

Qty.	Description
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1	CRN 20-1 A-FGJ-A-E-HQQE
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Product No.: [96500393](#)

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 combined DIN-ANSI-JIS flanges.

The pump is fitted with a 3-phase, fan-cooled asynchronous motor.

Further product details

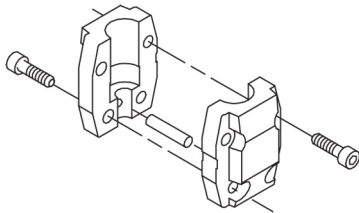
Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface. An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

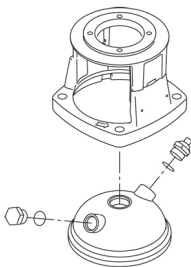
The colour code for the finished product is NCS 9000/RAL 9005.

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 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.



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)

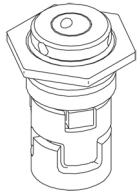
Qty. Description

- 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. This 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 flanges and base are cast in one piece and prepared for connection by means of DIN, ANSI or JIS.

Motor

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

Motor-mounting designation in accordance with IEC 60034-7: IM B 14 (Code I) / IM 3601 (Code II).

Electrical tolerances comply with IEC 60034.

The motor efficiency is classified as IE3 in accordance with IEC 60034-30-1.

The motor does not incorporate motor protection and must be connected to a motor-protective circuit breaker which can be manually reset. The motor-protective circuit breaker must be set according to the rated current of the motor (I1/1).

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

Technical:

Pump speed on which pump data are based: 2853 rpm

Rated flow: 21 m³/h

Rated head: 9.9 m

Pump orientation: Vertical

Shaft seal arrangement: Single

Code for shaft seal: HQQE

Approvals on nameplate: CE, EAC, ACS

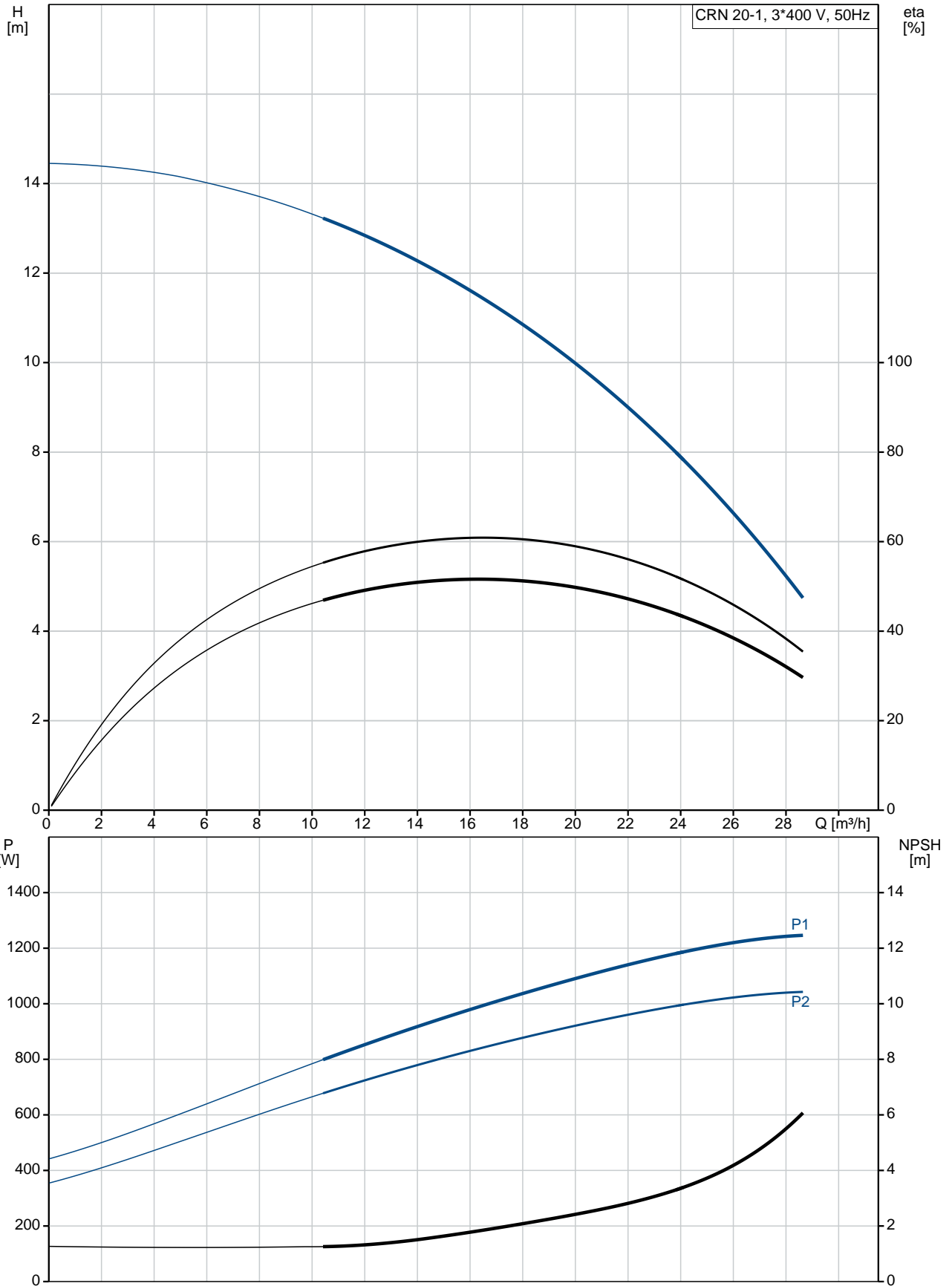
Curve tolerance: ISO9906:2012 3B

Materials:

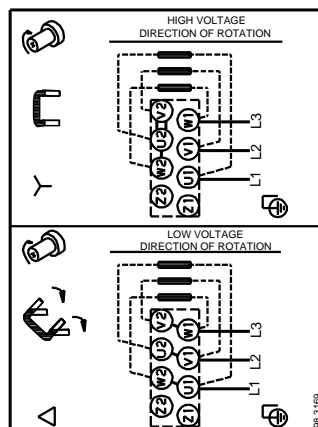
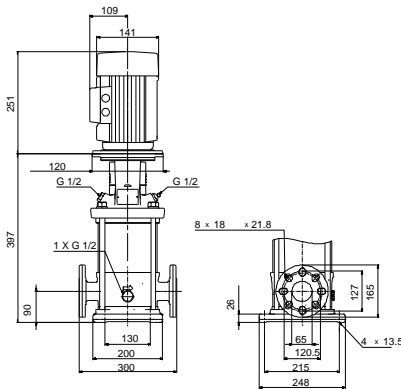
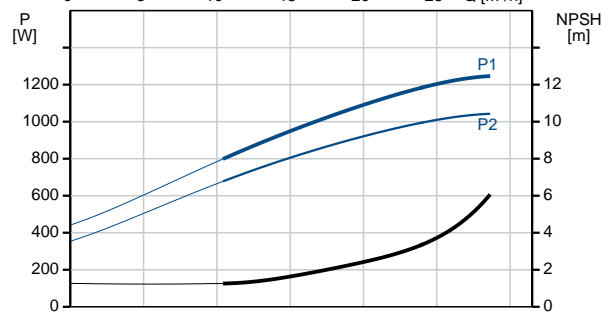
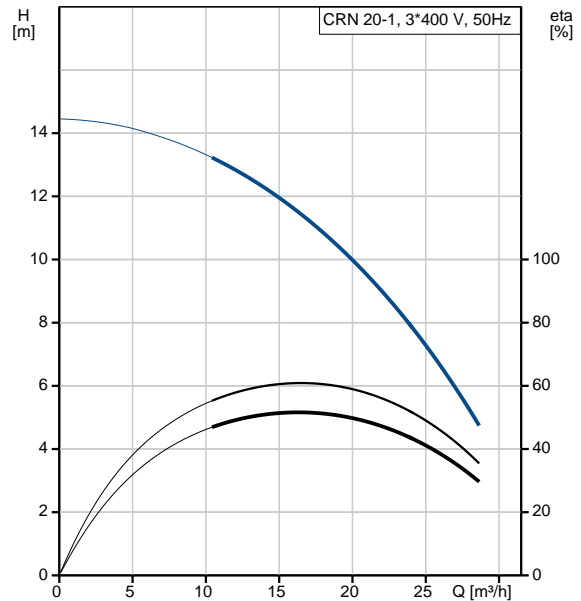
Base: Stainless steel
EN 1.4408
AISI 316

Qty.	Description
	<p>Impeller: Stainless steel EN 1.4401 AISI 316</p> <p>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: DIN / ANSI / JIS Size of inlet connection: DN 50 2 inch Size of outlet connection: DN 50 2 inch Pressure rating for pipe connection: PN 25 Flange rating inlet: 300 lb Flange size for motor: FT100</p> <p>Electrical data: Motor standard: IEC Motor type: 80C IE Efficiency class: IE3 Rated power - P2: 1.1 kW Power (P2) required by pump: 1.1 kW Mains frequency: 50 Hz Rated voltage: 3 x 220-240D/380-415Y V Rated current: 4.35/2.50 A Starting current: 450-500 % Cos phi - power factor: 0.83-0.76 Rated speed: 2840-2870 rpm Efficiency: IE3 82,7% Motor efficiency at full load: 82.7 % Motor efficiency at 3/4 load: 84.6 % Motor efficiency at 1/2 load: 85.4 % Number of poles: 2 Enclosure class (IEC 34-5): 55 Dust/Jetting Insulation class (IEC 85): F</p> <p>Others: Minimum efficiency index, MEI $\hat{\alpha}\%$: 0.70 Net weight: 39 kg Gross weight: 52 kg Shipping volume: 0.173 m³</p>

96500393 CRN 20-1 A-FGJ-A-E-HQQE 50 Hz



Description	Value
General information:	
Product name:	CRN 20-1 A-FGJ-A-E-HQQE
Product No:	96500393
EAN number:	5700396200927
Technical:	
Pump speed on which pump data are based:	2853 rpm
Rated flow:	21 m ³ /h
Rated head:	9.9 m
Head max:	14 m
Stages:	2
Impellers:	1
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:	DIN / ANSI / JIS
Size of inlet connection:	DN 50 2 inch
Size of outlet connection:	DN 50 2 inch
Pressure rating for pipe connection:	PN 25
Flange rating inlet:	300 lb
Flange size for motor:	FT100
Connect code:	FGJ
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:	80C
IE Efficiency class:	IE3
Rated power - P2:	1.1 kW
Power (P2) required by pump:	1.1 kW
Mains frequency:	50 Hz





Company name:

Created by:

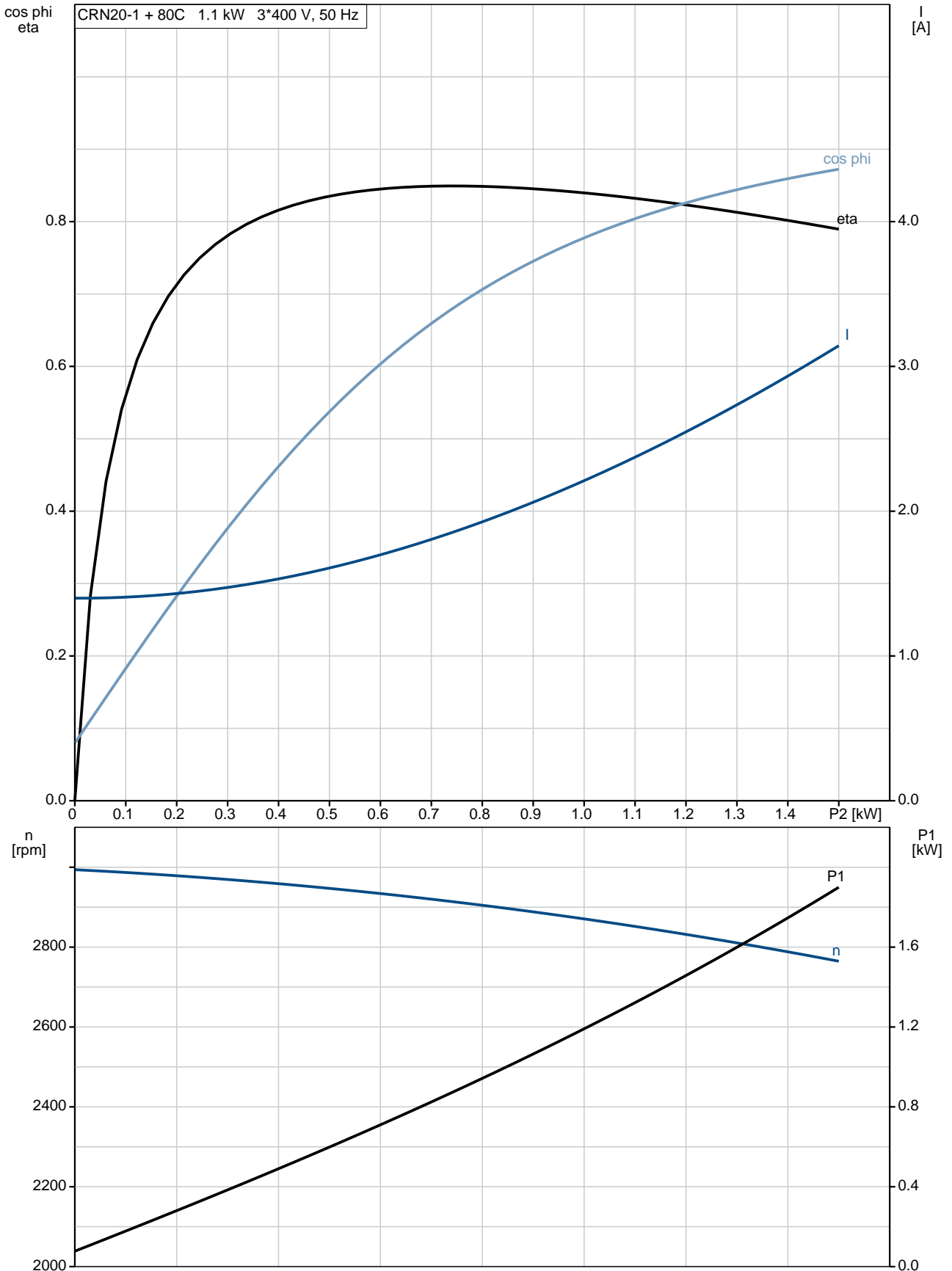
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Date:

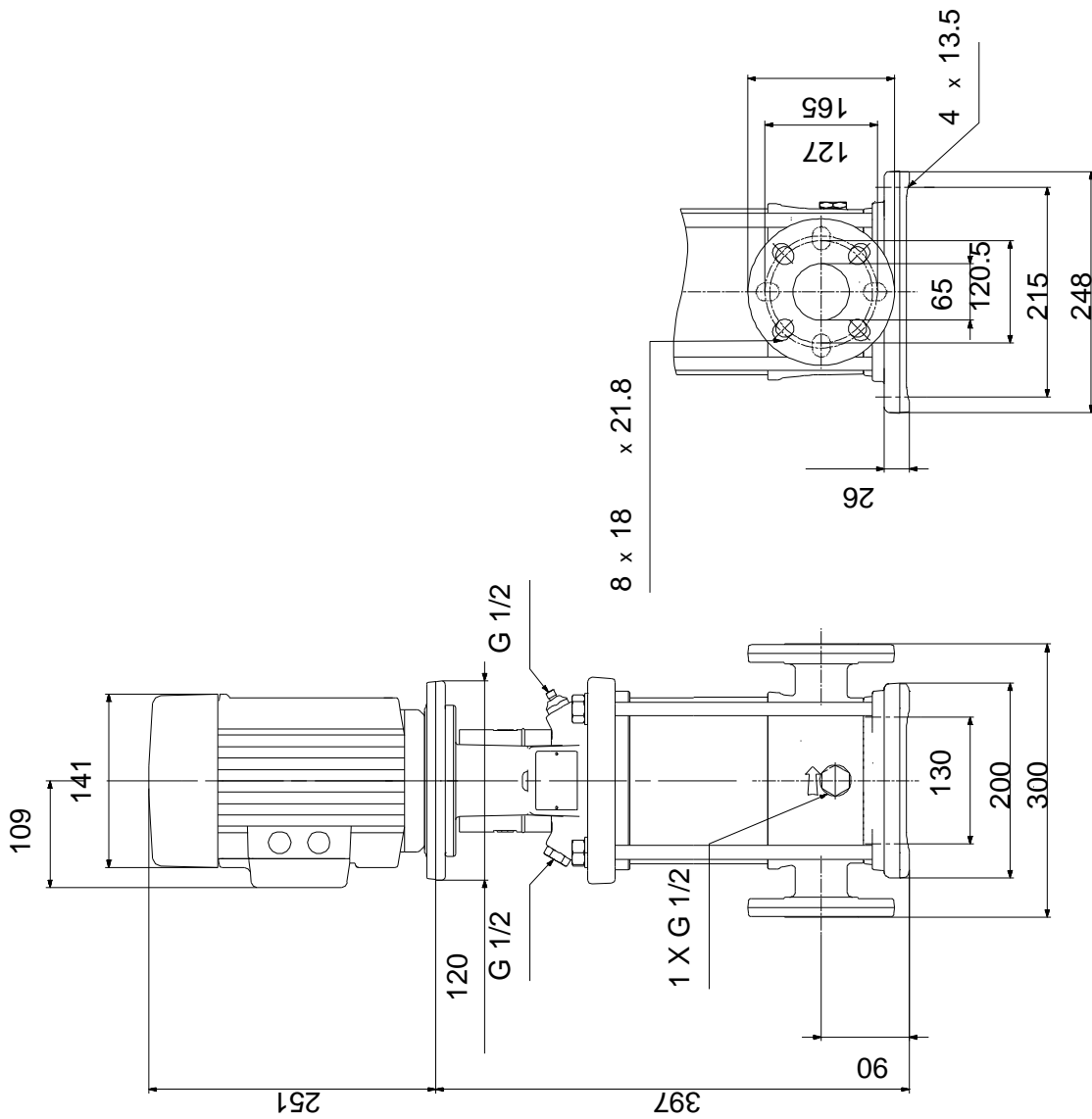
16/02/2019

Description	Value
Rated voltage:	3 x 220-240D/380-415Y V
Rated current:	4.35/2.50 A
Starting current:	450-500 %
Cos phi - power factor:	0.83-0.76
Rated speed:	2840-2870 rpm
Efficiency:	IE3 82,7%
Motor efficiency at full load:	82.7 %
Motor efficiency at 3/4 load:	84.6 %
Motor efficiency at 1/2 load:	85.4 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	NONE
Motor No:	85U05105
Controls:	
Frequency converter:	NONE
Others:	
Minimum efficiency index, MEI $\hat{\alpha}\%$:	0.70
Net weight:	39 kg
Gross weight:	52 kg
Shipping volume:	0.173 m ³

96500393 CRN 20-1 A-FGJ-A-E-HQQE 50 Hz

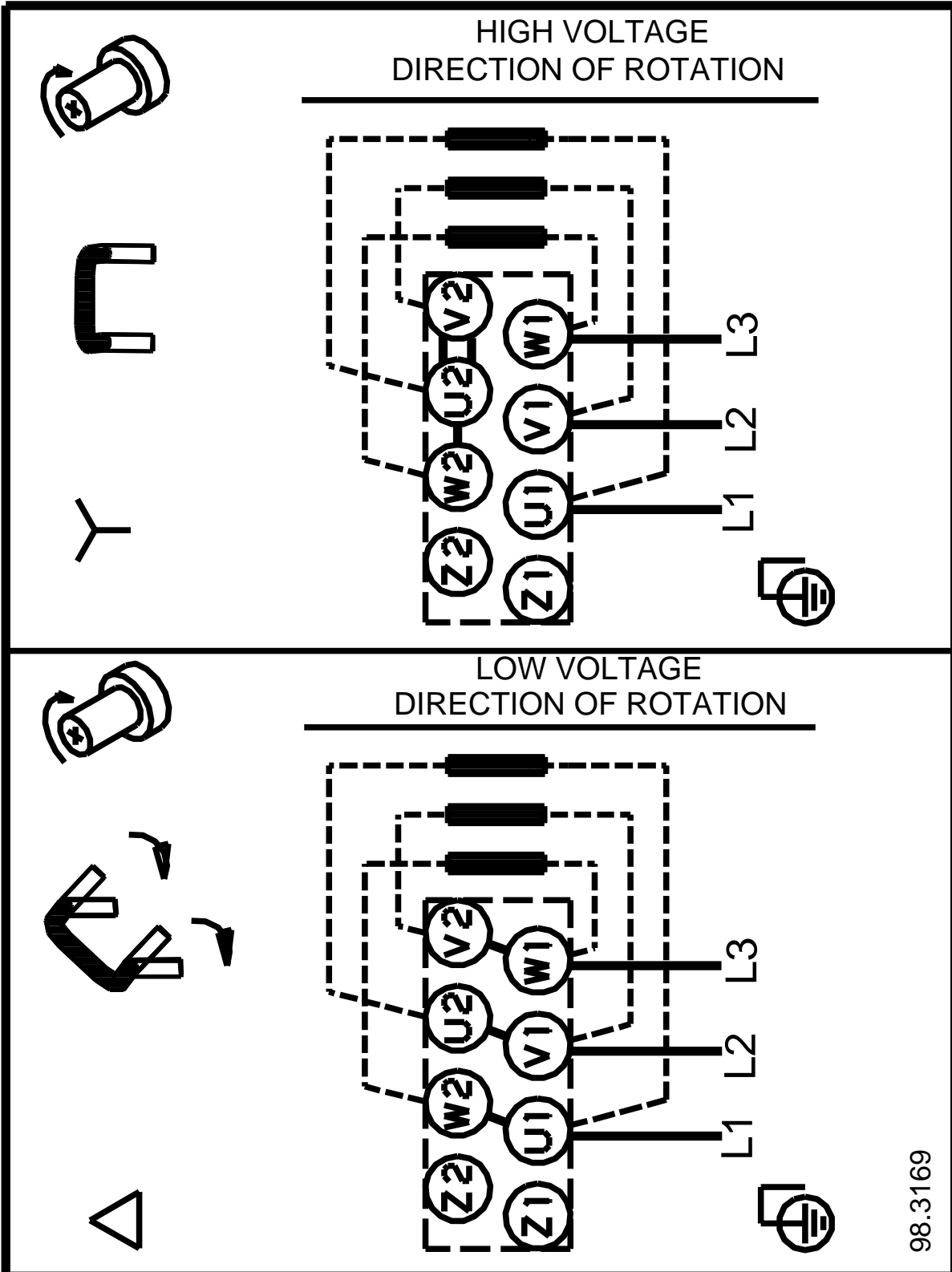


96500393 CRN 20-1 A-FGJ-A-E-HQQE 50 Hz



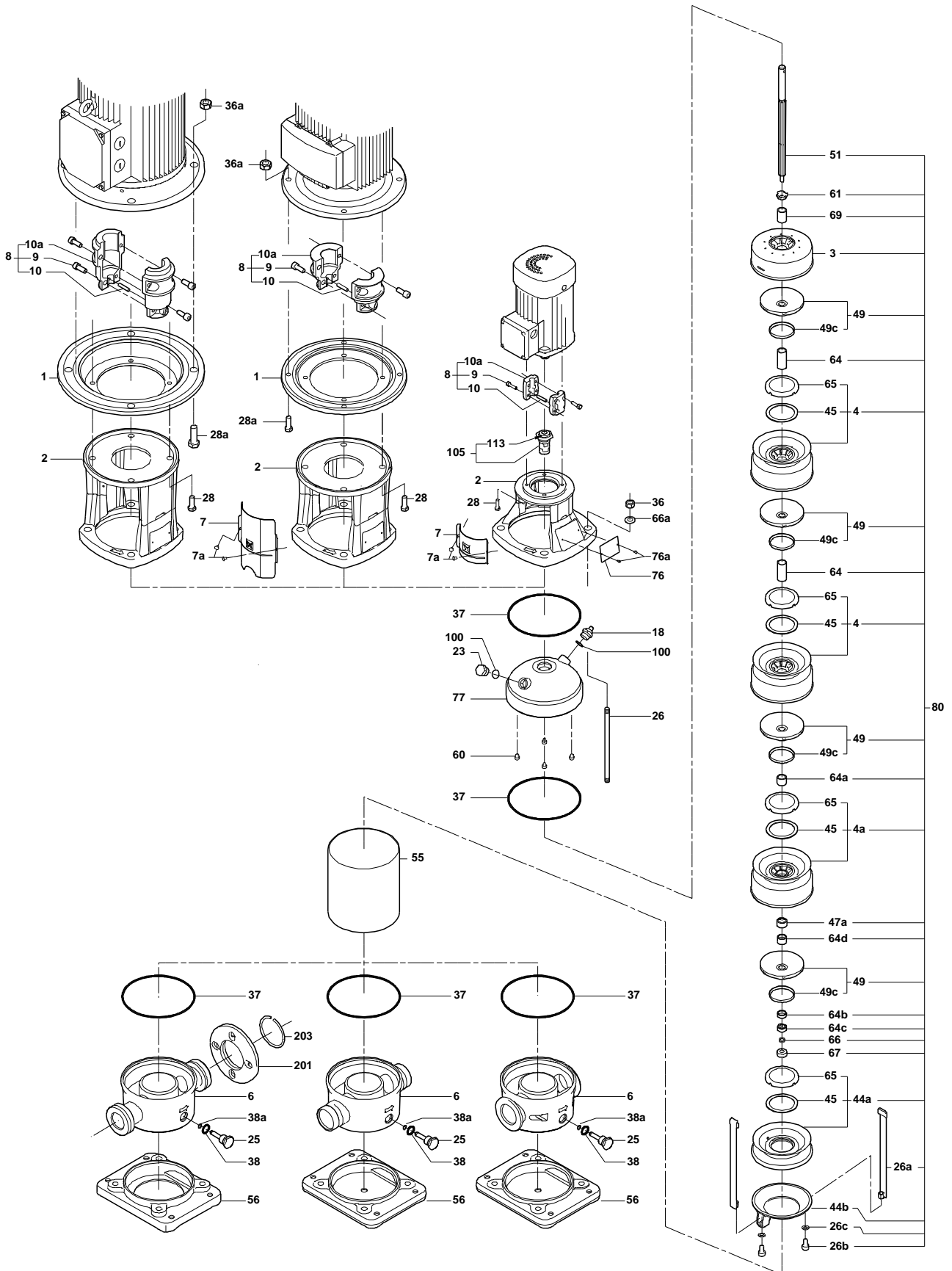
Note! All units are in [mm] unless others are stated.
Disclaimer: This simplified dimensional drawing does not show all details.

96500393 CRN 20-1 A-FGJ-A-E-HQQE 50 Hz

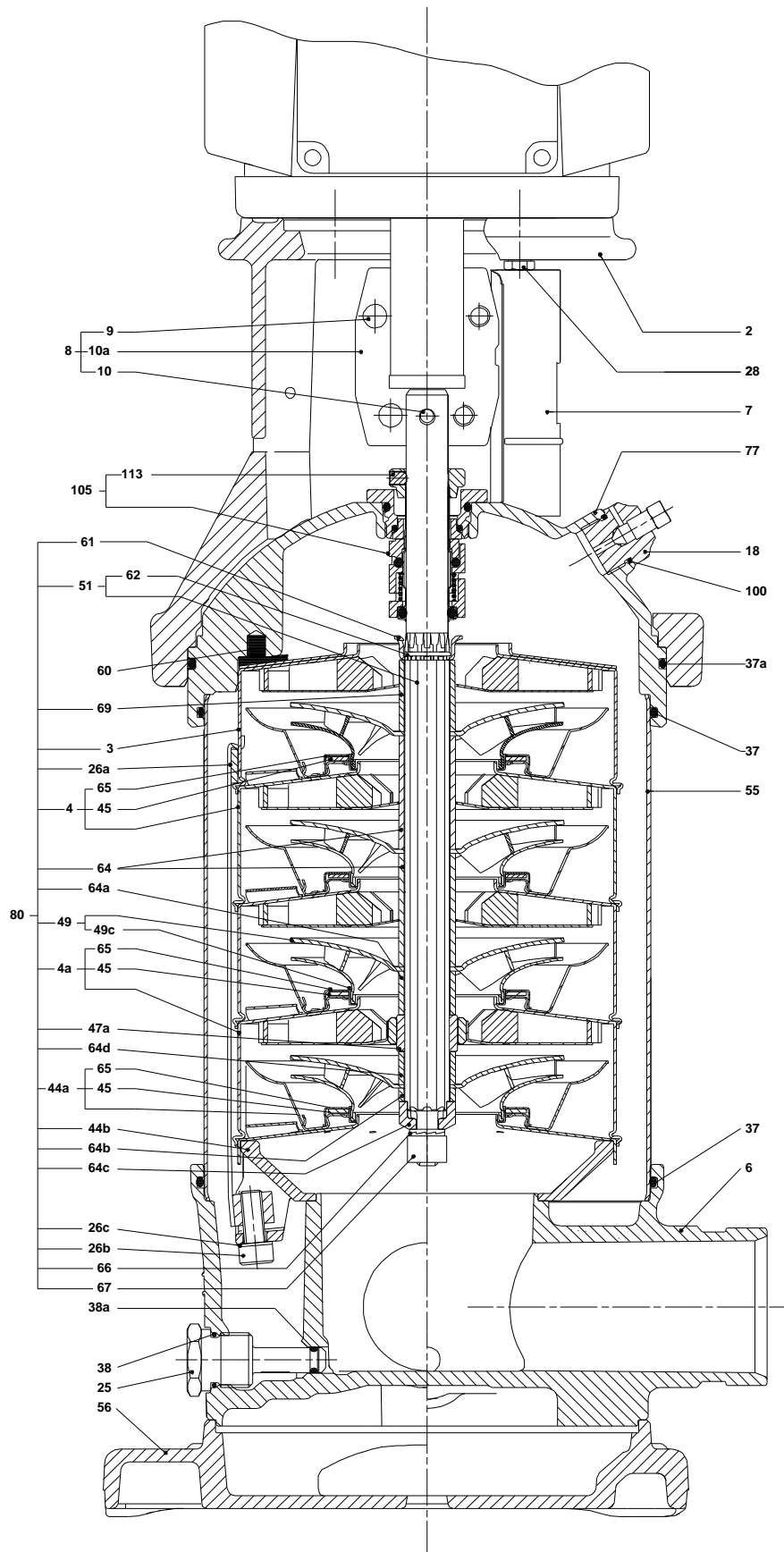


Note! All units are in [mm] unless others are stated.

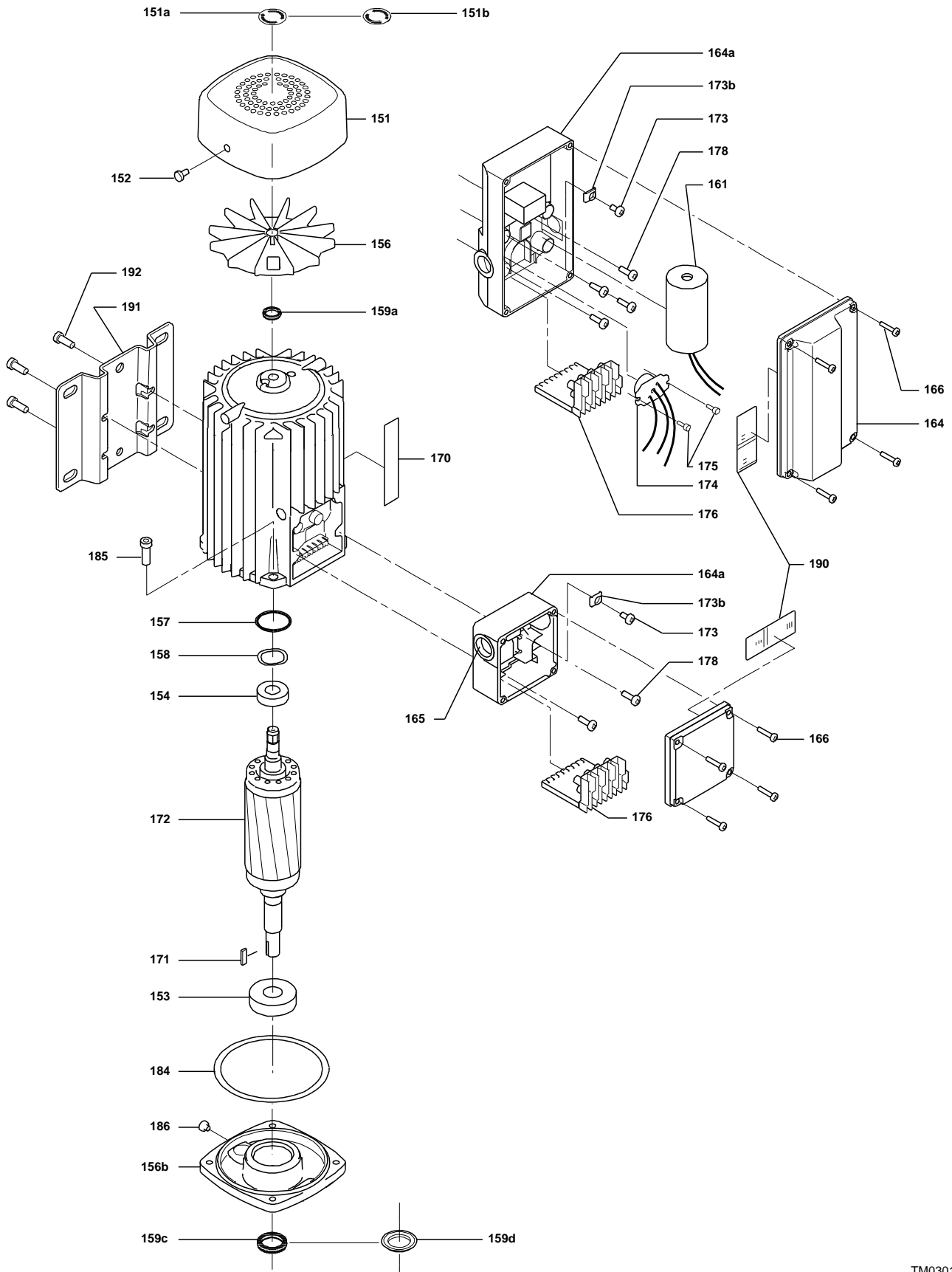
(TM02 6498 1003)



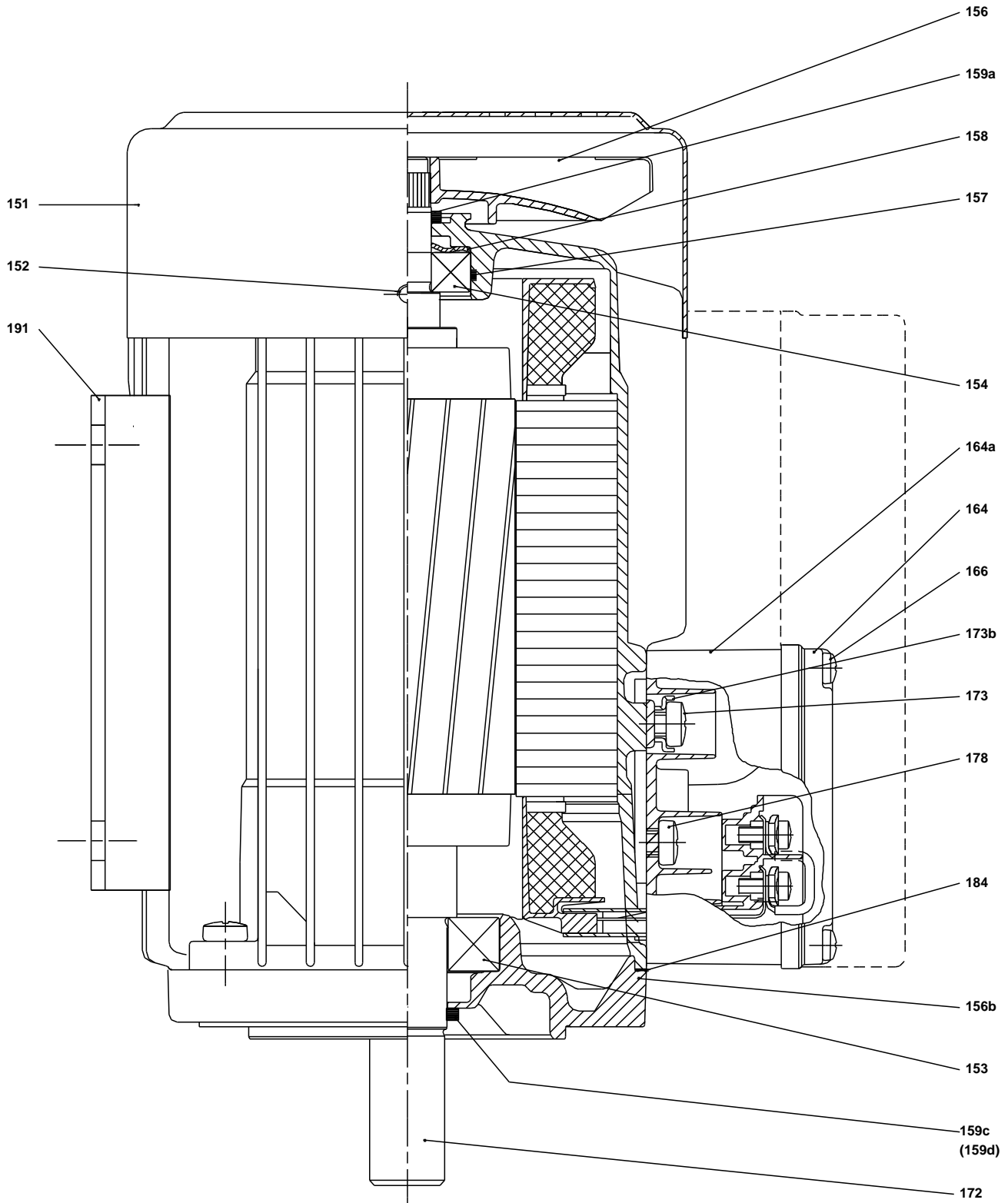
(TM02 6540 1003)



(TM030163 0505)

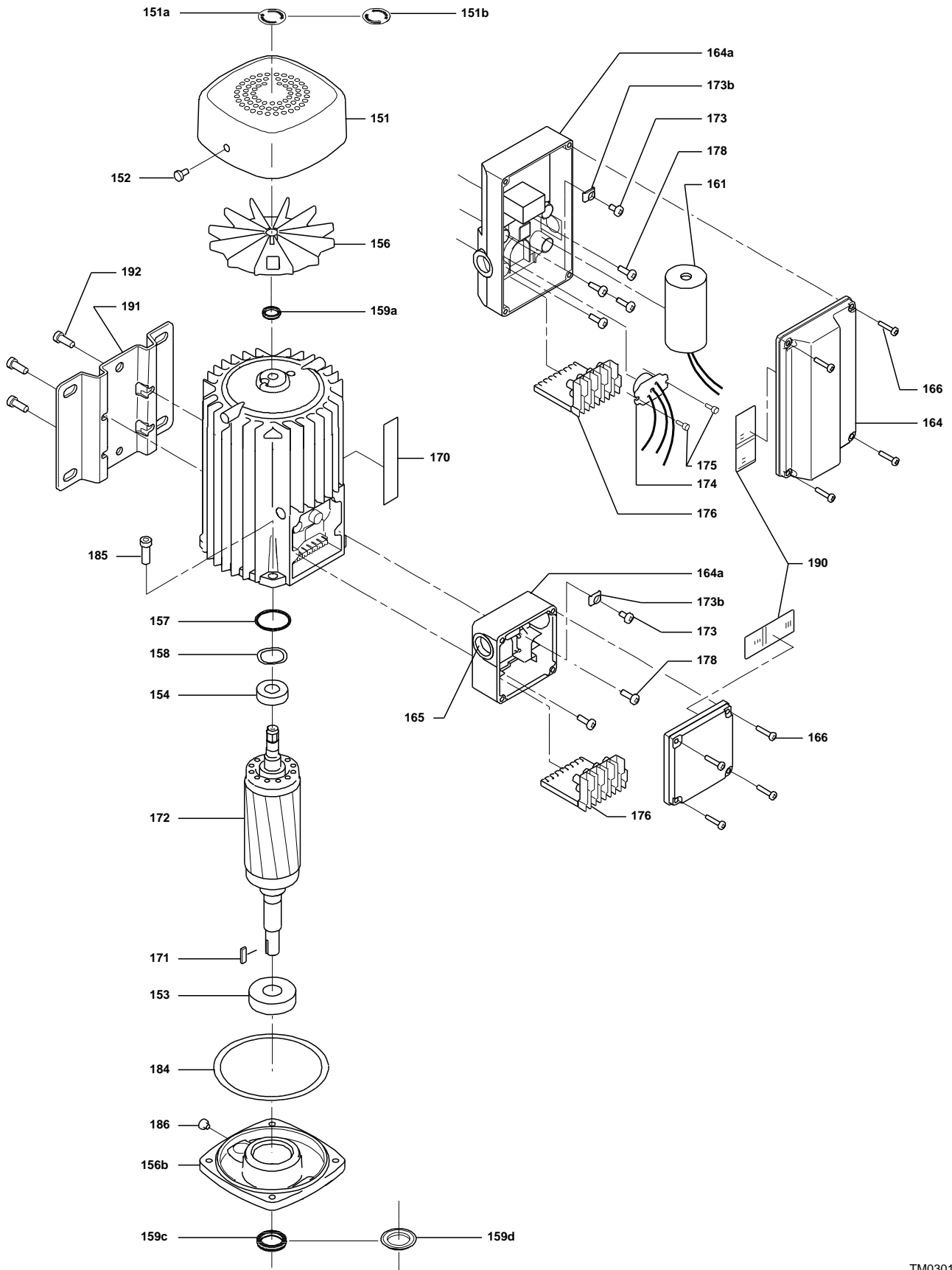


(TM029177)

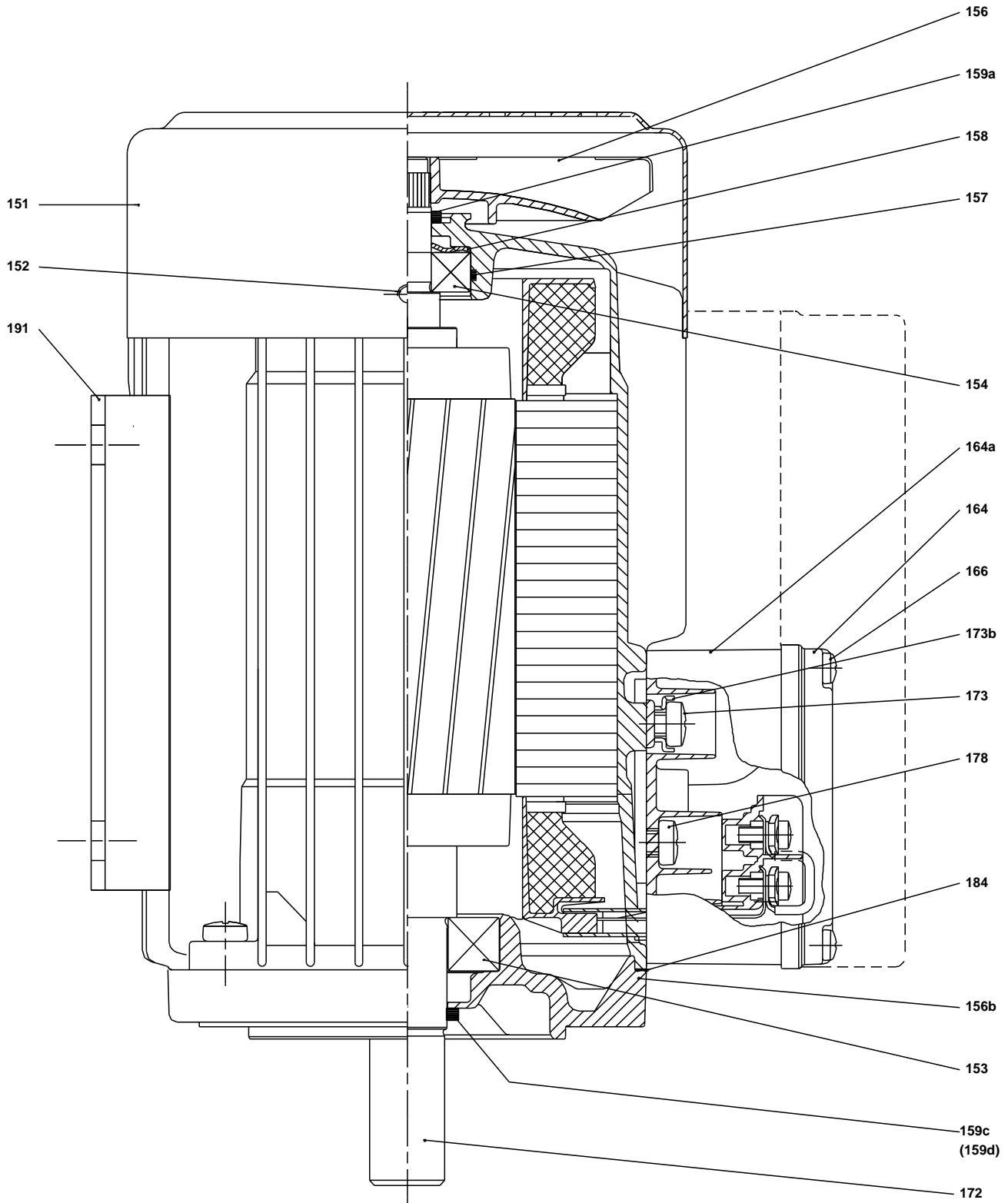


TM029177)

(TM030163 0505)



(TM029177)



TM029177)

Spare parts CRN 20-1, Product No. 96500393

Valid from 1.1.2011 (1152)

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
-	Kit, chamber stack			96491784	1	pcs
- 80	Chamber stack				1	
- 4a	Intermediate chamber cpl.					
	Sand Lifter					
	Guide cup					
	Bearing plate					
	Guide vane					
3	Intermediate chamber					
45a	Neck ring cpl.					
47	Bearing bush					
65	Retainer					
- 4	Upper chamber cpl.					
3	Chamber					
26a	Strap cpl.					
26.c	Washer		Designation: DIN 125A Thickness: 1,6			
26.b	Hex head screw					
44b	Inlet part					
- 44a	Inlet part cpl.					
45a	Neck ring cpl.					
65	Retainer					
47	Bearing ring					
- 49	Impeller cpl.					
49c	Wear ring					
49	Impeller					
- 51	Shaft, spline, cpl.					
62	Retaining ring					
64d	Spacing bush					
64c	Spacing pipe		Length (mm): 12.7			
64b	Spacing bush		Length (mm): 5.00			
64a	Spacing pipe		Internal diameter: 17,5 Length (mm): 17			
64	Spacing pipe		Length (mm): 29.05			
66	Wedge lock washer					
67	Lock nut		Thread: M8			
-	Kit, coupling			96511317	1	pcs
	Adjusting fork				1	
9	Hex socket head cap screw		Designation: DIN 912 Length (mm): 20 Thread: M6		4	
10a	Coupling half				2	
10	Shaft pin		Diameter: 5 Length (mm): 26		1	
-	Kit, coupling guard			96509611	1	pcs
7.a	Combi Slot Torx screw				4	
7	Coupling guard				2	
-	Kit, gaskets			96509609	1	pcs
	Gasket				2	
24	O-ring				2	
37	O-ring				2	
38a	O-ring		Diameter: 5,3 Material type: EPDM Thickness: 2,4		1	

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
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			
60	Spring				4	
415	Gasket				2	
441b	Gasket		Internal diameter: 49		2	
			Outer diameter: 92			
			Thickness: 2			
-	Kit, plug			96511312	1	pcs
-	18	Air vent screw			1	
		Spindle				
		Plug				
25a	Drain plug				1	
25	Plug				1	
38a	O-ring		Diameter: 5,3		1	
			Material type: FKM			
			Thickness: 2,4			
38a	O-ring		Diameter: 5,3		1	
			Material type: EPDM			
			Thickness: 2,4			
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			96511844	1	pcs
		Emery cloth			1	
		Grinding device			1	
105	Shaft seal		Material type: HQQE		1	
-	Kit, wear parts			96511824	1	pcs
-	4a	Intermediate chamber cpl.			1	
		Sand Lifter				
		Guide cup				
		Bearing plate				
		Guide vane				
3	Intermediate chamber					
45a	Neck ring cpl.					
47	Bearing bush					
65	Retainer					
26.c	Washer		Designation: DIN 125A		2	
			Thickness: 1,6			
26.b	Hex head screw				2	
45a	Neck ring cpl.				5	
47	Bearing ring				1	
49c	Wear ring				6	
62	Retaining ring				1	
64d	Spacing bush				1	
64c	Spacing pipe		Length (mm): 12.7		1	
64b	Spacing bush		Length (mm): 5.00		1	

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
64a	Spacing pipe		Internal diameter: 17,5 Length (mm): 17		1	
65	Retainer				5	
66	Wedge lock washer				1	
67	Lock nut		Thread: M8		1	
-	Motor			91333027	1	pcs
-	Kit, Ball bearing			96279730	1	
111	Ball bearing		Designation: 6204.2Z.C3.SYN			
111	Ball bearing					
157	O-ring		Diameter: 32 Material type: NBR Thickness: 2			
158	Waved washer					
-	Kit, fan			96279721	1	
156	Fan					
159a	Seal ring					
-	Kit, fan cover			96279720	1	
151	Fan cover					
152	Pan head thread forming screw					
-	Kit, flange			96279854	1	
156b	Flange					
159c	Seal ring					
184	Gasket		Internal diameter: 114,80 Outer diameter: 121,20 Thickness: 0,25			
185	Pan head screw					
186	Drain plug					
-	Kit, shaft seal			96279722	1	
159c	Seal ring					
159a	Seal ring					
-	Kit, terminal box			96279724	1	
152	Pan head thread forming screw					
164a	Terminal box w/gasket					
164	Terminal box cover w/gasket					
173a	Washer		Designation: SQUARE Internal diameter: 5,5 Outer diameter: 10X10 Thickness: 1,5			
173a	Base					
173	Pan head thread forming screw		Designation: COMBI TORX T25			
173	Pan head screw		Designation: DIN 7985			
175	Pan head screw		Designation: DIN 7985			
176	Terminal cpl.					
-	Motor			85901513	1	pcs
-	Kit, Ball bearing			96279730	1	
111	Ball bearing		Designation: 6204.2Z.C3.SYN			
111	Ball bearing					
157	O-ring		Diameter: 32 Material type: NBR Thickness: 2			
158	Waved washer					
-	Kit, fan			96279721	1	
156	Fan					
159a	Seal ring					
-	Kit, fan cover			96279720	1	
151	Fan cover					
152	Pan head thread forming screw					
-	Kit, flange			96279854	1	

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
156b	Flange					
159c	Seal ring					
184	Gasket		Internal diameter: 114,80 Outer diameter: 121,20 Thickness: 0,25			
185	Pan head screw					
186	Drain plug					
-	Kit, shaft seal			96279722	1	
159c	Seal ring					
159a	Seal ring					
-	Kit, terminal box			96279724	1	
152	Pan head thread forming screw					
164a	Terminal box w/gasket					
164	Terminal box cover w/gasket					
173a	Washer		Designation: SQUARE Internal diameter: 5,5 Outer diameter: 10X10 Thickness: 1,5			
173a	Base					
173	Pan head thread forming screw		Designation: COMBI TORX T25			
173	Pan head screw		Designation: DIN 7985			
175	Pan head screw		Designation: DIN 7985			
176	Terminal cpl.					
1a	Pump head			98824713	1	pcs
2	Pump cover			98481138	1	pcs
-	4a Bulk, Intermediate chamber cpl. (10 pcs)			96538853	1	pcs
3	Intermediate chamber			98371143	1	
65	Retainer			96547341	1	
+ 4a	Intermediate chamber cpl.			98371117	1	pcs
6	Base			98482550	1	pcs
7.a	Bulk, Combi Slot Torx screw (1000 pcs)			96886324	4	pcs
10	Bulk, Shaft pin (10 pcs)		Diameter: 5 Length (mm): 26	96536473	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
26a	Strap cpl.			98967067	2	pcs
26.c	Bulk, Washer (4 pcs)		Designation: DIN 125A Thickness: 1,6	99262704	2	pcs
26.c	Washer		Designation: DIN 125A Thickness: 1,6	96586880	2	pcs
26	Staybolt			98982874	4	pcs
37.a	Bulk, O-ring (20 pcs)			96538857	1	pcs
38a	Bulk, O-ring (10 pcs)		Diameter: 5,3 Material type: EPDM Thickness: 2,4	99198791	1	pcs
38	Bulk, O-ring (10 pcs)		Diameter: 16,3 Material type: EPDM Thickness: 2,4	99198815	2	pcs
38	Bulk, O-ring (50 pcs)		Diameter: 16,3 Material type: EPDM Thickness: 2,4	99412727	2	pcs
44b	Inlet part			98814593	1	pcs
+ 44a	Inlet part cpl.			98818922	1	pcs
47	Bulk, Bearing ring (10 pcs)			96538795	1	pcs
- 49	Bulk, Impeller cpl. (5 pcs)			98394310	1	pcs
49c	Bulk, Wear ring (10 pcs)			96547340	1	
+ 49	Impeller cpl.			98394459	1	pcs



Company name:

Created by:

Phone:

Date:

16/02/2019

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
- 51	Shaft, spline, cpl.			98368626	1	pcs
62	Retaining ring			96588022	1	
55	Outer sleeve			98812632	1	pcs
56	Base plate			98481136	1	pcs
60	Bulk, Spring (20 pcs)			96538963	4	pcs
64d	Bulk, Spacing bush (20 pcs)			96538947	1	pcs
64c	Bulk, Spacing pipe (5 pcs)		Length (mm): 12.7	97980241	1	pcs
64b	Bulk, Spacing bush (20 pcs)		Length (mm): 5.00	96535098	1	pcs
64a	Bulk, Spacing pipe (10 pcs)		Internal diameter: 17,5	98417487	1	pcs
			Length (mm): 17			
64	Bulk, Spacing pipe (20 pcs)		Length (mm): 29.05	96535101	1	pcs
66	Bulk, Wedge lock washer (10 pcs)			96536157	1	pcs
67	Bulk, Lock nut (10 pcs)		Thread: M8	98277008	1	pcs
76a	Bulk, Rivet (100 pcs)			96620489	1	pcs
105	Bulk, Shaft seal (11 pcs)		Material type: HQQE	96538914	1	pcs
440b	Bulk, Lock ring (24 pcs)			96536453	2	pcs