

Submittal Data

PROJECT:	UNIT TAG:	 QUANTITY:	
	TYPE OF SERVICE:		
REPRESENTATIVE:	SUBMITTED BY:	 DATE:	
ENGINEER:	APPROVED BY:	DATE:	
CONTRACTOR:	ORDER NO.:	 DATE:	

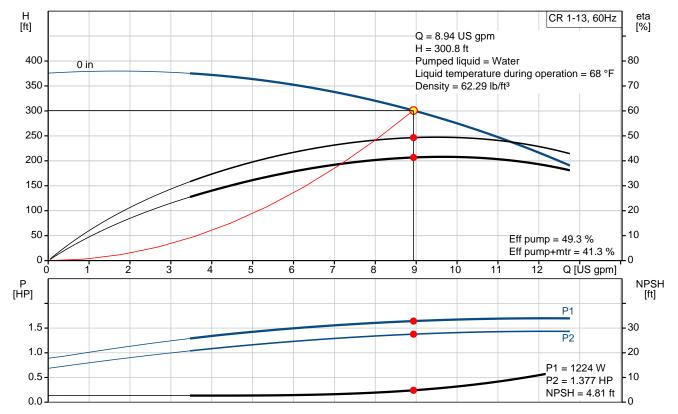


CR 1-13

Vertical, multistage centrifugal pump with suction and discharge ports on the same level. The pump head and base are in cast iron. All other wetted parts are in stainless steel (EN 1.4301)(AISI 304)

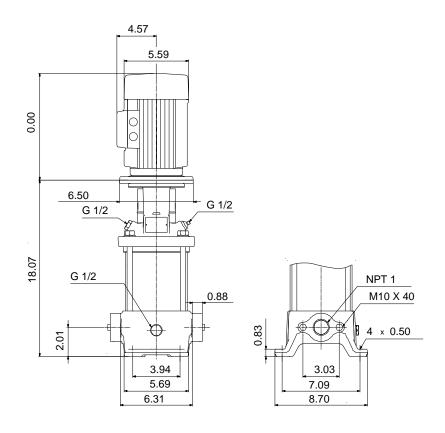
Product photo could vary from the actual product

Conditions	of Service			Moto	or Data
Flow: Head:	8.94 US gpm 300.8 ft	Max pressure at stated temperature: Maximum ambient temperature:	232 psi / 250 °F 140 °F	Rated power - P2: Rated voltage:	1.5 HP 208-230YY/460Y V
Efficiency:	41.3 %	Approvals:	CURUS,NSF61	Main frequency:	60 Hz
Liquid:	Water	Shaft seal:	HQQE	Enclosure class:	55 Dust/Jetting
Temperature:	68 °F	Product number:	96081988	Insulation class:	F
NPSH required: Viscosity:	4.81 ft			Motor protection: Motor type:	NONE 80CA
Specific Gravity:	1.000			Motor_efficiency:	84.9 %



Submittal Data





Materials:

Impeller:

Base:

Cast iron EN 1561 EN-GJL-200 ASTM A48-25B Stainless steel AISI 304 EN 1.4301 A

Material code: A Code for rubber: E



2/20/2018

Tender Text



Product No.: 96081988 CR 1-13 A-B-A-E-HQQE Vertical, non-self-priming, multistage, in-line, centrifugal pump for installation in pipe systems and mounting on a foundation. The pump has the following characteristics: Impellers and intermediate chambers are made of The shaft seal has assembly length according to EN 12756. - Power transmission is via cast iron split coupling. The motor is a 3-phase AC motor. Controls: Frequency converter: NONE Liquid: Pumped liquid: Water Liquid temperature during operation: 68 °F Density: 62.29 lb/ft3 **Technical:** Speed for pump data: 3466 rpm Actual calculated flow: 8.94 US gpm Resulting head of the pump: 300.8 ft Pump orientation: Vertical Shaft seal arrangement: Single Code for shaft seal: HQQE Approvals on nameplate: CURUS,NSF61 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 Bearing material: SIC Installation: Maximum ambient temperature: 140 °F Max pressure at stated temperature: 232 psi / 250 °F 232 psi / -4 °F Type of connection: Oval / NPT(F) Size of suction port: 1 inch



Date:

2/20/2018

Size of outlet port:	1 inch
Pressure rating:	PN 16
Flange size for motor:	56C

Electrical data:

NEMA
80CA
NEMA Premium / IE3 60Hz
1.5 HP
1.5 HP
60 Hz
3 x 208-230YY/460Y V
1,15
4,45-4,3/2,16 A
720 %
0,84-0,78
3440-3480 rpm
IE3 84,1%
84.9 %
81.0 %
78.5 %
2
55 Dust/Jetting
F

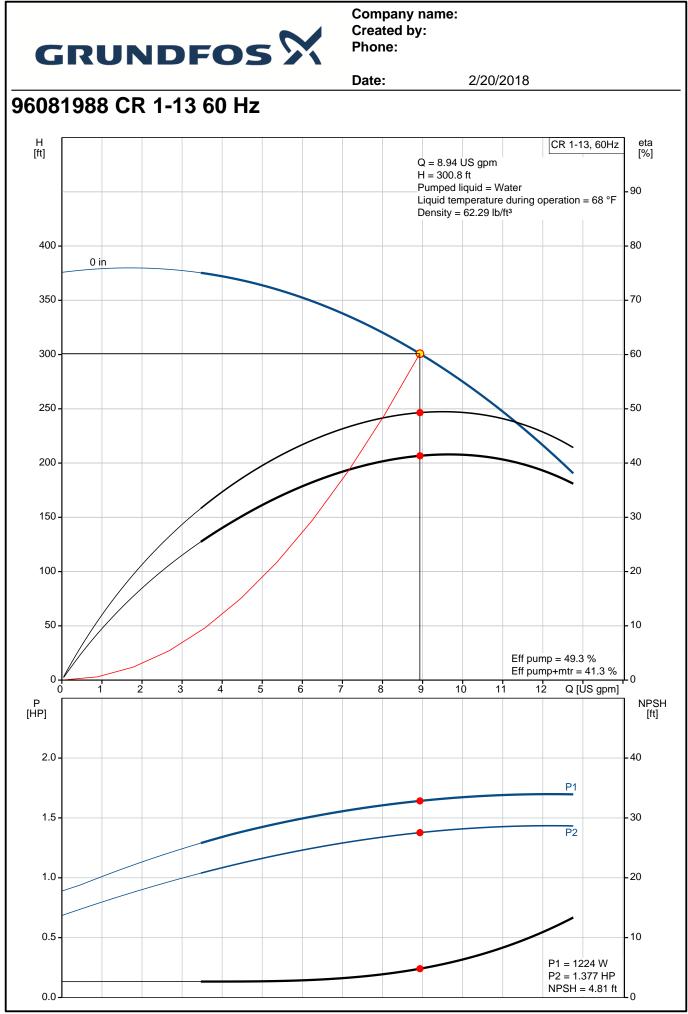
Others:

Net weight:	56.4 lb
Gross weight:	67.4 lb
Shipping volume:	6.11 ft ³

G	RU	INDFOS	Company nam Created by: Phone:	e:	
			Date:	2/20/2018	
Position	Count	Description			
	1	CR 1-13 A-B-A-E-HQQE			
		Product No.: 96081988 Vertical, non-self-priming, multis centrifugal pump for installation and mounting on a foundation.			
		The pump has the following cha Impellers and intermediat The shaft seal has assem according to EN 12756. Power transmission is via coupling.	e chambers are made of hbly length		
		The motor is a 3-phase AC moto	Dr.		
		Controls: Frequency converter:	NONE		
		Liquid: Pumped liquid: Liquid temperature during opera Density:	Water tion: 68 °F 62.29 lb/ft ³		
		Technical: Speed for pump data: Actual calculated flow: Resulting head of the pump: Pump orientation: Shaft seal arrangement: Code for shaft seal: Approvals on nameplate: Curve tolerance:	3466 rpm 8.94 US gpm 300.8 ft Vertical Single HQQE CURUS,NSF61 ISO9906:2012 3B		
		Materials:			
		Base:	Cast iron EN 1561 EN-GJL-200 ASTM A48-25B		
		Impeller:	Stainless steel EN 1.4301		
		Bearing material:	AISI 304 SIC		
		Installation: Maximum ambient temperature: Max pressure at stated tempera	ture: 232 psi / 250 °F 232 psi / -4 °F		
		Type of connection:	Oval / NPT(F)		
		Size of suction port: Size of outlet port:	1 inch 1 inch		
		•			



		Date:	2/20/2018
Position	Count Description		
	Pressure rating:	PN 16 56C	
	Flange size for motor:	500	
	Electrical data:		
	Motor standard:	NEMA	
	Motor type: IE Efficiency class:	80CA NEMA Premium / IE3 60Hz	
	Rated power - P2:	1.5 HP	
	Power (P2) required by pump:		
	Main frequency:	60 Hz	
	Rated voltage: Service factor:	3 x 208-230YY/460Y V 1,15	
	Rated current:	4,45-4,3/2,16 A	
	Starting current:	720 %	
	Cos phi - power factor:	0,84-0,78	
	Rated speed: IE efficiency:	3440-3480 rpm IE3 84,1%	
	Motor efficiency at full load:	84.9 %	
	Motor efficiency at 3/4 load:	81.0 %	
	Motor efficiency at 1/2 load:	78.5 %	
	Number of poles: Enclosure class (IEC 34-5):	2 55 Dust/Jetting	
	Insulation class (IEC 85):	F	
	Others:	56.4 lb	
	Net weight: Gross weight:	67.4 lb	
	Shipping volume:	6.11 ft ³	



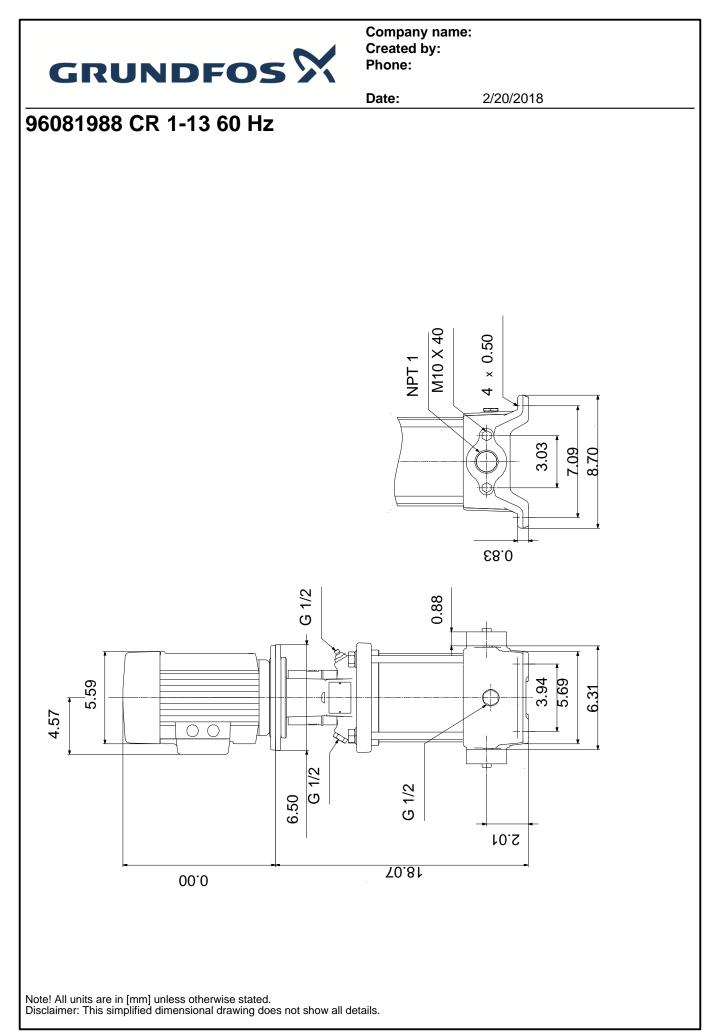


Value	– H [ft]				CR 1-13, 60Hz	eta
, and v	69					[%]
	-		Q = 8.94 L			- 90
CR 1-13 A-B-A-E-HQQE			H = 300.8 Pumped li	ft quid = Water		
96081988	400 -		Liquid tem	perature durir	g operation = 68 °F	- 80
5700395167269		0 in	Density =	62.29 lb/ft ³		1
5700333107203	350 -			_		70
3466 rpm	300 -					- 60
	250 -					- 50
	200 -					- 40
	150 -					- 30
-	100 -					20
	50 -					10
A	0-		4 6			+0
A	_ P		4 0	0		NPSH
TEFC	[HP]					[ft]
	2.0 -					- 40
					P1	
Cast iron	1.5 -					- 30
EN 1561 EN-GJL-200					P2	
ASTM A48-25B	1.0 -					- 20
Stainless steel						
EN 1.4301	0.5 -				P1 = 1224 W	- 10
AISI 304					P2 = 1.377 HP	
	0.0 -				NPSH = 4.81 ft	\Box_0
	-1					
		4.	57			
0.0		,	5.59			
140 °F	0.00					
232 psi / 250 °F						
•	-	6.50				
-		<u>G 1/2</u>	G 1/2			
	18.07	<u>G 1/2</u>		Ì	NPT 1	
			0.88		M10 X 40	
			¥∄		<u>4 × 0.50</u>	
				ĬĦ ŢŢ	Ť	
000			5.69	7.09]	
		h		. 0.70		
Water						
		μο	H VOI TAGE	_		
	6	DIRECTIO	ON OF ROTATION			
02.29 ID/It ³	- ```					
	_ 🏎		₽₩₽			
	-	<u>〔</u> ぽ(ᢓᡟ᠆ᡝᢩᡰ᠆᠑			
	- >-)			
	- ´					
	2	LO\ DIRECTIO	W VOLTAGE			
1.5 HP	_	(-				
60 Hz	r.	_ f- T				
3 x 208-230YY/460Y V	(Car	1 DA				
1,15		B				
4,45-4,3/2,16 A	_	(D)				
		0		8.3169		
	A TEFC Cast iron EN 1561 EN-GJL-200 ASTM A48-25B Stainless steel EN 1.4301 AISI 304 A E SIC 140 °F 232 psi / 250 °F 232 psi / 250 °F 232 psi / -4 °F Oval / NPT(F) B 1 inch 1 inch PN 16 56C Water 68 °F 62.29 lb/ft ³ Water 68 °F 62.29 lb/ft ³ NEMA 80CA NEMA Premium / IE3 60Hz 1.5 HP 1.5 HP 1.5 HP 1.5 HP 50 Hz 3 x 208-230YY/460Y V 1,15	3466 rpm 300. 8.94 US gpm 250. 300.8 ft 250. 13 200. 13 150. Vertical 160. Single 100. HQQE 00. CURUS,NSF61 50. ISO9906:2012 3B 60. A 0. Cast iron 1.5. EN 1561 EN-GJL-200 ASTM A48-25B Stainless steel 1.0. EN 1.4301 0.5. A 0.0. E SIC 140 °F 232 psi / 250 °F 232 psi / 250 °F 3. 232 psi / 250 °F 9. 1 inch 1 1 inch 1 1 inch 1 1 inch 1 1 inch . NEMA 80CA NEMA 80CA NEMA<	3466 rpm 300 $8.94 US gpm$ 300 $300.8 ft$ 13 13 13 13 13 13 13 N Vertical Single HQQE CURUS,NSF61 ISO9906:2012 3B A B A	3466 rpm 8.94 US gpm 300.8 ft 1300 A E SIC 140 °F 232 psi / 250 °F 232 psi / 250 °F 232 psi / 4 °F 62 C Water 68 °F 62 °F 62 °F 62 °F	3466 rpm8.44 US gpm300.8 ft131509906:2012 3BAATEFCCast ironEN 1561 EN-GJL-200ASTM A48-25BStainless steelEN 1531 204AAESiC140 °F232 psi / 250 °F232 psi / 250 °F232 psi / 250 °F232 psi / 250 °F232 psi / 4 °FOval / NPT(F)B1 inch1 inchNEMA80 CANEMA80 CA15 HP	3466 rpm 8.94 US gpm 300.8 ft 13 13 13 13 13 13 13 13 13 13 13 140 cp Cast iron En 1561 EN-GJL-200 ASTM A48-258 Stainless steel EN 1.4301 AA A A A A TEFC Cast iron En 1.4301 AISI 304 A A A A SIC 140 °F 232 psi / 250 °F 232 psi / 250 °F 232 psi / 4 °F Oval / NPT(F) B 1 16 56C Water 68 °F 62.29 lb/f ³ NEMA 80CA NEMA Premium / IE3 60Hz 1.5 HP

Printed from Grundfos Product Center [2017.09.058]



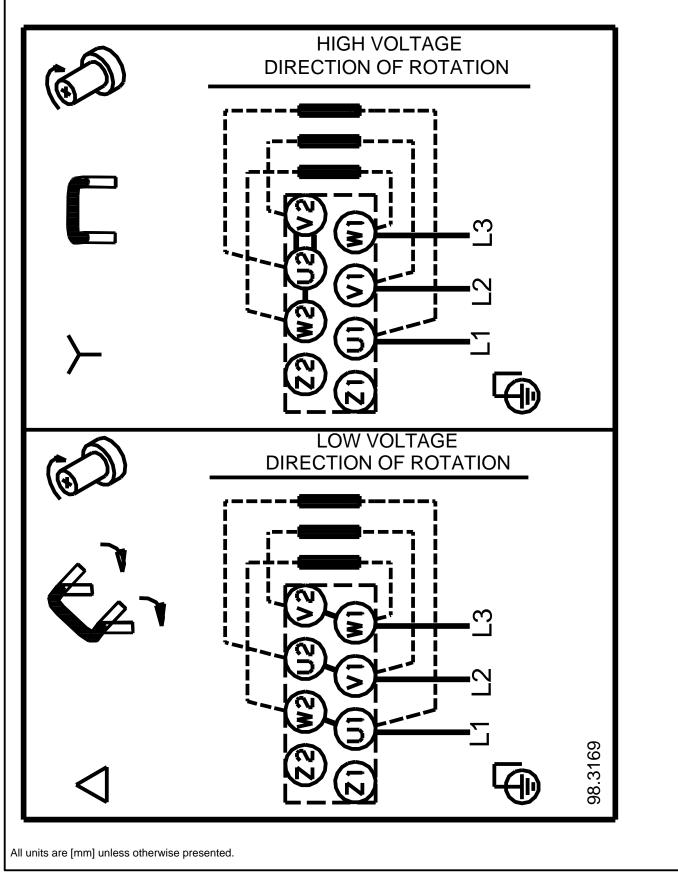
		Date:	2/20/2018	
Description	Value			
Load current:	5,1-4,95/2,48 A			
Cos phi - power factor:	0,84-0,78			
Rated speed:	3440-3480 rpm			
IE efficiency:	IE3 84,1%			
Motor efficiency at full load:	84.9 %			
Motor efficiency at 3/4 load:	81.0 %			
Motor efficiency at 1/2 load:	78.5 %			
Number of poles:	2			
Enclosure class (IEC 34-5):	55 Dust/Jetting			
Insulation class (IEC 85):	F			
Motor protection:	NONE			
Motor Number:	98976607			
Controls:				
Frequency converter:	NONE			
Others:				
Net weight:	56.4 lb			
Gross weight:	67.4 lb			
Shipping volume:	6.11 ft ³			





2/20/2018

96081988 CR 1-13 60 Hz



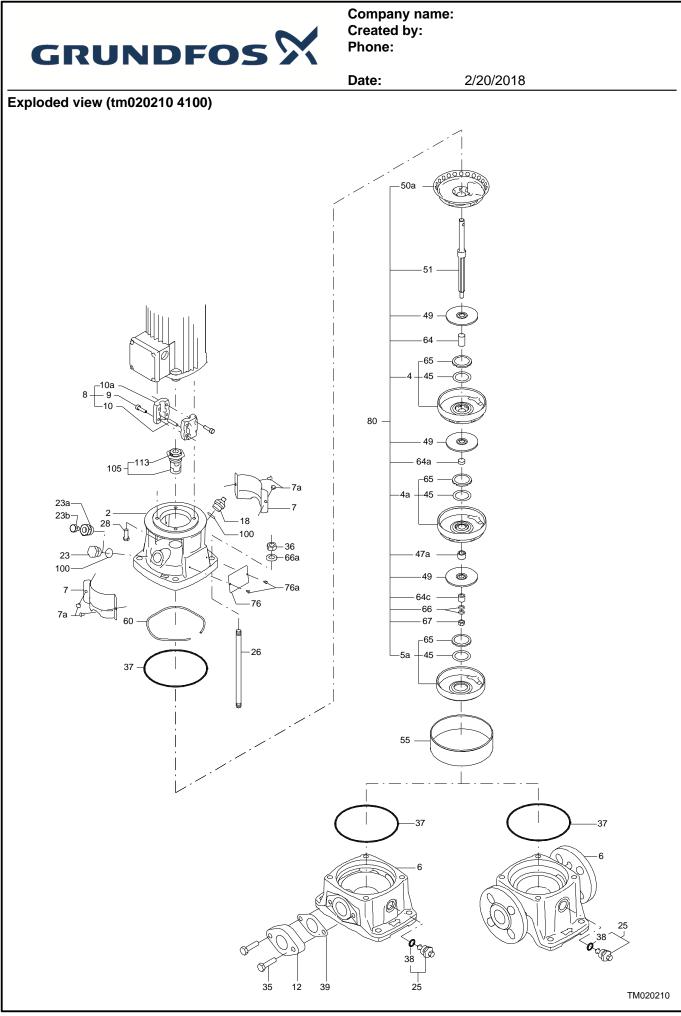


2/20/2018

Order Data:

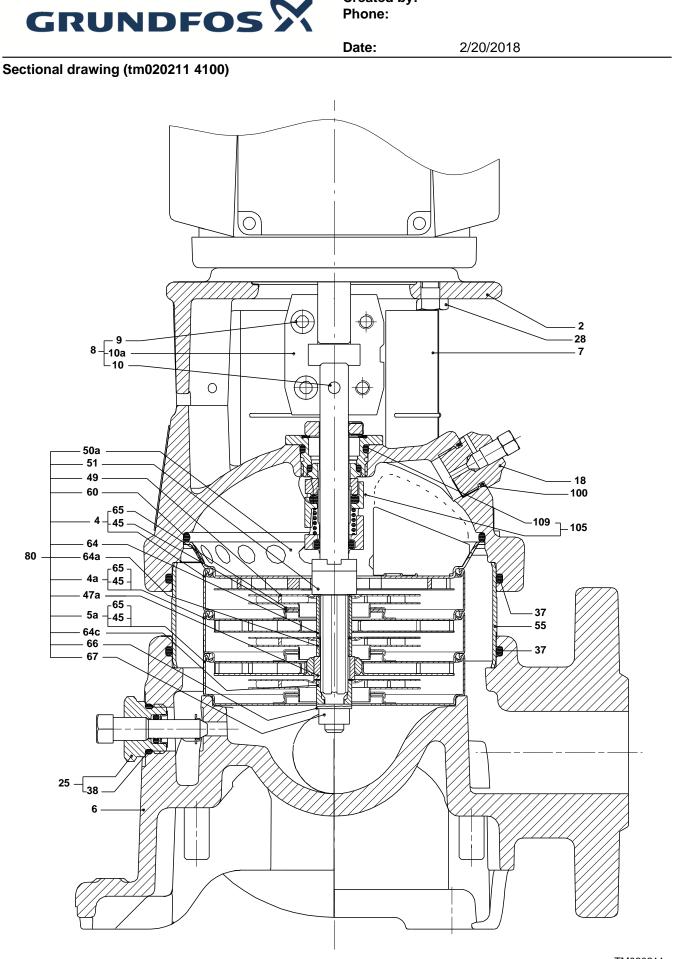
Product name: CR 1-13 A-B-A-E-HQQE Amount: 1 Product No.: 96081988

Total: Price on request





Company name: Created by:



TM020211



2/20/2018

Parts list CR 1-13, Prod number 96081988 Valid from 16.9.2016 (1638)

Position	Description	Annotation	Classification data	Part No.	Count	
	Motor				1	pcs
	Base cpl.				1	pcs
6	Base				1	
12	Flange				2	
35	Hex head screw		Length: 40		4	
			Thread: M10			
37	Gasket				2	
	Sealing parts				1	pcs
25	Drain plug w/bypass valve				1	
38	O-ring		Diameter: 16,3			
			Material type: EPDM			
			Thickness: 2,4			
37	O-ring				2	
100	O-ring		Diameter: 16,3		2	
	- 5		Material type: EPDM			
			Thickness: 2,4			
2	Pump head cpl.				1	pc
2	Pump head				. 1	20
7	Coupling guard				2	
7a	Thread cutting screw				4	
18	Air vent screw				. 1	
10	Plug				I	
	Spindle					
25	Drain plug				1	
23	Pipe plug				1	
25	Drain plug					
23	Hex head cap screw		Length: 25		4	
20	They head cap screw		Thread: UNC 3/8"		4	
60	Formed wire spring		Thiead. UNC 5/0		1	
8					1	-
	Coupling cpl.		Designation: DIN 012	1	4	pc
9	Hex socket head cap screw		Designation: DIN 912		4	
			Length: 20			
10			Thread: M6			
10	Shaft pin		Diameter: 5		1	
			Length: 26			
10a	Coupling half				2	
26	Staybolt		Length: 259		4	pc
~~			Thread: M12			
36a	Washer		Designation: DIN 125 A		4	pc
			Inner diameter: 13			
			Outer diameter: 24			
			Thickness: 2,5			
55	Outer sleeve				1	pc
66a	Nut		Thread: M12		4	pc
80	Chamber stack				1	pc
	Impeller				13	
	Guide vane cpl.				1	
	Plate					
50a	Guide vane					
50b	Top plate					
4	Chamber cpl.				10	
	Guide vane					
	Plate					



			Date:		0/2018	,
Position	Description	Annotation	Classification data	Part No.	Count	Unit
	Retainer					
	Intermediate chamber					
	Vane					
45	Neck ring					
65	Retainer					
4a	Chamber w. bearing cpl.				2	
	Guide vane					
	Retainer for bearing					
	Bearing bush					
	Retainer					
	Intermediate chamber					
	Vane					
45	Neck ring					
65	Retainer					
5a	Chamber cpl.				1	
	Retainer					
	Intermediate chamber					
	Vane					
45	Neck ring					
65	Retainer					
36	Lock nut		Thread: M8		1	
47a	Bearing ring, rotating				2	
51	Shaft, spline, cpl.				1	
64a	Spacing pipe				10	
64a	Spacing pipe		Inner diameter: 12,85	5	2	
			Outer diameter: 15,85	-	-	
			Length: 4,50			
64c	Clamp, splined		Inner diameter: 8,5		1	
~ 10			Outer diameter: 15		•	
66	Wedge lock washer				1	
105	Shaft seal		Material type: HQQE		1	pcs
	O-ring				1	P00
	O-ring				1	
	Seal driver, upper				1	
	Seal driver, lower				1	
	Spacer ring				1	
	Pipe				1	
	Plug				1	
	Plug				1	
	Compression spring				1	
	Socket set screw				1	
102	O-ring		Diameter: 22,00		1	
102	O-mig		Material type: EPDM		I	
			Thickness: 2,75			
102	Cool ring atotic row		THICKNESS: 2,75		4	
103	Seal ring, stationary				1	
105	Seal ring, rotating				1	
107	O-ring				1	
113	Driver				1	