

Qty.	Description
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1	CR 32-1 A-F-A-E-HQQE
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Note! Product picture may differ from actual product

Product No.: [96121951](#)

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.

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

### Further product details

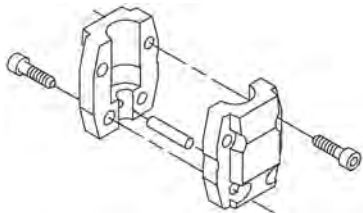
Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface. An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

- 1) Alkaline-based cleaning.
- 2) Zinc phosphating.
- 3) Cathodic electro-deposition.
- 4) Curing to a dry film thickness 18-22 my m.

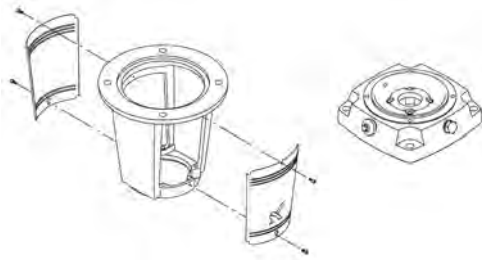
The colour code for the finished product is NCS 9000/RAL 9005.

### Pump

A standard split coupling connects the pump and motor shaft. It is enclosed in the pump head/motor stool by means of two coupling guards.



The motor stool connects the pump head and motor. The pump head has a combined 1/2" priming plug and vent screw.



The pump is fitted with a balanced O-ring seal unit with a rigid torque-transmission system. This seal type is assembled in a cartridge unit which makes replacement safe and easy. Due to the balancing, this seal type is suitable for high-pressure applications. The cartridge construction also protects the pump shaft from possible wear from a dynamic O-ring between pump shaft and shaft seal.

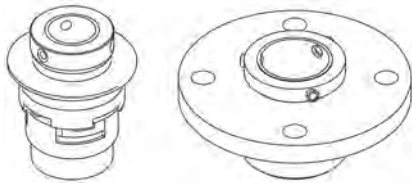
Primary seal:

- Rotating seal ring material: silicon carbide (SiC)
- Stationary seat material: silicon carbide (SiC)

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 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 (I<sub>1</sub>/1).

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: -30 .. 120 °C  
Liquid temperature during operation: 20 °C  
Density: 998.2 kg/m<sup>3</sup>

**Technical:**

Pump speed on which pump data are based: 2899 rpm  
Rated flow: 30 m<sup>3</sup>/h  
Rated head: 14.1 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: Cast iron  
EN 1563 EN-GJS-500-7  
ASTM A536 80-55-06  
Impeller: Stainless steel  
EN 1.4301  
AISI 304  
Bearing: SIC  
Support bearing: Graflon

**Installation:**

Maximum ambient temperature: 60 °C  
Maximum operating pressure: 16 bar  
Max pressure at stated temp: 16 bar / 120 °C  
16 bar / -30 °C  
Type of connection: DIN  
Size of inlet connection: DN 65  
Size of outlet connection: DN 65  
Pressure rating for pipe connection: PN 40  
Flange size for motor: FT115

**Electrical data:**

Motor standard: IEC  
Motor type: 90LC  
IE Efficiency class: IE3  
Rated power - P2: 2.2 kW  
Power (P2) required by pump: 2.2 kW  
Mains frequency: 50 Hz  
Rated voltage: 3 x 220-240D/380-415Y V  
Rated current: 7.70/4.45 A  
Starting current: 850-950 %  
Cos phi - power factor: 0.89-0.87  
Rated speed: 2890-2910 rpm  
Efficiency: IE3 85,9%  
Motor efficiency at full load: 85.9 %  
Motor efficiency at 3/4 load: 86.8 %  
Motor efficiency at 1/2 load: 86.0 %  
Number of poles: 2



Company name:

Created by:

Phone:

Date:

16/02/2019

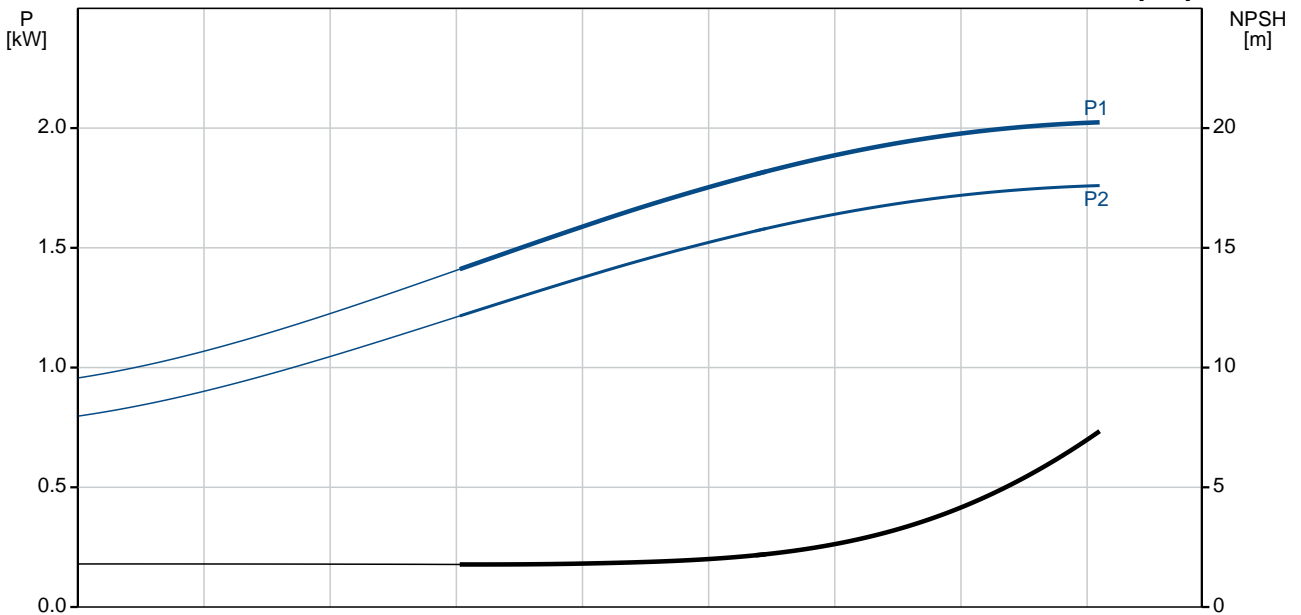
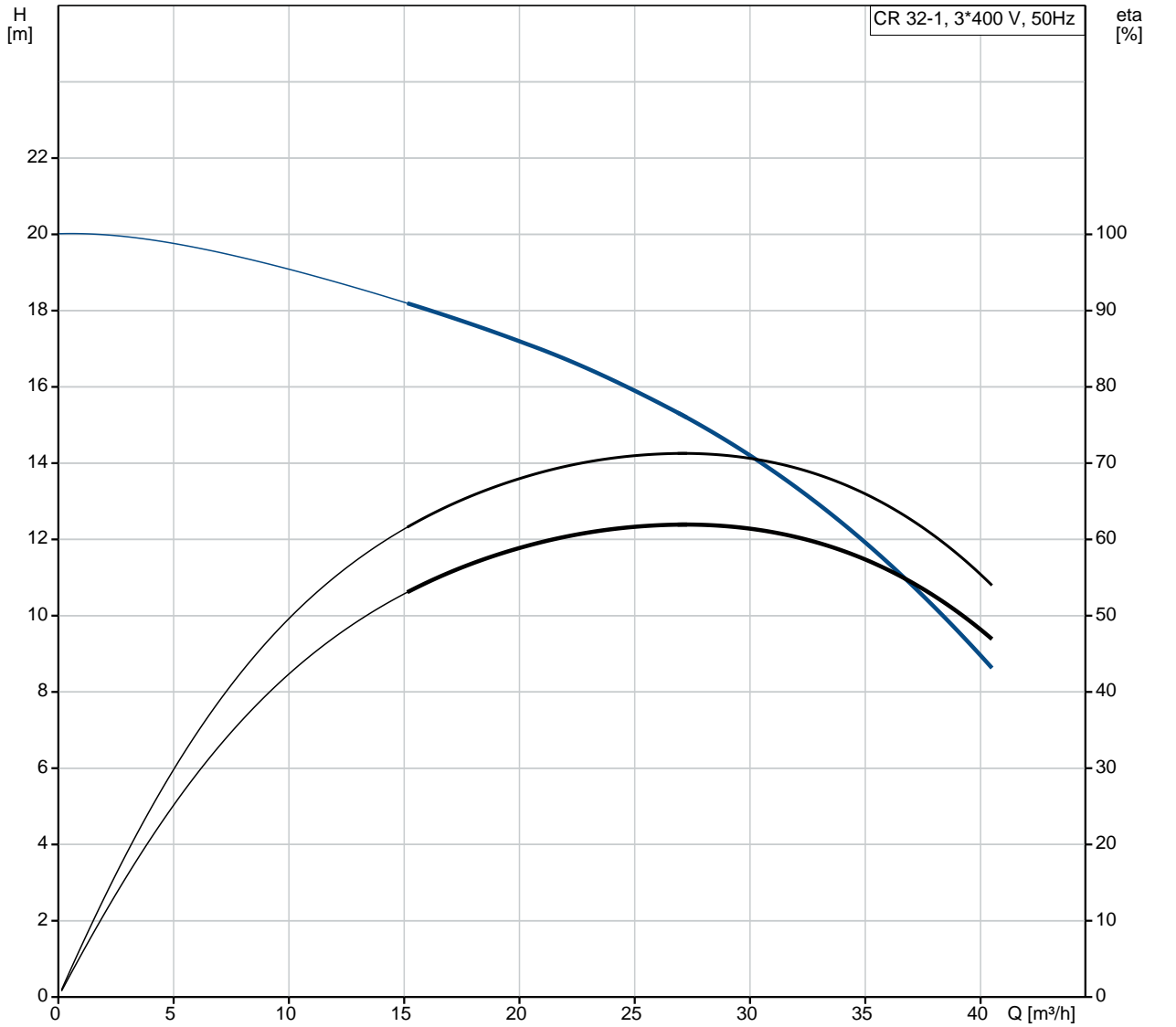
Qty.	Description
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	Enclosure class (IEC 34-5): 55 Dust/Jetting
	Insulation class (IEC 85): F

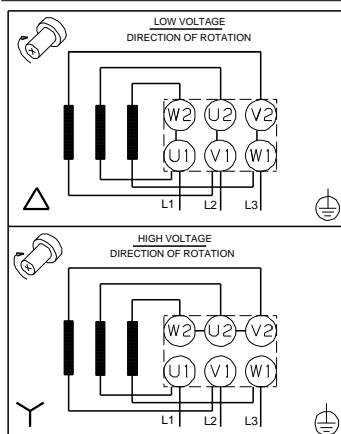
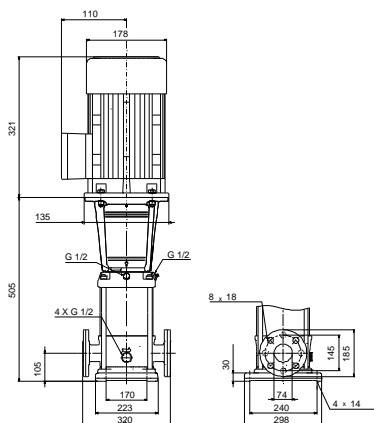
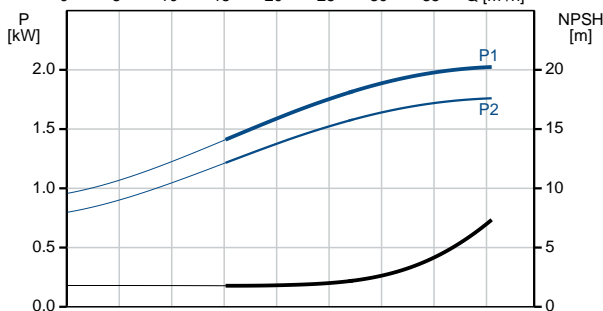
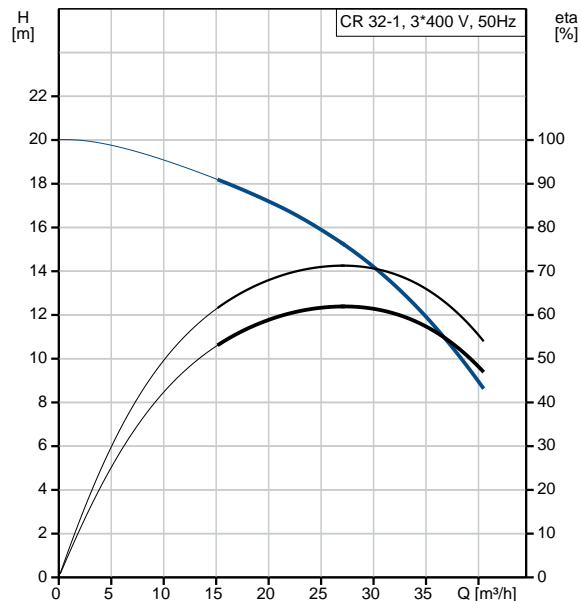
**Others:**

Minimum efficiency index, MEI $\eta_{\text{MEI}}$ :	0.70
Net weight:	67.9 kg
Gross weight:	90.8 kg
Shipping volume:	0.309 m <sup>3</sup>
Danish VVS No.:	385906010
Swedish RSK No.:	5824869

## 96121951 CR 32-1 A-F-A-E-HQQE 50 Hz



Description	Value
<b>General information:</b>	
Product name:	CR 32-1 A-F-A-E-HQQE
Product No:	96121951
EAN number:	5700396679259
<b>Technical:</b>	
Pump speed on which pump data are based:	2899 rpm
Rated flow:	30 m <sup>3</sup> /h
Rated head:	14.1 m
Head max:	19.7 m
Stages:	1
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:	B
<b>Materials:</b>	
Base:	Cast iron EN 1563 EN-GJS-500-7
Impeller:	ASTM A536 80-55-06 Stainless steel EN 1.4301 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 16 bar / -30 °C
Type of connection:	DIN
Size of inlet connection:	DN 65
Size of outlet connection:	DN 65
Pressure rating for pipe connection:	PN 40
Flange size for motor:	FT115
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:	90LC
IE Efficiency class:	IE3
Rated power - P2:	2.2 kW
Power (P2) required by pump:	2.2 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 220-240D/380-415Y V





Company name:

Created by:

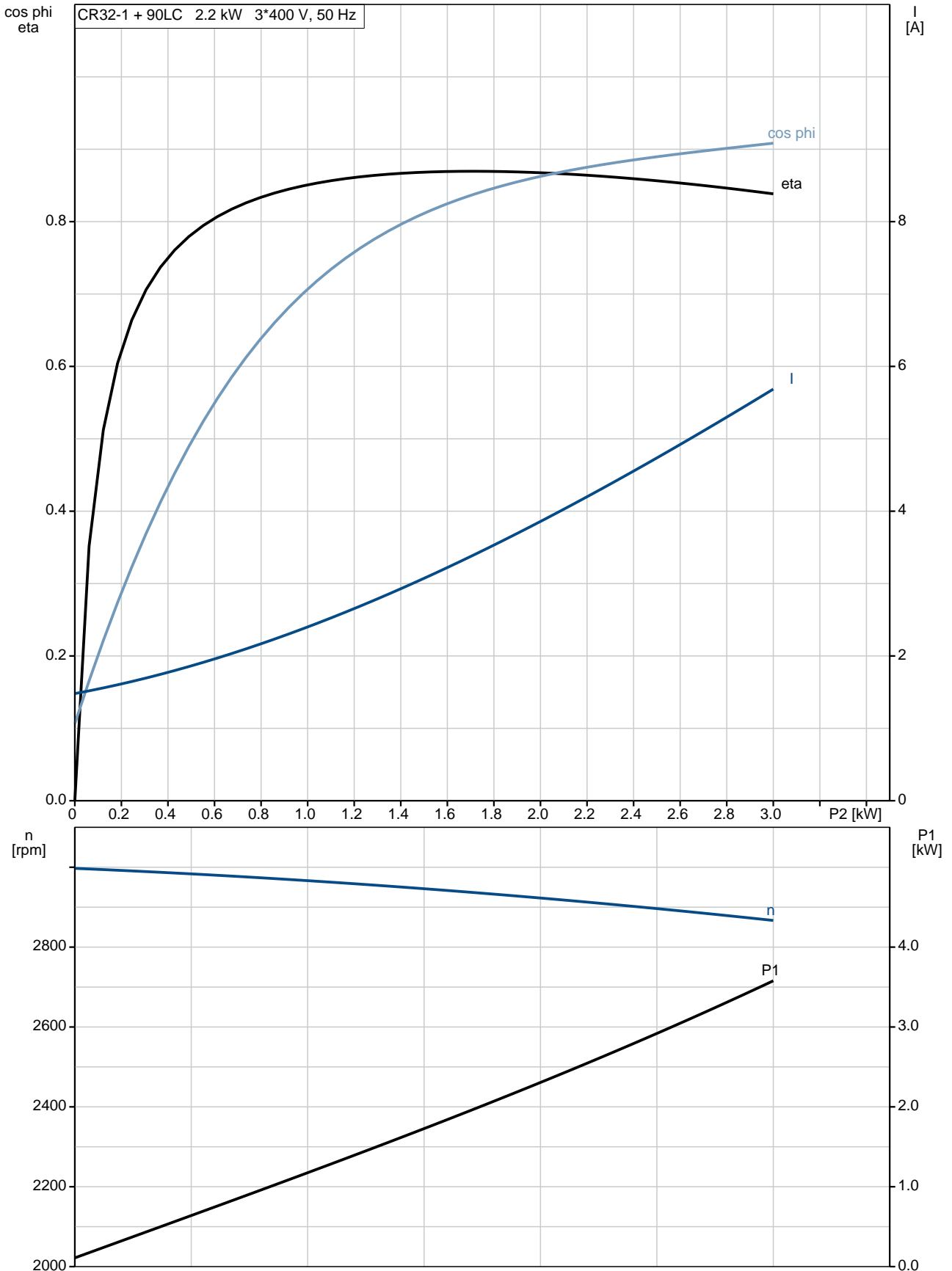
Phone:

Date:

16/02/2019

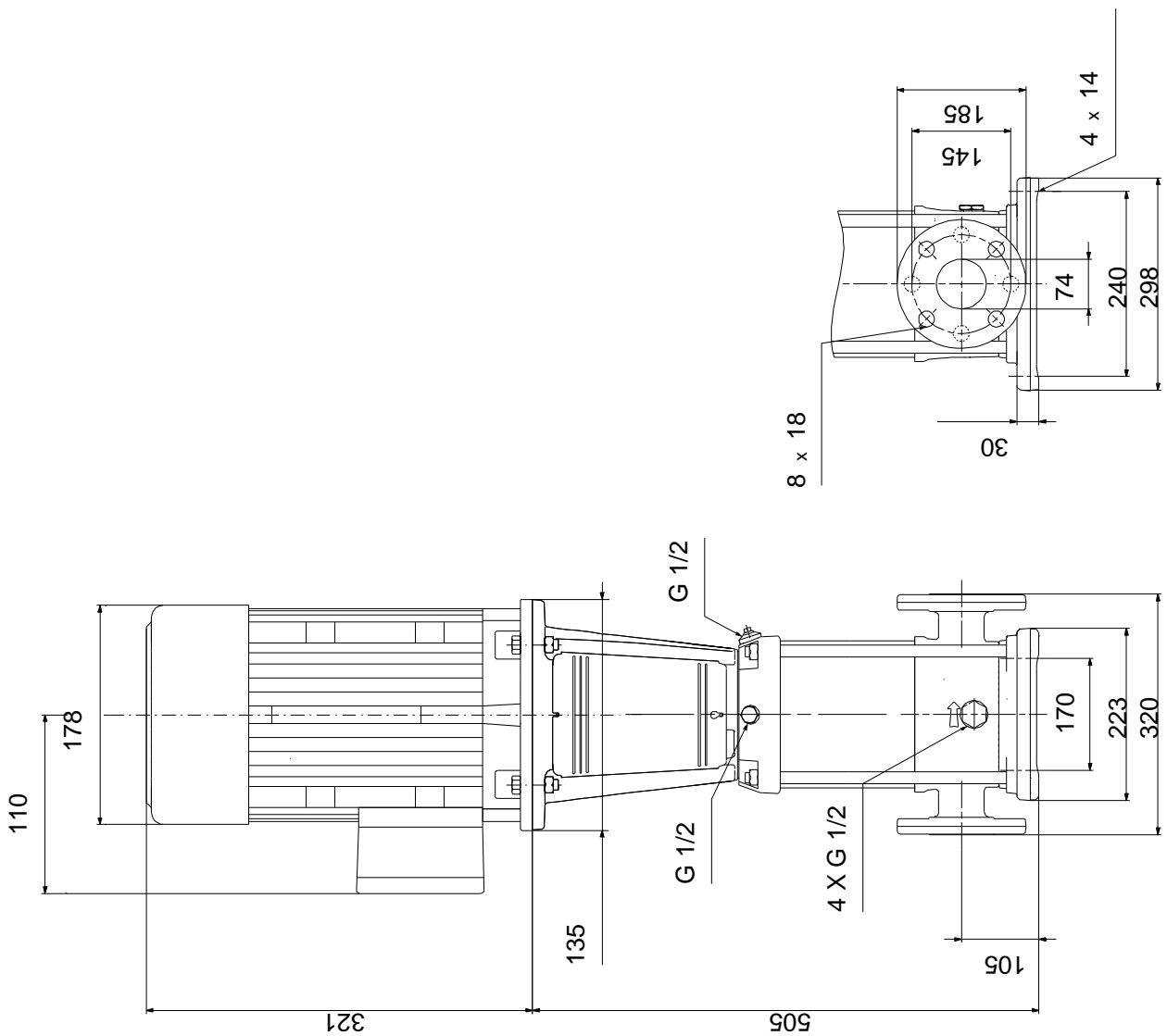
Description	Value
Rated current:	7.70/4.45 A
Starting current:	850-950 %
Cos phi - power factor:	0.89-0.87
Rated speed:	2890-2910 rpm
Efficiency:	IE3 85,9%
Motor efficiency at full load:	85.9 %
Motor efficiency at 3/4 load:	86.8 %
Motor efficiency at 1/2 load:	86.0 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	NONE
Motor No:	85U05908
<b>Controls:</b>	
Frequency converter:	NONE
<b>Others:</b>	
Minimum efficiency index, MEI $\eta_{min}$ :	0.70
Net weight:	67.9 kg
Gross weight:	90.8 kg
Shipping volume:	0.309 m <sup>3</sup>
Danish VVS No.:	385906010
Swedish RSK No.:	5824869

## 96121951 CR 32-1 A-F-A-E-HQQE 50 Hz



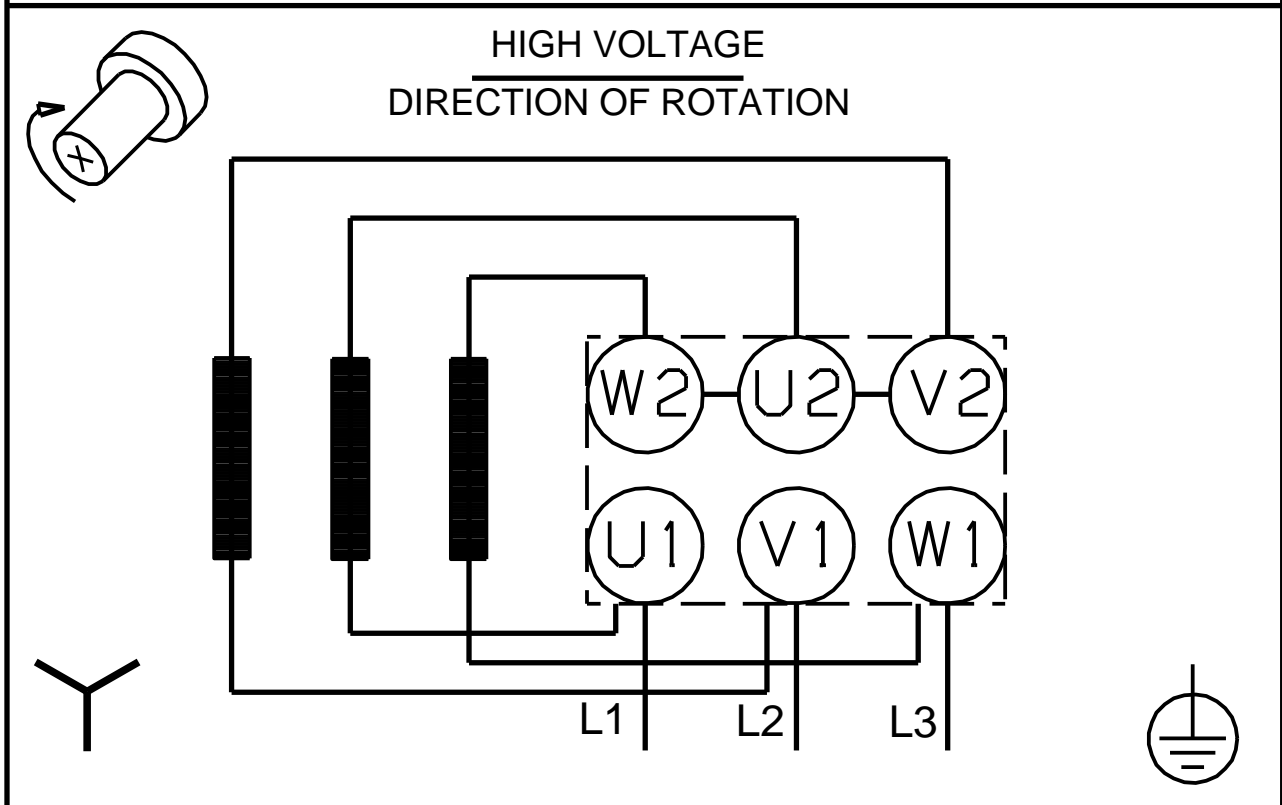
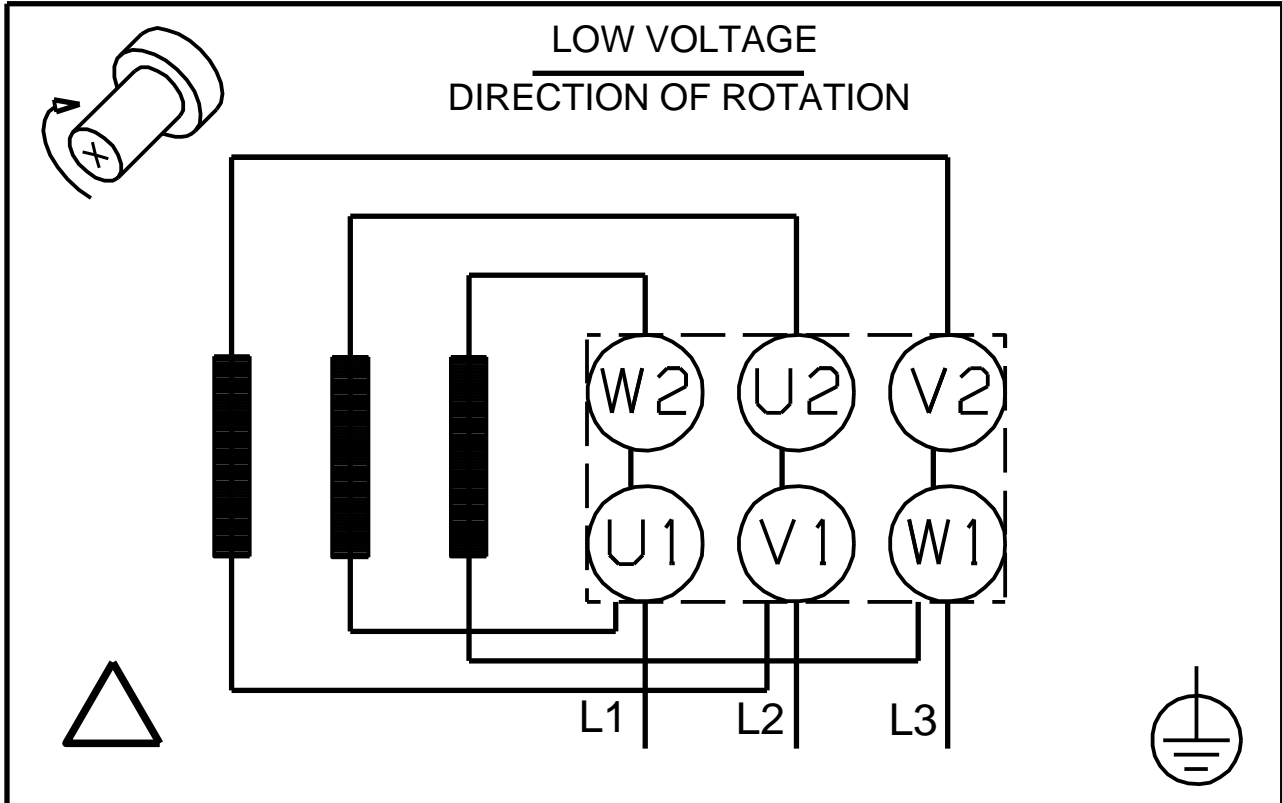


## 96121951 CR 32-1 A-F-A-E-HQQE 50 Hz



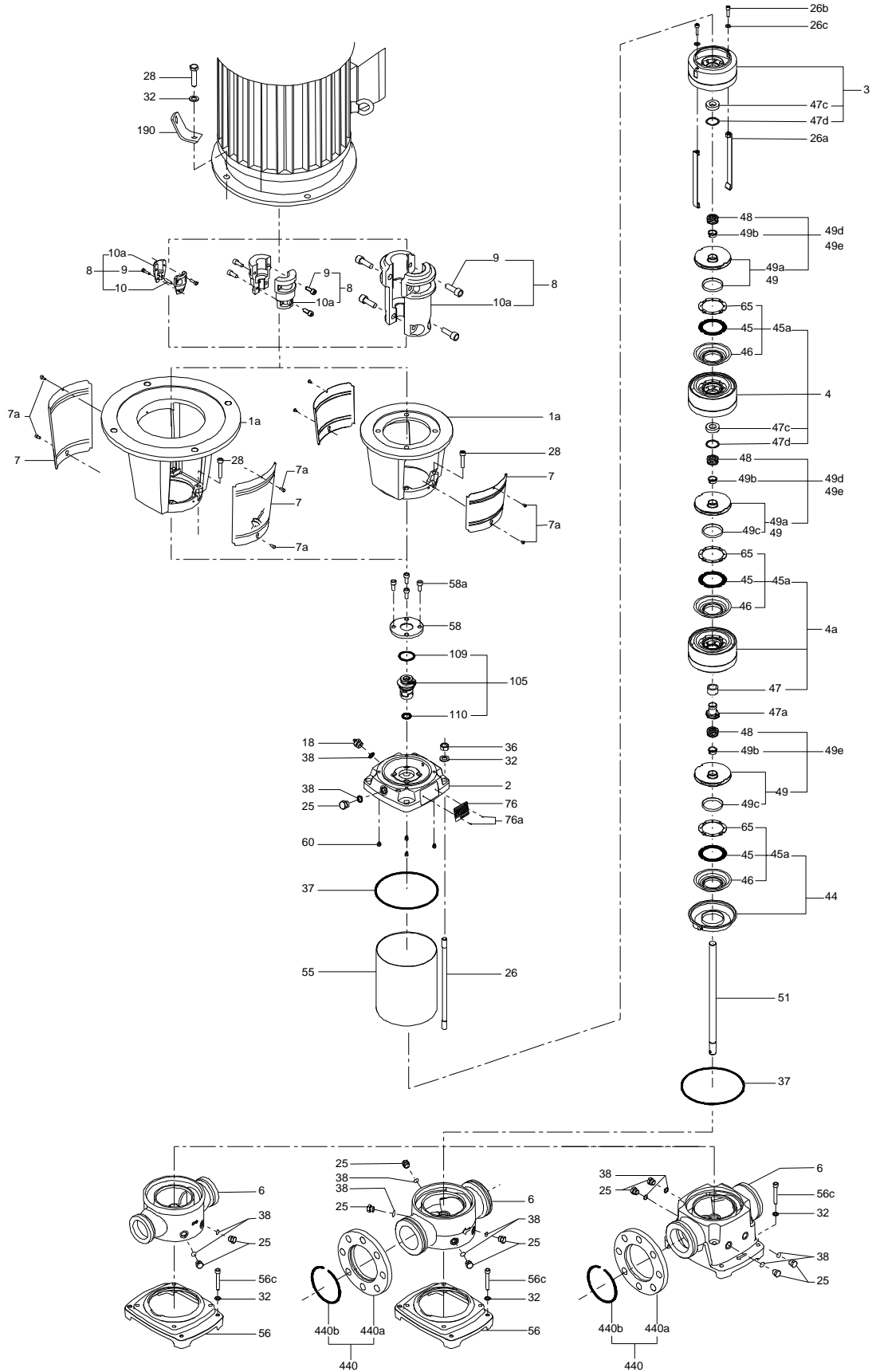
Note! All units are in [mm] unless others are stated.  
Disclaimer: This simplified dimensional drawing does not show all details.

**96121951 CR 32-1 A-F-A-E-HQQE 50 Hz**

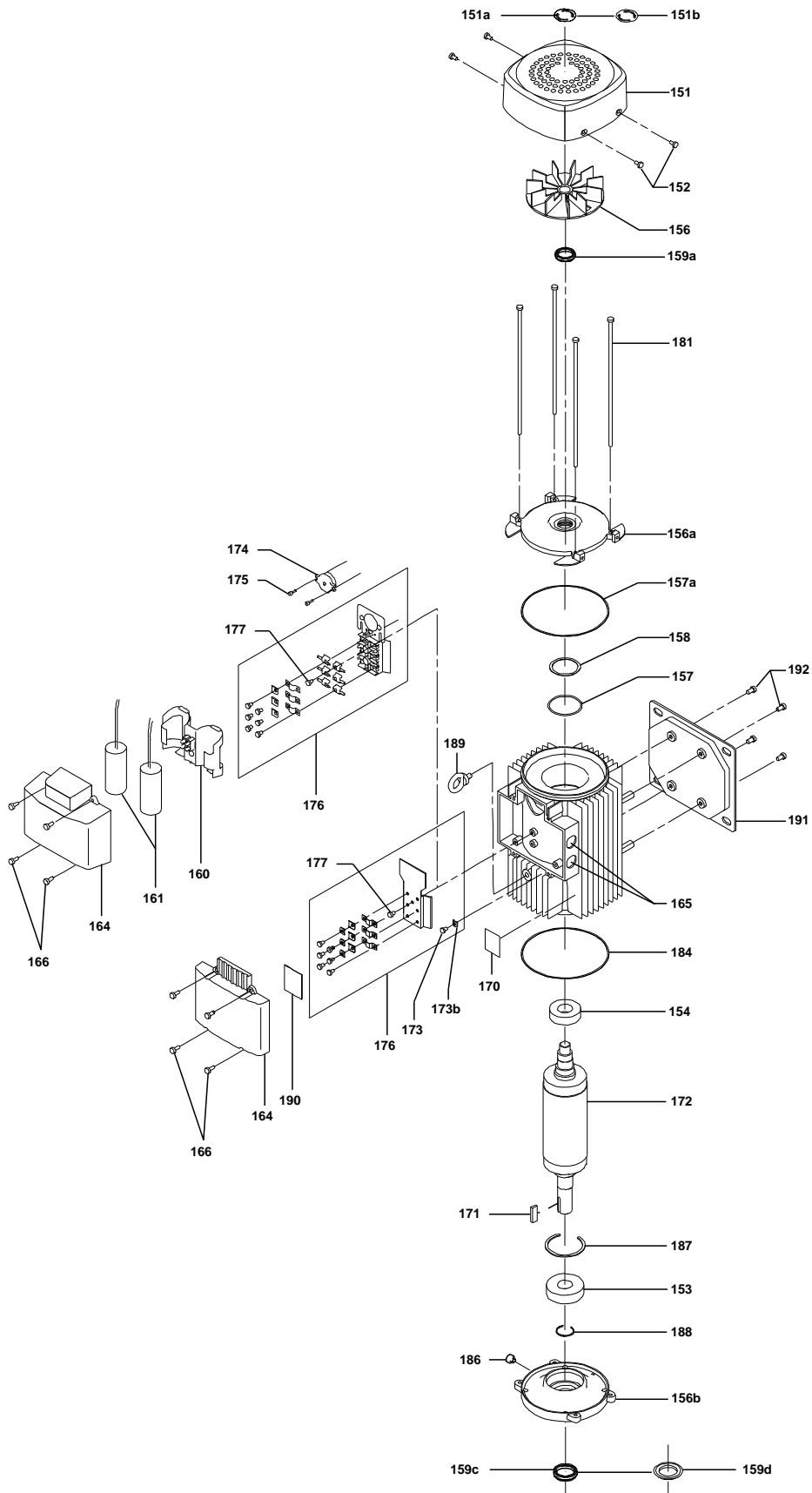


Note! All units are in [mm] unless others are stated.

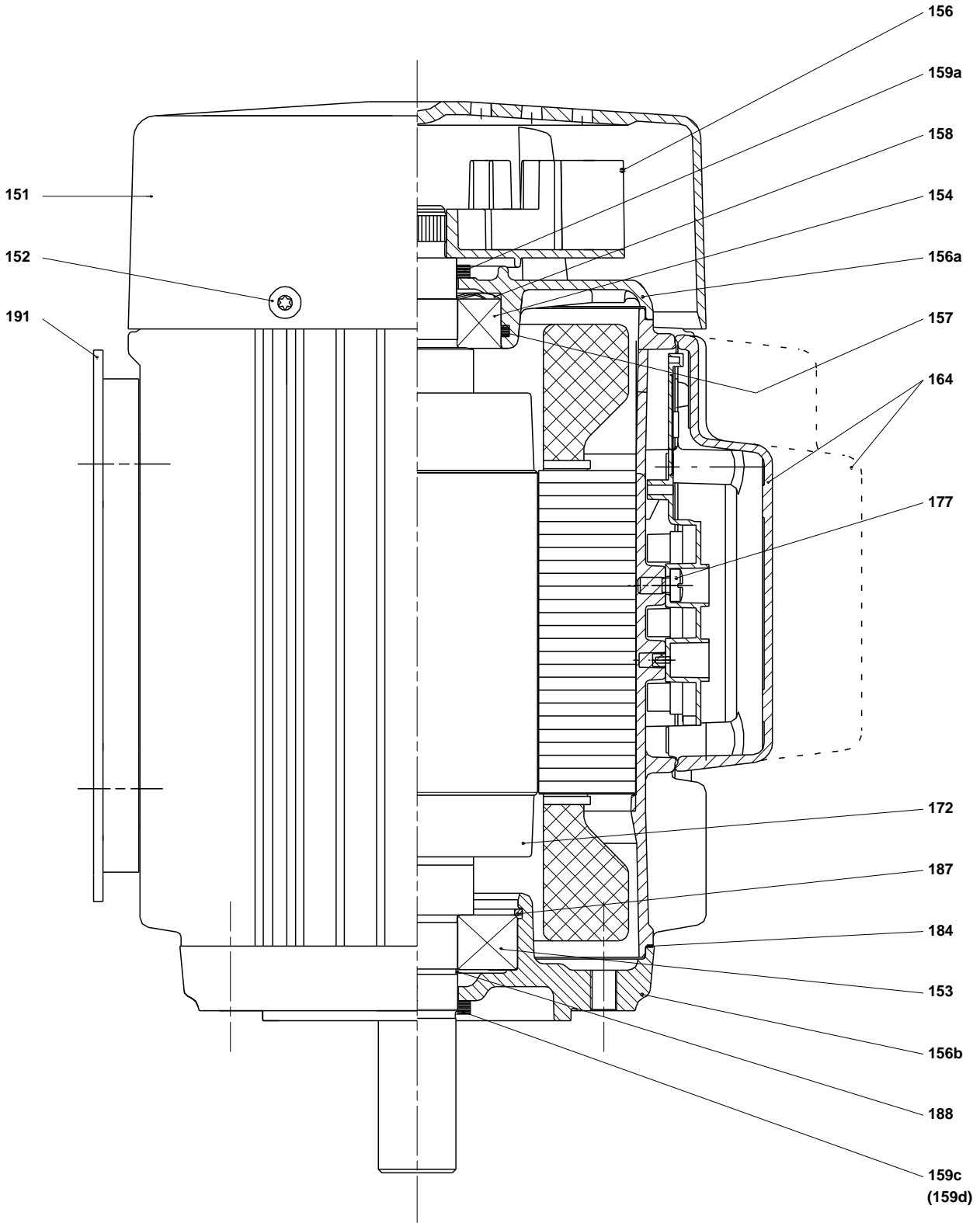
(tm069487 for LACR model B standard)



(tm029184 0505)



(tm029178 2004)



**Spare parts CR 32-1, Product No. 96121951**  
**Valid from 3.3.2014 (1410)**

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
-	Base			96547299	1	pcs
6	Base				1	
- 80	Kit, chamber stack			96416274	1	pcs
- 80	Chamber stack				1	
- 3	Upper chamber cpl.					
	Cone					
	Spare, turbulence optimizer KP					
	Spare, turbulence optimizer KP					
	Spare, turbulence optimizer KP					
	Spare, turbulence optimizer KP					
	Guide					
47	Bearing					
26c	Washer		Designation: DIN 125A			
			Thickness: 1,6			
26b	Hex socket head cap screw					
26.a	Strap cpl.					
- 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					
47f	Hairpin clip					
- 49e	Impeller cpl.					
48	Nut					
49b	Split cone					
- 49	Impeller					
	Impeller hub					
49c	Wear ring					
51	Shaft					
-	Kit, chambers			98633752	1	pcs
- 3	Upper chamber cpl.				1	
	Cone					
	Spare, turbulence optimizer KP					
	Spare, turbulence optimizer KP					
	Spare, turbulence optimizer KP					
	Spare, turbulence optimizer KP					
	Guide					
47	Bearing					
- 47a	Bearing cpl.				1	
	Driver					
	Holder					
	Disc spring					
	Bearing ring					
47f	Hairpin clip					
-	Kit, coupling			96416589	1	pcs
	Adjusting fork				1	
9	Hex socket head cap screw		Designation: DIN 912		4	
			Length (mm): 25			

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
			Thread: M10			
10a	Coupling				1	
-	Kit, coupling guard			96505134	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			96416597	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			98497465	1	pcs
48	Nut				1	
48	Nut				1	
49b	Split cone				1	
-	49 Impeller				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			

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
			Thickness: 4,25			
-	Kit, wear parts			98497130	1	pcs
45	Seal ring					2
47d	Lock ring					2
47c	Bush					1
49c	Wear ring					2
65	Top f/neck ring					2
-	Motor			85903722	1	pcs
-	Kit, bearing cpl.			96279794	1	
111	Ball bearing					
111	Ball bearing					
157	O-ring		Diameter: 52			
			Material type: NBR			
			Thickness: 3			
158	Waved washer					
187	Retaining ring					
188	Retaining ring					
-	Kit, end shield			96279789	1	
156a	End shield					
157a	Gasket		Internal diameter: 141,2			
			Outer diameter: 145,5			
			Thickness: 0,2			
157	O-ring		Diameter: 52			
			Material type: NBR			
			Thickness: 3			
158	Waved washer					
159a	Seal ring					
-	Kit, fan			96279757	1	
156	Fan					
159a	Seal ring					
-	Kit, fan cover			96279755	1	
151	Fan cover					
152	Pan head thread forming screw					
-	Kit, flange			96279777	1	
156b	Flange					
159.c	Seal ring					
184	Gasket		Internal diameter: 141,2			
			Outer diameter: 145,5			
			Thickness: 0,2			
186	Drain plug					
-	Kit, retaining ring			96279798	1	
187	Retaining ring					
188	Retaining ring					
-	Kit, shaft seal			96279761	1	
159c	Seal ring					
159a	Seal ring					
-	Kit, staybolts			96279792	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					



Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
-	Kit, terminal box			96279771	1	
164	Terminal box cover w/gasket					
166	Pan head thread forming screw					
1a	Motor stool			98977092	1	pcs
2	Pump head			96587722	1	pcs
+ 3	Bulk, Upper chamber cpl. (5 pcs)			99262799	1	pcs
- 6	Base cpl.		Rubber type: EPDM	96587692	1	pcs
25	Bulk, Plug (10 pcs)			96536013	4	
37	Bulk, O-ring (10 pcs)			96536149	1	
38	Bulk, O-ring (10 pcs)		Diameter: 16,3	99198815	4	
			Material type: EPDM			
			Thickness: 2,4			
38	Bulk, O-ring (50 pcs)		Diameter: 16,3	99412727	4	
			Material type: EPDM			
			Thickness: 2,4			
7a	Bulk, Socket button head screw (10 pcs)			96549696	4	pcs
7	Bulk, Coupling guard (10 pcs)			96603300	2	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			
26b	Bulk, Hex socket head cap screw (10 pcs)			98931380	2	pcs
26.a	Strap cpl.			98983834	2	pcs
26	Staybolt		Length (mm): 216	98976693	4	pcs
			Thread: M16			
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	4	pcs
			Internal diameter: 17			
			Outer diameter: 30			
			Thickness: 3			
36	Bulk, Hex nut (20 pcs)		Thread: M16	96620480	4	pcs
37	Bulk, O-ring (10 pcs)			96536149	1	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.			96547328	1	pcs
45	Bulk, Seal ring (10 pcs)			97915217	1	
65	Bulk, Top f/neck ring (10 pcs)			96534931	1	
+ 47a	Bulk, Bearing cpl. (5 pcs)			99270646	1	pcs
49b	Bulk, Split cone (10 pcs)			96536010	1	pcs
49c	Bulk, Wear ring (10 pcs)			96534930	1	pcs
55	Outer sleeve		Outer diameter: 197,0	99049372	1	pcs
			Length (mm): 95,5			
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
203	Bulk, Lock ring (4 pcs)			96534918	1	pcs