

Date: 16/02/2019

Qty. | Description

1 | CRN 10-8 A-P-A-E-HQQE



Product No.: 96501047

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 PJE (Victaulic®) couplings.

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

Further product details

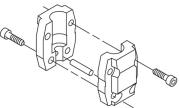
Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface. An 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 and flange for motor mounting is made in one piece (cast iron). The pump head cover is a separate component (stainless steel). 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)



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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)

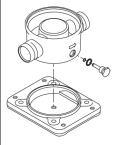
EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.



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 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. The outlet side of the base has a drain plug. The pump is secured to the foundation by four bolts through the base plate. The base is prepared for connection by means of PJE (Victualic®) couplings.



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



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Technical:

Pump speed on which pump data are based: 2902 rpm

Rated flow: 10 m³/h
Rated head: 64.8 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 Stainless steel

Impeller: Stainless stee

EN 1.4401 AISI 316

Bearing: SIC

Installation:

Maximum ambient temperature: 60 °C Maximum operating pressure: 25 bar

Max pressure at stated temp: 25 bar / 120 °C

25 bar / -20 °C

Type of connection:

Size of inlet connection:

DN 50
2 inch
Size of outlet connection:

DN 50

2 inch

Pressure rating for pipe connection: PN 50 Flange size for motor: FT130

Electrical data:

Motor standard: IEC
Motor type: 100LC
IE Efficiency class: IE3
Rated power - P2: 3 kW
Power (P2) required by pump: 3 kW
Mains frequency: 50 Hz

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

Rated current: 11.0/6.30 A Starting current: 840-920 % Cos phi - power factor: 0.87-0.82 Rated speed: 2900-2920 rpm Efficiency: IE3 87,1% Motor efficiency at full load: 87.1 % Motor efficiency at 3/4 load: 88.0 % Motor efficiency at 1/2 load: 87.7 % Number of poles:

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

Insulation class (IEC 85): F

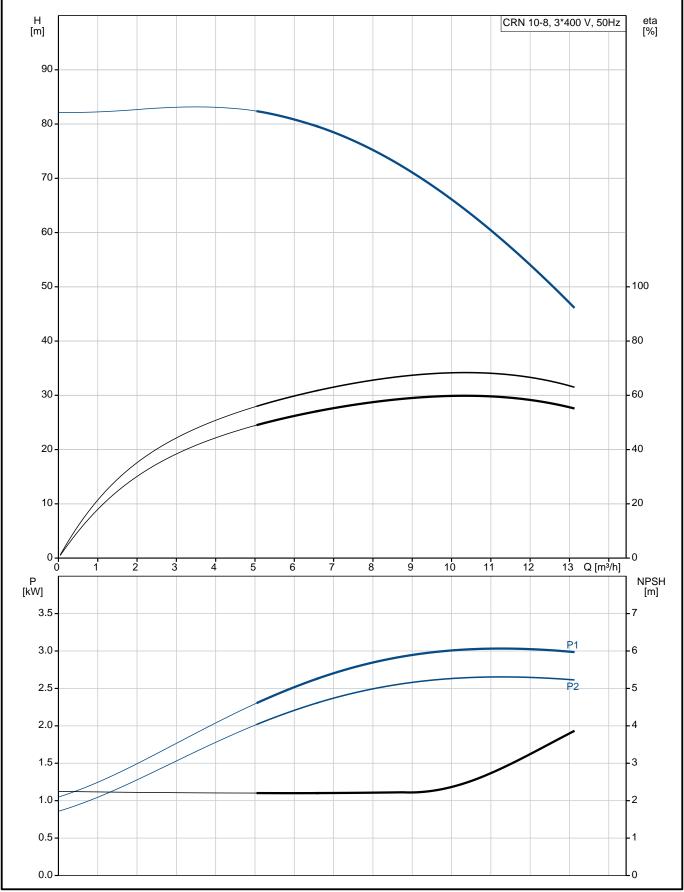
Others:

Minimum efficiency index, MEI ≥: 0.70
Net weight: 55 kg
Gross weight: 59 kg
Shipping volume: 0.13 m³
Danish VVS No.: 385913080



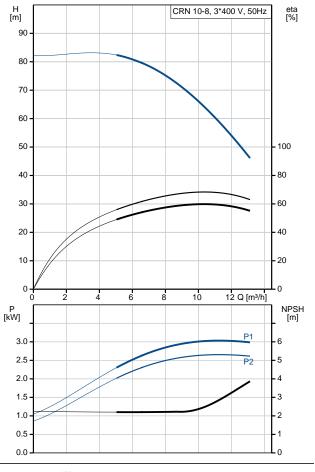
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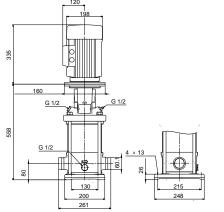
96501047 CRN 10-8 A-P-A-E-HQQE 50 Hz

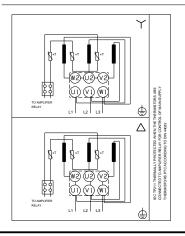




Description	Value
General information:	¥ di do
General information.	CRN 10-8
Product name:	A-P-A-E-HQQE
Product No:	96501047
EAN number:	5700396214290
	5700396214290
Technical:	
Pump speed on which pump data are based:	2902 rpm
Rated flow:	10 m3/h
	10 m³/h
Rated head:	64.8 m
Head max:	81.7 m
Stages:	8
Impellers:	8
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:	Stainless steel
	EN 1.4408
	AISI 316
Impollar	Stainless steel
Impeller:	EN 1.4401
	AISI 316
Material code:	A
Code for rubber:	E
Bearing:	SIC
Installation:	
Maximum ambient temperature:	60 °C
Maximum operating pressure:	25 bar
Max pressure at stated temp:	25 bar / 120 °C
	25 bar / -20 °C
Type of connection:	PJE
Size of inlet connection:	DN 50
	2 inch
Size of outlet connection:	DN 50
	2 inch
Pressure rating for pipe connection:	PN 50
Flange size for motor:	FT130
Connect code:	P
Liquid:	<u> </u>
Pumped liquid:	Water
· · · · · · · · · · · · · · · · · · ·	-20 120 °C
Liquid temperature range:	
Liquid temperature during operation:	20 °C
Density:	998.2 kg/m³
Electrical data:	IFC
Motor standard:	IEC
Motor type:	100LC
IE Efficiency class:	IE3
Rated power - P2:	3 kW
Power (P2) required by pump:	3 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 220-240D/380-415Y
	V







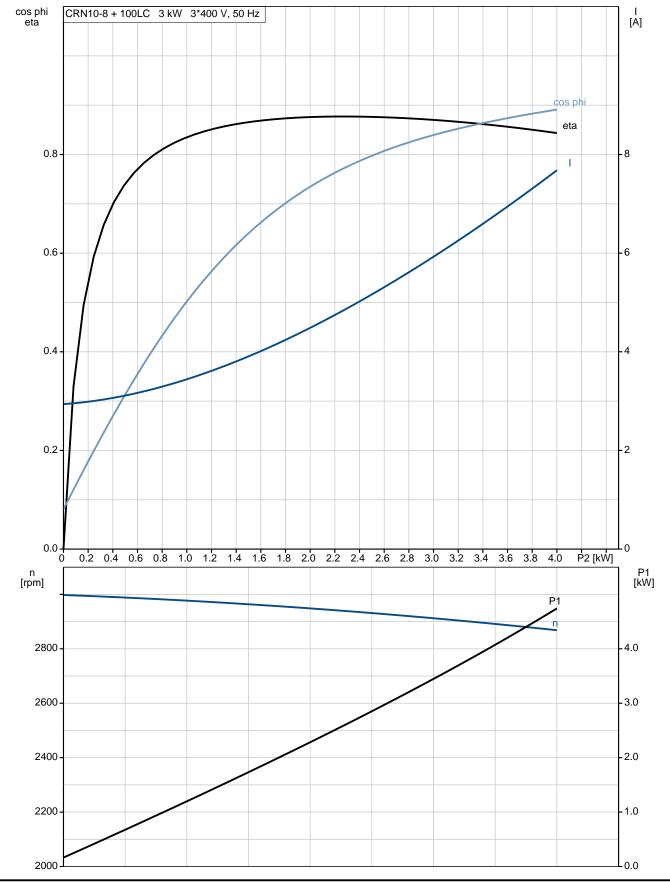


Description	Value
Rated current:	11.0/6.30 A
Starting current:	840-920 %
Cos phi - power factor:	0.87-0.82
Rated speed:	2900-2920 rpm
Efficiency:	IE3 87,1%
Motor efficiency at full load:	87.1 %
Motor efficiency at 3/4 load:	88.0 %
Motor efficiency at 1/2 load:	87.7 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	PTC
Motor No:	85U05510
Controls:	
Frequency converter:	NONE
Others:	
Minimum efficiency index, MEI ≥:	0.70
Net weight:	55 kg
Gross weight:	59 kg
Shipping volume:	0.13 m ³
Danish VVS No.:	385913080



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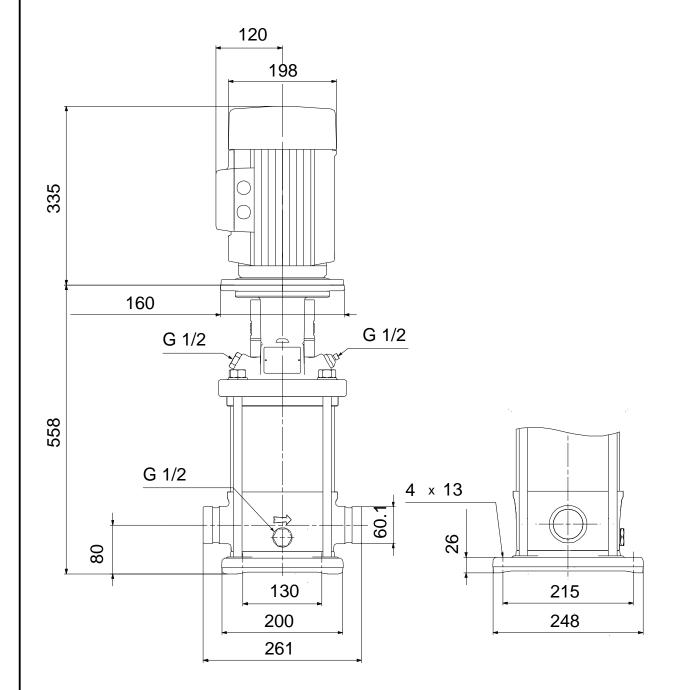
96501047 CRN 10-8 A-P-A-E-HQQE 50 Hz





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96501047 CRN 10-8 A-P-A-E-HQQE 50 Hz

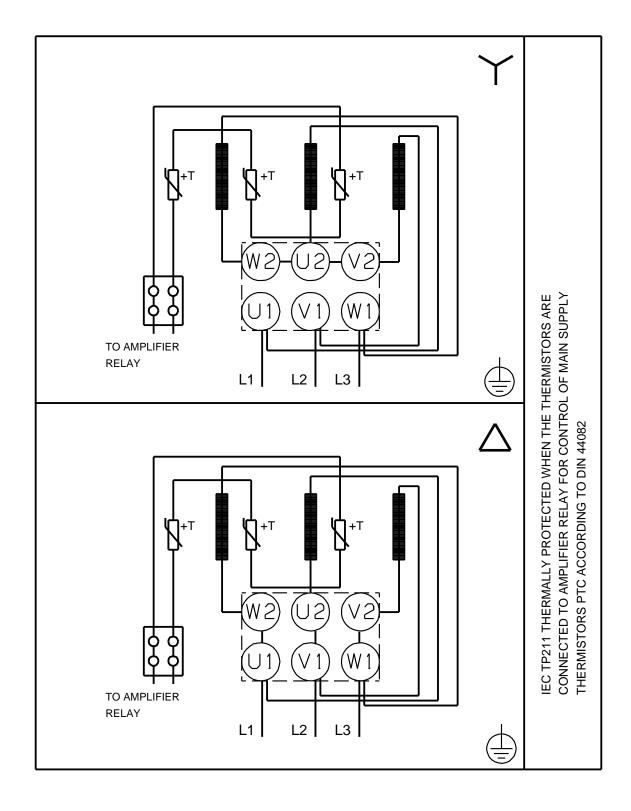


Note! All units are in [mm] unless others are stated. Disclaimer: This simplified dimensional drawing does not show all details.



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96501047 CRN 10-8 A-P-A-E-HQQE 50 Hz



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

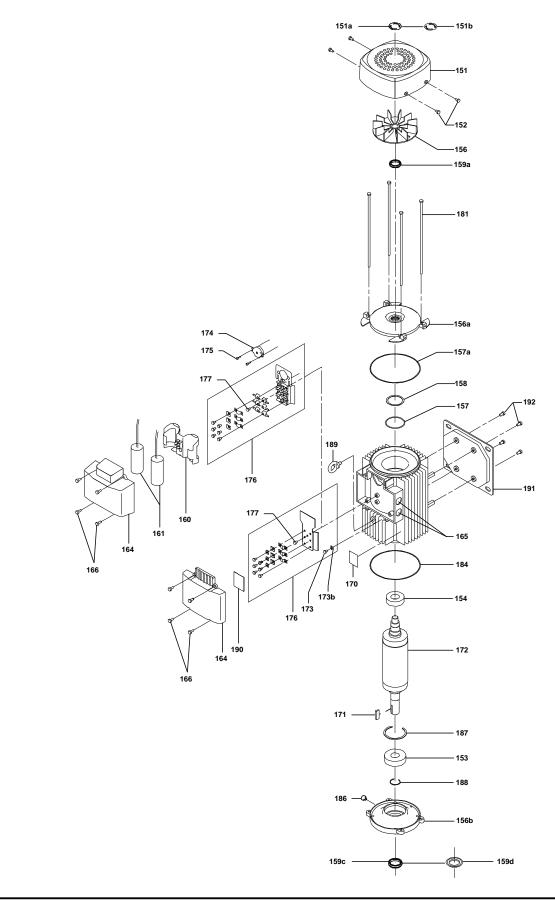


Date: 16/02/2019 (tm069460 for MECR 10 standard) 62 -28a --65 45 25 26c 26b



Date: 16/02/2019

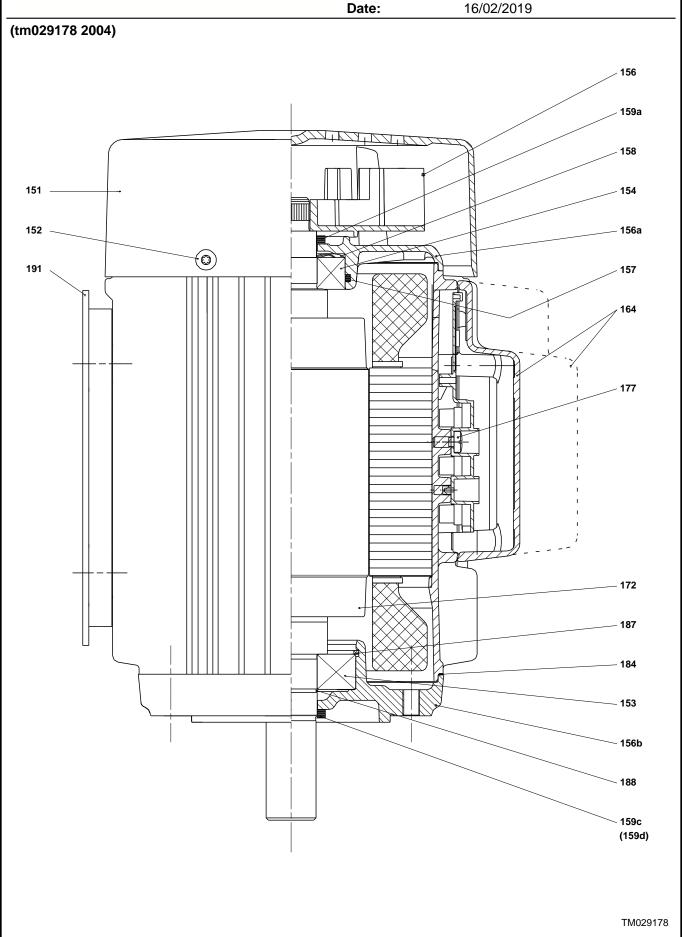
(tm029184 0505)



TM029184



Date:





Date: 16/02/2019

Spare parts CRN 10-8, Product No. 96501047 Valid from 1.1.2011 (1152)

Pos	Description Kit chamber stock	Annotation	Classification Data	Part no.		. Uni
00	Kit, chamber stack			96491727	1	pcs
80	Chamber stack					1
3	Top intermediate chamber					
	Guide vane					
	Cover plate					
3	Top intermediate chamber					
4a	Intermediate chamber cpl.					
	Sand Lifter					
	Guide cup					
	Bearing plate					
	Guide vane					
3	Intermediate chamber					
45	Neck ring cpl.					
47	Bearing bush					
65	Retainer					
4	Intermediate chamber cpl.					
3	Intermediate chamber					
45	Neck ring cpl.					
65	Retainer					
26a	Strap cpl.					
26.c	Washer		Designation: DIN 125A			
			Thickness: 1,6			
26.b	Hex head screw					
44b	Inlet part					
44a	Inlet part cpl.					
	Inlet part					
45	Neck ring cpl.					
65	Retainer					
47	Bearing ring					
49	Impeller cpl.					
51	Shaft, spline, cpl.					
<u> </u>	Bar					
62	Stop ring					
64c	Spacing pipe		Length (mm): 12.7			
64a	Spacing bush		Length (mm): 9.00			
64.d	Spacer		Lengur (mm). 5.55			
64	Spacing pipe		Length (mm): 29.05			
66	Wedge lock washer		Lengur (mm). 23.03			
67	Lock nut		Thread: M8			
69	Spacing bush		Length (mm): 18.00			
09	Kit, coupling		Lengui (mm). 16.00	96511350	1	noo
	Adjusting fork			90311330		pcs
0	Hex socket head cap screw		Designation: DIN 912			1
9	nex socket head cap screw		•			4
			Length (mm): 25			
40-	Caualian half		Thread: M8			_
10a	Coupling half		Diameter 5			2
10	Shaft pin		Diameter: 5			1
			Length (mm): 26			
	Kit, coupling guard			96509612		pcs
7.a	Combi Slot Torx screw					4
7	Coupling guard					2
	Kit, gaskets			96509609	1	pcs
	Gasket				;	2



Pos	Description	Annotation Classification Data	Part no.	Qty	. Un
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
		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		96511312	1	рс
18	Air vent screw				1
	Spindle				-
	Plug				
25a	Drain plug				1
25a	Plug				1
38a	O-ring	Diameter: 5,3			1
30a	O-IIIIg	Material type: FKM			'
		Thickness: 2,4			
20-	O win a				
38a	O-ring	Diameter: 5,3			1
		Material type: EPDM			
00	0.1	Thickness: 2,4			_
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
		Material type: EPDM			
		Thickness: 2,4			
38	O-ring	Diameter: 16,3			2
		Material type: EPDM			
		Thickness: 2,4			
	Kit, shaft seal HQQE		96511844	1	рс
	Emery cloth				1
	Grinding device				1
105	Shaft seal	Material type: HQQE			1
	Kit, wear parts	. 71	96511889	1	рс
4a	Intermediate chamber cpl.				1
	Sand Lifter				
	Guide cup				
	Bearing plate				
	Guide vane				
3	Intermediate chamber				
45	Neck ring cpl.				
47	Bearing bush				
65	Retainer	Design C DIN 4074			^
26.c	Washer	Designation: DIN 125A			2
		Thickness: 1,6			
26.b	Hex head screw				2
45	Neck ring cpl.				7
47	Bearing ring				1



Pos	Description Patricip via 2	Annotation Classification Data Part no. Qty	/. U
62	Retaining ring	1 4 () 10 =	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	85903730 1	po
	Kit, Ball bearing	96279795	1
99a	Retaining ring		
99	Retaining ring		
111	Ball bearing		
111	Ball bearing		
157	O-ring	Diameter: 52	
	3	Material type: NBR	
		Thickness: 3	
158	Waved washer		
. 55	Kit, end shield	96279831	1
156a	End shield	30279031	•
150a 157	O-ring	Diameter: 52	
101	O IIIIg	Material type: NBR	
		Thickness: 3	
158	Wayad washar	HIIUMHESS. S	
	Waved washer		
159a	Seal ring	00070777	4
	Kit, fan	96279757	1
156	Fan		
159a	Seal ring		
	Kit, fan cover	96279826	1
151b	Label		
151	Fan cover		
152	Pan head thread forming screw		
	Kit, flange	96279828	1
156b	Flange		
156.c	Drain plug		
159.c	Seal ring		
	Kit, retaining ring	96279799	1
99	Retaining ring		
188	Retaining ring		
-	Kit, shaft seal	96279762	1
159c	Seal ring	302.0.02	
159a	Seal ring		
	Kit, staybolts	96279832	1
181	Pan head staybolt	3021 3032	•
101	Kit, terminal board	96279769	1
173a	Base	90279769	'
173a 173	Pan head thread forming screw	Decignation: COMPLEODY TOE	
	_	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		
177	Pan head screw		
	Kit, terminal box	96279771	1
164	Terminal box cover w/gasket		
166	Pan head thread forming screw		
1a	Pump head	98824712 1	р
2	Pump cover	98481138 1	po



	Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit		
+	3	Top intermediate chamber			98371084	1	pcs		
+	4a	Intermediate chamber cpl.			98371088	1	pcs		
-	4	Intermediate chamber cpl.			98371086	6	pcs		
	3	Intermediate chamber			983710	98371064 1			
	6	Base			98654159	1	pcs		
	7.a	Bulk, Combi Slot Torx screw (1000 pcs)			96886324	4	pcs		
	10	Bulk, Shaft pin (10 pcs)		Diameter: 5	96536473	1	pcs		
				Length (mm): 26					
+	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		
	26a	Strap cpl.			98984429	2	pcs		
	26.c	Bulk, Washer (4 pcs)		Designation: DIN 125A	99262704	2	pcs		
				Thickness: 1,6					
	26.c	Washer		Designation: DIN 125A	96586880	2	pcs		
				Thickness: 1,6					
	26	Staybolt			98982879	4	pcs		
	37.a	Bulk, O-ring (20 pcs)			96538857	1	pcs		
	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	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					
	44b	Inlet part			98814593	1	pcs		
+	44a	Inlet part cpl.			98890953	1	pcs		
	47	Bulk, Bearing ring (10 pcs)			96538795	1	pcs		
	49	Impeller cpl.			98459841	8	pcs		
+	51	Shaft, spline, cpl.			98368633	1	pcs		
	55	Outer sleeve			98812638	1	pcs		
	56	Base plate			98824711	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	pcs		
	64.d	Bulk, Spacer (20 pcs)			97516851	1	pcs		
	64	Bulk, Spacing pipe (20 pcs)		Length (mm): 29.05	96535101	6	pcs		
	66	Bulk, Wedge lock washer (10 pcs)			96536157	1	pcs		
	67	Bulk, Lock nut (10 pcs)		Thread: M8	98277008	1	pcs		
	69	Bulk, Spacing bush (20 pcs)		Length (mm): 18.00	96538948	1	pcs		
	76a	Bulk, Rivet (100 pcs)			96620489	1	pcs		
	105	Bulk, Shaft seal (11 pcs)		Material type: HQQE	96538914	1	pcs		