description	Annotation	Classification Data	Part no. Qt	y. U
38	O-ring		Diameter: 16,3		2
			Material type: FKM		
			Thickness: 2,4		
38	O-ring		Diameter: 16,3		4
			Material type: FKM		
			Thickness: 2,4		
38	O-ring		Diameter: 16,3		6
	-		Material type: FKM		
			Thickness: 2,4		
38	O-ring		Diameter: 16,3		2
	3		Material type: EPDM		
			Thickness: 2,4		
38	O-ring		Diameter: 16,3		4
-			Material type: EPDM		•
			Thickness: 2,4		
	Kit, seals		71110111000. 2, 1	96416601 1	po
	Adjusting fork			30410001 1	1
37	O-ring				2
38	O-ring O-ring		Diameter: 16,3		2
50	O-filing		Material type: EPDM		_
			* *		
20	O vin a		Thickness: 2,4		4
38	O-ring		Diameter: 16,3		4
			Material type: EPDM		
			Thickness: 2,4		
60	Spring				4
109	O-ring				1
110	O-ring		Diameter: 21,2		1
			Material type: EPDM		
			Thickness: 3,55		
	Kit, shaft seal HQQE			96525458 1	po
	Grinding device				1
105	Shaft seal		Material type: HQQE		1
	Adjusting fork				
109	O-ring				
110	O-ring		Diameter: 21,5		
			Material type: EPDM		
			Thickness: 4,25		
	Kit, wear parts			98497509 1	рс
45	Seal ring				1
45	Neck ring				2
47d	Lock ring				2
					1
47c	Bush				
47c 49c					
49c	Wear ring				1
49c 49c	Wear ring Wear ring				1 2
49c 49c 65	Wear ring Wear ring Top f/neck ring				1 2 1
49c 49c	Wear ring Wear ring Top f/neck ring Top f/neck ring			Q1333N3R 1	1 2 1 2
49c 49c 65	Wear ring Wear ring Top f/neck ring Top f/neck ring Motor			91333038 1	1 2 1 2
49c 49c 65 65	Wear ring Wear ring Top f/neck ring Top f/neck ring Motor Kit, bearing cpl.		Designation: 6000	96796642	1 2 1 2
49c 49c 65 65	Wear ring Wear ring Top f/neck ring Top f/neck ring Motor Kit, bearing cpl. Ball bearing		Designation: 6206.	96796642	1 2 1 2
49c 49c 65 65 111 153	Wear ring Wear ring Top f/neck ring Top f/neck ring Motor Kit, bearing cpl. Ball bearing Angular-contact bearing		_	96796642	1 2 1 2
49c 49c 65 65	Wear ring Wear ring Top f/neck ring Top f/neck ring Motor Kit, bearing cpl. Ball bearing		Diameter: 62	96796642	1 2 1 2
49c 49c 65 65 111 153	Wear ring Wear ring Top f/neck ring Top f/neck ring Motor Kit, bearing cpl. Ball bearing Angular-contact bearing		Diameter: 62 Material type: NBR	96796642	1 2 1 2
49c 49c 65 65 111 153 157	Wear ring Wear ring Top f/neck ring Top f/neck ring Motor Kit, bearing cpl. Ball bearing Angular-contact bearing O-ring		Diameter: 62	96796642	1 2 1 2
49c 49c 65 65 111 153 157	Wear ring Wear ring Top f/neck ring Top f/neck ring Motor Kit, bearing cpl. Ball bearing Angular-contact bearing O-ring Waved washer		Diameter: 62 Material type: NBR	96796642	1 2 1 2
49c 49c 65 65 111 153 157	Wear ring Wear ring Top f/neck ring Top f/neck ring Motor Kit, bearing cpl. Ball bearing Angular-contact bearing O-ring  Waved washer V-ring		Diameter: 62 Material type: NBR	96796642	1 2 1 2
49c 49c 65 65 111 153 157	Wear ring Wear ring Top f/neck ring Top f/neck ring Motor Kit, bearing cpl. Ball bearing Angular-contact bearing O-ring  Waved washer V-ring V-ring		Diameter: 62 Material type: NBR	96796642	1 2 1 2
49c 49c 65 65 111 153 157	Wear ring Wear ring Top f/neck ring Top f/neck ring Motor Kit, bearing cpl. Ball bearing Angular-contact bearing O-ring  Waved washer V-ring		Diameter: 62 Material type: NBR	96796642	1 2 1 2 po



Pos	Description	Annotation	Classification Data	Part no. Qty	<del>/. U</del>
	Kit, fan			96796189	1
156	Fan				
	Kit, fan cover			96796188	1
151	Fan cover				
152	Pan head thread forming screw				
132				00700004	
	Kit, flange			96796224	1
156.b	Flange				
159.b	V-ring				
185c	Nut				
185	Hex socket head cap screw				
186	Drain plug				
	Kit, gaskets			96798510	1
184	O-ring			00.000.0	•
104	Kit, ND-end shield cpl.			96796598	1
450				90790390	1
156.a	End shield NDE				
157	O-ring		Diameter: 62		
			Material type: NBR		
			Thickness: 3		
158	Waved washer				
159	V-ring				
185.c	Nut				
185.a	Hex socket head cap screw				
100.4	Kit, shaft seal			96843458	1
450 h				30043430	1
159.b	V-ring				
159	V-ring				
	Kit, terminal board			96030209	1
176	Terminal				
176	Terminal board				
178	Connecting piece				
179	Cable shoe				
180a	Slot cheese head screw		Designation: COM	IBI TORX T25	
			Length (mm): 10		
			Thread: M5		
180	Wire clamp		Tilledd. Wio		
100	•			00700045	,
	Kit, terminal box cover			96796215	1
164	Terminal box cover w/gasket				
166	Pan head thread forming screw				
1a	Motor stool			96547431 1	р
2	Pump head			97789459 1	p
3	Bulk, Upper chamber cpl. (5 pcs)			99262805 1	p.
6	Base			97974018 1	p
7a	Bulk, Socket button head screw (10 pcs)			96549696 4	p
7	Bulk, Coupling guard (10 pcs)		B	96603300 2	р
8	Coupling cpl.		Dimension: 22/38	96587705 1	р
18	Bulk, Air vent screw (5 pcs)			96547461 1	р
18	Air vent screw			95061351 1	р
25	Bulk, Plug (10 pcs)			96536013 1	р
26	Staybolt		Length (mm): 321	98976756 4	p
			Thread: M16	300.0100 T	۲,
26c	Rulk Washer (4 pcs)		Designation: DIN 125A	99262704 2	
200	Bulk, Washer (4 pcs)		-	99202704 2	р
			Thickness: 1,6		
26c	Washer		Designation: DIN 125A	96586880 2	р
			Thickness: 1,6		
				98931380 2	р
26b	Bulk, Hex socket head cap screw (10 pcs	)		-	
26b 26a		)	Length (mm): 101	98983911 2	р
	Bulk, Hex socket head cap screw (10 pcs; Strap cpl.	)	Length (mm): 101 Thread: M8		p
			Length (mm): 101 Thread: M8 Designation: DIN 912		p



	Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
				Thread: M10			
	28	Bulk, Hex head screw (20 pcs)		Length (mm): 45 MM	96620474	4	pcs
				Thread: M12			
	36	Bulk, Nut (20 pcs)		Thread: M12	96620479	4	pcs
	38	Bulk, O-ring (10 pcs)		Diameter: 16,3	99198815	2	pcs
				Material type: EPDM			
				Thickness: 2,4			
	38	Bulk, O-ring (50 pcs)		Diameter: 16,3	99412727	2	pcs
				Material type: EPDM			
				Thickness: 2,4			
+	47a	Bulk, Bearing (5 pcs)			99270667	1	pcs
	49b	Bulk, Split cone (10 pcs)			96536010	1	pcs
	55	Outer sleeve			98820406	1	pcs
	56	Base plate			97789433	1	pcs
	58	Cover			98893158	1	pcs
	60	Bulk, Spring (20 pcs)			96536032	4	pcs
-	105	Bulk, Shaft seal (12 pcs)		Material type: HQQE	96984086	1	pcs
		Adjusting fork			965878	96 1	
	109	Bulk, O-ring (10 pcs)			965475	86 1	
+	105	Bulk, Shaft seal (12 pcs)		Material type: HQQE	96984070	1	pcs
	440b	Bulk, Lock ring (4 pcs)			96547435	1	pcs