

Qty. Description

1 NBE 50-160/167 AASF2AESBQQENWB



Note! Product picture may differ from actual product

Product No.: [99101898](#)

Non-self-priming, single-stage, centrifugal volute pump designed according to ISO 5199 with dimensions and rated performance according to EN 733 (10 bar).

Flanges are PN 16 with dimensions according to EN 1092-2. The pump has an axial suction port, radial discharge port, horizontal shaft and a back pull-out design enabling removal of the motor, motor stool, cover and impeller without disturbing the pump housing or pipework.

The unbalanced rubber bellows seal is according to DIN EN 12756.

The pump is close-coupled to a fan-cooled, permanent-magnet synchronous motor.

The motor includes a frequency converter and PI controller in the motor terminal box. This enables continuously variable control of the motor speed, which again enables adaptation of the performance to a given requirement.

The product's minimum efficiency index (MEI) is greater or equal to 0.70. This is by the Commission Regulation (EU) considered as an indicative benchmark for best-performing water pump available on the market as from 1 January 2013.

An external sensor can be connected if controlled pump operation is required for flow, differential pressure or temperature control.

The operating panel on the motor terminal box features a four-inch TFT display, push-buttons and the Grundfos Eye indicator.

The display gives an intuitive and user-friendly interface to all functions.

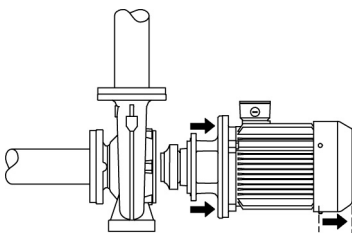
The push-buttons are used to navigate through the menu structure to access pump and performance data on site and enable setting of required setpoint as well as setting of pump to "Min." or "Max." operation or to "Stop".

The Grundfos Eye indicator on the operating panel provides visual indication of pump status:

- "Power on": Motor is running (rotating green indicator lights) or not running (permanently green indicator lights)
- "Warning": Motor is still running (rotating yellow indicator lights) or has stopped (permanently yellow indicator lights)
- "Alarm": Motor has stopped (flashing red indicator lights).

Communication with the pump is also possible by means of Grundfos GO Remote (accessory). The remote control enables further settings as well as reading out of a number of parameters such as "Actual value", "Speed", "Power input" and total "Power consumption".

The back pull-out design means that the pump can be serviced by a single person without disturbing the pump housing or pipes.



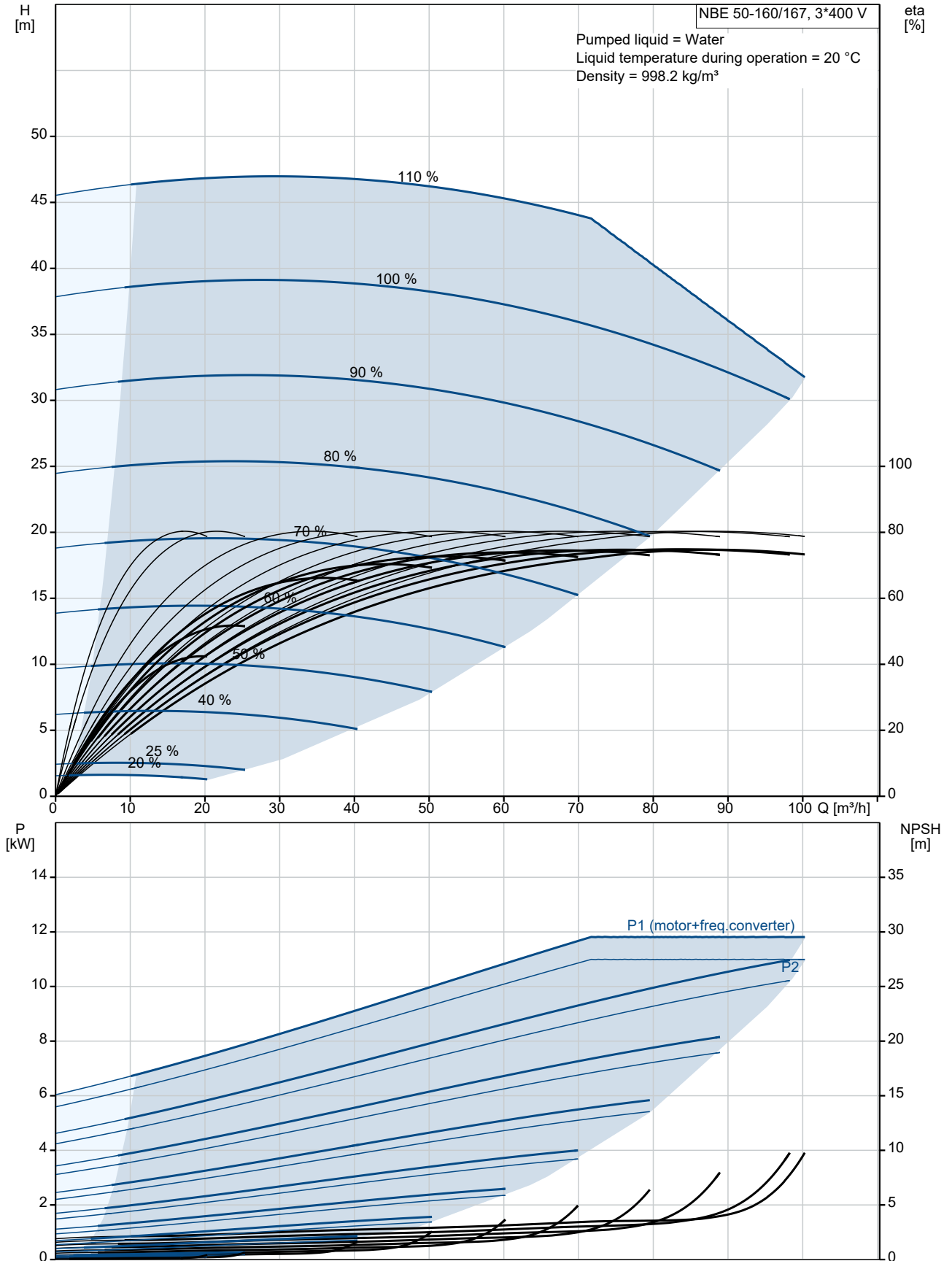
Cast-iron parts have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface.

Pump

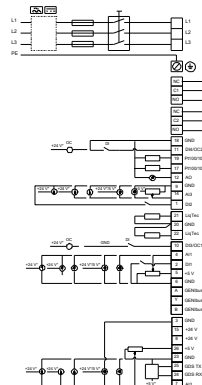
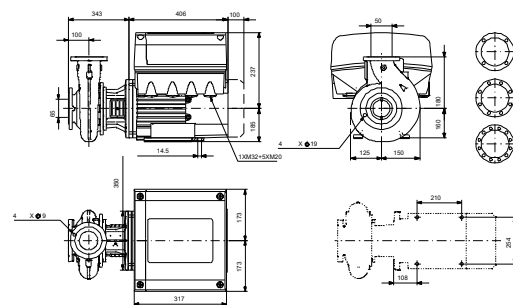
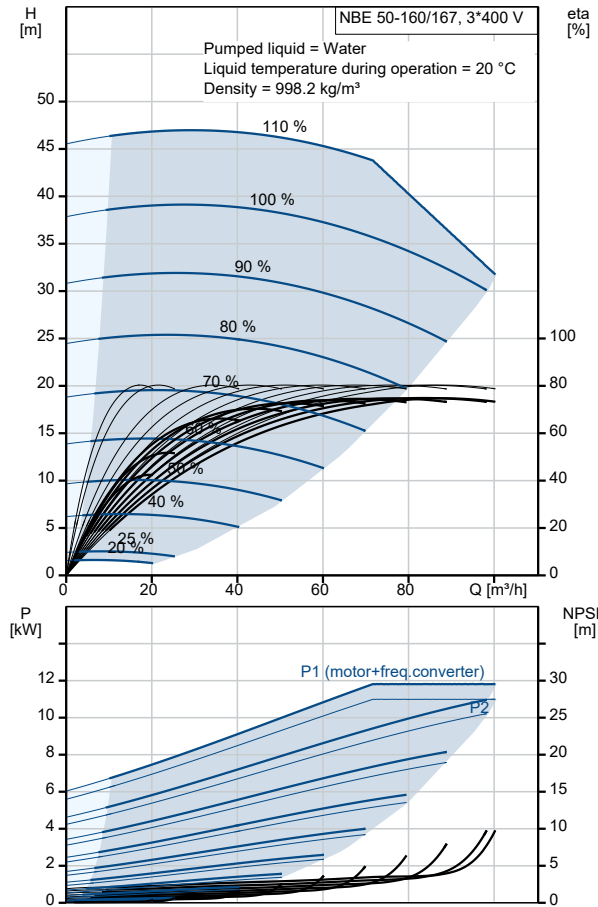
Qty.	Description												
1	<p>The pump housing has both a priming and a drain hole closed by plugs. The impeller is a closed impeller with double-curved blades with smooth surfaces. The impeller is statically balanced according to ISO 1940-1 class G6.3 and hydraulically balanced to compensate for axial thrust.</p> <p>Wear rings used in pump housing and for impeller are made of bronze/brass.</p> <p>Motor stool and pump cover are made of cast iron (EN-GJL-250). Coupling guards are fitted to the motor stool. The pump cover is provided with a manual air vent screw for venting of the pump housing and the shaft seal chamber.</p> <p>The pump is fitted with an unbalanced rubber bellows seal with torque transmission across the spring and around the bellows. Due to the bellows, the seal does not wear the shaft, and the axial movement is not prevented by deposits on the shaft.</p> <p>Seal faces:</p> <ul style="list-style-type: none"> • Rotating seal ring material: silicon carbide (SiC) • Stationary seat material: silicon carbide (SiC) <p>This material pairing is used where higher corrosion resistance is required. The high hardness of this material pairing offers good resistance against abrasive particles.</p> <p>Secondary seal material: EPDM (ethylene-propylene rubber)</p> <p>EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.</p> <p>The pump housing has no feet.</p> <p>The pump is to be secured to the foundation with bolts through the pump housing feet and motor feet. The pump is delivered with steel support blocks. The support blocks provide horizontal alignment of the pump and ensure clearance between the motor stool/motor flange and the foundation.</p> <p>Motor</p> <p>The motor is a totally enclosed, fan-cooled motor with principal dimensions to IEC and DIN standards. Electrical tolerances comply with IEC 60034.</p> <p>The motor efficiency is classified as IE5 in accordance with IEC 60034-30-2.</p> <p>The motor requires no external motor protection. The motor control unit incorporates protection against slow- and quick-rising temperatures, e.g. constant overload and stalled conditions.</p> <p>The terminal box holds terminals for these connections:</p> <ul style="list-style-type: none"> - one dedicated digital input - two analog inputs, 0(4)-20 mA, 0-5 V, 0-10 V, 0.5 - 3.5 V - 5 V voltage supply to potentiometer and sensor - one configurable digital input or open-collector output - Grundfos Digital Sensor input and output - 24 V voltage supply for sensors - two signal-relay outputs (potential-free contacts) - GENibus connection - interface for Grundfos CIM fieldbus module. <p>Further product details</p> <p>Cast-iron parts 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.</p> <p>Technical data</p> <p>Controls:</p> <table data-bbox="201 1787 638 1848"> <tr> <td>Frequency converter:</td> <td>Built-in</td> </tr> <tr> <td>Pressure sensor:</td> <td>N</td> </tr> </table> <p>Liquid:</p> <table data-bbox="201 1906 702 2027"> <tr> <td>Pumped liquid:</td> <td>Water</td> </tr> <tr> <td>Liquid temperature range:</td> <td>-25 .. 120 °C</td> </tr> <tr> <td>Selected liquid temperature:</td> <td>20 °C</td> </tr> <tr> <td>Density:</td> <td>998.2 kg/m³</td> </tr> </table> <p>Technical:</p>	Frequency converter:	Built-in	Pressure sensor:	N	Pumped liquid:	Water	Liquid temperature range:	-25 .. 120 °C	Selected liquid temperature:	20 °C	Density:	998.2 kg/m ³
Frequency converter:	Built-in												
Pressure sensor:	N												
Pumped liquid:	Water												
Liquid temperature range:	-25 .. 120 °C												
Selected liquid temperature:	20 °C												
Density:	998.2 kg/m ³												

Qty.	Description
1	<p>Pump speed on which pump data are based: 2901 rpm</p> <p>Rated flow: 87.43 m³/h</p> <p>Rated head: 32.62 m</p> <p>Actual impeller diameter: 167 mm</p> <p>Nominal impeller diameter: 160</p> <p>Shaft seal arrangement: Single</p> <p>Code for shaft seal: BQQE</p> <p>Curve tolerance: ISO9906:2012 3B</p> <p>Bearing design: Standard</p> <p>Materials:</p> <p>Pump housing: Cast iron EN-GJL-250 ASTM class 35</p> <p>Wear ring: Brass</p> <p>Impeller: Cast iron EN-GJL-200 ASTM class 30</p> <p>Internal pump house coating: CED</p> <p>Shaft: Stainless steel EN 1.4301 AISI 304</p> <p>Installation:</p> <p>Range of ambient temperature: -20 .. 50 °C</p> <p>Maximum operating pressure: 16 bar</p> <p>Pipe connection standard: EN 1092-2</p> <p>Size of inlet connection: DN 65</p> <p>Size of outlet connection: DN 50</p> <p>Pressure rating for connection: PN 16</p> <p>Bearing lubrication: Grease</p> <p>Pump housing with feet: No</p> <p>Support block (Yes/No): Y</p> <p>Electrical data:</p> <p>IE Efficiency class: IE5</p> <p>Rated power - P2: 11 kW</p> <p>Mains frequency: 50 Hz</p> <p>Rated voltage: 3 x 380-500 V</p> <p>Rated current: 20.3-16.0 A</p> <p>Cos phi - power factor: 0.93-0.90</p> <p>Rated speed: 360-4000 rpm</p> <p>Efficiency: 93.1%</p> <p>Motor efficiency at full load: 93.1 %</p> <p>Number of poles: 2</p> <p>Enclosure class (IEC 34-5): IP55</p> <p>Insulation class (IEC 85): F</p> <p>Motor No: 99306732</p> <p>Bearing insulation type N-end: STEEL BEARING</p> <p>Others:</p> <p>Minimum efficiency index, MEI ≥: 0.70</p> <p>Net weight: 116 kg</p> <p>Gross weight: 138 kg</p> <p>Shipping volume: 0.509 m³</p> <p>Danish VVS No.: 386102166</p> <p>Country of origin: HU</p> <p>Custom tariff no.: 84137051</p>

99101898 NBE 50-160/167 AASF2AESBQQENWB 50 Hz



Description	Value
General information:	
Product name:	NBE 50-160/167 AASF2AESBQQENWB
Product No:	99101898
EAN number:	5712606791071
Technical:	
Pump speed on which pump data are based:	2901 rpm
Rated flow:	87.43 m ³ /h
Rated head:	32.62 m
Actual impeller diameter:	167 mm
Nominal impeller diameter:	160
Shaft seal arrangement:	Single
Shaft diameter:	24 mm
Code for shaft seal:	BQQE
Curve tolerance:	ISO9906:2012 3B
Pump version:	AS
Bearing design:	Standard
Materials:	
Pump housing:	Cast iron
Pump housing:	EN-GJL-250
Pump housing:	ASTM class 35
Wear ring:	Brass
Impeller:	Cast iron
Impeller:	EN-GJL-200
Impeller:	ASTM class 30
Internal pump house coating:	CED
Material code:	A
Code for rubber:	E
Shaft:	Stainless steel
Shaft:	EN 1.4301
Shaft:	AISI 304
Installation:	
Range of ambient temperature:	-20 .. 50 °C
Maximum operating pressure:	16 bar
Pipe connection standard:	EN 1092-2
Size of inlet connection:	DN 65
Size of outlet connection:	DN 50
Pressure rating for connection:	PN 16
Bearing lubrication:	Grease
Pump housing with feet:	No
Support block (Yes/No):	Y
Connect code:	F2
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-25 .. 120 °C
Selected liquid temperature:	20 °C
Density:	998.2 kg/m ³
Electrical data:	
IE Efficiency class:	IE5
Rated power - P2:	11 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-500 V
Rated current:	20.3-16.0 A
Cos phi - power factor:	0.93-0.90
Rated speed:	360-4000 rpm
Efficiency:	93.1%
Motor efficiency at full load:	93.1 %
Number of poles:	2





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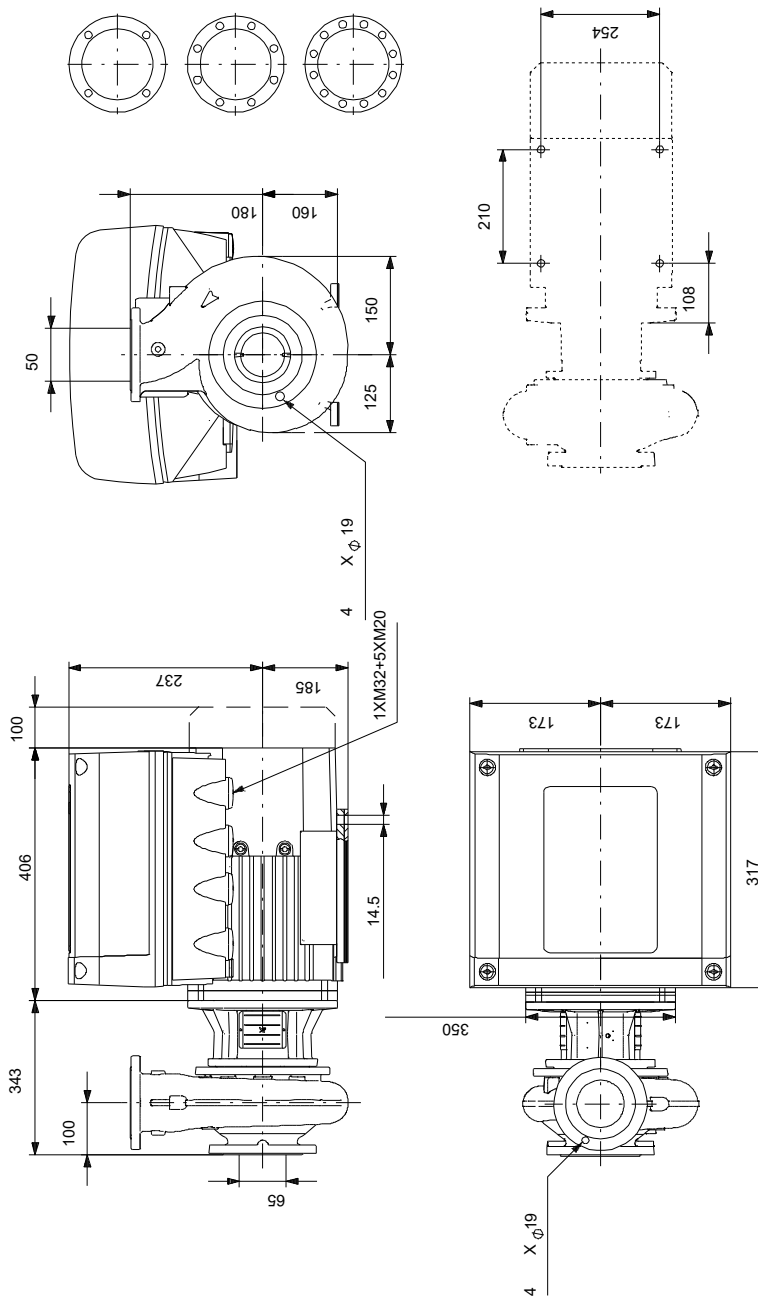
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Description	Value
Enclosure class (IEC 34-5):	IP55
Insulation class (IEC 85):	F
Built-in motor protection:	ELEC
Motor No:	99306732
Mount. design. acc. IEC 34-7:	IM B35
Bearing insulation type N-end:	STEEL BEARING
Controls:	
Control panel:	HMI300 - Advanced
Function Module:	FM300 - Advanced
Frequency converter:	Built-in
Pressure sensor:	N
Others:	
Minimum efficiency index, MEI \geq :	0.70
Net weight:	116 kg
Gross weight:	138 kg
Shipping volume:	0.509 m ³
Danish VVS No.:	386102166
Country of origin:	HU
Custom tariff no.:	84137051

99101898 NBE 50-160/167 AASF2AESBQQENWB 50 Hz



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

99101898 NBE 50-160/167 AASF2AESBQQENWB 50 Hz



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



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Phone:

Date:

15/08/2022

**Spare parts NBE 50-160/167, Product No. 99101898
Produced After 2053 (production year and week number)**

Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
-	Bulk, Nut			92514630	1	pcs
67	Nut		Thread: M14		5	
-	Bulk, O-ring			92547662	1	pcs
72a	O-ring				5	
-	Bulk, Plug vent			96620482	1	pcs
18	Plug				5	
-	Bulk, Shaft seal			99380916	1	pcs
105	Shaft seal				5	
-	Kit, Coupling guard			96809946	1	pcs
7a	Pan head screw				4	
7	Coupling guard				2	
-	Kit, Motor stool			98990918	1	pcs
1a	Motor stool				1	
7	Coupling guard				2	
18	Plug				1	
28	Hex head screw				4	
36	Hex nut		Thread: M16		4	
36	Nut		Thread: M10		6	
76a	Rivet				2	
77a	Pan head screw				4	
-	Kit, Nut			96939128	1	pcs
11	Parallel key		Dimension: 6X6X35		1	
-	36 Nut				1	
66a	Spring lock washer					
66	Washer					
67	Nut		Thread: M14			
-	Kit, Pump housing			95131716	1	pcs
-	6 Pump housing				1	
26	Staybolt		Length (mm): 40 Thread: M10			
45b	Wear ring					
20	Pipe plug		Thread: R 3/8		2	
36	Nut		Thread: M10		6	
-	Kit, Stub shaft			96039354	1	pcs
9	Socket set screw		Length (mm): 10 Thread: M8		2	
11	Parallel key		Dimension: 6X6X35		1	
51	Pump shaft				1	
66a	Spring lock washer				1	
66	Washer				1	
67	Nut		Thread: M14		1	
-	Spare, O-ring			97757659	1	pcs
72a	O-ring				1	
-	Spare, Plug vent			98164277	1	pcs
18	Plug				1	
-	Spare, Shaft seal			98434904	1	pcs
105	Shaft seal				1	
-	Spare, Wear ring			99208819	1	pcs
45	Wear ring				1	
-	Motor				1	pcs
-	Kit, Ball bearing			98881522	1	
111	Ball bearing					
154	Ball bearing					



Company name: Pump Sales Direct

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Phone:

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Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
156d	Seal ring					
156c	Seal ring					
158	Waved washer					
-	Kit, Blanking plug			99052476	1	
252b	Blind plug					
252b	Plug cpl.					
-	Kit, Cable gland			98736115	1	
293	Cable glands set					
-	Kit, Connector plugs			98403113	1	
266	Connector plug 10-pole					
266	Connector plug 2-pole					
266	Connector plug 8-pole					
266	Connector plug 8-pole					
266	Connector plug 8-pole					
266	Connector plug 3-pole					
266	Connector plug 3-pole					
266	Connector plug 3-pole					
-	Kit, Control box			98878620	1	
251d	Pan head thread forming screw					
251b	Control box					
251a	Control box cpl.					
252b	Blind plug					
252b	Plug cpl.					
266	Connector plug 10-pole					
266	Connector plug 8-pole					
266	Connector plug 8-pole					
266	Connector plug 8-pole					
266	Connector plug 3-pole					
266	Connector plug 3-pole					
266	Connector plug 3-pole					
268a	Base					
268	Pan head screw					
273b	Battery					
273a	Cross recess Pan head screw					
273	Funct. Module cpl.					
275a	Pin					
277b	Spring					
277a	Cross recess Pan head screw					
277	Cover					
286	Spacer					
287	Cover					
288b	Retaining ring					
288a	Pan head thread forming screw					
288	Wire clamp					
289a	Pan head thread forming screw					
289	Wire clamp					
290	Control panel, cpl.					
301	Jumper					
-	Kit, Control box upper			98869871	1	
251b	Pan head thread forming screw					
251b	Control box					
-	Kit, Control panel			98939971	1	
290	Control panel, cpl.					
-	Kit, Cover			98330622	1	
287	Cover					
-	Kit, End shield (NDE)			98869886	1	
150b	O-ring					
156c	Gamma ring					



Company name: Pump Sales Direct

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Phone:

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Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
156c	Seal ring					
156a	End shield NDE					
158	Waved washer					
200a	Grease nipple					
206	Pan head thread forming screw					
206	Hex socket head cap screw					
207b	Nut					
-	Kit, Fan			98869879	1	
152	Pan head thread forming screw					
156c	Seal ring					
156	Fan					
-	Kit, Fan cover			98869873	1	
151	Fan cover					
152	Pan head thread forming screw					
-	Kit, Flange (DE)			98869906	1	
	Glue					
150b	O-ring					
155a	Bearing cover					
156c	Seal ring					
156b	Flange					
185	Hex socket head cap screw					
201c	Drain plug					
201b	Blind plug					
201a	Grease nipple					
208b	Nut					
208a	Gasket					
208	Hex socket head cap screw		Designation: DIN912			
			Length (mm): 40			
			Thread: M5			
-	Kit, Foot			98962891	1	
152	Pan head thread forming screw					
191	Foot					
-	Kit, Funct. module			98334777	1	
273a	Cross recess Pan head screw					
273	Funct. Module cpl.					
275a	Pin					
286	Spacer					
-	Kit, Isolation cover			98859523	1	
277b	Spring					
277a	Cross recess Pan head screw					
277	Cover					
-	Kit, Lower part cpl.			98859573	1	
178	Pan head thread forming screw					
251a	Control box cpl.					
275a	Pin					
277a	Cross recess Pan head screw					
277	Cover					
-	Kit, Motor			99010814	1	
	Hex socket head cap screw					
	Terminal					
	Washer					
111	Ball bearing					
150b	O-ring					
150	Stator w/housing					
151	Fan cover					
152	Pan head thread forming screw					
152	Pan head thread forming screw					
152	Pan head thread forming screw					



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Pos	Description	Annotation	Classification Data	Part no.	Qty.	Unit
154	Ball bearing					
155a	Bearing cover					
156d	Seal ring					
156c	Seal ring					
156b	Flange					
156	Fan					
158	Waved washer					
172a	Parallel key		Designation: DS96 DIN 6885 Dimension: 12X8X90			
172	Shaft w/rotor					
185	Hex socket head cap screw					
187	Retaining ring					
191	Foot					
201c	Drain plug					
203	Terminal plug					
205	Gasket					
206	Hex socket head cap screw					
207b	Nut					
208b	Nut					
208a	Gasket					
208	Hex socket head cap screw		Designation: DIN912 Length (mm): 40 Thread: M5			
-	Kit, Plug			99028677	1	
152	Pan head thread forming screw					
203	Terminal plug					
205	Gasket					
-	Kit, Screws			99028725	1	
268a	Base					
268	Pan head screw					
288b	Retaining ring					
288a	Pan head thread forming screw					
288	Wire clamp					
289a	Pan head thread forming screw					
289	Wire clamp					
	Lifting device			99140040	2	
99a	Retaining ring			99946400	1	
152	Pan head thread forming screw			99834207	4	
152	Pan head thread forming screw			99814578	4	
186	Drain plug			99980519	4	
251d	Pan head thread forming screw			98995460	4	
266	Connector plug 3-pole			99421265	1	
49	Impeller			98296676	1	pcs