GRUNDFOS LENNTECH

GRUNDFOS **DATA BOOKLET**

NKE80-250/225A1F2AE-SBQQE

Grundfos pump 99099009



Thank you for your interest in our products. Please contact us for more information, or visit our website

https://www.lenntech.com/grundfos/NKEBASIS/99099009/NKE-80-250-225-A1-F-A-E-BQQE.html

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Position	Qty.	Description
	1	**NKE 80-250/225 A1-F-A-E-BQQE**



Product No.: On request

Non-self-priming, single-stage, centrifugal volute pump designed according to ISO 5199 with dimensions and rated performance according to EN 733. Flanges are PN 16 with dimensions according to EN 1092-2. The pump has an axial suction port, a radial discharge port and horizontal shaft. It is of the back pull-out design enabling removal of the motor, coupling, bearing bracket and impeller without disturbing the pump housing or pipework.

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

The pump is fitted with a foot-mounted, fan-cooled, permanent-magnet synchronous motor. Pump and motor are mounted on a common base frame.

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.

Further product details

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.

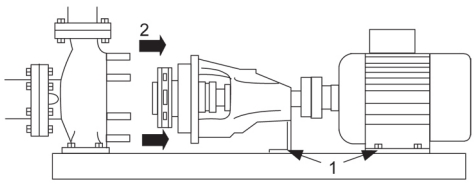
An operating panel on the motor terminal box enables setting of required setpoint as well as setting of pump to "Min." or "Max." operation or to "Stop". The Grundfos Eye indicator on the operating panel provides visual indication of pump status:

- "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 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".

Pump and motor are mounted on a common steel base frame in accordance with ISO 3661. The back pull-out design makes it possible to make service on the pump when the pump housing is still connected to the inlet and discharge pipes.

1) Remove the bolts in the bearing bracket support foot and motor foot.
2) Remove the bearing bracket and the motor from the pump housing.



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. 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.

Position	Qty.	Description

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

Pump

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.

Wear rings used in pump housing and for impeller are made of bronze/brass or cast iron.

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.

Primary seal:

- Rotating seal ring material: silicon carbide (SiC)
- Stationary seat material: silicon carbide (SiC)

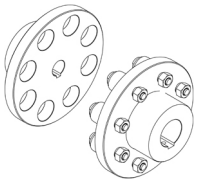
This material pairing is used where higher corrosion resistance is required. The high hardness of this material pairing offers good resistance against abrasive particles.

Secondary seal material: EPDM (ethylene-propylene rubber)

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

The shaft is made of stainless steel and has a diameter of 32 mm where the coupling is mounted.

The pump uses a standard coupling between the pump and motor shaft.



Motor

The motor is a totally enclosed, fan-cooled motor with principal dimensions to IEC and DIN standards and mounting designation B3 (IM 1001). Electrical tolerances comply with IEC 60034.

The motor efficiency is classified as IE5 in accordance with IEC 60034-30-2.

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.

The terminal box holds terminals for these connections:

- 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.

Technical data

Liquid:

Pumped liquid:	Water
Liquid temperature range:	-25 .. 120 °C
Liquid temperature during operation:	20 °C
Density:	998.2 kg/m³

Technical:

Rated flow:	91.3 m³/h
Rated head:	15.3 m
Actual impeller diameter:	225 mm
Impeller nom:	250 mm
Primary shaft seal:	BQQE
Secondary shaft seal:	NONE
Curve tolerance:	ISO9906:2012 3B

Position	Qty.	Description

Materials:

Pump housing:	Cast iron EN-GJL-250 ASTM A48-40 B
Impeller:	Cast iron EN-GJL-200 ASTM A48-30 B
Rubber:	EPDM
Wear ring mat.:	High alloy brass(CuZn34Mn3AI2

Installation:

Maximum ambient temperature:	50 °C
Maximum operating pressure:	16 bar
Flange standard:	EN 1092-2
Pump inlet:	DN 100
Pump outlet:	DN 80
Pressure rating:	PN 16
Coupling type:	Standard
Base frame:	EN / ISO

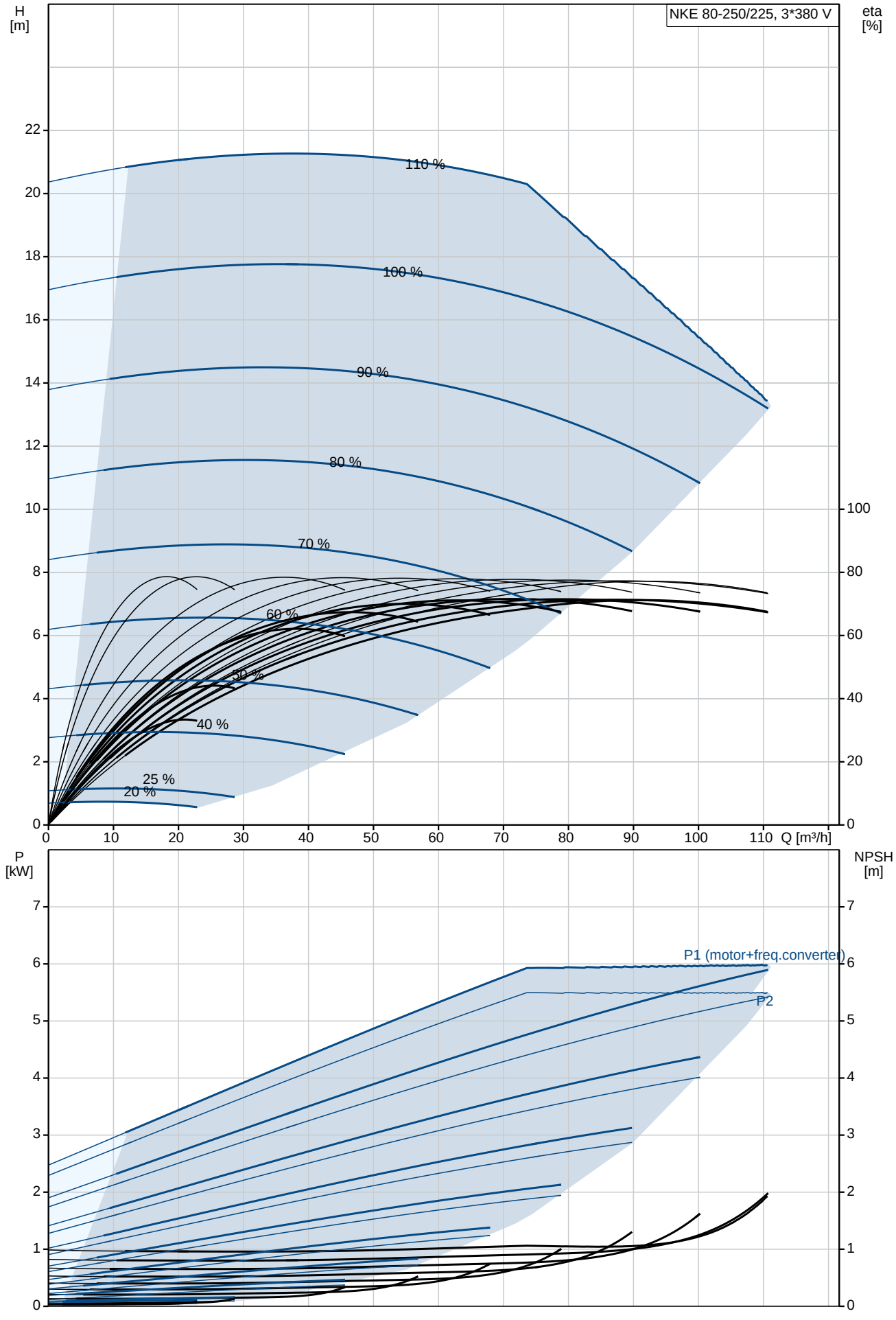
Electrical data:

Motor type:	132SG
IE Efficiency class:	IE5
Rated power - P2:	5.5 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-500 V
Rated current:	10.5-8.40 A
Cos phi - power factor:	0.92-0.88
Rated speed:	180-2200 rpm
Efficiency:	91.9%
Motor efficiency at full load:	91.9 %
Number of poles:	4
Enclosure class (IEC 34-5):	IP55
Insulation class (IEC 85):	F
Lubricant type:	Grease

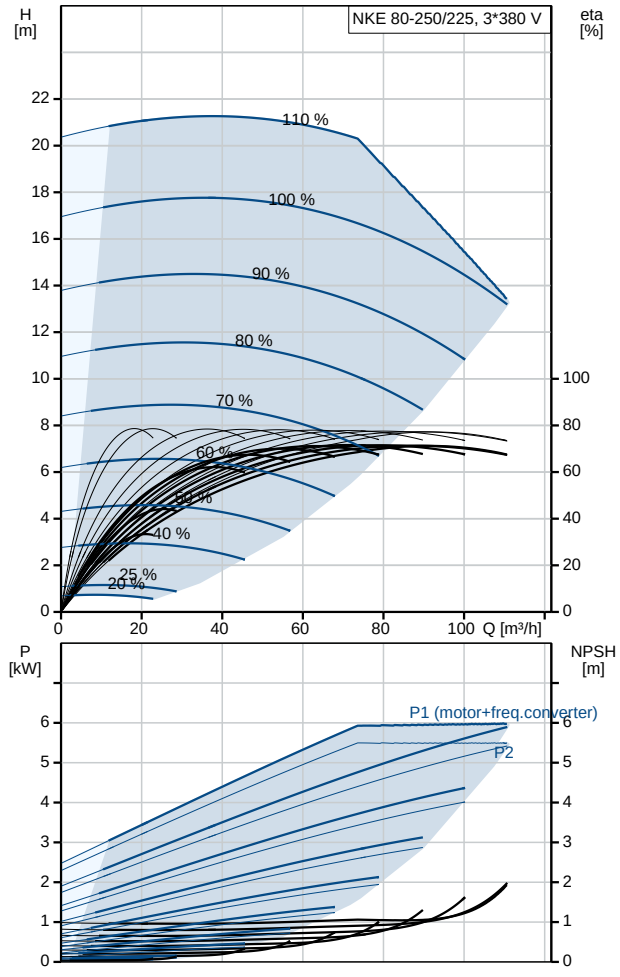
Others:

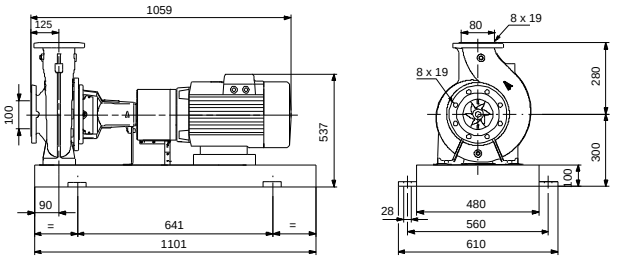
Minimum efficiency index, MEI ≥:	0.70
ErP status:	EuP Standalone/Prod.
Net weight:	268 kg
Gross weight:	295 kg
Shipping volume:	0.717 m³

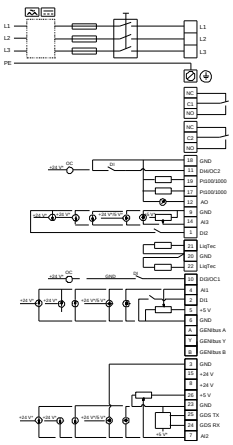
On request NKE 80-250/225 A1-F-A-E-BQQE 50 Hz



Description	Value
General information:	
Product name:	NKE 80-250/225 A1-F-A-E-BQQE
Product No:	On request
EAN number:	On request
Technical:	
Rated flow:	91.3 m³/h
Rated head:	15.3 m
Actual impeller diameter:	225 mm
Impeller nom:	250 mm
Primary shaft seal:	BQQE
Secondary shaft seal:	NONE
Shaft diameter:	32 mm
Curve tolerance:	ISO9906:2012 3B
Pump version:	A1
Materials:	
Pump housing:	Cast iron
	EN-GJL-250
	ASTM A48-40 B
Impeller:	Cast iron
	EN-GJL-200
	ASTM A48-30 B
Material code:	A
Rubber:	EPDM
Code for rubber:	E
Wear ring mat.:	High alloy brass(CuZn34Mn3Al2
Installation:	
Maximum ambient temperature:	50 °C
Maximum operating pressure:	16 bar
Flange standard:	EN 1092-2
Pump inlet:	DN 100
Pump outlet:	DN 80
Pressure rating:	PN 16
Coupling type:	Standard
Wear ring(s):	neckring(s)
Base frame:	EN / ISO
Connect code:	F
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-25 .. 120 °C
Liquid temperature during operation:	20 °C
Density:	998.2 kg/m³
Electrical data:	
Motor type:	132SG
IE Efficiency class:	IE5
Rated power - P2:	5.5 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-500 V
Rated current:	10.5-8.40 A
Cos phi - power factor:	0.92-0.88
Rated speed:	180-2200 rpm
Efficiency:	91.9%
Motor efficiency at full load:	91.9 %
Number of poles:	4
Enclosure class (IEC 34-5):	IP55
Insulation class (IEC 85):	F
Motor protec:	YES
Motor No:	99305893
Lubricant type:	Grease
Controls:	
Control panel:	HMI300 - Advanced
Function Module:	FM300 - Advanced
Others:	

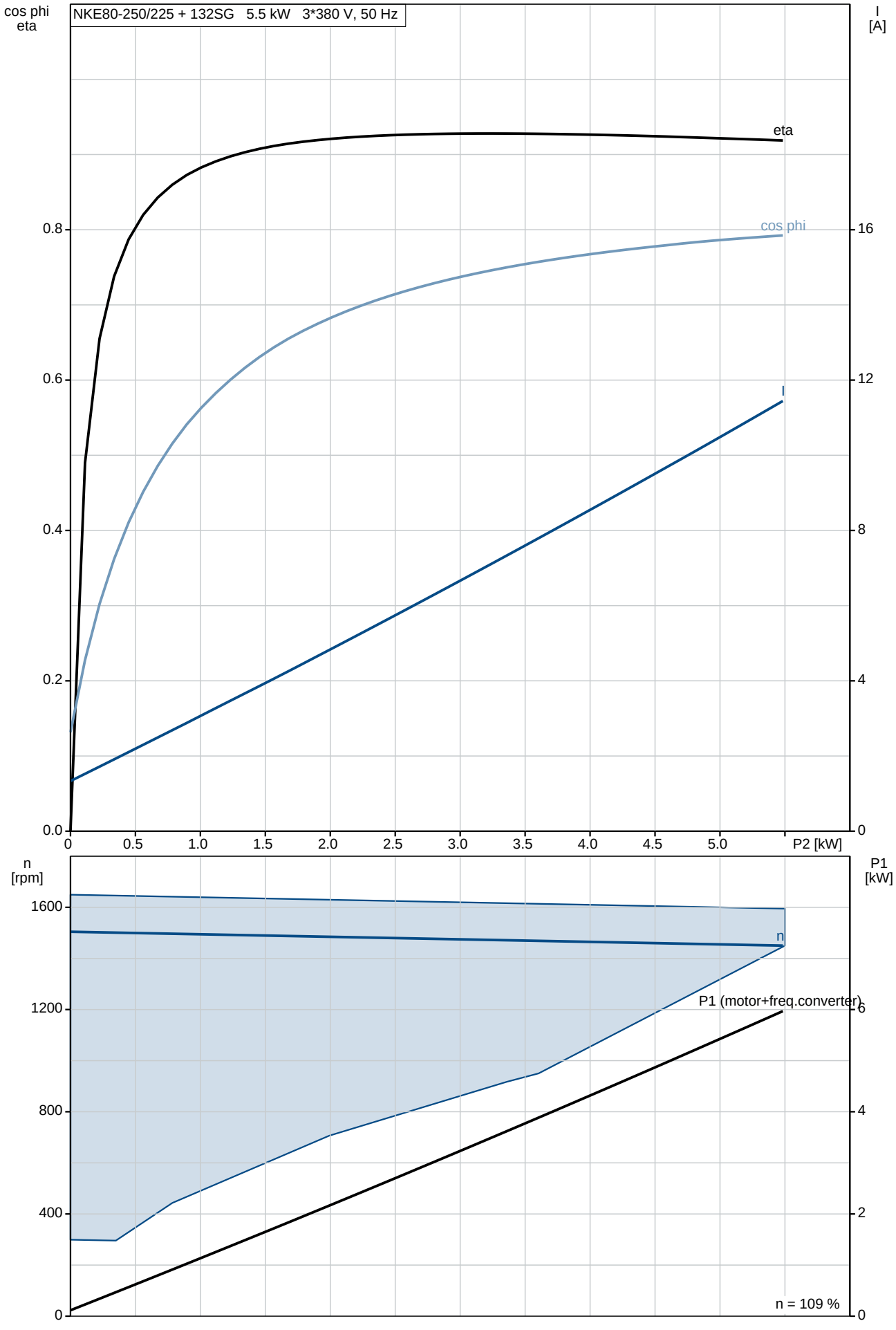




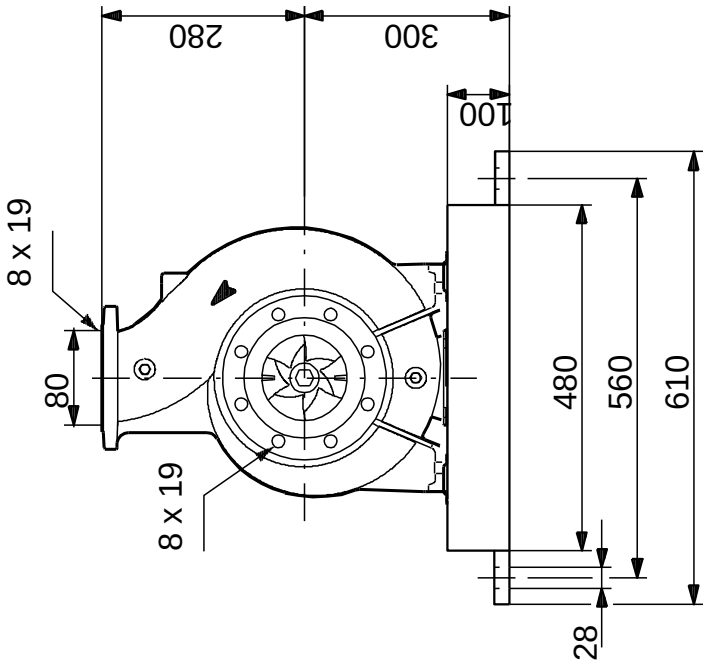


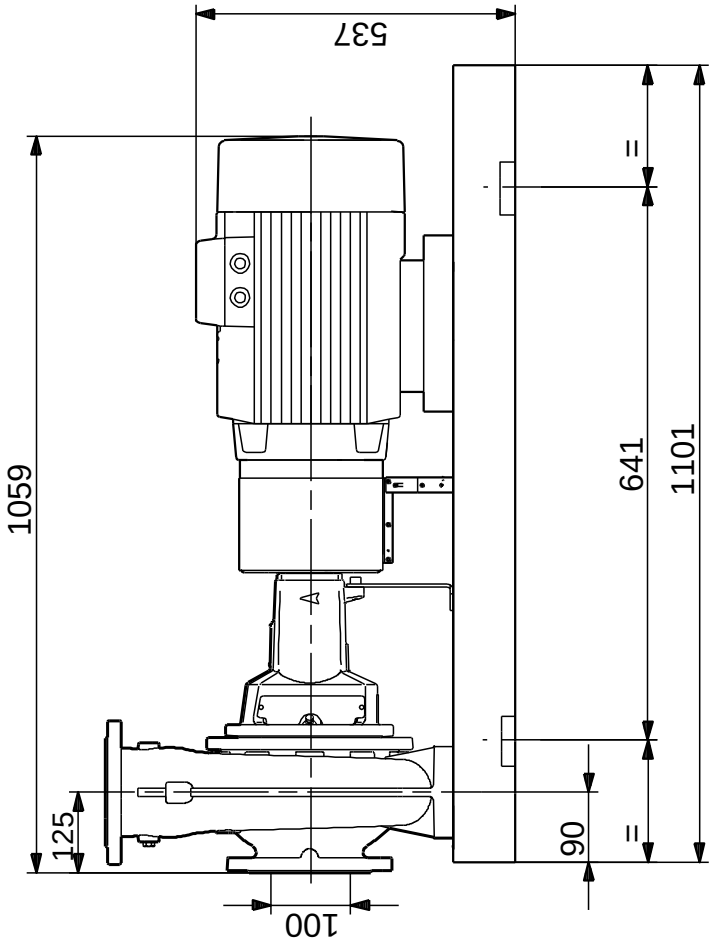
Description	Value
Minimum efficiency index, MEI ≥:	0.70
ErP status:	EuP Standalone/Prod.
Net weight:	268 kg
Gross weight:	295 kg
Shipping volume:	0.717 m³
Config. file no:	99100732

On request NKE 80-250/225 A1-F-A-E-BQQE 50 Hz



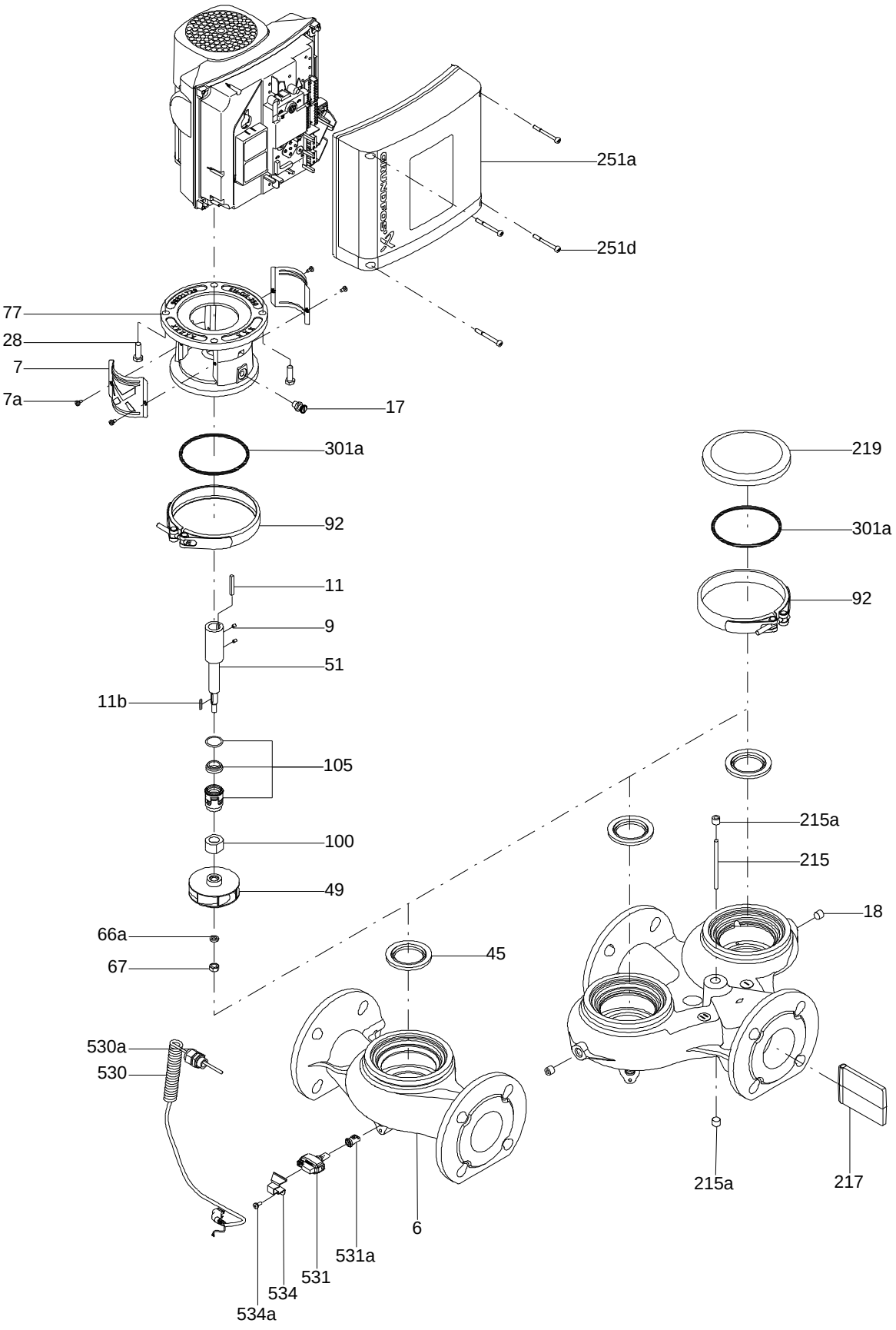
On request NKE 80-250/225 A1-F-A-E-BQQE 50 Hz



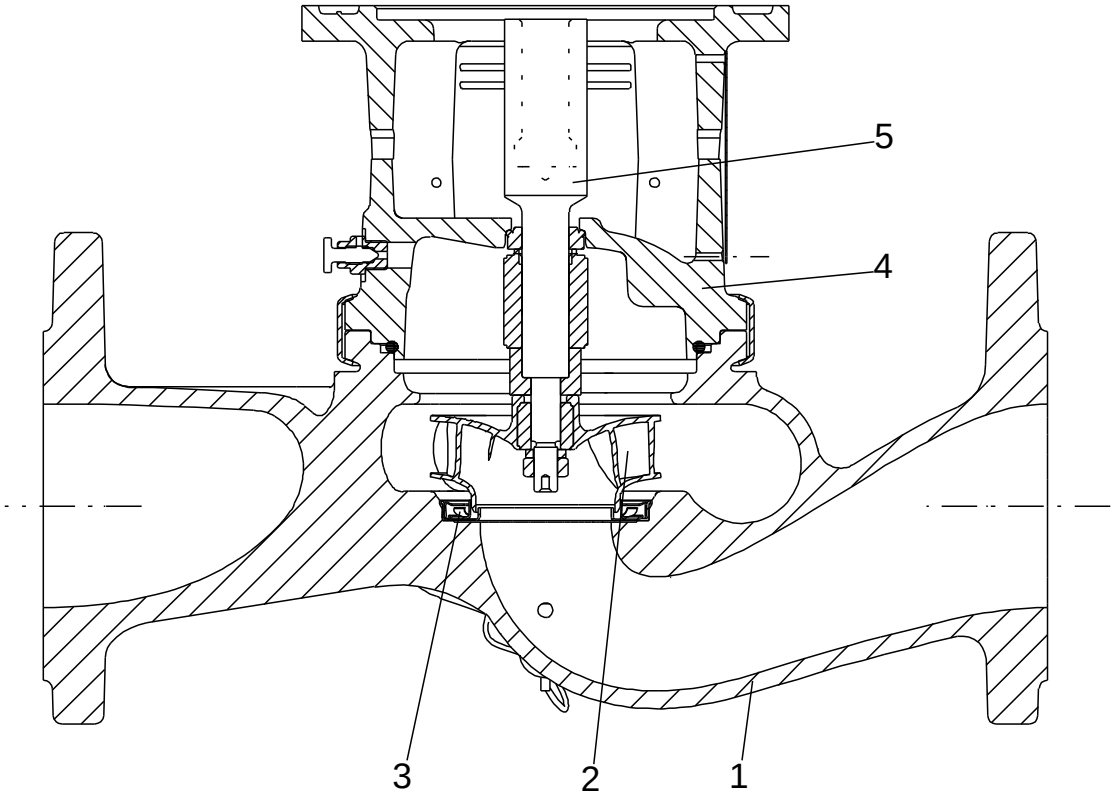


Note! All units are in [mm] unless others are stated.
Disclaimer: This simplified dimensional drawing does not show all details.

Exploded view

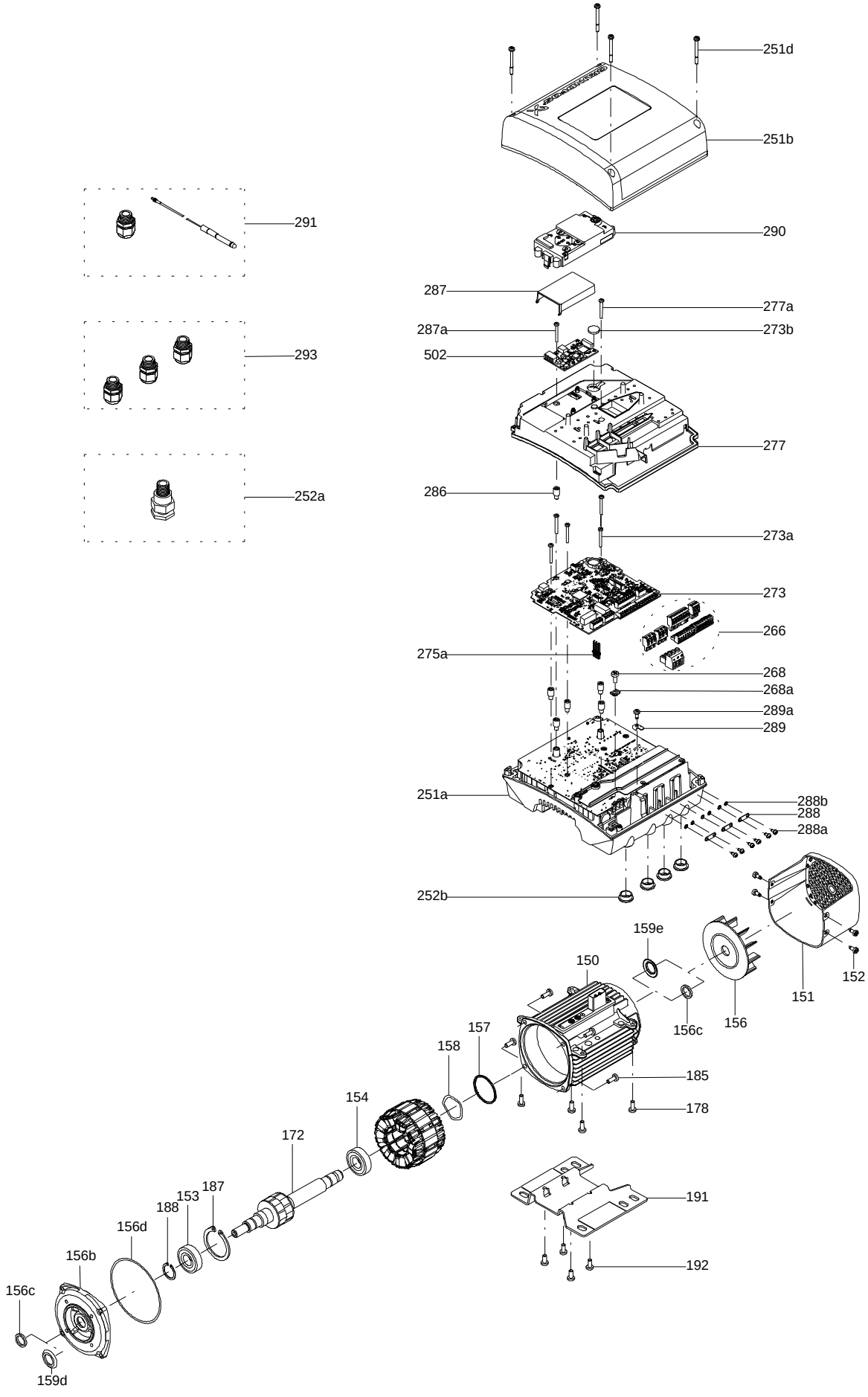


Sectional drawing (TM058200 for TPE2,TPE3)



TM058200

Exploded view (TM057026 for MGE model H/I)



Parts list NKE 80-250/225, Product No. On request
Valid from 1.3.2010 (1009)

	Pos	Description	Annotation	Données de classification	Référence	Quantité	Unité
+		Motor				1	pcs
-		Coupling cpl.				1	pcs
-		Bolt				8	
-		Bolt				1	
	89d	Bolt					
	89e	Nut					
	89f	Washer		Internal diameter: 14,5			
				Outer diameter: 25			
	89g	Spring lock washer					
	89q	Washer		Internal diameter: 16,5			
				Outer diameter: 25,0			
	89	Rubber blocks for coupling				1	
	89.o	Connector				1	
	89.p	Coupling female				1	
	89a	Socket set screw				2	
	89b	Socket set screw				2	
-		Nut				1	pcs
	66	Washer		Designation: DIN 125 A2		1	
				Internal diameter: 19			
				Outer diameter: 34			
				Thickness: 3			
	66a	Spring lock washer				1	
	67	Nut		Thread: M18		1	
-		Pump housing cpl.				1	pcs
	6	Pump housing				1	
	66a	Nut		Thread: M12		10	
-	7	Coupling guard cpl.				1	pcs
-	7	Coupling guard cpl.				1	
	7	Coupling guard				1	
	7c	Spacer f/coupling guard				1	
	7e	Hex socket head cap screw				3	
	94	Lock nut		Thread: M6		2	
	7b	Retainer for coupling guard				1	
	7k	Hex socket head cap screw		Length (mm): 10		4	
				Thread: M6			
-	7.d	Foot for coupling guard				1	pcs
	7d	Foot for coupling guard				1	
	7h	Hex socket head cap screw				2	
	7l	Support f/coupling guard foot				1	
	49	Impeller				1	pcs
	72.a	O-ring		Diameter: 278,99		1	pcs
				Material type: EPDM			
				Thickness: 3,53			
-	77	Cover cpl.				1	pcs
	36	Nut		Thread: M10		8	
	77	Cover				1	
-	86	Bearing bracket				1	pcs
	28a	Hex head screw		Length (mm): 25		1	
				Thread: M12			
	53.b	Spacer ring				1	
	54	Ball bearing				2	
	54a	O-ring		Diameter: 89,5		2	
				Material type: EPDM			
				Thickness: 3			
	77a	Pan head screw				4	
	86	Bearing bracket				1	
	153a	Retaining ring				2	
	156a	Bearing cover				2	
	159a	V-ring				2	

	Pos	Description	Annotation	Données de classification	Référence	Quantité	Unité
-	90	Base plate				1	pcs
		Hex head screw				4	
		Washer				4	
		Washer				4	
		Base plate				1	
		Support rail				2	
		Support block				2	
		Support block				2	
	7h	Hex head screw		Length (mm): 16		2	
				Thread: M8			
	28	Hex head screw				4	
	28a	Hex head screw		Length (mm): 25		2	
				Thread: M12			
	66	Washer				2	
	66	Washer				2	
	105	Shaft seal				1	pcs
	105b	Spacer				1	pcs

Disclaimer: The information about the Grundfos pump in this document may be outdated.
Data may be subject to alterations without further notice.
Please contact us to verify the data above is still accurate/up-to-date.

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