Company name:
Created by:
Phone:

Date: 18/02/2019

Qty.	Description
1	**CR 120-6-1 A-F-A-E-HBQE**

Note! Product picture may differ from actual product

Product No.: 95922156

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 DIN flanges.

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

Further product details

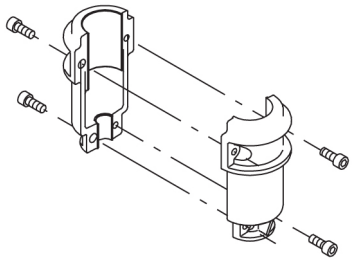
Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface. An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

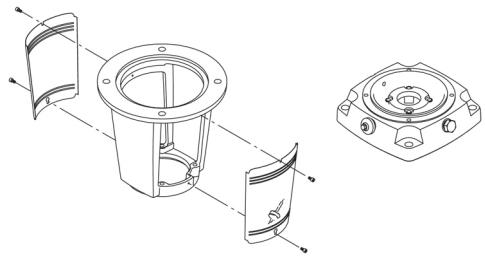
The colour code for the finished product is NCS 9000/RAL 9005.

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.

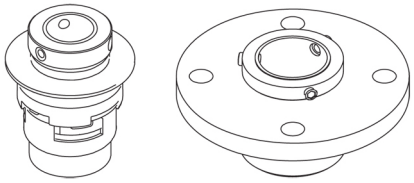
Primary seal:

- 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)

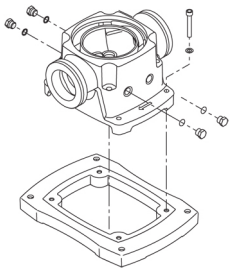
EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.



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 base is made of cast iron and mounted on a separate cast-iron base plate. 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.

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:	2974 rpm
Rated flow:	120 m³/h
Rated head:	127.1 m
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HBQE
Approvals on nameplate:	CE, EAC,ACS,DM174
Curve tolerance:	ISO9906:2012 3B

Materials:

Base:	Cast iron EN 1563 EN-GJS-500-7 ASTM A536 80-55-06
Impeller:	Stainless steel EN 1.4301 AISI 304
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:	55 kW
Power (P2) required by pump:	55 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-420D/660-725Y V
Rated current:	99,0-90,0/57,0-52,0 A
Starting current:	670-670 %
Cos phi - power factor:	0.89

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Company name:
Created by:
Phone:

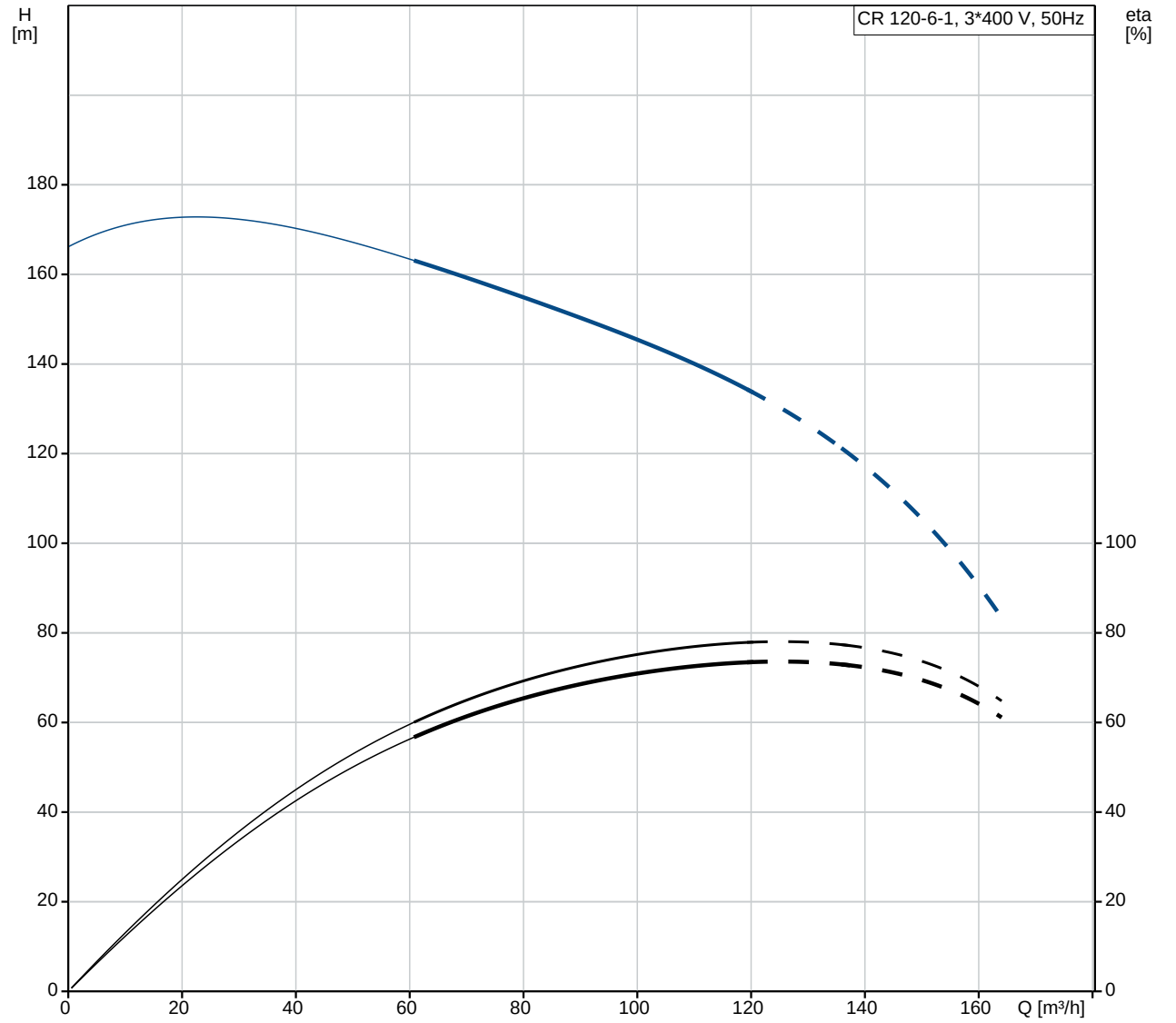
Date: 18/02/2019

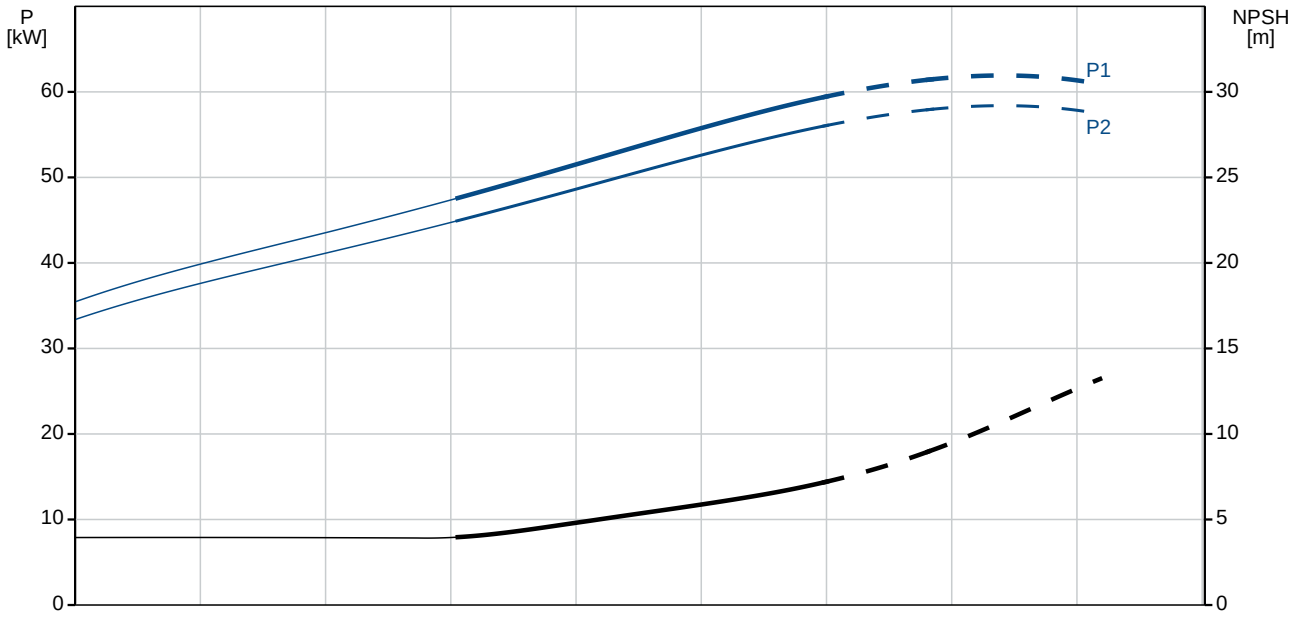
Qty.	Description	
	Rated speed:	2975 rpm
	Efficiency:	IE3 94,3%
	Motor efficiency at full load:	94.3-94.3 %
	Motor efficiency at 3/4 load:	94.5-94.5 %
	Motor efficiency at 1/2 load:	93.9-93.9 %
	Number of poles:	2
	Enclosure class (IEC 34-5):	55 Dust/Jetting
	Insulation class (IEC 85):	F
	Others:	
	Minimum efficiency index, MEI â‰¥:	0.70
	Net weight:	622 kg
	Gross weight:	781 kg
	Shipping volume:	2.13 m³

Company name:
Created by:
Phone:

Date: 18/02/2019

95922156 CR 120-6-1 A-F-A-E-HBQE 50 Hz

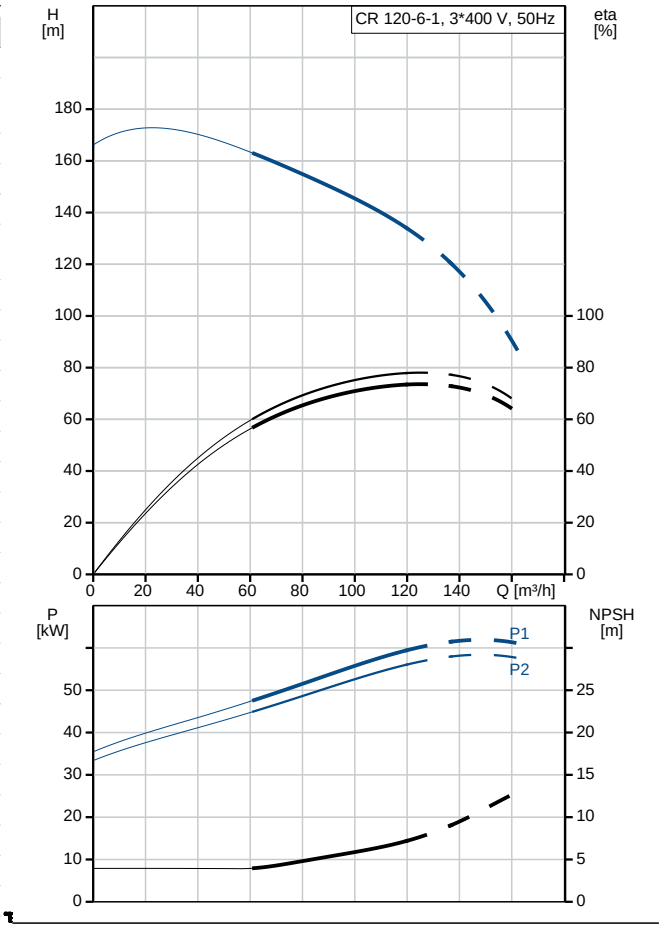


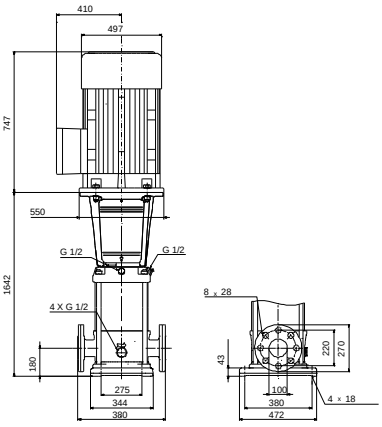


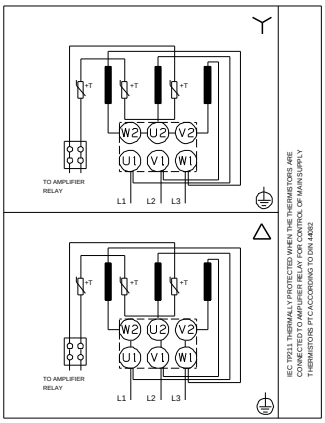
Company name:
Created by:
Phone:

Date: 18/02/2019

Description	Value
General information:	
Product name:	CR 120-6-1 A-F-A-E-HBQE
Product No:	95922156
EAN number:	5700838933659
Technical:	
Pump speed on which pump data are based:	2974 rpm
Rated flow:	120 m³/h
Rated head:	127.1 m
Head max:	163.9 m
Stages:	6
Impellers:	6
Number of reduced-diameter impellers:	1
Low NPSH:	N
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HBQE
Approvals on nameplate:	CE, EAC,ACS,DM174
Curve tolerance:	ISO9906:2012 3B
Pump version:	A
Model:	A
Materials:	
Base:	Cast iron
	EN 1563 EN-GJS-500-7
	ASTM A536 80-55-06
Impeller:	Stainless steel
	EN 1.4301
	AISI 304
Material code:	A
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/m³
Electrical data:	
Motor standard:	IEC
Motor type:	SIEMENS
IE Efficiency class:	IE3
Rated power - P2:	55 kW
Power (P2) required by pump:	55 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-420D/660-725Y V
Rated current:	99,0-90,0/57,0-52,0 A







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Company name:
Created by:
Phone:

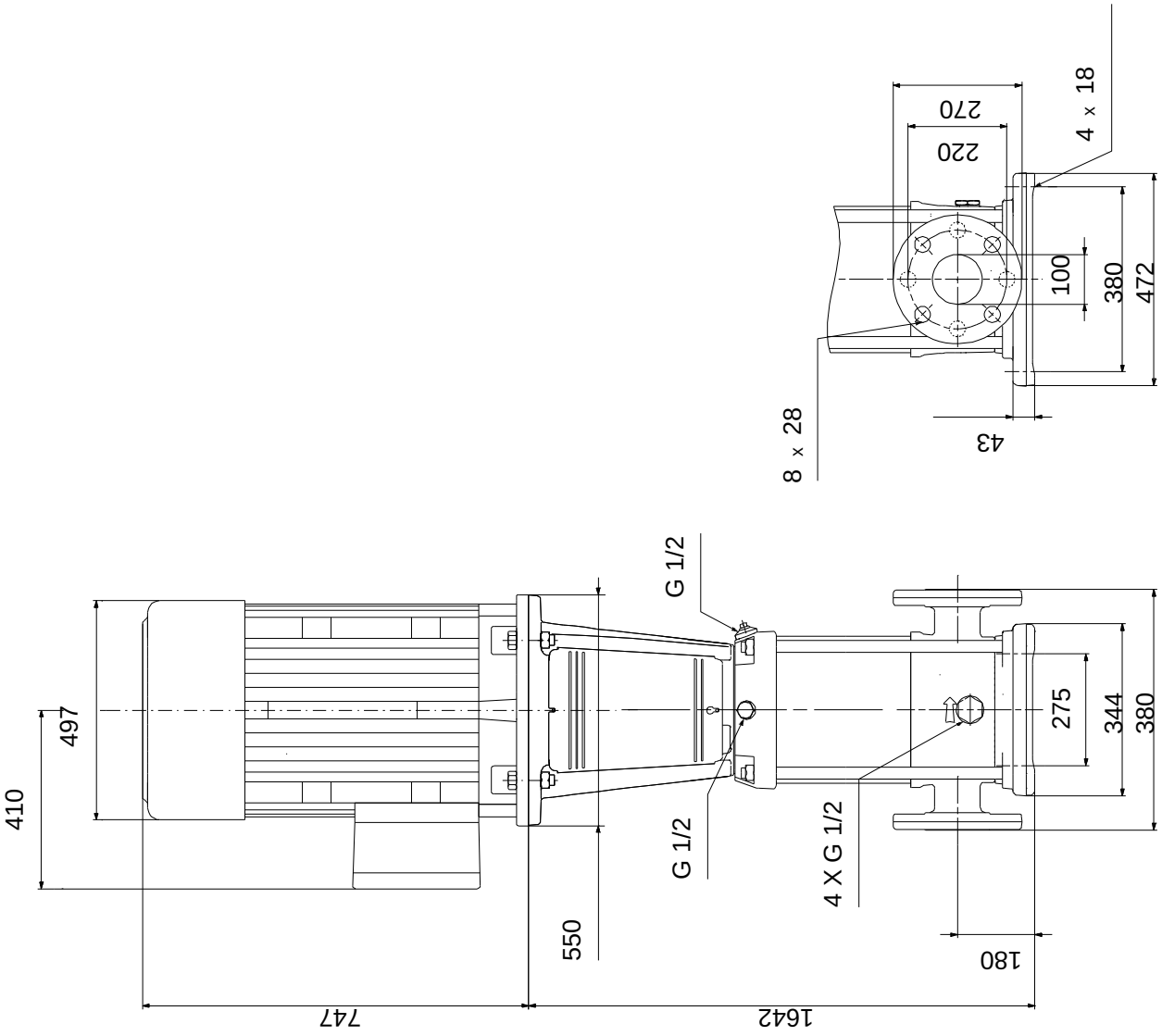
Date: 18/02/2019

Description	Value
Starting current:	670-670 %
Cos phi - power factor:	0.89
Rated speed:	2975 rpm
Efficiency:	IE3 94,3%
Motor efficiency at full load:	94.3-94.3 %
Motor efficiency at 3/4 load:	94.5-94.5 %
Motor efficiency at 1/2 load:	93.9-93.9 %
Number of poles:	2
Enclosure class (IEC 34-5):	55 Dust/Jetting
Insulation class (IEC 85):	F
Motor protec:	PTC
Motor No:	81U15338
Controls:	
Frequency converter:	NONE
Others:	
Minimum efficiency index, MEI â‰¥:	0.70
Net weight:	622 kg
Gross weight:	781 kg
Shipping volume:	2.13 m³

Company name:
Created by:
Phone:

Date: 18/02/2019

95922156 CR 120-6-1 A-F-A-E-HBQE 50 Hz

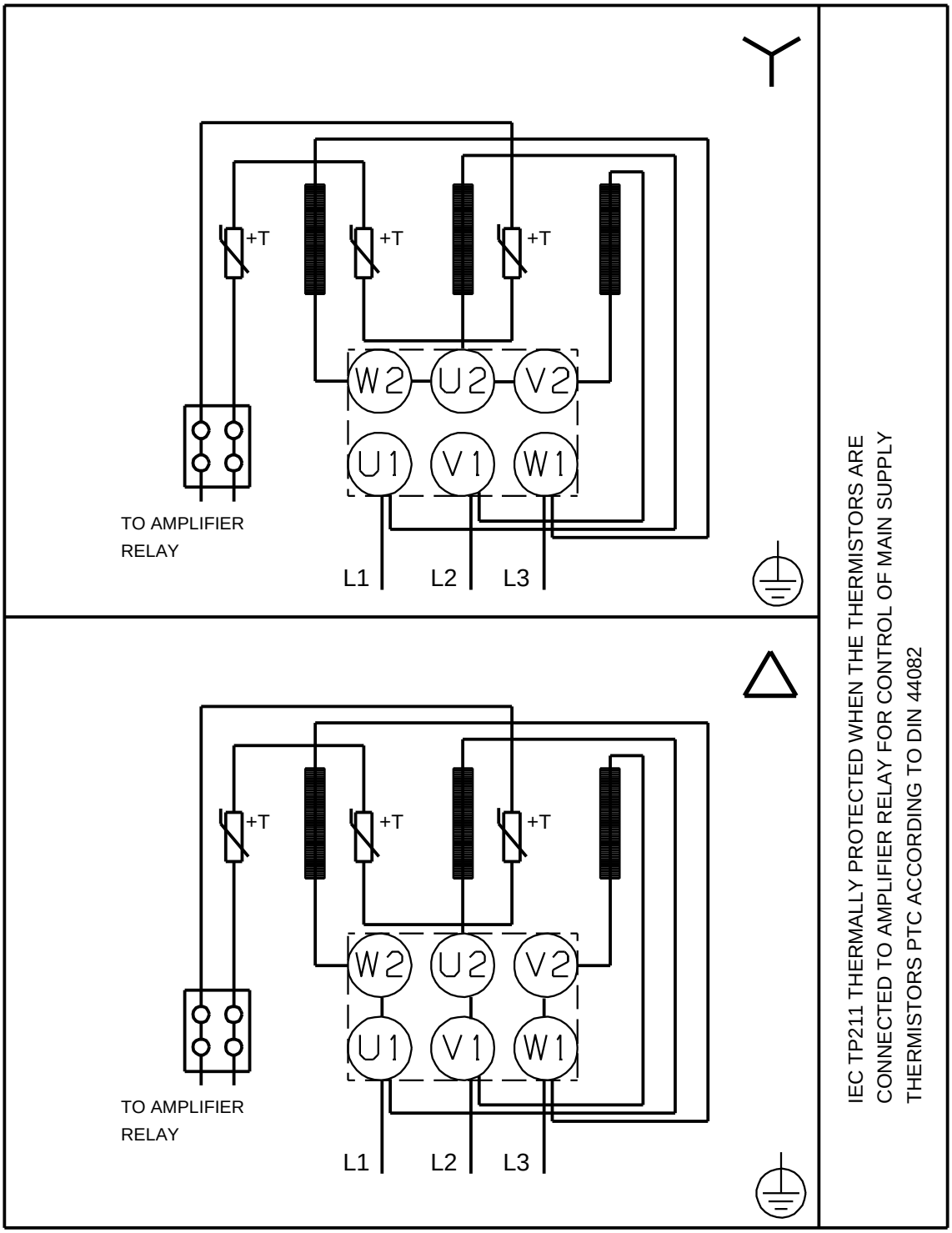


Note! All units are in [mm] unless others are stated.
Disclaimer: This simplified dimensional drawing does not show all details.

Company name:
Created by:
Phone:

Date: 18/02/2019

95922156 CR 120-6-1 A-F-A-E-HBQE 50 Hz

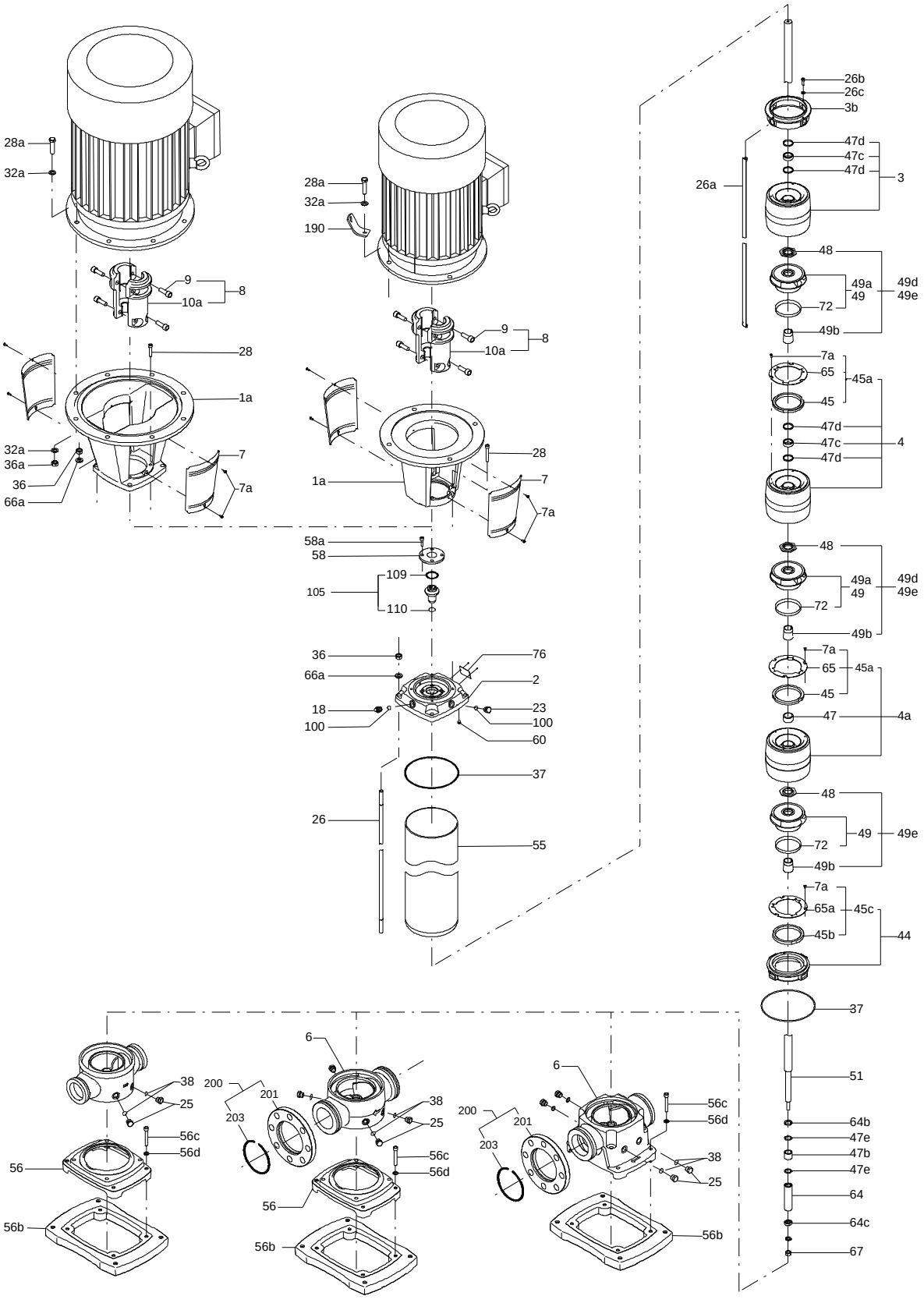


Note! All units are in [mm] unless others are stated.

Company name:
Created by:
Phone:

Date: 18/02/2019

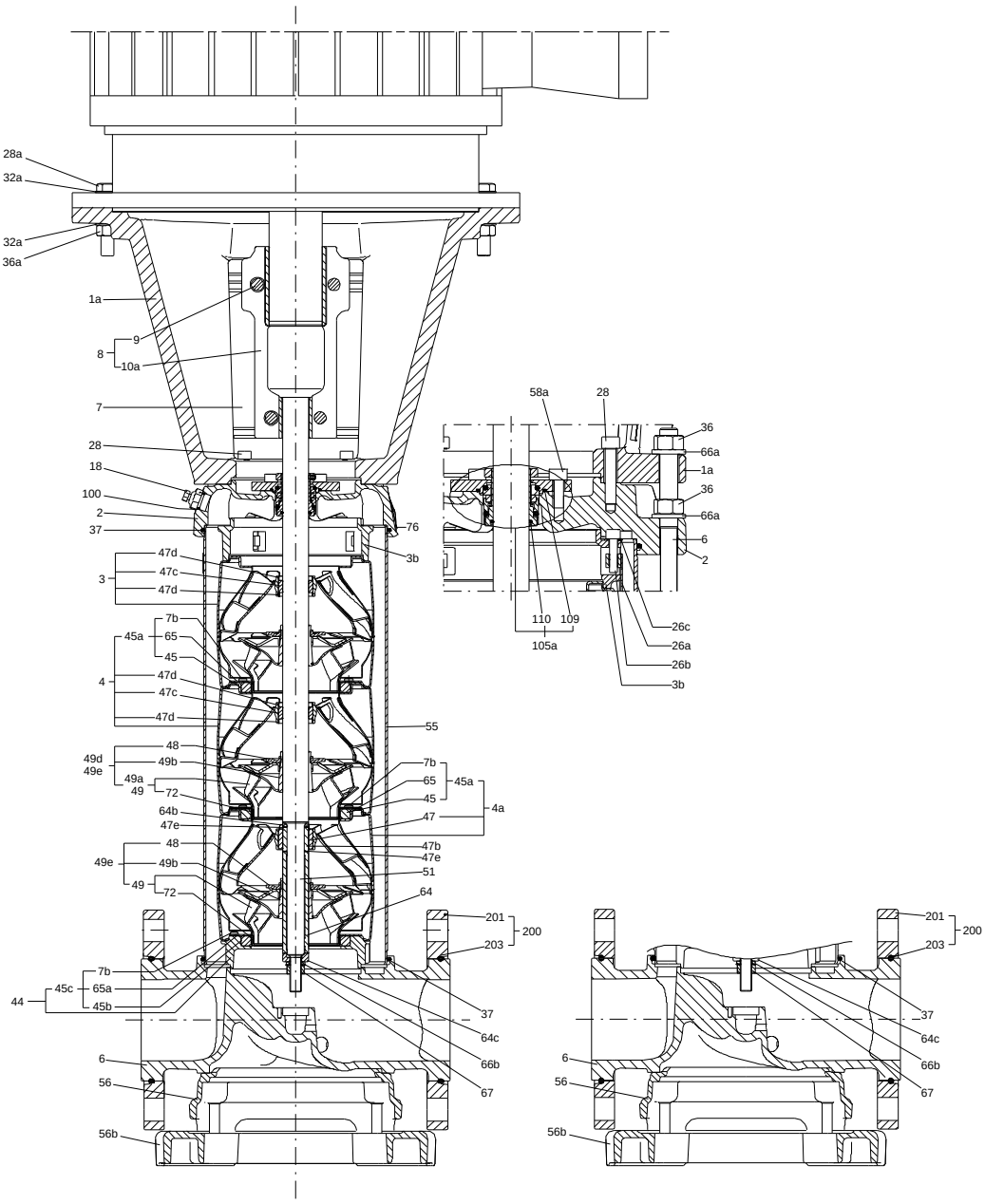
(TM065565 XLCR)



Company name:
Created by:
Phone:

Date: 18/02/2019

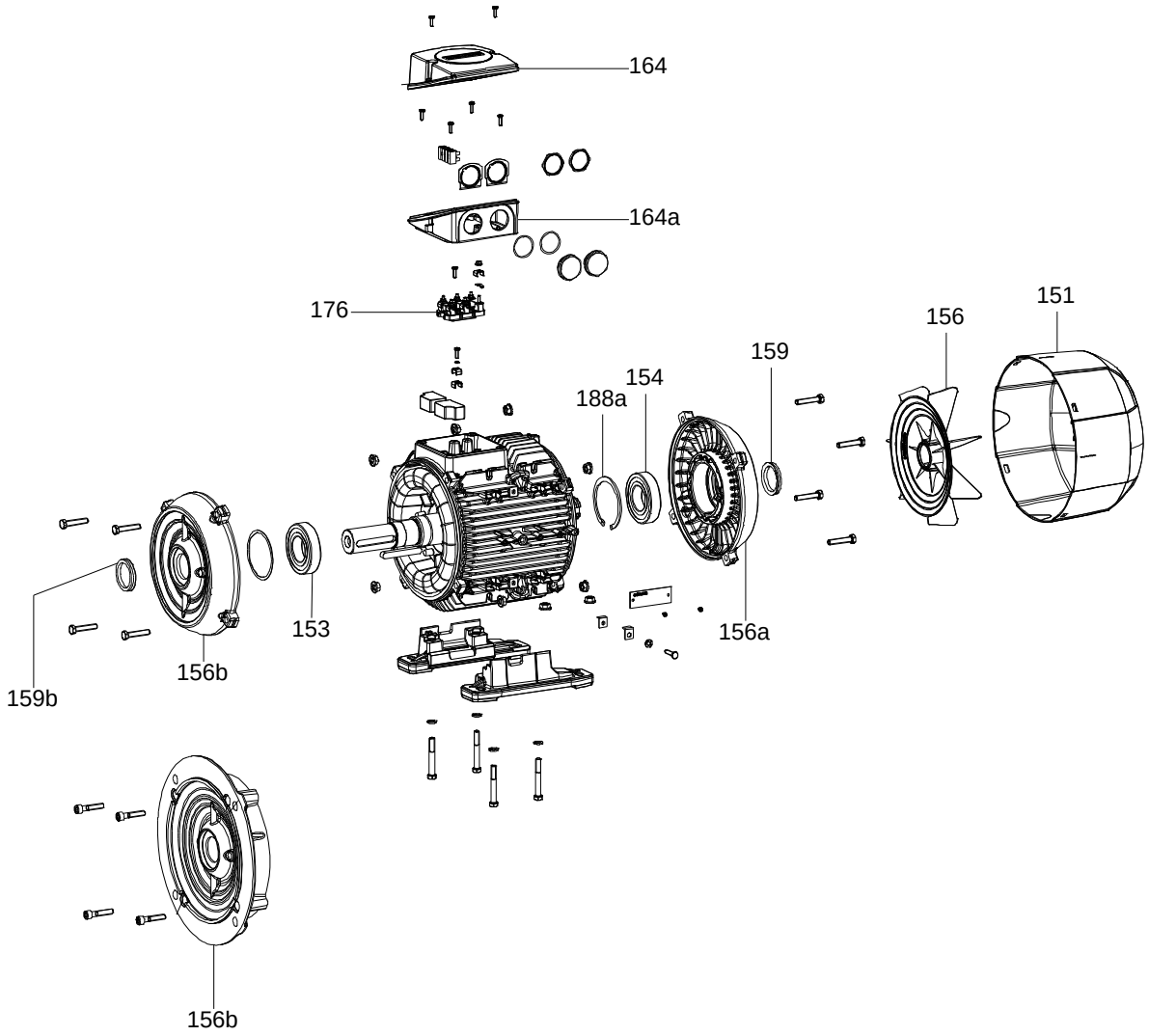
(TM065579 XLCR)



Company name:
Created by:
Phone:

Date: 18/02/2019

(TM058162)



GRUNDFOS

Company name:
Created by:
Phone:

Date: 18/02/2019

Spare parts CR 120-6-1, Product No. 95922156
Valid from 12.9.2007 (0737)

	Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
-		Base			98807603	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			95059827	1	pcs
-	80	Chamber stack				1	
-		Shaft cpl.		Diameter: D32			
				Length (mm): 1198			
	47e	Washer		Internal diameter: D22			
				Outer diameter: D32			
	47b	Bearing ring, rotating					
	51	Pump shaft		Diameter: D32			
				Length (mm): 1198			
	64c	Spacer ring					
	64b	Wedge lock washer					
	64b	Lock washer					
	64	Spacing bush					
	67	Hex nut		Thread: M14			
-	3	Chamber cpl.					
	47d	Locking ring					
	47c	Bush					
-	4a	Chamber cpl.					
	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.		Length (mm): 983			
	44a	Discharge part					
-	44	Inlet part					
		Inlet part					
	45b	Seal ring					
-	49e	Impeller cpl.					
	48	Split cone nut					
	49b	Split cone					
-	49a	Impeller, reduced diameter		Type: A-TRIM			
	49c	Wear ring					
-	49e	Impeller cpl.					
	48	Split cone nut					
	49b	Split cone					

GRUNDFOS

Company name:
Created by:
Phone:

Date: 18/02/2019

	Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
-	49	Impeller					
	49c	Wear ring					
	65a	Retainer					
-		Kit, chambers			96751982	1	pcs
		Adjusting fork				1	
		Adjusting fork				1	
-	4a	Chamber cpl.				1	
	7a	Cross recess Pan head screw					
	45	Neck ring					
	47	Bearing ring					
	65	Retainer					
-		Kit, coupling			95059812	1	pcs
		Adjusting fork				1	
-	8	Coupling		Dimension: 60/32		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	
				Material type: EPDM			

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Company name:
Created by:
Phone:

Date: 18/02/2019

	Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
				Thickness: 2,4			
-		Kit, shaft			98368851	1	pcs
-		Shaft cpl.		Diameter: D32		1	
				Length (mm): 1198			
	47e	Washer		Internal diameter: D22			
				Outer diameter: D32			
	47b	Bearing ring, rotating					
	51	Pump shaft		Diameter: D32			
				Length (mm): 1198			
	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): 1198			
	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
-		Motor				1	pcs
	156	Fan			96766619	1	
	151	Kit, fan cover			98062277	1	
	156b	Kit, flange			98062294	1	
		Kit, lubrication nipple			98062533	1	
	156a	Kit, ND-end shield cpl.			98062519	1	
	159b	Kit, seal ring			98062553	1	
	176	Kit, terminal board			98062239	1	
	164a	Kit, terminal box			98062264	1	
	1a	Motor stool			99367309	1	pcs
	2	Pump head			98906052	1	pcs
+	3	Chamber cpl.			98371385	1	pcs
+	4a	Bulk, Chamber cpl. (3 pcs)			98371389	1	pcs
+	4a	Chamber cpl.			98371394	1	pcs
+	4	Chamber cpl.			98371387	4	pcs
	6	Base			99321771	1	pcs
	7a	Bulk, Socket button head screw (10 pcs)			96549696	4	pcs

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	Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
	7	Bulk, Coupling guard (10 pcs)			96603279	2	pcs
+	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.		Length (mm): 983	98984448	4	pcs
	26	Staybolt		Length (mm): 1208	98976646	4	pcs
				Thread: M16			
	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. (5 pcs)			97506741	1	pcs
	49c	Bulk, Wear ring (2 pcs)			96535350	2	
+	49e	Impeller cpl.			97506727	1	pcs
-	49e	Impeller cpl.			97506694	5	pcs
	48	Bulk, Split cone nut (10 pcs)			96551333	1	
-	49	Bulk, Impeller (10 pcs)			96537745	1	
	49c	Bulk, Wear ring (2 pcs)			96535350		
	55	Outer sleeve		Outer diameter: 225	99021303	1	pcs
				Length (mm): 1006,5			
	56b	Base plate			99048161	1	pcs
	60	Bulk, Spring (20 pcs)			96536032	4	pcs
	65a	Retainer			98461640	1	pcs
	440b	Bulk, Lock ring (4 pcs)			96547435	1	pcs