

# CRN-SF

## Installation and operating instructions

GB D F I E P GR NL S FIN DK



## GB Declaration of Conformity

We Grundfos declare under our sole responsibility that the products **CRN-SF**, to which this declaration relates, are in conformity with the Council Directives on the approximation of the laws of the EC Member States relating to

- Machinery (98/37/EC).  
Standard used: EN ISO 12100.
- Electromagnetic compatibility (89/336/EEC).  
Standards used: EN 61000-6-2 and EN 61000-6-3.
- Electrical equipment designed for use within certain voltage limits (73/23/EEC) [95].  
Standards used: EN 60335-1: 1994 and EN 60335-2-51: 1997.

## D Konformitätserklärung

Wir Grundfos erklären in alleiniger Verantwortung, dass die Produkte **CRN-SF**, auf die sich diese Erklärung bezieht, mit den folgenden Richtlinien des Rates zur Angleichung der Rechtsvorschriften der EG-Mitgliedstaaten übereinstimmen:

- Maschinen (98/37/EG).  
Norm, die verwendet wurde: EN ISO 12100.
- Elektromagnetische Verträglichkeit (89/336/EWG).  
Normen, die verwendet wurden: EN 61000-6-2 und EN 61000-6-3.
- Elektrische Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen (73/23/EWG) [95].  
Normen, die verwendet wurden: EN 60335-1: 1994 und EN 60335-2-51: 1997.

## F Déclaration de Conformité

Nous Grundfos déclarons sous notre seule responsabilité que les produits **CRN-SF** auxquels se réfère cette déclaration sont conformes aux Directives du Conseil concernant le rapprochement des législations des Etats membres CE relatives à

- Machines (98/37/CE).  
Standard utilisé: EN ISO 12100.
- Compatibilité électromagnétique (89/336/CEE).  
Standards utilisés: EN 61000-6-2 et EN 61000-6-3.
- Matériel électrique destiné à employer dans certaines limites de tension (73/23/CEE) [95].  
Standards utilisés: EN 60335-1: 1994 et EN 60335-2-51: 1997.

## I Dichiarazione di Conformità

Noi Grundfos dichiariamo sotto la nostra esclusiva responsabilità che i prodotti **CRN-SF** ai quali questa dichiarazione si riferisce sono conformi alle Direttive del Consiglio concernente il ravvicinamento delle legislazioni degli Stati membri CE relative a

- Macchine (98/37/CE).  
Standard usato: EN ISO 12100.
- Compatibilità elettromagnetica (89/336/CEE).  
Standard usati: EN 61000-6-2 e EN 61000-6-3.
- Materiale elettrico destinato ad essere utilizzato entro certi limiti di tensione (73/23/CEE) [95].  
Standard usati: EN 60335-1: 1994 e EN 60335-2-51: 1997.

## E Declaración de Conformidad

Nosotros Grundfos declaramos bajo nuestra única responsabilidad que los productos **CRN-SF** a los cuales se refiere esta declaración son conformes con las Directivas del Consejo relativas a la aproximación de las legislaciones de los Estados Miembros de la CE sobre

- Máquinas (98/37/CE).  
Norma aplicada: EN ISO 12100.
- Compatibilidad electromagnética (89/336/CEE).  
Normas aplicadas: EN 61000-6-2 y EN 61000-6-3.
- Material eléctrico destinado a utilizarse con determinadas límites de tensión (73/23/CEE) [95].  
Normas aplicadas: EN 60335-1: 1994 y EN 60335-2-51: 1997.

## P Declaração de Conformidade

Nós Grundfos declaramos sob nossa única responsabilidade que os produtos **CRN-SF** aos quais se refere esta declaração estão em conformidade com as Directivas do Conselho das Comunidades Europeias relativas à aproximação das legislações dos Estados Membros respeitantes à

- Máquinas (98/37/CE).  
Norma utilizada: EN ISO 12100.
- Compatibilidade electromagnética (89/336/CEE).  
Normas utilizadas: EN 61000-6-2 e EN 61000-6-3.
- Material eléctrico destinado a ser utilizado dentro de certos limites de tensão (73/23/CEE) [95].  
Normas utilizadas: EN 60335-1: 1994 e EN 60335-2-51: 1997.

## GR Δήλωση Συμμόρφωσης

Εμείς η Grundfos δηλώνουμε με αποκλειστικά δική μας ευθύνη ότι τα προϊόντα **CRN-SF** συμμορφώνονται με την Οδηγία του Συμβουλίου επί της σύγκλισης των νόμων των Κρατών Μελών της Ευρωπαϊκής Ένωσης σε σχέση με τα

- Μηχανήματα (98/37/ΕΚ).  
Πρότυπο που χρησιμοποιήθηκε: EN ISO 12100.
- Ηλεκτρομαγνητική συμβατότητα (89/336/ΕΕΚ).  
Πρότυπα που χρησιμοποιήθηκαν: EN 61000-6-2 και EN 61000-6-3.
- Ηλεκτρικές συσκευές σχεδιασμένες για χρήση εντός ορισμένων ορίων ηλεκτρικής τάσης (73/23/ΕΕΚ) [95].  
Πρότυπα που χρησιμοποιήθηκαν: EN 60335-1: 1994 και EN 60335-2-51: 1997.

## NL Overeenkomstigheidsverklaring

Wij Grundfos verklaren geheel onder eigen verantwoordelijkheid dat de producten **CRN-SF** waarop deze verklaring betrekking heeft in overeenstemming zijn met de Richtlijnen van de Raad inzake de onderlinge aanpassing van de wetgevingen van de Lid-Staten betreffende

- Machines (98/37/EG).  
Norm: EN ISO 12100.
- Elektromagnetische compatibiliteit (89/336/EEG).  
Normen: EN 61000-6-2 en EN 61000-6-3.
- Elektrisch materiaal bestemd voor gebruik binnen bepaalde spanningsgrenzen (73/23/EEG) [95].  
Normen: EN 60335-1: 1994 en EN 60335-2-51: 1997.

## S Försäkran om överensstämmelse

Vi Grundfos försäkrar under ansvar, att produkterna **CRN-SF**, som omfattas av denna försäkran, är i överensstämmelse med Rådets Direktiv om inbördes närmande till EU-medlemsstaternas lagstiftning, avseende

- Maskinell utrustning (98/37/EC).  
Använd standard: EN ISO 12100.
- Elektromagnetisk kompatibilitet (89/336/EC).  
Använda standarder: EN 61000-6-2 och EN 61000-6-3.
- Elektrisk material avsedd för användning inom vissa spänningsgränser (73/23/EC) [95].  
Använda standarder: EN 60335-1: 1994 och EN 60335-2-51: 1997.

## FIN Vastaavuusvakuutus

Me Grundfos vakuutamme yksin vastuullisesti, että tuotteet **CRN-SF**, jota tämä vakuutus koskee, noudattavat direktiivejä jotka käsittelevät EY:n jäsenvaltioiden koneellisia laitteita koskevien lakien yhdenmukaisuutta seur.:

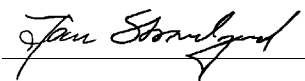
- Koneet (98/37/EY).  
Käytetty standardi: EN ISO 12100.
- Elektromagneettinen vastaavuus (89/336/EY).  
Käytetyt standardit: EN 61000-6-2 ja EN 61000-6-3.
- Määrätyjen jänniterajoitusten puitteissa käytettävät sähköiset laitteet (73/23/EY) [95].  
Käytetyt standardit: EN 60335-1: 1994 ja EN 60335-2-51: 1997.

## DK Overensstemmelseserklæring

Vi Grundfos erklærer under ansvar, at produkterne **CRN-SF**, som denne erklæring omhandler, er i overensstemmelse med Rådets direktiver om indbyrdes tilnærmelse til EF medlemsstaternes lovgivning om

- Maskiner (98/37/EF).  
Anvendt standard: EN ISO 12100.
- Elektromagnetisk kompatibilitet (89/336/EØF).  
Anvendte standarder: EN 61000-6-2 og EN 61000-6-3.
- Elektrisk materiel bestemt til anvendelse inden for visse spændingsgrænser (73/23/EØF) [95].  
Anvendte standarder: EN 60335-1: 1994 og EN 60335-2-51: 1997.

Bjerringbro, 01/11/2005



Jan Strandgaard  
Technical Director

# CRN-SF

<b>Installation and operating instructions</b>	4	<b>GB</b>
<b>Montage- und Betriebsanleitung</b>	8	<b>D</b>
<b>Notice d'installation et d'entretien</b>	13	<b>F</b>
<b>Istruzioni di installazione e funzionamento</b>	17	<b>I</b>
<b>Instrucciones de instalación y funcionamiento</b>	21	<b>E</b>
<b>Instruções de instalação e funcionamento</b>	25	<b>P</b>
<b>Οδηγίες εγκατάστασης και λειτουργίας</b>	29	<b>GR</b>
<b>Installatie- en bedieningsinstructies</b>	34	<b>NL</b>
<b>Monterings- och driftsinstruktion</b>	38	<b>S</b>
<b>Asennus- ja käyttöohjeet</b>	42	<b>FIN</b>
<b>Monterings- og driftsinstruktion</b>	46	<b>DK</b>

**CONTENTS**

	<b>Page</b>
<b>1. Pump key</b>	<b>4</b>
<b>2. Applications</b>	<b>4</b>
2.1 Pumped liquids	4
<b>3. Technical data</b>	<b>4</b>
3.1 Ambient temperature	4
3.2 Liquid temperature	4
3.3 Maximum permissible operating pressure	4
3.4 Liquid temperature for the shaft seal	4
3.5 Minimum inlet pressure	4
3.6 Maximum inlet pressure	4
3.7 Electrical data	4
3.8 Frequency of starts and stops	4
3.9 Dimensions and weights	4
3.10 Sound level	5
<b>4. Installation</b>	<b>5</b>
4.1 Minimum flow rate	5
4.2 Installation example	5
<b>5. Electrical connection</b>	<b>6</b>
5.1 Frequency converter operation	6
<b>6. Start-up</b>	<b>6</b>
<b>7. Maintenance</b>	<b>6</b>
<b>8. Frost protection</b>	<b>6</b>
<b>9. Service</b>	<b>6</b>
<b>10. Fault finding chart</b>	<b>7</b>
<b>11. Disposal</b>	<b>7</b>



Prior to installation, read these installation and operating instructions. Installation and operation must comply with local regulations and accepted codes of good practice.

**1. Pump key**

Example	CRN- 10 - 21- SF - X - X - X - XXXX
Pump range	10
Nominal flow rate in m³/h	21
Number of impellers	SF
Code for pump version	X
Code for pipework connection	X
Code for materials	X
Code for rubber parts	X
Code for shaft seal	XXXX

**2. Applications**

For pressure boosting and circulation in systems operating with high pressures. The pump requires a minimum inlet pressure of 2 bar and is usually supplied together with a CRN pump which is installed as a feed pump for the CRN-SF pump.

**2.1 Pumped liquids**

Thin, non-explosive liquids, not containing solid particles or fibres. The liquid must not attack the pump materials chemically. When pumping liquids with a density and/or viscosity higher than that of water, motors with correspondingly higher outputs must be used, if required.

**3. Technical data**

**3.1 Ambient temperature**

- 0.37-0.75 kW motors (EFF 2, MG): Max. +40°C.
- 1.1-11 kW motors (EFF 1, MG): Max. +60°C.
- 15-45 kW motors (EFF 1, Siemens): Max. +55°C.

If the ambient temperature exceeds above maximum values or if the motor is located 1000 metres above sea level, the motor output (P2) must be reduced due to 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.

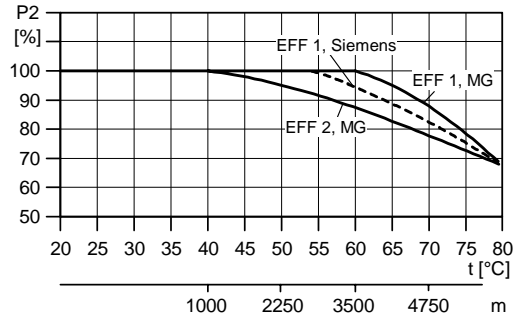


Fig. 1

**3.2 Liquid temperature**

-30°C to +120°C.

**Note:** The maximum permissible operating pressure and liquid temperature ranges apply to the pump only.

**3.3 Maximum permissible operating pressure**

50 bar.

**3.4 Liquid temperature for the shaft seal**

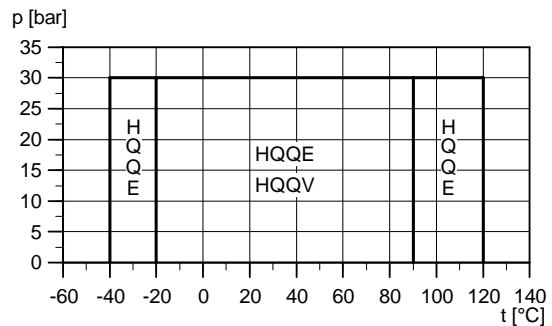


Fig. 2

**3.5 Minimum inlet pressure**

2 bar at +20°C.

If the liquid temperature exceeds +20°C, an additional pressure according to fig. C on page 51 must be added to 2 bar.

**Example:**

At an operating temperature of +80°C, an additional pressure of approx. 0.5 bar must be added. The total inlet pressure must be 2 bar + 0.5 bar = 2.5 bar.

**3.6 Maximum inlet pressure**

**During start-up:**

**CRN-SF pump + CRN feed pump:**

Both pumps start simultaneously. Consequently, the inlet pressure to the CRN-SF pump should not be taken into account.

**CRN-SF pump supplied without feed pump:**

10 bar.

**During operation:**

The actual inlet pressure + pressure when the pump is running against a closed valve must always be lower than the "maximum permissible operating pressure".

**3.7 Electrical data**

See motor nameplate.

**3.8 Frequency of starts and stops**

- Motors up to 11 kW: Maximum 200 times per hour.
- Other motors: Maximum 100 times per hour.

**3.9 Dimensions and weights**

**Dimensions:** See fig. A, page 50.

**Weights:** See label on the packing.

TM03 1868 3305

TM03 2254 4005

### 3.10 Sound level

See fig. B, page 50.

### 4. Installation

The pump can be installed vertically or horizontally, see fig. 3. Ensure that an adequate supply of cool air reaches the motor cooling fan. However, the motor must never fall below the horizontal plane.

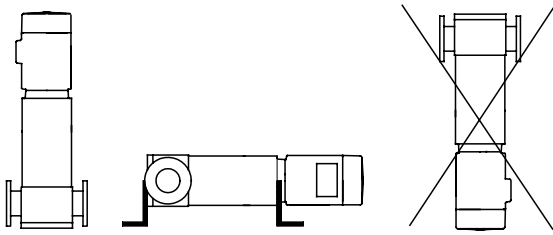


Fig. 3

Arrows on the pump base show the direction of flow of liquid through the pump.

Figure A, page 50, shows the dimensions of the base as well as the diameter and the position of the foundation bolt holes.

To minimize possible noise from the pump, it is advisable to fit expansion joints either side of the pump and anti-vibration mountings between foundation and pump.

Port-to-port lengths and pipework connections appear from fig. A, page 50.

Isolating valves should be fitted either side of the pump to avoid draining the system if the pump needs to be cleaned, repaired or replaced.

Install the pipes so that air locks are avoided, especially on the suction side of the pump. Correct pipework shown in fig. 4.

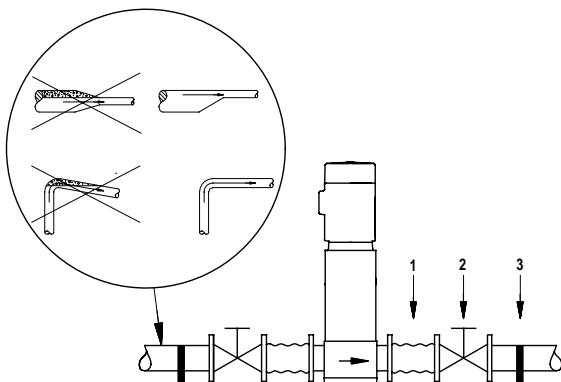


Fig. 4

Pos.	Description	Function
1	Expansion joint	Reduces noise and absorbs vibrations and expansion.
2	Isolating valve	Enables easy service of the pump.
3	Pipe hanger	Supports pipe and absorbs distortion and strain.

**Note:** The pump must always be protected against backflow by means of a non-return valve (foot valve).

In the case of installations in which the discharge pipe slopes downwards away from the pump and there is a risk of siphon effect and in installations which must be protected against backflow of unclean liquids, a vacuum valve must be fitted close to the pump, see fig. 5.

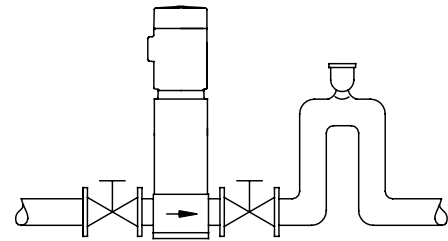


Fig. 5

#### 4.1 Minimum flow rate

Due to the risk of overheating, the pump should **not** be used at flows below the minimum flow rate.

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

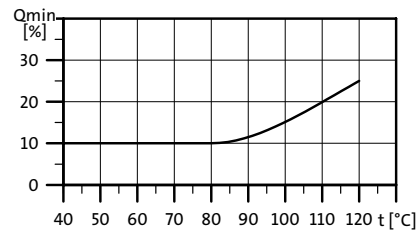


Fig. 6

**Note:** The pump must never operate against a closed discharge valve.

#### 4.2 Installation example

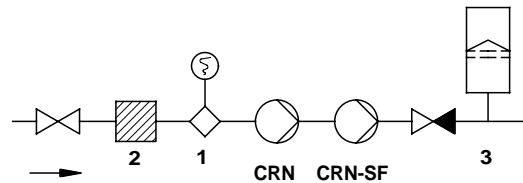


Fig. 7

Pos.	Description
1	Flow switch
2	Filter
3	Diaphragm tank

The flow switch will protect the pumps against damage caused by overheating by stopping the pumps in the event of too small a flow of liquid.

The filter is fitted to protect the flow switch in installations used for the pumping of slightly polluted water.

In installations where the flow conditions are stable and where the minimum flow rate required can be ensured, the above measures are unnecessary.

In installations where there is a risk of water hammering, a non-return valve should be fitted on the discharge side of the pumps. Do not use rapid-closing valves, e.g. rapid-closing spray guns, as these may cause water hammering.

TM01 1240 4097

GB

TM01 1241 4097

TM02 8290 4903

TM02 8280 4903

TM01 0900 3997

## 5. Electrical connection

The electrical connection should be carried out by an authorized electrician in accordance with local regulations.



Before removing the terminal box cover and before any removal/dismantling of the pump, make sure that the electricity supply has been switched off.

The pump must be connected to an external mains switch with a minimum contact gap of 3 mm in all poles.

The operating voltage and frequency are marked on the motor nameplate. Make sure that the motor is suitable for the electricity supply on which it will be used.

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

Three-phase motors must be connected to a motor starter.

The terminal box can be turned to four positions, in 90° steps:

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. Replace and tighten the bolts.
5. Replace the coupling guards.

The electrical connection should be carried out as shown in the diagram inside the terminal box cover.

### 5.1 Frequency converter operation

#### Motors supplied by Grundfos:

All three-phase motors supplied by Grundfos can be connected to a frequency converter.

Dependent on the frequency converter type, this may cause increased acoustic noise from the motor. Furthermore, it may cause the motor to be exposed to detrimental voltage peaks.

**Note:** Grundfos motors types MG 71 and MG 80 as well as MG 90 (1.5 kW, 2-pole), all for supply voltages up to and including 440 V (see motor nameplate), must be protected against voltage peaks higher than 650 V (peak value) between the supply terminals.

It is recommended to protect all other motors against voltage peaks higher than 850 V.

The above disturbances, i.e. both increased acoustic noise and detrimental voltage peaks, can be eliminated by fitting an LC filter between the frequency converter and the motor.

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

#### Other motor makes than those supplied by Grundfos:

Please contact Grundfos or the motor manufacturer.

## 6. Start-up

**Note:** Do not start the pump until it has been filled with liquid and vented.



Pay attention to the direction of the vent hole and take care to ensure that the escaping water does not cause injury to persons or damage to the motor or other components.

In hot-water installations, special attention should be paid to the risk of injury caused by scalding hot water.

1. Close the isolating valve on the discharge side of the pump and open the isolating valve on the suction side.
2. Remove the priming plug from the pump head and slowly fill the pump with liquid. Replace the priming plug and tighten securely.
3. See the correct direction of rotation of the pump on the motor fan cover.  
CRN: Counter-clockwise.  
CRN-SF: Clockwise.
4. Start the pump and check the direction of rotation.
5. Vent the pump by means of the vent valve in the pump head. At the same time, open the discharge isolating valve a little.

6. Continue to vent the pump. At the same time, open the discharge isolating valve a little more.
7. Close the vent valve when a steady stream of liquid runs out of it. Completely open the discharge isolating valve.

## 7. Maintenance



Before starting work on the pump, make sure that all power supplies to the pump have been switched off and that they cannot be accidentally switched on.

Pump bearings and shaft seal are maintenance-free.

#### Motor bearings:

Motors which are not fitted with grease nipples are maintenance-free.

Motors fitted with grease nipples should be lubricated with a high-temperature lithium-based grease, see the instructions on the fan cover.

In the case of seasonal operation (motor is idle for more than 6 months of the year), it is recommended to grease the motor when the pump is taken out of operation.

## 8. Frost protection

Pumps which are not being used during periods of frost should be drained to avoid damage.

Drain the pump by loosening the vent screw in the pump head and by removing the drain plug from the base.



Care must be taken to ensure that the escaping water does not cause injury to persons or damage to the motor or other components.

In hot-water installations, special attention should be paid to the risk of injury caused by scalding hot water.

Do not tighten the vent screw and replace the drain plug until the pump is to be used again.

## 9. Service

**Note:** If a pump has been used for a liquid which is injurious to health or toxic, the pump will be classified as contaminated.

If Grundfos is requested to service the pump, Grundfos must be contacted with details about the pumped liquid, etc. *before* the pump is returned for service. Otherwise Grundfos can refuse to accept the pump for service.

Possible costs of returning the pump are paid by the customer.

However, any application for service (no matter to whom it may be made) must include details about the pumped liquid if the pump has been used for liquids which are injurious to health or toxic.

## 10. Fault finding chart



Before removing the terminal box cover and before any removal/dismantling of the pump, make sure that the electricity supply has been switched off and that it cannot be accidentally switched on.

Fault	Cause	Remedy
1. Motor does not run when started.	a) Supply failure.	Connect the electricity supply.
	b) Fuses are blown.	Replace fuses.
	c) Motor starter overload has tripped out.	Reactivate the motor protection.
	d) Main contacts in motor starter are not making contact or the coil is faulty.	Replace contacts or magnetic coil.
	e) Control circuit is defective.	Repair the control circuit.
	f) Motor is defective.	Replace the motor.
2. Motor starter overload trips out immediately when supply is switched on.	a) One fuse/automatic circuit breaker is blown.	Cut in the fuse.
	b) Contacts in motor starter overload are faulty.	Replace motor starter contacts.
	c) Cable connection is loose or faulty.	Fasten or replace the cable connection.
	d) Motor winding is defective.	Replace the motor.
	e) Pump mechanically blocked.	Remove the mechanical blocking of the pump.
	f) Overload setting is too low.	Set the motor starter correctly.
3. Motor starter overload trips out occasionally.	a) Overload setting is too low.	Set the motor starter correctly.
	b) Low voltage at peak times.	Check the electricity supply.
4. Motor starter has not tripped out but the pump does not run.	a) Check 1 a), b), d) and e).	
5. Pump capacity not constant.	a) Pump inlet pressure is too low (cavitation).	Check the suction conditions.
	b) Suction pipe/pump partly blocked by impurities.	Clean the pump or suction pipe.
	c) Pump draws in air.	Check the suction conditions.
6. Pump runs but gives no water.	a) Suction pipe/pump blocked by impurities.	Clean the pump or suction pipe.
	b) Foot or non-return valve blocked in closed position.	Repair the foot or non-return valve.
	c) Leakage in suction pipe.	Repair the suction pipe.
	d) Air in suction pipe or pump.	Check the suction conditions.
	e) Motor rotates in the wrong direction.	Change the direction of rotation of the motor.
7. Pump runs backwards when switched off.	a) Leakage in suction pipe.	Repair the suction pipe.
	b) Foot or non-return valve is defective.	Repair the foot or non-return valve.
8. Leakage in shaft seal.	a) Shaft seal is defective.	Replace the shaft seal.
9. Noise.	a) Cavitation occurs in the pump.	Check the suction conditions.
	b) Pump does not rotate freely (frictional resistance) because of incorrect pump shaft position.	Adjust the pump shaft.
	c) Frequency converter operation.	See section 5.1 <i>Frequency converter operation</i> .

## 11. Disposal

Disposal of this product or parts of it must be carried out according to the following guidelines:

1. Use the local public or private waste collection service.
2. In case such waste collection service does not exist or cannot handle the materials used in the product, please deliver the product or any hazardous materials from it to your nearest Grundfos company or service workshop.

Fig. A

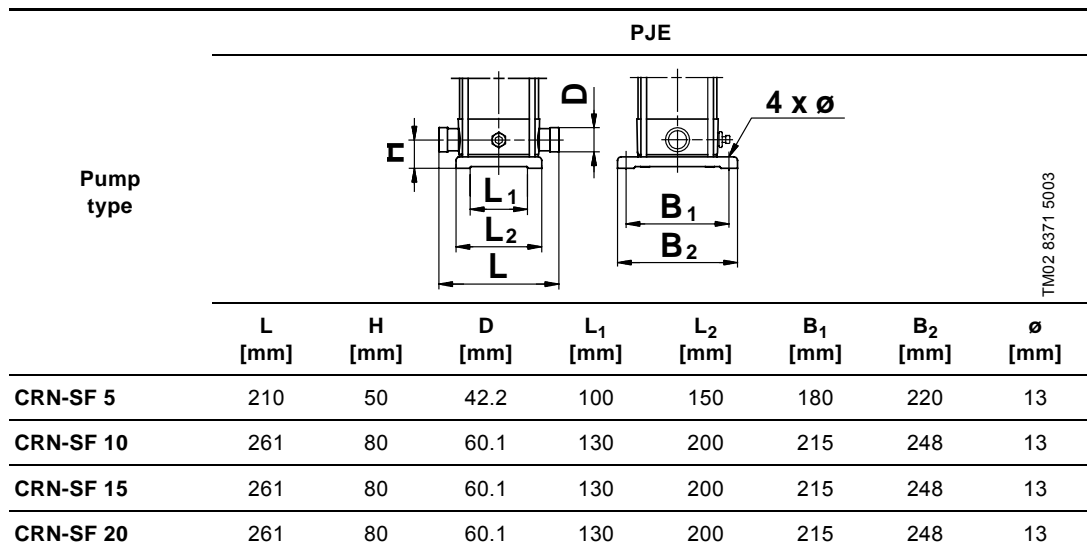


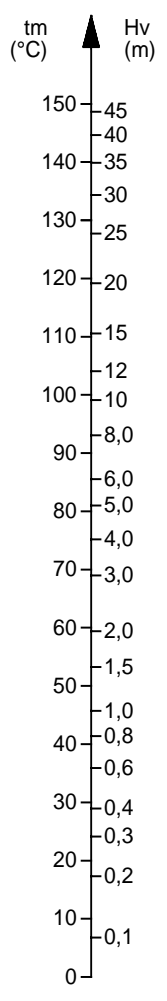
Fig. B

- Ⓒ GB Airborne noise emitted by pumps with motors fitted by Grundfos:
- Ⓒ D Luftschallemission von Pumpen mit Motoren, die von Grundfos montiert sind:
- Ⓒ F Bruit aérien émis par les pompes avec moteurs montés par Grundfos:
- Ⓒ I Rumore aereo emesso da pompe dotate di motori installati da Grundfos:
- Ⓒ E Nivel de ruido producido por bombas con motores montados por Grundfos:
- Ⓒ P Ruído emitido pelas electrobombas montadas pela Grundfos:
- Ⓒ GR Θόρυβος που εκπέμπεται στον αέρα από αντλίες εφοδιασμένες με κινητήρες από τη Grundfos:
- Ⓒ NL Geluidsdruk van pompen met een door Grundfos gemonteerde motor:
- Ⓒ S Ljudtrycksnivå från pumpar med motorer monterade av Grundfos:
- Ⓒ SF Ilmassa kantautuva ääni Grundfos'in asentamalla moottoreilla:
- Ⓒ DK Luftbåren støj fra pumper med motorer monteret af Grundfos:

Motor [kW]	50 Hz	60 Hz
	$\bar{L}_{pA}$ [dB(A)]	$\bar{L}_{pA}$ [dB(A)]
1.1	55	60
1.5	59	65
2.2	61	66
3.0	58	63
4.0	65	69
5.5	63	68
7.5	68	73
11	70	75
15	63	67



Fig. C



TM00 3037 3493

**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

**Albania**

COALB sh.p.k.  
Rr.Dervish Hekali N.1  
AL-Tirana  
Phone: +355 42 22727  
Telefax: +355 42 22727

**Argentina**

Bombas GRUNDFOS de Argentina S.A.  
Ruta Panamericana km. 37.500 Lote 34A  
1619 - Garin  
Pcia. de Buenos Aires  
Phone: +54-3327 414 444  
Telefax: +54-3327 411 111

**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

**Belorussia**

Представительство ГРУНДФОС в  
Минске  
220090 Минск ул.Олешева 14  
Телефон: (8632) 62-40-49  
Факс: (8632) 62-40-49

**Bosnia/Herzegovina**

GRUNDFOS Sarajevo  
Paromilinska br. 16,  
BiH-71000 Sarajevo  
Phone: +387 33 713290  
Telefax: +387 33 231795

**Brazil**

GRUNDFOS do Brasil Ltda.  
Rua Tomazina 106  
CEP 83325 - 040  
Pinhais - PR  
Phone: +55-41 668 3555  
Telefax: +55-41 668 3554

**Bulgaria**

GRUNDFOS Pumpen Vertrieb  
Representative Office - Bulgaria  
Bulgaria, 1421 Sofia  
Lozenetz District  
105-107 Arsenalski blvd.  
Phone: +359 2963 3820, 2963 5653  
Telefax: +359 2963 1305

**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.  
22 Floor, Xin Hua Lian Building  
755-775 Huai Hai Rd, (M)  
Shanghai 200020  
PRC  
Phone: +86-512-67 61 11 80  
Telefax: +86-512-67 61 81 67

**Croatia**

GRUNDFOS predstavništvo Zagreb  
Radoslava Cimermana 64a  
HR-10000 Zagreb  
Phone: +385 1 6595 400  
Telefax: +385 1 6595 499

**Czech Republic**

GRUNDFOS s.r.o.  
Čajkovského 21  
779 00 Olomouc  
Phone: +420-585-716 111  
Telefax: +420-585-438 906

**Estonia**

GRUNDFOS Pumps Eesti OÜ  
Peterburi tee 44  
11415 Tallinn  
Tel: + 372 606 1690  
Fax: + 372 606 1691

**Finland**

OY GRUNDFOS Pumput AB  
Mestarintie 11  
Piispankylä  
FIN-01730 Vantaa (Helsinki)  
Phone: +358-9 878 9150  
Telefax: +358-9 878 91550

**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: info@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.  
Park u. 8  
H-2045 Törökbalint,  
Phone: +36-23 511 110  
Telefax: +36-23 511 111

**India**

GRUNDFOS Pumps India Private Limited  
Flat A, Ground Floor  
61/62 Chamiers Aptmt  
Chamiers Road  
Chennai 600 028  
Phone: +91-44 432 3487  
Telefax: +91-44 432 3489

**Indonesia**

PT GRUNDFOS Pompa  
Jl. Rawa Sumur III, Blok III / CC-1  
Kawasan Industri, Pulogadung  
Jakarta 13930  
Phone: +62-21-460 6909  
Telefax: +62-21-460 6910/460 6901

**Ireland**

GRUNDFOS (Ireland) Ltd.  
Unit 34, Stillorgan Industrial Park  
Blackrock  
County Dublin  
Phone: +353-1-2954926  
Telefax: +353-1-2954739

**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  
Hamamatsu City  
Shizuoka pref. 431-21  
Phone: +81-53-428 4760  
Telefax: +81-53-484 1014

**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-2600 Vilnius  
Tel: + 370 52 395 430  
Fax: + 370 52 395 431

**Macedonia**

MAKOTERM  
Dame Gruev Street 7  
MK-91000 Skopje  
Phone: +389 91 117733  
Telefax: +389 91 220100

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

**Netherlands**

GRUNDFOS Nederland B.V.  
Postbus 104  
NL-1380 AC Weesp  
Tel.: +31-294-492 211  
Telefax: +31-294-492244/492299

**New Zealand**

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

**Norway**

GRUNDFOS Pumper A/S  
Strømsveien 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  
Phone: (+48-61) 650 13 00  
Telefax: (+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

**Republic of Moldova**

MOLDOCON S.R.L.  
Bd. Dacia 40/1  
MD-277062 Chishinau  
Phone: +373 2 542530  
Telefax: +373 2 542531

**Romania**

GRUNDFOS Pompe România SRL  
Sos. Panduri No. 81- 83, Sector 5  
RO-050657 Bucharest  
Phone: +40 21 4115460/4115461  
Telefax: +40 21 4115462  
E-mail: romania@grundfos.ro

**Russia**

ООО Грундфос  
Россия, 109544 Москва, Школьная 39  
Тел. (+7) 095 737 30 00, 564 88 00  
Факс (+7) 095 737 75 36, 564 88 11  
E-mail grundfos.moscow@grundfos.com

**Serbia and Montenegro**

GRUNDFOS Predstavništvo Beograd  
Dr. Milutina Ivkovića 2a/29  
YU-11000 Beograd  
Phone: +381 11 26 47 877, 11 26 47 496  
Telefax: +381 11 26 48 340

**Singapore**

GRUNDFOS (Singapore) Pte. Ltd.  
24 Tuas West Road  
Jurong Town  
Singapore 638381  
Phone: +65-6865 1222  
Telefax: +65-6861 8402

**Slovenia**

GRUNDFOS PUMPEN VERTRIEB  
Ges.m.b.H.,  
Podružnica Ljubljana  
Blatnica 1, SI-1236 Trzin  
Phone: +386 1 563 5338  
Telefax: +386 1 563 2098  
E-mail: slovenia@grundfos.si

**Spain**

Bombas GRUNDFOS España S.A.  
Camino de la Fuentecilla, s/n  
E-28110 Algete (Madrid)  
Tel.: +34-91-848 8800  
Telefax: +34-91-628 0465

**Sweden**

GRUNDFOS AB  
Lunnagårdsgatan 6  
431 90 Mölndal  
Tel.: +46-0771-32 23 00  
Telefax: +46-31 331 94 60

**Switzerland**

GRUNDFOS Pumpen AG  
Bruggacherstrasse 10  
CH-8117 Fällanden/ZH  
Tel.: +41-1-806 8111  
Telefax: +41-1-806 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.  
947/168 Moo 12, Bangna-Trad Rd., K.M.  
3,  
Bangna, Phrakonong  
Bangkok 10260  
Phone: +66-2-744 1785 ... 91  
Telefax: +66-2-744 1775 ... 6

**Turkey**

GRUNDFOS POMPA San. ve Tic. Ltd. Sti.  
Gebze Organize Sanayi Bölgesi  
İhsan 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**

ТОВ ГРУНДФОС Україна  
ул. Владимирская, 71, оф. 45  
г. Киев, 01033, Украина,  
Тел. +380 44 289 4050  
Факс +380 44 289 4139

**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 8TL  
Phone: +44-1525-850000  
Telefax: +44-1525-850011

**U.S.A.**

GRUNDFOS Pumps Corporation  
17100 West 118th Terrace  
Olathe, Kansas 66061  
Phone: +1-913-227-3400  
Telefax: +1-913-227-3500

**Uzbekistan**

Представительство ГРУНДФОС в  
Ташкенте  
700000 Ташкент ул.Усмана Носира 1-й  
тулик 5  
Телефон: (3712) 55-68-15  
Факс: (3712) 53-36-35

<b>96530119</b> 1205	<b>126</b>
Repl. 96530119 1105	