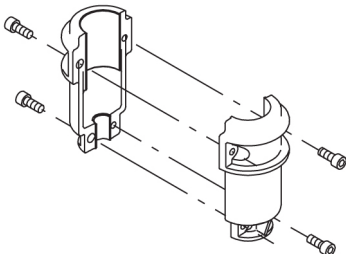


| Qty. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | <p data-bbox="199 331 497 365"><b>CR 45-4-2 A-F-A-E-HQQE</b></p> <div data-bbox="363 398 456 846">  </div> <p data-bbox="592 846 1077 869">Note! Product picture may differ from actual product</p> <p data-bbox="199 878 467 902">Product No.: <a href="#">96122802</a></p> <p data-bbox="199 936 1460 1037">Vertical, multistage centrifugal pump with inlet and outlet ports on same the level (inline). The pump head and base are in cast iron – all other wetted parts are in 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.</p> <p data-bbox="199 1077 936 1106">The pump is fitted with a 3-phase, fan-cooled asynchronous motor.</p> <p data-bbox="199 1137 520 1171"><b>Further product details</b></p> <p data-bbox="199 1173 1430 1274">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 data-bbox="199 1288 695 1404" 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 data-bbox="199 1406 909 1433">The colour code for the finished product is NCS 9000/RAL 9005.</p> <p data-bbox="199 1464 284 1498"><b>Pump</b></p> <p data-bbox="199 1500 1460 1576">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> <div data-bbox="204 1588 550 1841">  </div> <p data-bbox="199 1870 1437 1921">The motor stool connects the pump head and motor. The pump head has a combined 1/2" priming plug and vent screw.</p> |



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 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 base is made of cast iron. Both the inlet and the outlet side of the base have two pressure gauge tapings. 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.

| Qty. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      | <b>Technical data</b><br><br><b>Controls:</b><br>Frequency converter: NONE<br><br><b>Liquid:</b><br>Pumped liquid: Water<br>Liquid temperature range: -30 .. 120 °C<br>Liquid temperature during operation: 20 °C<br>Density: 998.2 kg/m <sup>3</sup><br><br><b>Technical:</b><br>Pump speed on which pump data are based: 2923 rpm<br>Rated flow: 45 m <sup>3</sup> /h<br>Rated head: 72.1 m<br>Pump orientation: Vertical<br>Shaft seal arrangement: Single<br>Code for shaft seal: HQQE<br>Approvals on nameplate: CE, EAC, ACS<br>Curve tolerance: ISO9906:2012 3B<br><br><b>Materials:</b><br>Base: Cast iron<br>EN 1563 EN-GJS-500-7<br>ASTM A536 80-55-06<br>Impeller: Stainless steel<br>EN 1.4301<br>AISI 304<br>Bearing: SIC<br>Support bearing: Graflon<br><br><b>Installation:</b><br>Maximum ambient temperature: 60 °C<br>Maximum operating pressure: 16 bar<br>Max pressure at stated temp: 16 bar / 120 °C<br>16 bar / -30 °C<br>Type of connection: DIN<br>Size of inlet connection: DN 80<br>Size of outlet connection: DN 80<br>Pressure rating for pipe connection: PN 40<br>Flange size for motor: FF300<br><br><b>Electrical data:</b><br>Motor standard: IEC<br>Motor type: 160MD<br>IE Efficiency class: IE3<br>Rated power - P2: 15 kW<br>Power (P2) required by pump: 15 kW<br>Mains frequency: 50 Hz<br>Rated voltage: 3 x 380-415D/660-690Y V<br>Rated current: 28,0-26,0/16,2-15,6 A<br>Starting current: 660-780 %<br>Cos phi - power factor: 0.89-0.87<br>Rated speed: 2930-2950 rpm<br>Efficiency: IE3 91,9%<br>Motor efficiency at full load: 91.9-91.9 %<br>Motor efficiency at 3/4 load: 92.4 %<br>Motor efficiency at 1/2 load: 92.4 %<br>Number of poles: 2 |



Company name:

Created by:

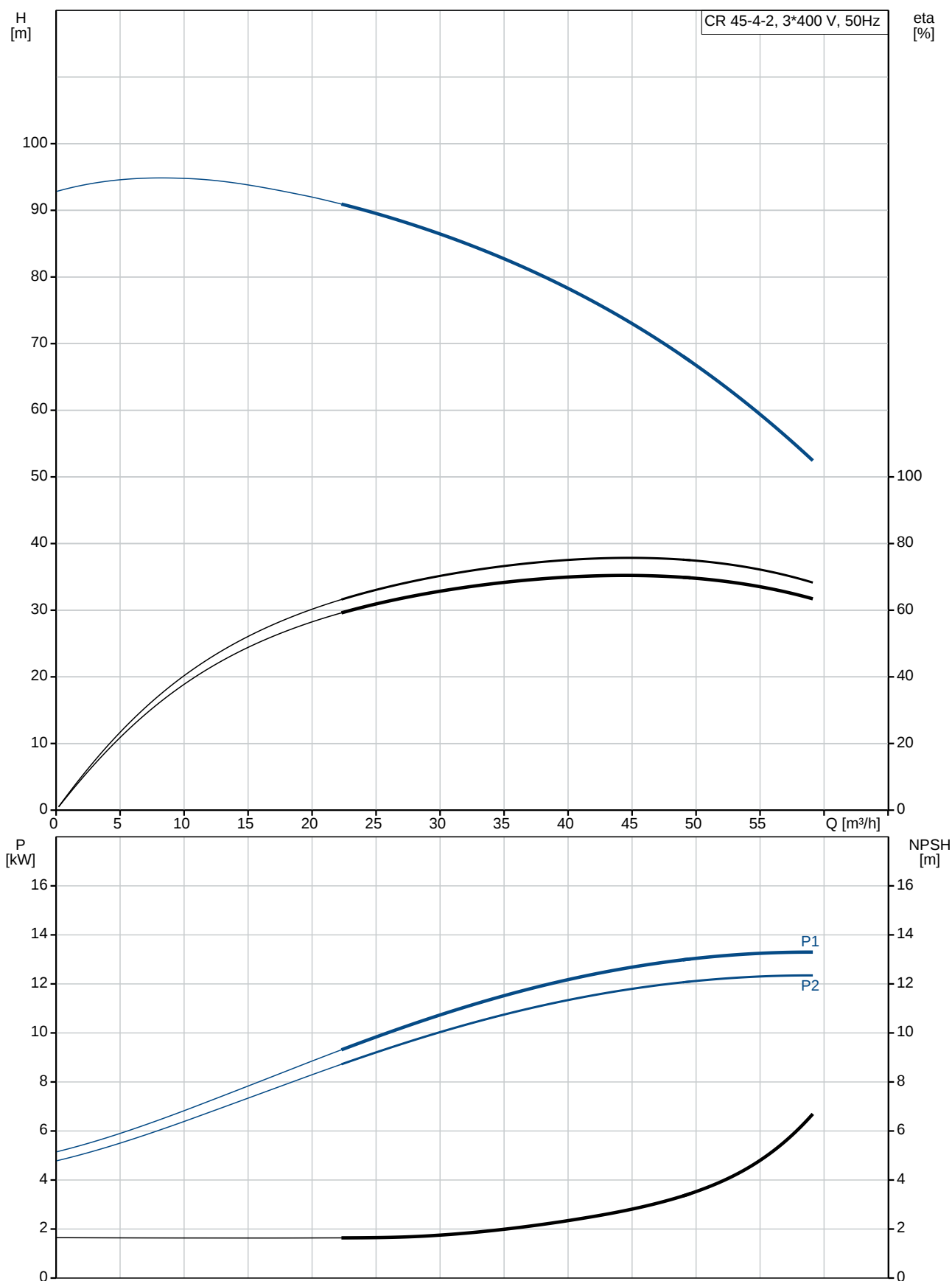
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Date:

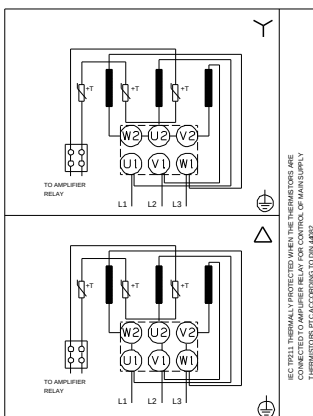
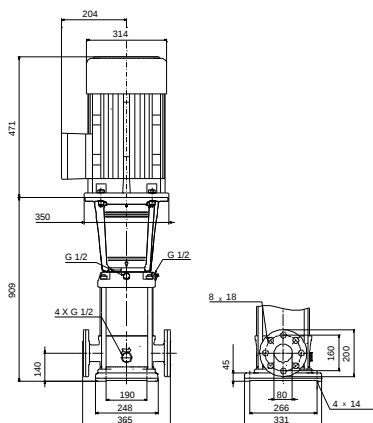
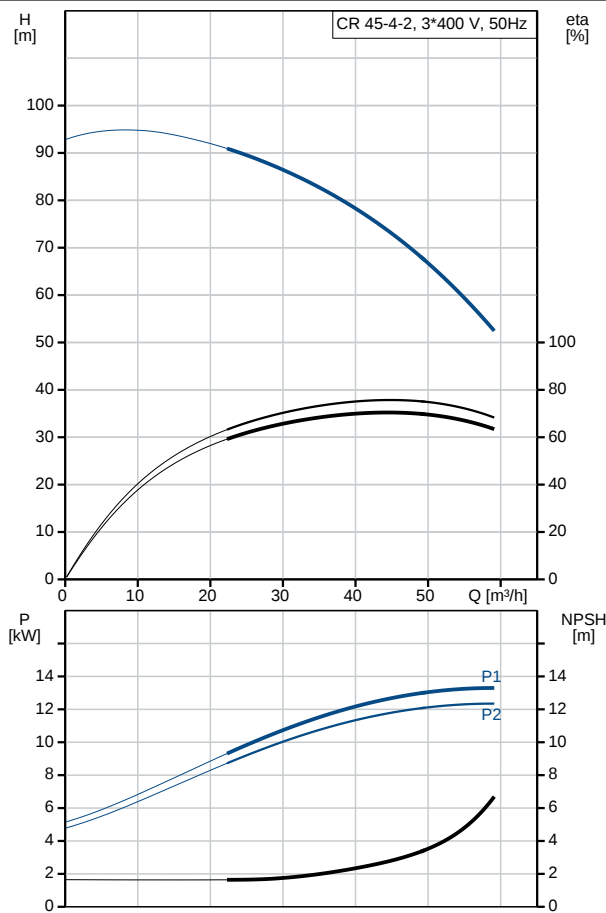
17/02/2019

| Qty. | Description                                                                                                                                                                                                                                                                       |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      | Enclosure class (IEC 34-5): 55 Dust/Jetting<br>Insulation class (IEC 85): F<br><br><b>Others:</b><br>Minimum efficiency index, MEI $\eta_{\text{MEI}}$ : 0.70<br>Net weight: 179 kg<br>Gross weight: 212 kg<br>Shipping volume: 0.495 m <sup>3</sup><br>Danish VVS No.: 385907042 |

## 96122802 CR 45-4-2 A-F-A-E-HQQE 50 Hz



| Description                              | Value                                                          |
|------------------------------------------|----------------------------------------------------------------|
| <b>General information:</b>              |                                                                |
| Product name:                            | CR 45-4-2<br>A-F-A-E-HQQE                                      |
| Product No:                              | 96122802                                                       |
| EAN number:                              | 5700396688466                                                  |
| <b>Technical:</b>                        |                                                                |
| Pump speed on which pump data are based: | 2923 rpm                                                       |
| Rated flow:                              | 45 m <sup>3</sup> /h                                           |
| Rated head:                              | 72.1 m                                                         |
| Head max:                                | 92.4 m                                                         |
| 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 on nameplate:                  | CE, EAC, ACS                                                   |
| Curve tolerance:                         | ISO9906:2012 3B                                                |
| Pump version:                            | A                                                              |
| Model:                                   | B                                                              |
| <b>Materials:</b>                        |                                                                |
| Base:                                    | Cast iron<br>EN 1563 EN-GJS-500-7                              |
| Impeller:                                | ASTM A536 80-55-06<br>Stainless steel<br>EN 1.4301<br>AISI 304 |
| Material code:                           | A                                                              |
| Code for rubber:                         | E                                                              |
| Bearing:                                 | SIC                                                            |
| Support bearing:                         | Graflon                                                        |
| <b>Installation:</b>                     |                                                                |
| Maximum ambient temperature:             | 60 °C                                                          |
| Maximum operating pressure:              | 16 bar                                                         |
| Max pressure at stated temp:             | 16 bar / 120 °C<br>16 bar / -30 °C                             |
| Type of connection:                      | DIN                                                            |
| Size of inlet connection:                | DN 80                                                          |
| Size of outlet connection:               | DN 80                                                          |
| Pressure rating for pipe connection:     | PN 40                                                          |
| Flange size for motor:                   | FF300                                                          |
| Connect code:                            | F                                                              |
| <b>Liquid:</b>                           |                                                                |
| Pumped liquid:                           | Water                                                          |
| Liquid temperature range:                | -30 .. 120 °C                                                  |
| Liquid temperature during operation:     | 20 °C                                                          |
| Density:                                 | 998.2 kg/m <sup>3</sup>                                        |
| <b>Electrical data:</b>                  |                                                                |
| Motor standard:                          | IEC                                                            |
| Motor type:                              | 160MD                                                          |
| IE Efficiency class:                     | IE3                                                            |
| Rated power - P2:                        | 15 kW                                                          |
| Power (P2) required by pump:             | 15 kW                                                          |
| Mains frequency:                         | 50 Hz                                                          |
| Rated voltage:                           | 3 x 380-415D/660-690Y<br>V                                     |





Company name:

Created by:

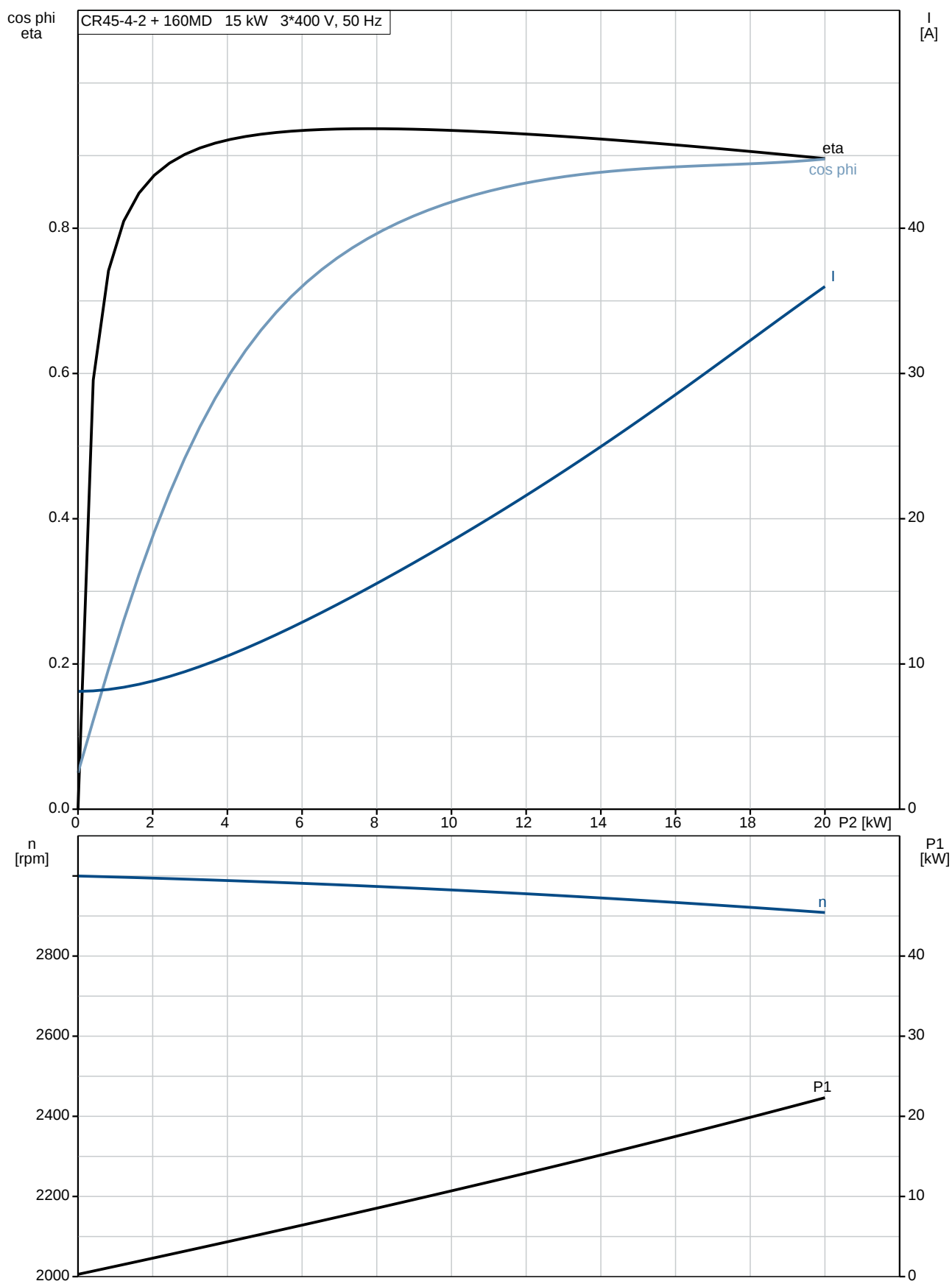
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Date:

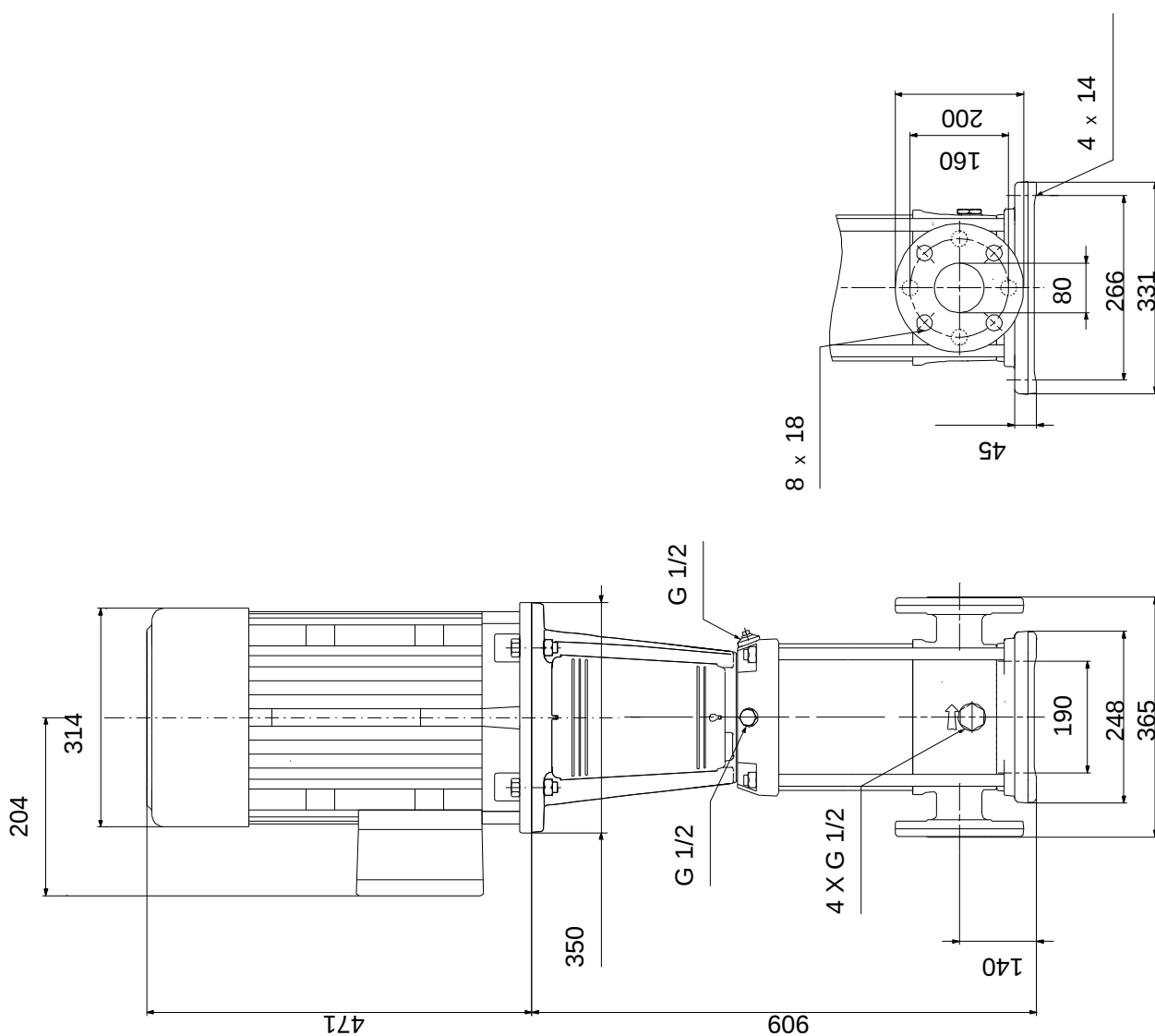
17/02/2019

| Description                                 | Value                 |
|---------------------------------------------|-----------------------|
| Rated current:                              | 28,0-26,0/16,2-15,6 A |
| Starting current:                           | 660-780 %             |
| Cos phi - power factor:                     | 0.89-0.87             |
| Rated speed:                                | 2930-2950 rpm         |
| Efficiency:                                 | IE3 91,9%             |
| Motor efficiency at full load:              | 91.9-91.9 %           |
| Motor efficiency at 3/4 load:               | 92.4 %                |
| Motor efficiency at 1/2 load:               | 92.4 %                |
| Number of poles:                            | 2                     |
| Enclosure class (IEC 34-5):                 | 55 Dust/Jetting       |
| Insulation class (IEC 85):                  | F                     |
| Motor protec:                               | PTC                   |
| Motor No:                                   | 85U17526              |
| <b>Controls:</b>                            |                       |
| Frequency converter:                        | NONE                  |
| <b>Others:</b>                              |                       |
| Minimum efficiency index, MEI $\eta_{\%}$ : | 0.70                  |
| Net weight:                                 | 179 kg                |
| Gross weight:                               | 212 kg                |
| Shipping volume:                            | 0.495 m <sup>3</sup>  |
| Danish VVS No.:                             | 385907042             |

## 96122802 CR 45-4-2 A-F-A-E-HQQE 50 Hz

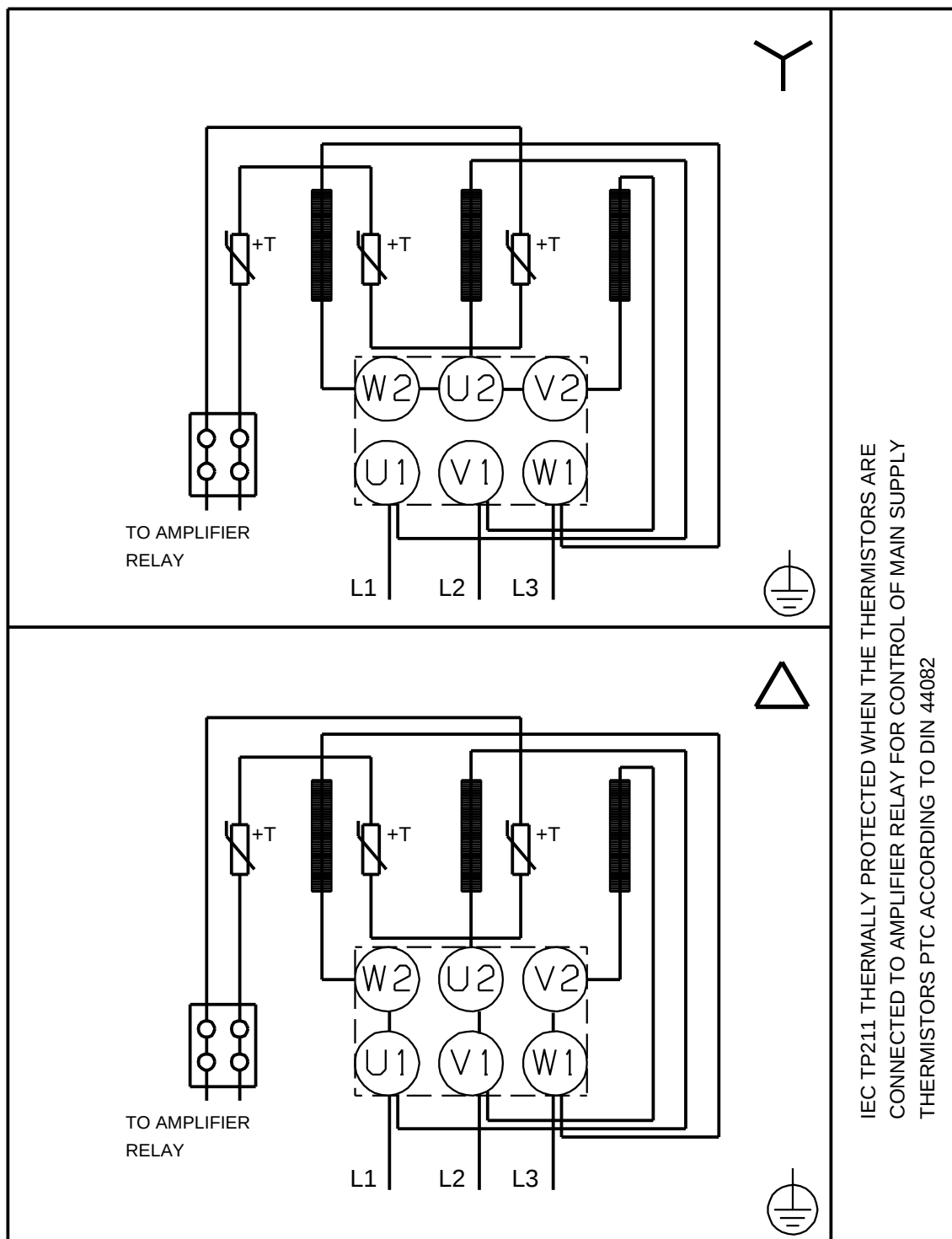


## 96122802 CR 45-4-2 A-F-A-E-HQQE 50 Hz



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

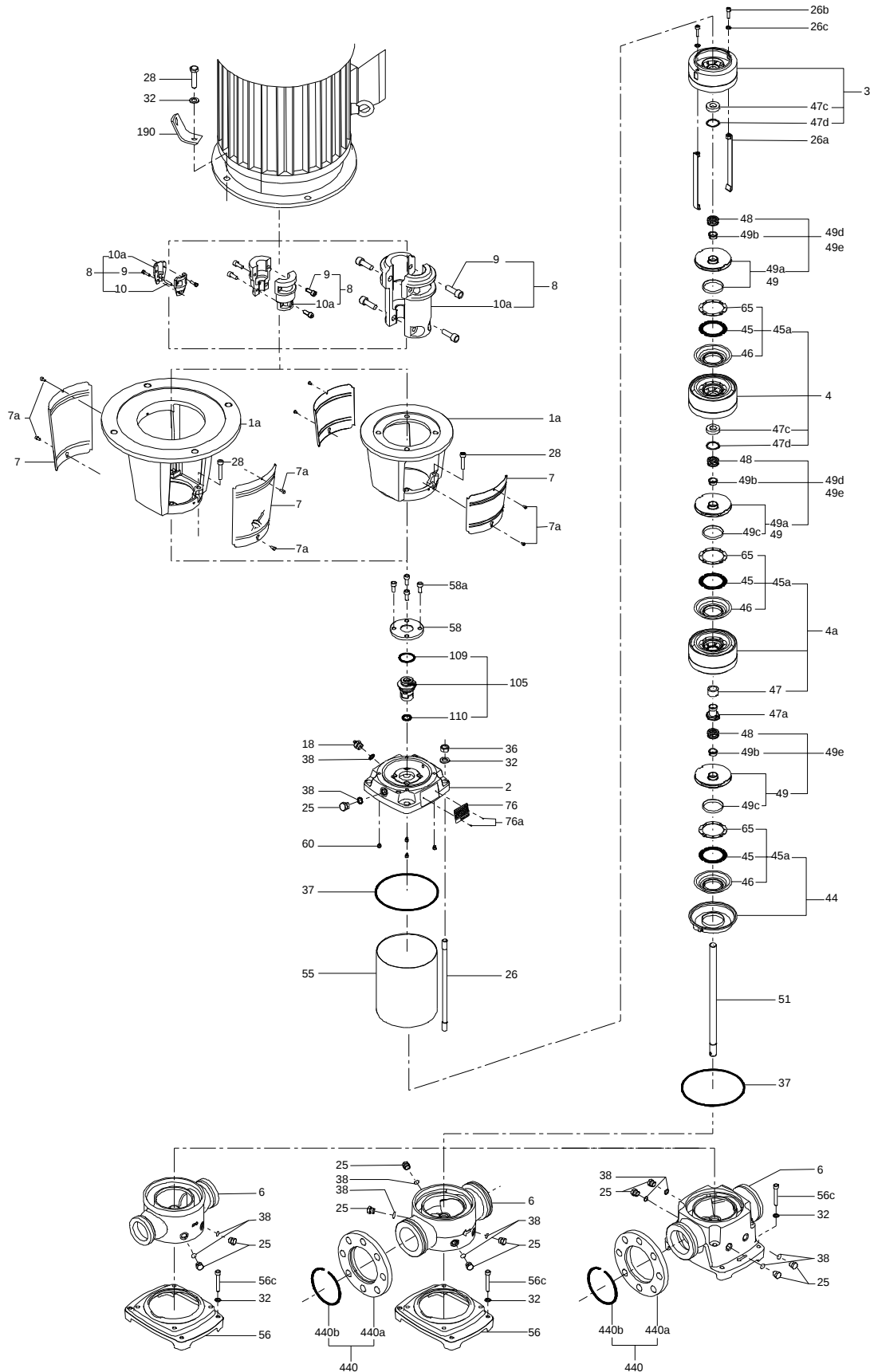
## 96122802 CR 45-4-2 A-F-A-E-HQQE 50 Hz



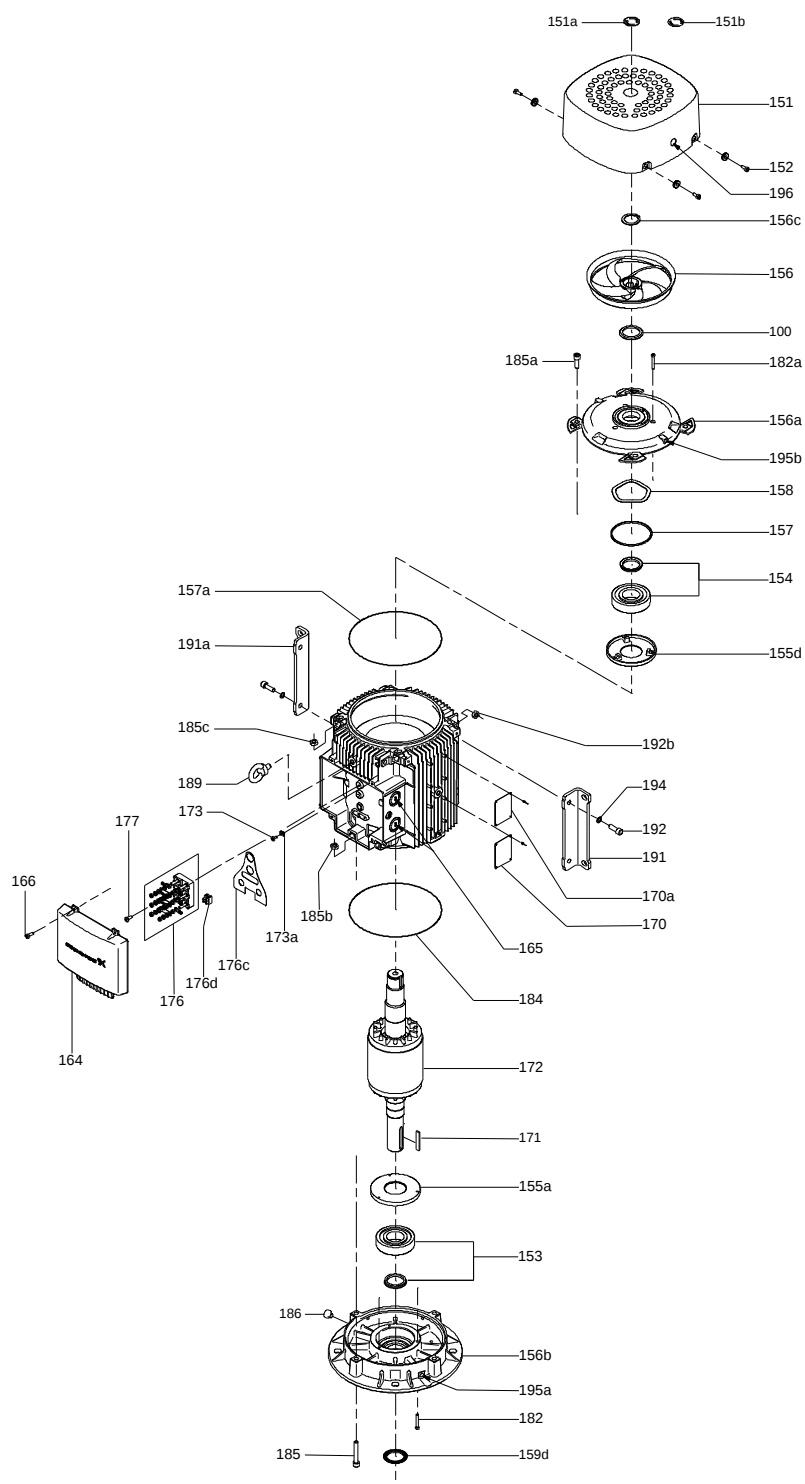
IEC TP211 THERMALLY PROTECTED WHEN THE THERMISTORS ARE  
CONNECTED TO AMPLIFIER RELAY FOR CONTROL OF MAIN SUPPLY  
THERMISTORS PTC ACCORDING TO DIN 44082

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

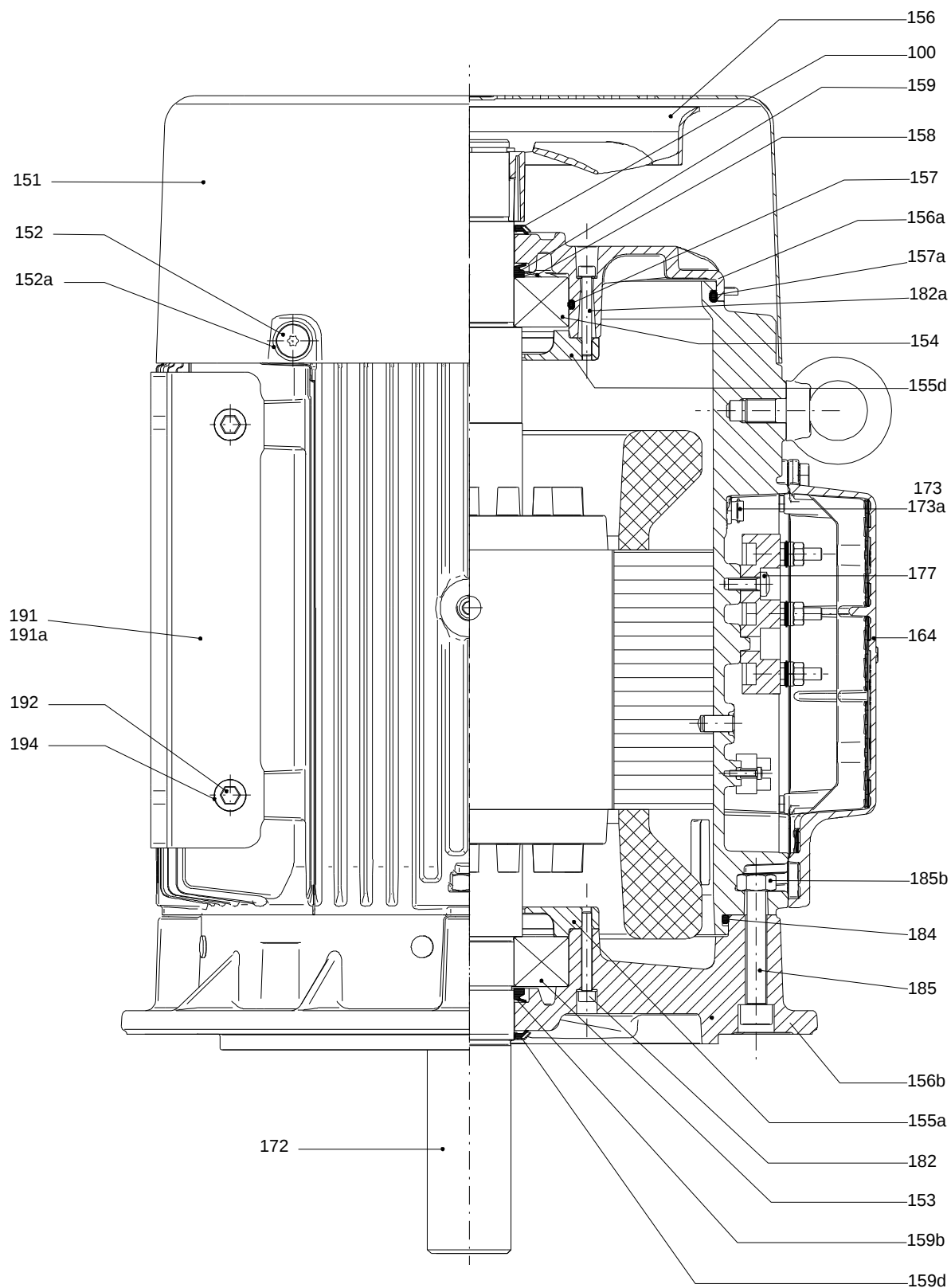
(tm069487 for LACR model B standard)



## Exploded view



## Sectional drawing



## Spare parts CR 45-4-2, Product No. 96122802

Valid from 3.3.2014 (1410)

| Pos   | Description                 | Annotation | Classification Data   | Part no. | Qty. | Unit |
|-------|-----------------------------|------------|-----------------------|----------|------|------|
| -     | Base                        |            |                       | 96587694 | 1    | pcs  |
| 6     | Base                        |            |                       |          | 1    |      |
| - 80  | Kit, chamber stack          |            |                       | 96416229 | 1    | pcs  |
| - 80  | Chamber stack               |            |                       |          | 1    |      |
| - 3   | Upper chamber cpl.          |            |                       |          |      |      |
|       | Guide cup                   |            |                       |          |      |      |
|       | Guide cup                   |            |                       |          |      |      |
|       | Cone                        |            |                       |          |      |      |
|       | Guide vane                  |            |                       |          |      |      |
|       | Chamber                     |            |                       |          |      |      |
|       | Chamber                     |            |                       |          |      |      |
| 47d   | Lock ring                   |            |                       |          |      |      |
| 47c   | Bush                        |            |                       |          |      |      |
| - 4a  | Intermediate chamber cpl.   |            |                       |          |      |      |
|       | Guide cup                   |            |                       |          |      |      |
|       | Guide cup                   |            |                       |          |      |      |
|       | Cone                        |            |                       |          |      |      |
|       | Guide vane                  |            |                       |          |      |      |
|       | Chamber                     |            |                       |          |      |      |
|       | Chamber                     |            |                       |          |      |      |
| 45a   | Neck ring cpl.              |            |                       |          |      |      |
| 47    | Bearing                     |            |                       |          |      |      |
| - 4   | Intermediate chamber cpl.   |            |                       |          |      |      |
|       | Guide cup                   |            |                       |          |      |      |
|       | Guide cup                   |            |                       |          |      |      |
|       | Cone                        |            |                       |          |      |      |
|       | Guide vane                  |            |                       |          |      |      |
|       | Chamber                     |            |                       |          |      |      |
|       | Chamber                     |            |                       |          |      |      |
| 45a   | Neck ring cpl.              |            |                       |          |      |      |
| 47d   | Lock ring                   |            |                       |          |      |      |
| 47c   | Bush                        |            |                       |          |      |      |
| 26c   | Washer                      |            | Designation: DIN 125A |          |      |      |
|       |                             |            | Thickness: 1,6        |          |      |      |
| 26b   | Hex socket head cap screw   |            |                       |          |      |      |
| 26a   | Strap cpl.                  |            | Length (mm): 329      |          |      |      |
|       |                             |            | Thread: M8            |          |      |      |
| - 44  | Suction interconnector cpl. |            |                       |          |      |      |
|       | Suction interconnector      |            |                       |          |      |      |
| 45    | Seal ring                   |            |                       |          |      |      |
| 46    | Neck ring                   |            |                       |          |      |      |
| 65    | Top f/neck ring             |            |                       |          |      |      |
| - 47a | Bearing cpl.                |            |                       |          |      |      |
|       | Driver                      |            |                       |          |      |      |
|       | Holder                      |            |                       |          |      |      |
|       | Disc spring                 |            |                       |          |      |      |
|       | Bearing ring                |            |                       |          |      |      |
| - 49e | Impeller cpl.               |            |                       |          |      |      |
| 48    | Nut                         |            |                       |          |      |      |
| 49b   | Split cone                  |            |                       |          |      |      |
| - 49  | Impeller                    |            |                       |          |      |      |
|       | Impeller hub                |            |                       |          |      |      |
| 49c   | Wear ring                   |            |                       |          |      |      |

| Pos   | Description                    | Annotation | Classification Data  | Part no. | Qty. | Unit |
|-------|--------------------------------|------------|----------------------|----------|------|------|
| - 49d | Impeller cpl.                  |            |                      |          |      |      |
| 48    | Nut                            |            |                      |          |      |      |
| 49b   | Split cone                     |            |                      |          |      |      |
| - 49a | Impeller, reduced diameter     |            |                      |          |      |      |
|       | Impeller hub                   |            |                      |          |      |      |
| 49c   | Wear ring                      |            |                      |          |      |      |
| 51    | Shaft                          |            |                      |          |      |      |
| -     | Kit, chambers                  |            |                      | 98497485 | 1    | pcs  |
| - 4a  | Intermediate chamber cpl.      |            |                      |          | 1    |      |
|       | Guide cup                      |            |                      |          |      |      |
|       | Guide cup                      |            |                      |          |      |      |
|       | Cone                           |            |                      |          |      |      |
|       | Guide vane                     |            |                      |          |      |      |
|       | Chamber                        |            |                      |          |      |      |
|       | Chamber                        |            |                      |          |      |      |
| 45a   | Neck ring cpl.                 |            |                      |          |      |      |
| 47    | Bearing                        |            |                      |          |      |      |
| - 47a | Bearing cpl.                   |            |                      |          | 1    |      |
|       | Driver                         |            |                      |          |      |      |
|       | Holder                         |            |                      |          |      |      |
|       | Disc spring                    |            |                      |          |      |      |
|       | Bearing ring                   |            |                      |          |      |      |
| -     | Kit, coupling                  |            |                      | 96416592 | 1    | pcs  |
|       | Adjusting fork                 |            |                      |          | 1    |      |
| - 8   | Coupling cpl.                  |            | Dimension: 22/42     |          | 1    |      |
| 9     | Hex socket head cap screw      |            | Designation: DIN 912 |          |      |      |
|       |                                |            | Length (mm): 25      |          |      |      |
|       |                                |            | Thread: M10          |          |      |      |
| 10a   | Coupling half                  |            |                      |          |      |      |
| -     | Kit, coupling guard            |            |                      | 96505135 | 1    | pcs  |
| 7a    | Socket button head screw       |            |                      |          | 4    |      |
| 7     | Coupling guard                 |            |                      |          | 2    |      |
| -     | Kit, cover                     |            |                      | 98832448 | 1    | pcs  |
| 58a   | Hex socket head cap screw      |            | Designation: DIN 912 |          | 4    |      |
|       |                                |            | Length (mm): 25      |          |      |      |
|       |                                |            | Thread: M10          |          |      |      |
| 58    | Cover                          |            |                      |          | 1    |      |
| -     | Kit, gaskets                   |            |                      | 96416599 | 1    | pcs  |
|       | Adjusting fork                 |            |                      |          | 1    |      |
| 37    | O-ring                         |            |                      |          | 2    |      |
| 38    | O-ring                         |            | Diameter: 16,3       |          | 2    |      |
|       |                                |            | Material type: EPDM  |          |      |      |
|       |                                |            | Thickness: 2,4       |          |      |      |
| 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, impeller                  |            |                      | 98497488 | 1    | pcs  |
| 48    | Nut                            |            |                      |          | 1    |      |
| 48    | Nut                            |            |                      |          | 1    |      |
| 49b   | Split cone                     |            |                      |          | 1    |      |
| - 49  | Impeller                       |            |                      |          | 1    |      |
|       | Impeller hub                   |            |                      |          |      |      |
| 49c   | Wear ring                      |            |                      |          |      |      |
| -     | Kit, Impeller, reduced diamete |            |                      | 98634014 | 1    | pcs  |

| Pos   | Description                | Annotation | Classification Data | Part no. | Qty. | Unit |
|-------|----------------------------|------------|---------------------|----------|------|------|
| 48    | Nut                        |            |                     |          | 1    |      |
| 48    | Nut                        |            |                     |          | 1    |      |
| 49b   | Split cone                 |            |                     |          | 1    |      |
| - 49a | Impeller, reduced diameter |            |                     |          | 1    |      |
|       | Impeller hub               |            |                     |          |      |      |
| 49c   | Wear ring                  |            |                     |          |      |      |
| -     | Kit, plug                  |            |                     | 96505136 | 1    | pcs  |
| - 18  | Air vent screw             |            |                     |          | 1    |      |
|       | Spindle                    |            |                     |          |      |      |
|       | Plug                       |            |                     |          |      |      |
| 25    | Plug                       |            |                     |          | 4    |      |
| 25    | Plug                       |            |                     |          | 1    |      |
| 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    |      |
|       |                            |            | Material type: EPDM |          |      |      |
|       |                            |            | Thickness: 2,4      |          |      |      |
| 38    | O-ring                     |            | Diameter: 16,3      |          | 4    |      |
|       |                            |            | Material type: EPDM |          |      |      |
|       |                            |            | Thickness: 2,4      |          |      |      |
| -     | Kit, shaft seal HQQE       |            |                     | 96525458 | 1    | pcs  |
|       | 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            |            |                     | 98497474 | 1    | pcs  |
| 45    | Seal ring                  |            |                     |          | 7    |      |
| 47d   | Lock ring                  |            |                     |          | 7    |      |
| 47c   | Bush                       |            |                     |          | 5    |      |
| 49c   | Wear ring                  |            |                     |          | 7    |      |
| 65    | Top f/neck ring            |            |                     |          | 7    |      |
| -     | Motor                      |            |                     | 85904134 | 1    | pcs  |
| -     | Kit, bearing cpl.          |            |                     | 96796676 | 1    |      |
| 32b   | Waved washer               |            |                     |          |      |      |
| 153   | Angular-contact bearing    |            |                     |          |      |      |
| 154   | Ball bearing               |            |                     |          |      |      |
| 157   | O-ring                     |            |                     |          |      |      |
| 159   | V-ring                     |            |                     |          |      |      |
| -     | Kit, bearing plate         |            |                     | 96796664 | 1    |      |
| 155.a | Bearing cover              |            |                     |          |      |      |
| 208a  | Gasket                     |            |                     |          |      |      |
| 208   | Hex socket head cap screw  |            | Designation: DIN912 |          |      |      |
|       |                            |            | Length (mm): 40     |          |      |      |
|       |                            |            | Thread: M5          |          |      |      |
| -     | Kit, eyebolt               |            |                     | 96796712 | 1    |      |
| 189   | Eyebolt                    |            |                     |          |      |      |
| -     | Kit, fan                   |            |                     | 96796654 | 1    |      |
| 156.c | Retaining ring             |            |                     |          |      |      |
| 156   | Fan                        |            |                     |          |      |      |

| Pos   | Description                             | Annotation | Classification Data   | Part no. | Qty. | Unit |
|-------|-----------------------------------------|------------|-----------------------|----------|------|------|
| -     | Kit, fan cover                          |            |                       | 96796647 | 1    |      |
| 151   | Fan cover                               |            |                       |          |      |      |
| 152.a | Rubber bush                             |            |                       |          |      |      |
| 152   | Hex head cap screw                      |            |                       |          |      |      |
| 196   | Diaphragm                               |            |                       |          |      |      |
| -     | Kit, flange                             |            |                       | 96796662 | 1    |      |
| 156.b | Flange                                  |            |                       |          |      |      |
| 159.b | Seal ring                               |            |                       |          |      |      |
| 185.b | Nut                                     |            |                       |          |      |      |
| 185   | Hex socket head cap screw               |            |                       |          |      |      |
| 186   | Drain plug                              |            |                       |          |      |      |
| 195.a | Grease nipple                           |            |                       |          |      |      |
| -     | Kit, gaskets                            |            |                       | 96798508 | 1    |      |
| 184   | O-ring                                  |            | Diameter: 235         |          |      |      |
| -     | Kit, lubrication nipple                 |            |                       | 96796671 | 1    |      |
| 195.b | Grease nipple                           |            |                       |          |      |      |
| 195.a | Grease nipple                           |            |                       |          |      |      |
| -     | Kit, ND-end shield cpl.                 |            |                       | 96796669 | 1    |      |
| 32b   | Waved washer                            |            |                       |          |      |      |
| 156.a | End shield NDE                          |            |                       |          |      |      |
| 157   | O-ring                                  |            |                       |          |      |      |
| 159   | V-ring                                  |            |                       |          |      |      |
| 185.c | Nut                                     |            |                       |          |      |      |
| 185.a | Hex socket head cap screw               |            |                       |          |      |      |
| 195.b | Grease nipple                           |            |                       |          |      |      |
| -     | Kit, shaft seal                         |            |                       | 96843459 | 1    |      |
| 159.b | V-ring                                  |            |                       |          |      |      |
| 159   | V-ring                                  |            |                       |          |      |      |
| -     | Kit, terminal board                     |            |                       | 96796657 | 1    |      |
|       | Terminal connection                     |            |                       |          |      |      |
|       | Washer                                  |            |                       |          |      |      |
| 36    | Hex nut                                 |            |                       |          |      |      |
| 173   | Torx Screw                              |            |                       |          |      |      |
| 176.d | Terminal board                          |            |                       |          |      |      |
| 176   | Terminal board                          |            |                       |          |      |      |
| 177   | Torx Screw                              |            |                       |          |      |      |
| -     | Kit, terminal box cover                 |            |                       | 96796659 | 1    |      |
| 164   | Terminal box cover                      |            |                       |          |      |      |
| 273a  | Pan head thread forming screw           |            |                       |          |      |      |
| 1a    | Motor stool                             |            |                       | 98993921 | 1    | pcs  |
| 2     | Pump head                               |            |                       | 96547433 | 1    | pcs  |
| - 3   | Upper chamber cpl.                      |            |                       | 98634042 | 1    | pcs  |
| 47c   | Bulk, Bush (10 pcs)                     |            |                       | 99321194 | 1    |      |
| + 4a  | Bulk, Intermediate chamber cpl. (5 pcs) |            |                       | 99262867 | 1    | pcs  |
| + 4a  | Intermediate chamber cpl.               |            |                       | 99139113 | 1    | pcs  |
| - 4   | Bulk, Intermediate chamber cpl. (5 pcs) |            |                       | 99458546 | 2    | pcs  |
| 45a   | Bulk, Neck ring cpl. (4 pcs)            |            |                       | 98763585 | 1    |      |
| 45a   | Bulk, Neck ring cpl. (10 pcs)           |            |                       | 96547397 | 1    |      |
| 7a    | Bulk, Socket button head screw (10 pcs) |            |                       | 96549696 | 4    | pcs  |
| 7     | Bulk, Coupling guard (10 pcs)           |            |                       | 96603279 | 2    | pcs  |
| + 8   | Coupling cpl.                           |            | Dimension: 22/42      | 96587704 | 1    | pcs  |
| + 18  | Bulk, Air vent screw (5 pcs)            |            |                       | 96547461 | 1    | pcs  |
| + 18  | Air vent screw                          |            |                       | 95061351 | 1    | pcs  |
| 25    | Bulk, Plug (10 pcs)                     |            |                       | 96536013 | 1    | pcs  |
| 26c   | Bulk, Washer (4 pcs)                    |            | Designation: DIN 125A | 99262704 | 2    | pcs  |
|       |                                         |            | Thickness: 1,6        |          |      |      |
| 26c   | Washer                                  |            | Designation: DIN 125A | 96586880 | 2    | pcs  |
|       |                                         |            | Thickness: 1,6        |          |      |      |

| Pos   | Description                              | Annotation | Classification Data    | Part no. | Qty. | Unit |
|-------|------------------------------------------|------------|------------------------|----------|------|------|
| 26b   | Bulk, Hex socket head cap screw (10 pcs) |            |                        | 98931380 | 2    | pcs  |
| 26a   | Strap cpl.                               |            | Length (mm): 329       | 98983870 | 2    | pcs  |
|       |                                          |            | Thread: M8             |          |      |      |
| 26    | Staybolt                                 |            | Length (mm): 487       | 98976713 | 4    | pcs  |
|       |                                          |            | Thread: M16            |          |      |      |
| 28.a  | Bulk, Hex head screw (20 pcs)            |            |                        | 96620478 | 4    | pcs  |
| 28    | Bulk, Hex socket head cap screw (10 pcs) |            | Designation: DIN 912   | 96536147 | 4    | pcs  |
|       |                                          |            | Length (mm): 50        |          |      |      |
|       |                                          |            | Thread: M10            |          |      |      |
| 32    | Bulk, Washer (100 pcs)                   |            | Designation: DIN 125 A | 98923051 | 8    | pcs  |
|       |                                          |            | Internal diameter: 17  |          |      |      |
|       |                                          |            | Outer diameter: 30     |          |      |      |
|       |                                          |            | Thickness: 3           |          |      |      |
| 36    | Bulk, Hex nut (20 pcs)                   |            | Thread: M16            | 96620480 | 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         |          |      |      |
| - 44  | Suction interconnector cpl.              |            |                        | 98634054 | 1    | pcs  |
| 45    | Bulk, Seal ring (10 pcs)                 |            |                        | 97911448 | 1    |      |
| 45    | Bulk, Seal ring (10 pcs)                 |            |                        | 96535952 | 1    |      |
| 65    | Bulk, Top f/neck ring (10 pcs)           |            |                        | 96547390 | 1    |      |
| + 47a | Bulk, Bearing cpl. (5 pcs)               |            |                        | 99270649 | 1    | pcs  |
| + 47a | Bulk, Bearing cpl. (10 pcs)              |            |                        | 96535951 | 1    | pcs  |
| 48    | Bulk, Nut (3 pcs)                        |            |                        | 99262680 | 1    | pcs  |
| 48    | Bulk, Nut (10 pcs)                       |            |                        | 99262683 | 1    | pcs  |
| 48    | Bulk, Nut (10 pcs)                       |            |                        | 96536016 | 1    | pcs  |
| - 49e | Impeller cpl.                            |            |                        | 98394328 | 2    | pcs  |
| 48    | Bulk, Nut (3 pcs)                        |            |                        | 99262680 | 1    |      |
| 48    | Bulk, Nut (10 pcs)                       |            |                        | 99262683 | 1    |      |
| 48    | Bulk, Nut (10 pcs)                       |            |                        | 96536016 | 1    |      |
| 49b   | Bulk, Split cone (10 pcs)                |            |                        | 96536010 | 1    |      |
| - 49  | Bulk, Impeller (10 pcs)                  |            |                        | 96535946 | 1    |      |
| 49c   | Bulk, Wear ring (10 pcs)                 |            |                        | 96535949 |      |      |
| 49b   | Bulk, Split cone (10 pcs)                |            |                        | 96536010 | 1    | pcs  |
| - 49a | Bulk, Impeller, reduced diameter (5 pcs) |            |                        | 96535954 | 1    | pcs  |
| 49c   | Bulk, Wear ring (10 pcs)                 |            |                        | 96535949 | 1    |      |
| 55    | Outer sleeve                             |            | Outer diameter: 216,0  | 98820342 | 1    | pcs  |
|       |                                          |            | Length (mm): 343,5     |          |      |      |
| 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                           |            |                        | 96587896 | 1    |      |
| 109   | Bulk, O-ring (10 pcs)                    |            |                        | 96547586 | 1    |      |
| + 105 | Bulk, Shaft seal (12 pcs)                |            | Material type: HQQE    | 96984070 | 1    | pcs  |
| 440b  | Bulk, Lock ring (4 pcs)                  |            |                        | 96535943 | 1    | pcs  |