

Date: 16/02/2019

Qty. | Description

1 | CR 32-4 A-F-A-E-HQQE



Note! Product picture may differ from actual product

Product No.: 96122013

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

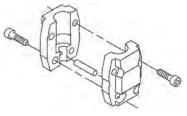
Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface. An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

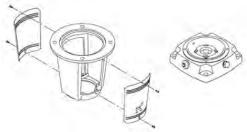
A standard split coupling connects the pump and motor shaft. It is enclosed in the pump head/motor stool by means of two coupling guards.



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



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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.

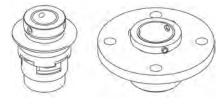
Primary seal:

- 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 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.



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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/m³

Technical:

Pump speed on which pump data are based: 2919 rpm

Rated flow: 30 m³/h
Rated head: 59.1 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 SIC

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: FF265

Electrical data:

Motor standard: IEC
Motor type: 132SB
IE Efficiency class: IE3
Rated power - P2: 7.5 kW
Power (P2) required by pump: 7.5 kW
Mains frequency: 50 Hz

Rated voltage: 3 x 380-415D/660-690Y V Rated current: 14,4-14,0/8,30-8,10 A

2

Starting current: 780-910 %

Cos phi - power factor: 0.88-0.82

Rated speed: 2910-2920 rpm

Efficiency: IE3 90,1%

Motor efficiency at full load: 90.1-90.4 %

Motor efficiency at 3/4 load: 90.8 %

Motor efficiency at 1/2 load: 90.8 %

Number of poles:



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

Insulation class (IEC 85):

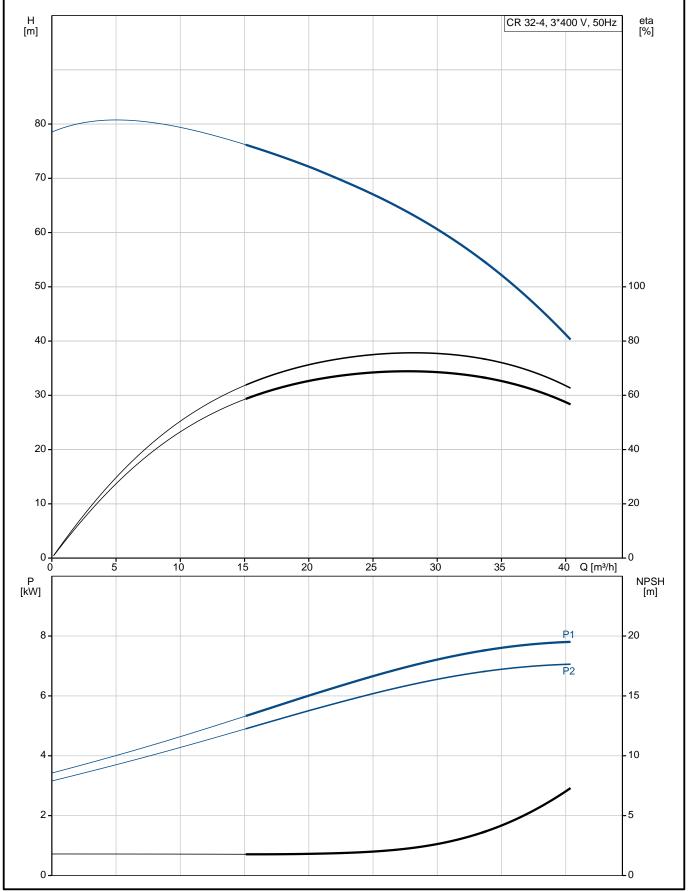
Others:

Minimum efficiency index, MEI ≥: 0.70
Net weight: 110 kg
Gross weight: 133 kg
Shipping volume: 0.309 m³
Danish VVS No.: 385906040
Swedish RSK No.: 5824875



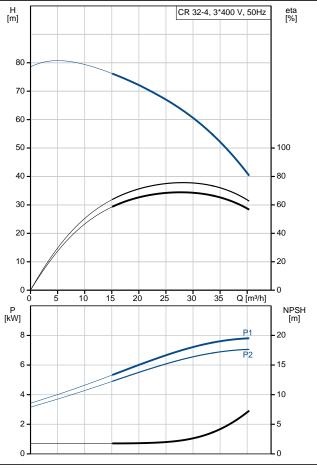
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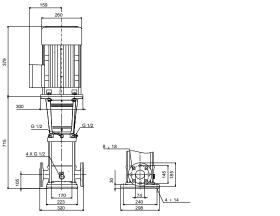
96122013 CR 32-4 A-F-A-E-HQQE 50 Hz

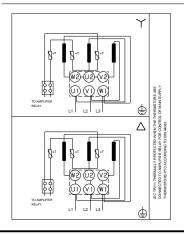




Description	Value
General information:	
Product name:	CR 32-4 A-F-A-E-HQQE
Product No:	96122013
EAN number:	5700396680576
Technical:	
Pump speed on which pump data are	
based:	2919 rpm
Rated flow:	30 m³/h
Rated head:	59.1 m
Head max:	77.8 m
Stages:	4
Impellers:	4
Number of reduced-diameter impellers:	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:	Cast iron
	EN 1563 EN-GJS-500-7
	ASTM A536 80-55-06
Impeller:	Stainless steel
<u>'</u>	EN 1.4301
	AISI 304
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
max process at clases temp.	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:	FF265
Connect code:	F F F F F F F F F F F F F F F F F F F
	Г
Liquid:	Matan
Pumped liquid:	Water
Liquid temperature range:	-30 120 °C
Liquid temperature during operation:	20 °C
Density:	998.2 kg/m³
Electrical data:	150
Motor standard:	IEC
Motor type:	132SB
IE Efficiency class:	IE3
Rated power - P2:	7.5 kW
Power (P2) required by pump:	7.5 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-415D/660-690Y V







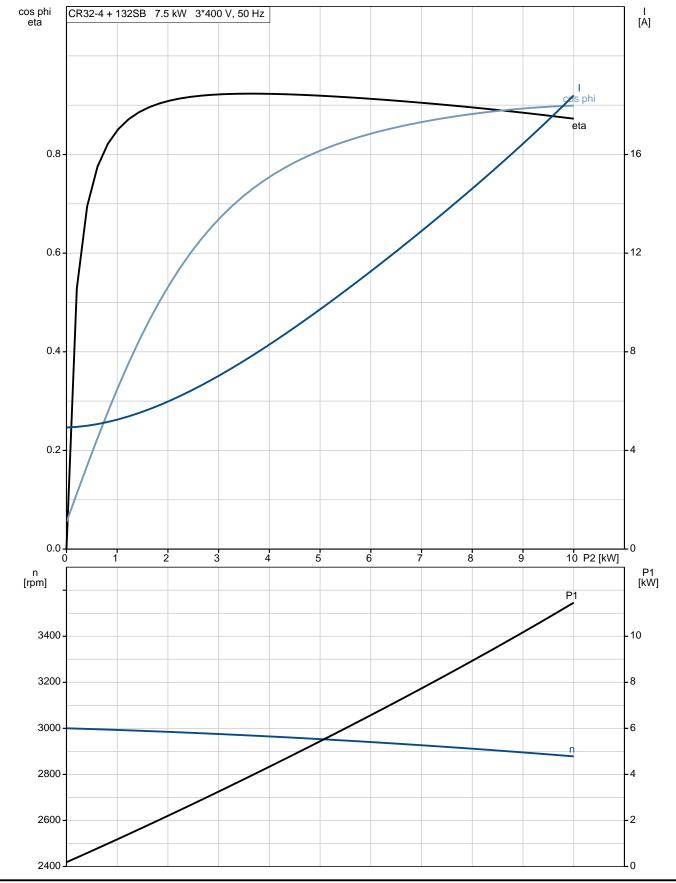


Description	Value
Rated current:	14,4-14,0/8,30-8,10 A
Starting current:	780-910 %
Cos phi - power factor:	0.88-0.82
Rated speed:	2910-2920 rpm
Efficiency:	IE3 90,1%
Motor efficiency at full load:	90.1-90.4 %
Motor efficiency at 3/4 load:	90.8 %
Motor efficiency at 1/2 load:	90.8 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	PTC
Motor No:	85U17522
Controls:	
Frequency converter:	NONE
Others:	
Minimum efficiency index, MEI ≥:	0.70
Net weight:	110 kg
Gross weight:	133 kg
Shipping volume:	0.309 m ³
Danish VVS No.:	385906040
Swedish RSK No.:	5824875



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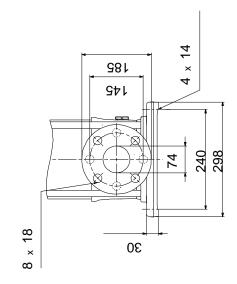
96122013 CR 32-4 A-F-A-E-HQQE 50 Hz

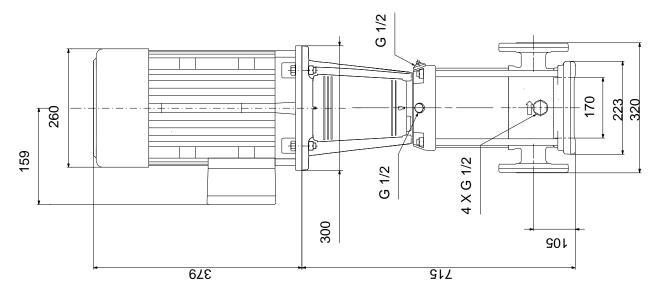




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96122013 CR 32-4 A-F-A-E-HQQE 50 Hz





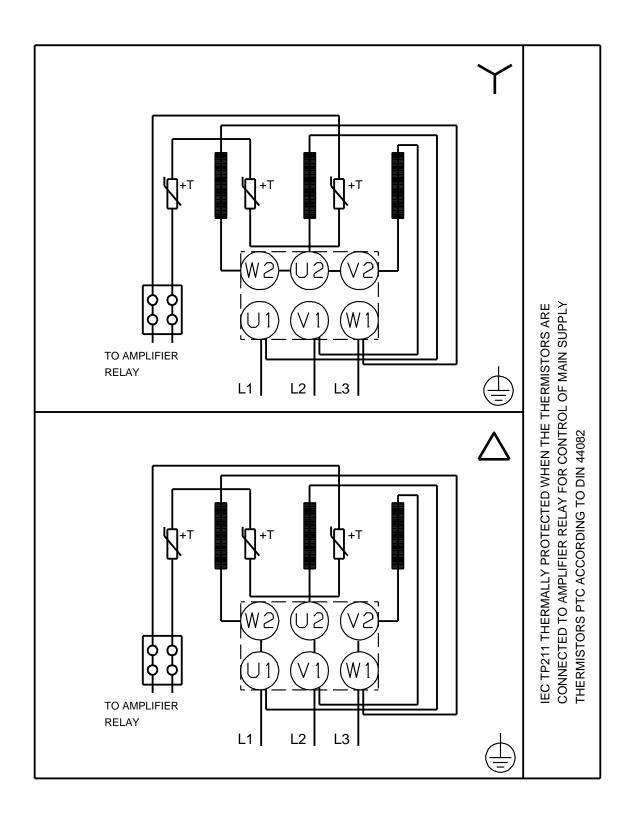
Note! All units are in [mm] unless others are stated. Disclaimer: This simplified dimensional drawing does not show all details.



Date:

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96122013 CR 32-4 A-F-A-E-HQQE 50 Hz

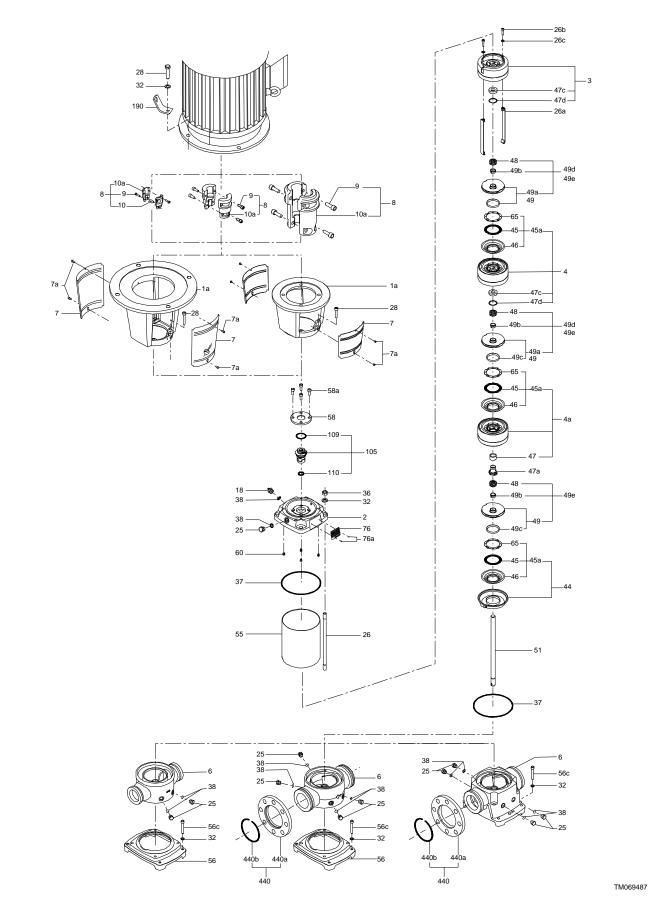


Note! All units are in [mm] unless others are stated.



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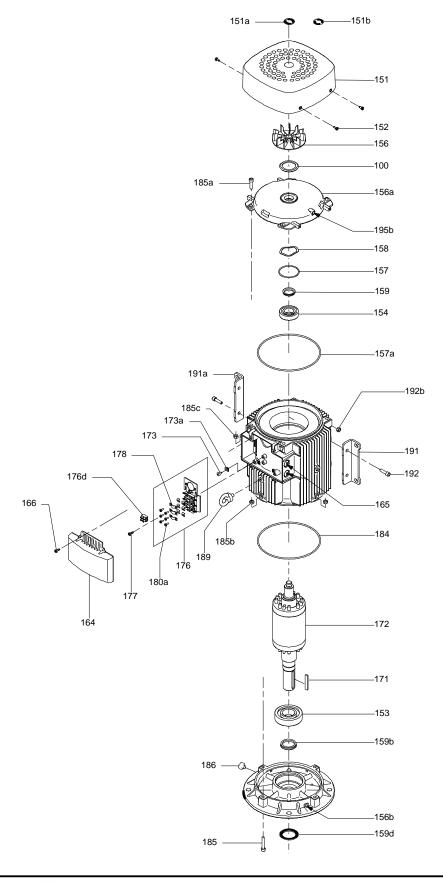
(tm069487 for LACR model B standard)



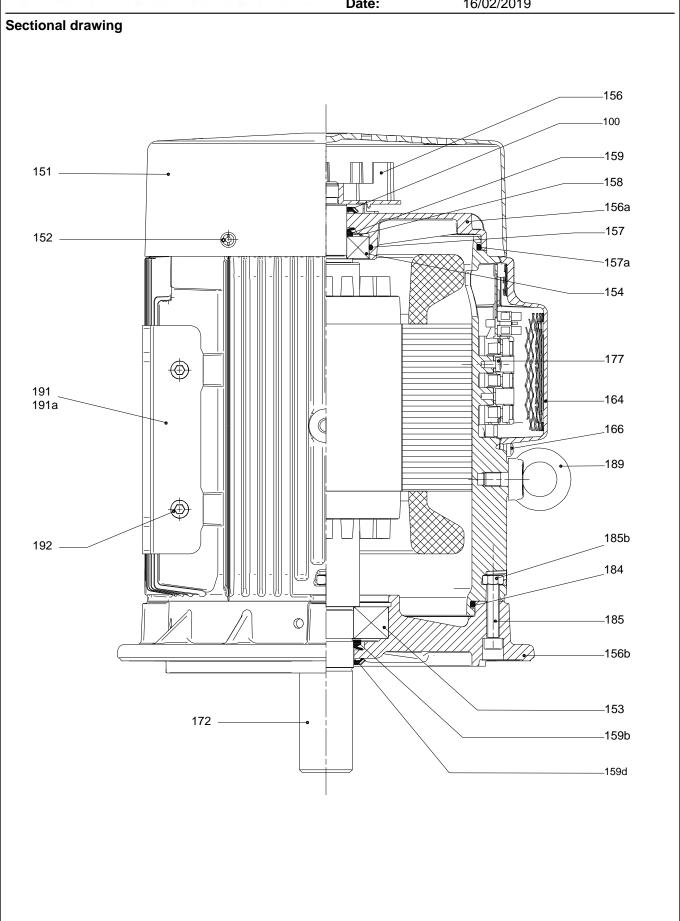


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Exploded view









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Spare parts CR 32-4, Product No. 96122013 Valid from 3.3.2014 (1410)

Pos	Description	Annotation	Classification Data	Part no.	Qty.	
	Base			96547299	1	pc
6	Base				1	l
80	Kit, chamber stack			96416278	1	рс
80	Chamber stack				1	l
3	Upper chamber cpl.					
	Cone					
	Spare, turbulence optimizer KP					
	Spare, turbulence optimizer KP					
	Spare, turbulence optimizer KP					
	Spare, turbulence optimizer KP					
	Guide					
47d	Lock ring					
47c	Bush					
4a	Intermediate chamber cpl.					
	Intermediate chamber cpl.					
45a	Neck ring cpl.					
45 45	Seal ring					
46	Neck ring					
65	Top f/neck ring					
47	Bearing					
4	Intermediate chamber cpl.					
4	Cone					
	Spare, turbulence optimizer KP					
	Spare, turbulence optimizer KP					
	Spare, turbulence optimizer KP Spare, turbulence optimizer KP					
	Spare, turbulence optimizer KP					
45-	Guide					
45a	Neck ring cpl.					
45	Seal ring					
46	Neck ring					
65	Top f/neck ring					
47d	Lock ring					
47c	Bush					
26c	Washer		Designation: DIN 125A			
			Thickness: 1,6			
26b	Hex socket head cap screw					
26a	Strap cpl.		Length (mm): 289			
			Thread: M8			
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					
49e	Impeller cpl.					
48	Nut					
49b	Split cone					
49	Impeller					
	Impeller hub					



Pos	Description	Annotation Classification Data	Part no.	Qty	. U	Jni
49c	Wear ring					
51	Shaft					
	Kit, chambers		98497462	1	р	CS
4a	Intermediate chamber cpl.				1	
	Intermediate chamber cpl.					
45a	Neck ring cpl.					
45	Seal ring					
46	Neck ring					
65	Top f/neck ring					
47	Bearing					
47a	Bearing cpl.				1	
	Driver					
	Holder					
	Disc spring					
	Bearing ring					
			96416591	1	_	
	Kit, coupling		90410391	!		CS
_	Adjusting fork	Desire diam DIN 040			1	
9	Hex socket head cap screw	Designation: DIN 912			4	
		Length (mm): 25				
		Thread: M10				
10a	Coupling	Type: SPACER			1	
	Kit, coupling guard		96505134	1	р	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 912			4	
		Length (mm): 25				
		Thread: M10				
58	Cover				1	
	Kit, gaskets		96416597	1	р	CS
	Adjusting fork				1	
37	O-ring				2	
38	O-ring	Diameter: 16,3			2	
	- 3	Material type: EPDM				
		Thickness: 2,4				
38	O-ring	Diameter: 16,3			4	
- 00	o mig	Material type: EPDM			_	
		Thickness: 2,4				
00	Con wise as	THICKHESS. 2,4			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		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	Plug				4	
25	Plug				1	
38	O-ring	Diameter: 16,3			2	
30	O-mily				_	
		Material type: FKM Thickness: 2,4				



Pos	Description		ر. ل
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	р
	Grinding device	00020.00	1
105	Shaft seal	Material type: HQQE	1
100	Adjusting fork	Material type. The de	•
109	O-ring		
		Diameter: 21 F	
110	O-ring	Diameter: 21,5	
		Material type: EPDM	
	IXI and and	Thickness: 4,25	
	Kit, wear parts	98497451 1	p
45	Seal ring		7
47d	Lock ring		7
47c	Bush		5
49c	Wear ring		7
65	Top f/neck ring		7
	Motor	91333038 1	р
	Kit, bearing cpl.	96796642	1
111	Ball bearing	Designation: 6206.2Z.C3.SYN	
153	Angular-contact bearing	`	
157	O-ring	Diameter: 62	
	<u> </u>	Material type: NBR	
		Thickness: 3	
158	Waved washer	THIOMICOC. O	
159.b	V-ring		
159	V-ring		
139		00070074	4
400	Kit, eyebolt	96279874	1
189	Lifting eye	00700100	
	Kit, fan	96796189	1
156	Fan		
	Kit, fan cover	96796188	1
151	Fan cover		
152	Pan head thread forming screw		
	Kit, flange	96796224	1
156.b	Flange		
159.b	V-ring		
185c	Nut		
185	Hex socket head cap screw		
186	Drain plug		
	Kit, gaskets	96798510	1
184	O-ring	30730310	•
.07	Kit, ND-end shield cpl.	96796598	1
156 c		90/90398	1
156.a		Diamatan 00	
157	O-ring	Diameter: 62	
		Material type: NBR	
		Thickness: 3	
158	Waved washer		
159	V-ring		
185.c	Nut		



Pos	Description	Annotation Classification Data	Part no. Qty	y. Uni
185.a	Hex socket head cap screw			
-	Kit, shaft seal		96843458	1
159.b	V-ring			
159	V-ring			
-	Kit, terminal board		96030209	1
176	Terminal			
176	Terminal board			
178	Connecting piece			
179	Cable shoe			
180a	Slot cheese head screw	Designation: COMBI	TORX T25	
		Length (mm): 10		
		Thread: M5		
180	Wire clamp			
-	Kit, terminal box cover		96796215	1
164	Terminal box cover w/gasket			
166	Pan head thread forming screw			
1a	Motor stool		96547431 1	pcs
2	Pump head		96587722 1	pcs
- 3	Upper chamber cpl.		98633863 1	pcs
47c	Bulk, Bush (10 pcs)		99321194	
+ 4a	Bulk, Intermediate chamber cpl. (5 pcs)		99262755 1	
	Intermediate chamber cpl. (5 pcs)		99262755 1	pcs
+ 4a - 4	Bulk, Intermediate chamber cpl. (3 pcs)		96534939 2	pcs
				pcs
- 45a	Bulk, Neck ring cpl. (10 pcs)		98686545	
45	Bulk, Seal ring (10 pcs)		979152	
65	Bulk, Top f/neck ring (10 pcs)		965349	
- 6	Base cpl.	Rubber type: EPDM	96587692 1	pcs
25	Bulk, Plug (10 pcs)			4
37	Bulk, O-ring (10 pcs)		96536149	
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
+ 8	Coupling cpl.	Dimension: 22/38	96587705 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
26c	Bulk, Washer (4 pcs)	Designation: DIN 125A	99262704 2	pcs
	, , , , , , , , , , , , , , , , , , , ,	Thickness: 1,6		7.00
26c	Washer	Designation: DIN 125A	96586880 2	pcs
		Thickness: 1,6	2000000 2	Poo
26b	Bulk, Hex socket head cap screw (10 pcs)	11110101000. 1 ₃ 0	98931380 2	pcs
26a	Strap cpl.	Length (mm): 289	98983837 2	pcs
200	σιιαρ ορι.	Thread: M8	90903031 Z	pcs
26	Stavbolt	Length (mm): 426	98923038 4	nac
26	Staybolt	Thread: M16	20223030 4	pcs
20	Rulk Hay sacket hand can corew (40 per)		06526447 4	nac
28	Bulk, Hex socket head cap screw (10 pcs)	Designation: DIN 912	96536147 4	pcs
		Length (mm): 50		
60	Dulle Harris (00	Thread: M10	000004=4	
28	Bulk, Hex head screw (20 pcs)	Length (mm): 45 MM	96620474 4	pcs
00	D. H. W. J. (400	Thread: M12	00000074	
32	Bulk, Washer (100 pcs)	Designation: DIN 125 A	98923051 4	pcs
		Internal diameter: 17		
		Outer diameter: 30		



	Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
				Thickness: 3			
	36	Bulk, Hex nut (20 pcs)		Thread: M16	96620480	4	pcs
	36	Bulk, Nut (20 pcs)		Thread: M12	96620479	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		pcs
	45	Bulk, Seal ring (10 pcs)			979152		
	65	Bulk, Top f/neck ring (10 pcs)			965349	_	
+	47a	Bulk, Bearing cpl. (5 pcs)			99366796		pcs
+	47a	Bulk, Bearing cpl. (10 pcs)			96534932	1	pcs
-	49e	Bulk, Impeller cpl. (3 pcs)			98287180		pcs
	48	Bulk, Nut (3 pcs)			992626		
	48	Bulk, Nut (10 pcs)			992626		
	48	Bulk, Nut (10 pcs)			965360		
	49b	Bulk, Split cone (10 pcs)			965360		
	49c	Bulk, Wear ring (10 pcs)			965349	30 1	i .
+	49e	Bulk, Impeller cpl. (10 pcs)			96534935	4	pcs
+	49e	Impeller cpl.			98394455	4	pcs
	55	Outer sleeve		Outer diameter: 197,0	98895077	1	pcs
				Length (mm): 305,5			
	58	Cover			98893158	1	pcs
	60	Bulk, Spring (20 pcs)			96536032		pcs
-	105	Bulk, Shaft seal (12 pcs)		Material type: HQQE	96984086		pcs
		Adjusting fork			965878		
	109	Bulk, O-ring (10 pcs)			965475	86 1	
+	105	Bulk, Shaft seal (12 pcs)		Material type: HQQE	96984070	1	pcs
	203	Bulk, Lock ring (4 pcs)			96534918	1	pcs