

**Date:** 16/02/2019

Qty. | Description

1 CR 5-29 A-FGJ-A-E-HQQE



Note! Product picture may differ from actual product

Product No.: 96513392

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 combined DIN-ANSI-JIS flanges.

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

### Further product details

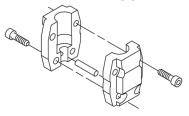
Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface. An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

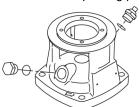
The colour code for the finished product is NCS 9000/RAL 9005.

#### **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, 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.



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)



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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 flanges and base are cast in one piece. 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.



#### **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

Technical:

Pump speed on which pump data are based: 2917 rpm

Rated flow: 5.8 m³/h Rated head: 150.4 m



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#### Qty. **Description**

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** 

SIC Bearing:

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 25/32

1 1/4 inch DN 25/32

Size of outlet connection: 1 1/4 inch

Pressure rating for pipe connection: PN 25 Flange rating inlet: 250 lb Flange size for motor: FT130

#### Electrical data:

Motor standard: IEC Motor type: 112MC IE Efficiency class: IE3 Rated power - P2: 4 kW Power (P2) required by pump: 4 kW Mains frequency: 50 Hz

3 x 380-415D V Rated voltage:

Rated current: 7.9 A Starting current: 1000-1110 % Cos phi - power factor: 0.87-0.87 Rated speed: 2920-2940 rpm Efficiency: IE3 88,1% Motor efficiency at full load: 88.1 %

Motor efficiency at 3/4 load: 88.6 % Motor efficiency at 1/2 load: 85.2 % Number of poles: 2

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

Insulation class (IEC 85):

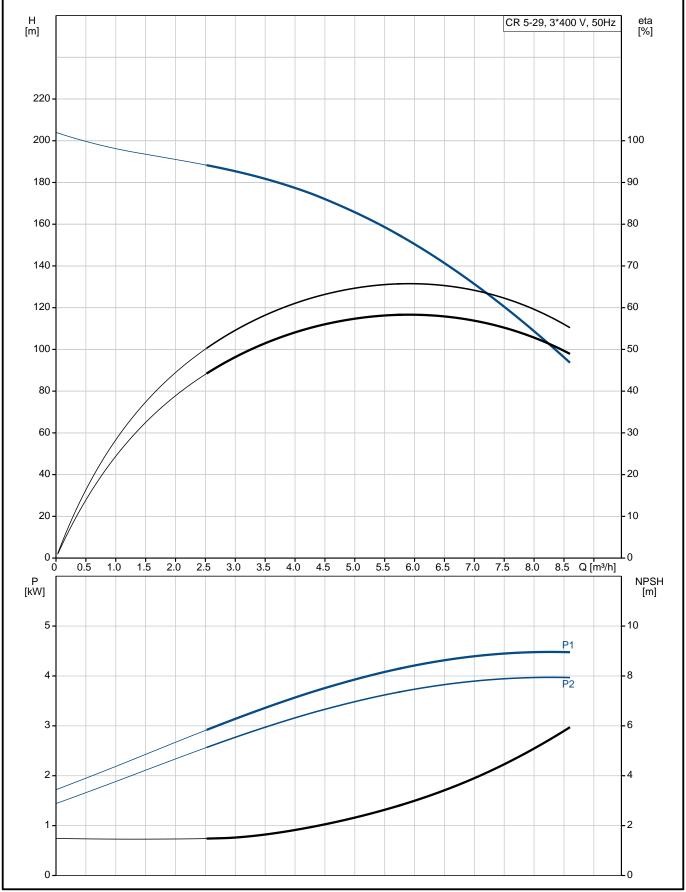
#### Others:

Minimum efficiency index, MEI ≥: 0.57 Net weight: 70.4 kg Gross weight: 91 kg Shipping volume: 0.257 m<sup>3</sup> Danish VVS No.: 385902129 Swedish RSK No.: 5824865



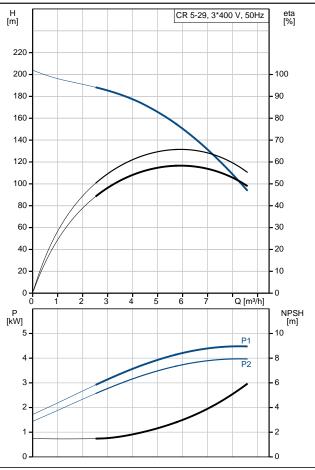
**Date:** 16/02/2019

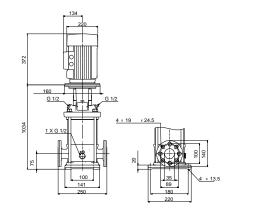
### 96513392 CR 5-29 A-FGJ-A-E-HQQE 50 Hz

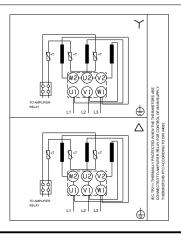




Description	Value
General information:	
Product name:	CR 5-29 A-FGJ-A-E-HQQE
Product No:	96513392
EAN number:	5700396639567
Technical:	0,000000000
Pump speed on which pump data are based:	2917 rpm
Rated flow:	5.8 m³/h
Rated head:	150.4 m
Head max:	197.5 m
Stages:	29
Impellers:	29
Number of reduced-diameter 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:	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:	DIN / ANSI / JIS
Size of inlet connection:	DN 25/32
	1 1/4 inch
Size of outlet connection:	DN 25/32
	1 1/4 inch
Pressure rating for pipe connection:	PN 25
Flange rating inlet:	250 lb
Flange size for motor:	FT130
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:	112MC
IE Efficiency class:	IE3
Rated power - P2:	4 kW
Power (P2) required by pump:	4 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-415D V







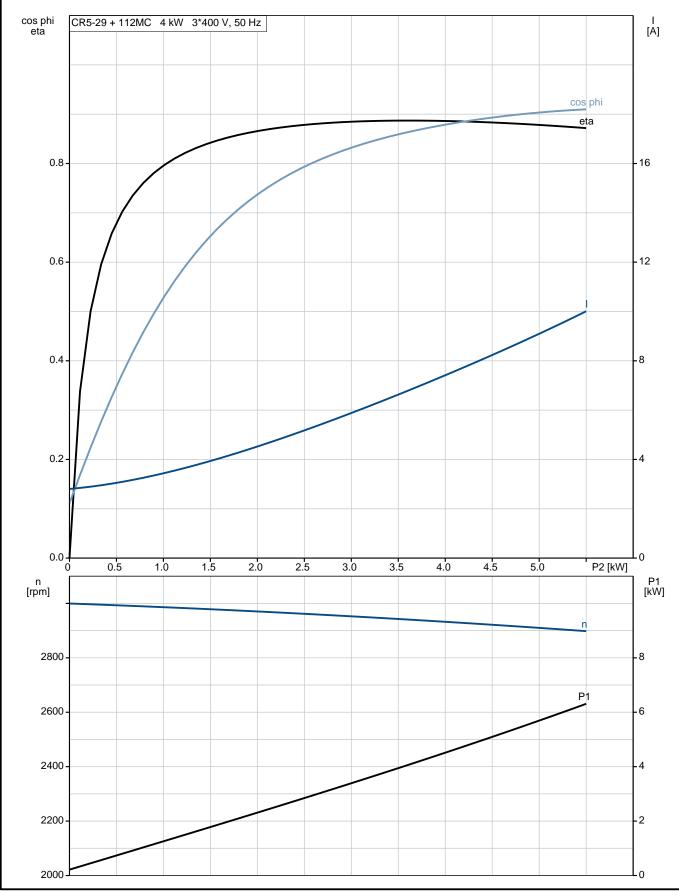


Description	Value
Rated current:	7.9 A
Starting current:	1000-1110 %
Cos phi - power factor:	0.87-0.87
Rated speed:	2920-2940 rpm
Efficiency:	IE3 88,1%
Motor efficiency at full load:	88.1 %
Motor efficiency at 3/4 load:	88.6 %
Motor efficiency at 1/2 load:	85.2 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	PTC
Motor No:	85U15413
Controls:	
Frequency converter:	NONE
Others:	
Minimum efficiency index, MEI ≥:	0.57
Net weight:	70.4 kg
Gross weight:	91 kg
Shipping volume:	0.257 m <sup>3</sup>
Danish VVS No.:	385902129
Swedish RSK No.:	5824865



**Date:** 16/02/2019

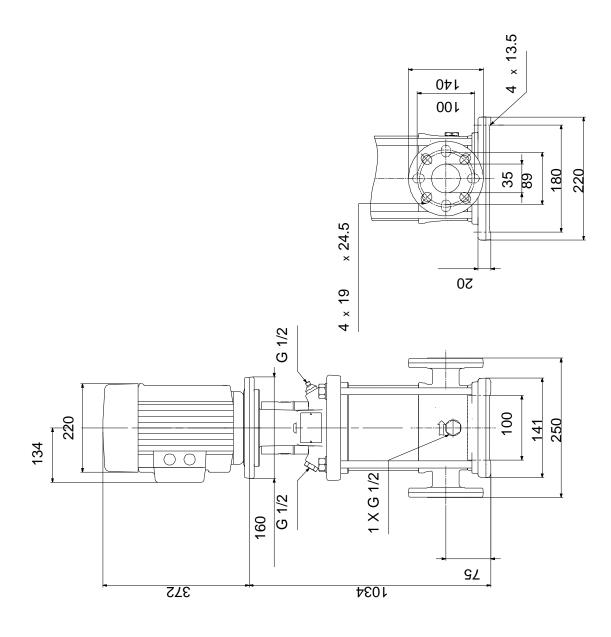
## 96513392 CR 5-29 A-FGJ-A-E-HQQE 50 Hz





Date: 16/02/2019

# 96513392 CR 5-29 A-FGJ-A-E-HQQE 50 Hz

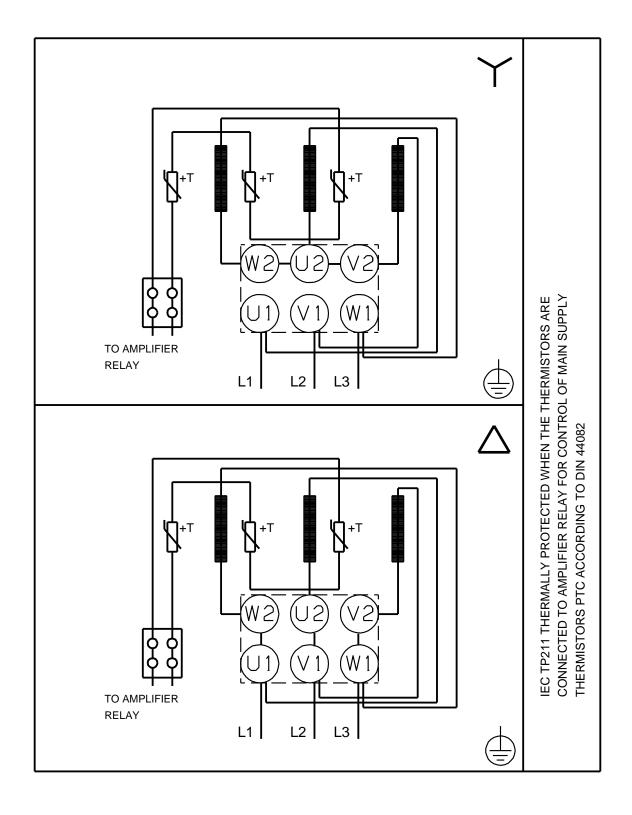


Note! All units are in [mm] unless others are stated. Disclaimer: This simplified dimensional drawing does not show all details.



**Date:** 16/02/2019

### 96513392 CR 5-29 A-FGJ-A-E-HQQE 50 Hz



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

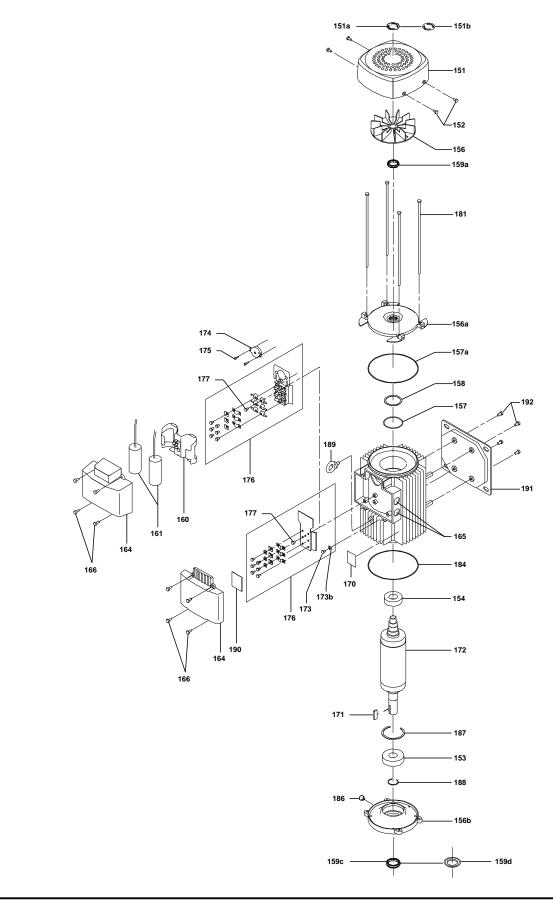


16/02/2019 Date: (TM069451 for SMCR standard)



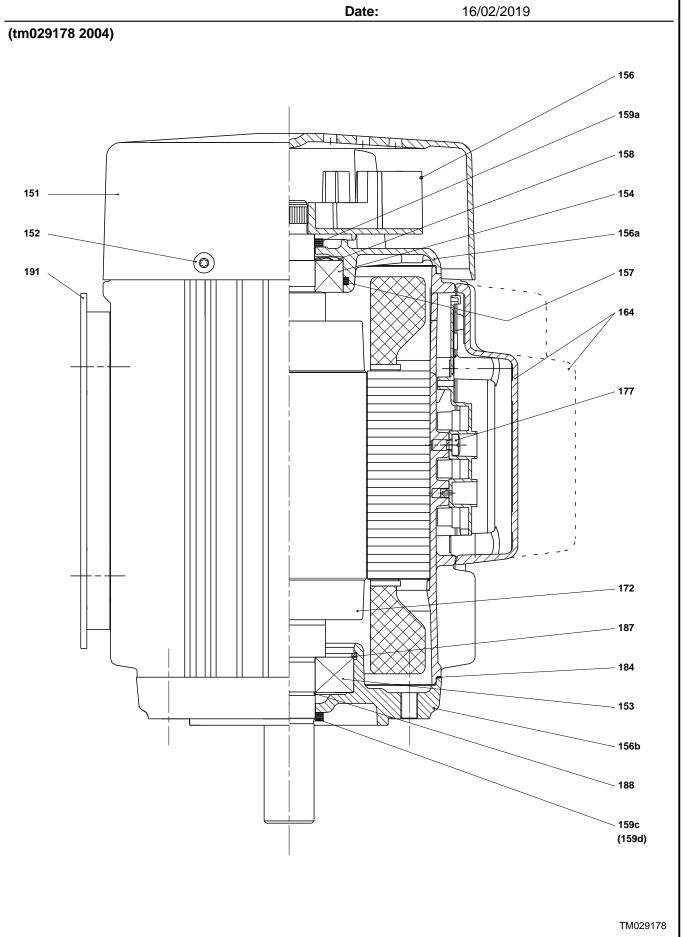
**Date:** 16/02/2019

(tm029184 0505)



TM029184







**Date:** 16/02/2019

### Spare parts CR 5-29, Product No. 96513392 Valid from 1.1.2011 (1152)

Pos	Description	Annotation Classification Data Part no		Qty.	
_	Kit, coupling	004150	63 1		pcs
9	Hex socket head cap screw	Designation: DIN 912		4	
		Length (mm): 25			
		Thread: M8			
10a	Coupling half			2	
10	Shaft pin	Diameter: 5		1	
		Length (mm): 26			
	Kit, coupling guard	965051	31 1		рс
7.a	Combi Slot Torx screw			4	
7	Coupling guard			2	!
	Kit, gaskets	964550	90 1	l .	рс
37	O-ring			2	2
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			
109	O-ring	Diameter: 22,00		1	
		Material type: EPDM			
		Thickness: 2,75			
	Kit, plug	965051	33 1	1	рс
18	Air vent screw			1	
	Spindle				
	Plug				
23b	Spindle			1	
25	Plug			1	
25	Plug			1	
38	O-ring	Diameter: 16,3		1	
	- 3	Material type: FKM			
		Thickness: 2,4			
38	O-ring	Diameter: 16,3		2	
	- 3	Material type: FKM			
		Thickness: 2,4			
38	O-ring	Diameter: 16,3		1	
	····9	Material type: EPDM			
		Thickness: 2,4			
38	O-ring	Diameter: 16,3		2	,
50	O IIIIg	Material type: EPDM			•
		Thickness: 2,4			
	Kit, shaft seal HQQE	964550	86 '	1	no
105	Shaft seal		50		pc
105	Kit, wear parts	Material type: HQQE	00 -	1	
10	•	Material type: SIC 964551	JU 1		pc
4a	Chamber w. bearing cpl.			7	
45	Chamber				
45	Neck ring				
65	Neck ring retainer				_
45	Neck ring				9
47	Bearing ring, rotating			7	
64c	Clamp, splined	Internal diameter: 8,5		1	
		Outer diameter: 15			
64a	Spacing pipe	Length (mm): 13.00		7	
65	Neck ring retainer			2	9



Pos 66	Description Wedge lock washer	Annotation Classification Data Part no. Qty	<del>. Ur</del> 1
		Three dr MO	
67	Lock nut	Thread: M8	1
441b	Gasket		2
	Motor	85903740 1	рс
	Kit, bearing cpl.	96279802	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	1110.11033.10	
100	Kit, end shield	96279790	1
156a	End shield	30213130	•
		Diameter CO	
157	O-ring	Diameter: 62	
		Material type: NBR	
		Thickness: 3	
158	Waved washer		
159a	Seal ring		
	Kit, eyebolt	96279825	1
189	Eyebolt		
	Kit, fan	96279758	1
156	Fan		
159c	Seal ring		
159a	Seal ring		
1554	Kit, fan cover	96279756	1
4546		90219130	1
151b	Label		
151	Fan cover		
152	Pan head thread forming screw		
	Kit, flange	96279779	1
156b	Flange		
159.c	Seal ring		
186	Drain plug		
	Kit, shaft seal	96279763	1
159c	Seal ring		
159a	Seal ring		
	Kit, staybolts	96279793	1
181	Pan head staybolt	002.0.00	•
101	Kit. terminal board	96279769	1
173a	Base	90219109	'
		Desire effect COMPLEORY TOP	
173	Pan head thread forming screw	Designation: COMBI TORX 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	96279772	1
164	Terminal box cover w/gasket	33213112	
166	Pan head thread forming screw		
2a	Pump head	98681106 1	n
	•		po
4a	Bulk, Chamber w. bearing cpl. (24 pcs)	96547652 6	pc
4a	Chamber w. bearing cpl.	98371274 6	pc
4	Bulk, Chamber cpl. (24 pcs)	96547651 22	рс
45	Bulk, Neck ring (24 pcs)	96547603	1
65	Bulk, Retainer (10 pcs)	97911446	1
	Chamber cpl.		



	Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
+	5a	Chamber cpl.			98371269	1	pcs
	6	Base			96588146	1	pcs
	7.a	Bulk, Combi Slot Torx screw (1000 pcs)			96886324	4	pcs
	7	Bulk, Coupling guard (10 pcs)			96603690	2	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
l  -	25a	Drain plug w/bypass valve			96588242	1	pcs
	38	Bulk, O-ring (10 pcs)		Diameter: 16,3	991988	315 1	
				Material type: EPDM			
				Thickness: 2,4			
	38	Bulk, O-ring (50 pcs)		Diameter: 16,3	994127	727 1	
				Material type: EPDM			
				Thickness: 2,4			
	26	Staybolt		Length (mm): 805	98986336	4	pcs
				Thread: M12			
	28	Bulk, Hex head screw (4 pcs)		Length (mm): 25	99335941	4	pcs
				Thread: M8			
	36	Bulk, Nut (20 pcs)		Thread: M12	96620479	4	pcs
	37	Bulk, O-ring (24 pcs)			96547656	2	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			
+	44a	Bulk, Guide vane cpl. (5 pcs)			96547658	1	pcs
+	44a	Guide vane cpl.			98681144	1	pcs
	47	Bulk, Bearing ring, rotating (10 pcs)			97905743	6	pcs
	47	Bearing ring, rotating			96547649	6	pcs
	49	Bulk, Impeller cpl. (10 pcs)			98394283	29	pcs
	49	Bulk, Impeller cpl. (24 pcs)			96547648	29	pcs
	49	Impeller cpl.			98394422	29	pcs
+	51	Shaft, spline, cpl.			98368530	1	pcs
	55	Outer sleeve			98811266	1	pcs
	60	Formed wire spring			96547664	1	pcs
	64c	Bulk, Clamp, splined (5 pcs)		Internal diameter: 8,5	98496968	1	pcs
				Outer diameter: 15			
	64a	Bulk, Spacing pipe (24 pcs)		Length (mm): 13.00	96536452	6	pcs
	64a	Spacing pipe		Length (mm): 13.00	98520104	6	pcs
	64	Bulk, Spacing pipe (24 pcs)		Length (mm): 26.0	96536304	22	pcs
	66	Bulk, Wedge lock washer (10 pcs)			96536157	1	pcs
	67	Bulk, Lock nut (10 pcs)		Thread: M8	98277008	1	pcs
	67	Bulk, Lock nut (10 pcs)		Thread: M8	98275969	1	pcs
	69	Bulk, Spacing pipe (10 pcs)		Length (mm): 2.00	96536451	1	pcs
+	105	Bulk, Shaft seal (15 pcs)		Material type: HQQE	96983415	1	pcs
_							