

Date: 18/02/2019

Qty. | Description

1 | CRN 64-2 A-F-A-E-HQQE



Product No.: 96123778

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

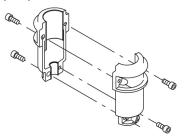
Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface. An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

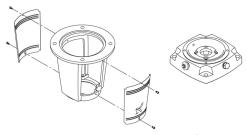
The colour code for the finished product is NCS 9000/RAL 9005.

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.



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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.

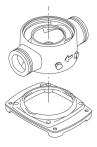




The shaft seal is retained in the pump head by a cover and screws. It can be replaced without removing the motor.

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 tappings. 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



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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: 2924 rpm

Rated flow:

Rated head:

Pump orientation:

Shaft seal arrangement:

Code for shaft seal:

Approvals on nameplate:

Curve tolerance:

Seam of the market are all and the market are al

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: 60 °C Maximum operating pressure: 16 bar

Max pressure at stated temp: 16 bar / 120 °C

16 bar / -40 °C

Type of connection: DIN
Size of inlet connection: DN 100
Size of outlet connection: DN 100
Pressure rating for pipe connection: PN 16
Flange size for motor: FF300

Electrical data:

Motor standard: IEC
Motor type: 160MB
IE Efficiency class: IE3
Rated power - P2: 11 kW
Power (P2) required by pump: 11 kW
Mains frequency: 50 Hz

Rated voltage: 3 x 380-415D/660-690Y V Rated current: 20,8-19,8/12,0-11,8 A

Starting current: 660-780 %
Cos phi - power factor: 0.88-0.84
Rated speed: 2940-2950 rpm
Efficiency: IE3 91,2%
Motor efficiency at full load: 91.2-91.2 %
Motor efficiency at 3/4 load: 91.8 %
Motor efficiency at 1/2 load: 91.3 %

Number of poles: 2

Enclosure class (IEC 34-5): 55 Dust/Jetting

Insulation class (IEC 85): F

Others:

Minimum efficiency index, MEI ≥: 0.70 Net weight: 162 kg Gross weight: 195 kg

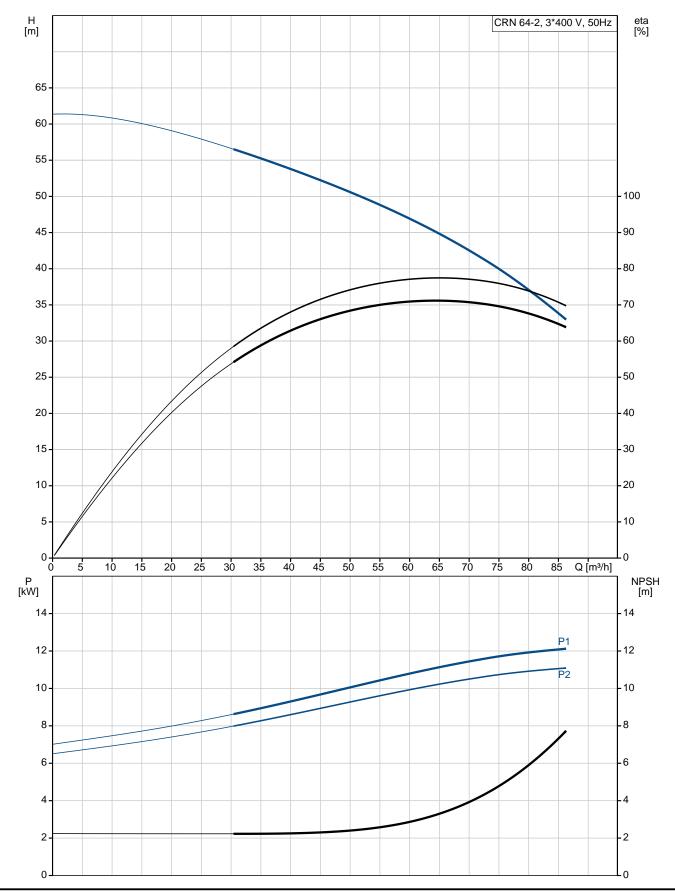


			Date:	18/02/2019	
Qty.	Description		<u></u>		
,-		0.405 0			
	Shipping volume: Danish VVS No.:	0.495 m ³			
	Danish VVS No.:	385918020			



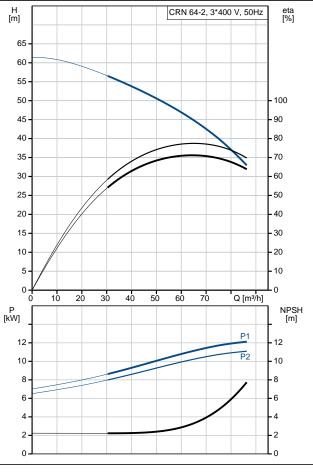
Date: 18/02/2019

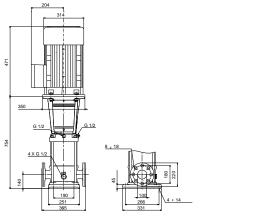
96123778 CRN 64-2 A-F-A-E-HQQE 50 Hz

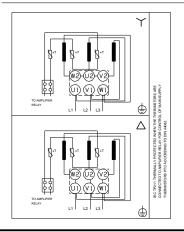




Description	Value
General information:	
Product name:	CRN 64-2 A-F-A-E-HQQE
Product No:	96123778
EAN number:	5700396700397
Technical:	
Pump speed on which pump data are based:	2924 rpm
Rated flow:	64 m³/h
Rated head:	44.3 m
Head max:	60.9 m
Stages:	2
Impellers:	2
Number of reduced-diameter impellers:	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:	В
Materials:	
Base:	Stainless steel
	EN 1.4408
	AISI 316
Impeller:	Stainless steel
r	EN 1.4401
	AISI 316
Material code:	A
Code for rubber:	E
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 / -40 °C
Type of connection:	DIN
Size of inlet connection:	DN 100
Size of outlet connection:	DN 100
Pressure rating for pipe connection:	PN 16
Flange size for motor:	FF300
Connect code:	F
Liquid:	<u>'</u>
Pumped liquid:	Water
Liquid temperature range:	-40 120 °C
Liquid temperature during operation:	20 °C
Density:	998.2 kg/m³
Electrical data:	550.2 Rg/III-
Motor standard:	
IVIULUI SLAITUATU.	IEC
Motor typo:	IEC 160MP
Motor type:	160MB
IE Efficiency class:	160MB IE3
IE Efficiency class: Rated power - P2:	160MB IE3 11 kW
IE Efficiency class: Rated power - P2: Power (P2) required by pump:	160MB IE3 11 kW 11 kW
IE Efficiency class: Rated power - P2:	160MB IE3 11 kW 11 kW 50 Hz
IE Efficiency class: Rated power - P2: Power (P2) required by pump:	160MB IE3 11 kW 11 kW







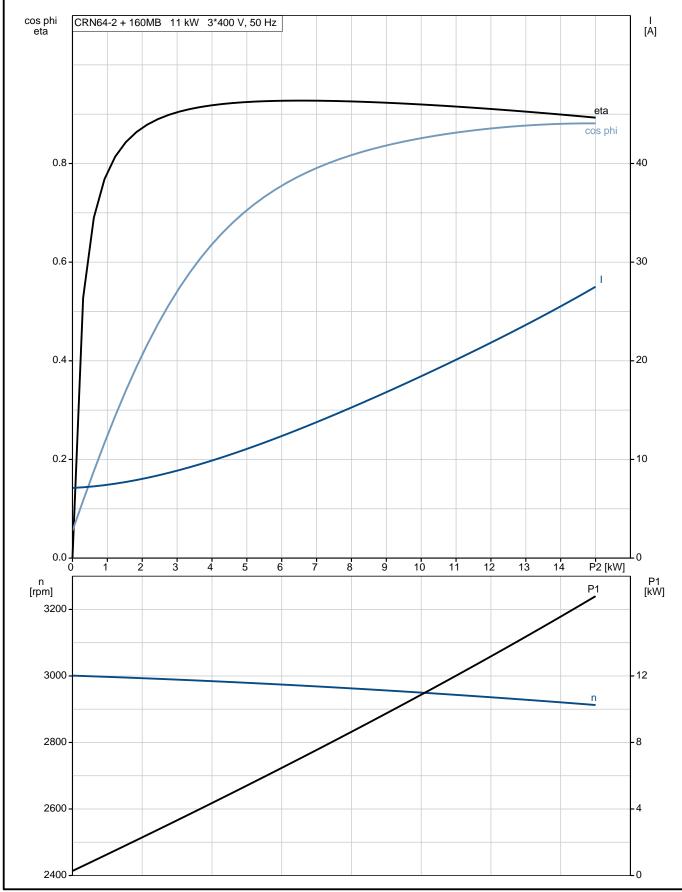


Description	Value
Starting current:	660-780 %
Cos phi - power factor:	0.88-0.84
Rated speed:	2940-2950 rpm
Efficiency:	IE3 91,2%
Motor efficiency at full load:	91.2-91.2 %
Motor efficiency at 3/4 load:	91.8 %
Motor efficiency at 1/2 load:	91.3 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	PTC
Motor No:	85U17524
Controls:	
Frequency converter:	NONE
Others:	
Minimum efficiency index, MEI â%¥:	0.70
Net weight:	162 kg
Gross weight:	195 kg
Shipping volume:	0.495 m ³
Danish VVS No.:	385918020



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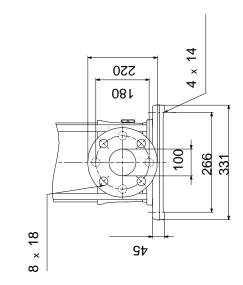
96123778 CRN 64-2 A-F-A-E-HQQE 50 Hz

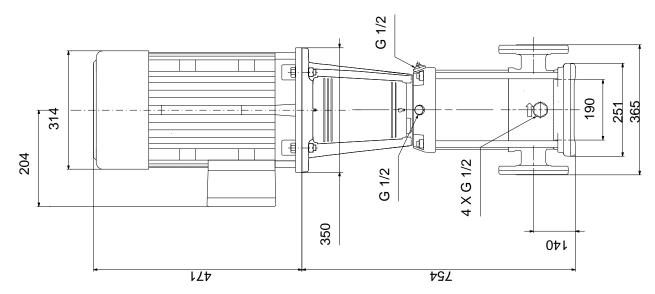




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96123778 CRN 64-2 A-F-A-E-HQQE 50 Hz



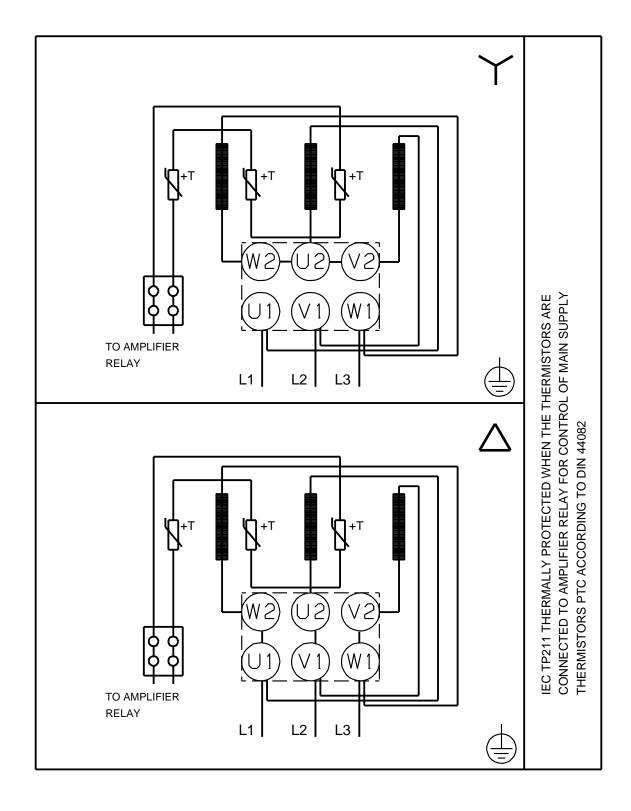


Note! All units are in [mm] unless others are stated. Disclaimer: This simplified dimensional drawing does not show all details.



Date: 18/02/2019

96123778 CRN 64-2 A-F-A-E-HQQE 50 Hz

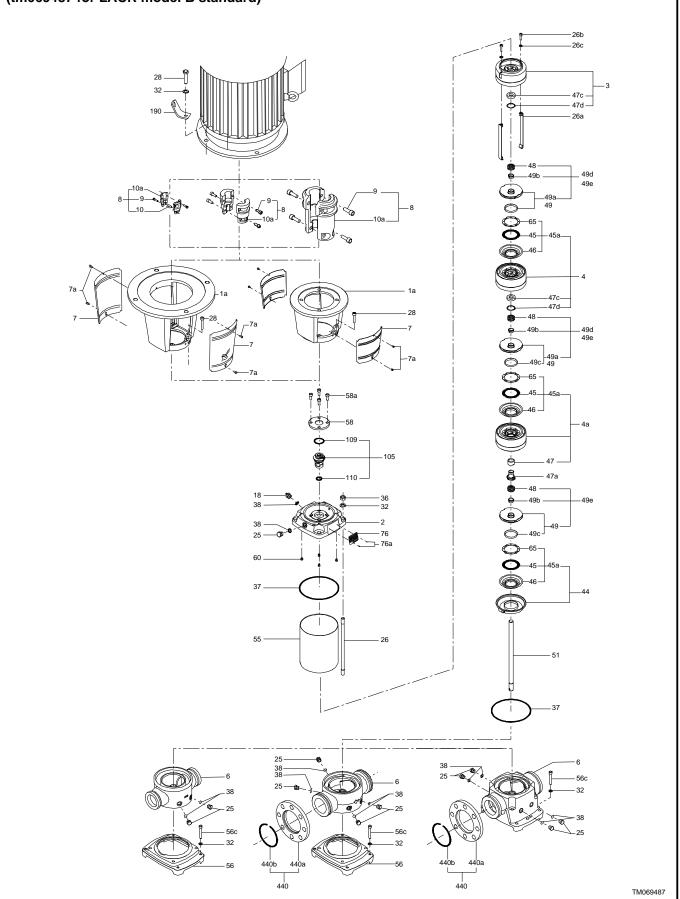


Note! All units are in [mm] unless others are stated.



Date: 18/02/2019

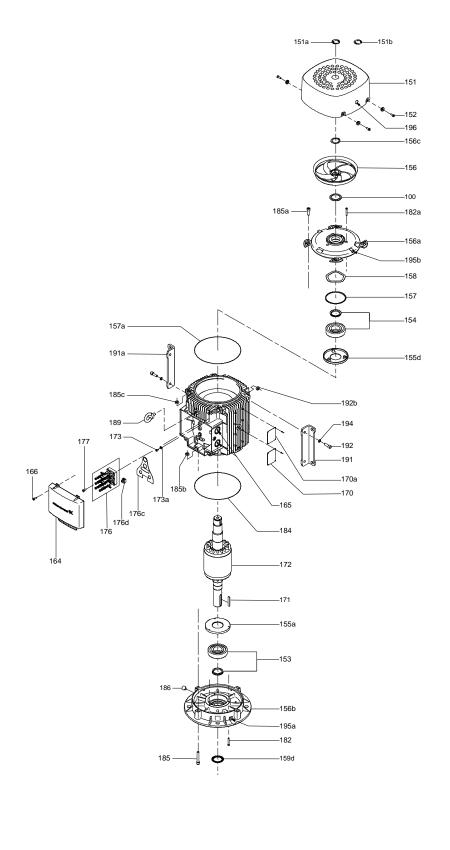
(tm069487 for LACR model B standard)



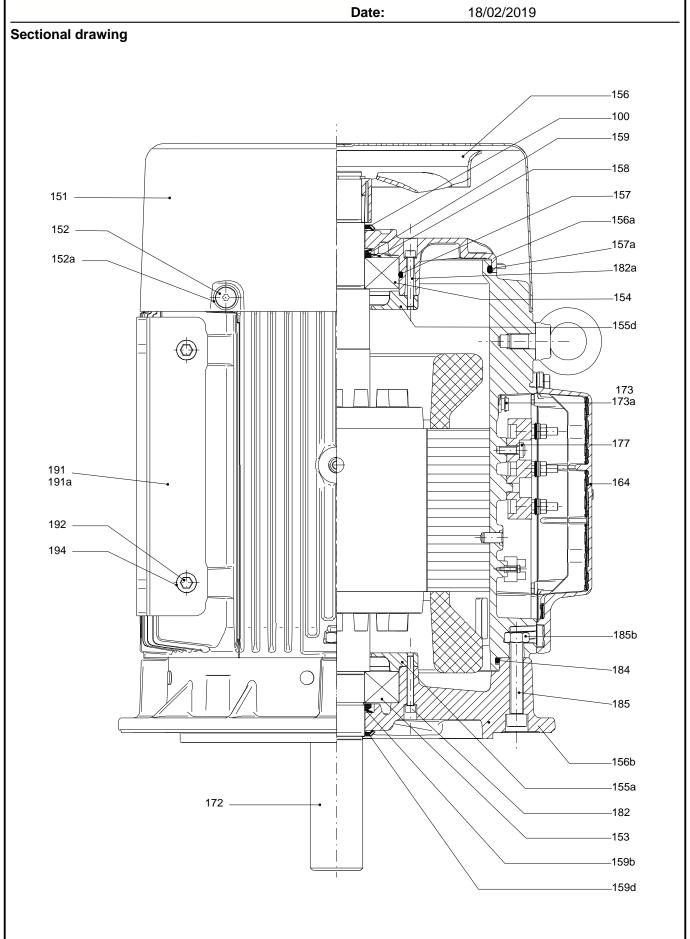


Date: 18/02/2019

Exploded view









Date: 18/02/2019

Spare parts CRN 64-2, Product No. 96123778 Valid from 3.3.2014 (1410)

Pos	Description	Annotation	Classification Data	Part no.	Qty.	
	Base			96587697	1	pc
6	Base				1	
80	Kit, chamber stack			96416330		pc
80	Chamber stack				1	ı
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					
26c	Washer		Designation: D	IN 125A		
			Thickness: 1,6			
26b	Hex socket head cap screw					
26a	Strap cpl.		Length (mm):	174 5		
	Chap op		Thread: M8	,0		
44	Suction interconnector cpl.					
44a	Inlet part					
45	Seal ring					
46	Neck ring					
65	Top f/neck ring					
47a	Bearing cpl.					
71 U	Driver					
	Holder					
	Disc spring					
	Bearing ring					
49e						
	Impeller cpl.					
48 49b	Nut Split copo					
49b 49	Split cone Impeller					
49						
10 -	Impeller hub					
49c	Wear ring					
51	Shaft			000010==	_	
	Kit, chambers			98634056		po
4a	Intermediate chamber cpl.				1	l
	Guide cup					
	Guide cup					
	Cone					
	Guide vane					
	Chamber					
	Chamber					
	Neck ring cpl.					



Pos	Description	Annotation	Classification Data	Part no.	uty	. U	m
47	Bearing						
- 47a	Bearing cpl.					1	
	Driver						
	Holder						
	Disc spring						
	Bearing ring						
	Kit, coupling			96416592	1	р	cs
	Adjusting fork					1	
- 8	Coupling cpl.		Dimension: 22/42			1	
9	Hex socket head cap screw		Designation: DIN	J 012		•	
<u> </u>	Tiex societ flead cap screw		Length (mm): 25	1012			
			Thread: M10				
40-	O a combinato la alf		Tilleau. WTU				
10a	Coupling half						
•	Kit, coupling guard			96505135	1		CS
7a	Socket button head screw					4	
7	Coupling guard					2	
-	Kit, cover			98832448	1	р	cs
58a	Hex socket head cap screw		Designation: DIN 91	2		4	
	· ·		Length (mm): 25				
			Thread: M10				
58	Cover					1	
	Kit, gaskets			96416599	1		cs
-	_			30410333	'		Co
^-	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 immeller		1111CK11655. 3,33	98634079	4	_	
. 40	Kit, impeller			90034079	1		cs
48	Nut					1	
48	Nut					1	
49b	Split cone					1	
49	Impeller					1	
	Impeller hub						
49c	Wear ring						
-	Kit, plug			96505136	1	р	cs
- 18	Air vent screw					1	
-	Spindle						
	Plug						
25						4	
	Plug						
25	Plug		Diamentes 40.0			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	
	- U		Material type: FKM			-	
			Thickness: 2,4				
20	Oring					2	
38	O-ring		Diameter: 16,3			2	



			Date.	10/02/20	ı y		
Pos	Description	Annotation	Classification Data Material type: EPDM	Part no.	Qty	.	Un
			Thickness: 2,4				
38	O-ring		Diameter: 16,3			4	
00	C Tilly		Material type: EPDM			_	
			Thickness: 2,4				
	100		mickness. 2,4	00505450	_		
	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			98497494	1		pcs
45	Seal ring					2	
47d	Lock ring					2	
47c	Bush					1	
49c	Wear ring					2	
65	Top f/neck ring					2	
00	Motor			85004227	1		no-
	*******			85904227			pcs
00'	Kit, bearing cpl.			967966	0/6	1	
32b	Waved washer						
153	Angular-contact bearing						
154	Ball bearing						
157	O-ring						
159	V-ring						
	Kit, bearing plate			967966	664	1	
155.a	Bearing cover						
208a	Gasket						
208	Hex socket head cap screw		Designation: DIN	l912			
	·		Length (mm): 40				
			Thread: M5				
	Kit, eyebolt			967967	12	1	
189	Eyebolt						
	Kit, fan			967966	354	1	
156.c	Retaining ring			33.33		•	
156.0	Fan						
130	Kit, fan cover			967966	17	1	
454				907900)47	-	
151	Fan cover						
152.a							
152	Hex head cap screw						
196	Diaphragm						
	Kit, flange			967966	62	1	
156.b	<u> </u>						
159.b							
185.b	Nut						
185	Hex socket head cap screw						
186	Drain plug						
195.a							
	Kit, gaskets			967985	808	1	
184	O-ring		Diameter: 235			•	
.57	Kit, lubrication nipple		Sidiffoldi. 200	967966	71	1	
105 -				301 300	,, ,	'	
195.b							
195.a	• • • • • • • • • • • • • • • • • • • •			00			
	IZU NID			967966	69	1	
	Kit, ND-end shield cpl.						
32b	Waved washer						
32b 156.a 157	Waved washer						



Pos	Description	Annotation	Classification Data	Part no.	Qty	. Uni
159	V-ring					
185.c	Nut					
185.a	Hex socket head cap screw					
195.b	Grease nipple					
	Kit, shaft seal			96843	459	1
159.b	V-ring					
159	V-ring					
	Kit, terminal board			96796	657	1
	Terminal connection					
	Washer					
36	Hex nut					
173	Torx Screw					
176.d	Terminal board					
176	Terminal board					
177	Torx Screw					
	Kit, terminal box cover			96796	659	1
164	Terminal box cover			00700	000	•
273a	Pan head thread forming screw					
1a	Motor stool			98993921	1	pcs
2	Pump head			96587726		pcs
3				98634150		•
	Upper chamber cpl. Bulk, Bush (10 pcs)			99321		pcs
47c						•
4a	Bulk, Intermediate chamber cpl. (5 pcs)			99262947		pcs
45a	Bulk, Neck ring cpl. (10 pcs)			96547		
45a	Neck ring cpl.			98678		
7a	Bulk, Socket button head screw (10 pcs)			96549696		pcs
7	Bulk, Coupling guard (10 pcs)			96603279		pcs
- 8	Coupling cpl.		Dimension: 22/42	96587704		pcs
- 18	Bulk, Air vent screw (5 pcs)			96547461	1	pcs
+ 18	Air vent screw			95061351	1	pcs
25	Bulk, Plug (10 pcs)			96536013		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.		Length (mm): 174,5	98983897	2	pcs
			Thread: M8			
26	Staybolt		Length (mm): 396	98976741	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
37	Bulk, O-ring (10 pcs)		Diameter: 216	96536144		pcs
	<u>- · · · · · · · · · · · · · · · · · · ·</u>		Material type: FKM			•
			Thickness: 4			
38	Bulk, O-ring (10 pcs)		Diameter: 16,3	99198815	4	pcs
- -	, - 3 \ - F - 7 /		Material type: EPDM		-	
			Thickness: 2,4			
38	Bulk, O-ring (10 pcs)		Diameter: 16,3	99198813	2	pcs
00	Sam, Sinig (10 poo)		Material type: FKM	30130013	_	Pos
			Thickness: 2,4			
			1110KH033. 2, 4			



	Pos	Description	Annotation		Part no.	Qty	<u>.</u> l	Unit
	38	Bulk, O-ring (50 pcs)		Diameter: 16,3	99412727	4	F	pcs
				Material type: EPDM				
				Thickness: 2,4				
	38	Bulk, O-ring (50 pcs)		Diameter: 16,3	99412883	2	F	pcs
				Material type: FKM				
				Thickness: 2,4				
-	44	Suction interconnector cpl.			98634153	1	F	pcs
	45	Bulk, Seal ring (10 pcs)			965360	030	1	
	65	Bulk, Top f/neck ring (10 pcs)			965360)14	1	
+	47a	Bulk, Bearing cpl. (5 pcs)			99270649	1	F	pcs
+	47a	Bulk, Bearing cpl. (10 pcs)			96535951	1	ı	pcs
-	49e	Impeller cpl.			98394372	2	ı	pcs
	48	Bulk, Nut (3 pcs)			992626	088	1	
	48	Bulk, Nut (10 pcs)			992626	883	1	
	48	Bulk, Nut (10 pcs)			965360)16	1	
	49b	Bulk, Split cone (10 pcs)			965360	010	1	
	49c	Bulk, Wear ring (10 pcs)			965358	379	1	
	55	Outer sleeve			96587888	1	F	pcs
	56	Base plate			96587696	1	F	pcs
	58	Cover			98893158	1	ı	pcs
	60	Bulk, Spring (20 pcs)			96536032	4	F	pcs
-	105	Bulk, Shaft seal (12 pcs)		Material type: HQQE	96984086	1	F	pcs
		Adjusting fork			965878	396	1	
	109	Bulk, O-ring (10 pcs)			965475	586	1	
+	105	Bulk, Shaft seal (12 pcs)		Material type: HQQE	96984070	1	ı	pcs
	440b	Bulk, Lock ring (4 pcs)			96547435	1	ı	pcs