
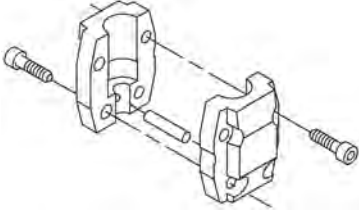
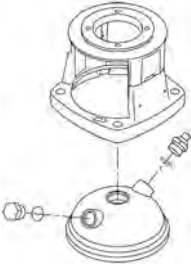


Qty.	Description
1	<p data-bbox="199 338 496 367">CRN 5-36 A-P-A-E-HQQE</p>  <p data-bbox="199 660 469 689">Product No.: 96513495</p> <p data-bbox="199 719 1453 824">Vertical, multistage centrifugal pump with inlet and outlet ports on same the level (inline). Pump materials in contact with the liquid are in high-grade stainless steel. A cartridge shaft seal ensures high reliability, safe handling, and easy access and service. Power transmission is via a rigid split coupling. Pipe connection is via PJE (Victaulic®) couplings.</p> <p data-bbox="199 862 935 891">The pump is fitted with a 3-phase, fan-cooled asynchronous motor.</p> <p data-bbox="199 922 520 952">Further product details</p> <p data-bbox="199 958 1430 1064">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 1070 695 1189" style="list-style-type: none"> 1) Alkaline-based cleaning. 2) Zinc phosphating. 3) Cathodic electro-deposition. 4) Curing to a dry film thickness 18-22 my m. <p data-bbox="199 1189 908 1218">The colour code for the finished product is NCS 9000/RAL 9005.</p> <p data-bbox="199 1249 284 1279">Pump</p> <p data-bbox="199 1285 1390 1339">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.</p>  <p data-bbox="199 1583 1366 1637">The pump head and flange for motor mounting is made in one piece (cast iron). The pump head cover is a separate component (stainless steel). The pump head has a combined 1/2" priming plug and vent screw.</p>  <p data-bbox="199 1935 1453 2033">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.</p> <p data-bbox="199 2047 347 2076">Primary seal:</p> <ul data-bbox="236 2076 799 2105" style="list-style-type: none"> • Rotating seal ring material: silicon carbide (SiC)

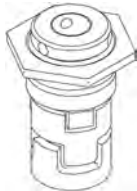
Qty. Description

- Stationary seat material: silicon carbide (SiC)

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

Secondary seal material: EPDM (ethylene-propylene rubber)

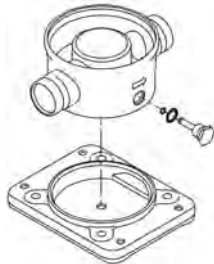
EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.



The shaft seal is screwed into the pump head.

The chambers and impellers are made of stainless-steel sheet. The chambers are provided with a PTFE neck ring offering improved sealing and high efficiency. The impellers have smooth surfaces, and the shape of the blades ensure a high efficiency.

The pump has a stainless-steel base mounted on a separate base plate. The base and base plate are kept in position by the tension of the staybolts which hold the pump together. The outlet side of the base has a combined drain plug and bypass valve. The pump is secured to the foundation by four bolts through the base plate. The base is prepared for connection by means of PJE (Victualic®) couplings.



Motor

The motor is a totally enclosed, fan-cooled motor with principal dimensions to IEC and DIN standards. The motor is flange-mounted with free-hole flange (FF).

Motor-mounting designation in accordance with IEC 60034-7: IM B 5 (Code I) / IM 3001 (Code II).

Electrical tolerances comply with IEC 60034.

The motor efficiency is classified as 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: -20 .. 120 °C

Liquid temperature during operation: 20 °C

Density: 998.2 kg/m³

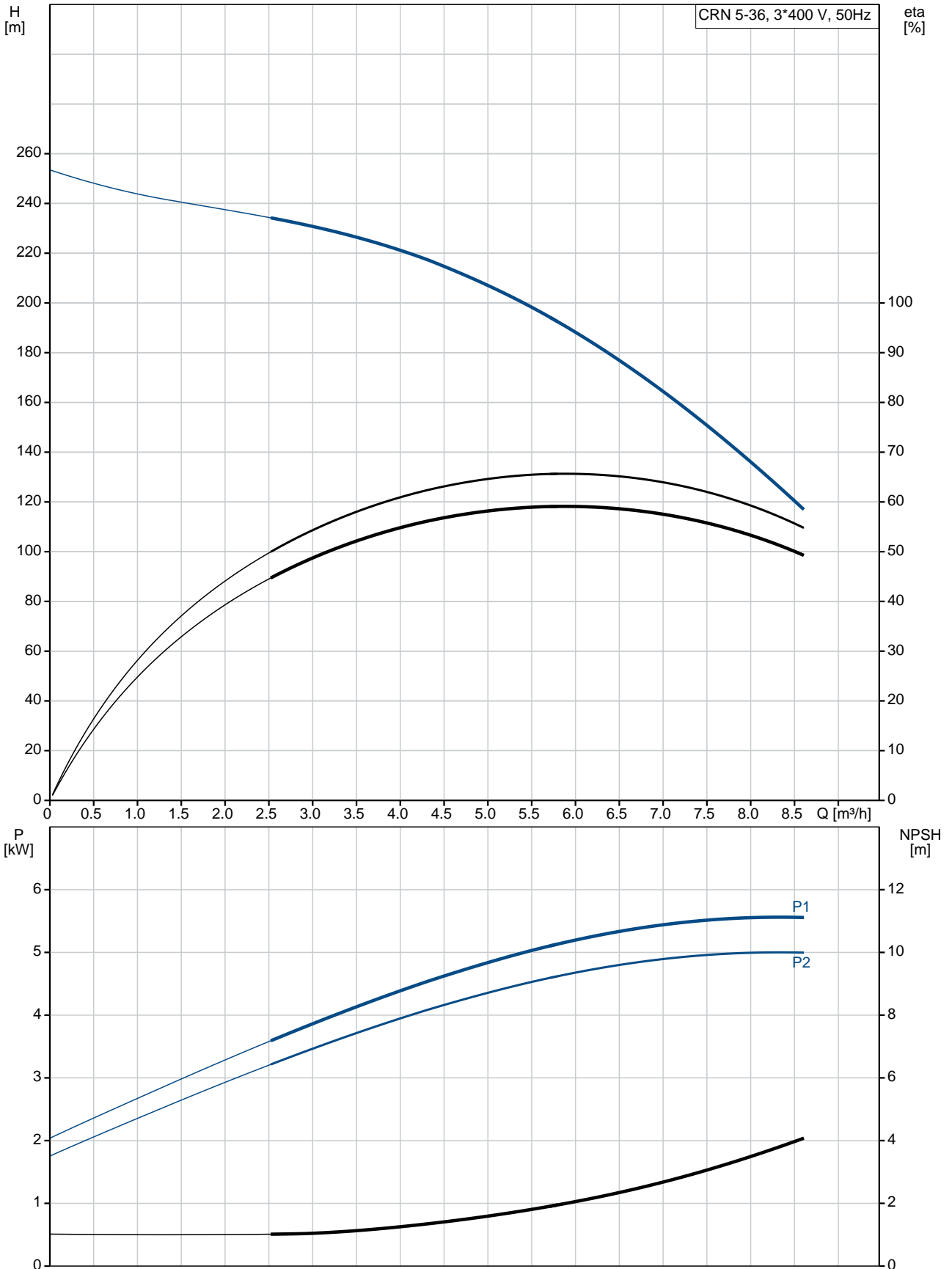
Qty.	Description
	<p>Technical: Pump speed on which pump data are based: 2919 rpm Rated flow: 5.8 m³/h Rated head: 189.2 m Pump orientation: Vertical Shaft seal arrangement: Single Code for shaft seal: HQQE Approvals on nameplate: CE, EAC, ACS Curve tolerance: ISO9906:2012 3B</p> <p>Materials: Base: Stainless steel EN 1.4408 AISI 316 Impeller: Stainless steel EN 1.4401 AISI 316 Bearing: SIC</p> <p>Installation: Maximum ambient temperature: 60 °C Maximum operating pressure: 25 bar Max pressure at stated temp: 25 bar / 120 °C 25 bar / -20 °C Type of connection: PJE Size of inlet connection: DN 32 1 1/4 inch Size of outlet connection: DN 32 1 1/4 inch Pressure rating for pipe connection: PN 50 Flange size for motor: FF265</p> <p>Electrical data: Motor standard: IEC Motor type: 132SC IE Efficiency class: IE3 Rated power - P2: 5.5 kW Power (P2) required by pump: 5.5 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-415D V Rated current: 11 A Starting current: 1080-1180 % Cos phi - power factor: 0.87-0.82 Rated speed: 2920-2940 rpm Efficiency: IE3 89,2% Motor efficiency at full load: 89.2 % Motor efficiency at 3/4 load: 90.0 % Motor efficiency at 1/2 load: 89.6 % Number of poles: 2 Enclosure class (IEC 34-5): 55 Dust/Jetting Insulation class (IEC 85): F</p> <p>Others: Minimum efficiency index, MEI $\hat{a}\%{\text{¥}}$: 0.57 Net weight: 77.9 kg Gross weight: 103 kg Shipping volume: 0.429 m³ Danish VVS No.: 385912036</p>



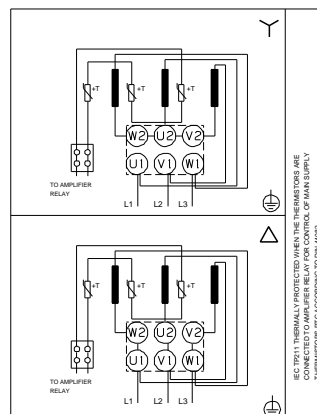
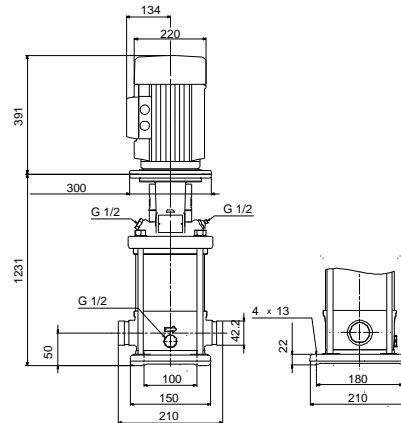
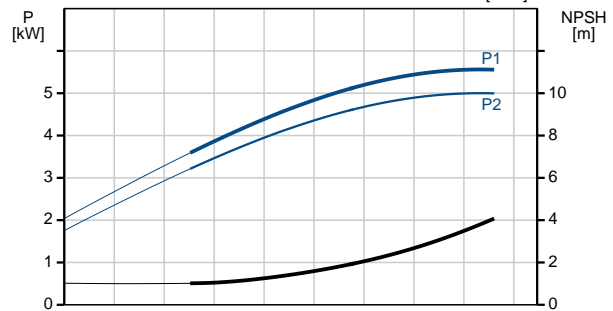
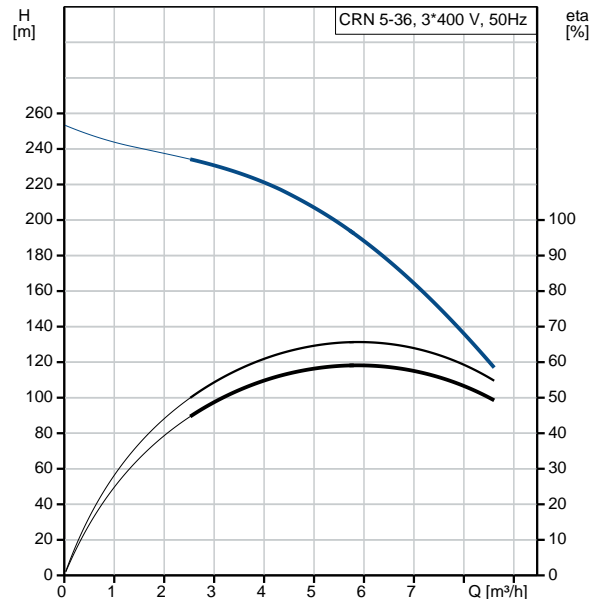
Company name: Personal
Created by:
Phone:

Date: 16/02/2019

96513495 CRN 5-36 A-P-A-E-HQQE 50 Hz



Description	Value
General information:	
Product name:	CRN 5-36 A-P-A-E-HQQE
Product No:	96513495
EAN number:	5700396645476
Technical:	
Pump speed on which pump data are based:	2919 rpm
Rated flow:	5.8 m ³ /h
Rated head:	189.2 m
Head max:	248.4 m
Stages:	36
Impellers:	36
Number 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:	A
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
Installation:	
Maximum ambient temperature:	60 °C
Maximum operating pressure:	25 bar
Max pressure at stated temp:	25 bar / 120 °C 25 bar / -20 °C
Type of connection:	PJE
Size of inlet connection:	DN 32 1 1/4 inch
Size of outlet connection:	DN 32 1 1/4 inch
Pressure rating for pipe connection:	PN 50
Flange size for motor:	FF265
Connect code:	P
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-20 .. 120 °C
Liquid temperature during operation:	20 °C
Density:	998.2 kg/m ³
Electrical data:	
Motor standard:	IEC
Motor type:	132SC
IE Efficiency class:	IE3
Rated power - P2:	5.5 kW
Power (P2) required by pump:	5.5 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-415D V
Rated current:	11 A





Company name: Personal

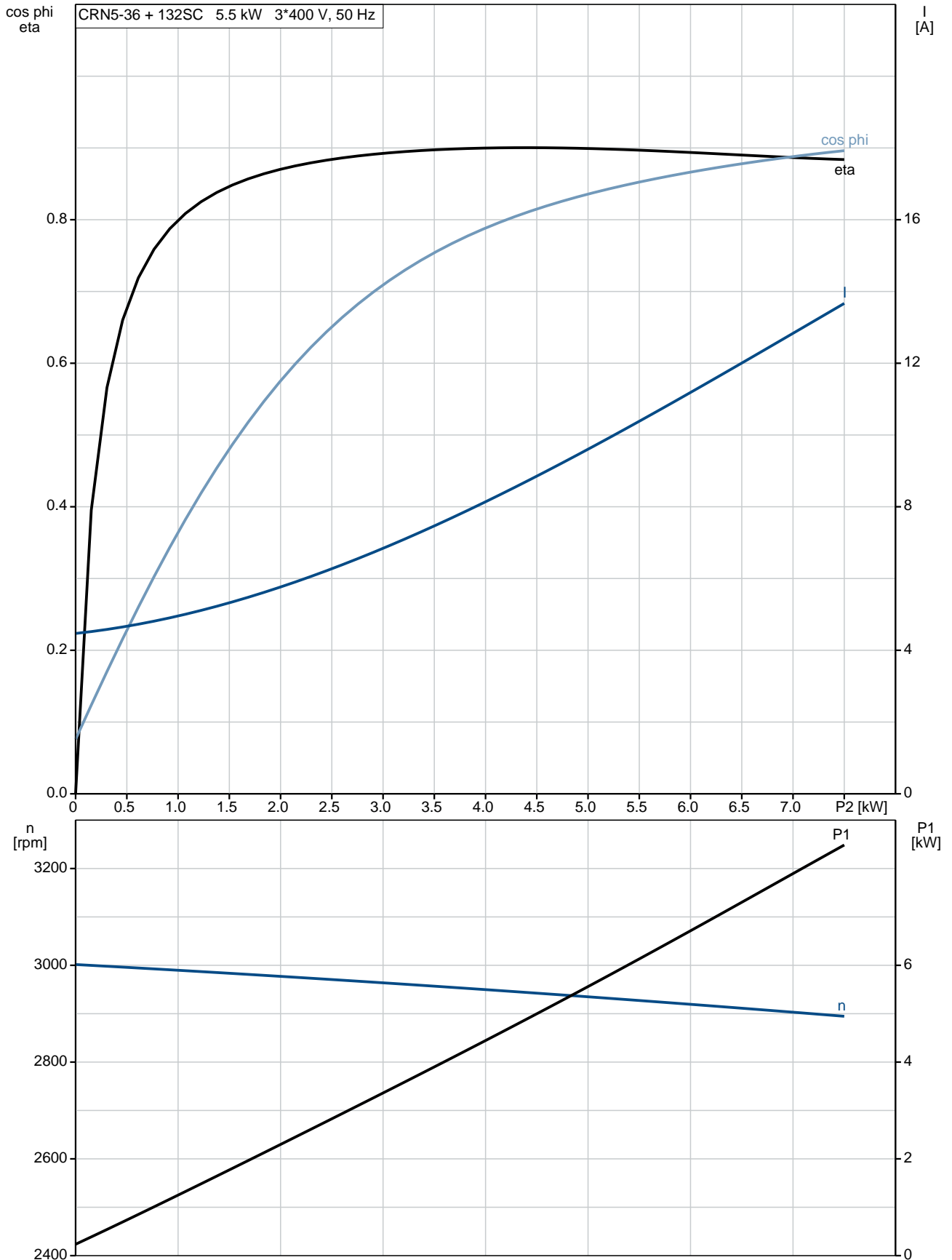
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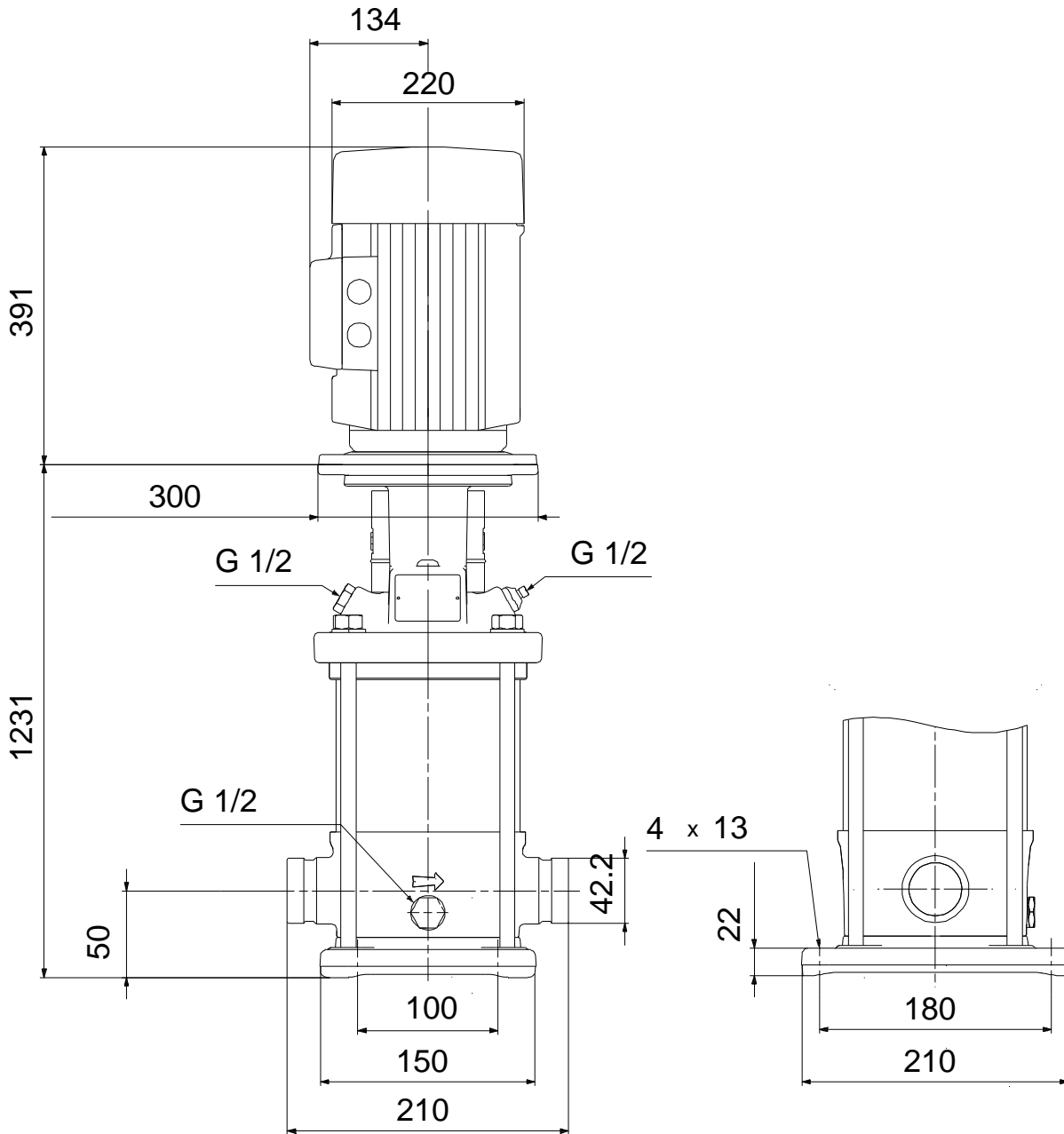
Date: 16/02/2019

Description	Value
Starting current:	1080-1180 %
Cos phi - power factor:	0.87-0.82
Rated speed:	2920-2940 rpm
Efficiency:	IE3 89,2%
Motor efficiency at full load:	89.2 %
Motor efficiency at 3/4 load:	90.0 %
Motor efficiency at 1/2 load:	89.6 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	PTC
Motor No:	85U17417
Controls:	
Frequency converter:	NONE
Others:	
Minimum efficiency index, MEI %:	0.57
Net weight:	77.9 kg
Gross weight:	103 kg
Shipping volume:	0.429 m ³
Danish VVS No.:	385912036

96513495 CRN 5-36 A-P-A-E-HQQE 50 Hz

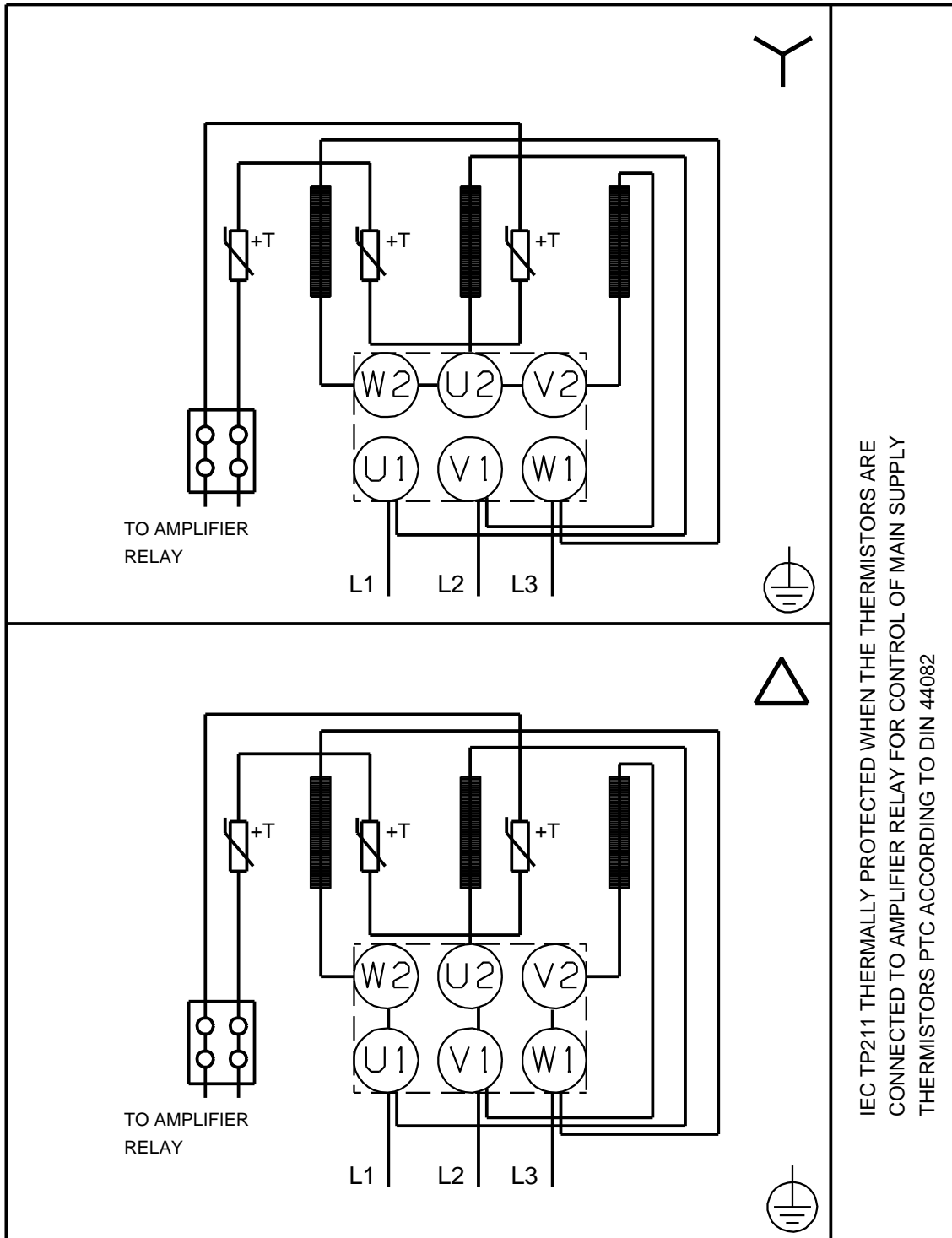


96513495 CRN 5-36 A-P-A-E-HQQE 50 Hz



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

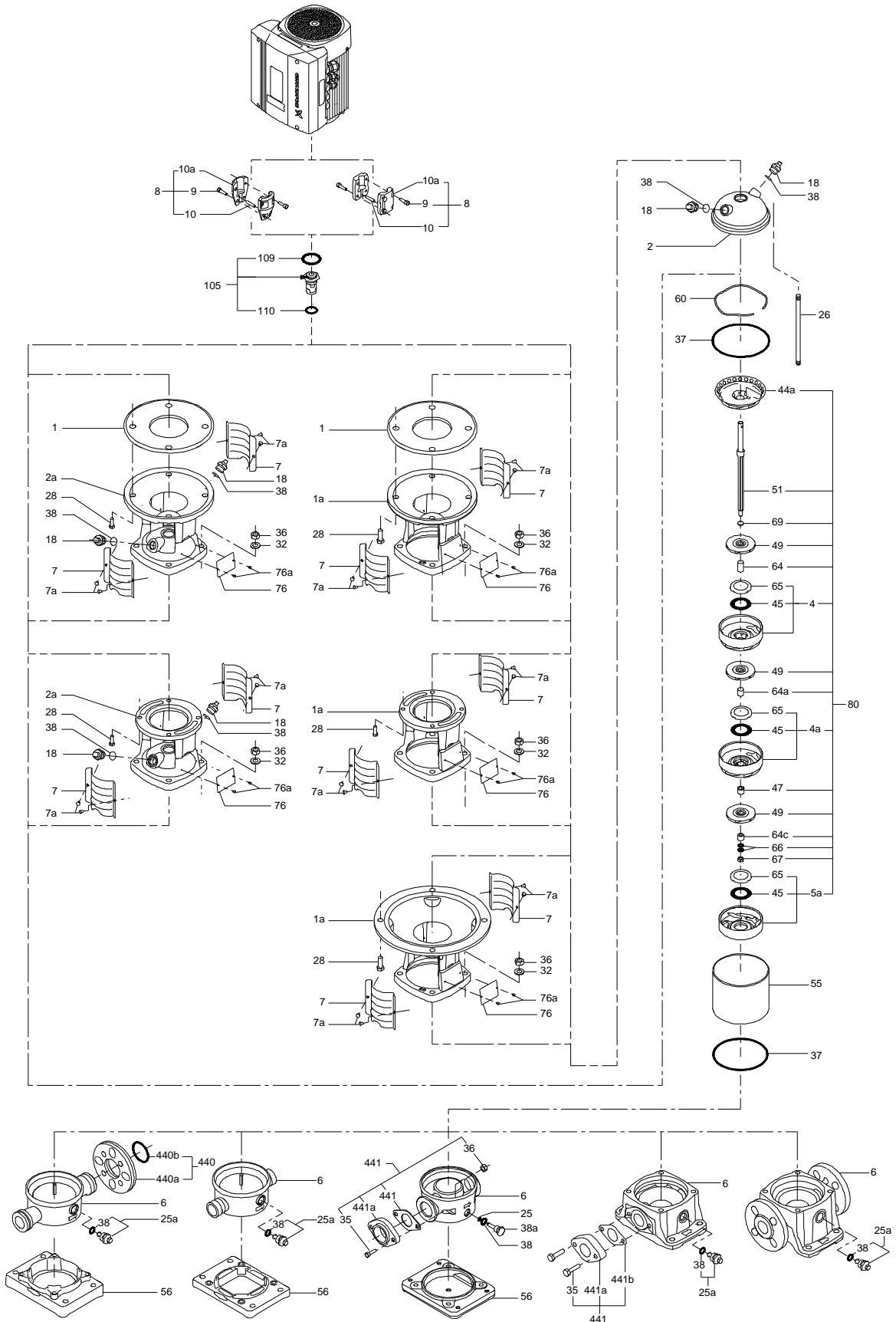
96513495 CRN 5-36 A-P-A-E-HQQE 50 Hz



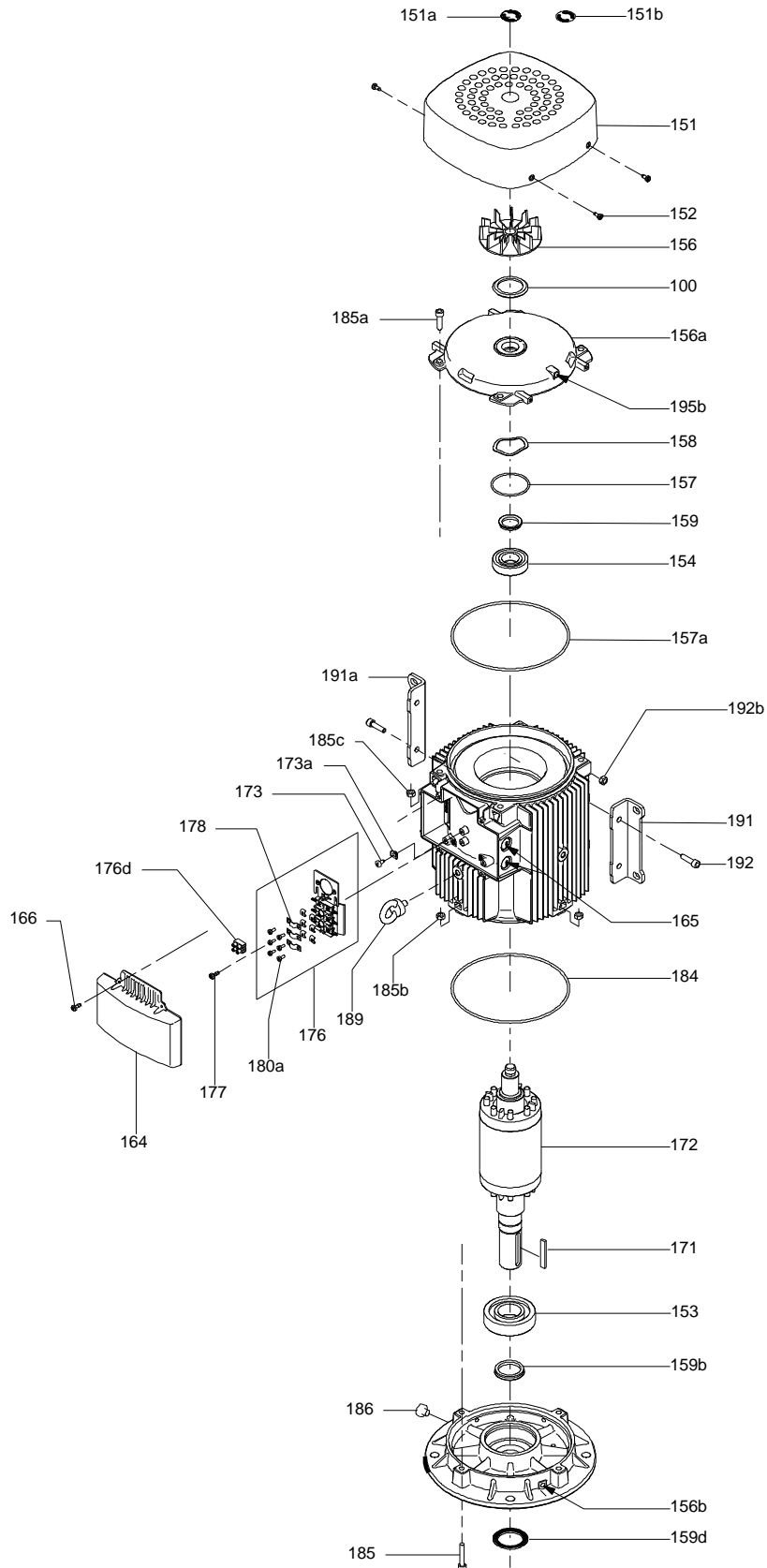
IEC TP211 THERMALLY PROTECTED WHEN THE THERMISTORS ARE
 CONNECTED TO AMPLIFIER RELAY FOR CONTROL OF MAIN SUPPLY
 THERMISTORS PTC ACCORDING TO DIN 44082

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

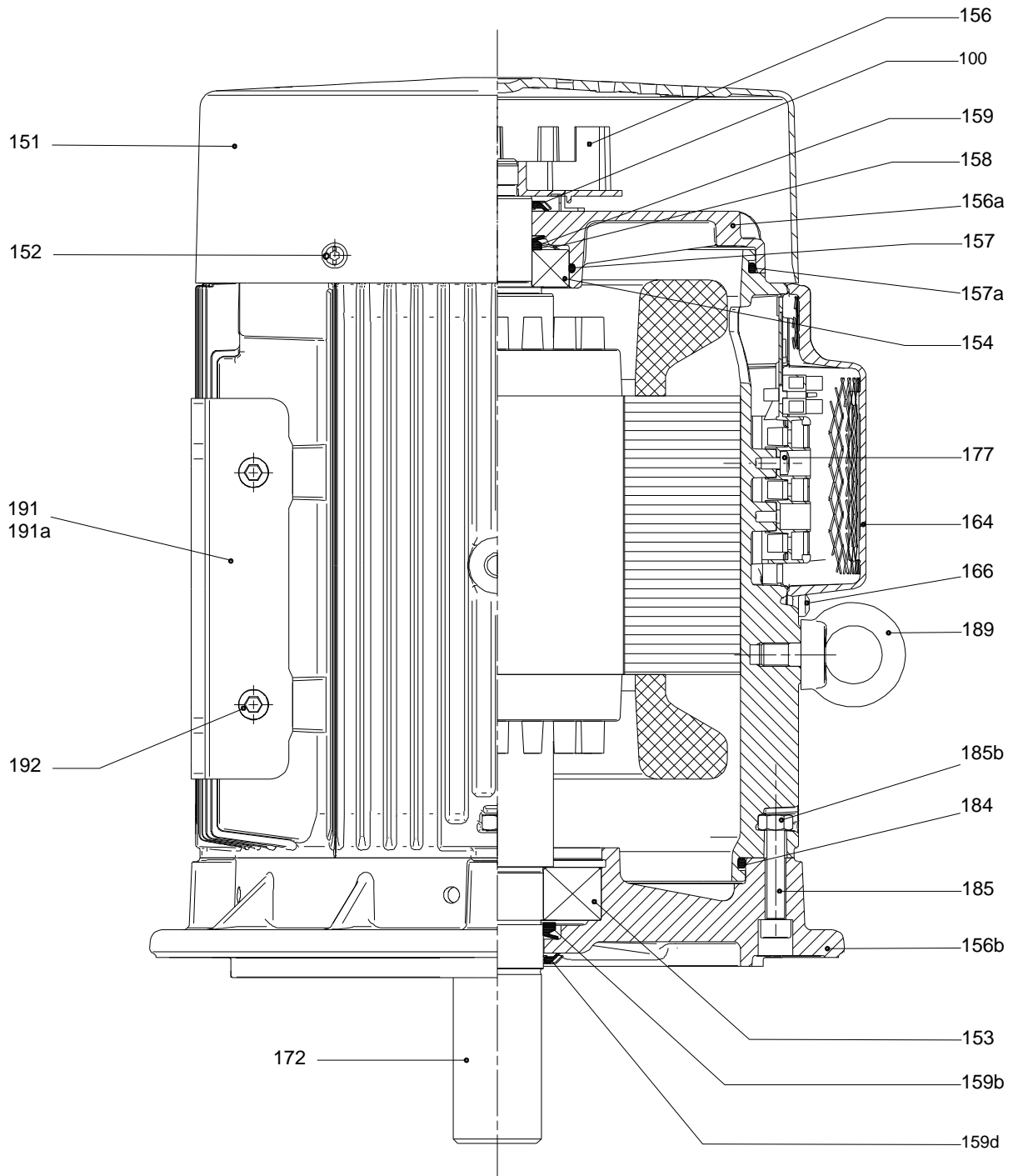
(TM069451 for SMCR standard)



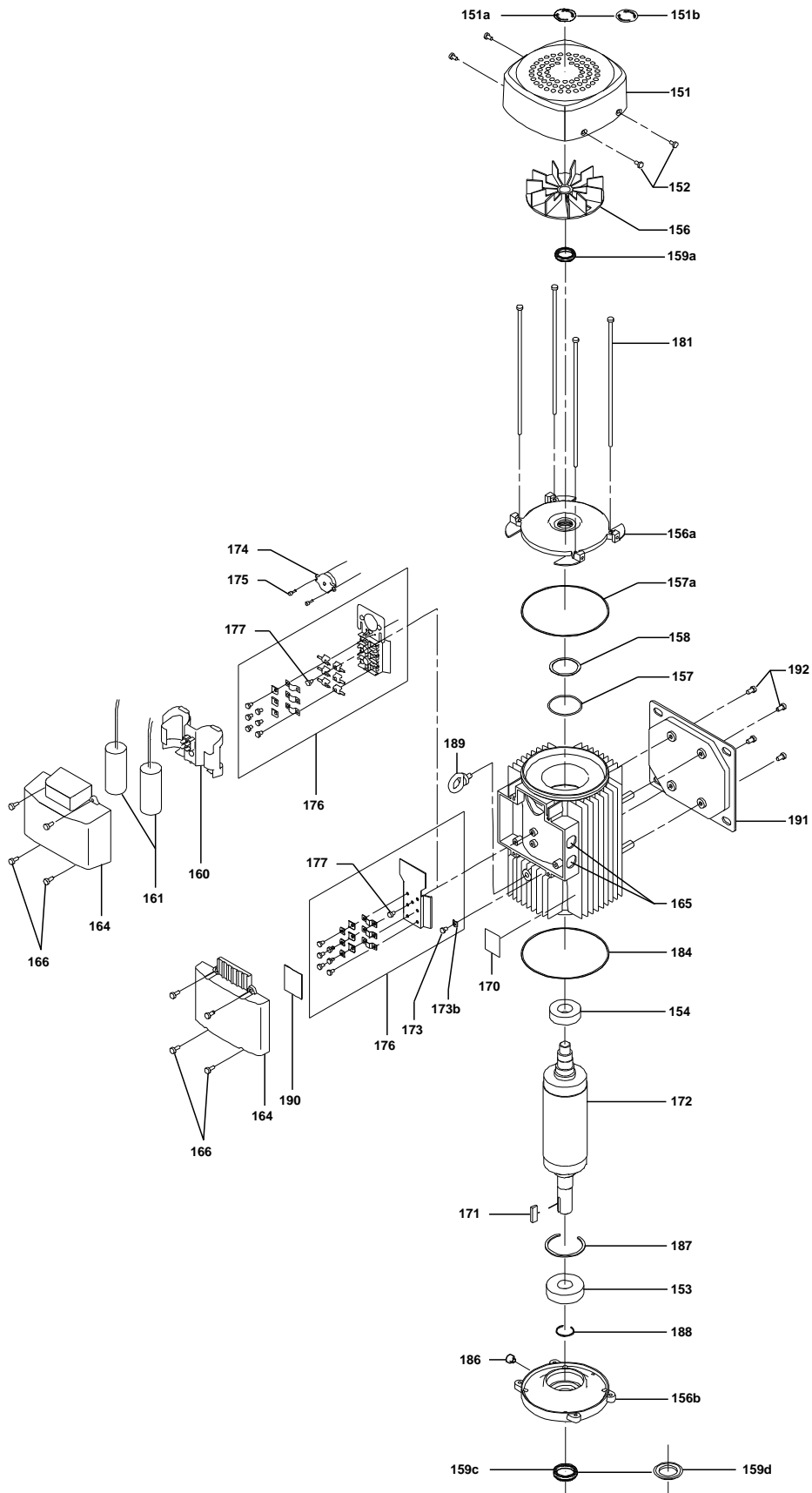
Exploded view



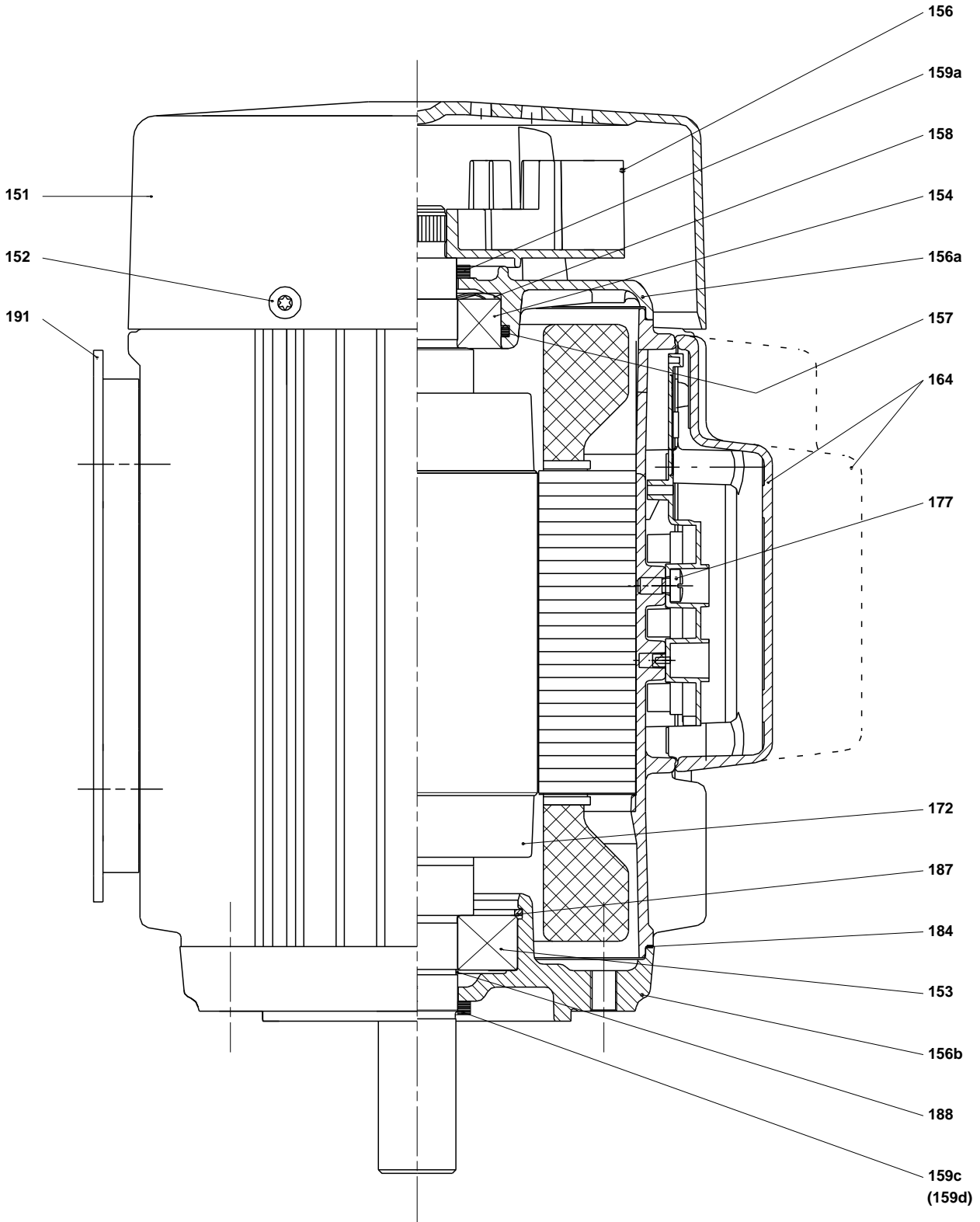
Sectional drawing



(tm029184 0505)



(tm029178 2004)



Spare parts CRN 5-36, Product No. 96513495
Valid from 1.1.2011 (1152)

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
- 80	Kit, chamber stack			96453620	1	pcs
- 4a	Chamber w. bearing cpl.				7	
	Chamber					
	Neck ring					
	Neck ring retainer					
- 4	Chamber cpl.				28	
	Chamber					
	Neck ring					
	Neck ring retainer					
- 5a	Chamber cpl.				1	
	Chamber					
	Neck ring					
	Neck ring retainer					
- 44a	Guide vane				1	
	Plate					
	Guide vane					
	Top plate					
	Bearing ring, rotating				7	
+ 49	Impeller cpl.				36	
	Shaft, spline, cpl.				1	
	Clamp, splined		Internal diameter: 8,5 Outer diameter: 15		1	
	Spacing pipe		Length (mm): 13.00		7	
	Spacing pipe		Length (mm): 26.0		28	
	Wedge lock washer				1	
	Lock nut		Thread: M8		1	
	Spacing pipe		Length (mm): 2.00		1	
-	Kit, coupling			00415065	1	pcs
	Hex socket head cap screw		Designation: DIN 912 Length (mm): 25 Thread: M10		4	
	Coupling				1	
	Shaft pin		Diameter: 5 Length (mm): 26		1	
-	Kit, coupling guard			96505131	1	pcs
	Combi Slot Torx screw				4	
	Coupling guard				2	
-	Kit, gaskets			96455090	1	pcs
	O-ring				2	
	O-ring		Diameter: 16,3 Material type: EPDM Thickness: 2,4		1	
	O-ring		Diameter: 16,3 Material type: EPDM Thickness: 2,4		2	
	O-ring		Diameter: 22,00 Material type: EPDM Thickness: 2,75		1	
-	Kit, plug			96505133	1	pcs
- 18	Air vent screw				1	
	Spindle					
	Plug					
	Spindle				1	

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
25	Plug				1	
25	Plug				1	
38	O-ring		Diameter: 16,3		1	
			Material type: FKM			
			Thickness: 2,4			
38	O-ring		Diameter: 16,3		2	
			Material type: FKM			
			Thickness: 2,4			
38	O-ring		Diameter: 16,3		1	
			Material type: EPDM			
			Thickness: 2,4			
38	O-ring		Diameter: 16,3		2	
			Material type: EPDM			
			Thickness: 2,4			
-	Kit, shaft seal HQQE			96455086	1	pcs
+ 105	Shaft seal		Material type: HQQE		1	
-	Kit, wear parts		Material type: SIC	96455100	1	pcs
- 4a	Chamber w. bearing cpl.				7	
	Chamber					
45	Neck ring					
65	Neck ring retainer					
45	Neck ring				29	
47	Bearing ring, rotating				7	
64c	Clamp, splined		Internal diameter: 8,5		1	
			Outer diameter: 15			
64a	Spacing pipe		Length (mm): 13.00		7	
65	Neck ring retainer				29	
66	Wedge lock washer				1	
67	Lock nut		Thread: M8		1	
441b	Gasket				2	
-	Motor			85904020	1	pcs
-	Kit, bearing cpl.			96279803	1	
111	Ball bearing		Designation: 6206.2Z.C3.SYN			
153	Angular-contact bearing					
157	O-ring		Diameter: 62			
			Material type: NBR			
			Thickness: 3			
158	Waved washer					
-	Kit, end shield			96279790	1	
156a	End shield					
157	O-ring		Diameter: 62			
			Material type: NBR			
			Thickness: 3			
158	Waved washer					
159a	Seal ring					
-	Kit, eyebolt			96279825	1	
189	Eyebolt					
-	Kit, fan			96279758	1	
156	Fan					
159c	Seal ring					
159a	Seal ring					
-	Kit, fan cover			96279756	1	
151b	Label					
151	Fan cover					
152	Pan head thread forming screw					
-	Kit, flange			96279784	1	
156b	Flange					
159.c	Seal ring					
186	Drain plug					



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Date: 16/02/2019

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
-	Kit, retaining ring			96279801	1	
187	Retaining ring					
188	Retaining ring					
-	Kit, shaft seal			96279764	1	
159d	Seal ring					
159c	Seal ring					
-	Kit, staybolts			96279793	1	
181	Pan head staybolt					
-	Kit, terminal board			96279769	1	
173a	Base					
173	Pan head thread forming screw		Designation: COMBI TORX T25			
176	Slot cheese head screw		Designation: COMBI TORX T25			
			Length (mm): 10			
			Thread: M5			
176	Terminal					
176	Connecting piece					
176	Wire clamp					
176	Terminal board					
177	Pan head screw					
-	Kit, terminal box			96279772	1	
164	Terminal box cover w/gasket					
166	Pan head thread forming screw					
-	Motor			85901556	1	pcs
-	Kit, bearing cpl.			96279803	1	
111	Ball bearing		Designation: 6206.2Z.C3.SYN			
153	Angular-contact bearing					
157	O-ring		Diameter: 62			
			Material type: NBR			
			Thickness: 3			
158	Waved washer					
-	Kit, end shield			96279790	1	
156a	End shield					
157	O-ring		Diameter: 62			
			Material type: NBR			
			Thickness: 3			
158	Waved washer					
159a	Seal ring					
-	Kit, eyebolt			96279825	1	
189	Eyebolt					
-	Kit, fan			96279758	1	
156	Fan					
159c	Seal ring					
159a	Seal ring					
-	Kit, fan cover			96279756	1	
151b	Label					
151	Fan cover					
152	Pan head thread forming screw					
-	Kit, flange			96279784	1	
156b	Flange					
159.c	Seal ring					
186	Drain plug					
-	Kit, retaining ring			96279801	1	
187	Retaining ring					
188	Retaining ring					
-	Kit, shaft seal			96279764	1	
159d	Seal ring					
159c	Seal ring					
-	Kit, staybolts			96279793	1	
181	Pan head staybolt					



Company name: Personal

Created by:

Phone:

Date: 16/02/2019

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
-	Kit, terminal board			96279769	1	
173a	Base					
173	Pan head thread forming screw		Designation: COMBI TORX T25			
176	Slot cheese head screw		Designation: COMBI TORX T25			
			Length (mm): 10			
			Thread: M5			
176	Terminal					
176	Connecting piece					
176	Wire clamp					
176	Terminal board					
177	Pan head screw					
-	Kit, terminal box			96279772	1	
164	Terminal box cover w/gasket					
166	Pan head thread forming screw					
1a	Pump head			99128224	1	pcs
2	Pump cover			96588244	1	pcs
+ 4a	Bulk, Chamber w. bearing cpl. (5 pcs)			96547653	7	pcs
+ 4a	Chamber w. bearing cpl.			98371281	7	pcs
- 4	Chamber cpl.			98371279	28	pcs
45	Bulk, Neck ring (24 pcs)			96547603	1	
+ 5a	Chamber cpl.			98371278	1	pcs
6	Base			96588139	1	pcs
7.a	Bulk, Combi Slot Torx screw (1000 pcs)			96886324	4	pcs
7	Bulk, Coupling guard (10 pcs)			96603690	2	pcs
10	Bulk, Shaft pin (10 pcs)		Diameter: 5	96536473	1	pcs
			Length (mm): 26			
+ 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
- 25a	Drain plug w/bypass valve			96588243	1	pcs
38	Bulk, O-ring (10 pcs)		Diameter: 16,3	99198815	1	
			Material type: EPDM			
			Thickness: 2,4			
38	Bulk, O-ring (50 pcs)		Diameter: 16,3	99412727	1	
			Material type: EPDM			
			Thickness: 2,4			
26	Staybolt		Length (mm): 1066	98985624	4	pcs
			Thread: M12			
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
37	Bulk, O-ring (24 pcs)			96547656	2	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			
+ 44a	Guide vane			98902003	1	pcs
47	Bulk, Bearing ring, rotating (10 pcs)			97905743	7	pcs
47	Bearing ring, rotating			96547649	7	pcs
+ 49	Bulk, Impeller cpl. (10 pcs)			97643331	36	pcs
+ 49	Bulk, Impeller cpl. (24 pcs)			96547650	36	pcs
+ 49	Impeller cpl.			98394423	36	pcs
51	Shaft, spline, cpl.			96588240	1	pcs
55	Outer sleeve			98811253	1	pcs
56	Base plate			96588142	1	pcs
60	Formed wire spring			96547664	1	pcs



Company name: Personal

Created by:

Phone:

Date: 16/02/2019

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
64c	Bulk, Clamp, splined (5 pcs)		Internal diameter: 8,5 Outer diameter: 15	98496968	1	pcs
64a	Bulk, Spacing pipe (24 pcs)		Length (mm): 13.00	96536452	7	pcs
64a	Spacing pipe		Length (mm): 13.00	98520104	7	pcs
64	Bulk, Spacing pipe (24 pcs)		Length (mm): 26.0	96536304	28	pcs
66	Bulk, Wedge lock washer (10 pcs)			96536157	1	pcs
67	Bulk, Lock nut (10 pcs)		Thread: M8	98277008	1	pcs
69	Bulk, Spacing pipe (10 pcs)		Length (mm): 2.00	96536451	1	pcs
+ 105	Bulk, Shaft seal (15 pcs)		Material type: HQQE	96983415	1	pcs