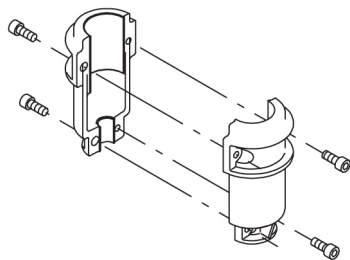
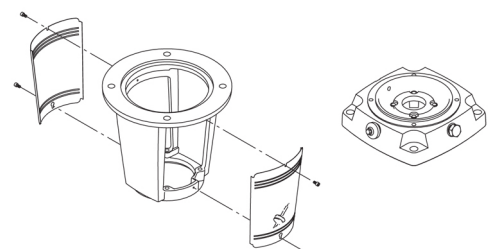
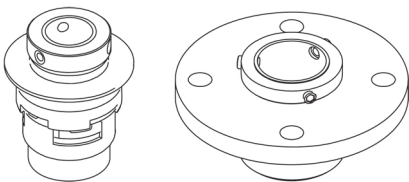
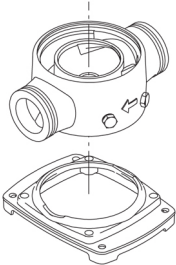


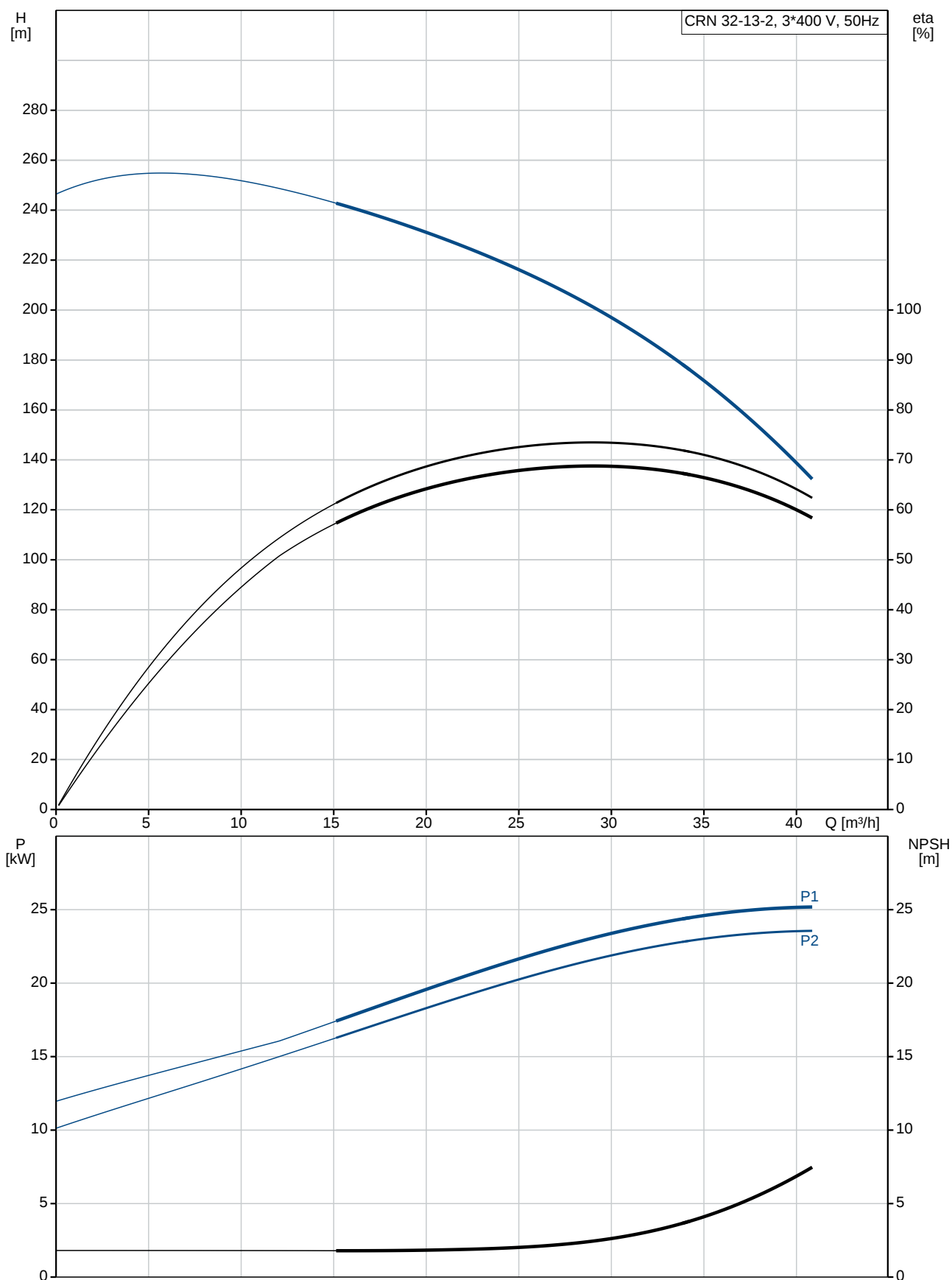
Qty.	Description
1	CRN 32-13-2 A-F-A-E-HQQE  Product No.: 96122374 Vertical, multistage centrifugal pump with inlet and outlet ports on same the level (inline). Pump materials in contact with the liquid are in high-grade stainless steel. A cartridge shaft seal ensures high reliability, safe handling, and easy access and service. Power transmission is via a rigid split coupling. Pipe connection is via DIN flanges. The pump is fitted with a 3-phase, fan-cooled asynchronous motor. Further product details Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface. An integral part of the process is a pretreatment. The entire process consists of these elements: 1) Alkaline-based cleaning. 2) Zinc phosphating. 3) Cathodic electro-deposition. 4) Curing to a dry film thickness 18-22 my m. The colour code for the finished product is NCS 9000/RAL 9005. Pump A 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.  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.

Qty.	Description
	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 pump has a stainless-steel base mounted on a separate base plate. The base and base plate are kept in position by the tension of the staybolts which hold the pump together. Both the inlet and the outlet side of the base have two pressure gauge 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. Technical data Controls: Frequency converter: NONE Liquid: Pumped liquid: Water

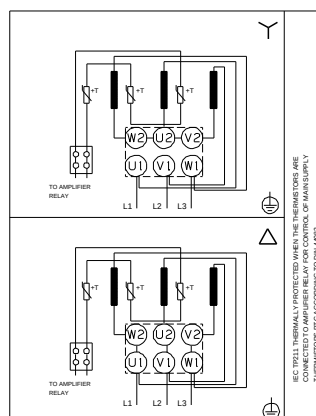
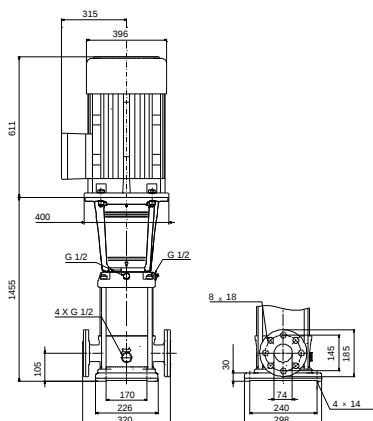
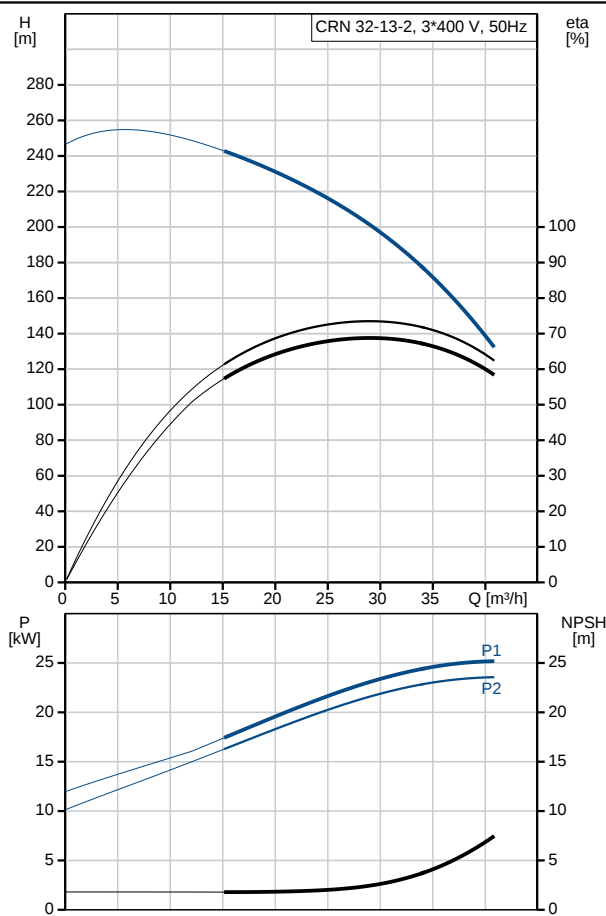
Qty.	Description
	Liquid temperature range: -40 .. 120 °C Liquid temperature during operation: 20 °C Density: 998.2 kg/m³ Technical: Pump speed on which pump data are based: 2951 rpm Rated flow: 30 m³/h Rated head: 196.8 m Pump orientation: Vertical Shaft seal arrangement: Single Code for shaft seal: HQQE Approvals on nameplate: CE, EAC, ACS Curve tolerance: ISO9906:2012 3B Materials: Base: Stainless steel EN 1.4408 AISI 316 Impeller: Stainless steel EN 1.4401 AISI 316 Bearing: SIC Support bearing: Graflon Installation: Maximum ambient temperature: 55 °C Maximum operating pressure: 30 bar Max pressure at stated temp: 30 bar / 120 °C 30 bar / -40 °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: FF350 Electrical data: Motor standard: IEC Motor type: SIEMENS IE Efficiency class: IE3 Rated power - P2: 30 kW Power (P2) required by pump: 30 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-420D/660-725Y V Rated current: 56,0-51,0/32,0-29,5 A Starting current: 660-660 % Cos phi - power factor: 0.87 Rated speed: 2955 rpm Efficiency: IE3 93,3% Motor efficiency at full load: 93.3-93.3 % Motor efficiency at 3/4 load: 93.6-93.6 % Motor efficiency at 1/2 load: 93.4-93.4 % Number of poles: 2 Enclosure class (IEC 34-5): 55 Dust/Jetting Insulation class (IEC 85): F Others: Minimum efficiency index, MEI η_{MEI}: 0.70 Net weight: 331 kg Gross weight: 376 kg

17/02/2019

96122374 CRN 32-13-2 A-F-A-E-HQQE 50 Hz



Description	Value
General information:	
Product name:	CRN 32-13-2 A-F-A-E-HQQE
Product No:	96122374
EAN number:	5700396684185
Technical:	
Pump speed on which pump data are based:	2951 rpm
Rated flow:	30 m³/h
Rated head:	196.8 m
Head max:	247.1 m
Stages:	13
Impellers:	13
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
Materials:	
Base:	Stainless steel EN 1.4408 AISI 316
Impeller:	Stainless steel EN 1.4401 AISI 316
Material code:	A
Code for rubber:	E
Bearing:	SIC
Support bearing:	Graflon
Installation:	
Maximum ambient temperature:	55 °C
Maximum operating pressure:	30 bar
Max pressure at stated temp:	30 bar / 120 °C 30 bar / -40 °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:	FF350
Connect code:	F
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-40 .. 120 °C
Liquid temperature during operation:	20 °C
Density:	998.2 kg/m³
Electrical data:	
Motor standard:	IEC
Motor type:	SIEMENS
IE Efficiency class:	IE3
Rated power - P2:	30 kW
Power (P2) required by pump:	30 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-420D/660-725Y V
Rated current:	56,0-51,0/32,0-29,5 A





Company name:

Created by:

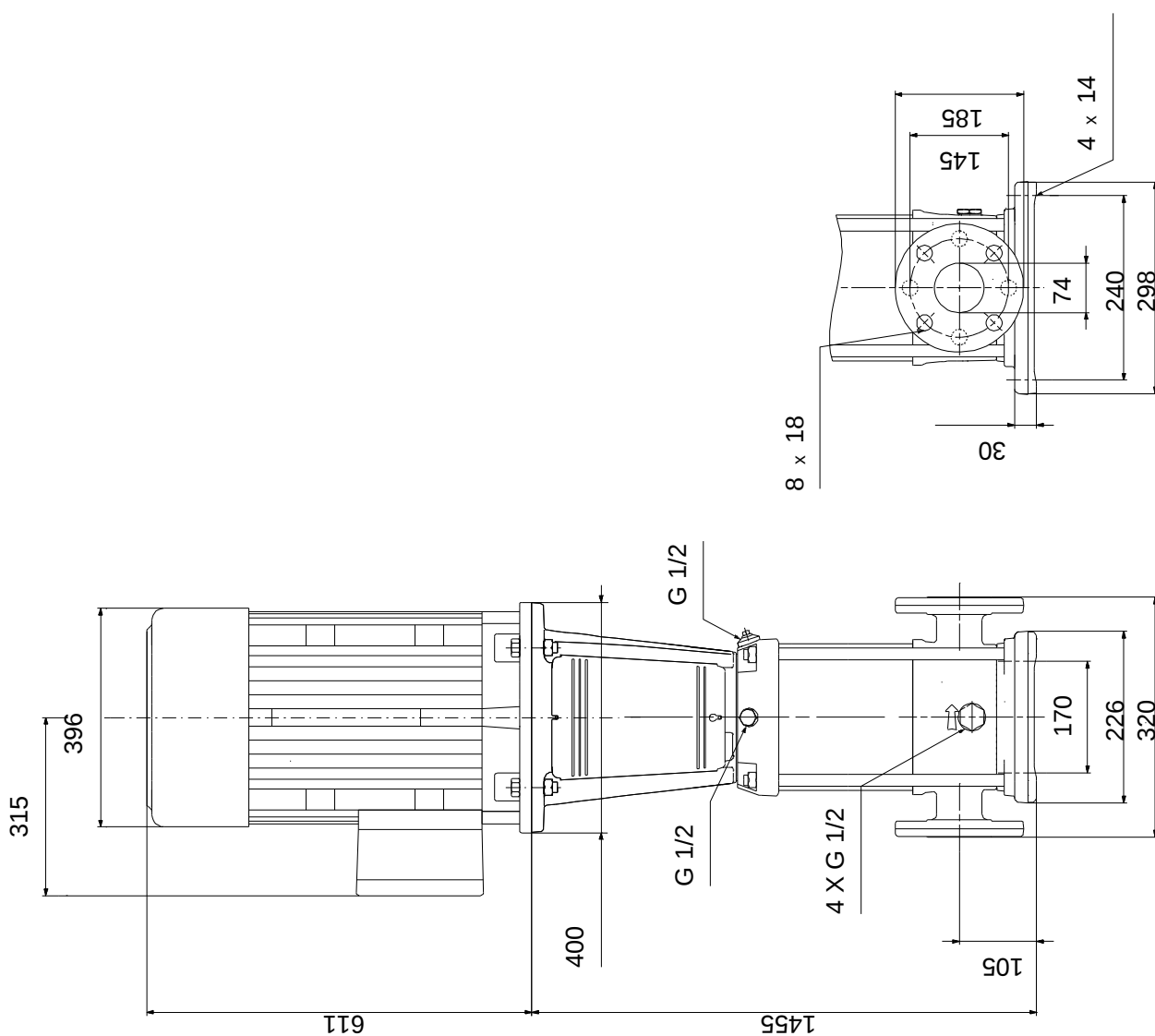
Phone:

Date:

17/02/2019

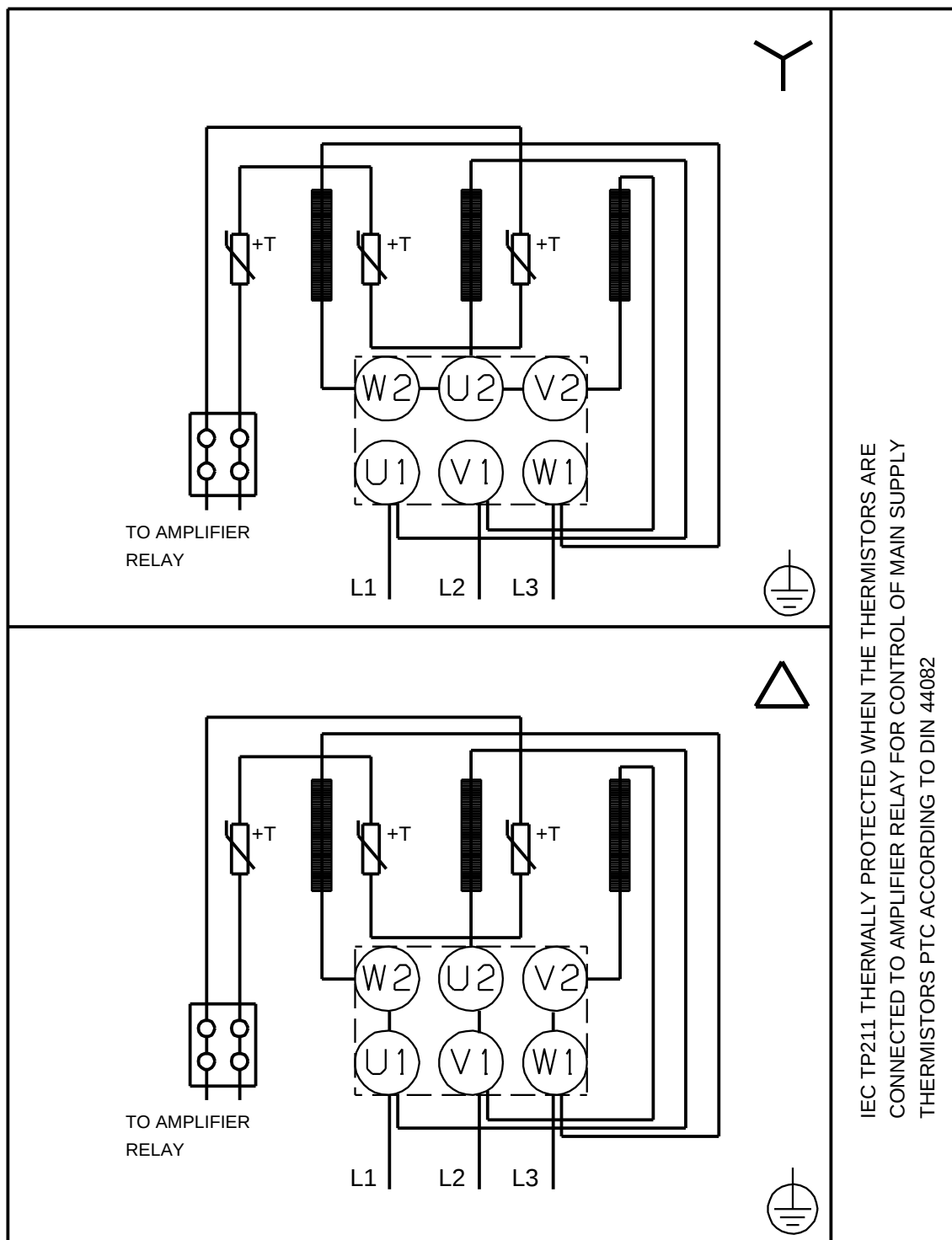
Description	Value
Starting current:	660-660 %
Cos phi - power factor:	0.87
Rated speed:	2955 rpm
Efficiency:	IE3 93,3%
Motor efficiency at full load:	93.3-93.3 %
Motor efficiency at 3/4 load:	93.6-93.6 %
Motor efficiency at 1/2 load:	93.4-93.4 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	PTC
Motor No:	81U15332
Controls:	
Frequency converter:	NONE
Others:	
Minimum efficiency index, MEI η_{min} :	0.70
Net weight:	331 kg
Gross weight:	376 kg
Shipping volume:	0.808 m ³
Danish VVS No.:	385916132

96122374 CRN 32-13-2 A-F-A-E-HQQE 50 Hz



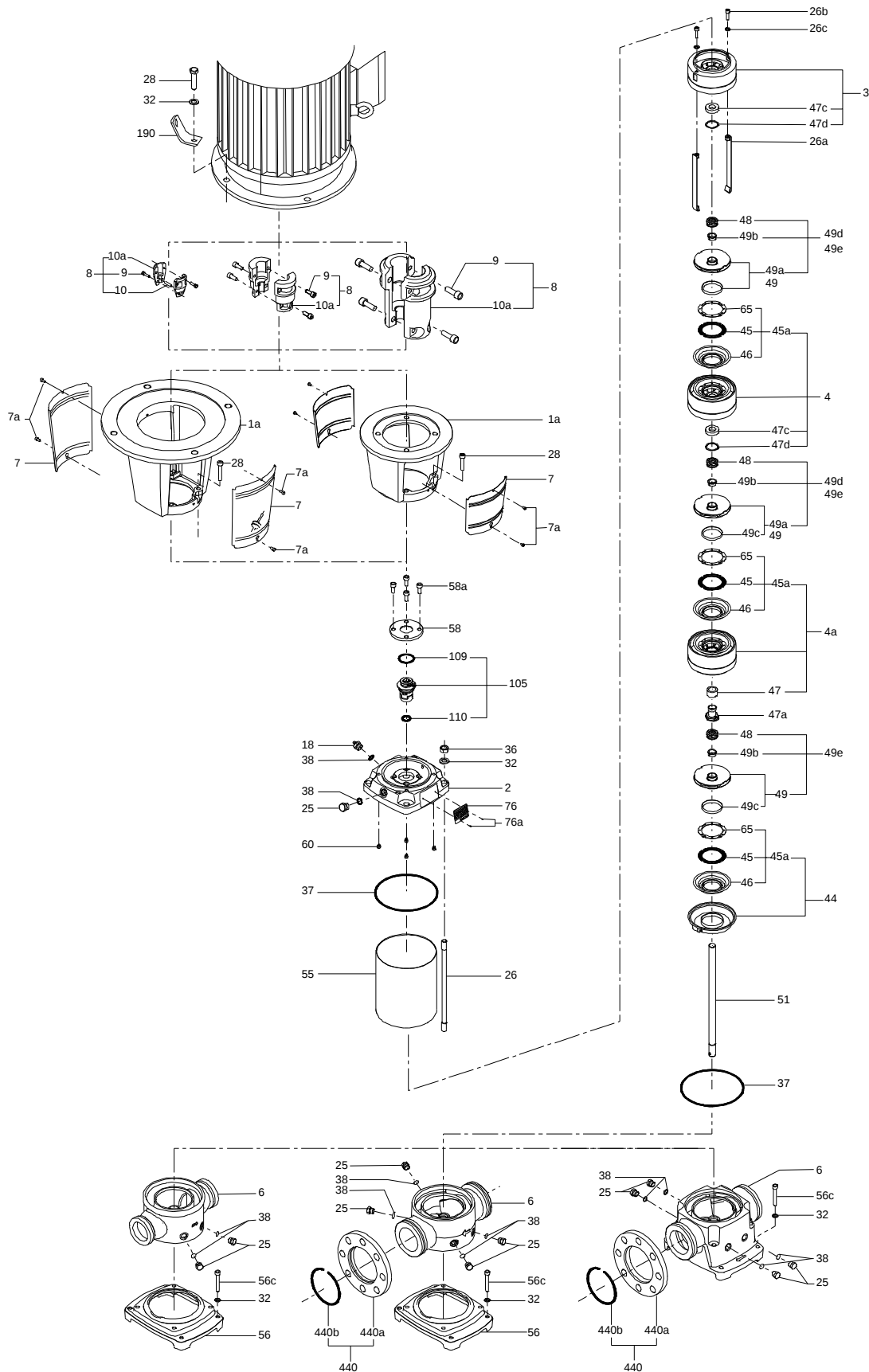
Note! All units are in [mm] unless others are stated.
Disclaimer: This simplified dimensional drawing does not show all details.

96122374 CRN 32-13-2 A-F-A-E-HQQE 50 Hz

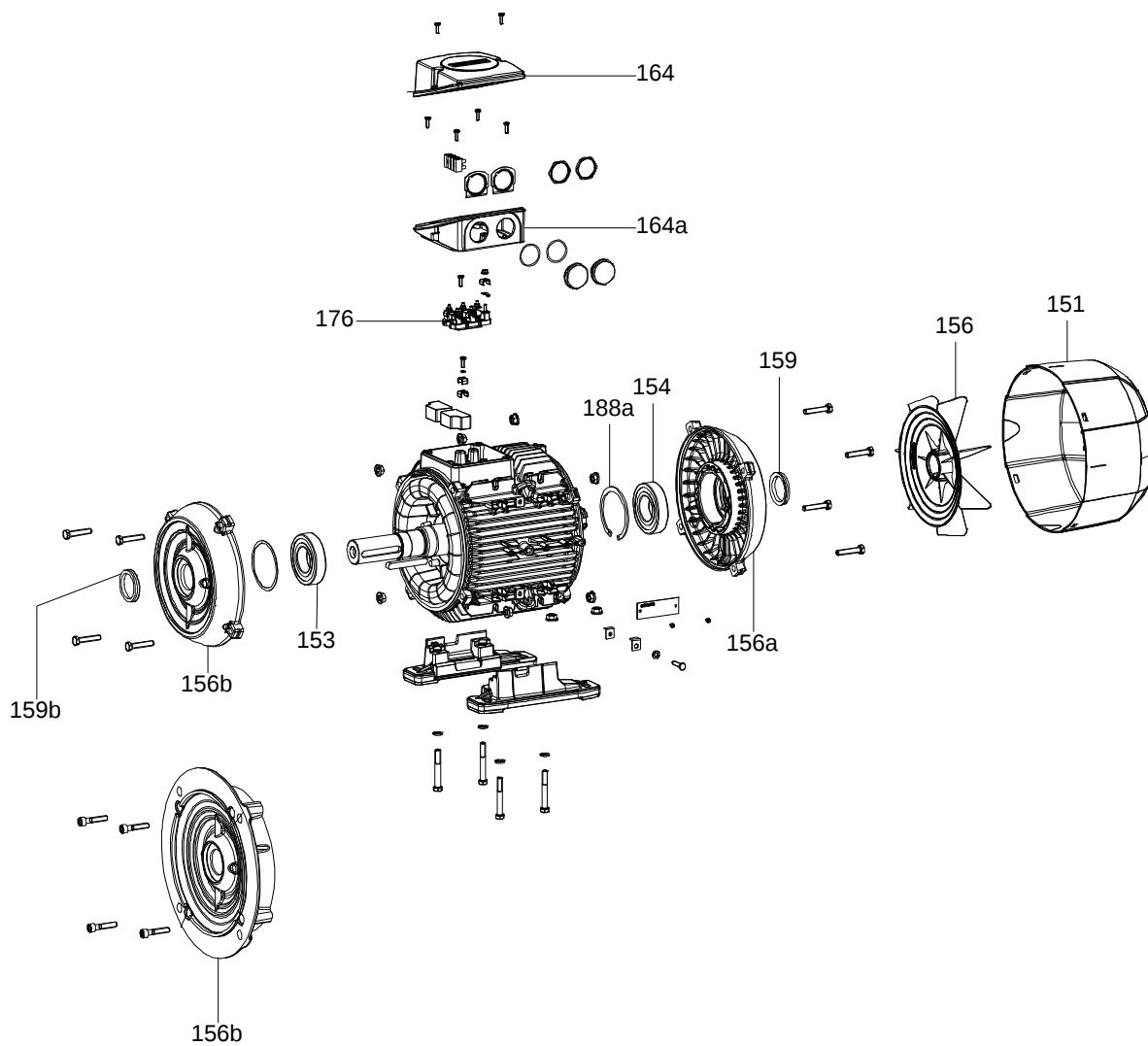


Note! All units are in [mm] unless others are stated.

(tm069487 for LACR model B standard)



(TM058162)



Spare parts CRN 32-13-2, Product No. 96122374

Valid from 3.3.2014 (1410)

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
-	Base			98925061	1	pcs
6	Base				1	
- 80	Chamber stack			96416929	1	pcs
- 80	Chamber stack				1	
- 3	Upper chamber cpl.					
	Guide cup					
	Guide cup					
	Cone					
	Guide					
	Chamber					
	Chamber					
47d	Lock ring					
47c	Bush					
- 4a	Intermediate chamber cpl.					
	Guide cup					
	Guide cup					
	Cone					
	Guide					
	Chamber					
	Chamber					
45a	Neck ring cpl.					
47	Bearing					
- 4	Intermediate chamber cpl.					
	Guide cup					
	Guide cup					
	Cone					
	Guide					
	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.					
- 44	Suction interconnector cpl.					
44a	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					
- 49d	Impeller cpl. reduced diameter					

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
48	Nut					
49b	Split cone					
- 49a	Impeller					
	Impeller hub					
49c	Wear ring					
51	Shaft					
-	Kit, chambers			98633738	1	pcs
- 4a	Intermediate chamber cpl.				1	
	Guide cup					
	Guide cup					
	Cone					
	Guide					
	Chamber					
	Chamber					
45a	Neck ring cpl.					
47	Bearing					
- 47a	Bearing cpl.				1	
	Driver					
	Holder					
	Disc spring					
	Bearing ring					
-	Kit, coupling			96416594	1	pcs
	Adjusting fork				1	
- 8	Coupling cpl.		Dimension: 22/55		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			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			98633780	1	pcs
48	Nut				1	
48	Nut				1	
49b	Split cone				1	
- 49	Impeller				1	
	Impeller hub					
49c	Wear ring					
-	Kit, Impeller, reduced diamete			98633836	1	pcs

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
48	Nut				1	
48	Nut				1	
49b	Split cone				1	
- 49a	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			
			Thickness: 4,25			
-	Kit, wear parts			98497453	1	pcs
45	Seal ring				14	
47d	Lock ring				14	
47c	Bush				11	
49c	Wear ring				14	
65	Top f/neck ring				14	
-	Motor				1	pcs
156	Kit, fan			98062265	1	
151	Kit, fan cover			98062275	1	
156b	Kit, flange			98062279	1	
	Kit, lubrication nipple			98062531	1	
156a	Kit, ND-end shield cpl.			98062517	1	
159b	Kit, seal ring			98062551	1	
176	Kit, terminal board			98062236	1	
164a	Kit, terminal box			98062262	1	
1a	Motor stool			98967671	1	pcs
2	Pump head			98593646	1	pcs
- 3	Upper chamber cpl.			98633870	1	pcs
47c	Bulk, Bush (10 pcs)			99321194	1	
+ 4	Bulk, Intermediate chamber cpl. (3 pcs)			99481487	9	pcs
+ 4a	Bulk, Intermediate chamber cpl. (5 pcs)			99262783	3	pcs
- 4	Bulk, Intermediate chamber cpl. (10 pcs)			99481488	3	pcs
45a	Bulk, Neck ring cpl. (10 pcs)			96547322	1	

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
+ 4	Intermediate chamber cpl.			98633840	9	pcs
- 6b	Base cpl.		Rubber type: EPDM	96587693	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			
56	Base plate			96587691	1	
7a	Bulk, Socket button head screw (10 pcs)			96549696	4	pcs
7	Bulk, Coupling guard (10 pcs)			96603279	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
26a	Strap cpl.			98983866	2	pcs
26	Staybolt		Length (mm): 1122	98976691	4	pcs
			Thread: M16			
28	Bulk, Hex socket head cap screw (10 pcs)		Designation: DIN 912	96536147	4	pcs
			Length (mm): 50			
			Thread: M10			
28	Bulk, Hex head screw (20 pcs)		Length (mm): 60	97506949	4	pcs
			Thread: M16			
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
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.			98633886	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)			99366796	3	pcs
+ 47a	Bulk, Bearing cpl. (10 pcs)			96534932	3	pcs
- 49e	Impeller cpl.			98394326	11	pcs
+ 49	Bulk, Impeller (10 pcs)			96534933	1	
- 49d	Impeller cpl. reduced diameter			98394466	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	
- 49a	Impeller			96547325	1	
49c	Bulk, Wear ring (10 pcs)			96534930		
55	Outer sleeve		Outer diameter: 197	99051715	1	pcs
			Length (mm): 935,5			
58	Cover			98893158	1	pcs



Company name:

Created by:

Phone:

Date:

17/02/2019

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
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