

MGE model F

Service instructions



Original service instructions

CONTENTS

	Page
1. General information	2
1.1 Hazard statements	2
1.2 Notes	2
1.3 Scope of delivery	3
1.4 Safety details to be aware of when working on the product	3
2. Identification	4
2.1 Nameplates	4
2.2 Type key	5
2.3 Configuration	6
3. General description	6
3.1 Wiring diagrams and signal terminals	7
3.2 Control panel	8
3.3 Indicator lights	8
4. Fault finding	9
4.1 Safety instructions	9
4.2 Fault finding procedure	9
4.3 Operating conditions	9
4.4 PC Tool E-products as service tool	10
4.5 Fault observations	10
4.6 Fault finding using the indicator lights on the control panel	11
4.7 Fault finding using alarm and warning codes	15
5. Maintenance	19
5.1 Lubrication of motor bearings	19
5.2 Replacement of motor bearings	20
6. Emergency operation (bypass)	22
6.1 Establishing emergency operation	23
6.2 Re-establishment of frequency converter operation	24
7. Drawings and diagrams	25
8. Tightening torques and lubrication	28
8.1 Tightening torques	28
8.2 Lubricating intervals and grease	28
9. Service tools	29



Read this document before starting service work on the product. Installation and service work must comply with local regulations and accepted codes of good practice.

Observe the safety instructions in the installation and operating instructions for the product.

1. General information

1.1 Hazard statements

The symbols and hazard statements below may appear in Grundfos installation and operating instructions, safety instructions and service instructions.

**DANGER**

Indicates a hazardous situation which, if not avoided, will result in death or serious personal injury.

**WARNING**

Indicates a hazardous situation which, if not avoided, could result in death or serious personal injury.

**CAUTION**

Indicates a hazardous situation which, if not avoided, could result in minor or moderate personal injury.

The hazard statements are structured in the following way:

**SIGNAL WORD****Description of hazard**

Consequence of ignoring the warning.
- Action to avoid the hazard.

1.2 Notes

The symbols and notes below may appear in Grundfos installation and operating instructions, safety instructions and service instructions.



Observe these instructions for explosion-proof products.



A blue or grey circle with a white graphical symbol indicates that an action must be taken.



A red or grey circle with a diagonal bar, possibly with a black graphical symbol, indicates that an action must not be taken or must be stopped.



If these instructions are not observed, it may result in malfunction or damage to the equipment.



Tips and advice that make the work easier.

1.3 Scope of delivery

These service instructions describe fault finding of pumps with Grundfos motors, type MGE model F (hereafter called MGE-F).

If the fault cannot be remedied by means of these instructions, or you require spare parts or technical assistance, contact your nearest Grundfos partner or company. See the back of these service instructions.

State the following information when you contact Grundfos to get help for fault finding:

- nameplate data of the pump the MGE-F is fitted to
- nameplate data of the MGE-F
- status of indicator lights on the control panel
- any alarm or warning and the corresponding fault code read with Grundfos GO Remote.

These service instructions are published on Grundfos Product Center.



These service instructions apply only for the MGE-F and its user interfaces (control panel, Grundfos GO Remote and PC Tool E-products). If the application includes other Grundfos products or systems, refer to the service instructions of those products.

1.4 Safety details to be aware of when working on the product

WARNING

Electric shock

Death or serious personal injury

- Before starting any work on the product, make sure that the power supply is switched off and that it cannot be accidentally switched on.
- Wait 30 minutes before doing any work inside the product.
- Make sure that the mains cover is fitted in MGE-F if you perform service work where fault finding with power on and/or with connection to PC Tool Link is needed. Turn off power and wait for the control box to be de-energised before you check whether the mains cover is fitted. If the mains cover is missing, you can order it by part number 99926860.
- Installation, commissioning, service, and maintenance of equipment, systems, and circuits may only be performed by Grundfos service technicians or a Grundfos Authorised Service Partner (ASP) who have attended training equivalent to Grundfos Electronics Service Expert (GESE) or similar.
- Always observe local applicable safety regulation.



WARNING

Electric shock

Death or serious personal injury

- Due to the capacitors of MGE-F, touching live electrical parts may be fatal, even after the mains supply has been disconnected. Disconnect the mains supply, and wait at least 30 minutes or the amount of time stated on the warning label under the terminal box cover before touching any live parts.
- Note that the relay may be connected to an external power supply and still be live after the mains supply to the motor has been disconnected.



2. Identification

2.1 Nameplates

The MGE-F nameplate (fig. 1) is fitted on the side of the terminal box (fig. 2).

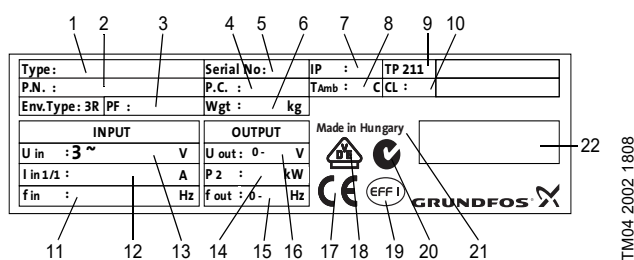


Fig. 1 Nameplate for MGE-F, efficiency 1 motor

TM04 2002 1808

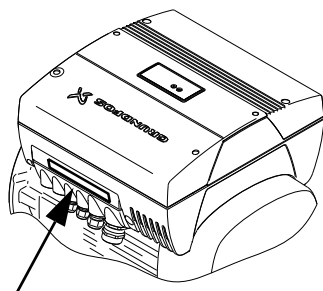


Fig. 2 Position of nameplate

TM04 2399 2508

Pos.	Description	Pos.	Description
1	Type designation	12	Max. supply current at min. and max. supply voltage
2	Product number	13	Supply voltage
3	Power factor	14	Rated power
4	Production code, year/week	15	Output frequency
5	Serial number	16	Output voltage
6	Weight	17	CE mark
7	Enclosure class according to IEC 34-5	18	VDE mark
8	Maximum ambient temperature	19	Standard motor efficiency according to CEMEP
9	Motor protection according to IEC 34-11	20	C-Tick mark
10	Insulation class according to IEC 62114	21	Country of manufacture
11	Frequency	22	Bar code

The motor nameplates (fig. 3) are fitted under the terminal box (fig. 4).

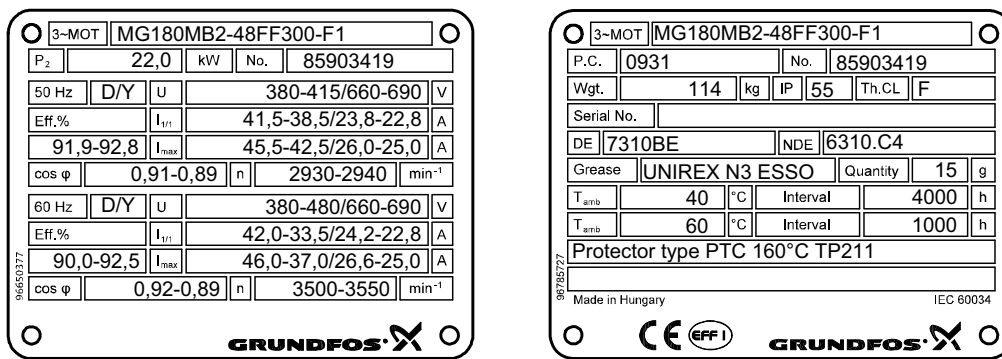
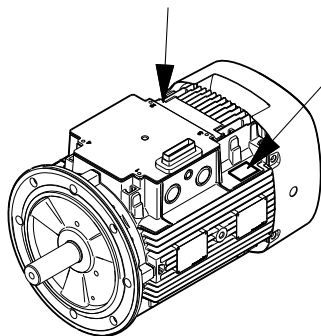


Fig. 3 Nameplates for standard motors with CE and UL approvals



TM04 2843 3208

Fig. 4 Position of motor nameplates

2.2 Type key

Example	MG	E	160	M	D	2-	42	FF	300	-F	1
Motor Grundfos											
Electronically controlled											
Frame size according to IEC (centre line height of shaft of foot motor) [mm]											
160											
180											
Size of foot											
M											
L											
Length of stator core											
B											
D											
Number of poles											
2											
4											
Diameter of shaft end [mm]											
Flange version											
FF (free-hole flange)											
Pitch circle diameter, flange version [mm]											
Model designation for motor											
F											
Efficiency class for standard motor											
[] = not stated											
1 = IE2 motor											
2 = IE3 motor											

TM04 3051 3508

2.3 Configuration

The terminal box is configured from factory for the application and the pump type the motor is to be used for. The configuration file number appears from the terminal box configuration label which is placed inside the terminal box on the frame of the control panel. See figs 5 and 6.



Fig. 5 Configuration label

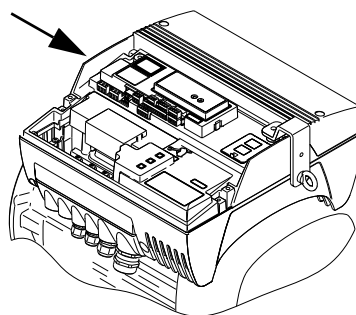


Fig. 6 Position of configuration label

If the terminal box is replaced or mounted on another motor, it must be reconfigured. Contact Grundfos Service.

TM04 2305 2308

TM04 2400 2508

3. General description

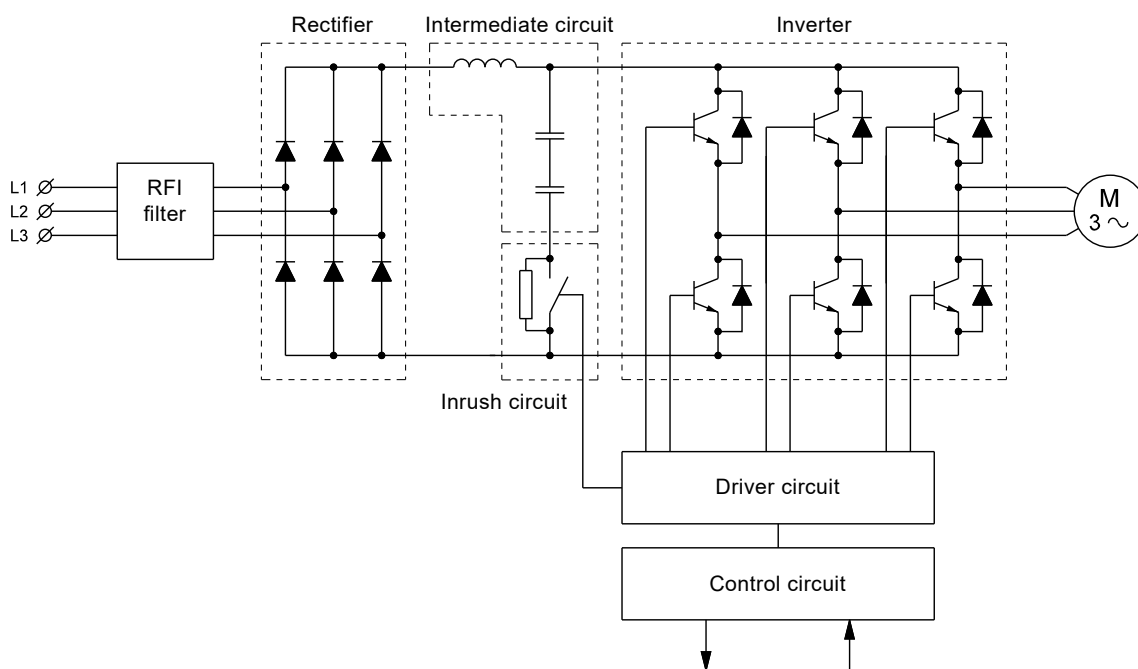


Fig. 7 Block diagram showing the functional blocks of the frequency converter

TM00 8679 4206

3.1 Wiring diagrams and signal terminals

The wiring diagram and the signal terminals depend on the pump application. Figures 8 to 11 are examples of the different functional modules available. Refer to the figure corresponding to the functional module fitted.

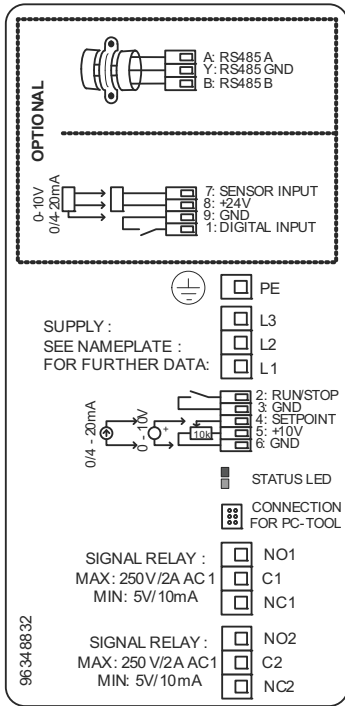


Fig. 8 I/O module and GENIbus

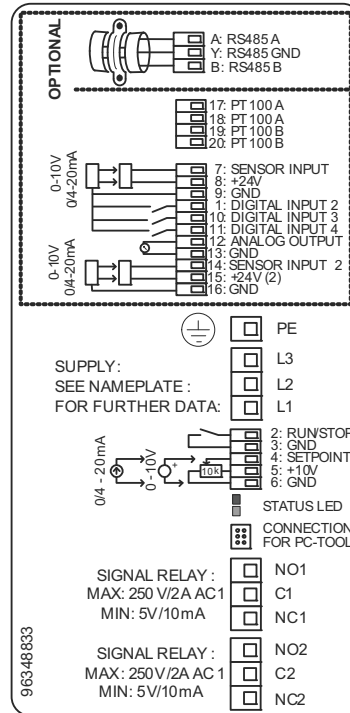


Fig. 9 Extended I/O module and GENIbus

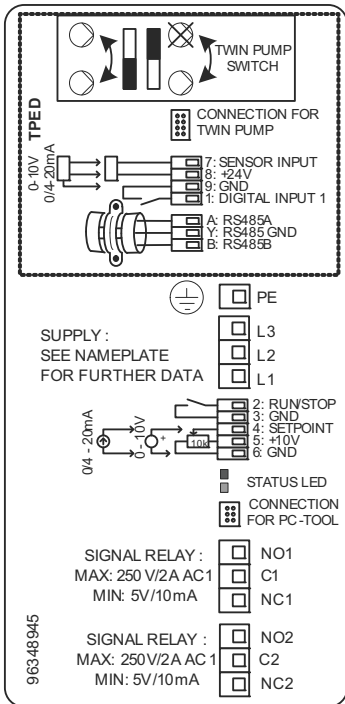


Fig. 10 TPED module

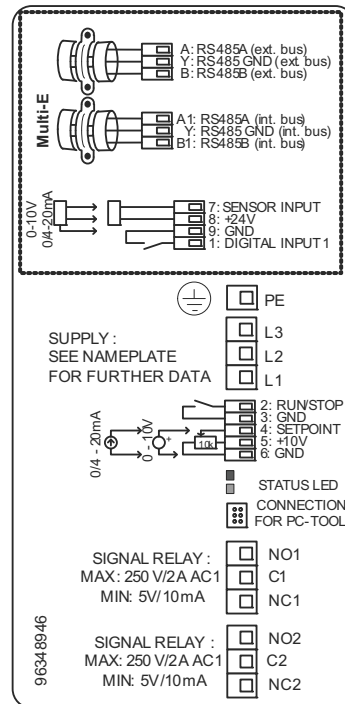


Fig. 11 Multi-E module

TM04 2072 1908

TM04 2071 1908

TM04 2074 1908

TM04 2073 1908

3.2 Control panel

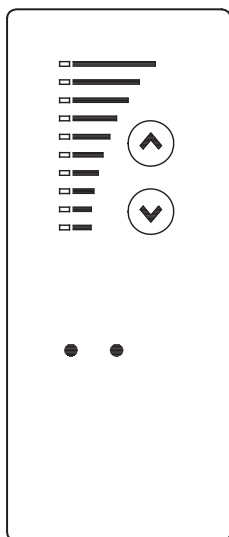


Fig. 12 CRE and TPE, TPED

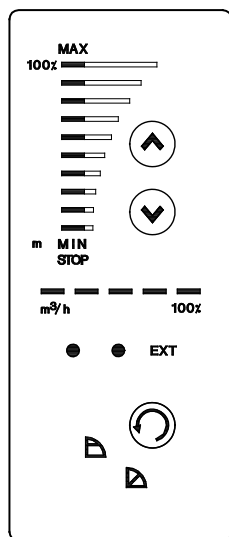


Fig. 13 TPE, TPED Series 2000

3.2.1 Operation

The motor control panel has the following buttons and indicator lights:

- Buttons Ⓢ and Ⓣ for setting of setpoint.
- Light fields, yellow, for indication of setpoint.
- Indicator lights, green (operation) and red (fault).

Switch control mode by pressing Ⓢ in this sequence:

- constant pressure, ▢
- proportional pressure, ▣.

Set the pump head by pressing Ⓢ or Ⓣ.

The light fields of the control panel will indicate the set head (setpoint).

3.3 Indicator lights

WARNING

Electric shock

Death or serious personal injury



- Make sure that the mains cover is fitted in MGE-F if you perform service work where fault finding with power on and/or with connection to PC Tool Link is needed. Turn off power and wait for the control box to be de-energised before you check whether the mains cover is fitted. If the mains cover is missing, you can order it by part number 99926860.

3.3.1 Indicator lights on the control panel

The indicator lights on the control panel show the MGE-F motor's operating and alarm condition.

See section 4.6 *Fault finding using the indicator lights on the control panel* to get an overview of the meaning of the indicator lights.

3.3.2 Indicator lights inside the terminal box

The indicator lights beside the terminal block on the control board normally have the same functions as the indicator lights on the control panel. See fig. 14.



In case of certain faults in the electronics, the indicator lights on the control panel may indicate differently from the indicator lights on the control board. In these cases, the indicator lights on the control board indicate the current operating and alarm condition.



Indicator lights for operation and alarm on the control panel

Fig. 14 Indicator lights inside the terminal box

See section 4.6 *Fault finding using the indicator lights on the control panel* to get an overview of the meaning of the indicator lights.

TM02 8513 0304

TM03 0126 4104

TM04 2569 4620

4. Fault finding

4.1 Safety instructions

WARNING

Electric shock

Death or serious personal injury

- Due to the capacitors of MGE-F, touching live electrical parts may be fatal, even after the mains supply has been disconnected. Disconnect the mains supply, and wait at least 30 minutes or the amount of time stated on the warning label under the terminal box cover before touching any live parts.
- Make sure that the mains cover is fitted in MGE-F if you perform service work where fault finding with power on and/or with connection to PC Tool Link is needed. Turn off power and wait for the control box to be de-energised before you check whether the mains cover is fitted. If the mains cover is missing, you can order it by part number 99926860.
- Note that the relay may be connected to an external power supply and still be live after the mains supply to the motor has been disconnected.
- Installation, commissioning, service, and maintenance of equipment, systems, and circuits may only be performed by Grundfos service technicians or a Grundfos Authorised Service Partner (ASP) who have attended training equivalent to Grundfos Electronics Service Expert (GESE) or similar.
- Always observe local applicable safety regulation.



CAUTION

Hot surface

Minor or moderate personal injury

- MGE-F may be hot.



4.2 Fault finding procedure

Fault finding is based on these sections in this order:

- [4.3 Operating conditions](#)
- [4.5 Fault observations](#)
- [4.6 Fault finding using the indicator lights on the control panel](#)
- [4.7 Fault finding using alarm and warning codes](#)
- [8. Tightening torques and lubrication.](#)

The necessary tools for the fault finding can be seen in section [9. Service tools](#).

4.3 Operating conditions

Correct functioning of the MGE-F depends on these points:

Mains supply

- Check nameplate data, and measure the actual supply voltage with a digital voltmeter (true RMS).
- Check the earth leakage circuit breaker and the backup fuses. The MGE-F has no internal fuses.

Pump and motor load

- Check nameplate data, and measure the actual current consumption with a digital amperemeter (true RMS). Do the pump and the MGE-F match?

External signals, for instance from another controller

- Check that the external signals are suitable for the MGE-F. See section [3.1 Wiring diagrams and signal terminals](#) and installation and operating instructions for MGE 160 and MGE 180.
- Check that terminals 2 and 3 are connected and that the MGE-F has been started via the control panel.

Sensors connected

- Check that the sensor measuring range matches the pump application.
- Check that the settings of the MGE-F match the sensors (current, voltage, minimum and maximum values).

Condensation

- Check whether condensation occurs in the terminal box. This may happen if the ambient temperature becomes very low. The problem may be overcome by enabling the standstill heating function and by removing the drain plug in the motor. See installation and operating instructions for MGE 160 and MGE 180.

Electromagnetic disturbances

- Check that the wiring complies with the EMC Directive. See installation and operating instructions for MGE 160 and MGE 180.

Start-up, installation and operating settings via the control panel or Grundfos GO Remote

- Check that the green indicator light on the control panel (or inside the terminal box) is on.
- Check that the settings in Grundfos GO Remote match the pump application. The menu displays are described in detail in the installation and operating instructions for MGE 160 and MGE 180.

If the above points are according to the installation and operating instructions for MGE 160 and MGE 180 and the pump application, but a fault still exists and the red indicator light is on, continue the fault finding in sections [4.6 Fault finding using the indicator lights on the control panel](#) and [4.7 Fault finding using alarm and warning codes](#).

4.4 PC Tool E-products as service tool

WARNING

Electric shock

Death or serious personal injury

- When making the wiring connections for PC-Tool Link, make sure that the power is switched off and wait 30 minutes. Connect the cable through the cable glands, and mount the cover before switching on the power.
- Make sure that the mains cover is fitted in MGE-F if you perform service work where fault finding with power on and/or with connection to PC Tool Link is needed. Turn off power and wait for the control box to be de-energised before you check whether the mains cover is fitted. If the mains cover is missing, you can order it by part number 99926860.



PC Tool E-products is a software tool which enables communication with GENIbus products from a PC using Microsoft Windows.

PC Tool E-products can be used for fault correction of E-products, including the MGE-F.

4.4.1 Acquisition of PC Tool E-products

PC Tool E-products can be acquired via the Grundfos GTI database.

4.4.2 Connecting the PC Tool Link to the MGE-F

PC Tool Link is used for the physical connection between the PC and the MGE-F. PC Tool Link converts RS-485 used by the MGE-F to USB used by the PC. PC Tool Link also provides galvanic separation between the MGE-F and the PC.



Fig. 15 Example of connection of a PC to the MGE-F

4.5 Fault observations

4.5.1 Condensation in the terminal box

Description	Condensation in the terminal box.
Explanation	During standstill, the motor temperature will fall below the dew point of the surrounding air. Then the humidity in the air may condensate and settle on the surface of the terminal box.
Check/remedy	Activate <i>Standstill heating</i> .

4.6 Fault finding using the indicator lights on the control panel

The operational state of the motor incl. possible faults can be read via the indicator lights on the control panel.

If Grundfos GO Remote is available, we recommend you to start fault finding via the fault codes.

See section [4.7 Fault finding using alarm and warning codes](#).

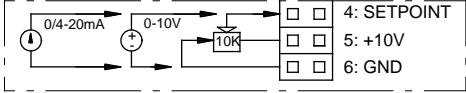
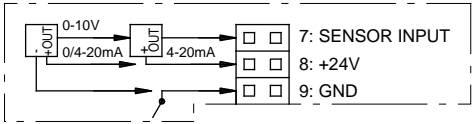
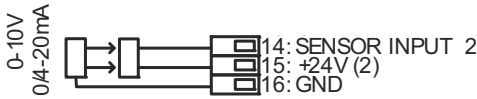


In case of certain faults in the electronics, the indicator lights on the control panel may indicate differently from the indicator lights on the control board. In these cases, the indicator lights on the control board indicate the current operating and alarm condition.

Indicator lights		Condition/cause	Remedy	
Green	Red			
On	On	Normal operation + indication of previous fault		
		1. The pump is running at normal performance. – The pump's duty/standby function has been activated, but there is no communication with the standby pump.	a) Has the power supply to the standby pump been switched off? YES: Re-establish the power supply. NO: Proceed to point b).	
			b) Has the communication cable been disconnected? YES: Check the communication cable. NO: Contact Grundfos Service.	
		2. The pump is running at maximum speed. – The sensor signal is outside the set signal range.	a) Does the sensor setting correspond to the sensor type installed? (0-10 V, 0-20 mA, 4-20 mA) NO: Correct the setting using Grundfos GO Remote or PC-Tool E-Products. YES: Proceed to point b).	
			b) Is the voltage to the sensor connection 24 VDC?	
				TM02 1606 4720
				TM04 2072 4720
		NO Replace the I/O module. YES Proceed to point c).		
		c) Is the sensor signal – below 10 V (type 0-10 V sensor)? – below 20 mA (type 0-20 mA sensor)? – between 4 and 20 mA (type 4-20 mA sensor)?		
				TM02 1604 1601
		TM04 2072 1908		
NO: Replace the sensor. YES: Proceed to point d).				
d) Has the sensor been connected correctly, and does the sensor signal correspond to the system pressure?				
NO: Connect the sensor signal correctly. YES: Replace the I/O module or the terminal box. If the sensor is defective, replace it.				

Indicator lights		Condition/cause	Remedy
Green	Red		
On	On	<p>3. The pump is running at minimum speed.</p> <ul style="list-style-type: none"> - The setpoint signal is outside the set signal range. 	<p>a) Set the pump to "open loop" operation, and connect 10 V supply to the setpoint input. Does the pump switch to maximum speed?</p> <hr/> <p>NO: Proceed to point b). YES: The pump is OK.</p> <hr/> <p>b) Does the setpoint setting correspond to the setpoint type installed? (0-10 V, 0-20 mA, 4-20 mA)</p> <hr/> <p>NO: Correct the setting using Grundfos GO Remote or PC-Tool E-products. YES: Proceed to point c).</p> <hr/> <p>c) Is the voltage to the setpoint connection 10 VDC?</p> <div style="text-align: center;"> </div> <hr/> <p>NO: Replace the terminal box. YES: Proceed to point d).</p> <hr/> <p>d) Is the setpoint signal</p> <ul style="list-style-type: none"> - below 10 V (type 0-10 V sensor)? - below 20 mA (type 0-20 mA sensor)? - between 4 and 20 mA (type 4-20 mA sensor)? <hr/> <p>NO: Check for fault in the external setpoint signal. YES: Re-establish the correct setpoint signal, if necessary. If the pump still does not run correctly, replace the terminal box.</p>
		On	Off

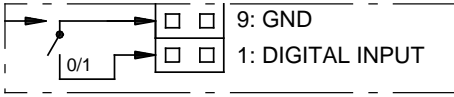
TM02 1607 4720

Indicator lights		Condition/cause	Remedy		
Green	Red				
On	Off	3. The pump is running at unexpectedly high or low speed. – Can be caused by fault in installation, setting or signal from setpoint/sensor or that the sensor input has been set to "active".	<p>a) Has the correct setpoint type been set in the motor? (0-10 V, 0-20 mA, 4-20 mA).</p> <p>NO: Correct the setting using Grundfos GO Remote or PC-Tool E-products. YES: Proceed to point b).</p> <p>b) Has the external setpoint signal from potentiometer or external controller been connected correctly?</p>  <p>NO: Connect the setpoint signal correctly. YES: Proceed to point c).</p> <p>c) Has the correct sensor type been set in the motor? (0-10 V, 0-20 mA, 4-20 mA)</p> <p>NO: Correct the setting using Grundfos GO Remote or PC-Tool E-products. YES: Proceed to point d).</p> <p>d) Has the sensor been connected correctly, and does the sensor signal correspond to the system pressure?</p>   <p>NO: Connect the sensor signal correctly. YES: If the pump does not run correctly, replace the I/O module or the terminal box.</p> <p>If the sensor is defective, replace it.</p>		
		The pump is not running			
		Off	Off	1. The power supply to the motor has been cut.	Re-establish correct power supply.
				2. The control panel or one of the functional modules is defective.	Switch off the power supply. Then remove the control panel and the functional modules, one at a time, and switch on the power supply every time a component has been removed. When the fault has disappeared after switching on the power supply, the defective component has been localised and can be replaced.
3. The terminal box is defective.	Replace the terminal box, or contact Grundfos Service.				

TM02 1606 1601

TM02 1604 0601

TM04 2072 1908

Indicator lights		Condition/cause	Remedy
Green	Red		
Off	On	The pump has stopped due to a fault	
		The pump has been stopped due to one of the following causes:	
		1. The pump is blocked or overloaded.	Remove the blockage, or reduce the load.
		2. The ambient temperature is too high, or the cooling is insufficient.	Re-establish sufficient cooling.
		3. Power supply fault: – undervoltage – overvoltage – phase failure – mains supply failure.	Check that the supply voltage at the source is within the stated voltage range. If not, re-establish correct power supply.
		4. External fault.	a) Has the digital input been set to external fault?
			NO: Correct the setting using Grundfos GO Remote or PC-Tool E-products.
			YES: Proceed to point b).
			b) Check the external contactor for continuity when closed across terminals 1-9.
			
	NO: Contact between terminals 1 and 9 is closed. Seek the cause of fault in external signal transmitter.		
	YES: Contact between terminals 1 and 9 is open. The E-pump is OK. Proceed to the next fault possibility.		
	5. Other faults: – wrong terminal box – wrong configuration – fatal fault.	<ul style="list-style-type: none"> • Replace the terminal box. • Reconfigure the terminal box. • Replace the terminal box. 	
Flashing, 1 Hz	Off	Normal operational stop	
		The pump has been stopped <ul style="list-style-type: none"> • with the ⏻ button • with Grundfos GO Remote • using the Grundfos GENIbus • by the motor start/stop function. (Input on terminal 2-3 is open). 	
Flashing, 1 Hz	On	Normal operational stop + indication of previous fault	
		The pump has been stopped <ul style="list-style-type: none"> • with the ⏻ button • with Grundfos GO Remote • using the Grundfos GENIbus • by the motor start/stop function, but was previously stopped due to a fault which has now disappeared. 	
Flashing, 5 Hz	On	The pump has been stopped due to a fault in the product	
		Pump is not running and <ul style="list-style-type: none"> • communication with Grundfos GO Remote is not possible • no reaction when you press ⏻ or ⏹ • fatal internal communication fault in the pump. 	
		Try resetting the fault by <ul style="list-style-type: none"> • disconnecting the power supply • waiting until all diodes are off • re-establishing the power supply. 	
		If this does not remedy the fault, the terminal box is defective. Replace the terminal box.	

TM02-1605 0601

4.7 Fault finding using alarm and warning codes

Apart from being indicated by the indicator lights on the control panel, alarms, warnings and their fault codes can be read using Grundfos GO Remote or PC-Tool E-Products.

4.7.1 Alarm and warning list

The list below gives you an overview of the possible alarms and warnings and a description of their causes and suggestions for remedy.

These abbreviations are used in the column "Fault type":

W: Warning.

A: Alarm.

1): The alarm can be configured to Warn/Max/Min/Stop/User using the PC Tool E-products.

Fault code	Fault reading in Grundfos GO Remote	Fault reading in PC Tool E-products	Fault type
Explanation/cause		Remedy	
3	External fault	External fault signal	A
The digital input set for "External fault" was or is closed (terminal 1, 10 or 11).		When the digital input is no longer closed, the fault indication can be reset with Grundfos GO Remote, PC-Tool E-Products or by pressing ☺ or ☹.	
4	Too many restarts	Too many restarts (from standby mode per 24)	A
<ul style="list-style-type: none"> The number of attempted restarts at 10-second intervals after a fault has exceeded four within one minute. The number of attempted restarts at five-minute intervals after a fault has exceeded 16 within 24 hours. 		Seek the cause under the fault log code numbers in Grundfos GO Remote or PC-Tool E-Products. The pump will automatically attempt to restart after 24 hours. The fault indication can be reset with Grundfos GO remote, PC-Tool E-Products or by pressing ☺ or ☹.	
30	Replace motor bearings	Motor bearings need change (service information)	W
The motor has reached the number of operating hours for the bearing service life that is stated in the configuration.		Replace the bearings. See section 5.2 Replacement of motor bearings .	
31	Replace varistor	Motor varistor(s) need change (service information)	W
The varistor has been exposed to the allowable number of transients and needs replacing.		Contact Grundfos Service.	
32	Overvoltage	Overvoltage	A
The supply voltage has been or is too high.		Reduce the voltage to the specified level (see the nameplate).	
40	Undervoltage	Undervoltage	A
The supply voltage has been or is too low.		Increase the voltage to the specified level (see the nameplate).	
41	Undervoltage	Undervoltage transient	A
There has been a voltage drop in the supply voltage caused by one of the following:			
<ul style="list-style-type: none"> Supply cable too small. Another big user is supplied from the same panel. 			
45	Mains voltage asymmetry	Voltage asymmetry	A
The supply voltage has been or is asymmetric.		Check the supply voltage at the source while the motor is loaded.	
49	Overload	Overcurrent (i_line, i_dc, i_mo)	A
The terminal box or the motor is heavily overloaded. Cause:			
<ul style="list-style-type: none"> Blocked pump. Blocked rotor. Continued overload. Incorrect configuration of the terminal box. Wrong terminal box. Fault in stator windings. Power supply failure (phase failure). 		<ul style="list-style-type: none"> Remove the blockage. Remove the blockage. Reduce the load. Contact Grundfos Service. Contact Grundfos Service. Contact Grundfos Service. Re-establish correct power supply. 	
51	Overload	Blocked motor/pump	A
The pump is blocked during start-up which causes a heavy overload. The input current is very high; the motor P > 120 % for 60 seconds.		Remove the blockage.	

Fault code	Fault reading in Grundfos GO Remote	Fault reading in PC Tool E-products	Fault type
Explanation/cause		Remedy	
55	Overload	Motor current protection activated (MCP)	A
<p>The built-in motor-current protection function has registered a continued overload of more than 125 % of rated current for 60 seconds.</p> <p>Cause:</p> <ul style="list-style-type: none"> Continued overload. Incorrect configuration of the terminal box. Fault in stator windings. 		<ul style="list-style-type: none"> Reduce the load by limiting the pump flow. Contact Grundfos Service. Contact Grundfos Service. 	
56	Underload	Underload	A
<p>The motor is underloaded.</p> <p>Cause:</p> <ul style="list-style-type: none"> Incorrect configuration of the terminal box. The pump has run dry. 		<ul style="list-style-type: none"> Check the settings of the terminal box. Make sure that all valves in the piping system are open and that there is water in the piping system. 	
57	Dry running	Dry running	A
<p>The pump has run dry.</p>		<p>Make sure that all valves in the piping system are open and that there is water in the piping system.</p>	
65	Too high motor temperature	Motor temperature	A
<p>The temperature sensor in the motor has measured a too high winding temperature.</p> <p>Cause:</p> <ul style="list-style-type: none"> Dust and dirt in the cooling fins. Too high ambient temperature. Fault in stator windings. 		<ul style="list-style-type: none"> Clean the cooling fins. Improve the cooling. Contact Grundfos Service. 	
73	Undervoltage	Hardware shutdown (HSD)	A
<p>The current limit of the electronic module has been exceeded.</p> <p>Cause:</p> <ul style="list-style-type: none"> Incorrect configuration of the terminal box. Fault in stator windings. Terminal box defective. 		<ul style="list-style-type: none"> Contact Grundfos Service. Contact Grundfos Service. Contact Grundfos Service. 	
77	Duty/standby, Communication fault	Twin pump communication fault	W
<p>Communication between the two pumps which have been set to duty/standby function has been interrupted.</p> <p>Cause:</p> <ul style="list-style-type: none"> Power supply to standby pump has been cut. Communication cable has been cut. Communication module defective. 		<ul style="list-style-type: none"> Re-establish the power supply. Check the communication cable. Replace communication module. 	
85	Other fault	Freq. converter parameter verification error (EEPROM)	A
<p>The EEPROM has lost its contents.</p>		<p>Contact Grundfos Service.</p>	
88	Sensor 1 signal outside signal range	General sensor signal fault / feedback sensor signal fault	1)
<p>Sensor signal type 4-20 mA: signal below 2 mA or above 22 mA. Sensor signal type 0-20 mA: signal above 22 mA. Sensor signal type 0-10 V: signal above 11 V.</p> <ul style="list-style-type: none"> Signal range set incorrectly. Sensor incorrectly connected. Sensor defective. Sensor cable defective. Incorrect power supply to sensor. 		<ul style="list-style-type: none"> Correct the signal range setting. Connect the sensor correctly. Replace the sensor. Check the sensor cable. Replace the functional module. 	
91	Temperature sensor 1 signal outside signal range	Temperature sensor 1 signal fault	1)
<p>The sensor signal has been short-circuited or cut.</p>		<p>Replace the temperature sensor. Before doing any work, turn off the mains switch or power off.</p>	

Fault code	Fault reading in Grundfos GO Remote	Fault reading in PC Tool E-products	Fault type
Explanation/cause		Remedy	
93	Sensor 2 signal outside signal range	Sensor 2 signal fault	1)
Same as fault 88.		Same as fault 88.	
96	Setpoint signal outside signal range	Reference input signal fault	1)
<p>Sensor signal type 4-20 mA: signal below 2 mA or above 22 mA. Sensor signal type 0-20 mA: signal above 22 mA. Sensor signal type 0-10 V: signal above 11 V.</p> <ul style="list-style-type: none"> • Signal range set incorrectly. • Setpoint signal incorrectly connected. • Incorrect supply voltage to the setpoint. 		<ul style="list-style-type: none"> • Correct the signal range setting. • Connect the setpoint signal correctly. • Replace the functional module. 	
105	Overload	Electronic rectifier protection activated (ERP)	A
<p>The electronic module/motor is heavily overloaded, and the temperature of the electronics is above 100 °C. The measured temperature can be read via PC Tool E-products. Cause:</p> <ul style="list-style-type: none"> • Temperature sensor defective. • Continued overload. • The ambient temperature is too high, or the cooling is insufficient. • Incorrect configuration of the terminal box. 		<ul style="list-style-type: none"> • Contact Grundfos Service. • Reduce the load. • Improve the cooling. • Contact Grundfos Service. 	
106	Overload	Electronic inverter protection activated (EIP)	A
<p>The electronic module/motor is heavily overloaded, and the temperature of the electronics is above 100 °C. The measured temperature can be read via PC Tool E-products. Cause:</p> <ul style="list-style-type: none"> • Temperature sensor defective. • Continued overload. • The ambient temperature is too high, or the cooling is insufficient. • Incorrect configuration of the terminal box. 		<ul style="list-style-type: none"> • Contact Grundfos Service. • Reduce the load. • Improve the cooling. • Contact Grundfos Service. 	
148	DE bearing temperature high	Motor drive-end (DE) bearing temp. warning limit Motor drive-end (DE) bearing temp. alarm limit	W A
<p>The drive-end motor bearing has become too hot. Cause:</p> <ul style="list-style-type: none"> • The bearing is worn. • The motor is dirty. 		<ul style="list-style-type: none"> • Replace the bearing. See section 5.2 Replacement of motor bearings. • Check and clean, if necessary, <ul style="list-style-type: none"> – the fan – the motor cooling fins. 	
149	NDE bearing temperature high	Motor non-drive-end (NDE) bearing temp. warning limit Motor non-drive-end (NDE) bearing temp. alarm limit	W A
<p>The non-drive-end motor bearing has become too hot. Cause:</p> <ul style="list-style-type: none"> • The bearing is worn. • The motor is dirty. 		<ul style="list-style-type: none"> • Replace the bearing. See section 5.2 Replacement of motor bearings. • Check and clean, if necessary, <ul style="list-style-type: none"> – the fan – the motor cooling fins. 	
155	Undervoltage	Inrush fault	A
<p>The terminal box voltage is outside the alarm limit. Cause:</p> <ul style="list-style-type: none"> • Fault in the voltage supply. • Transients in the voltage supply during operation. 		<ul style="list-style-type: none"> • Re-establish the voltage supply. • Contact Grundfos Service. 	

Fault code	Fault reading in Grundfos GO Remote	Fault reading in PC Tool E-products	Fault type
Explanation/cause		Remedy	
156	Other fault	Internal communication failure in frequency converter	A
Internal communication fault in the pump due to defect in the terminal box.		Contact Grundfos Service.	
175	Temperature sensor 2 signal outside signal range	Temperature sensor 2 signal fault	1)
Same as fault 91.		Same as fault 91.	
190	Limit 1 exceeded	Limit 1 exceeded	1)
191	Limit 2 exceeded	Limit 2 exceeded	
<p>This is a monitoring function offering information, alarm or warning if a low or high limit is exceeded. The function can only be set with the PC Tool E-products.</p> <p>The limit set has been exceeded either upwards or downwards.</p>		<p>The function can be set to monitor</p> <ul style="list-style-type: none"> • sensor 1 or 2 • Pt100 sensor 1 or 2 • external setpoint • the feedback signal. <p>Procedure:</p> <ol style="list-style-type: none"> 1. Using PC Tool E-products, check which function is being monitored. 2. Check in the pump system whether the alarm or warning is real. If it is real, remedy the fault. 3. If the alarm or warning seems to be wrong for the pump system, troubleshoot according to the selected sensor using these service instructions. 	
240	Relubricate motor bearings	Motor bearings need lubrication (service information)	W
The motor has reached the number of operating hours stated in the configuration for the bearing lubrication.		Lubricate the bearings. See section 5.1 Lubrication of motor bearings .	

5. Maintenance

WARNING

Electric shock

Death or serious personal injury

- Installation, commissioning, service, and maintenance of equipment, systems, and circuits may only be performed by Grundfos service technicians or a Grundfos Authorised Service Partner (ASP) who have attended training equivalent to Grundfos Electronics Service Expert (GESE) or similar.
- Always observe local applicable safety regulation.



Follow these instructions when it is necessary to maintain the motor or the terminal box.

Position numbers of components (numbers in brackets) refer to section [7. Drawings and diagrams](#).

Position letters of tools (letters in brackets) refer to section [9. Service tools](#).

Prior to dismantling

Disconnect the mains supply in accordance with local regulations.

WARNING

Electric shock

Death or serious personal injury

- Due to the capacitors of MGE-F, touching live electrical parts may be fatal, even after the mains supply has been disconnected. Disconnect the mains supply, and wait at least 30 minutes or the amount of time stated on the warning label under the terminal box cover before touching any live parts.
- Note that the relay may be connected to an external power supply and still be live after the mains supply to the motor has been disconnected.
- Make sure that the mains cover is fitted in MGE-F if you perform service work where fault finding with power on and/or with connection to PC Tool Link is needed. Turn off power and wait for the control box to be de-energised before you check whether the mains cover is fitted. If the mains cover is missing, you can order it by part number 99926860.



CAUTION

Hot surface

Minor or moderate personal injury

- MGE-F may be hot.



During assembly

Tighten screws and nuts to the correct torque. See section [8.1 Tightening torques](#).

5.1 Lubrication of motor bearings

5.1.1 Grease and lubrication intervals

The recommended grease type and quantity and the recommended lubrication intervals in hours appear from the lubricating plate fitted to the motor. When the MGE-F has reached the prescribed number of operating hours, it will give a lubrication warning that will appear on Grundfos GO Remote or PC Tool E-products. See section [4. Fault finding](#).

5.1.2 Lubrication procedure



The motor must be running during the lubrication. This ensures that the new grease is distributed evenly and that the old grease is pressed out of the bearing.

Connect the grease gun to the lubricating nipples, and apply the prescribed quantity of grease.

Confirm the lubrication in Grundfos GO Remote. Confirmation can also be made via PC Tool E-products.

5.2 Replacement of motor bearings

When the MGE-F has reached the prescribed number of operating hours, it will give a warning about replacement of bearings that will appear on Grundfos GO Remote or PC Tool E-products. See section 4. *Fault finding*.

5.2.1 Removing the bearings

1. Remove the screws (pos. 152) holding the fan cover (pos. 151), and remove the fan cover.
2. Remove the retaining ring (pos. 156c) holding the fan (pos. 156).
3. Pull off the fan.
4. Remove the three screws (pos. 182a) holding the bearing cover (pos. 155d).
5. Remove the screws (pos. 185a) holding the bearing end shield in the non-drive end (pos. 156a).
6. Remove the bearing end shield in the non-drive end and the spring (pos. 158).
7. Remove the screws (pos. 185) holding the bearing end shield in the drive end (pos. 156b).
8. Carefully pull the bearing end shield in the drive end and the shaft/rotor (pos. 172) out of the stator housing. Take care not to damage the stator windings.
9. Remove the three screws (pos. 182) holding the bearing cover (pos. 155a).
10. Remove the bearing end shield in the drive end using a puller (pos. B).
11. Pull bearings (pos. 153 and 154) off the shaft using a puller. If the drive end bearing is stuck in the bearing end shield, heat up the bearing end shield, and press the bearing out by pushing at it through the shaft hole.
12. Clean and check the bearing journals of the shaft and the bearing seats of the bearing end shields.

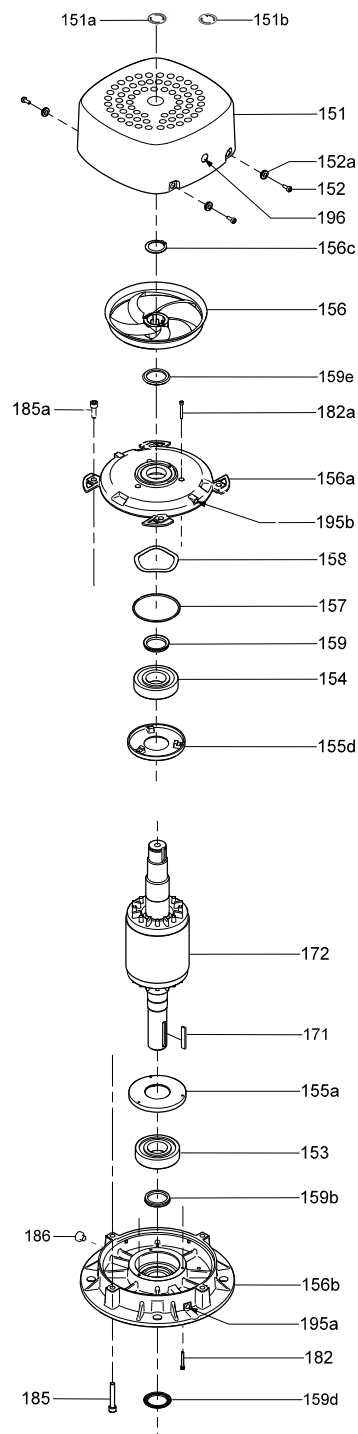


Fig. 16 Detail from fig. 24, exploded view of the MGE-F

5.2.2 Fitting the bearings

1. Fit bearing covers (pos. 155a and 155d) on the shaft (pos. 172).
2. Heat up the bearings (pos. 153 and 154) to 90 °C, and fit them on the shaft (pos. 172).
An induction heater is the most suitable heating method for greased-for-life bearings (2Z and 2RZ).
Note: Remember to demagnetise the components, if necessary.
Alternatively, heat up the components using a heating plate or an oil bath.
If it is not possible to heat up the bearings before fitting them, press or tap them into position by applying the force to the inner ring of the bearing.
3. Replace V-ring (pos. 159b) in the bearing seat of the bearing end shield in the drive end (pos. 156b).
4. Fit the bearing end shield in the drive end on the bearing. If necessary, heat up the bearing end shield to approx. 80 °C to ensure that the bearing seat is large enough for an easy and safe fitting of the bearing.
5. Fit the three screws (pos. 182) holding the bearing cover (pos. 155a), and **tighten them to 8 Nm**.
6. Carefully move the bearing end shield in the drive end and the shaft/rotor to their position inside the stator housing. Take care not to damage the stator windings.
7. Fasten the bearing end shield in the drive end with the screws (pos. 185), and **cross-tighten them to 27 Nm**.
8. Replace V-ring (pos. 159e) and O-ring (pos. 157) in the bearing seat of the bearing end shield in the non-drive end (pos. 156a).
9. Fit spring (pos. 158) in the bearing seat of the bearing end shield in the non-drive end.
10. Fit the three screws (pos. 182a) holding the bearing cover (pos. 155d), and **tighten them to 8 Nm**.
11. Fasten the bearing end shield in the non-drive end with the screws (pos. 185a), and **cross-tighten them to 27 Nm**.
12. Fit fan (pos. 156) and retaining ring (pos. 156c).
13. Fit fan cover (pos. 151), and fasten it with the screws (pos. 152) and the rubber bushes. **Tighten the screws to 10 Nm**.
14. If the bearings are not prelubricated, lubricate the bearings according to instructions. See section [8.2 Lubricating intervals and grease](#).
15. Confirm the replacement of the bearings using Grundfos GO Remote (or via PC Tool E-products).

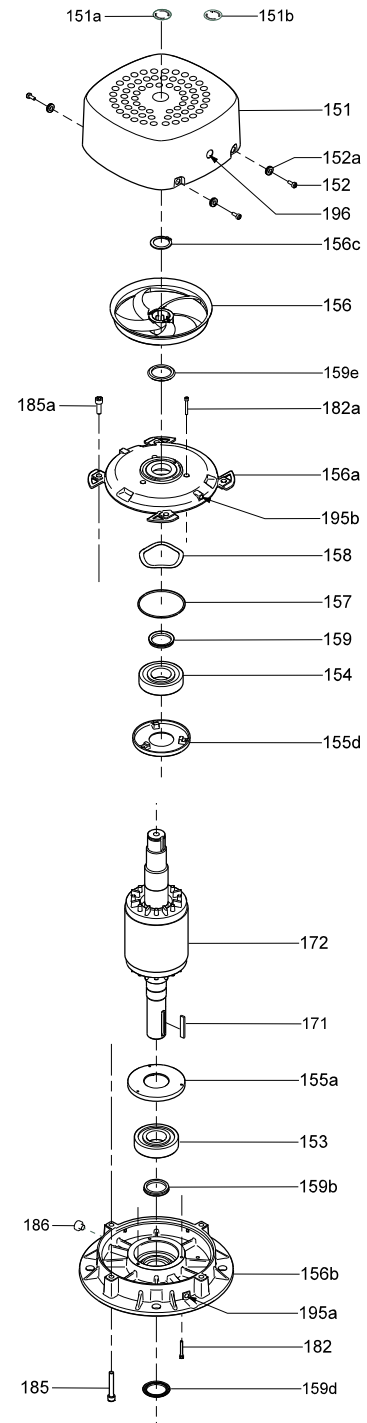


Fig. 17 Detail from fig. 24, exploded view of the MGE-F

6. Emergency operation (bypass)

If it is necessary to continue pump operation even if replacement or repair of the terminal box is not possible, establish emergency operation by connecting the motor direct to the mains supply.

WARNING

Electric shock

Death or serious personal injury

- Before starting any work on the product, make sure that the power supply is switched off and that it cannot be accidentally switched on.
- During emergency operation, the motor is only protected by its backup fuse. Normal operation must therefore be re-established as quickly as possible.
- Wait 30 minutes before doing any work inside the product.



Before establishing emergency operation of the pump, make sure that the motor is OK. You may for instance meg the motor.



The starting current will increase when the frequency converter is bypassed.

Emergency operation is illustrated on a label on the cover over the motor terminals. See fig. 20.

Prior to establishing emergency operation

Disconnect the mains supply in accordance with local regulations.

WARNING

Electric shock

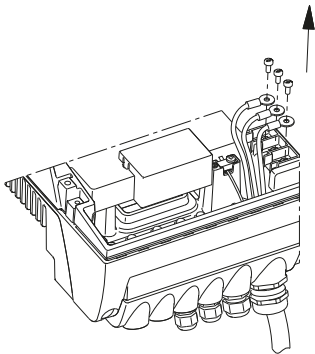
Death or serious personal injury

- Due to the capacitors of MGE-F, touching live electrical parts may be fatal, even after the mains supply has been disconnected. Disconnect the mains supply, and wait at least 30 minutes or the amount of time stated on the warning label under the terminal box cover before touching any live parts.
- Note that the relay may be connected to an external power supply and still be live after the mains supply to the motor has been disconnected.



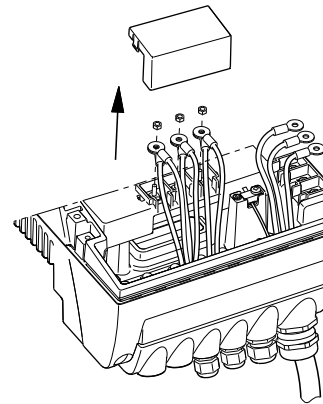
6.1 Establishing emergency operation

1. Loosen the four screws in the terminal box cover, and remove the cover from the terminal box.
2. Remove the three mains supply conductors from the supply terminals, but leave the protective earth conductor in the PE terminal. See fig. 18.
3. Remove the cover over the motor terminals. See fig. 19. Unscrew the nuts from the motor terminals.



TM07 6727 2520

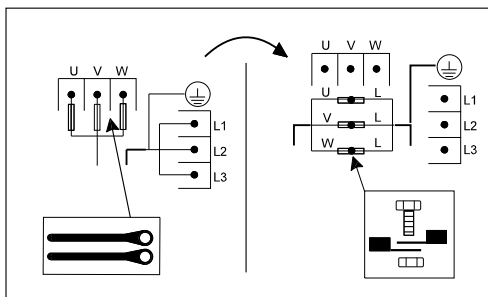
Fig. 18 Cover over the supply terminals



TM03 9120 3407

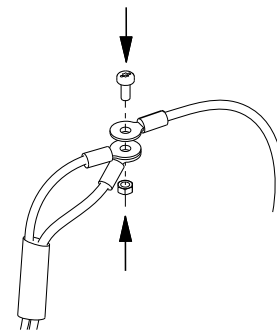
Fig. 19 Cover over the motor terminals

4. Connect the conductors as shown on the label on the cover over the motor terminals. See fig. 20. Use the screws from the supply terminals and the nuts from the motor terminals. See fig. 21.



TM04 0018 4807

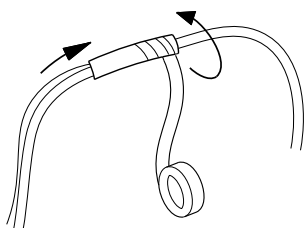
Fig. 20 Emergency label on the cover over the motor terminals



TM03 9121 3407

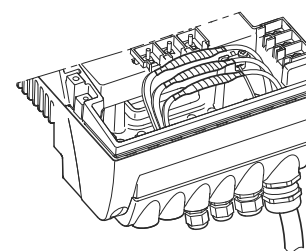
Fig. 21 Joining the motor conductors (two) and the supply conductor

5. Pull the insulating hose around the motor conductors up over the joint. Wind insulating tape or similar around the ends of the insulating hose in order to fasten it over the joint. See figs. 22 and 23.



TM03 9122 3407

Fig. 22 Insulating the joint



TM03 9123 3407

Fig. 23 The joints placed in the terminal box

6. Briefly start the motor, and observe the direction of rotation.



It is important to check (and change, if necessary) the motor's direction of rotation to ensure that the pump is not running backwards.

7. If the motor's direction of rotation is wrong, interchange two of the supply conductors (phases).
8. Put the terminal box cover (pos. 164) back on, and fasten it with the four screws (pos. 166). **Tighten the screws to 7 Nm.**

6.2 Re-establishment of frequency converter operation

1. Loosen the four screws in the terminal box cover, and remove the cover from the terminal box.
2. Remove the insulating tape, and separate one of the joints of motor conductors and supply conductor. Push the insulating hose down over the motor conductors again.
3. Fit the motor conductors on the correct motor terminal: Blue/black to U1/W2, white/grey to V1/U2 and orange/yellow to W1/V2. **Tighten them to 2.2 Nm.**
4. Fit the supply conductor to one of the supply terminals, and **tighten it to 2.2 Nm.**
5. Repeat steps 2 to 4 for the remaining two joints.
6. Fit the cover over the motor terminals.
7. Fit the cover over the supply terminals (pos. 284), and **tighten the screw to 7 Nm.**
8. Put the terminal box cover (pos. 164) back on, and fasten it with the four screws (pos. 166). **Tighten the screws to 7 Nm.**

7. Drawings and diagrams

The position numbers in fig. 24 refer to the list on page 25.

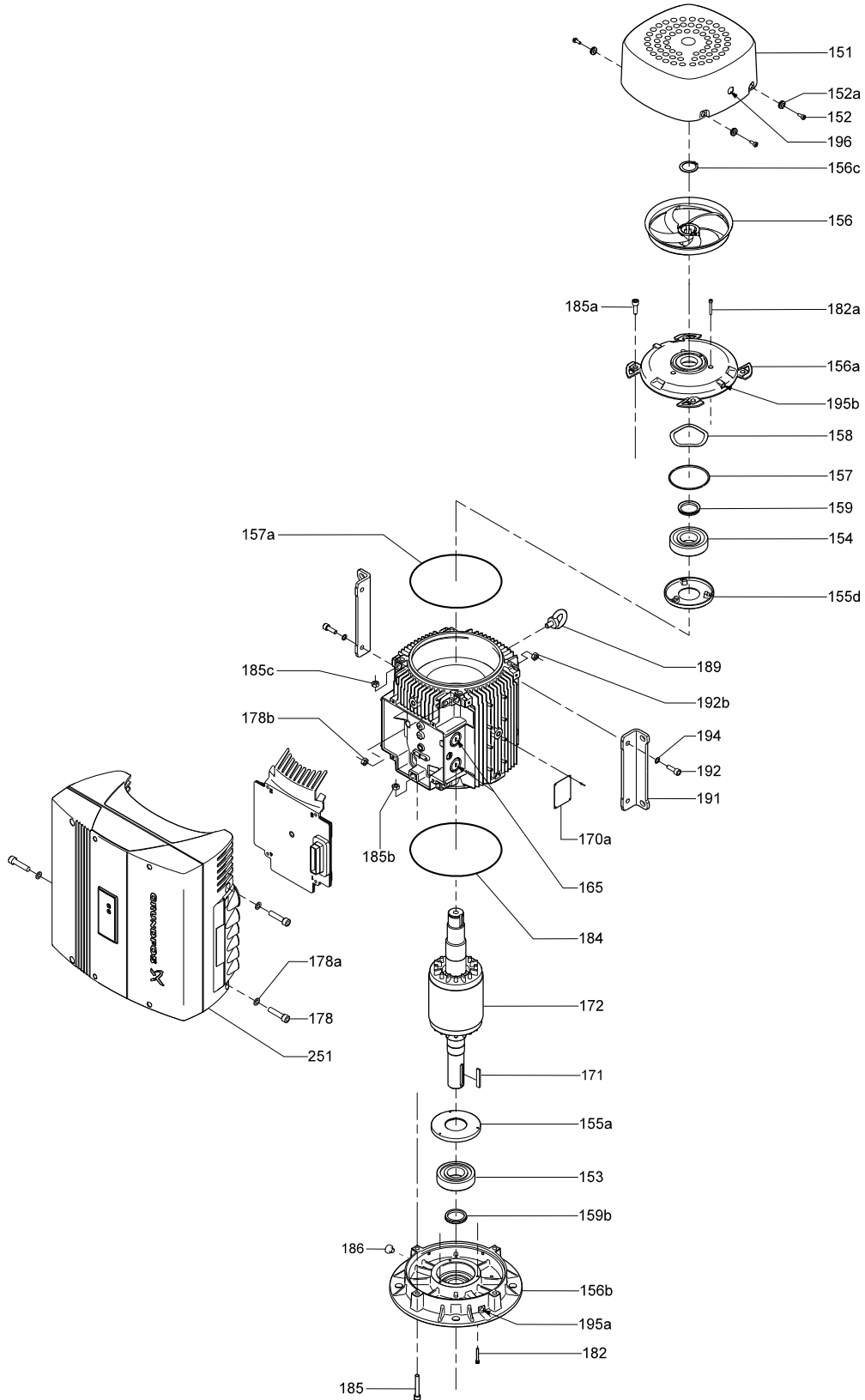
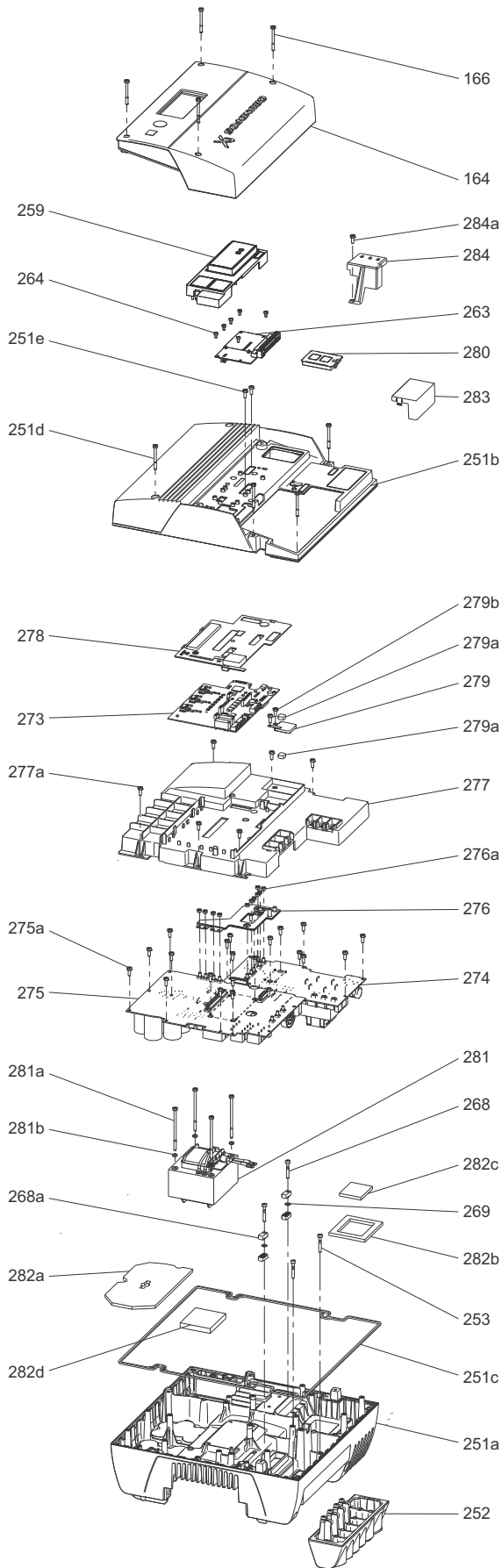


Fig. 24 Exploded view, MGE-F

Pos.	Description
151	Fan cover
152	Screw, fan cover
152a	Rubber bushing
153	Ball bearing, drive end
154	Ball bearing, non-drive end
155a	Inner bearing cover, drive end
155d	Inner bearing cover, non-drive end
156	Fan
156a	Bearing end shield, non-drive end
156b	Bearing end shield, drive end
156c	Circlip for fan
157	O-ring, bearing, non-drive end flange
157a	Gasket, non-drive end
158	Corrugated spring
159	V-ring, non-drive end
159b	V-ring, drive end
165	Knock-out cable entry
170a	Nameplate
171	Key
172	Shaft with rotor
178	Screw, terminal box
178a	Lock washer, D10.5/D16 x 1 A2
178b	Nut, M10 DIN 934 A2, waxed
182	Screw, bearing cover
182a	Screw, bearing cover, non-drive end
184	Gasket, drive end
185	Screw, drive end
185a	Screw, non-drive end
185b	Nut, drive end
185c	Nut, non-drive end
186	Plug for drain hole
189	Eyebolt
191	Foot
192	Screw for foot
192b	Nut for foot
194	Lock washer
195a	Lubricating nipple, drive end flange
195b	Lubricating nipple, non-drive end flange
196	Protective cover for lubricating nipple, non-drive end
251	Terminal box with integrated frequency converter



TM07 8055 4920

Fig. 25 Exploded view, terminal box

Pos.	Description
164	Terminal box cover
166	Screw for terminal box cover
251a	Terminal box, lower part
251b	Terminal box top
251c	Gasket for terminal box top
251d	Screw for terminal box top
251e	Screw for terminal box top
252	Cable entry block, complete
253	Screw for cable entry block,
259	Control panel
263	Functional module, complete with plugs
264	Screw, functional module
268	Earth screw
268a	Earth clamp
269	Washer, earth screw
273	Control board
274	Rectifier board
275	Inverter board
275a	Screw for inverter board and rectifier board
276	Busbar
276a	Nut for busbar
277	Insulation cover
277a	Screw for insulation cover
278	Cover over control board
279	Varistor
279a	Shock absorber for varistor
279b	Screw for varistor
280	Cover for varistor
281	DC choke
281a	Screw for DC choke
281b	Washer for DC choke
282a	Gap filler for inverter board
282b	Gap filler for RFI choke part 1
282c	Gap filler for RFI choke part 2
282d	Gap filler for DC choke
283	Cover over motor terminals
284	Cover over supply terminals
284a	Screw for cover over supply terminals

8. Tightening torques and lubrication

8.1 Tightening torques

Pos.	Description	Torque [Nm]
Terminal box		
166	Screws for terminal box cover	4
251d	Screws for terminal box top	4
251e	Screws for terminal box top	4
284a	Screw for cover over supply terminals	3
277a	Screws for cover	4
253	Screws for cable entry block	4
	Terminals for supply conductors	2.2
	Terminals for motor conductors	2.2
268	Terminal for PE conductor	4
279b	Terminal for varistor	1.5
276a	Nuts for busbar	2.2
281a	Screws for coil	4
275a	Screws for rectifier board and inverter board	4
	Screws for inverter and IGBT (step 1/step 2)	4 / 4
264	Screws for modules	2 - 2.5
Motor		
152	Screws for fan cover	8
178	Screws for terminal box	27
182	Screws for bearing cover in the drive end	
182a	Screws for bearing cover in the non-drive end	8
185	Screws for bearing end shield in the drive end	
185a	Screws for bearing end shield in the non-drive end	27

8.2 Lubricating intervals and grease

Lubricating intervals, grease quantity and type appear from the motor lubricating plate.

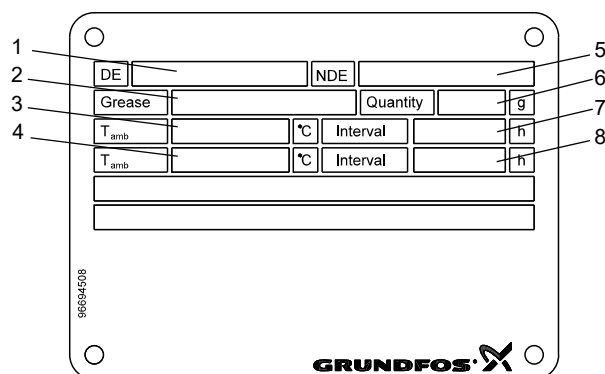
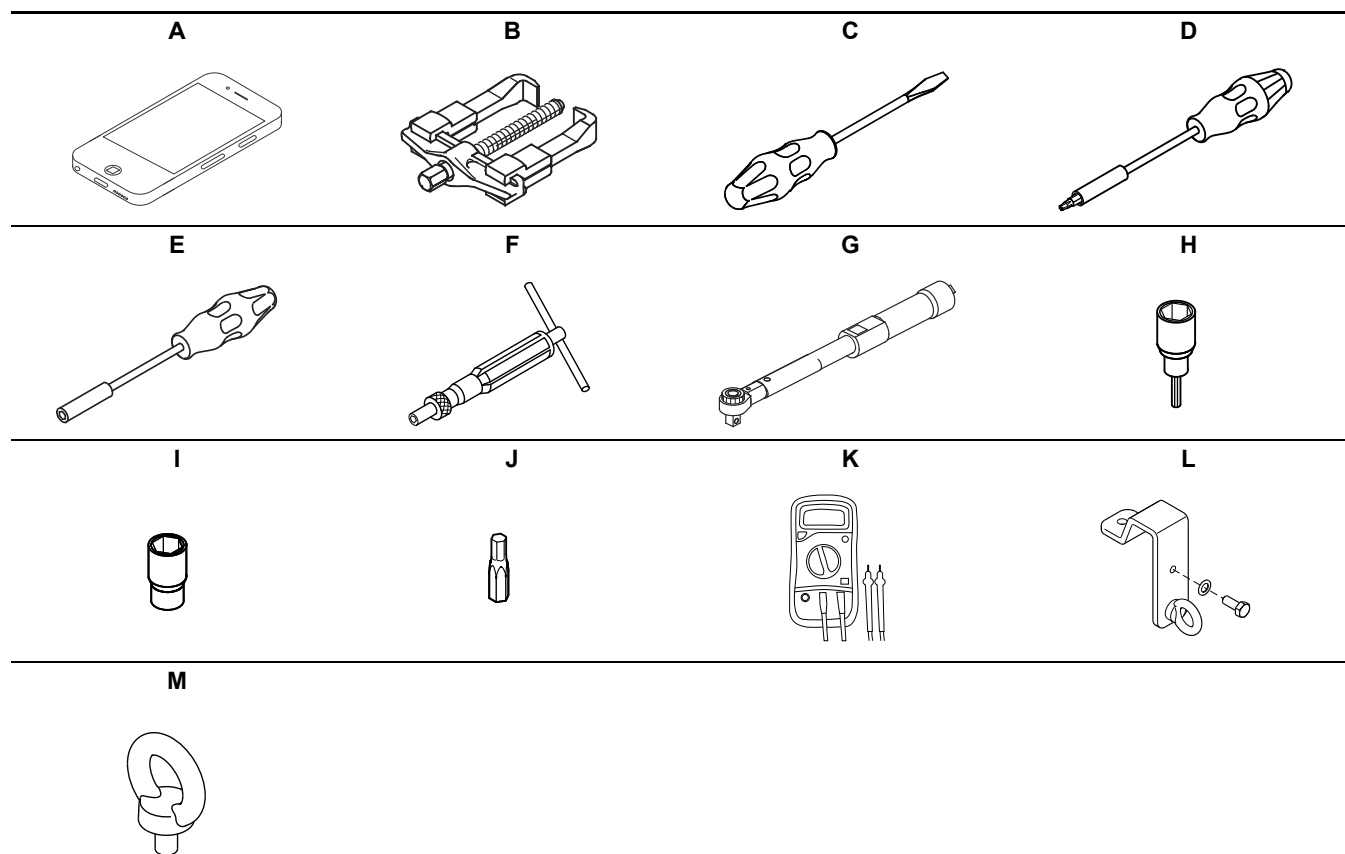


Fig. 26 Lubricating plate of MGE-F

Pos.	Description
1	Bearing, drive end
2	Grease type
3	Ambient temperature
4	Ambient temperature
5	Bearing, non-drive end
6	Quantity of grease
7	Lubricating interval
8	Lubricating interval

9. Service tools



Special tools

Pos.	Designation	Supplementary information	Product number
A	Grundfos GO Remote PC Tool E-products		98046408 96562869

Standard tools

Pos.	Designation	Supplementary information	Product number
B	Puller		
C	Slotted screwdriver		
D	Torx® screwdrivers (set)	T20, T25	96884908
E	Hexagon socket screwdriver	8 mm	

Torque tools

Pos.	Designation	Supplementary information	Product number
F	Torque screwdriver	1-6 Nm	SV0438
G	Torque wrench		
H	Hexagon head driver		
I	Hexagon socket		
J	Torx® bits (set)	T20, T25	96884936

Measuring tools

Pos.	Designation	Supplementary information	Product number
K	Digital multimeter, type RMS with diode test function	CAT III / 1000 V	

Lifting equipment

Pos.	Designation	Supplementary information	Product number
L	Lifting bracket		
M	Eye bolt	M8	

Argentina

Bombas GRUNDFOS de Argentina S.A.
Ruta Panamericana km. 37.500 Centro Industrial Garin
1619 Garin Pcia. de B.A.
Phone: +54-3327 414 444
Telefax: +54-3327 45 3190

Australia

GRUNDFOS Pumps Pty. Ltd.
P.O. Box 2040
Regency Park
South Australia 5942
Phone: +61-8-8461-4611
Telefax: +61-8-8340 0155

Austria

GRUNDFOS Pumpen Vertrieb Ges.m.b.H.
Grundfosstraße 2
A-5082 Grödig/Salzburg
Tel.: +43-6246-883-0
Telefax: +43-6246-883-30

Belgium

N.V. GRUNDFOS Bellux S.A.
Boomssesteenweg 81-83
B-2630 Aartselaar
Tél.: +32-3-870 7300
Télécopie: +32-3-870 7301

Belarus

Представительство ГРУНДФОС в Минске
220125, Минск
ул. Шафарнянская, 11, оф. 56, БЦ «Порт»
Тел.: +375 17 397 397 3
+375 17 397 397 4
Факс: +375 17 397 397 1
E-mail: minsk@grundfos.com

Bosnia and Herzegovina

GRUNDFOS Sarajevo
Zmaj od Bosne 7-7A,
BH-71000 Sarajevo
Phone: +387 33 592 480
Telefax: +387 33 590 465
www.ba.grundfos.com
e-mail: grundfos@bih.net.ba

Brazil

BOMBAS GRUNDFOS DO BRASIL
Av. Humberto de Alencar Castelo Branco, 630
CEP 09850 - 300
São Bernardo do Campo - SP
Phone: +55-11 4393 5533
Telefax: +55-11 4343 5015

Bulgaria

Grundfos Bulgaria EOOD
Slatina District
Iztochna Tangenta street no. 100
BG - 1592 Sofia
Tel. +359 2 49 22 200
Fax. +359 2 49 22 201
email: bulgaria@grundfos.bg

Canada

GRUNDFOS Canada Inc.
2941 Brighton Road
Oakville, Ontario
L6H 6C9
Phone: +1-905 829 9533
Telefax: +1-905 829 9512

China

GRUNDFOS Pumps (Shanghai) Co. Ltd.
10F The Hub, No. 33 Suhong Road
Minhang District
Shanghai 201106
PRC
Phone: +86 21 612 252 22
Telefax: +86 21 612 253 33

COLOMBIA

GRUNDFOS Colombia S.A.S.
Km 1.5 vía Siberia-Cota Conj. Potrero Chico,
Parque Empresarial Arcos de Cota Bod. 1A.
Cota, Cundinamarca
Phone: +57(1)-2913444
Telefax: +57(1)-8764586

Croatia

GRUNDFOS CROATIA d.o.o.
Buzinski prilaz 38, Buzin
HR-10010 Zagreb
Phone: +385 1 6595 400
Telefax: +385 1 6595 499
www.hr.grundfos.com

GRUNDFOS Sales Czechia and Slovakia s.r.o.

Čajkovského 21
779 00 Olomouc
Phone: +420-585-716 111

Denmark

GRUNDFOS DK A/S
Martin Bachs Vej 3
DK-8850 Bjerringbro
Tlf.: +45-87 50 50 50
Telefax: +45-87 50 51 51
E-mail: info_GDK@grundfos.com
www.grundfos.com/DK

Estonia

GRUNDFOS Pumps Eesti OÜ
Peterburi tee 92G
11415 Tallinn
Tel: + 372 606 1690
Fax: + 372 606 1691

Finland

OY GRUNDFOS Pumput AB
Trukkikuja 1
FI-01360 Vantaa
Phone: +358-(0) 207 889 500

France

Pompes GRUNDFOS Distribution S.A.
Parc d'Activités de Chesnes
57, rue de Malacombe
F-38290 St. Quentin Fallavier (Lyon)
Tél.: +33-4 74 82 15 15
Télécopie: +33-4 74 94 10 51

Germany

GRUNDFOS GMBH
Schlüterstr. 33
40699 Erkrath
Tel.: +49-(0) 211 929 69-0
Telefax: +49-(0) 211 929 69-3799
e-mail: infoservice@grundfos.de
Service in Deutschland:
e-mail: kundendienst@grundfos.de

Greece

GRUNDFOS Hellas A.E.B.E.
20th km. Athinon-Markopoulou Av.
P.O. Box 71
GR-19002 Peania
Phone: +0030-210-66 83 400
Telefax: +0030-210-66 46 273

Hong Kong

GRUNDFOS Pumps (Hong Kong) Ltd.
Unit 1, Ground floor
Siu Wai Industrial Centre
29-33 Wing Hong Street &
68 King Lam Street, Cheung Sha Wan
Kowloon
Phone: +852-27861706 / 27861741
Telefax: +852-27858664

Hungary

GRUNDFOS Hungária Kft.
Tópark u. 8
H-2045 Törökbálint,
Phone: +36-23 511 110
Telefax: +36-23 511 111

India

GRUNDFOS Pumps India Private Limited
118 Old Mahabalipuram Road
Thoraiakkam
Chennai 600 096
Phone: +91-44 2496 6800

Indonesia

PT. GRUNDFOS POMPA
Graha Intirub Lt. 2 & 3
Jln. Cililitan Besar No.454. Makasar,
Jakarta Timur
ID-Jakarta 13650
Phone: +62 21-469-51900
Telefax: +62 21-460 6910 / 460 6901

Ireland

GRUNDFOS (Ireland) Ltd.
Unit A, Merrywell Business Park
Ballymount Road Lower
Dublin 12
Phone: +353-1-4089 800
Telefax: +353-1-4089 830

Italy

GRUNDFOS Pompe Italia S.r.l.
Via Gran Sasso 4
I-20060 Truccazzano (Milano)
Tel.: +39-02-95838112
Telefax: +39-02-95309290 / 95838461

Japan

GRUNDFOS Pumps K.K.
1-2-3, Shin-Miyakoda, Kita-ku,
Hamamatsu
431-2103 Japan
Phone: +81 53 428 4760
Telefax: +81 53 428 5005

Korea

GRUNDFOS Pumps Korea Ltd.
6th Floor, Aju Building 679-5
Yeoksam-dong, Kangnam-ku, 135-916
Seoul, Korea
Phone: +82-2-5317 600
Telefax: +82-2-5633 725

Latvia

SIA GRUNDFOS Pumps Latvia
Deglava biznesa centrs
Augusta Deglava ielā 60, LV-1035, Rīga,
Tālr.: + 371 714 9640, 7 149 641
Fakss: + 371 914 9646

Lithuania

GRUNDFOS Pumps UAB
Smolensko g. 6
LT-03201 Vilnius
Tel: + 370 52 395 430
Fax: + 370 52 395 431

Malaysia

GRUNDFOS Pumps Sdn. Bhd.
7 Jalan Peguam U1/25
Glenmarie Industrial Park
40150 Shah Alam
Selangor
Phone: +60-3-5569 2922
Telefax: +60-3-5569 2866

Mexico

Bombas GRUNDFOS de México S.A. de C.V.
Boulevard TLC No. 15
Parque Industrial Stiva Aeropuerto
Apodaca, N.L. 66600
Phone: +52-81-8144 4000
Telefax: +52-81-8144 4010

Netherlands

GRUNDFOS Netherlands
Veluwezoom 35
1326 AE Almere
Postbus 22015
1302 CA ALMERE
Tel.: +31-88-478 6336
Telefax: +31-88-478 6332
E-mail: info_gnl@grundfos.com

New Zealand

GRUNDFOS Pumps NZ Ltd.
17 Beatrice Tinsley Crescent
North Harbour Industrial Estate
Albany, Auckland
Phone: +64-9-415 3240
Telefax: +64-9-415 3250

Norway

GRUNDFOS Pumper A/S
Stremsveien 344
Postboks 235, Leirdal
N-1011 Oslo
Tlf.: +47-22 90 47 00
Telefax: +47-22 32 21 50

Poland

GRUNDFOS Pompy Sp. z o.o.
ul. Klonowa 23
Baranowo k. Poznania
PL-62-081 Przeźmierowo
Tel: (+48-61) 650 13 00
Fax: (+48-61) 650 13 50

Portugal

Bombas GRUNDFOS Portugal, S.A.
Rua Calvet de Magalhães, 241
Apartado 1079
P-2770-153 Paço de Arcos
Tel.: +351-21-440 76 00
Telefax: +351-21-440 76 90

Romania

Grundfos Pompe România SRL
S-PARK BUSINESS CENTER, Clădirea A2,
etaj 2, Str. Tipografilor, Nr. 11-15, Sector 1,
Cod 013714, Bucuresti, Romania,
Tel: 004 021 2004 100
E-mail: romania@grundfos.ro
www.grundfos.ro

Russia

ООО Грундфос Россия
ул. Школьная, 39-41
Москва, RU-109544, Russia
Тел. (+7) 495 564-88-00 (495) 737-30-00
Факс (+7) 495 564 8811
E-mail grundfos.moscow@grundfos.com

Serbia

Grundfos Srbija d.o.o.
Omladinskih brigada 90b
11070 Novi Beograd
Phone: +381 11 2258 740
Telefax: +381 11 2281 769
www.rs.grundfos.com

Singapore

GRUNDFOS (Singapore) Pte. Ltd.
25 Jalan Tukang
Singapore 619264
Phone: +65-6681 9688
Telefax: +65-6681 9689

Slovakia

GRUNDFOS s.r.o.
Prievozská 4D
821 09 BRATISLAVA
Phona: +421 2 5020 1426
sk.grundfos.com

Slovenia

GRUNDFOS LJUBLJANA, d.o.o.
Leskoškova 9e, 1122 Ljubljana
Phone: +386 (0) 1 568 06 10
Telefax: +386 (0) 1 568 06 19
E-mail: tehnika-si@grundfos.com

South Africa

Grundfos (PTY) Ltd.
16 Lascelles Drive, Meadowbrook Estate
1609 Germiston, Johannesburg
Tel.: (+27) 10 248 6000
Fax: (+27) 10 248 6002
E-mail: lgradidge@grundfos.com

Spain

Bombas GRUNDFOS España S.A.
Camino de la Fuentequilla, s/n
E-28110 Algete (Madrid)
Tel.: +34-91-848 8800
Telefax: +34-91-628 0645

Sweden

GRUNDFOS AB
Box 333 (Lunnagårdsgatan 6)
431 24 Mölndal
Tel.: +46 31 332 23 000
Telefax: +46 31 331 94 60

Switzerland

GRUNDFOS Pumpen AG
Bruggacherstrasse 10
CH-8117 Fällanden/ZH
Tel.: +41-44-806 8111
Telefax: +41-44-806 8115

Taiwan

GRUNDFOS Pumps (Taiwan) Ltd.
7 Floor, 219 Min-Chuan Road
Taichung, Taiwan, R.O.C.
Phone: +886-4-2305 0868
Telefax: +886-4-2305 0878

Thailand

GRUNDFOS (Thailand) Ltd.
92 Chaloe Phrakiat Rama 9 Road,
Dokmai, Pravej, Bangkok 10250
Phone: +66-2-725 8999
Telefax: +66-2-725 8998

Turkey

GRUNDFOS POMPA San. ve Tic. Ltd. Sti.
Gebze Organize Sanayi Bölgesi
Ihsan dede Caddesi,
2. yol 200. Sokak No. 204
41490 Gebze/ Kocaeli
Phone: +90 - 262-679 7979
Telefax: +90 - 262-679 7905
E-mail: satis@grundfos.com

Ukraine

Бізнес Центр Європа
Столицне шосе, 103
м. Київ, 03131, Україна
Телефон: (+38 044) 237 04 00
Факс.: (+38 044) 237 04 01
E-mail: ukraine@grundfos.com

United Arab Emirates

GRUNDFOS Gulf Distribution
P.O. Box 16768
Jebel Ali Free Zone
Dubai
Phone: +971 4 8815 166
Telefax: +971 4 8815 136

United Kingdom

GRUNDFOS Pumps Ltd.
Grovebury Road
Leighton Buzzard/Beds. LU7 4TL
Phone: +44-1525-850000
Telefax: +44-1525-850011

U.S.A.

GRUNDFOS Pumps Corporation
9300 Loiret Blvd.
Lenexa, Kansas 66219
Phone: +1-913-227-3400
Telefax: +1-913-227-3500

Uzbekistan

Grundfos Tashkent, Uzbekistan The Representative Office of Grundfos Kazakhstan in Uzbekistan
38a, Oybek street, Tashkent
Телефон: (+998) 71 150 3290 / 71 150 3291
Факс: (+998) 71 150 3292

Addresses Revised 09.09.2020

96893745 12.2020

ECM: 1300816

Trademarks displayed in this material, including but not limited to Grundfos, the Grundfos logo and "be think innovate" are registered trademarks owned by The Grundfos Group. All rights reserved. © 2020 Grundfos Holding A/S. All rights reserved.