

Date: 16/02/2019

Qty. | Description

1 CRN 15-7 A-FGJ-A-E-HQQE



Product No.: 96501964

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

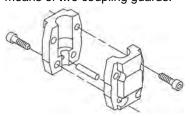
Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface. An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

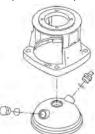
The colour code for the finished product is NCS 9000/RAL 9005.

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)



Date: 16/02/2019

Qty. | Description

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 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.

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: 2919 rpm

Rated flow: 17 m³/h
Rated head: 77.9 m
Pump orientation: Vertical
Shaft seal arrangement: Single
Code for shaft seal: HQQE

Approvals on nameplate: CE, EAC,ACS Curve tolerance: ISO9906:2012 3B



Date: 16/02/2019

Qty. | Description

Materials:

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 50

2 inch

Size of outlet connection: DN 50

2 inch

Pressure rating for pipe connection: PN 25 Flange rating inlet: 300 lb Flange size for motor: FF265

Electrical data:

Motor standard: IEC
Motor type: 132SC
IE Efficiency class: IE3
Rated power - P2: 5.5 kW
Power (P2) required by pump: 5.5 kW
Mains frequency: 50 Hz

Rated voltage: 3 x 380-415D V

Rated current: 11 A

Starting current: 1080-1180 % Cos phi - power factor: 0.87-0.82 Rated speed: 2920-2940 rpm Efficiency: IE3 89,2% Motor efficiency at full load: 89.2 % Motor efficiency at 3/4 load: 90.0 % Motor efficiency at 1/2 load: 89.6 % Number of poles: 2

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

Insulation class (IEC 85): F

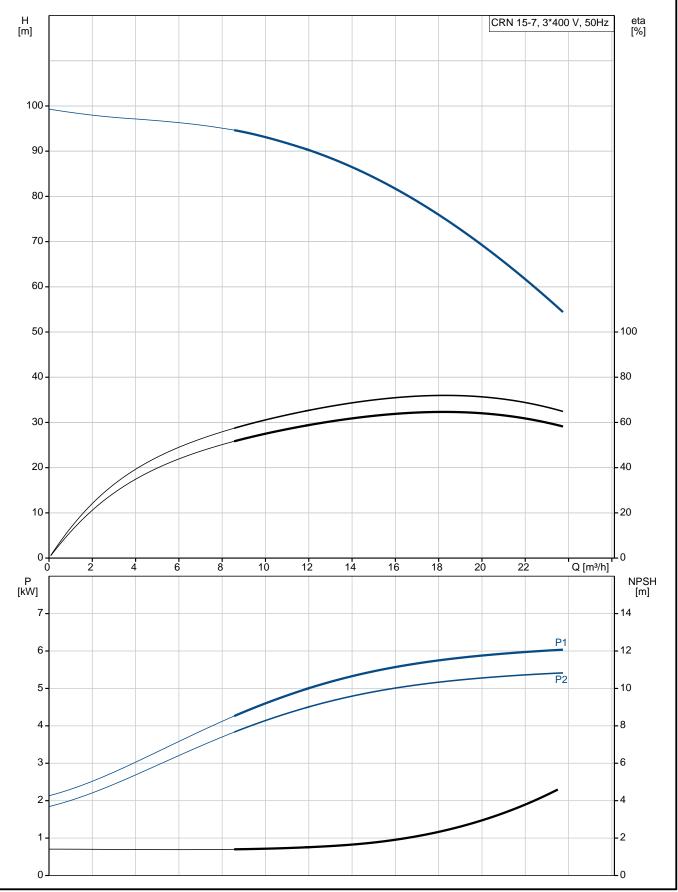
Others:

Minimum efficiency index, MEI ≥: 0.70
Net weight: 91 kg
Gross weight: 113 kg
Shipping volume: 0.285 m³



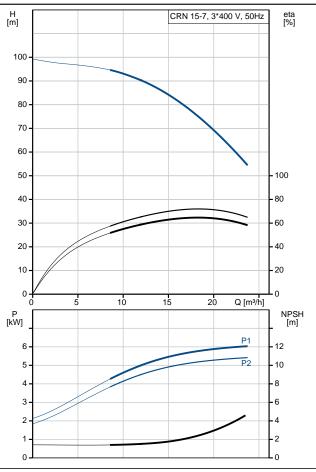
Date: 16/02/2019

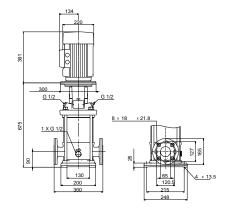
96501964 CRN 15-7 A-FGJ-A-E-HQQE 50 Hz

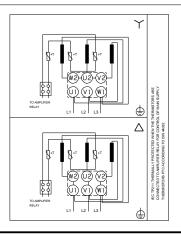




Description	Value
General information:	
Product name:	CRN 15-7
Froduct name.	A-FGJ-A-E-HQQE
Product No:	96501964
EAN number:	5700396232744
Technical:	
Pump speed on which pump data are	2919 rpm
based:	·
Rated flow:	17 m³/h
Rated head:	77.9 m
Head max:	98.5 m
Stages:	7
Impellers:	·
Number of reduced-diameter 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:	0
Base:	Stainless steel
	EN 1.4408
	AISI 316
Impeller:	Stainless steel
	EN 1.4401
***	AISI 316
Material code:	A
Code for rubber:	E
Bearing:	SIC
Installation:	CO 9C
Maximum ambient temperature:	60 °C 25 bar
Maximum operating pressure:	25 bar / 120 °C
Max pressure at stated temp:	25 bar / -20 °C
Type of connection:	
Type of connection: Size of inlet connection:	DIN / ANSI / JIS DN 50
Size of filler conflection.	2 inch
Size of outlet connection:	DN 50
Size of oddlet confidention.	2 inch
Pressure rating for pipe connection:	PN 25
Flange rating inlet:	300 lb
Flange size for motor:	FF265
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:	555.E Ng/III
Motor standard:	IEC
Motor type:	132SC
IE Efficiency class:	IE3
Rated power - P2:	5.5 kW
Power (P2) required by pump:	5.5 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-415D V
	5 % 000 110D V







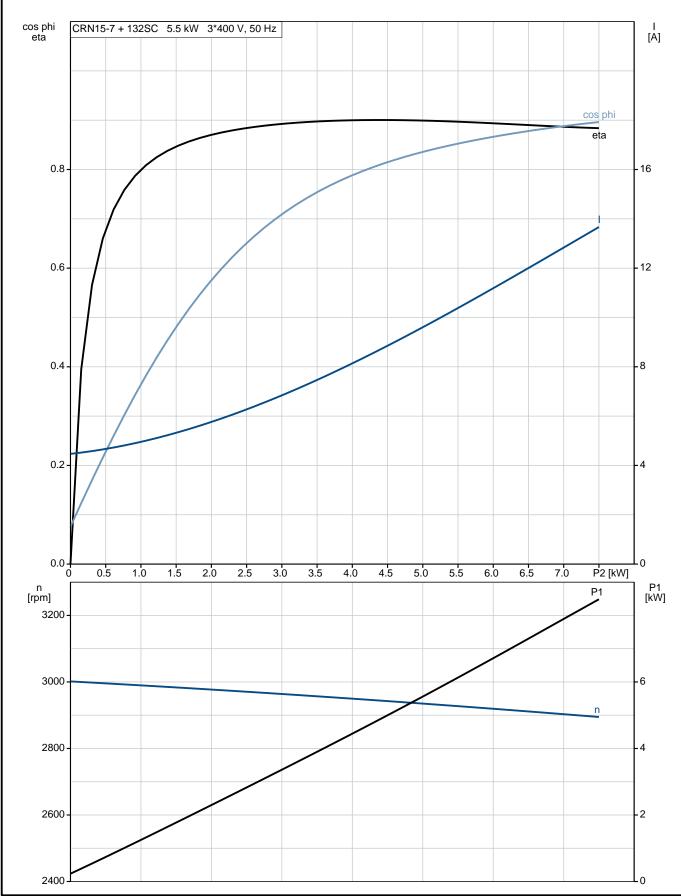


Description	Value
Rated current:	11 A
Starting current:	1080-1180 %
Cos phi - power factor:	0.87-0.82
Rated speed:	2920-2940 rpm
Efficiency:	IE3 89,2%
Motor efficiency at full load:	89.2 %
Motor efficiency at 3/4 load:	90.0 %
Motor efficiency at 1/2 load:	89.6 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	PTC
Motor No:	85U17417
Controls:	
Frequency converter:	NONE
Others:	
Minimum efficiency index, MEI ≥:	0.70
Net weight:	91 kg
Gross weight:	113 kg
Shipping volume:	0.285 m ³



Date: 16/02/2019

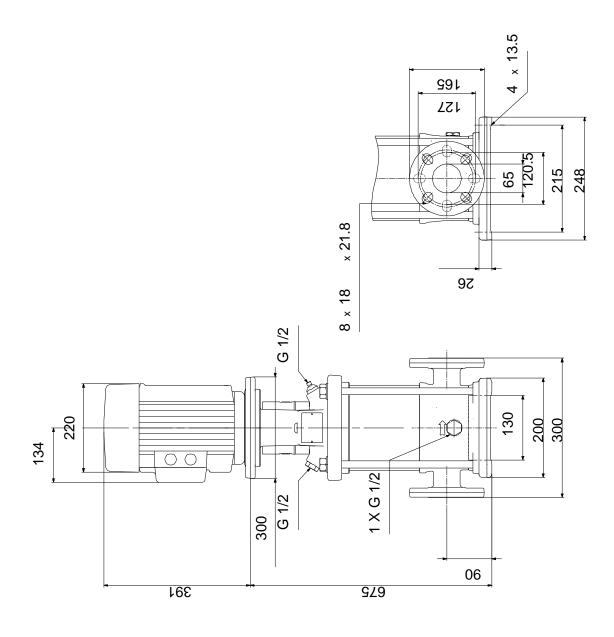
96501964 CRN 15-7 A-FGJ-A-E-HQQE 50 Hz





Date: 16/02/2019

96501964 CRN 15-7 A-FGJ-A-E-HQQE 50 Hz

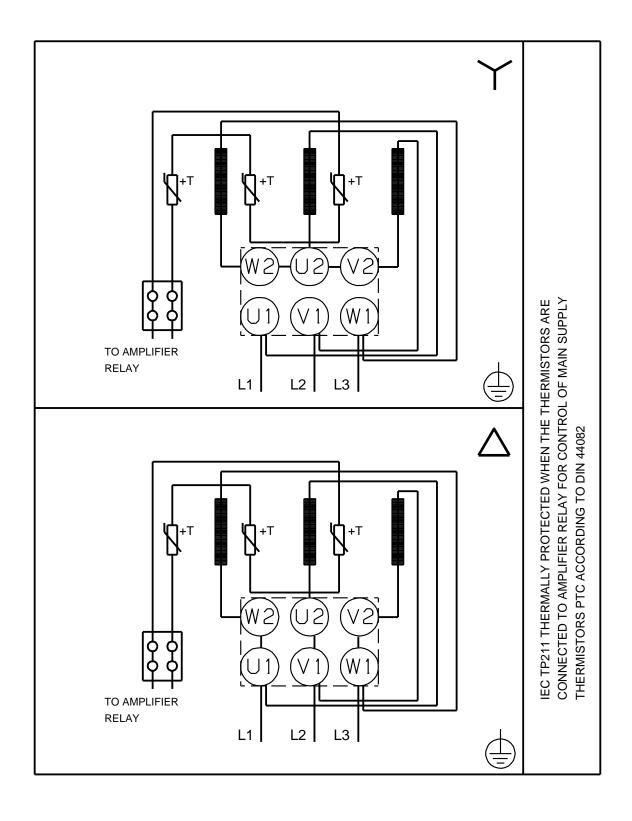


Note! All units are in [mm] unless others are stated. Disclaimer: This simplified dimensional drawing does not show all details.



Date: 16/02/2019

96501964 CRN 15-7 A-FGJ-A-E-HQQE 50 Hz

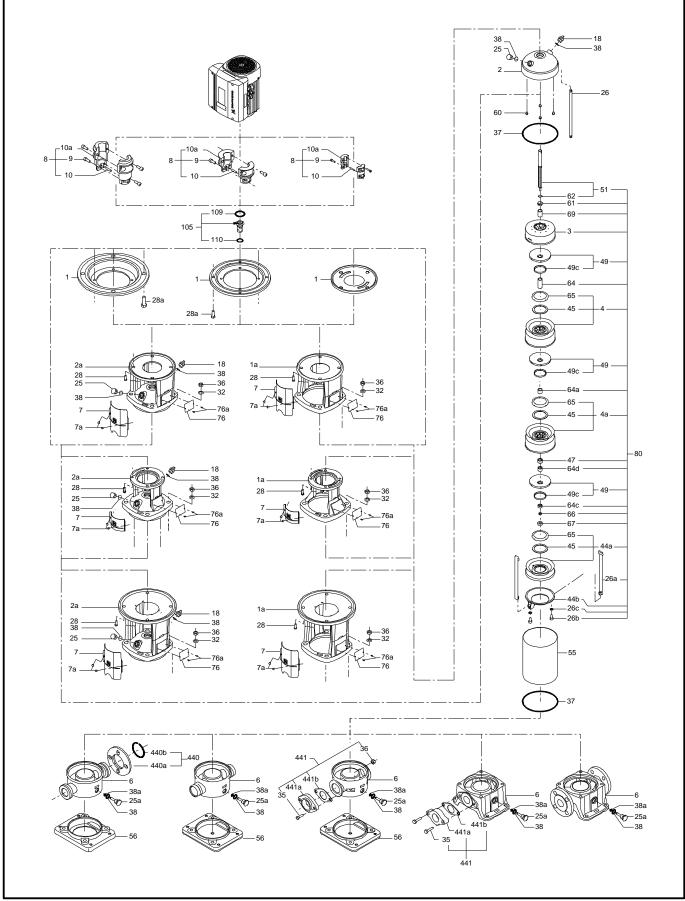


Note! All units are in [mm] unless others are stated.



Date: 16/02/2019

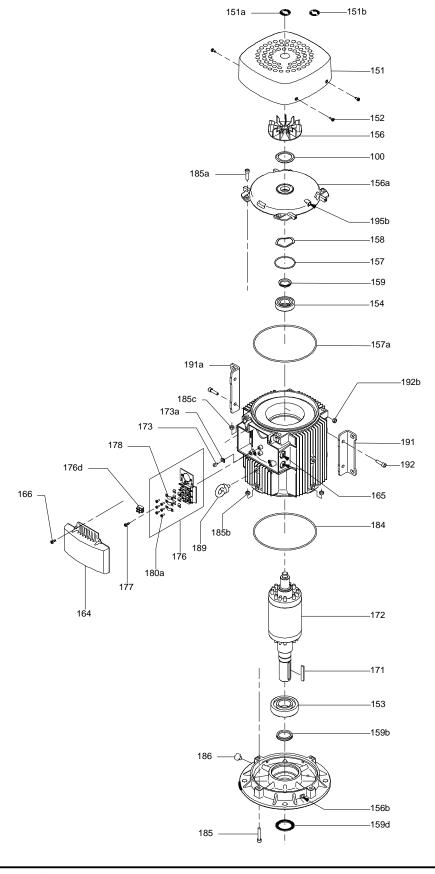
(tm069469 for MECR15,20 standard)



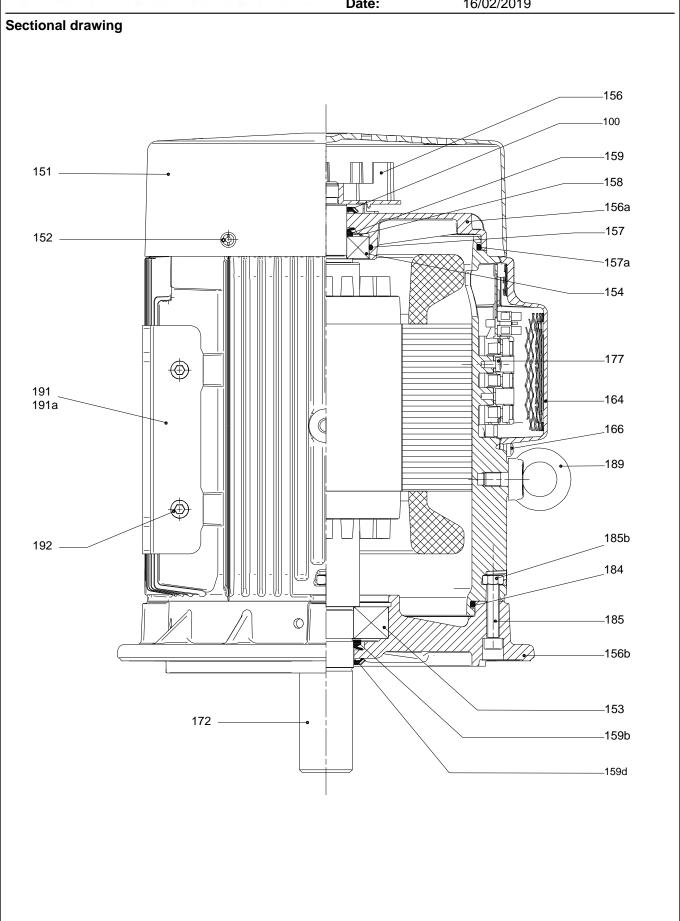


Date: 16/02/2019

Exploded view



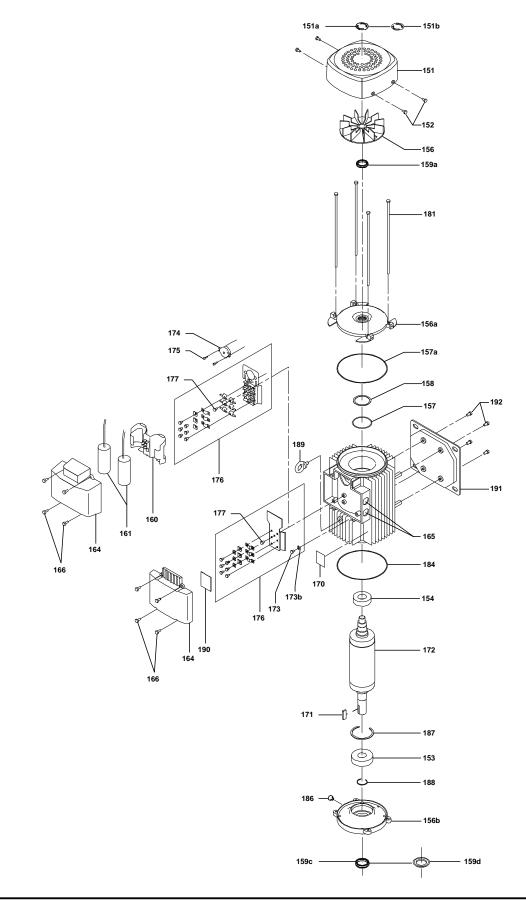






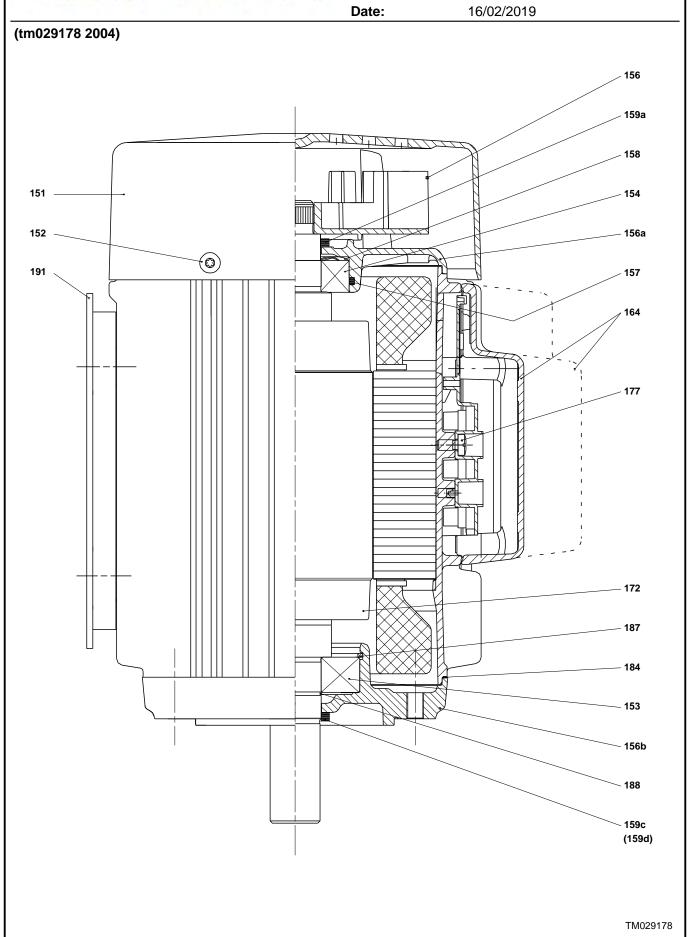
Date: 16/02/2019

(tm029184 0505)



TM029184







Date: 16/02/2019

Spare parts CRN 15-7, Product No. 96501964 Valid from 1.1.2011 (1152)

	Pos	Description Kit, chamber stack	Annotation	Classification Data	Part no. 96491765	Qty.	Uni
•	90	Chamber stack			90491705	1	pcs
	80					1	
-	3	Top intermediate chamber					
		Guide vane					
	_	Cover plate					
	3	Intermediate chamber					
-	4a	Intermediate chamber cpl.					
		Sand Lifter					
		Guide cup					
		Bearing plate					
		Guide vane					
	3	Intermediate chamber					
	45a	Neck ring cpl.					
	47	Bearing bush					
	65	Retainer					
-	4	Intermediate chamber cpl.					
	3	Intermediate chamber					
	45a	Neck ring cpl.					
	65	Retainer					
	26a	Strap cpl.		Length (mm): 314MM			
	26.c	Washer		Designation: DIN 125A			
				Thickness: 1,6			
	26.b	Hex head screw					
	44b	Inlet part					
-	44a	Inlet part cpl.					
	45a	Neck ring cpl.					
	65	Retainer					
	47	Bearing ring					
_	49	Impeller cpl.					
	49c	Wear ring					
	49	Impeller					
_	51	Shaft, spline, cpl.					
	•	Bar					
	62	Stop ring					
	64d	Spacing bush					
	64c	Spacing pipe		Length (mm): 12.7			
	64a	Spacing pipe Spacing pipe		Internal diameter: 17,5			
	0 4 a	Spacing pipe		Length (mm): 17			
	64	Spacing pipe		Length (mm): 43.6			
	66			Lengur (mm). 43.0			
		Wedge lock washer Lock nut		Throad: MO			
	67			Thread: M8			
	69	Spacing bush			00544054	_	
-	Kit, coupling			96511351		pcs	
	•	Adjusting fork				1	
-	8	Coupling		B 1 (1 B)N 040		1	
	9	Hex socket head cap screw		Designation: DIN 912			
			Length (mm): 25				
				Thread: M10			
	10a	Coupling half					
	10	Shaft pin		Diameter: 5			
				Length (mm): 26			
		Kit, coupling guard			96509613	1	pcs
	7.a	Combi Slot Torx screw				4	ļ.



Pos	Description	Annotation Classification Data	Part no.	Qty	y. Ur
7	Coupling guard				2
	Kit, gaskets		96509609	1	рс
	Gasket				2
24	O-ring				2
37	O-ring				2
38a	O-ring	Diameter: 5,3			1
		Material type: EPDM			
		Thickness: 2,4			
20	O win a				,
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
4410	Gasket	Outer diameter: 92			_
		Thickness: 2			
	Kit, plug		96511312	1	рс
18	Air vent screw				1
	Spindle				
	Plug				
25a	Drain plug				1
25	Plug				1
38a	O-ring	Diameter: 5,3			1
Soa	O-IIIIg				ı
		Material type: FKM			
		Thickness: 2,4			
38a	O-ring	Diameter: 5,3			1
		Material type: EPDM			
		Thickness: 2,4			
38	O-ring	Diameter: 16,3			1
		Material type: FKM			
		Thickness: 2,4			
38	O ring				2
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
	- ····g	Material type: EPDM			
	Vit. aboft and HOOF	Thickness: 2,4	06544044	1	
	Kit, shaft seal HQQE		96511844	1	рс
	Emery cloth				1
	Grinding device				1
105	Shaft seal	Material type: HQQE			1
	Kit, wear parts		96511827	1	рс
4a	Intermediate chamber cpl.				2
	Sand Lifter				
	Guide cup				
	•				
	Bearing plate				
	Guide vane				
3	Intermediate chamber				
45a	Neck ring cpl.				
47	Bearing bush				
65	Retainer				
26.c	Washer	Designation: DIN 125A			2
		200.3.700011.2071			_



	Description Hey hard scrow	Annotation Classification Data Part no. Qty	y. U
26.b	Hex head screw		2
45a	Neck ring cpl.		8
47	Bearing ring		2
49c	Wear ring		10
62	Retaining ring		1
64d	Spacing bush		2
64c	Spacing pipe	Length (mm): 12.7	1
64b	Spacing bush	Length (mm): 5.00	1
64a	Spacing pipe	Internal diameter: 17,5	2
		Length (mm): 17	
65	Retainer		8
66	Wedge lock washer		1
67	Lock nut	Thread: M8	1
	Motor	85904020 1	рс
	Kit, bearing cpl.	96279803	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		
	Kit, end shield	96279790	1
156a	End shield	00210100	•
157	O-ring	Diameter: 62	
137	O-IIIIg	Material type: NBR	
		Thickness: 3	
150	Mayadwaahar	Thickness: 3	
158	Waved washer		
159a	Seal ring	00070005	_
	Kit, eyebolt	96279825	1
189	Eyebolt		
	Kit, fan	96279758	1
156	Fan		
159c	Seal ring		
159a	Seal ring		
	Kit, fan cover	96279756	1
151b	Label		
151	Fan cover		
152	Pan head thread forming screw		
	Kit, flange	96279784	1
156b	Flange		
159.c	Seal ring		
186	Drain plug		
	Kit, retaining ring	96279801	1
187	Retaining ring		
188	Retaining ring		
	Kit, shaft seal	96279764	1
159d	Seal ring	30213104	•
159c	Seal ring		
1000	Kit, staybolts	96279793	1
181	Pan head staybolt	50219193	•
101	•	00070700	1
170-	Kit, terminal board	96279769	ı
173a	Base	D 1 // 001/D/T0D//T0-	
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		



Pos 176	Description Terminal board	Annotation Classification Data Part no. Qty	/. U
177	Pan head screw	00070770	,
404	Kit, terminal box	96279772	1
164	Terminal box cover w/gasket		
166	Pan head thread forming screw		
	Motor	85901556 1	p
	Kit, bearing cpl.	96279803	1
111	Ball bearing	Designation: 6206.2Z.C3.SYN	
153	Angular-contact bearing		
157	O-ring	Diameter: 62	
		Material type: NBR	
		Thickness: 3	
158	Waved washer		
	Kit, end shield	96279790	1
156a	End shield		
157	O-ring	Diameter: 62	
		Material type: NBR	
		Thickness: 3	
158	Waved washer	THIORISON O	
159a	Seal ring		
1334	Kit, eyebolt	96279825	1
189	Eyebolt	902/9023	1
109		00070750	1
450	Kit, fan	96279758	1
156	Fan		
159c	Seal ring		
159a	Seal ring		
	Kit, fan cover	96279756	1
151b	Label		
151	Fan cover		
152	Pan head thread forming screw		
	Kit, flange	96279784	1
156b	Flange		
159.c	Seal ring		
186	Drain plug		
	Kit, retaining ring	96279801	1
187	Retaining ring		
188	Retaining ring		
	Kit, shaft seal	96279764	1
159d	Seal ring	002.0101	•
159c	Seal ring		
1030	Kit, staybolts	96279793	1
181	Pan head staybolt	50279793	1
101		00070700	1
470-	Kit, terminal board	96279769	1
173a	Base	Designation OOMBLTODY TO	
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	5-2-02	
166	Pan head thread forming screw		
	i an noda anoda ionining solow		
	Pump head	98914854 1	р



Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
2	Pump cover			98481138	1	pcs
+ 3	Bulk, Top intermediate chamber (3 pcs)			98371113	1	pcs
+ 3	Top intermediate chamber			98734577	1	pcs
+ 4a	Bulk, Intermediate chamber cpl. (10 pcs)			96538853	2	pcs
+ 4a	Intermediate chamber cpl.			98371117		pcs
- 4	Bulk, Intermediate chamber cpl. (10 pcs)			96538840		pcs
3	Intermediate chamber			983711		
65	Retainer			965473	341 1	
+ 4	Intermediate chamber cpl.			98371115		pcs
6	Base			98482550		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.		Length (mm): 314MM	98925044	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			98982882	4	pcs
37a	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.			98818922	1	pcs
47	Bulk, Bearing ring (10 pcs)			96538795	2	pcs
- 49	Bulk, Impeller cpl. (5 pcs)			98394288	7	pcs
49c	Bulk, Wear ring (10 pcs)			965473	340 1	I
+ 49	Impeller cpl.			98394449	7	pcs
+ 51	Shaft, spline, cpl.			98368636	1	pcs
55	Outer sleeve			98812641	1	pcs
56	Base plate			98481136	1	pcs
60	Bulk, Spring (20 pcs)			96538963	4	pcs
64d	Bulk, Spacing bush (20 pcs)			96538947		pcs
64c	Bulk, Spacing pipe (5 pcs)		Length (mm): 12.7	97980241		pcs
64a	Bulk, Spacing pipe (10 pcs)		Internal diameter: 17,5	98417487		pcs
	, 1 3 1 1 · (- 1 · -)		Length (mm): 17			
64	Bulk, Spacing pipe (20 pcs)		Length (mm): 43.6	96535107	4	pcs
66	Bulk, Wedge lock washer (10 pcs)		J. (,	96536157		pcs
67	Bulk, Lock nut (10 pcs)		Thread: M8	98277008		pcs
69	Bulk, Spacing bush (20 pcs)			96538949		pcs
76a	Bulk, Rivet (100 pcs)			96620489		pcs
105	Bulk, Shaft seal (11 pcs)		Material type: HQQE	96538914		pcs
						PUS