

Date: 16/02/2019

Qty. | Description

1 | CR 10-4 A-A-A-E-HQQE



Note! Product picture may differ from actual product

Product No.: 96500982

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 oval flanges with internal Rp threads.

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

Further product details

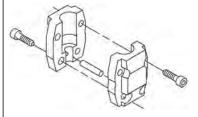
Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface. An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

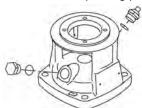
The colour code for the finished product is NCS 9000/RAL 9005.

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, pump head cover and flange for motor mounting is made in one piece. 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.

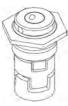
Primary seal:

- 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)

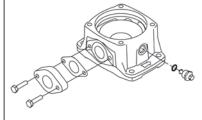
EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.



The shaft seal is 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 base is made of cast iron. The oval flanges are bolted to the base. The outlet side of the base has a drain plug. The pump is secured to the foundation by four bolts through the base plate.



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).

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: -20 .. 120 °C
Liquid temperature during operation: 20 °C
Density: 998.2 kg/m³



Date: 16/02/2019

Qty. **Description**

Technical:

Pump speed on which pump data are based: 2896 rpm

Rated flow: 10 m³/h Rated head: 31.9 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: Cast iron

EN 1561 EN-GJL-200

ASTM A48-25B

Impeller: Stainless steel

> EN 1.4301 **AISI 304**

Bearing: SIC

Installation:

Maximum ambient temperature: 60 °C Maximum operating pressure: 16 bar

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

16 bar / -20 °C

Type of connection: Oval / Rp Size of inlet connection: 1 1/2 inch Size of outlet connection: 1 1/2 inch Pressure rating for pipe connection: PN 16 FT115

Flange size for motor:

Electrical data:

Motor standard: **IEC** Motor type: 90SB IE Efficiency class: IE3 Rated power - P2: 1.5 kW Power (P2) required by pump: 1.5 kW Mains frequency: 50 Hz

Rated voltage: 3 x 220-240D/380-415Y V

Rated current: 5.45/3.15 A Starting current: 850-930 % Cos phi - power factor: 0.87-0.82 Rated speed: 2890-2910 rpm Efficiency: IE3 84,2% Motor efficiency at full load: 84.2 % Motor efficiency at 3/4 load: 84.5 % Motor efficiency at 1/2 load: 83.1 %

Number of poles:

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

Insulation class (IEC 85):

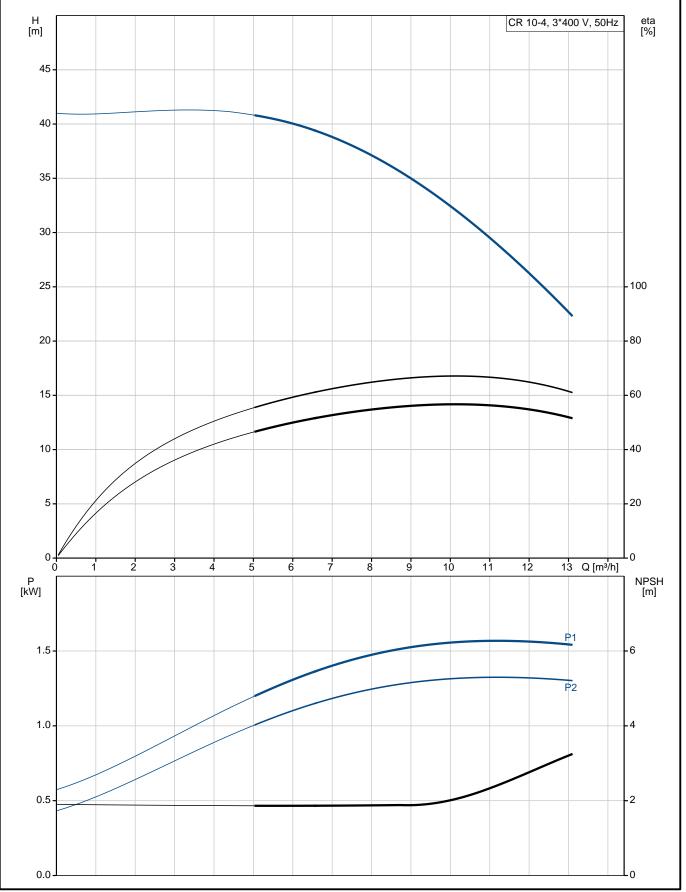
Others:

Minimum efficiency index, MEI ≥: 0.70 Net weight: 46 kg Gross weight: 50 kg Shipping volume: 0.094 m³ Danish VVS No.: 385903040 Norwegian NRF no.: 9040459



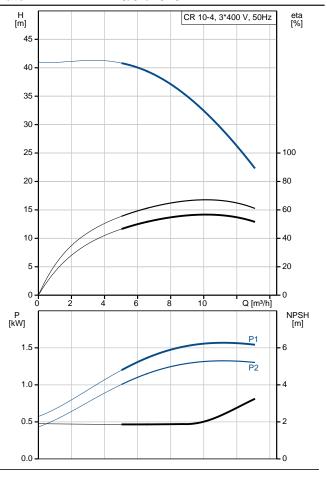
Date: 16/02/2019

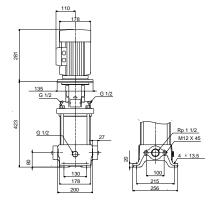
96500982 CR 10-4 A-A-A-E-HQQE 50 Hz

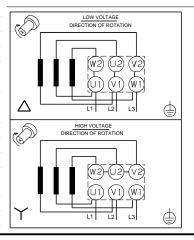




Description	Value
General information:	
Product name:	CR 10-4 A-A-A-E-HQQE
Product No:	96500982
EAN number:	5700396212999
Technical:	
Pump speed on which pump data are based:	2896 rpm
Rated flow:	10 m³/h
Rated head:	31.9 m
Head max:	40.8 m
Stages:	4
Impellers:	4
Number of reduced-diameter impellers:	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:	A
Materials:	
Base:	Cast iron
	EN 1561 EN-GJL-200
	ASTM A48-25B
Impeller:	Stainless steel
	EN 1.4301
	AISI 304
Material code:	Α
Code for rubber:	<i>F</i>
Bearing:	SIC
Installation:	0.0
Maximum ambient temperature:	60 °C
Maximum operating pressure:	16 bar
Max pressure at stated temp:	16 bar / 120 °C
max process at states temp.	16 bar / -20 °C
Type of connection:	Oval / Rp
Size of inlet connection:	1 1/2 inch
Size of outlet connection:	1 1/2 inch
Pressure rating for pipe connection:	PN 16
Flange size for motor:	FT115
Connect code:	A
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-20 120 °C
Liquid temperature during operation:	20 °C
Density:	998.2 kg/m³
Electrical data:	556.2 kg/iii
Motor standard:	IEC
Motor type:	90SB
IE Efficiency class:	IE3
Rated power - P2:	1.5 kW
Power (P2) required by pump:	1.5 kW
Mains frequency:	50 Hz
	3 x 220-240D/380-415Y
Rated voltage:	V
Rated current:	5.45/3.15 A
Starting current:	850-930 %







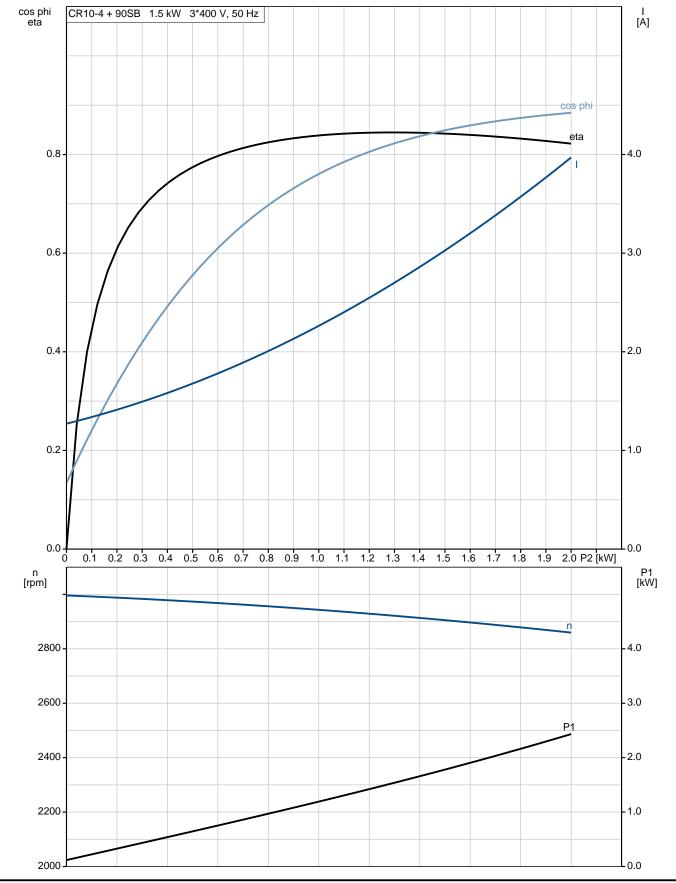


Description	Value
Cos phi - power factor:	0.87-0.82
Rated speed:	2890-2910 rpm
Efficiency:	IE3 84,2%
Motor efficiency at full load:	84.2 %
Motor efficiency at 3/4 load:	84.5 %
Motor efficiency at 1/2 load:	83.1 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	NONE
Motor No:	85U05906
Controls:	
Frequency converter:	NONE
Others:	
Minimum efficiency index, MEI ≥:	0.70
Net weight:	46 kg
Gross weight:	50 kg
Shipping volume:	0.094 m³
Danish VVS No.:	385903040
Norwegian NRF no.:	9040459



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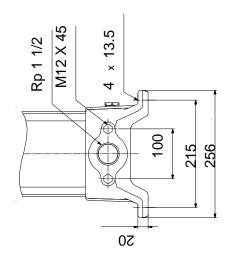
96500982 CR 10-4 A-A-A-E-HQQE 50 Hz

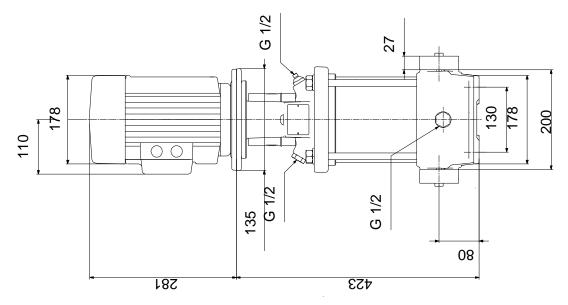




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96500982 CR 10-4 A-A-A-E-HQQE 50 Hz





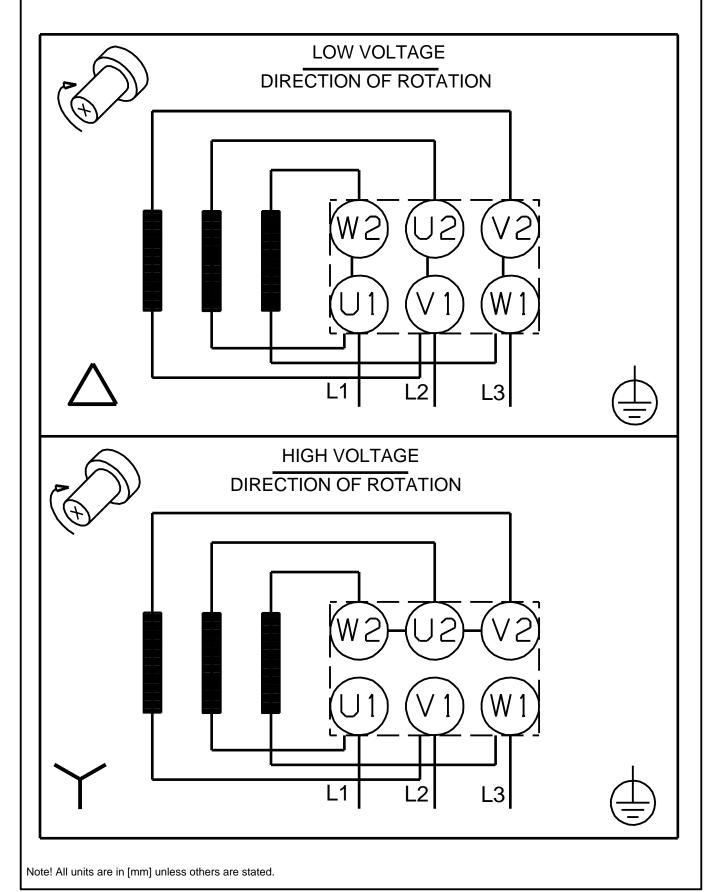
Note! All units are in [mm] unless others are stated. Disclaimer: This simplified dimensional drawing does not show all details.



Date:

16/02/2019

96500982 CR 10-4 A-A-A-E-HQQE 50 Hz



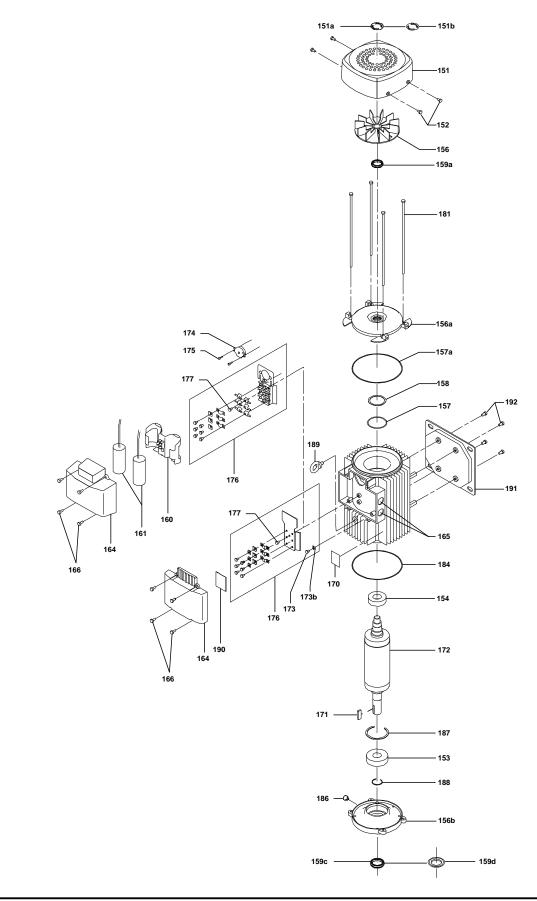


Date: 16/02/2019 (tm069460 for MECR 10 standard) 105 62 -28a --65 45 26c 26b



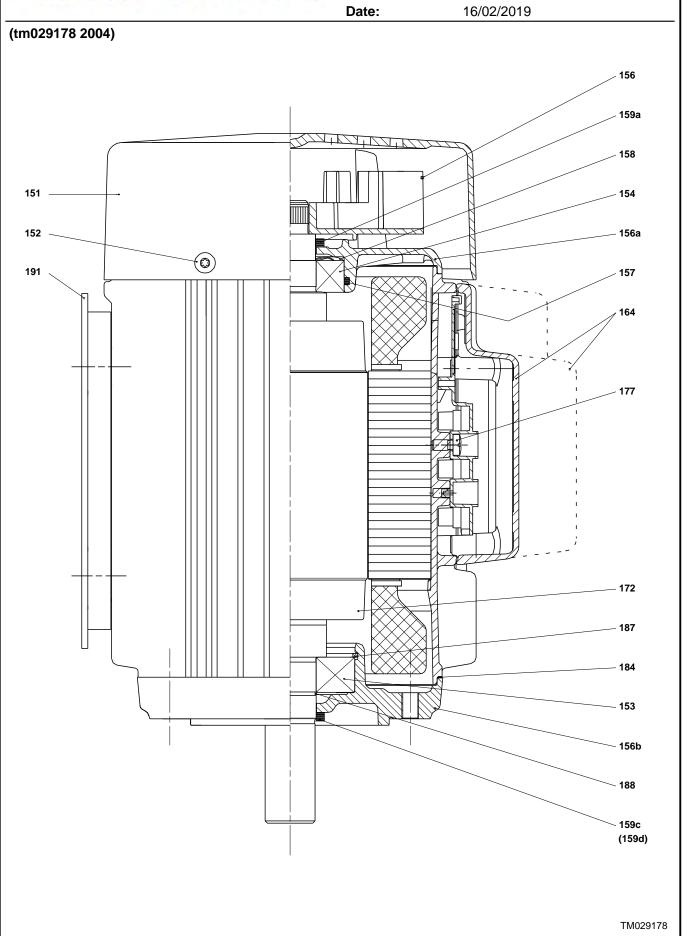
Date: 16/02/2019

(tm029184 0505)



TM029184







Date: 16/02/2019

Spare parts CR 10-4, Product No. 96500982 Valid from 1.1.2011 (1152)

Pos	Description	Annotation	Classification Data	Part no.	Qty.	
	Kit, chamber stack			96508406	1	pcs
80	Chamber stack		Bearing type: SIC			1
- 3	Top intermediate chamber					
	Spare, turbulence optimizer KP					
	Guide vane					
4a	Intermediate chamber cpl.					
	Guide cup					
	Bearing plate					
	Guide vane					
3	Intermediate chamber					
45	Neck ring cpl.					
47	Bearing bush					
65	Retainer					
4	Intermediate chamber cpl.					
	Guide cup					
	Guide vane					
3	Intermediate chamber					
45	Neck ring cpl.					
65	Retainer					
26a	Strap cpl.					
26.c			Designation: DIN 125A			
			Thickness: 1,6			
26	Hex head screw					
44b	Inlet part					
44a	Inlet part cpl.					
	Guide cup					
	Inlet part					
45	Neck ring cpl.					
65	Retainer					
47	Bearing ring					
49	Impeller cpl.					
51	Shaft, spline, cpl.					
	Bar					
62	Stop ring					
64c	Spacing pipe		Length (mm): 12.7			
64a	Spacing bush		Length (mm): 9.00			
64.d	Spacer					
64	Spacing pipe		Length (mm): 29.05			
66	Wedge lock washer					
67	Lock nut		Thread: M8			
69	Spacing bush		Length (mm): 18.00			
	Kit, coupling			96511319	1	pcs
	Adjusting fork					1
9	Hex socket head cap screw		Designation: DIN 912			4
	The council head cap colon		Length (mm): 25			•
			Thread: M8			
10a	Coupling half		1111044.1910			2
10	Shaft pin		Diameter: 5			1
10	Onan pin		Length (mm): 26			
	Kit, coupling guard		Longui (iiiii). 20	96509612	1	nor
7.a	Combi Slot Torx screw			30303012		pcs 4
7.a 7						4 2
1	Coupling guard			0050000		
	Kit, gaskets			96509609	1	pc



Pos	Description Gasket	Annotation Classification Data Part	. 110 પ્રા	y. Uı
24				2
24	O-ring			2
37	O-ring			2
38a	O-ring	Diameter: 5,3		1
		Material type: EPDM		
		Thickness: 2,4		
38	O-ring	Diameter: 16,3		1
		Material type: EPDM		
		Thickness: 2,4		
38	O-ring	Diameter: 16,3		2
50	O-IIIIg	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		11311 1	рс
18	Air vent screw			1
. •	Spindle			•
	Plug			
05				
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
	- J	Material type: EPDM		-
		Thickness: 2,4		
20	O vin v			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
	- J	Material type: EPDM		-
		Thickness: 2,4		
20	O ring			2
38	O-ring	Diameter: 16,3		2
		Material type: EPDM		
		Thickness: 2,4		
	Kit, shaft seal HQQE	965	11844 1	po
	Emery cloth			1
	Grinding device			1
105	Shaft seal	Material type: HQQE		1
	Kit, wear parts		11889 1	po
4a	Intermediate chamber cpl.	300		1
- 14				1
	Sand Lifter			
	Guide cup			
	Bearing plate			
	Guide vane			
3	Intermediate chamber			
45	Neck ring cpl.			
47	Bearing bush			
65	Retainer			
		Designation: DIM 405A		^
26.c	Washer	Designation: DIN 125A		2
		Thickness: 1,6		
26.b	Hex head screw			2
	Neck ring cpl.			7



Pos	Description	Annotation Classification Data Part no. Qty	, Un
47	Bearing ring		1
62	Retaining ring		1
64c	Spacing pipe	Length (mm): 12.7	1
64a	Spacing bush	Length (mm): 9.00	1
64.d	Spacer		1
65	Retainer		7
66	Wedge lock washer		1
67	Lock nut	Thread: M8	1
	Motor	85903713 1	pcs
	Kit, bearing cpl.	96279794	1
111	Ball bearing		
111	Ball bearing		
157	O-ring	Diameter: 52	
	- ····g	Material type: NBR	
		Thickness: 3	
158	Waved washer		
187	Retaining ring		
188	Retaining ring		
100	Kit, end shield	96279789	1
156a	End shield	90279769	1
150a 157a	Gasket	Internal diameter: 141,2	
15/8	Gaskei	·	
		Outer diameter: 145,5	
457		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	33210101	•
159a	Seal ring		
1000	Kit, staybolts	96279791	1
181	Pan head staybolt	90219191	•
101	Kit, terminal board	96279769	1
173a	Base	90279709	'
173a		Decignation: COMPLEORY TOE	
	Pan head thread forming screw	Designation: COMBLTORY 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		



Pos	Description	Annotation Classification Data	Part no. (Qty. Unit
177	Pan head screw			
-	Kit, terminal box		9627977	1 1
164	Terminal box cover w/gasket			
166	Pan head thread forming screw			
2a	Pump head		98852386 1	pcs
+ 3	Bulk, Top intermediate chamber (3 pcs)		96538970 1	pcs
+ 3	Top intermediate chamber		98415149 1	pcs
+ 4a	Bulk, Intermediate chamber cpl. (10 pcs)		96538850 1	pcs
+ 4a	Intermediate chamber cpl.		98371073 1	pcs
- 4	Intermediate chamber cpl.		98371071 2	2 pcs
3	Intermediate chamber		9841514	5 1
65	Bulk, Retainer (20 pcs)		9835467	5 1
6	Base		98818812 1	pcs
7.a	Bulk, Combi Slot Torx screw (1000 pcs)		96886324 4	
10	Bulk, Shaft pin (10 pcs)	Diameter: 5	96536473	•
	,	Length (mm): 26		P
+ 18	Bulk, Air vent screw (5 pcs)		96547461 1	pcs
+ 18	Air vent screw		95061351 1	
25	Bulk, Plug (10 pcs)		96536013	
25a	Bulk, Drain plug (10 pcs)		96535881 1	
25a 26a	Strap cpl.		98952934 2	1
26.c	Bulk, Washer (4 pcs)	Designation: DIN 125A	99262704 2	
20.0	Dain, Washioi (4 pos)	Thickness: 1,6	33202104 2	. pcs
26.c	Washer	Designation: DIN 125A	96586880 2) nec
20.0	Wasilei	Thickness: 1,6	90300000 2	2 pcs
26	Staybolt	THICKIESS. 1,0	98982839 4	l noo
28	Staybolt Bulk, Hex head screw (20 pcs)	Length (mm): 45 MM	96620474	
		Thread: M12		'
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	
37	Bulk, O-ring (20 pcs)		96538857 2	
38a	Bulk, O-ring (10 pcs)	Diameter: 5,3	99198791 1	pcs
		Material type: EPDM		
		Thickness: 2,4		
38	Bulk, O-ring (10 pcs)	Diameter: 16,3	99198815 2	2 pcs
		Material type: EPDM		
		Thickness: 2,4		
38	Bulk, O-ring (50 pcs)	Diameter: 16,3	99412727 2	2 pcs
		Material type: EPDM		
		Thickness: 2,4		
44b	Inlet part		98814595 1	•
+ 44a	Inlet part cpl.		97973678 1	
47	Bulk, Bearing ring (10 pcs)		96538795 1	
49	Bulk, Impeller cpl. (10 pcs)		96538796 4	pcs
49	Impeller cpl.		98394441 4	pcs
+ 51	Shaft, spline, cpl.		98368606 1	pcs
55	Outer sleeve		98812620 1	pcs
60	Bulk, Spring (20 pcs)		96538963 4	pcs
64c	Bulk, Spacing pipe (5 pcs)	Length (mm): 12.7	97980241 1	pcs
64a	Bulk, Spacing bush (20 pcs)	Length (mm): 9.00	96538950 1	
64.d	Bulk, Spacer (20 pcs)	,	97516851 1	
64	Bulk, Spacing pipe (20 pcs)	Length (mm): 29.05	96535101 2	
66	Bulk, Wedge lock washer (10 pcs)	2 , ,	96536157	
67	Bulk, Lock nut (10 pcs)	Thread: M8	98277008 1	
69	Bulk, Spacing bush (20 pcs)	Length (mm): 18.00	96538948 1	•
	, -1 3 (t b)			700



Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
76a	Bulk, Rivet (100 pcs)			96620489	1	pcs
105	Bulk, Shaft seal (11 pcs)		Material type: HQQE	96538914	1	pcs
415	Bulk, Gasket (10 pcs)			96536048	2	pcs
415	Gasket			99364495	2	pcs
440a	Flange		Thread: RP 1 1/2	99037027	2	pcs