

Qty.	Description
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1	CRN 120-7 A-F-N-E-HBQE
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Note! Product picture may differ from actual product

Product No.: [96869114](#)

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 DIN 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 long split coupling connects the pump and motor shaft. It is enclosed in the motor stool by means of two coupling guards. The long coupling makes it possible to replace the shaft seal without removing the motor from the pump.



The motor stool connects the pump head and motor. 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.

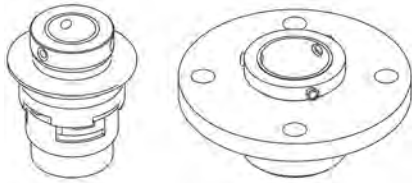
Primary seal:

- Rotating seal ring material: carbon graphite, resin-impregnated
- Stationary seat material: silicon carbide (SiC)

This material pairing has a very good corrosion resistance and is especially suitable for water up to 90 °C. The seal life will be reduced significantly at temperatures above 90 °C. The material pairing is not recommended for liquids containing particles as this will result in heavy wear on the SiC face.

Secondary seal material: EPDM (ethylene-propylene rubber)

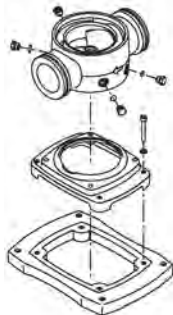
EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.



The shaft seal is retained in the pump head by a cover and screws. It can be replaced without removing the motor.

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. Both the inlet and the outlet side of the base have two pressure gauge tappings. The pump is secured to the foundation by four bolts through the base plate. The flanges are fastened to the base by means of locking rings.



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.

Qty. Description

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.

A variable speed drive makes adjustment of pump performance to any duty point possible. If the motor is to be connected to a variable speed drive, the pump must be ordered with an electrically insulated motor bearing.

Technical data
Controls:

Frequency converter: NONE

Liquid:

Pumped liquid: Water
 Liquid temperature range: 0 .. 120 °C
 Liquid temperature during operation: 20 °C
 Density: 998.2 kg/m³

Technical:

Pump speed on which pump data are based: 2975 rpm
 Rated flow: 120 m³/h
 Rated head: 163.2 m
 Pump orientation: Vertical
 Shaft seal arrangement: Single
 Code for shaft seal: HBQE
 Approvals on nameplate: CE, EAC, ACS
 Curve tolerance: ISO9906:2012 3B

Materials:

Base: Stainless steel
 EN 1.4408
 AISI 316
 Impeller: Stainless steel
 EN 1.4401
 AISI 316
 Bearing: SIC
 Support bearing: Graflon

Installation:

Maximum ambient temperature: 55 °C
 Maximum operating pressure: 30 bar
 Max pressure at stated temp: 30 bar / 120 °C
 30 bar / 0 °C
 Type of connection: DIN
 Size of inlet connection: DN 125
 Size of outlet connection: DN 125
 Pressure rating for pipe connection: PN 40
 Flange size for motor: FF500

Electrical data:

Motor standard: IEC
 Motor type: SIEMENS
 IE Efficiency class: IE3
 Rated power - P2: 75 kW
 Power (P2) required by pump: 75 kW
 Mains frequency: 50 Hz
 Rated voltage: 3 x 380-420D/660-725Y V
 Rated current: 135-122/78,0-70,0 A



Company name:

Created by:

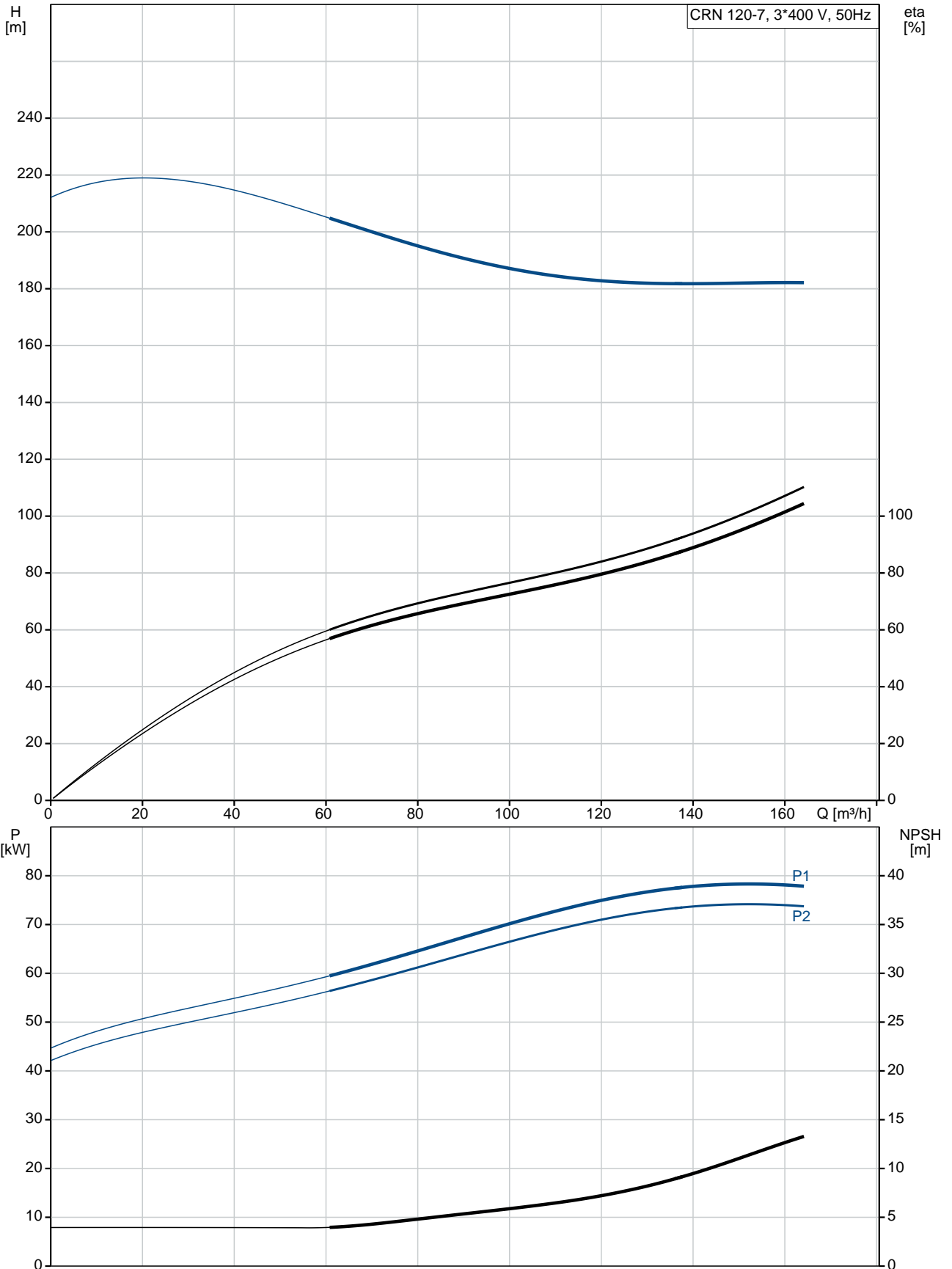
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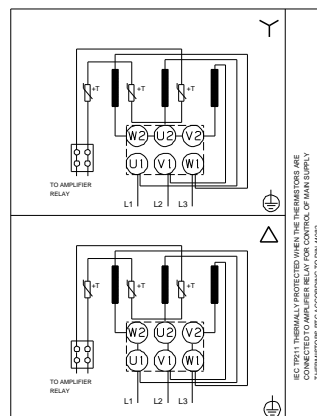
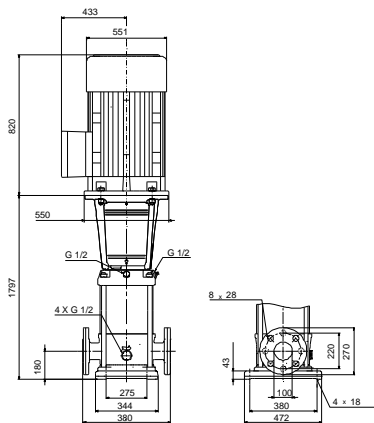
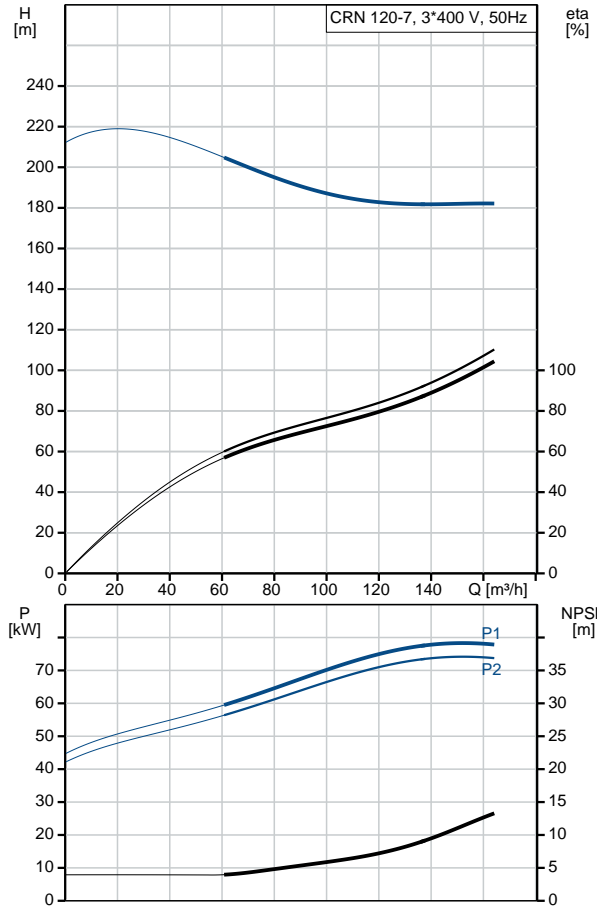
18/02/2019

Qty.	Description
	<p data-bbox="204 338 740 636">Starting current: 680-680 % Cos phi - power factor: 0.89 Rated speed: 2975 rpm Efficiency: IE3 94,7% Motor efficiency at full load: 94.7-94.7 % Motor efficiency at 3/4 load: 94.8-94.8 % Motor efficiency at 1/2 load: 94.1-94.1 % Number of poles: 2 Enclosure class (IEC 34-5): 55 Dust/Jetting Insulation class (IEC 85): F</p> <p data-bbox="204 667 676 815">Others: Minimum efficiency index, MEI $\hat{\alpha}\%$: 0.70 Net weight: 760 kg Gross weight: 924 kg Shipping volume: 2.25 m³</p>

96869114 CRN 120-7 A-F-N-E-HBQE 50 Hz



Description	Value
General information:	
Product name:	CRN 120-7 A-F-N-E-HBQE
Product No:	96869114
EAN number:	5700312333951
Technical:	
Pump speed on which pump data are based:	2975 rpm
Rated flow:	120 m ³ /h
Rated head:	163.2 m
Head max:	209.1 m
Stages:	7
Impellers:	7
Number of reduced-diameter impellers:	0
Low NPSH:	N
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HBQE
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:	N
Code for rubber:	E
Bearing:	SIC
Support bearing:	Graflon
Installation:	
Maximum ambient temperature:	55 °C
Maximum operating pressure:	30 bar
Max pressure at stated temp:	30 bar / 120 °C 30 bar / 0 °C
Type of connection:	DIN
Size of inlet connection:	DN 125
Size of outlet connection:	DN 125
Pressure rating for pipe connection:	PN 40
Flange size for motor:	FF500
Connect code:	F
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	0 .. 120 °C
Liquid temperature during operation:	20 °C
Density:	998.2 kg/m ³
Electrical data:	
Motor standard:	IEC
Motor type:	SIEMENS
IE Efficiency class:	IE3
Rated power - P2:	75 kW
Power (P2) required by pump:	75 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-420D/660-725Y V
Rated current:	135-122/78,0-70,0 A





Company name:

Created by:

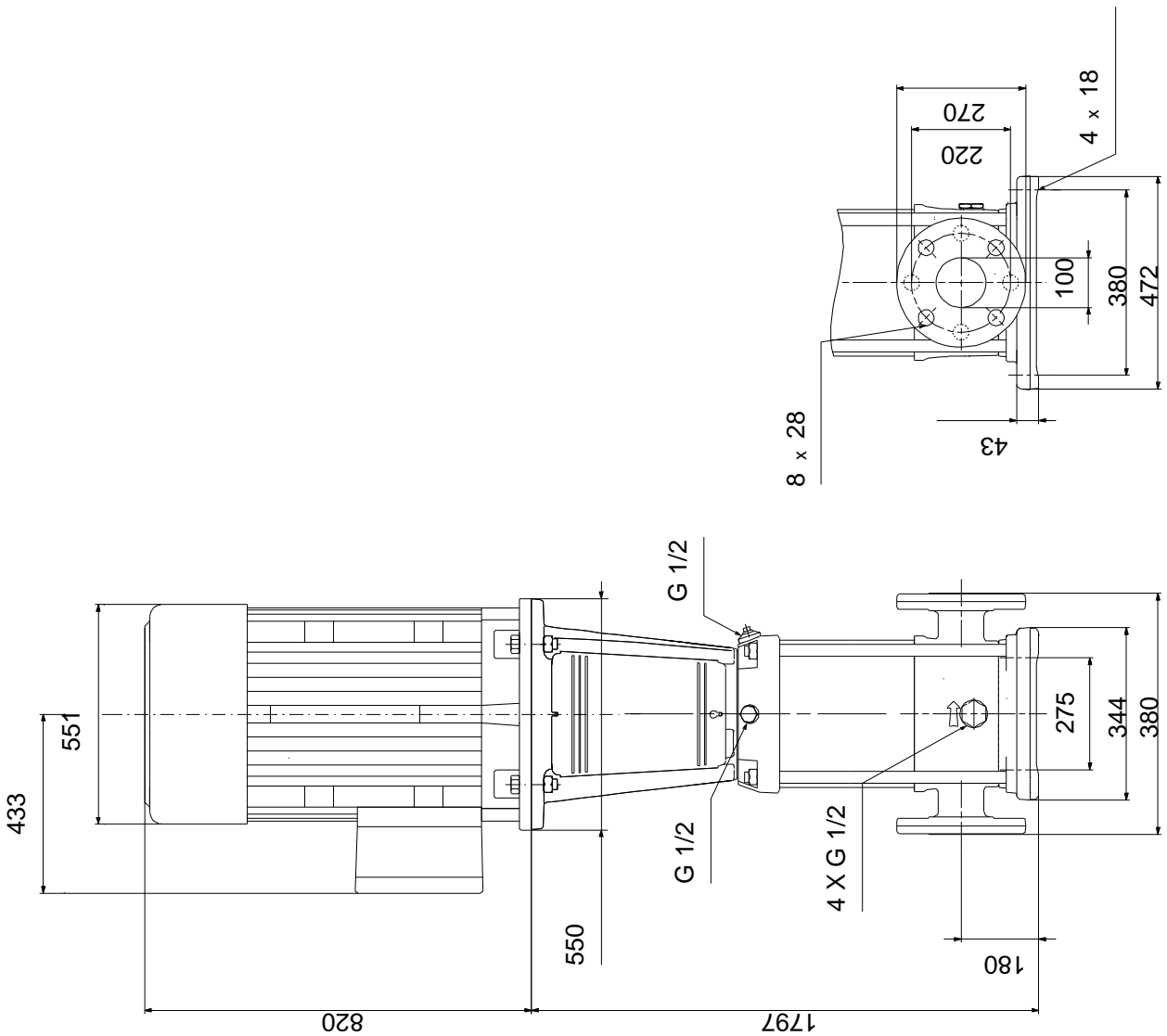
Phone:

Date:

18/02/2019

Description	Value
Starting current:	680-680 %
Cos phi - power factor:	0.89
Rated speed:	2975 rpm
Efficiency:	IE3 94,7%
Motor efficiency at full load:	94.7-94.7 %
Motor efficiency at 3/4 load:	94.8-94.8 %
Motor efficiency at 1/2 load:	94.1-94.1 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	PTC
Motor No:	81U15340
Controls:	
Frequency converter:	NONE
Others:	
Minimum efficiency index, MEI %:	0.70
Net weight:	760 kg
Gross weight:	924 kg
Shipping volume:	2.25 m ³
Sales region:	United Arab Emirates

96869114 CRN 120-7 A-F-N-E-HBQE 50 Hz



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

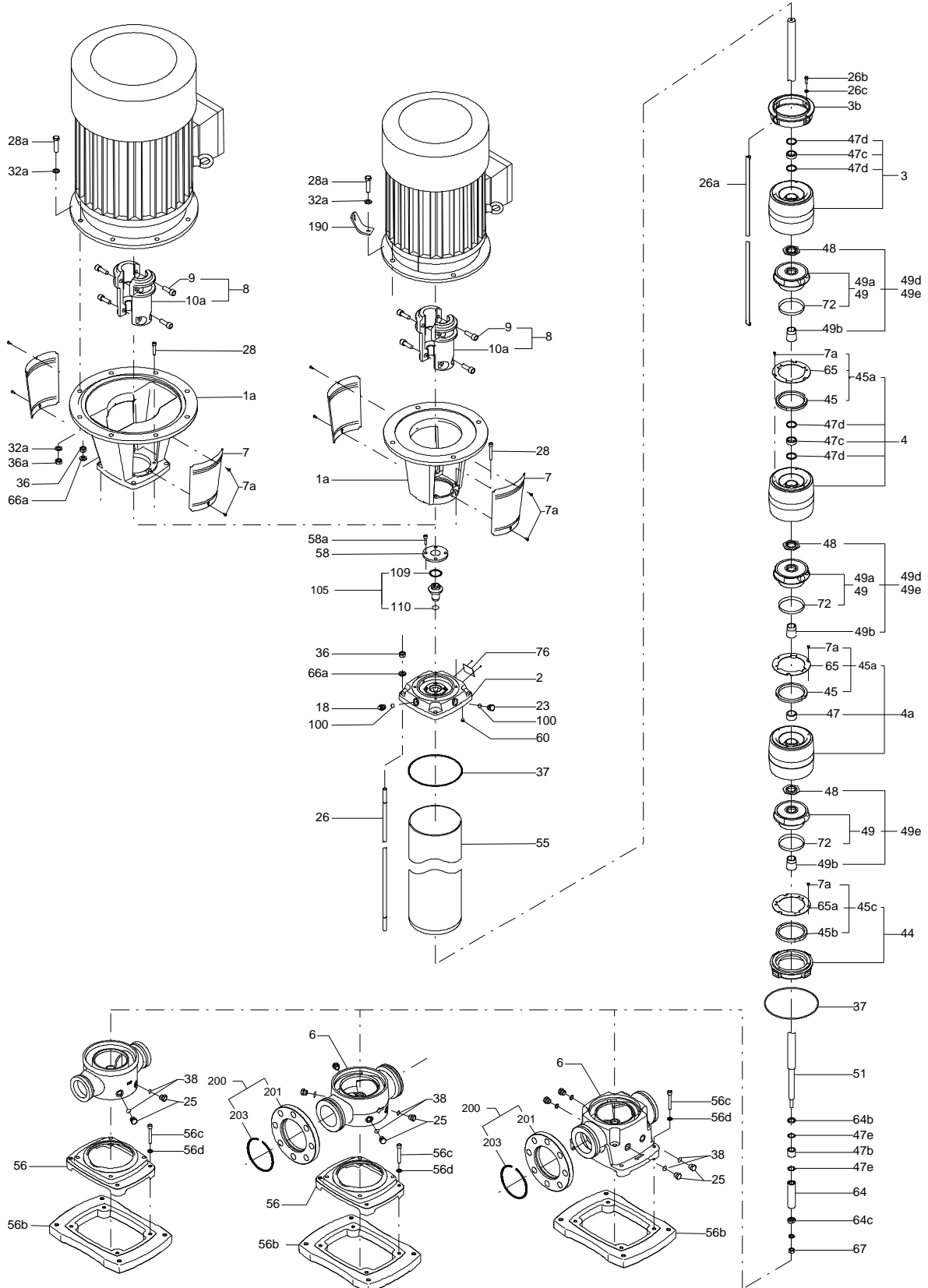
96869114 CRN 120-7 A-F-N-E-HBQE 50 Hz



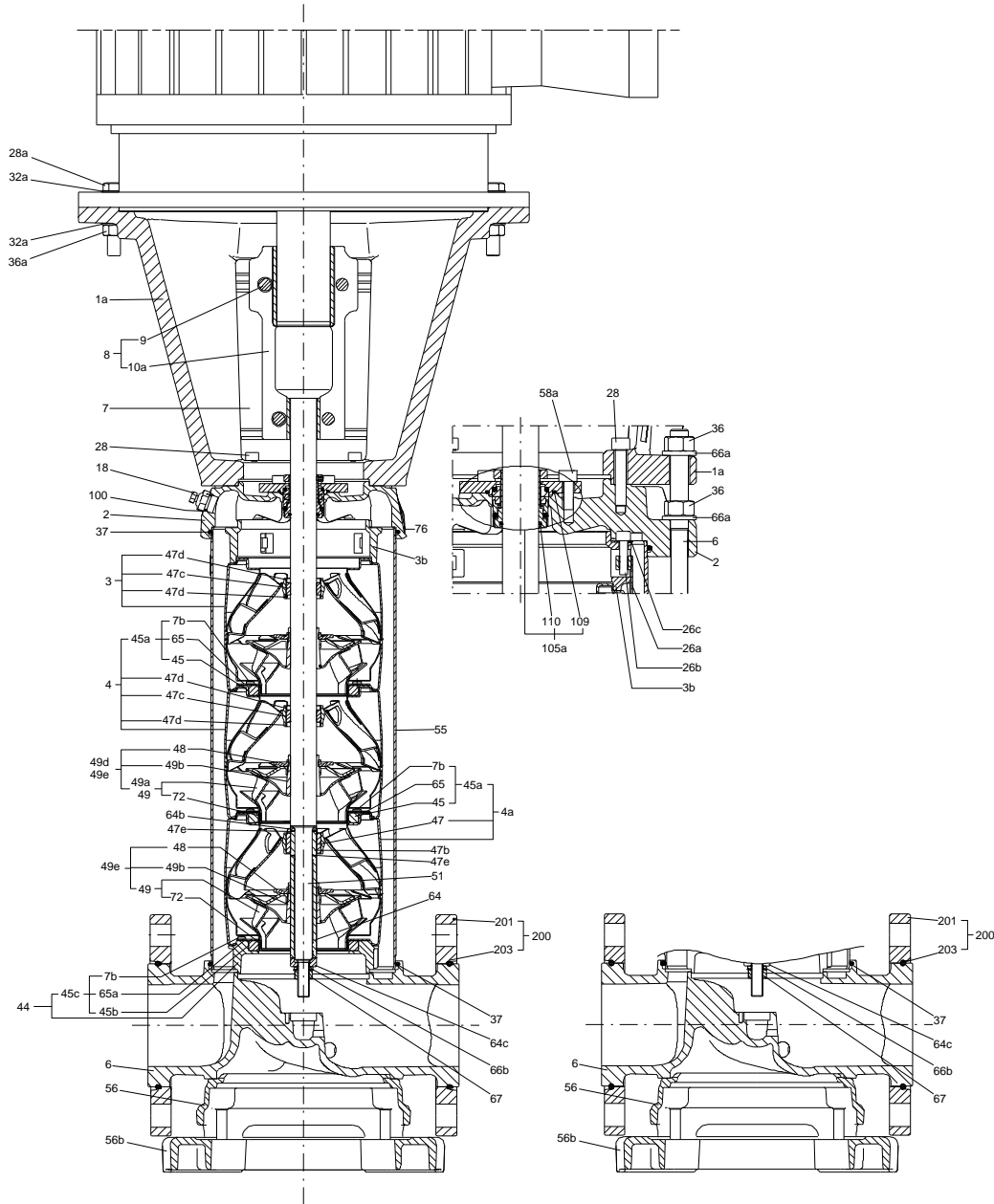
IEC TP211 THERMALLY PROTECTED WHEN THE THERMISTORS ARE
CONNECTED TO AMPLIFIER RELAY FOR CONTROL OF MAIN SUPPLY
THERMISTORS PTC ACCORDING TO DIN 44082

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

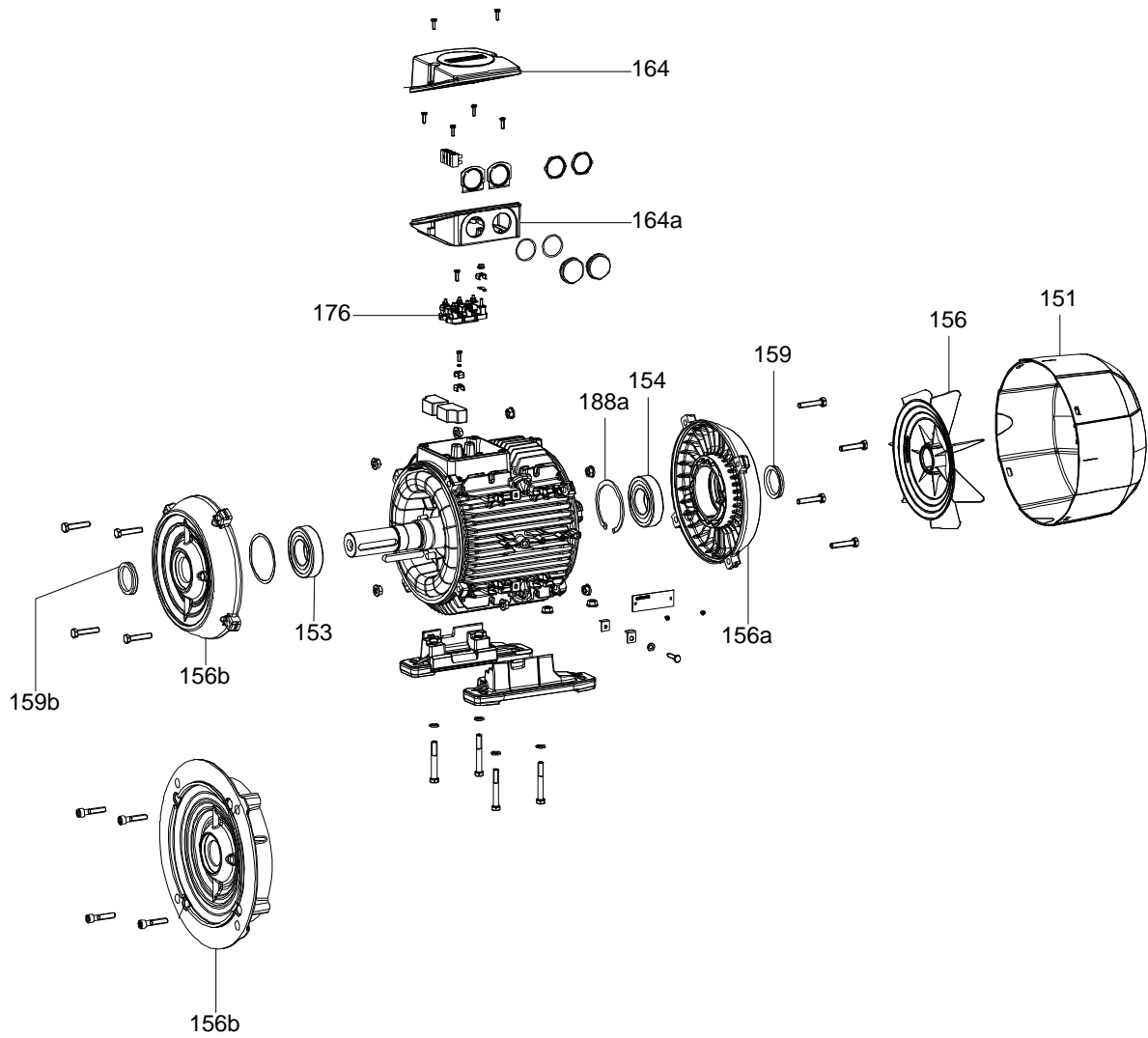
(TM065565 XLCR)



(TM065579 XLCR)



(TM058162)



Spare parts CRN 120-7, Product No. 96869114
Valid from 12.9.2007 (0737)

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
-	Base			96587699	1	pcs
6	Base				1	
-	Kit, bearing			96752215	1	pcs
	Adjusting fork				1	
	Adjusting fork				1	
47e	Washer		Internal diameter: D22		2	
			Outer diameter: D32			
47b	Bearing ring, rotating				1	
-	Kit, chamber stack			95059841	1	pcs
-	80 Chamber stack				1	
-	Shaft cpl.		Diameter: D32			
			Length (mm): 1353,5			
47e	Washer		Internal diameter: D22			
			Outer diameter: D32			
47b	Bearing ring, rotating					
51	Pump shaft		Diameter: D32			
			Length (mm): 1353,5			
64c	Spacer ring					
64b	Wedge lock washer					
64b	Lock washer					
64	Spacing bush					
67	Hex nut		Thread: M14			
-	Chamber cpl.					
47d	Locking ring					
47c	Bush					
-	4a Chamber cpl.					
	O-ring		Diameter: 42			
			Material type: FKM			
			Thickness: 4			
7a	Cross recess Pan head screw					
45	Neck ring					
47	Bearing ring					
65	Retainer					
-	4 Chamber cpl.					
7a	Cross recess Pan head screw					
45	Neck ring					
47d	Locking ring					
47c	Bush					
65	Retainer					
7a	Cross recess Pan head screw					
26c	Washer		Designation: DIN 125A			
			Thickness: 1,6			
26b	Hex socket head cap screw					
26a	Strap cpl.					
44a	Discharge part					
-	44 Inlet part					
	Inlet part					
45b	Seal ring					
-	49e Impeller cpl.					
48	Split cone nut					
49b	Split cone					
-	49 Impeller					
49c	Wear ring					

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
65a	Retainer					
-	Kit, chambers			96751983	1	pcs
	Adjusting fork				1	
	Adjusting fork				1	
- 4a	Chamber cpl.				1	
	O-ring		Diameter: 42			
			Material type: FKM			
			Thickness: 4			
7a	Cross recess Pan head screw					
45	Neck ring					
47	Bearing ring					
65	Retainer					
-	Kit, coupling			95059813	1	pcs
	Adjusting fork				1	
- 8	Coupling		Dimension: 65/32		1	
10a	Coupling half					
9	Hex socket head cap screw		Designation: DIN 912		4	
			Length (mm): 45			
			Thread: M16			
-	Kit, coupling guard			96505135	1	pcs
7a	Socket button head screw				4	
7	Coupling guard				2	
-	Kit, gaskets			95059804	1	pcs
	Adjusting fork				1	
	Adjusting fork				1	
37	O-ring				2	
38	O-ring		Diameter: 16,3		4	
			Material type: EPDM			
			Thickness: 2,4			
38	O-ring		Diameter: 16,3		2	
			Material type: EPDM			
			Thickness: 2,4			
60	Spring				4	
109	O-ring				1	
109	O-ring		Material type: EPDM		1	
110	O-ring				1	
110	O-ring		Diameter: 21,5		1	
			Material type: EPDM			
			Thickness: 4,25			
-	Kit, plug			96505136	1	pcs
- 18	Air vent screw				1	
	Spindle					
	Plug					
25	Plug				4	
25	Plug				1	
38	O-ring		Diameter: 16,3		2	
			Material type: FKM			
			Thickness: 2,4			
38	O-ring		Diameter: 16,3		4	
			Material type: FKM			
			Thickness: 2,4			
38	O-ring		Diameter: 16,3		6	
			Material type: FKM			
			Thickness: 2,4			
38	O-ring		Diameter: 16,3		2	
			Material type: EPDM			
			Thickness: 2,4			
38	O-ring		Diameter: 16,3		4	

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
			Material type: EPDM			
			Thickness: 2,4			
-	Kit, shaft			98368866	1	pcs
-	Shaft cpl.		Diameter: D32		1	
			Length (mm): 1353,5			
47e	Washer		Internal diameter: D22			
			Outer diameter: D32			
47b	Bearing ring, rotating					
51	Pump shaft		Diameter: D32			
			Length (mm): 1353,5			
64c	Spacer ring					
64b	Wedge lock washer					
64b	Lock washer					
64	Spacing bush					
67	Hex nut		Thread: M14			
47e	Washer		Internal diameter: D22		2	
			Outer diameter: D32			
47b	Bearing ring, rotating				1	
51	Pump shaft		Diameter: D32		1	
			Length (mm): 1353,5			
64c	Spacer ring				1	
64b	Wedge lock washer				1	
64b	Lock washer				1	
64	Spacing bush				1	
67	Hex nut		Thread: M14		1	
-	Kit, shaft seal HBQE			95059800	1	pcs
105	Shaft seal		Material type: HBQE		1	
-	Kit, wear parts			95059808	1	pcs
	Adjusting fork				1	
	Adjusting fork				1	
7a	Cross recess Pan head screw				21	
45b	Seal ring				1	
45	Neck ring				6	
47e	Washer		Internal diameter: D22		2	
			Outer diameter: D32			
47d	Locking ring				12	
47c	Bush				6	
47b	Bearing ring, rotating				1	
49c	Wear ring				7	
65a	Retainer				1	
65	Retainer				6	
	Bulk, Gasket (10 pcs)			99158755	1	pcs
+	Chamber cpl.			98371390	1	pcs
-	Motor				1	pcs
151	Kit, fan cover			99018554	1	
156b	Kit, flange			98062295	1	
	Kit, lubrication nipple			98062536	1	
156a	Kit, ND-end shield cpl.			98062520	1	
159b	Kit, seal ring			98062554	1	
176	Kit, terminal board			98062239	1	
164a	Kit, terminal box			98062264	1	
156	Spare, motor fan			96766463	1	
1a	Motor stool			99367309	1	pcs
2	Pump head			99025089	1	pcs
+	4 Chamber cpl.			98371391	5	pcs
6	Base			97974018	1	pcs
7a	Bulk, Socket button head screw (10 pcs)			96549696	4	pcs
7	Bulk, Coupling guard (10 pcs)			96603279	2	pcs

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
+ 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
26c	Bulk, Washer (4 pcs)		Designation: DIN 125A	99262704	4	pcs
			Thickness: 1,6			
26c	Washer		Designation: DIN 125A	96586880	4	pcs
			Thickness: 1,6			
26b	Bulk, Hex socket head cap screw (10 pcs)			98931380	4	pcs
26a	Strap cpl.			98984449	4	pcs
26	Staybolt		Length (mm): 1424,5	98976660	4	pcs
			Thread: M 16			
28	Bulk, Hex socket head cap screw (10 pcs)		Designation: DIN 912	96536147	4	pcs
			Length (mm): 50			
			Thread: M10			
28	Bulk, Hex head screw (20 pcs)		Length (mm): 60	97506949	8	pcs
			Thread: M16			
32	Bulk, Washer (100 pcs)		Designation: DIN 125 A	98923051	16	pcs
			Internal diameter: 17			
			Outer diameter: 30			
			Thickness: 3			
36	Bulk, Hex nut (20 pcs)		Thread: M16	96620480	8	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	Discharge part			99052574	1	pcs
+ 44	Inlet part			99106112	1	pcs
- 49e	Bulk, Impeller cpl. (3 pcs)			98394377	7	pcs
48	Bulk, Split cone nut (10 pcs)			96551333	1	
- 49	Impeller			96591609	1	
49c	Wear ring			96551238		
+ 49e	Impeller cpl.			96903234	7	pcs
55	Outer sleeve		Outer diameter: 225	99051723	1	pcs
			Length (mm): 1162			
56	Base			99497122	1	pcs
60	Bulk, Spring (20 pcs)			96536032	4	pcs
65a	Retainer			98461640	1	pcs
440b	Bulk, Lock ring (4 pcs)			96547435	1	pcs