

SPK



SPK

English (GB)

Installation and operating instructions 4

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English (GB) Installation and operating instructions

Original installation and operating instructions

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1. General information



Read this document before you install the product. Installation and operation must comply with local regulations and accepted codes of good practice.

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 the 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 gray circle with a white graphical symbol indicates that an action must be taken.



A red or gray 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.

2. Installing the product

2.1 Mechanical installation

WARNING

Moving parts

Death or serious personal injury



- Tighten the coupling screws to the correct torque.
- Install the coupling guards securely to the pump with the screws intended for this purpose.

CAUTION

Hot surface

Minor or moderate personal injury

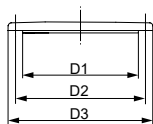
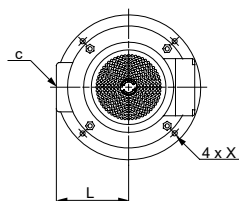


- The pump must be installed so that persons cannot accidentally come into contact with the hot surface of the motor.

2.1.1 Pump location

The pump is designed for tank mounting in vertical position. The pump is positioned in a hole cut into the cover of the tank (upper side) and is secured to the tank by four hexagon head screws through the holes in the mounting flange. We recommend to fit a sealing gasket between the pump flange and tank.

If the pump is to be installed horizontally, the drain hole of the motor stool must be fitted with a plug.



TM004375

Pump mounting flange dimensions:

Pump type	D1	D2	D3	L	C	X
SPK 1, 2 and 4	100	115	130	64	Rp 3/4	Ø7.5

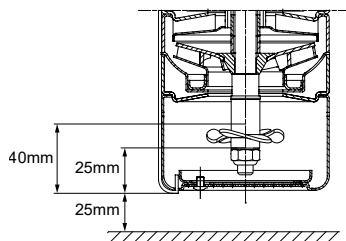
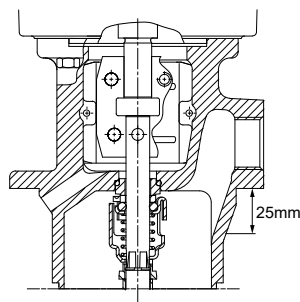
2.1.2 Inlet conditions

The bottom of the pump strainer must be at least 25 mm above the bottom of the tank.

The pumps are designed to provide full performance down to a level of A mm above the bottom of the strainer.

At a liquid level between A and B mm above the bottom of the strainer, the built-in priming screw protects the pump against dry running.

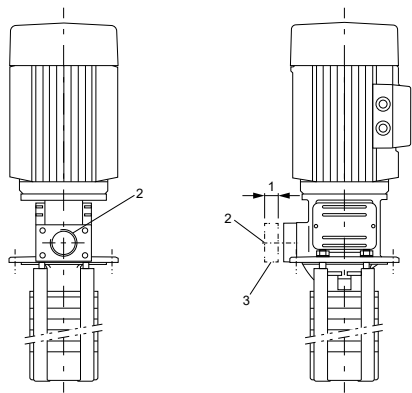
Pump type	A [mm]	B [mm]
SPK	40	25



TM011204

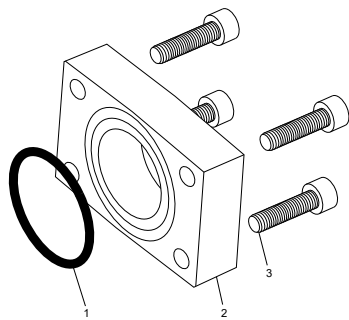
2.1.3 Piping for square flange

Pumps with type key x-M-A have piping threads at both the square flange and the pump head so you can connect the piping to either.



TM090138

Pos.	Description
1	19 mm
2	3/4"
3	Counterflange



TM090139

Counterflange set

Pos.	Description
1	O-Ring
2	Counterflange
3	Mounting bolt ¹⁾

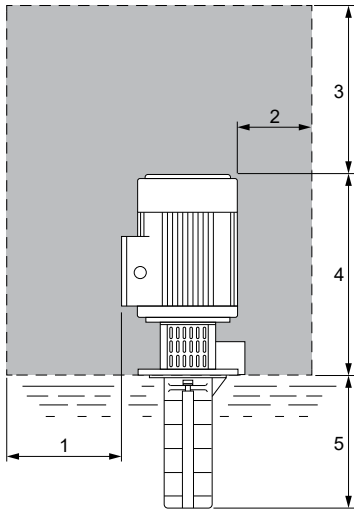
¹⁾ Maximum tightening torque: M8 = 27 Nm.



When connecting the flange, be sure to insert the O-ring securely into the O-ring groove.

Tighten the flange mounting bolts evenly.

2.1.4 Installation dimensions



TM090140

Pos.	Description
1	Min. 200 mm
2	Min. 150 mm
3	Dimension 5 + min. 30 mm
4	Varies by model
5	Varies by model

Make sure there is enough space for dimensions 1 to 3.

2.2 Electrical connection

WARNING

Electric shock

Death or serious personal injury



- Switch off the power supply before you start any work on the product. Make sure that the power supply cannot be switched on accidentally.
- Connect the product to an external main switch nearby. Make sure you can lock the main switch in OFF position (isolated). Type and requirements should be as specified in the EN 60204-1, 5.3.2.
- Connect the product to a motor-protective circuit breaker or a CUE frequency converter.



All electrical connections must be carried out by a qualified electrician in accordance with local regulations.



Confirm that the supply voltage and frequency correspond to the values stated on the nameplate.



Carry out the electrical connection as shown in the wiring diagram located inside the terminal box cover.

Single-phase Grundfos motors incorporate a thermal switch and require no additional motor protection.

Three-phase motors must be connected to a motor-protective circuit breaker.

2.2.1 Changing the terminal box position

WARNING

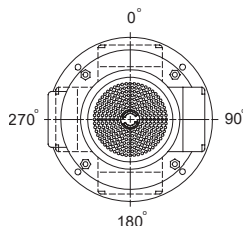
Electric shock

Death or serious personal injury



- Switch off the power supply before you start any work on the product. Make sure that the power supply cannot be switched on accidentally.

The terminal box can be positioned in four different directions by turning the motor in 90° steps.



Terminal box positions, top view

Follow the steps below to change the terminal box position:

1. If necessary, remove the coupling guards.



Do not remove the coupling.

2. Remove the bolts securing the motor to the pump.
3. Turn the motor to the required position.
4. Refit and tighten the bolts.
5. Refit the coupling guards.

2.2.2 Frequency converter operation

Three-phase motors defined by the IEC 60034 can be used for frequency converter operation, provided that the mains-voltage-dependent conditions and phase insulation requirements are met.



Make sure that all motors used with frequency converters are protected against voltage peaks and dU/dt transients according to the IEC 60034-17.

MG motors

All three-phase MG motors with phase insulation can be connected to a frequency converter.

Insulated bearings are recommended for motors from frame size 225 (45 kW/2-pole, 30 kW/4-pole and 22 kW/6-pole).

Other motor makes supplied by Grundfos

See the corresponding motor instructions supplied with the pump. If in doubt, contact Grundfos or the motor supplier.

2.2.2.1 Mains-voltage-dependent conditions

This section details the requirements for motor protection against voltage peaks for frequency-converter-operated MG motors defined by the IEC 60034:

TM004257

200-240 V

For mains voltages up to 240 V, no output filters are required.

380-500 V

For power cable lengths of less than 25 m and a mains supply up to 460 V, no additional motor protection is required.

For power cable lengths of more than 25 m or a mains supply higher than 460 V, sine-wave filters are required.

500 V and higher

For 500 V or higher voltages, sine-wave filters are always required.



Motors with reinforced insulation can be supplied as an option. These motors are according to the IEC 60034-25, therefore, there is no need for sine-wave filters. This does not eliminate the requirement for insulated bearings from frame size 225.

Exception

- Protect MG71 and MG80 motors (up to 1.1 kW/2-pole and up to 0.75 kW/4-pole) for supply voltages up to and including 440 V without phase insulation against voltage peaks above 650 V between the supply terminals.
- Use sine-wave filters at the output of the frequency converter, if you use MG71 and MG80 motors without phase insulation for input voltages above 240 V.



Phase-insulated MG 71 and MG 80 for use with variable frequency drives are available.



Frequency converter operation of the MG motors without phase insulation causes damage to the motor.

We recommend that you protect all other motors against voltage peaks higher than 1200 V by 2000 V/ μ sec.

You can eliminate increased acoustic noise and detrimental voltage peaks by fitting an LC filter between the frequency converter and the motor.

For further information, contact the frequency converter supplier or the motor supplier.

2.2.2.2 Dry-running protection

It is difficult to remove the air from the pump and piping if you start the pump at 50 Hz or less. We recommend installing a check valve near the outlet port to prevent the liquid in the pump and piping from dripping when the pump stops.



Starting or running the pump at a slow speed may result in the air inside the pump not being released. This causes the pump to run dry or the mechanical seal to stick, which may result in damage to the mechanical seal or fluid leakage.

2.2.2.3 Phase insulation, MG 71 and 80

The MG motors, frame sizes 71 and 80, do not have phase insulation as standard. The motors are not suitable for frequency converter operation as they are not protected against the voltage peaks caused by the frequency converter operation. Only motors with a rated voltage equal to 460 V or above have phase insulation.

3. Starting up the product



WARNING

Too high pressure and leakage
Death or serious personal injury

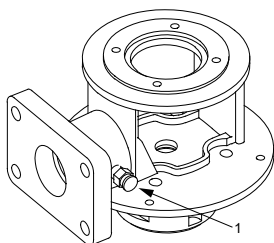
- Do not run the pump against a closed outlet valve for more than 5 minutes.

Before starting the pump, make sure the following requirements are met:

- all pipe connections are tight
- the pump body is partly filled with liquid (partly submerged)
- the strainer is not blocked by impurities.

Start the pump as follows:

1. Close the isolating valve on the outlet side of the pump.
2. If the pump is fitted with a vent valve, this valve must be opened, see figure 4.



TM016428

Pos.	Description
1	Vent valve

3. See the correct direction of rotation of the pump on the motor fan cover. When seen from the top, the pump must rotate *counterclockwise*.
4. Start the pump and check the direction of rotation.
5. Partly open the outlet isolating valve.
6. If the pump is fitted with a vent valve, this valve must be closed when a steady stream of liquid runs out of it.
7. Completely open the outlet isolating valve.

The pump has now been vented and is ready for operation.

4. Product introduction

4.1 Applications

The Grundfos SPK pumps are multistage centrifugal pumps designed for pumping liquids for machine tools, for condensate transfer and liquid transfer in industrial washing machines and similar applications.



WARNING

Fire and explosion

Death or serious personal injury

- Do not use the pump for flammable, combustible or explosive liquids.

The pumps are designed for pumping liquids with a density and viscosity corresponding to those of water. The pumped liquid must not contain abrasive particles or fibres.

When pumping liquids with a density or viscosity higher than that of water, the motor size must be taken into consideration.

4.2 Identification

The standard range of pumps encompasses complete impeller-in-chamber combinations.

Depending on duty combinations, other lengths can be supplied on request by fitting empty intermediate chambers instead of standard chambers with impellers.

The pump key on the pump nameplate indicates the number of chambers and impellers fitted to the pump.

4.3 Type key

Example: SPK 4-16/2-X-X-X-XXXX

Code	Explanation
SPK	Pump range
4	Nominal flow rate in m ³ /h
16	Number of stages
2	Number of impeller
X	Code for pump version
X	Code for pipe connection
X	Code for materials
XXXX	Code for shaft seal and rubber pump parts

5. Servicing the product

WARNING

Electric shock

Death or serious personal injury



- Before starting any work on the product, make sure the power supply has been switched off and that it cannot be accidentally switched on.

WARNING

Moving parts

Death or serious personal injury



- Tighten the coupling screws to the correct torque.
- Install the coupling guards securely to the pump with the screws intended for this purpose.

CAUTION

Corrosive liquids

Death or serious personal injury



- Wear personal protective equipment.

CAUTION

Toxic liquids

Death or serious personal injury



- Wear personal protective equipment.

CAUTION

Hot or cold liquid

Minor or moderate personal injury



- Wear personal protective equipment.

CAUTION

Hot or cold surface

Minor or moderate personal injury



- Make sure that no one can accidentally come into contact with hot or cold surfaces.

5.1 Maintaining the product

Pumps installed in accordance with these instructions require very little maintenance.

The mechanical shaft seal is self-adjusting and has wear-resistant seal rings that are lubricated and cooled by the pumped liquid.

The pump bearings are also lubricated by the pumped liquid. The motor ball bearings are grease-packed and sealed for life. No further lubrication is necessary.

5.1.1 Filters

Clean chip trays, filters, and so on, at regular intervals to ensure a correct flow of liquid.

5.1.2 Periodic checks

At regular intervals, depending on the conditions and time of operation, the following checks should be completed:

- Check the quantity of liquid and operating pressure.
- Confirm that there are no leaks.
- Confirm that the motor is not overheating.
- Check the tripping of the motor starter.
- Confirm that all controls are operating satisfactorily.

If the above checks do not reveal any abnormal operating details, no further checks are necessary.

Should any fault be found, check the symptoms in the fault finding section.

Related information

[8. Fault finding the product](#)

5.2 Contaminated products

CAUTION

Biological hazard

Minor or moderate personal injury



- Flush the pump thoroughly with clean water and rinse the pump parts in water after dismantling.

The product will be classified as contaminated if it has been used for a liquid which is injurious to health or toxic. If you request Grundfos to service the product, contact Grundfos with details about the pumped liquid before returning the product for service. Otherwise, Grundfos can refuse to accept the product for service.

Any application for service must include details about the pumped liquid.

Clean the product in the best possible way before you return it. Costs of returning the product are to be paid by the customer.

6. Taking the product out of operation

6.1 Taking the product permanently out of operation


CAUTION
Corrosive liquids

Death or serious personal injury

- Wear personal protective equipment.


CAUTION
Toxic liquids

Death or serious personal injury

- Wear personal protective equipment.


CAUTION
Hot or cold liquid

Minor or moderate personal injury

- Wear personal protective equipment.


CAUTION
Hot or cold surface

Minor or moderate personal injury

- Make sure no one can accidentally come into contact with hot or cold surfaces.

7. Technical data

Pump type	SPK
Minimum liquid temperature [°C]	-10
Maximum liquid temperature [°C]	+90
Maximum ambient temperature [°C]	+40/60
Maximum operating pressure [bar]	10
Enclosure class	IP55

7.1 Sound pressure level

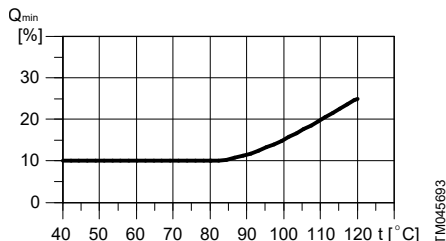
The table below shows airborne noise emitted by pumps fitted with a Grundfos MG or Innomotics motor.

For motors of other makes supplied by Grundfos, see the instructions for the motor supplied with the pump.

Motor [kW]	L _{pA} [dB(A)]	
	50 Hz	60 Hz
0.06	< 70	< 70
0.12	< 70	< 70
0.18	< 70	< 70
0.25	< 70	< 70
0.37	< 70	< 70
0.55	< 70	< 70
0.75	< 70	< 70
1.1	< 70	< 70

7.2 Minimum flow rate

The curve shows the minimum flow rate as a percentage of the rated flow rate in relation to the liquid temperature.



Minimum flow rate in percentage of the rated flow rate

[N/A]

Do not use the pump at flow rates below the minimum flow rate. The pump risks overheating.

TM045693

7.3 Maximum ambient temperature and altitude for the Grundfos MG and Innomotics motors

The table shows the maximum permissible ambient temperature at full load and the maximum permissible installation altitude above sea level at full load.

Motor power [kW]	Motor make ²⁾	Max. ambient temperature [°C]	Max. altitude [m]
0.06 - 0.18	Innomotics	40	1000
0.25 - 0.55	Grundfos MG	40	1000
0.75 - 1.1	Grundfos MG	60	3500

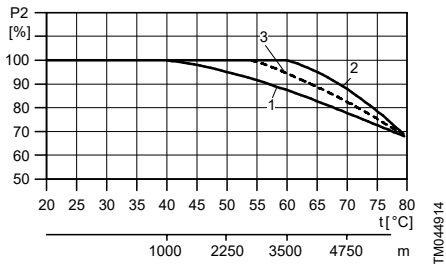
2) For motors of other makes supplied by Grundfos, see the instructions for the motor which are supplied with the pump.

Motor output derating factors

If the ambient temperature exceeds the maximum permissible temperature value or the pump is installed at an altitude exceeding the maximum permissible altitude value, the motor must not be fully loaded due to risk of overheating. Overheating may result from excessive ambient temperatures or the low density, and consequently low cooling effect, of the air.

In such cases, it may be necessary to use a motor with a higher rated output.

Motor load for the Grundfos MG and Innomotics motors



Maximum motor output in relation to ambient temperature and altitude

Derating curve	Motor power [kW]	Motor make ²⁾	Motor efficiency class
1	0.06 - 0.18	Innomotics	IE3
1	0.25 - 0.55	Grundfos MG	IE3
2	0.75 - 22	Grundfos MG	IE3
3	30-45	Innomotics	IE3

2) For motors of other makes supplied by Grundfos, see the instructions for the motor which are supplied with the pump.

Example of maximum motor load

Pump with a 2.2 kW IE3 motor (derating curve 2):

- If this pump is installed 4750 m above sea level, the motor must not be loaded more than 88 % of the rated output.
- At an ambient temperature of 75 °C, the motor must not be loaded more than 78 % of the rated output.
- If the pump is installed 4750 m above sea level at an ambient temperature of 75 °C, multiply the derating factors. The motor must not be loaded more than 88 % times 78 % equaling 68.6 % of the rated output.

If the motor load is not reduced in case the ambient temperature or installation altitude is exceeded, the motor life would be limited, and the warranty is void.

7.4 Maximum number of starts

It is valid for pumps fitted with a Grundfos MG or Innomotics motor:

Motor power [kW]	Maximum number of starts per hour
0.06 - 0.18	100
0.25 - 1.1	250

For motors of other makes supplied by Grundfos, see the instructions for the motor supplied with the pump.

8. Fault finding the product



WARNING

Electric shock

Death or serious personal injury

- Before starting any work on the product, make sure the power supply has been switched off and that it cannot be accidentally switched on.



WARNING

Moving parts

Death or serious personal injury

- Tighten the coupling screws to the correct torque.
- Install the coupling guards securely to the pump with the screws intended for this purpose.



CAUTION

Corrosive liquids

Death or serious personal injury

- Wear personal protective equipment.



CAUTION

Toxic liquids

Death or serious personal injury

- Wear personal protective equipment.



CAUTION

Hot or cold liquid

Minor or moderate personal injury

- Wear personal protective equipment.



CAUTION

Hot or cold surface

Minor or moderate personal injury

- Make sure no one can accidentally come into contact with hot or cold surfaces.

8.1 The motor does not run when started

Cause	Remedy
There is a supply failure.	Connect the power supply.
The fuses are blown.	Replace the fuses.
The motor starter overload has tripped.	Reactivate the motor protection.
The main contacts in the motor starter are not making contact or the coil is faulty.	Replace the contacts or the magnetic coil.
The control circuit is defective.	Repair the control circuit.
The motor is defective.	Replace the motor.

8.2 The motor starter overload trips out immediately when the supply is switched on

Cause	Remedy
One fuse or automatic circuit breaker is blown.	Cut in the fuse.
Contacts in the motor starter overload are faulty.	Replace the motor starter contacts.
The cable connection is loose or faulty.	Fasten or replace the cable connection.
The motor winding is defective.	Replace the motor.
The pump is mechanically blocked.	Remove the mechanical blocking of the pump.
The overload setting is too low.	Set the motor starter correctly.

8.3 The motor starter overload trips out occasionally

Cause	Remedy
The overload setting is too low.	Set the motor starter correctly.
There is low voltage at peak times.	Check the power supply.

8.4 The motor starter has not tripped but the pump does not run

Cause	Remedy
There is a supply failure.	Connect the power supply.
The fuses are blown.	Replace the fuses.
The main contacts in the motor starter are not making contact or the coil is faulty.	Replace the contacts or the magnetic coil.
The control circuit is defective.	Repair the control circuit.

8.5 The pump runs but gives no liquid or the pump capacity is not constant

Cause	Remedy
The pump strainer is partly blocked by impurities.	Clean the strainer.
The liquid level in the tank is too low.	Increase the liquid level.
The pump rotates in the wrong direction.	Change the direction of rotation of the motor.

9. Disposing of the product

This product or parts of it must be disposed of in an environmentally sound way.

1. Use the public or private waste collection service.
2. If this is not possible, contact the nearest Grundfos company or service workshop.



The crossed-out wheellie bin symbol on a product means that it must be disposed of separately from household waste. When a product marked with this symbol reaches its end of life, take it to a collection point designated by the local waste disposal authorities. The separate collection and recycling of such products will help protect the environment and human health.

See also end-of-life information at www.grundfos.com/product-recycling.

10. Document quality feedback

To provide feedback about this document, scan the QR-code using your phone's camera or a QR code app.



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安全上のご注意

1. Japanese warranty and safety statement

安全上のご注意

- ➔ ご使用（据付、運転、保守・点検等）の前に、必ずこの取扱説明書とその他の付属書類をすべて熟読し、正しくご使用ください。機器の知識、安全の情報そして、注意事項のすべてについて習熟してからご使用ください。
- ➔ この取扱説明書では、安全注意事項のランクを「危険」「注意」として区分してあります。

⚠ 危険：取扱いを誤った場合、危険な状況が起こりえて、死亡又は重傷を受ける可能性が想定される場合。

⚠ 注意：取扱いを誤った場合、危険な状況が起こりえて、中程度の傷害や軽傷を受ける可能性が想定される場合及び物的損害だけの発生が想定される場合。

なお、**⚠ 注意**に記載した事項でも、状況によっては重大な結果に結びつく可能性があります。

いずれも重要な内容を記載していますので必ず守ってください。

⚠ 危険
（全 般） ● 爆発性雰囲気中では使用しないでください。 ● メンテナンス等、保守の目的で作業する場合は、必ず電源を切って作業してください。 ● 運搬、設置、配管・配線、運転・操作、保守・点検の作業は、専門知識のある人が実施してください。感電、けが、火災等のおそれがあります。 （配管・配線） ● 電源ケーブルとの結線は、取扱説明書によって行ってください。感電や火災のおそれがあります。 ● ポンプの運転は、この取扱説明書に記されている容量の漏電ブレーカをつけて御使用ください。感電や火災等のおそれがあります。 （据付・調整） ● アース用端子を確実に接地してください。感電のおそれがあります。 （運 転） ● 運転中、回転体（シャフト、カップリング等）へは絶対に接近又は接触しないでください。巻き込まれ、けがのおそれがあります。 ● 停電した時は必ず電源スイッチを切ってください。けがのおそれがあります。 ● ポンプを締め切り状態や、取扱説明書に記載の最小流量以下での連続運転はしないでください。インペラーの摩擦熱によって、液温が急激に上昇し、やけど、液漏れの原因となります。 ● 空運転（ポンプ内部に搬送液がない時の運転）はしないでください。ポンプ破損の原因となります。



注 意

(全 般)

- ポンプの仕様以外で使用しないでください。感電、けが、破損等のおそれがあります。
- ポンプ及び電動機の開口部に、指や物を入れないでください。
感電、けが、火災等のおそれがあります。
- 損傷した電動機を使用しないでください。けが、火災等のおそれがあります。
- お客様による製品の改造は、当社の保証範囲外ですので、責任を負いません。
- 銘板を取り外さないでください。

(輸送・運搬)

- 運搬時は、落下、転倒すると危険ですので、十分ご注意ください。
- 装置に据え付けた後、ポンプのハンドルなどポンプ本体の部分を利用して、装置全体を吊り上げることは避けてください。
吊り上げる前に銘板、梱包箱、外形図、カタログ等により、ポンプの質量を確認し、吊り具の定格荷重以上のポンプは吊らないでください。

(開 梱)

- 天地を確認の上、特に木枠梱包はクギに注意して開梱してください。
けがのおそれがあります。
- 現品が注文通りのものかどうか、確認してください。
間違った製品を設置した場合、けが、破損等のおそれがあります。

(据付・調整)

- ポンプを定常運転する前に本取扱説明書を参考にして、回転方向を確認してください。
けが、装置破損のおそれがあります。
- ポンプには絶対に乗らないようにしてください。
ポンプの破損や、けがのおそれがあります。
- スターデルタ始動を行う場合、一次側に電磁開閉器付のもの（3 コンダクタ方式）を選定してください。火災のおそれがあります。
- 400V 級インバータで電動機を駆動する場合、インバータ側で抑制フィルタやリアクトルを設置するか、電動機側で絶縁を強化したものをご使用ください。
絶縁破壊による破損、火災のおそれがあります。
- 電動機の周囲には通風を妨げるような障害物を置いたり可燃物を置かないでください。
冷却が疎外され、異常加熱や火災、やけど等のおそれがあります。
- 運転前にはカップリングの締め付けボルトは、確実に締め付けてください。
破片飛散によるけが、装置破損のおそれがあります。
- 電動機単体での回転方向の確認は行わなわないでください。カップリング取付時にシャフト位置調整が必要な為、シャフト位置不具合によりポンプを破壊する原因となります。

(配管・配線)

- 配線は、電気設備技術基準や内線規程にしたがって施工してください。
焼損や火災のおそれがあります。
- 電動機保護装置が電動機に内蔵されていません。
過負荷保護装置は電気設備技術基準により取付が義務づけられています。
過負荷保護装置以外の保護装置（漏電遮断器等）も設置することを推奨します。
焼損や火災のおそれがあります。



注 意

(運 転)

- 運転中、電動機はかなり高温になります。手や体を触れないようにご注意ください。やけどのおそれがあります。
- 異常が発生した場合は直ちに運転を停止してください。感電、けが、火災等のおそれがあります。
- 一般仕様のポンプを許容以上の高温液（カタログの許容液温を御参照下さい）には使用しないで下さい。ポンプが故障し、漏電や感電などの原因となります。

(保守・点検)

- 絶縁抵抗測定の際は、ポンプ本体に触れないでください。感電のおそれがあります。
- ポンプの本体は高温になるので、素手でさわらないでください。やけどのおそれがあります。

(修理・分解・改造)

- 修理、分解は、必ず専門の担当者が行ってください。改造は行わないでください。感電、けが、火災等のおそれがあります。

(廃 棄)

- このポンプやその部品を廃棄処分する場合は、公的廃棄物収集サービス又は、廃棄物回収業者にご依頼ください。

安全のために次のことは必ず守ってください



安全上の注意事項

正しくお使いいただくために、ご使用前に必ず取扱説明書をお読みください。
また安全上、下記事項は特に注意してください。

- (1) この機器の回転部に接触すると重傷を負う可能性がありますので、関係者以外は操作出来ない配慮をしてください。
- (2) 周囲に爆発性、引火性、腐食性ガスのない場所に設置してください。
- (3) ご使用前に必ず接地（アース）を取り付けてください。
- (4) 部品を取り外して他の機器に使用したり、指定以外の商品を使用しないでください。
- (5) 仕様書、契約書、取扱説明書に記載された運転条件以外では、絶対に運転しないでください。

「安全上のご注意」を逸脱した取扱いによって発生した事故の責任はいっさい負いません。

保 証

納入品の保証期間は、納入日より1ヶ年といたします。ただし、保証は日本国内で使用される場合に限りです。

保証期間中に本取扱説明書に従った製品仕様範囲内の正常な使用状態で故障を生じた場合は、故障部分の交換又は修理を無償で行います。この場合、無償交換、修理は、納入品の故障、破損部分の交換又は修理に限られ、その他の費用の負担、損害についての責任は免除させていただきます。

但し、次に該当する場合は、この保証の範囲から除外させていただきます。

- (1) 不適当な取り扱い、使用、ならびに保存により生じた故障、破損
- (2) 納入品以外の機器が原因による故障、破損
- (3) 当社以外の修理、改造による故障、破損
- (4) 当社指定品以外の部品を使用した場合の故障、破損
- (5) 火災、地震、天災などの災害および不可抗力による故障、破損

修 理 ・ ア フ タ ー サ ー ビ ス

納入品に故障があることを発見したときは、直ちに購入先または弊社サービスまでご連絡下さい。納入日より1ヶ年以内にご連絡がない場合は、故障、破損部分の交換又は修理は有償となります。また、いかなる場合においても、その他の費用の負担、損害についての責任は免除させていただきます。

故障の連絡の際、銘板記載事項（型式、製造番号など）と故障状況をお知らせください。

消 耗 部 品 と 定 期 点 検

消耗部品交換の目安

ポンプ部		3～4年に一度
電動機部		1～2年に一度

定期点検

長期に渡り安定した性能を得る為には、1年に一度点検を施し異常が無いか、変化が無いか以下の点を調査・測定し記録し対策をしてください。

流量、圧力：異常がある場合はポンプ部の分解点検をします。

電流値、絶縁抵抗値：電動機交換等の処理をします。

1. 中国 RoHS

产品中有害物质的名称及含有信息表

部件名称	有害物质									
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价 铬 (Cr6+)	多溴 联苯 (PBBs)	多溴二 苯醚 (PBDEs)	邻苯二甲 酸二正丁 酯 (DBP)	邻苯二甲 酸二 异丁酯 (DIBP)	邻苯二甲酸 丁基半酯 (BBP)	邻苯二甲 酸二(2- 乙基)己 酯 (DEHP)
泵壳	X	O	O	O	O	O	O	O	O	O
紧固件	X	O	O	O	O	O	O	O	O	O
管件	X	O	O	O	O	O	O	O	O	O
定子	X	O	O	O	O	O	O	O	O	O
转子	X	O	O	O	O	O	O	O	O	O
注 1：O：表示该有害物质在该部件所有均质材料中的含量均不超出电器电子产品有害物质限制使用国家标准要求。 X：表示该有害物质至少在该部件的某一均质材料中含量超出电器电子产品有害物质限制使用国家标准要求。 注 2：以上未列出的部件，表明其有害物质含量均不超出电器电子产品有害物质限制使用国家标准要求。										



TM090584

EU declaration of conformity

GB: EC/EU declaration of conformity

We, Grundfos, declare under our sole responsibility that the product SPK, to which the declaration below relates, is in conformity with the Council Directives listed below on the approximation of the laws of the EC/EU member states.

DE: EG-/EU-Konformitätserklärung

Wir, Grundfos, erklären in alleiniger Verantwortung, dass das Produkt SPK, auf das sich diese Erklärung bezieht, mit den folgenden Richtlinien des Rates zur Angleichung der Rechtsvorschriften der EG-/EU-Mitgliedsstaaten übereinstimmt.

ES: Declaración de conformidad de la CE/UE

Grundfos declara, bajo su exclusiva responsabilidad, que el producto al que concierne la presente declaración, marcado con la denominación SPK, es conforme con las Directivas del Consejo que figuran a continuación, basadas en la aproximación de las legislaciones correspondientes de los Estados miembros de la CE/UE.

FR : Déclaration de conformité CE/UE

Nous, Grundfos, déclarons sous notre entière responsabilité que le produit SPK auquel la déclaration ci-dessous fait référence, est conforme aux directives du Conseil répertoriées ci-dessous, concernant le rapprochement des législations des États membres de la CE et de l'UE.

IT: Dichiarazione di conformità CE/UE

Grundfos dichiara sotto la sua esclusiva responsabilità che il prodotto SPK, al quale si riferisce questa dichiarazione, è conforme alle seguenti direttive del Consiglio riguardanti il riavvicinamento delle legislazioni degli Stati membri CE/UE.

PL: Deklaracja zgodności WE/UE

Firma Grundfos oświadcza z pełną odpowiedzialnością, że jej produkt SPK, którego dotyczy niniejsza deklaracja, jest zgodny z następującymi dyrektywami Rady w sprawie zbliżenia przepisów prawnych państw członkowskich WE/UE.

RU: Декларация о соответствии нормам ЕЭС/ЕС

Мы, компания Grundfos, со всей ответственностью заявляем, что изделие SPK, к которому относится нижеприведённая декларация, соответствует нижеприведённым Директивам Совета Евросоюза о тождественности законов стран-членов ЕЭС/ЕС.

CZ: ES/EU prohlášení o shodě

My společnost Grundfos prohlašujeme na svou plnou odpovědnost, že výrobek SPK, na který se toto prohlášení vztahuje, je v souladu s níže uvedenými ustanoveními směrnice Rady pro sblížení právních předpisů členských států ES/EU.

DK: EF/EU-overensstemmelseserklæring

Vi, Grundfos, erklærer under ansvar at produktet SPK som erklæringen nedenfor omhandler, er i overensstemmelse med Rådets direktiver der er nævnt nedenfor, om indbyrdes tilnærmelse til EF/EU-medlemsstaternes lovgivning.

FI: EY/EU-vaatimustenmukaisuusvakuutus

Grundfos vakuuttaa omalla vastuullaan, että tuote SPK, jota tämä vakuutus koskee, on EY/ EU:n jäsenvaltioiden lainsäädännön lähentämiseen tähtäävien Euroopan neuvoston direktiivien vaatimusten mukainen seuraavasti.

GR: Δήλωση συμμόρφωσης ΕΚ/ΕΕ

Εμείς, η Grundfos, δηλώνουμε με αποκλειστική δική μας ευθύνη ότι το προϊόν SPK, στο οποίο αναφέρεται η παρακάτω δήλωση, συμμορφώνεται με τις παρακάτω Οδηγίες του Συμβουλίου περί προσέγγισης των νομοθεσιών των κρατών μελών της ΕΚ/ΕΕ.

NL: EG/EU-conformiteitsverklaring

Wij, Grundfos, verklaren geheel onder eigen verantwoordelijkheid dat product SPK, waarop de onderstaande verklaring betrekking heeft, in overeenstemming is met de onderstaande Richtlijnen van de Raad inzake de onderlinge aanpassing van de wetgeving van de EG-/EU-lidstaten.

PT: Declaração de conformidade CE/UE

A Grundfos declara sob sua única responsabilidade que o produto SPK, ao qual diz respeito a declaração abaixo, está em conformidade com as Diretivas do Conselho sobre a aproximação das legislações dos Estados Membros da CE/UE.

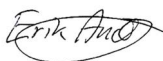
SE: EG/EU-försäkran om överensstämmelse

Vi, Grundfos, försäkrar under ansvar att produkten SPK, som omfattas av nedanstående försäkran, är i överensstämmelse med de rättsdirektiv om inbördes närmande till EG/EU-medlemsstaternas lagstiftning som listas nedan.

- Machinery Directive (2006/42/EC).
Standards used: EN 809:1998 + A1:2009
- Ecodesign Directive (2009/125/EC).
Electric motors:
Commission Regulation No 640/2009.
Applies only to three-phase Grundfos motors marked IE2 or IE3.
See motor nameplate.
Standard used EN 60034-30:2009.
- Ecodesign Directive (2009/125/EC).
Water pumps:
Commission Regulation No 547/2012.
Applies only to water pumps marked with the minimum efficiency index MEI. See pump nameplate.
Additional directives and standards effective from 22 July 2019:
- RoHS Directives: 2011/65/EU and 2015/863/EU
Standard used: EN 50581:2012

This EC/EU declaration of conformity is only valid when published as part of the Grundfos installation and operating instructions (publication number 96496967).

Bjerringbro, 26 November 2018



Erik Andersen
Senior Manager
Grundfos Holding A/S
Poul Due Jensens Vej 7
8850 Bjerringbro, Denmark
www.grundfos.com

Person authorised to compile technical file and empowered to sign the EC/EU declaration of conformity.

UK declaration of conformity

UK declaration of conformity

We, Grundfos, declare under our sole responsibility that the products to which the declaration below relates, are in conformity with UK regulations, standards and specifications to which conformity is declared, as listed below:

Valid for products:

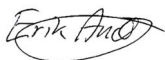
SPK

- Supply of Machinery (Safety) Regulations 2008
Standard used: EN 809:1998, A1:2009.
- The Ecodesign for Energy-Related Products and Energy Information Regulations 2019
Electric motors:
Regulation (EC) No 640/2009 and Regulation (EU) No 4/2014
Applies only to three-phase Grundfos motors marked IE2 or IE3.
See motor nameplate.
Standard used: EN 60034-30-1:2009
- The Ecodesign for Energy-Related Products and Energy Information Regulations 2019
Water pumps:
Regulation (EU) No 547/2012.
Applies only to water pumps marked with the minimum efficiency index MEI. See pump nameplate.
- The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2019
Standard used: EN IEC 63000:2018

This UK declaration of conformity is only valid when accompanying Grundfos instructions.

UK Importer: Grundfos Pumps Ltd. Grovebury Road, Leighton Buzzard, LU7 4TL.

Bjerringbro, January 1, 2021



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