

**Date:** 16/02/2019

Qty. | Description

1 CRN 10-6 A-FGJ-A-E-HQQE



Product No.: 96501061

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 combined DIN-ANSI-JIS flanges.

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

### Further product details

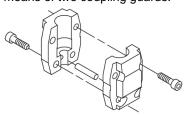
Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface. An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

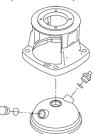
The colour code for the finished product is NCS 9000/RAL 9005.

#### **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 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. This 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 combined drain plug and bypass valve. The pump is secured to the foundation by four bolts through the base plate. The flanges and base are cast in one piece and prepared for connection by means of DIN, ANSI or JIS.

#### 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

Technical:

Pump speed on which pump data are based: 2899 rpm

Rated flow: 10 m³/h
Rated head: 48.3 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:



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Base: Stainless steel

EN 1.4408 AISI 316

Impeller: Stainless steel

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: DIN / ANSI / JIS

Size of inlet connection: DN 40

1 1/2 inch

Size of outlet connection: DN 40

1 1/2 inch

Pressure rating for pipe connection: PN 25 Flange rating inlet: 300 lb Flange size for motor: FT115

**Electrical data:** 

Motor standard: IEC
Motor type: 90LC
IE Efficiency class: IE3
Rated power - P2: 2.2 kW
Power (P2) required by pump: 2.2 kW
Mains frequency: 50 Hz

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

Rated current: 7.70/4.45 A Starting current: 850-950 % Cos phi - power factor: 0.89-0.87 Rated speed: 2890-2910 rpm Efficiency: IE3 85,9% Motor efficiency at full load: 85.9 % Motor efficiency at 3/4 load: 86.8 % Motor efficiency at 1/2 load: 86.0 %

Number of poles: 2

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

Insulation class (IEC 85): F

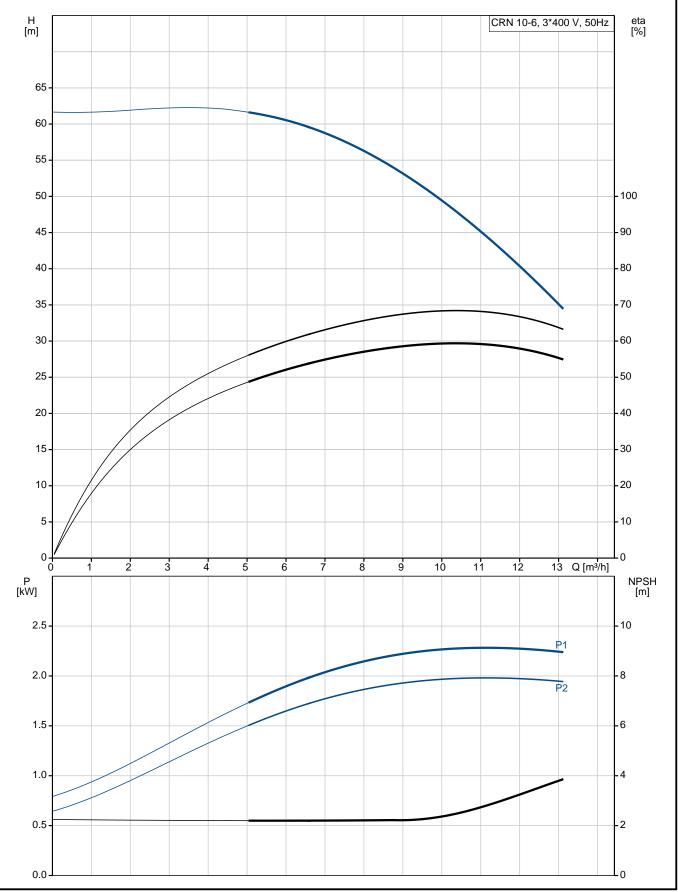
Others:

Minimum efficiency index, MEI ≥: 0.70
Net weight: 52 kg
Gross weight: 56 kg
Shipping volume: 0.104 m³



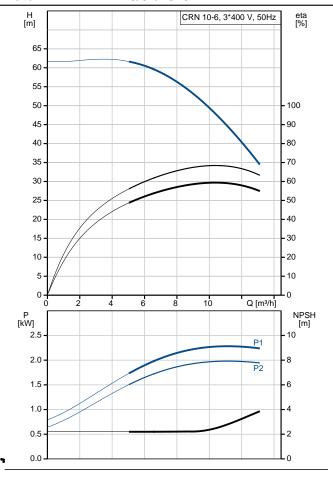
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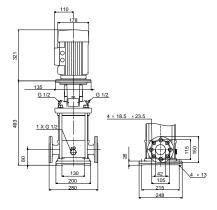
## 96501061 CRN 10-6 A-FGJ-A-E-HQQE 50 Hz

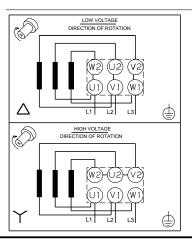




Description	Value
General information:	
Product name:	CRN 10-6 A-FGJ-A-E-HQQE
Product No:	96501061
EAN number:	5700396214573
Technical:	0700000211070
Pump speed on which pump data are	
based:	2899 rpm
Rated flow:	10 m³/h
Rated head:	48.3 m
Head max:	61.2 m
Stages:	6
Impellers:	6
Number of reduced-diameter 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
Impeller:	Stainless steel
	EN 1.4401
	AISI 316
Material code:	Α
Code for rubber:	<i>F</i>
Bearing:	SIC
Installation:	0.0
Maximum ambient temperature:	60 °C
Maximum operating pressure:	25 bar
Max pressure at stated temp:	25 bar / 120 °C
wax pressure at stated temp.	25 bar / -20 °C
Type of connection:	DIN / ANSI / JIS
Size of inlet connection:	DN 40
Size of filler conflection.	1 1/2 inch
Size of outlet connection:	DN 40
Size of outlet connection.	1 1/2 inch
December of the state of the st	=
Pressure rating for pipe connection:	PN 25
Flange rating inlet:	300 lb
Flange size for motor:	FT115
Connect code:	FGJ
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-20 120 °C
Liquid temperature during operation:	20 °C
Density:	998.2 kg/m³
Electrical data:	
Motor standard:	IEC
Motor type:	90LC
IE Efficiency class:	IE3
Rated power - P2:	2.2 kW
Power (P2) required by pump:	2.2 kW
Mains frequency:	50 Hz
• •	







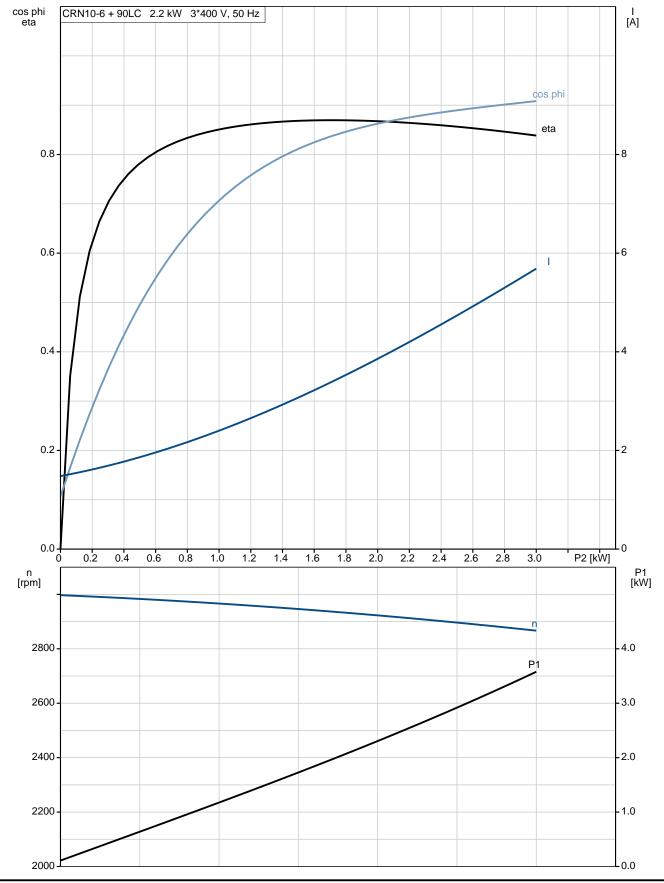


Description	Value
Rated voltage:	3 x 220-240D/380-415Y V
Rated current:	7.70/4.45 A
Starting current:	850-950 %
Cos phi - power factor:	0.89-0.87
Rated speed:	2890-2910 rpm
Efficiency:	IE3 85,9%
Motor efficiency at full load:	85.9 %
Motor efficiency at 3/4 load:	86.8 %
Motor efficiency at 1/2 load:	86.0 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	NONE
Motor No:	85U05908
Controls:	
Frequency converter:	NONE
Others:	
Minimum efficiency index, MEI ≥:	0.70
Net weight:	52 kg
Gross weight:	56 kg
Shipping volume:	0.104 m³



**Date:** 16/02/2019

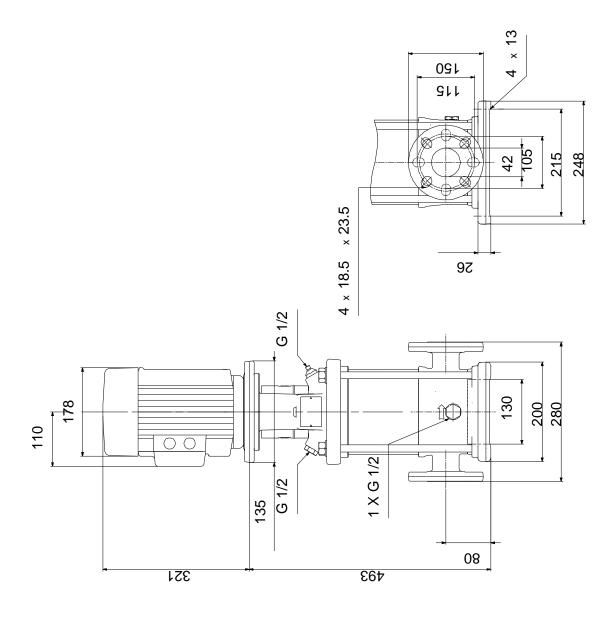
## 96501061 CRN 10-6 A-FGJ-A-E-HQQE 50 Hz





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# 96501061 CRN 10-6 A-FGJ-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.

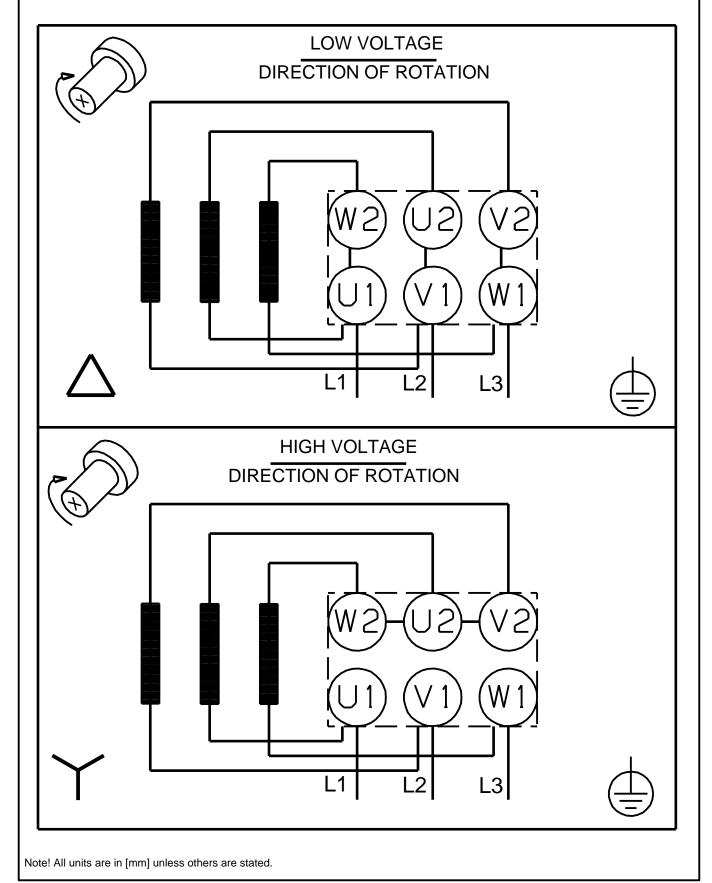
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Date:

16/02/2019

### 96501061 CRN 10-6 A-FGJ-A-E-HQQE 50 Hz



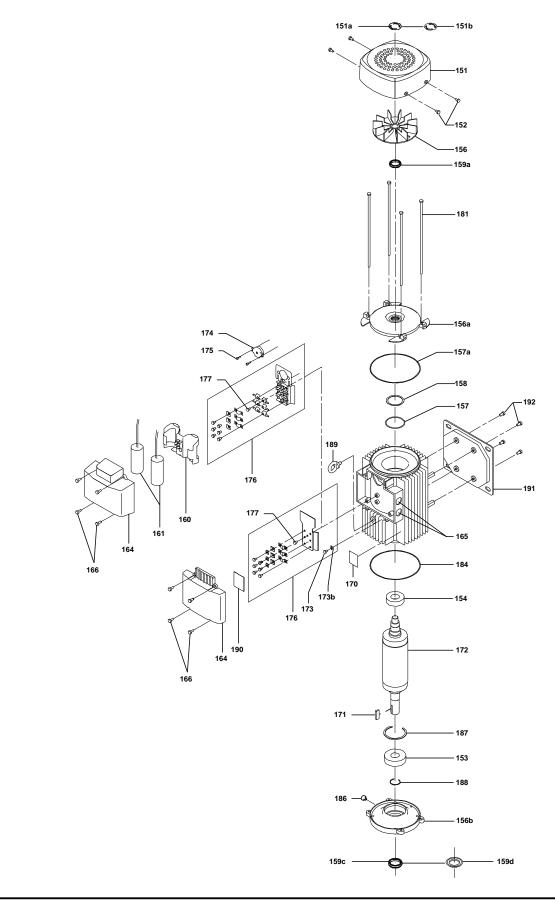


Date: 16/02/2019 (tm069460 for MECR 10 standard) 62 -28a --65 45 25 26c 26b



**Date:** 16/02/2019

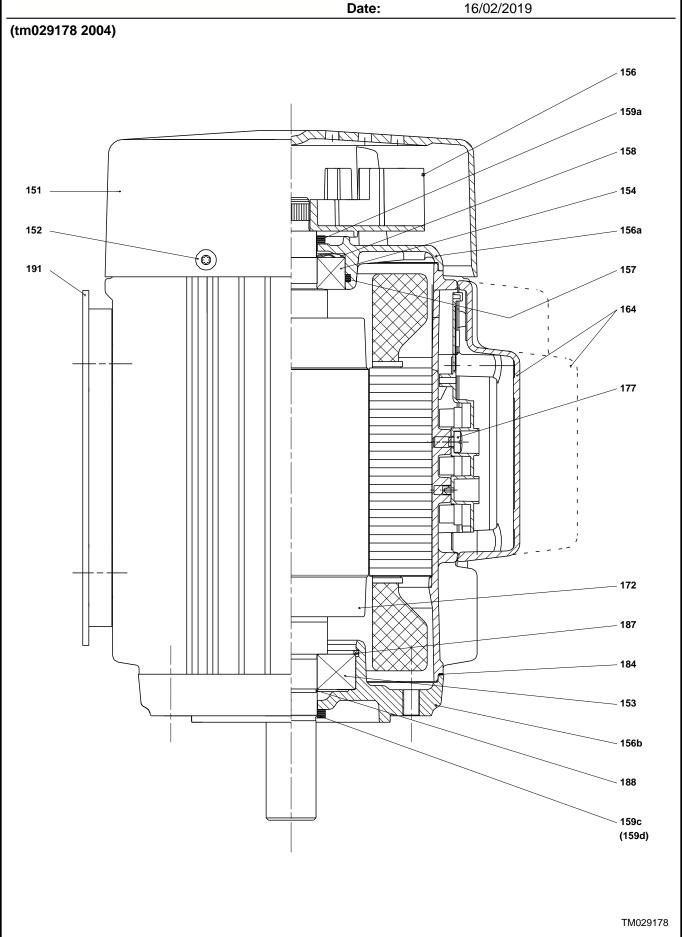
(tm029184 0505)



TM029184



Date:





**Date:** 16/02/2019

# Spare parts CRN 10-6, Product No. 96501061 Valid from 1.1.2011 (1152)

Pos	Description  Kit chamber stock	Annotation	Classification Data	Part no.		Uni
00	Kit, chamber stack			96491725	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.					
	Bar					
62	Stop ring					
64c	Spacing pipe		Length (mm): 12.7			
64a	Spacing bush		Length (mm): 9.00			
64.d	Spacer		2011911 (11111). 0.00			
64	Spacing pipe		Length (mm): 29.05			
66	Wedge lock washer		Length (mm). 25.05			
67	Lock nut		Thread: M8			
	Spacing bush		Length (mm): 18.00			
- -	Kit, coupling		Lengur (mm). 16.00	96511319	1	pcs
	Adjusting fork			90311319		
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	00500015	_	
	Kit, coupling guard			96509612		pcs
7.a	Combi Slot Torx screw					4
7	Coupling guard					2
-	Kit, gaskets			96509609	1	pcs
	Gasket				2	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	Annotation Classification Data Part no. Qty	. Unit
62	Retaining ring	Amounton oldosmouton bata 1 art no. Qty	1
64c	Spacing pipe	Length (mm): 12.7	1
64a	Spacing bush	Length (mm): 9.00	1
64.d	Spacer	20119.11 (11111)1 0100	1
65	Retainer		7
66	Wedge lock washer		1
67	Lock nut	Thread: M8	1
01	Motor	85903722 1	
_	Kit, bearing cpl.		pcs 1
111	Ball bearing	90219194	•
111	Ball bearing Ball bearing		
	<u>~</u>	Diameter: 52	
157	O-ring		
		Material type: NBR	
450	Ways days abou	Thickness: 3	
158	Waved washer		
187	Retaining ring		
188	Retaining ring		
	Kit, end shield	96279789	1
156a	End shield		
157a	Gasket	Internal diameter: 141,2	
		Outer diameter: 145,5	
		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	11-27-07-00	
188	Retaining ring		
-	Kit, shaft seal	96279761	1
159c	Seal ring	33270701	•
159a	Seal ring		
-	Kit, staybolts	96279792	1
181	Pan head staybolt	33213132	•
-	Kit, terminal board	96279769	1
- 173a	Base	302/3/03	'
173a	Pan head thread forming screw	Designation: COMBI TORX T25	
173	Slot cheese head screw	Designation: COMBI TORX 125  Designation: COMBI TORX T25	
170	Siot Glicese Head Sciew		
		Length (mm): 10	
470	Torminal	Thread: M5	
176	Terminal		
176	Connecting piece		
176	Wire clamp		
176	Terminal board		
177	Pan head screw		



	Pos	Description	Annotation	Classification Data		Qty.	
-		Kit, terminal box			9627977	71 1	
	164	Terminal box cover w/gasket					
	166	Pan head thread forming screw					
	1a	Pump head			98933809	1	pcs
1	2	Pump cover			98481138	1	pcs
+	3	Top intermediate chamber			98371084	1	pcs
+	4a	Intermediate chamber cpl.			98371088	1	pcs
-	4	Intermediate chamber cpl.			98371086	4	pcs
	3	Intermediate chamber			9837106	64 1	
	6	Base			98892305	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.			98976505	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			98982876	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	6	pcs
+	51	Shaft, spline, cpl.			98368630	1	pcs
	55	Outer sleeve			98812636	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	4	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	2	pcs
	105	Bulk, Shaft seal (11 pcs)		Material type: HQQE	96538914		pcs
	203	Helical compression spring			96547671	2	pcs