

## Parts List

8146.020/.190 Bravo 200





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# 1 Introduction

## **Purpose of this manual**

The purpose of this manual is to provide necessary information on spare parts and accessories order.

## **Disclaimer**

Always use genuine Grindex parts. The use of other spare parts or accessories can invalidate any claims for warranty or compensation. Grindex does not take any responsibility for damages that are caused by the use of non-original parts. For more information, contact your local sales and service representative.

## **Data for ordering spare parts**

The following information is needed for spare part orders:

- Serial number of the product
- Part number
- Quantity of bulk material, see \* in tables

## 1.1 Specially approved products

### **Qualification of personnel**

Only Grindex or Grindex-authorized service personnel may undertake repair work on Ex-approved products.

### **Dimensional accuracy inspection**

Spare parts marked with (Ex) after the part number are subject to dimensional accuracy inspection when used in specially approved products.

## 2 Product Description

### 2.1 Products included

Pump model	Standard	Ex-proof	Slurry
Bravo 200, 8146.020	X		X
Bravo 200, 8146.190		X	X

### 2.2 The data plate

#### Introduction

The data plate is a metal label located on the main body of the pump. The data plate lists key product specifications.

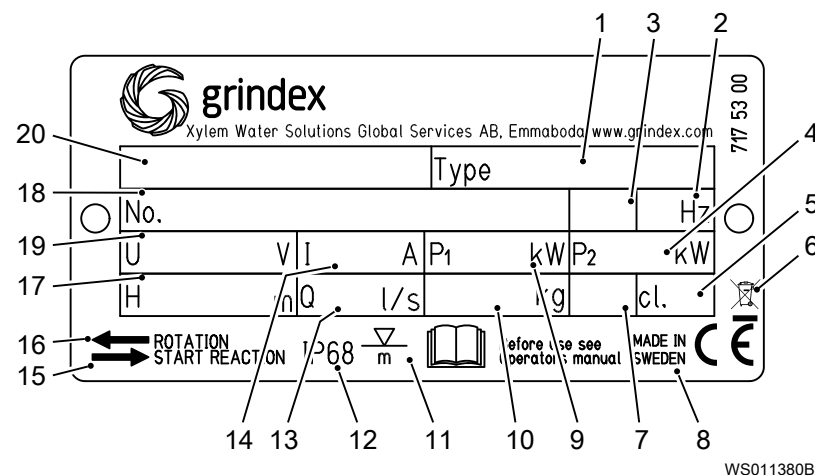
#### The data plate

This list of callouts is applicable for all versions of data plates:

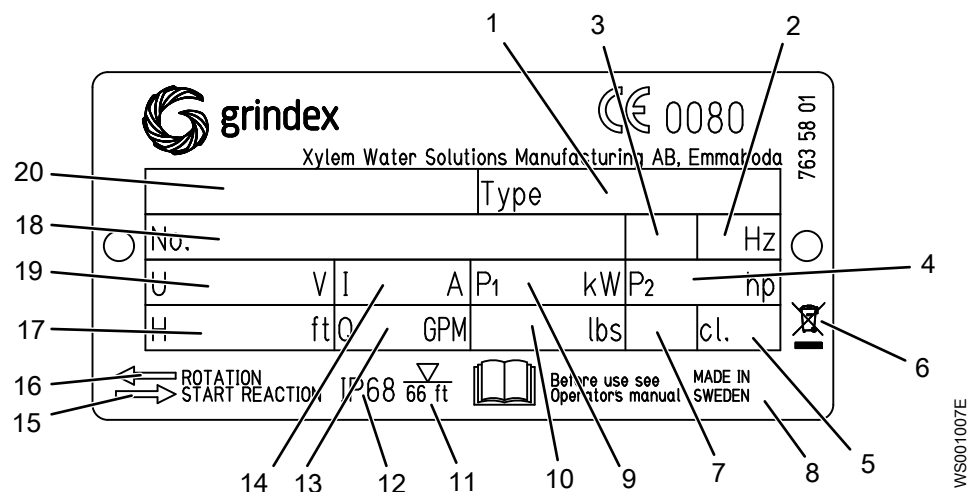
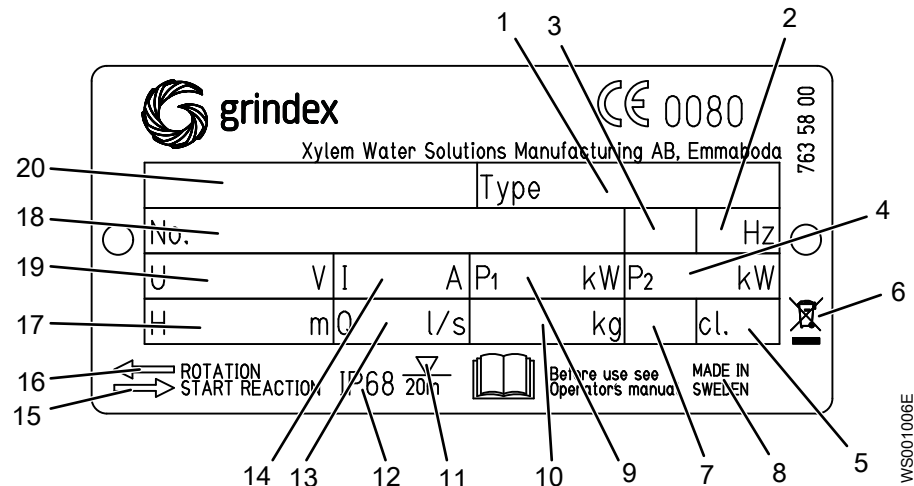
1. Pump type number
2. Frequency
3. Phases, type of current
4. Rated shaft power
5. Thermal class
6. WEEE-Directive symbol
7. Locked rotor code-letter
8. Country of origin
9. Maximum power consumption
10. Product weight
11. Maximum submersion depth
12. Degree of protection
13. Maximum capacity
14. Rated current
15. Direction of the start reaction
16. Direction of the impeller rotation
17. Maximum head
18. Serial number
 

The first two characters describe the production year.
19. Rated voltage
20. Pump model

This is the data plate for non explosion-proof version .020:





These are the data plates for explosion-proof version .190:



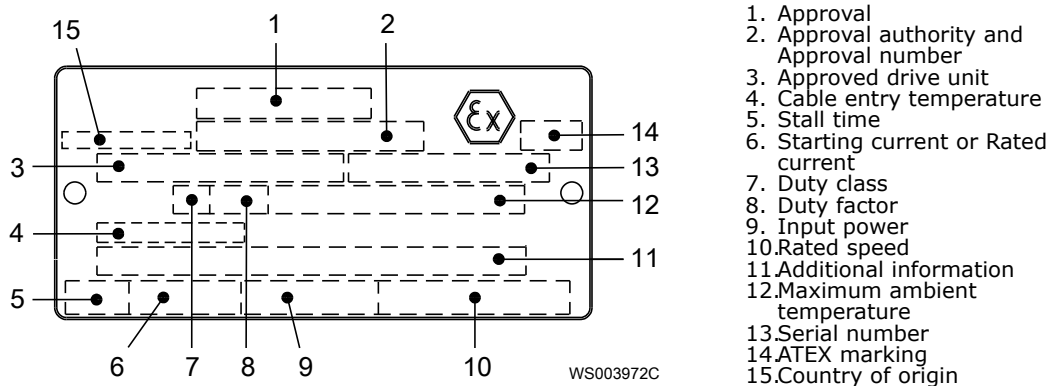
## 2.3 Approvals

### Product approvals for hazardous locations

Pump	Approval
8146.190	European Norm (EN) <ul style="list-style-type: none"> <li>• ATEX Directive</li> <li>• EN IEC 60079-0:2018, EN 60079-1:2014, EN ISO 80079-36:2016, EN ISO 80079-37:2016</li> <li>•  II 2 G Ex db h IIB T4 Gb</li> <li>•  I M2 Ex db h I Mb</li> </ul>
	IEC <ul style="list-style-type: none"> <li>• IECEx scheme</li> <li>• IEC 60079-0:2017, IEC 60079-1:2014-06, ISO 80079-36:2016, ISO 80079-37:2016</li> <li>• Ex db h IIB T4 Gb</li> <li>• Ex db h I Mb</li> </ul>
	FM (FM Approvals) <ul style="list-style-type: none"> <li>• Explosion proof for use in Class I, Div. 1, Group C and D</li> <li>• Dust ignition proof for use in Class II, Div. 1, Group E, F and G</li> <li>• Suitable for use in Class III, Div. 1, Hazardous Locations</li> </ul>

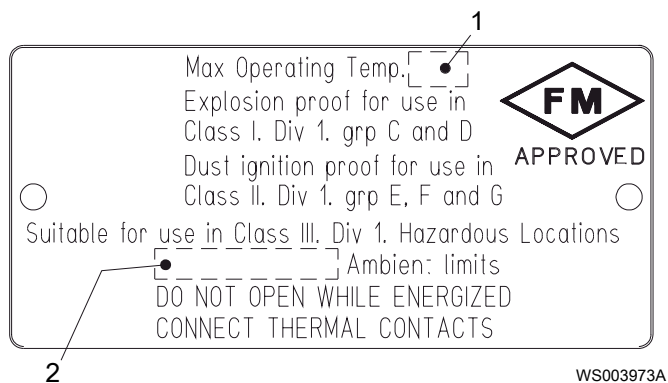
#### EN approval plate

This illustration describes the EN approval plate and the information that is contained in its fields.



#### FM approval plate

This illustration describes the FM approval plate and the information that is contained in its fields.

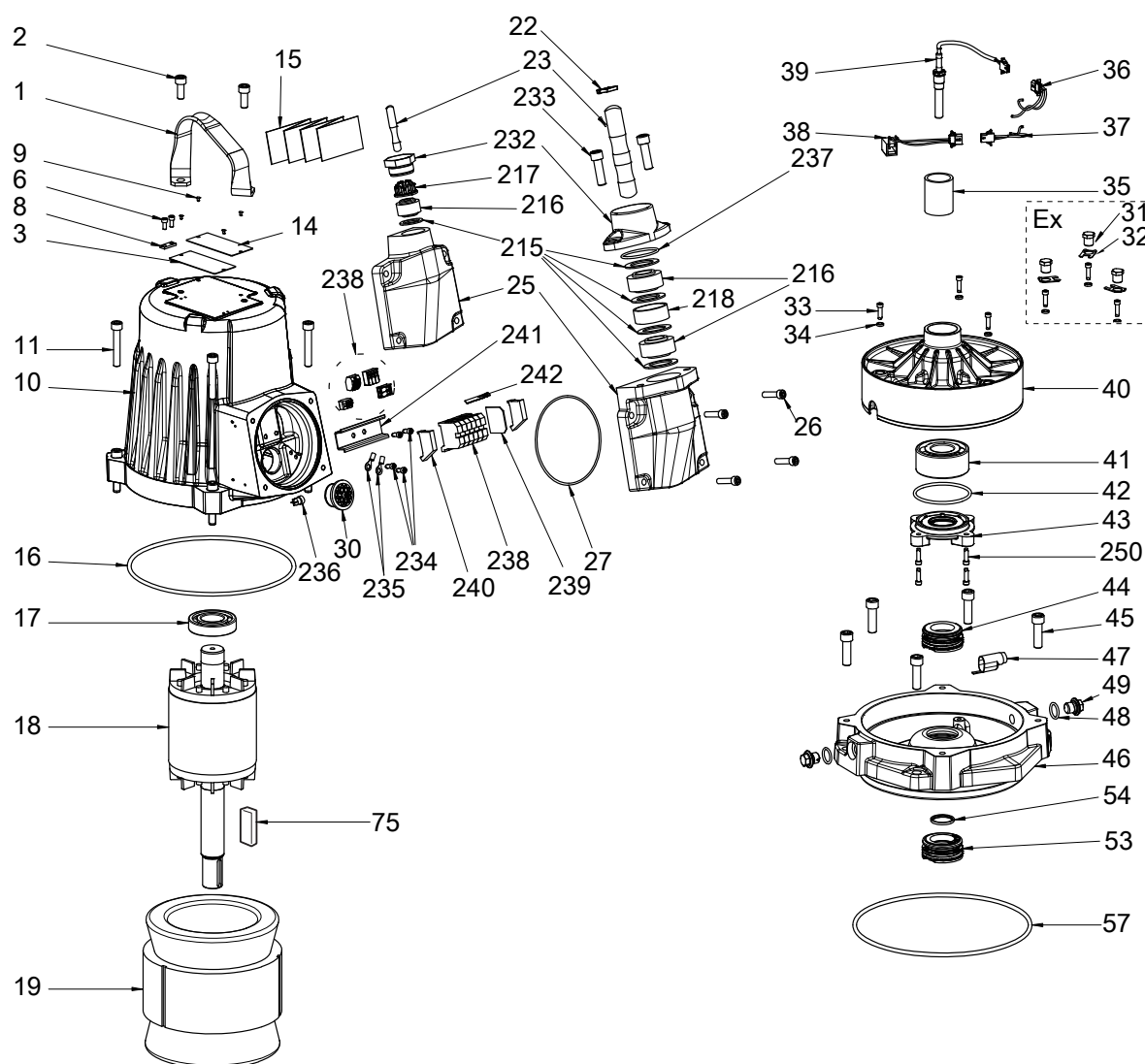


1. Temperature class
2. Maximum ambient temperature

# 3 Exploded View

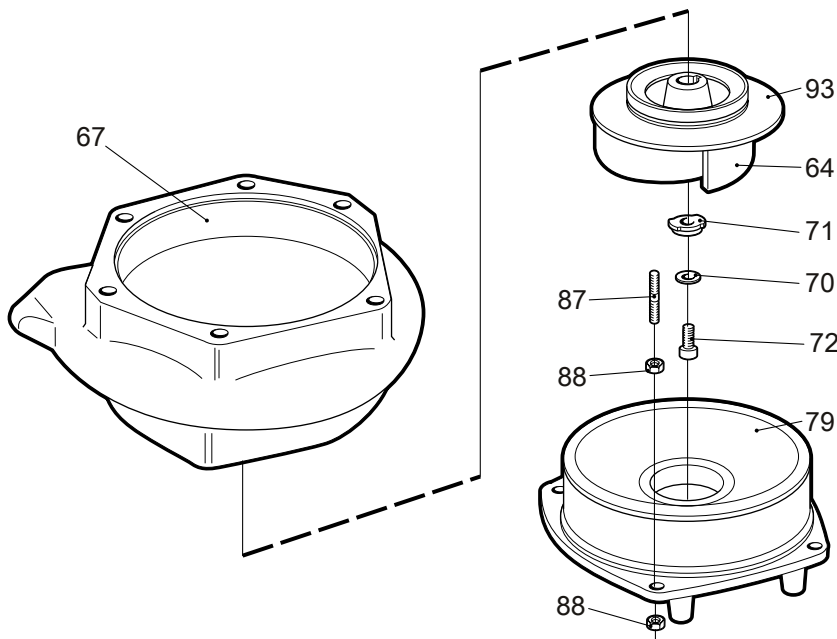
## 3.1 Drive Unit

### 3.1.1 Standard and Explosion-proof (EX)



### 3.2 Hydraulic Unit

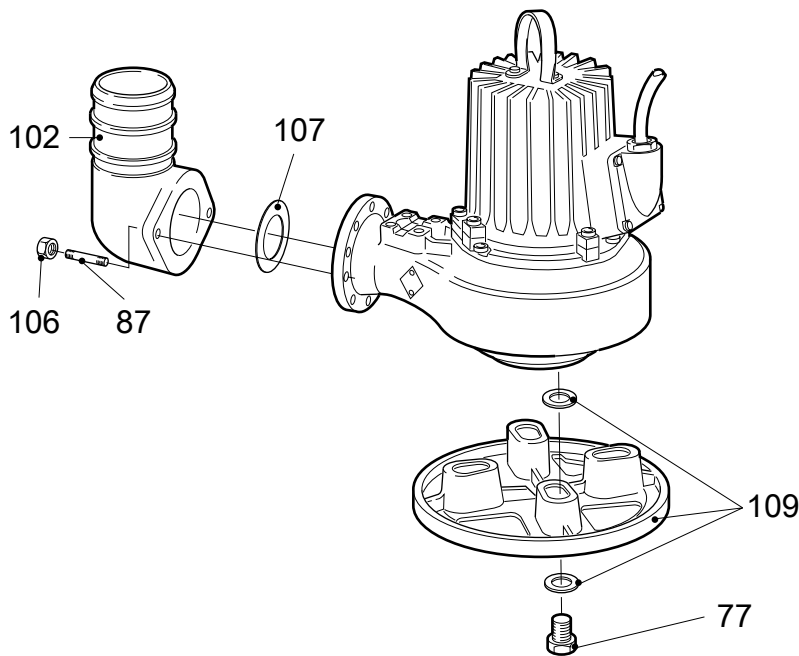
#### 3.2.1 Exploded view



20070A

### 3.3 Installation Components

#### 3.3.1 Exploded view



20071A

## 4 List of Parts

### 4.1 8146.020/.190

Pos. No	Part. No	Type	Denomination	Qty/Version	
				020	190
1	4771101	(Ex)	Lifting handle	1	1
2	830323		Hex.socket hd screw M10X25-A4-70	2	2
3	6308500		Plate-blank	1	1
6	830258		Hex.socket hd screw M5X12-A4-70		2
8	2792900	(Ex)	Earthing plate		1
9	822088		Drive screw 4X5-A2/A4	12	10
10	4435300		Stator housing	1	
10	4435305	(Ex)	Stator housing		1
11	830330		Hex.socket hd screw M10X60-A4-70	4	4
12,2	834262		Closed-end splice 0.33-0.82 (AWG 22-18)	2	2
14	7521900	(Ex)	Certificate plate		2
14	7522000	(Ex)	Certificate plate		1
15	7721701		Connection plate	1	
15	4271300		Marking tape	1	1
15	5502200		Connection plate (FLS)	1	1
15	7721701		Connection plate		1
15	5502400		Connection plate		1
16	827497		O-ring 239.5X5.7 NBR	1	
16	827497		O-ring 239.5X5.7 NBR		1
17	833236		Ball bearing 6207,35X72X17	1	1
18	4435906		Shaft unit	1	
18	4436605	(Ex)	Shaft unit		1
19	4266312	(Ex)	Stator 21-10-4a	1	1
			Stator 3-phase 60 Hz 4- poles 440V-460V YSER 220V-230V Y// P2=5,60kW/7,50hp Max ambient temp=40 DC Thermal contact 125 DC		
19	4266330	(Ex)	Stator 21-10-4a	1	

Pos. No	Part. No	Type	Denomination	Qty/Version	
				020	190
19	4266334	(Ex)	Stator 21-10-4a	1	1
			Stator 3-phase 50 Hz 4-poles 220V D 380V Y Rated power 4,70kW Max ambient temperature 40 DC Thermal contact 125 DC		
			Stator 3-phase 60 Hz 4-poles 260V D 440V-460V Y Rated power 5,60kW/7,50hp Max ambient temperature 40 DC Thermal contact 125 DC		
19	4266338	(Ex)	Stator 21-10-4a	1	1
			Stator 3-phase 50 Hz 4-poles 380V D 660V Y Rated power 4,70kW Max ambient temperature 40 DC Thermal contact 125 DC		
			Stator 3-phase 60 Hz 4-poles 440V-460V D P2=5,60kW/7,50hp Max ambient temp=40 DC Thermal contact 125 DC		
19	4266340	(Ex)	Stator 21-10-4a	1	
			Stator 3-phase 60 Hz 4-poles 400V D P2=5,60kW/7,50hp Max ambient temperature 40 DC Thermal contact 125 DC		
19	4266344	(Ex)	Stator 21-10-4a	1	1
			Stator 3-phase 50 Hz 4-poles 400V-420V D P2=4,70kW Max ambient temp=40 DC Thermal contact 125 DC		
			Stator 3-phase 60 Hz 4-poles 480V D P2=5,60kW/7,50hp Max ambient temp=40 DC Thermal contact 125 DC		
19	4266350	(Ex)	Stator 21-10-4a	1	1
19	4266352	(Ex)	Stator 21-10-4a	1	1
			Stator 3-phase 50 Hz 4-poles 500V-550V D P2=4,70kW Max ambient temp=40 DC		
			Stator 3-phase 60 Hz 4-poles 575V-600V D P2=5,60kW/7,50hp Max ambient temp=40 DC Thermal contact 125 DC		
19	4266355	(Ex)	Stator 21-10-4a	1	1

Pos. No	Part. No	Type	Denomination		Qty/Version	
					020	190
19	4266302	(Ex)	Stator 21-10-4a	Stator 3-phase 50 Hz 4-poles 400V Y 230V D P2=4,70kW Max ambient temp=40 DC Thermal contact 125 DC	1	1
19	4266301	(Ex)	Stator 21-10-4a	Stator 3-phase 50 Hz 4-poles 690V Y 400V D P2=4,70kW Max ambient temp=40 DC Thermal contact 125 DC	1	1
19	4266330	(Ex)	Stator 21-10-4a			1
22	834559		Cable tie 200X2.4 PA 6/6 -55+105		1	1
23	942042		Motor cable subcab 4G2.5	Power cable x 1 SUBCAB 4G2,5 12,50 - 13,50mm L= 20m	*	
23	942043		Motor cable subcab 4G4	Power cable x 1 SUBCAB 4G4 16 - 17mm L= 20m	*	
23	942059		Motor cable subcab 4G2.5+2X1.5	Power cable x 1 SUBCAB 4G2,5+2x1,5 17 - 18mm L= 20m	*	*
23	942060		Motor cable subcab 4G4+2X1.5	Power cable x 1 SUBCAB 4G4+2x1,5 20 - 22mm L= 20m	*	*
23	942082		Motor cable subcab 7G2.5+2X1.5	Power cable x 1 SUBCAB 7G2,5+2x1,5 20 - 22mm L= 20m Only for YD-connection	*	*
23	942080		Motor cable subcab 7G4+2X1.5	Power cable x 1 SUBCAB 7G4+2x1,5 24 - 26mm L= 20m Only for YD-connection	*	
23	942102		Motor cable subcab 14 AWG/7	Power cable x 1 SUBCAB 14AWG/7 18 - 20mm L= 16m Only for YD-connection	*	
23	942104		Motor cable subcab 12 AWG/7	Power cable x 1 SUBCAB 12AWG/7 19,50 - 21,50mm L= 16m Only for YD-connection	*	
23	942106	Motor cable	Power cable x 1 SUBCAB 10AWG/3-2-1-GC 20,30 - 22,30mm L= 16m	*	*	
23	942108	Motor cable	Power cable x 1 SUBCAB 8AWG/3-2-1-GC 27,20 - 29,20mm L= 16m	*		
23	941723		Motor cable 3X2,5MM	Power cable x 1 Screened 3x2,5 13,50 - 14,90mm L= 20m	*	

Pos. No	Part. No	Type	Denomination	Qty/Version			
				020	190		
23	941990		Motor cable subcab S3X2.5+3X2.5/3+S(4X0.5)	Power cable x 1 SUBCAB S3x2,5+3x2,5/3+S(4x0,5) 18 - 20mm L= 20m	*	*	
23	941724		Motor cable SCREENED 6X2,5+2*1,5	Power cable x 1 Screened 6x2,5+2x1,5 18,10 - 19,90mm L= 20m Only for YD-connection	*		
25	4435100		Entrance cover	Entrance cover For motor cable -35mm	1		
25	4435000		Entrance cover	Entrance cover For motor cable -52mm	1		
25	4435003		(Ex)	Entrance cover			1
26	830445			Hex.socket hd screw M8X35-A4-80	4	4	
27	827478			O-ring 124.5X3.0-NBR	1		
27	827478			O-ring 124.5X3.0-NBR			1
30	7345900			El.lead through unit 12X + 6X	1		
30	7345900			El.lead through unit 12X + 6X			1
31	4394401	(Ex)	Screw M14X1.25			3	
32	5960700	(Ex)	Square washer			3	
33	821764		Cutting screw TAPTITE-M6X20	14	7		
34	825060		Sealing washer DUBO NR 301	3	3		
35	4435702		Sleeve SIS 14 41 04-6	1			
36	5047806		Cable unit	1			
37	5047807		Cable unit	1	1		
38	5188902	(Ex)	Leakage sensor (FLS)	1	1		
39	5051200		Leakage sensor (CLS30)	1			
40	8002700		Bearing holder	1			
40	8002702		Bearing holder	1			
40	8002701	(Ex)	Bearing holder			1	
41	833017		Ball bearing 35X80X34.9 MM	1	1		
42	827815		O-ring 78X4 NBR	1			
42	827815		O-ring 78X4 NBR			1	
43	6144900		Bearing cover	1	1		
44	7206351		Mechanical seal AL203/WCCR FPM	1			
44	7206351		Mechanical seal AL203/WCCR FPM			1	

Pos. No	Part. No	Type	Denomination	Qty/Version	
				020	190
45	830348		Hex.socket hd screw M12X40-A4-70	5	5
46	6044701		Oil housing bottom MECH. SEAL 549 07 XX	1	
46	6044701		Oil housing bottom MECH. SEAL 549 07 XX		1
47	4434900		Sleeve	1	1
48	827390		O-ring 19.2X3 NBR	2	
48	827390		O-ring 19.2X3 NBR		2
49	4282217		Inspection screw BRASS	2	2
53	5490751		Mechanical seal WCCR/ WCCR FPM	1	1
54	5917900		Insert ring	1	
57	827498		O-ring 249.3X5.7 NBR	1	1
59	4361000		Ring		1
64	3399000		Impeller HD-impeller HT 50Hz 3- phase Max ambient temp=40 DC HD-impeller HT 60Hz 3- phase Max ambient temp=40 DC	1	1
64	3399001		Impeller HD-impeller HT 60Hz 3- phase Max ambient temp=40 DC	1	1
67	3398800		Pump housing	1	1
70	823577		Plain washer 13X24X2.5- A4-170HV	1	1
71	3435300		Square nut	1	1
72	844254		Hex.socket hd screw MC6S 12X40-2343	1	1
75	807063		Parallel key SMS 2306-8H9X7H11X45	1	1
77	814912		Hexagon head screw M12X35-A4-70	4	4
79	3399400		Suction cover	1	1
87	849494		Stud 12X80-A4-70	4	4
87	809740		Stud 12X35-A4-70	2	2
88	822335		Hexagon nut M12-A4-70	8	8
93	3399200		Wear protect.compl.	1	1
102	3408800		Discharge connection 4" Discharge connection Installation S HT DN 100	1	1
102	3408900		Discharge connection 4-8 NPSM Discharge connection Installation S HT Thread : 4-8 NPSM Outer DN 100	1	1

Pos. No	Part. No	Type	Denomination	Qty/Version	
				020	190
102	3408901		Discharge connection R 4" Discharge connection Installation S HT Thread : ISO G4A Outer Quick coupling: Storz diam=133 mm DN 100 Quick coupling: Storz Discharge connection Installation S HT Thread : ISO G4A Outer DN 100	1	1
102	3408902		Discharge connection Discharge connection Installation S HT Thread: NPT 4-8 Outer Outlet DN 100	1	1
102	831934		Coupling part STORZ ISO G4 133MM	1	
106	822335		Hexagon nut M12-A4-70	2	2
107	3398700		Gasket	1	1
109	4369400		Stand unit	1	1
134	830085		Starter DOL 9-14A 380-415/CEE32	1	
134	830083		Starter DOL 9-14A 380-415/CEE16	1	
134	830090		Starter DOL 9-14A 380-415/CABLE	1	
162	930077		Shrink hose ID=6.4 MM	*	*
215	824061		Plain washer 24.5X35X2-A2-70	1	
215	824082		Plain washer 34.5X52X2-A2-70	1	
215	824082		Plain washer 34.5X52X2-A2-70	4	
215	824081		Plain washer 32.5X52X2-A2-70		4
215	824082		Plain washer 34.5X52X2-A2-70		4
216	841791		Seal sleeve (12)-14 MM NBR	1	
216	841793		Seal sleeve (16)-18 MM NBR	1	
216	841802		Seal sleeve (20)-23 MM NBR	1	
216	841802		Seal sleeve (20)-23 MM NBR	2	
216	841803		Seal sleeve (23)-26 MM NBR	2	
216	841794		Seal sleeve (18)-20 MM NBR	1	

Pos. No	Part. No	Type	Denomination	Qty/Version	
				020	190
216	841804		Seal sleeve (26)-29 MM NBR	2	
216	841792		Seal sleeve (14)-16 MM NBR	1	
216	841800		Seal sleeve (14)-17 MM NBR		2
216	841801		Seal sleeve (17)-20 MM NBR		2
216	841802		Seal sleeve (20)-23 MM NBR		2
216	841803		Seal sleeve (23)-26 MM NBR		2
216	841804		Seal sleeve (26)-29 MM NBR		2
216	841805		Seal sleeve (29)-32 MM NBR		2
217	6785814	(Ex)	Cable clip 12-(14) MM	1	
217	6785818	(Ex)	Cable clip 16-(18) MM	1	
217	6785820	(Ex)	Cable clip 18-(20) MM	1	
217	6785816	(Ex)	Cable clip 14-(16) MM	1	
218	5979802	(Ex)	Sleeve	1	
218	5979802	(Ex)	Sleeve		1
232	3978100	(Ex)	Gland screw Pr 37	1	
232	6421700		Entrance flange (20)-32 MM	1	
232	6421701	(Ex)	Entrance flange (14)-32 MM		1
233	830348		Hex.socket hd screw M12X40-A4-70	1	
233	830348		Hex.socket hd screw M12X40-A4-70	2	
233	830348		Hex.socket hd screw M12X40-A4-70		2
234	821761		Cutting screw TAPTITE-M6X12	3	
234	821761		Cutting screw TAPTITE-M6X12	1	1
235	834296		Cable lug 2.5-6 MM2 M6	1	
235	834358		Cable lug UL/CSA 1.04-2.62 MM2 M6	1	1
235	834358		Cable lug UL/CSA 1.04-2.62 MM2 M6	2	
235	834296		Cable lug 2.5-6 MM2 M6	2	2
235	834348		Cable lug CSA 10 MM2 M6	2	

Pos. No	Part. No	Type	Denomination	Qty/Version	
				020	190
236	834424	(Ex)	Closed-end splice 3-6 (AWG 12-10)	1	
237	827463		O-ring 49.5X3 NBR	1	
237	827463		O-ring 49.5X3 NBR		1
237	6421701		Entrance flange (14)-32 MM		1
238	834265		Terminal block 600V/20A UL	2	2
238	834265		Terminal block 600V/20A UL	3	3
238	834267		Terminal block 600V/20A UL	2	
238	834265		Terminal block 600V/20A UL	1	
238	835321		Terminal clamp SAK6/35 038056 EL-AUTOM	6	6
238	835330		Terminal clamp SAK10/35 EL-AUTM	6	
238	835330		Terminal clamp SAK10/35 EL-AUTM		6
239	835322		End plate APPA - 11796	1	1
240	835354		End support WEW 35/2	2	2
241	4436800		Rail 35X15	1	1
242	7220000		Marking plate 5-GW (U1,V1,W1,W2,U2,V1)	2	
242	7220000		Marking plate 5-GW (U1,V1,W1,W2,U2,V1)		2
243	4717701		Marking strip 5-GW (U1,V1,W1,W2,U2,V1)	2	2
800	838753		O-ring kit	1	1
900	7625300		Basic repair kit	1	1
900,1	410 694		O-ring kit	1	1
900,2	410 635		Ball bearing 6207,35X72X17	1	1
900,3	410 634		Ball bearing 35X80X34.9 MM	1	1
900,4	51 766 00		Mechanical seal AL203/ WCCR FPM	1	1
900,5	51 593 00		Mechanical seal WCCR/ WCCR FPM	1	1
912	827390		O-ring 19.2X3 NBR	4	
912	827478		O-ring 124.5X3.0-NBR	1	
912	827390		O-ring 19.2X3 NBR		4
912	827478		O-ring 124.5X3.0-NBR		1





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