

CR, CRN 95-255

Installation and operating instructions



Other languages

<http://net.grundfos.com/qr/i/99078486>

be
think
innovate

GRUNDFOS

English (GB) Installation and operating instructions

Original installation and operating instructions

These installation and operating instructions describe Grundfos CR, CRN 95 to 255.

Sections 1-4 give the information necessary to be able to unpack, install and start up the product in a safe way.

Sections 5-10 give important information about the product, as well as information on service, fault finding and disposal of the product.

CONTENTS

	Page
1. General information	2
1.1 Hazard statements	2
1.2 Notes	3
1.3 Safety information for the motor	3
2. Receiving the product	3
2.1 Transporting the product	3
2.2 Unpacking the product	3
2.3 Inspecting the product	3
2.4 Lifting the product	3
3. Installing the product	7
3.1 Mechanical installation	7
3.2 Electrical connection	13
4. Starting up the product	13
4.1 Startup procedure	14
4.2 Shaft seal run-in	15
5. Product introduction	15
5.1 Identification	15
5.2 Intended use of the product	17
5.3 Operating the product	17
6. Servicing the product	18
6.1 Contaminated pumps	19
6.2 Service documentation	19
6.3 Contact the motor manufacturer. Maintaining the product	19
7. Taking the product out of operation	20
7.1 Frost protection	20
7.2 Taking the product permanently out of operation	20
8. Fault finding the product	21
9. Technical data	23
9.1 Operating conditions	23
9.2 Dimensions and weights	24
9.3 Electrical data	24
9.4 Sound pressure level	24
10. Disposing of the product	24



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

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 Safety information for the motor



Read the safety information specific for the motor in the instructions for the motor which are supplied with the pump.

2. Receiving the product

2.1 Transporting the product

WARNING

Falling objects

- Death or serious personal injury
- Keep the product in a stable and fixed position during transportation.
- Wear personal protective equipment.



2.2 Unpacking the product

WARNING

Falling objects

- Death or serious personal injury
- Keep the product in a stable position during unpacking.
- Wear personal protective equipment.



2.3 Inspecting the product

Before you install the product, do the following:

1. Check that the product is as ordered.
2. Check that no visible parts have been damaged.

If parts are damaged or missing, contact your local Grundfos sales company.

2.4 Lifting the product

WARNING

Falling objects

- Death or serious personal injury
- Do not use the motor eyebolts to lift the entire pump if the pump is fitted with a motor of another make than Grundfos MG and MGE.
- Follow the lifting instructions.
- Use lifting equipment which is approved for the weight of the product.
- Persons must keep a safe distance to the product during lifting operations.
- Wear personal protective equipment.



The following sections describe various lifting situations and the lifting instructions which must be followed in order to obtain safe lifting of the product:

- Position of lifting brackets: See section [2.4.1 Position of lifting brackets](#).
- Lifting the motor with or without the motor stool. See section [2.4.2 Lifting the motor off the pump](#).
- Horizontal lift: See section [2.4.4 Lifting the product in horizontal position](#).
- Raising or laying down the product: See section [2.4.5 Raising or laying down the product](#).
- Vertical lift: See section [2.4.6 Lifting the product in vertical position](#).
- Lifting of CRE pumps: See section [2.4.3 Lifting of pumps fitted with MGE motors](#).

2.4.1 Position of lifting brackets

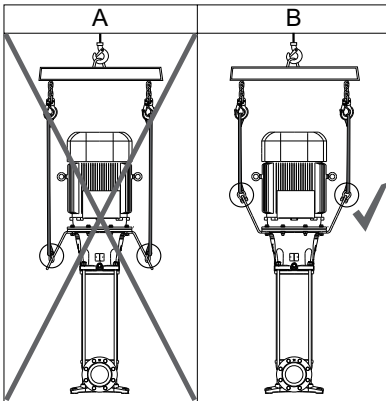


Fig. 1 Position of lifting brackets

TM07 2254 3218

- | | |
|----|---|
| A: | Incorrect position of lifting brackets. |
| B: | Correct position of lifting brackets. |

2.4.2 Lifting the motor off the pump

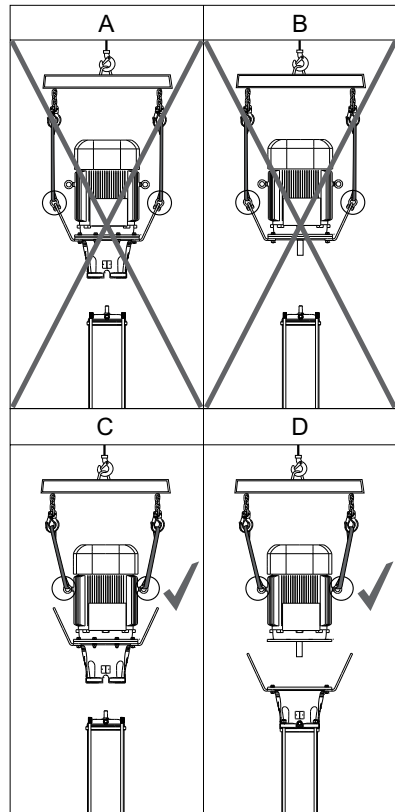


Fig. 2 Lifting the motor

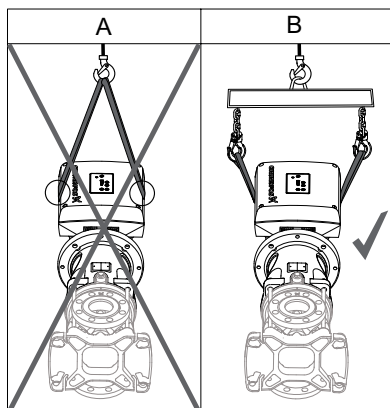
- | | |
|----|---|
| A: | Incorrect lifting of motor with motor stool. |
| B: | Incorrect lifting of motor without motor stool. |
| C: | Correct lifting of motor with motor stool. |
| D: | Correct lifting of motor without motor stool. |

TM07 2255 3218

2.4.3 Lifting of pumps fitted with MGE motors



When lifting a pump fitted with a motor that contains an integrated frequency converter, make sure that the terminal box does not come into contact with the lifting equipment. See fig. 3.



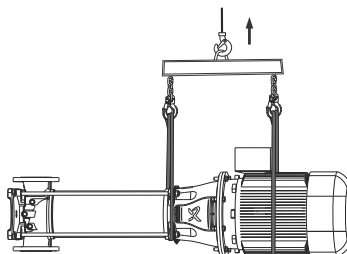
TM07 2290 3218

Fig. 3 Lifting of pumps fitted with MGE motors

A: Incorrect lifting of pump with MGE motor.

B: Correct lifting of pump with MGE motor.

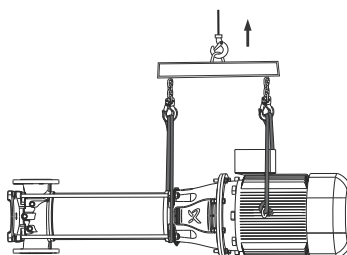
2.4.4 Lifting the product in horizontal position



TM06 8773 1117

Fig. 4 Horizontal lift of pumps with 5.5 kW Grundfos MG and MGE* motors

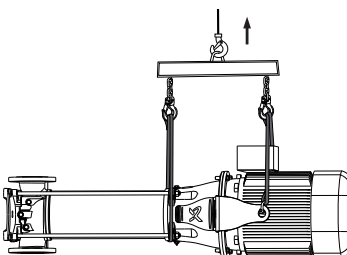
* See also section [2.4.3 Lifting of pumps fitted with MGE motors](#)



TM06 8774 1117

Fig. 5 Horizontal lift of pumps with 7.5 - 22 kW Grundfos MG and MGE* motors

* See also section [2.4.3 Lifting of pumps fitted with MGE motors](#)



TM06 8627 0917

Fig. 6 Horizontal lift of pumps with 5.5 - 200 kW motors of other makes than Grundfos MG and MGE

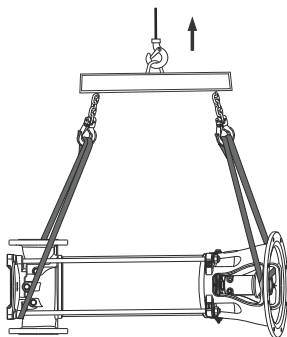


Fig. 7 Horizontal lift of pumps without motor

TM06 8775 1117

2.4.5 Raising or laying down the product

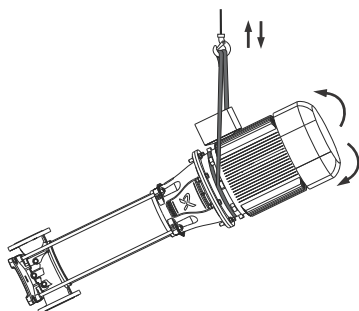


Fig. 8 Raising or laying down pumps with 5.5 kW Grundfos MG and MGE* motors

TM06 8744 1117

* See also section [2.4.3 Lifting of pumps fitted with MGE motors](#)

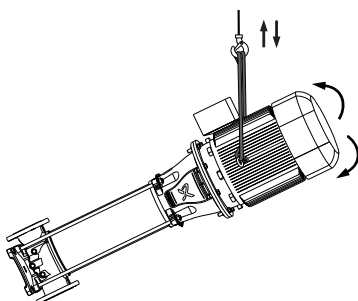


Fig. 9 Raising or laying down pumps with 7.5 - 22 kW Grundfos MG and MGE* motors

TM06 8743 1117

* See also section [2.4.3 Lifting of pumps fitted with MGE motors](#)

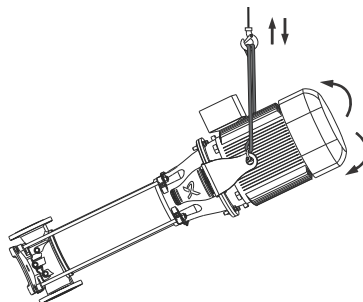


Fig. 10 Raising or laying down pumps with 5.5 - 200 kW motors of other makes than Grundfos MG and MGE

TM06 8742 1117

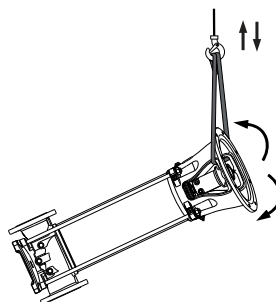


Fig. 11 Raising or laying down pumps without motor

TM06 8745 1117

2.4.6 Lifting the product in vertical position

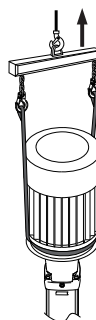
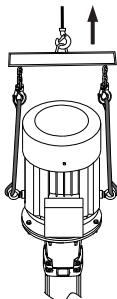


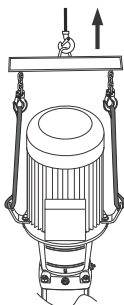
Fig. 12 Vertical lift of pumps with 5.5 kW Grundfos MG and MGE motors

TM06 8597 1117



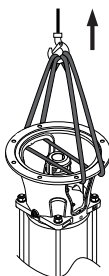
TM06 8598 1117

Fig. 13 Vertical lift of pumps with 7.5 - 22 kW Grundfos MG and MGE motors



TM06 8599 1117

Fig. 14 Vertical lift of pumps with 5.5 - 200 kW motors of other makes than Grundfos MG and MGE



TM06 8162 1117

Fig. 15 Vertical lift of pumps without motor

3. Installing the product

DANGER

Falling objects



Death or serious personal injury

- Fasten the pump securely to a solid and even foundation according to the specifications stated in the installation and operating instructions.

3.1 Mechanical installation

WARNING

Contamination when pumping drinking water

Death or serious personal injury



- Before the pump is used for supplying drinking water, flush the pump thoroughly with clean water.
- Do not use the pump for drinking water if the internal parts have been in contact with particles or substances not suitable for water intended for human consumption.

3.1.1 Lifting the product

WARNING

Falling objects

Death or serious personal injury



- Do not use the motor eyebolts to lift the entire pump if the pump is fitted with a motor of another make than Grundfos MG and MGE.
- Follow the lifting instructions.
- Use lifting equipment which is approved for the weight of the product.
- Persons must keep a safe distance to the product during lifting operations.
- Wear personal protective equipment.

For lifting instructions, see section [2.4 Lifting the product](#).

3.1.2 Drive-end motor bearing

Make sure to use the correct type of drive-end (DE) motor bearing for the bare-shaft pump. Please check the specific pump range and pump version stated on the nameplate and select the corresponding DE bearing.

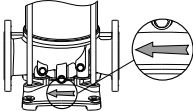
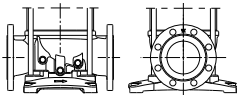
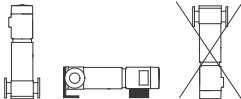
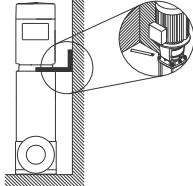
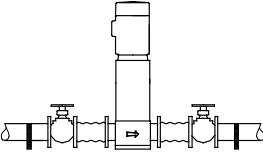
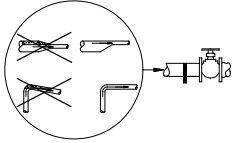
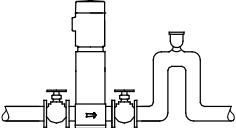
Pump version ¹⁾	DE bearing CR 1-64 pump range		DE bearing CR 95-255 pump range	
	Deep-groove ball bearing (62/63xx)	Angular contact bearing (73xx)	Deep-groove ball bearing (62/63xx)	Angular contact bearing (73xx)
A Standard pump	0.37 - 3 kW	4-45 kW	75-200 kW	5.5 - 55 kW
T Pump with thrust handling device (THD) ²⁾	-	-	5.5 - 55 kW	Not allowed
Z Pump with bearing flange ²⁾	0.37 - 45 kW	Not allowed	5.5 - 200 kW	Not allowed

1) Refer to the codes for pump version in section [5.1.2 Type key](#).

2) Factory product variants (FPV).

3.1.3 Installation guidelines

The pump must be secured to a horizontal, plane and solid foundation with bolts through the holes in the base plate. When installing the pump, be aware of the information below in order to avoid damaging the pump.

Illustration	Information
1 	TM06 9134 1617 Arrows on the pump base plate show the direction of flow of liquid through the pump.
2 	TM06 9156 1717 These dimensions are stated on page 27: • port-to-port lengths • dimensions of the base plate • pipe connections • diameter and position of anchor bolts.
3 	TM07 0783 0218 The pump can be installed vertically and horizontally. If you wish to install a pump horizontally, it must be ordered with support brackets fitted from factory and a foot-mounted motor.
3a 	TM05 7705 1013 Additional support. As the centre of gravity of the pump is relatively high, we recommend that pumps installed on ships, in areas with risk of earth quake or in systems which can be moved, are equipped with an additional support bracket. You can fit the bracket from the motor stool to the bulkhead of the ship, a rigid wall in a building or to a rigid part.
4 	TM02 0116 3800 To minimise possible noise from the pump, we recommend that you fit expansion joints on either side of the pump. Build a foundation and carry out mechanical installation as described in section 3.1.4 Foundation. Fit isolating valves on either side of the pump to avoid draining the system if the pump needs to be removed for cleaning, repair or replacement. Always protect the pump against backflow by means of a non-return valve.
5 	TM02 0114 3800 Install the pipes so that air pockets do not occur.
6 	TM02 0115 3800 Fit a vacuum valve close to the pump if the installation has one of these characteristics: • The outlet pipe slopes downwards away from the pump. • There is a risk of siphon effect. • Protection against backflow of unclean liquids is needed.

3.1.4 Foundation

WARNING

Falling objects

- Death or serious personal injury
- Keep the product in a stable and fixed position before installing it.
 - Make sure that the foundation is suitable for the weight of the product.

We recommend that you install the pump on a concrete foundation which is heavy enough to provide permanent and rigid support for the entire pump. The foundation must be capable of absorbing any vibration, normal strain or shock. The concrete foundation must have an absolutely level and even surface.

Place the pump on the foundation, and fasten it. The base plate must be supported on the whole area.

The following instruction applies when mounting the pump in both vertical and horizontal position. Place the pump on the foundation, and fasten it. See fig. 16.

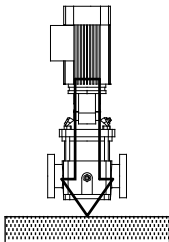


Fig. 16 Correct installation

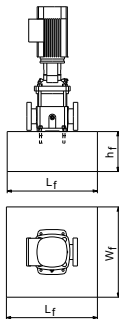


Fig. 17 Foundation, vertical mounting

The recommended length and width of the foundation are shown in fig. 17. Note that for pumps with motor size below or equal to 30 kW, the length and width of the foundation must be 200 mm larger than the base plate.

For pumps with motor size equal to 37 kW or above, the length and width must always be 1.5 x 1.5 (Lf x Wf) m.

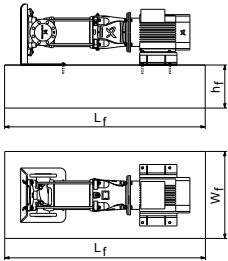


Fig. 18 Foundation, horizontal mounting

The foundation length and width must always be 200 mm larger than the length and width of the pump. See fig. 18.

The mass of the foundation must be at least 1.5 times the total mass of the pump. The minimum height of the foundation (hf) can then be calculated:

$$hf = \frac{M_{\text{pump}} \times 1.5}{Lf \times Wf \times \delta_{\text{concrete}}}$$

The density (δ) of concrete is usually taken as 2200 kg/m³.

In installations where noiseless operation is particularly important, we recommend that you use a foundation with a mass up to 5 times that of the pump.

The foundation must be provided with anchor bolts for fixing the base plate. See fig. 19.

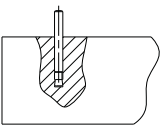


Fig. 19 Bolt in foundation

When the anchor bolts are in position, place the pump on the foundation. Then align the base plate using shims, if necessary, so that it is completely horizontal. See fig. 20.

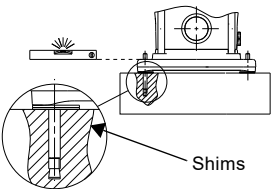


Fig. 20 Alignment with shims

3.1.5 Vibration dampening

Elimination of noise and vibrations is best achieved by means of a concrete foundation, vibration dampers and expansion joints.

If you use vibration dampers, install them under the foundation. For pumps with motor size below or equal to 30 kW, you can use vibration dampers as shown in fig. 21.

For pumps with motor size equal to 37 kW or above, you can use a Sylomer® plate as shown in fig. 22.

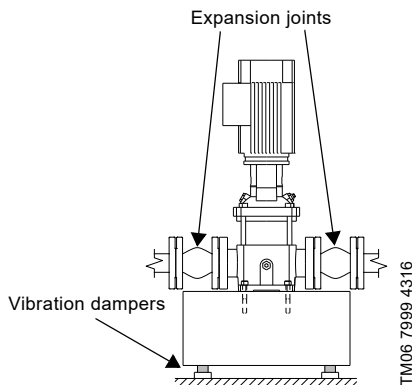


Fig. 21 Pump on vibration dampers

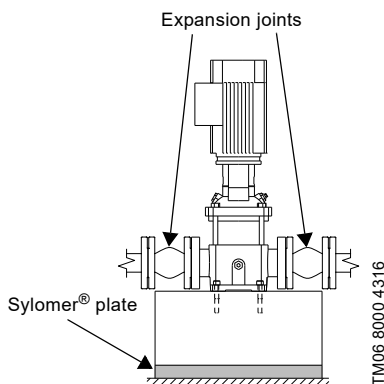


Fig. 22 Pump on Sylomer® plate

3.1.6 Outdoor installation

When the pump is installed outdoors, we recommend that you provide the motor with a rain cover. We also recommend that you open one of the drain holes in the motor flange.

3.1.7 Tightening torques

WARNING



Flange gasket blowout

Death or serious personal injury

- Tighten flange bolts according to the specified torque values.

WARNING



Falling objects

Death or serious personal injury

- Tighten the base plate anchor bolts according to the specified torque values.

The tables show the recommended torques for base plate anchor bolts and flange bolts.

The bolt quality must be minimum class 5.8 except for CR, CRN 95 with optional small base plate which must be minimum class 8.8.

CR, CRN	Base plate anchor bolts	
	Bolt size	Torque [Nm]
95 with optional small base plate	M12 (Ø14 free hole)	65
95	M16 (Ø18 free hole)	100
125-155	M20 (Ø22 free hole)	90 ¹⁾ 190 ²⁾
185-255	M24 (Ø26 free hole)	130

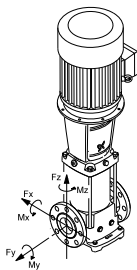
1) Applies for pumps fitted with motors up to and including 55 kW.

2) Applies for pumps fitted with motors of 75 kW and up.

CR, CRN	Flange bolts (DIN/EN, JIS, ANSI)	
	Bolt size	Torque [Nm]
95	M16	30
	M20	90
125-155	M20	90
	M24	230
185-255	M20	90
	M24	230
	M27	300

3.1.8 Flange forces and torques

If not all loads reach the maximum permissible value stated in the tables below, one of these values may exceed the normal limit. Contact Grundfos for further information.



TM04 0346 2013

Fig. 23 Flange forces and torques

- Y-direction: Inlet or outlet
- Z-direction: Direction of chamber stack
- X-direction: 90 ° from inlet or outlet

The following tables represent the values that apply according to the material quality.

Force limits for CR pumps

Flange, DN [mm]	CR	Force, Y-direction [N]	Force, Z-direction [N]	Force, X-direction [N]
100	95	1256	1013	1125
150	125 and 155	1875	1519	1688
200	185, 215 and 255	2513	2025	2250

Force limits for CRN pumps

Flange, DN [mm]	CRN	Force, Y-direction [N]	Force, Z-direction [N]	Force, X-direction [N]
100	95	2513	2025	2250
150	125 and 155	3750	3038	3375
200	185, 215 and 255	5025	4050	4500

Torque limits for CR pumps

Flange, DN [mm]	CR	Torque, Y-direction [Nm]	Torque, Z-direction [Nm]	Torque, X-direction [Nm]
100	95	375	475	625
150	125 and 155	625	775	1000
200	185, 215 and 255	900	1075	1375

Torque limits for CRN pumps

Flange, DN [mm]	CRN	Torque, Y-direction [Nm]	Torque, Z-direction [Nm]	Torque, X-direction [Nm]
100	95	750	950	1250
150	125 and 155	1250	1550	2000
200	185, 215 and 255	1800	2150	2750

3.2 Electrical connection



Follow the instructions for the motor when carrying out the electrical connections.

The electrical connection must be carried out by an authorised electrician in accordance with local regulations.

WARNING

Electric shock

- Death or serious personal injury
- Before starting any work on the product, make sure that the power supply has been switched off and that it cannot be accidentally switched on.
- Connect the pump to an external main switch close to the pump and to a motor-protective circuit breaker or a CUE frequency converter. Make sure you can lock the main switch in OFF position (isolated). Type and requirements as specified in EN 60204-1, 5.3.2.



WARNING

Electric shock

- Death or serious personal injury
- Connect the pump to the same protective-earth (PE) potential as the motor if both motor bearings are of the insulated type such as ceramic bearings.



3.2.1 Maximum absorbed current



Some motors can absorb a maximum current which is larger than the full load current $I_{1/1}$ stated on the nameplate. See the table below.

Motor type according to the nameplate	Upper limit for absorbed current
• Motors marked with both of the below: – full load current $I_{1/1}$ – maximum current I_{max}	I_{max}
• Grundfos MMG-G motors • Grundfos MMG-E motors	$1.05 \times I_{1/1}$
• Motors marked only with the below: – full load current $I_{1/1}$	$I_{1/1}$

4. Starting up the product

WARNING

Corrosive liquids

- Death or serious personal injury
- Wear personal protective equipment.



WARNING

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.
- Pay attention to the direction of the vent hole when you fill the pump with liquid and vent it.
- Make sure that no persons are hurt by the escaping liquid.



Fill the pump with liquid and vent it before you start the pump.



Pay attention to the direction of the vent hole during liquid filling and venting. Make sure that the escaping liquid does not cause damage to the motor or other components.

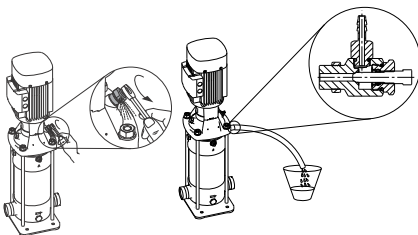
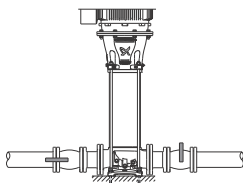


Fig. 24 Vent valve, standard and an optional solution with hose connection

TM05 1160 0611 - TM05 8098 1913

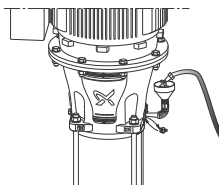
4.1 Startup procedure

1. Close the isolating valve on the outlet side of the pump and open the isolating valve on the inlet side.



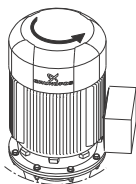
TM06 6882 2516

2. Remove the priming plug from the pump head and slowly fill the pump with liquid. Replace the priming plug and tighten securely.



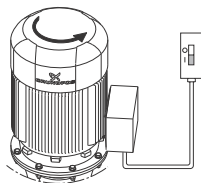
TM06 6883 2516

3. See the correct direction of rotation of the pump on the motor fan cover.



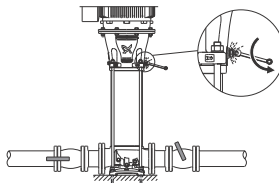
TM06 6884 2516

4. Start the pump and check the direction of rotation.



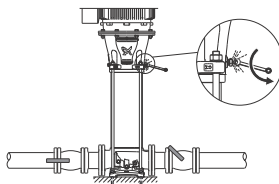
TM06 6885 2516

5. Vent the pump by means of the vent valve in the pump head. At the same time, open the outlet isolating valve a little.



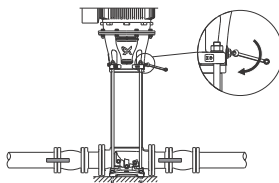
TM06 6886 2516

6. Continue to vent the pump. At the same time, open the outlet isolating valve a little more.



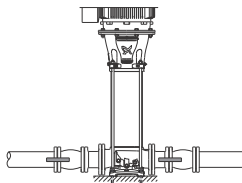
TM06 6887 2516

7. Close the vent valve when a steady stream of liquid runs out of it.



TM06 6888 2516

8. Completely open the outlet isolating valve.



TM07 2337 3118

4.2 Shaft seal run-in

WARNING



Corrosive liquids

Death or serious personal injury
- Wear personal protective equipment.

WARNING



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.



Make sure that a leakage does not cause damage to the equipment.

The seal faces are lubricated by the pumped liquid, meaning that there may be a certain amount of leakage from the shaft seal.

When you start the pump for the first time, or when you install a new shaft seal, a certain run-in period is required before the leakage is reduced to an acceptable level. The time required for this depends on the operating conditions, that is every time the operating conditions change, a new run-in period will be started.

Under normal conditions, the leaking liquid will evaporate. As a result, no leakage will be detected.

5. Product introduction

5.1 Identification

5.1.1 Nameplate

The information on the pump nameplate are described below.

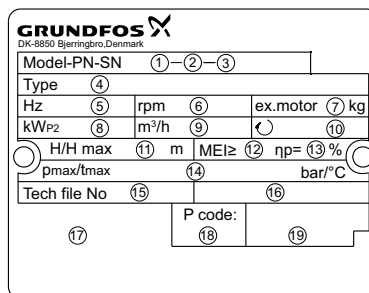


Fig. 25 Nameplate

Pos.	Description
1	Model
2	Product number
3	Serial number
4	Type designation
5	Frequency
6	Rated speed
7	Weight excluding motor
8	Power at rated flow rate and rated speed
9	Rated flow rate
10	Direction of rotation CCW: Counterclockwise CW: Clockwise
11	Head at rated flow rate/Maximum head
12	Minimum efficiency index
13	Hydraulic efficiency at rated flow rate
14	Maximum system pressure/maximum liquid temperature Note: This field may have two sets of data, separated by a semicolon.
15	Technical file number (stated if the pump is ATEX classified) or customer-specific information
16	Country of origin
17	Approval marks
18	Production code
19	ATEX category (stated if the pump is ATEX classified)

TM07 2185 3518

5.1.2 Type key

Example	CR	95-	2	1-	X-	X-	X-	X-	XXXX
Type range: CR, CRN									
Rated flow rate in m ³ /h									
Number of stages									
Number of impellers with reduced diameter									
Code for pump version									
Code for pipe connection									
Code for materials									
Code for rubber pump parts									
Code for shaft seal									

5.1.3 Key to codes for pump version

Codes for pump version	
A	Basic version
B	Oversize motor
C	CR compact
D	Pump with pressure intensifier
E	Pump with certificate
F	Pump for high temperatures (with air-cooled top)
G	E-pump without control panel
H	Horizontal version
I	Different pressure rating
J	E-pump with a different maximum speed
K	Pump with low NPSH
L	Pump including Grundfos CUE and certificate
M	Magnetic drive
N	With sensor
O	Cleaned and dried
P	Undersize motor
Q	High-pressure pump with high-speed MGE motor
R	Belt driven pump
S	High-pressure pump
T	Thrust handling device (THD)
U	ATEX approved pump
V	Cascade function
W	Deep-well pump with ejector
X	Special version
Y	Electropolished
Z	Pumps with bearing flange

5.2 Intended use of the product

Only use the CR, CRN pumps according to the specifications stated in the installation and operating instructions.

5.2.1 Applications

CR, CRN pumps are suitable for industrial applications such as:

- water supply
- cooling
- heating
- pressure boosting
- water treatment
- liquid transfer of cold or hot clean liquids.

5.2.2 Pumped liquids

DANGER



Fire and explosion

- Death or serious personal injury
- Do not use the pump for flammable, combustible or explosive liquids.

WARNING



Chemical attack and leakage

- Death or serious personal injury
- Do not use the pump for liquids which can attack the pump materials chemically.
 - Contact Grundfos if in doubt.

WARNING



Corrosive liquids

- Death or serious personal injury
- Wear personal protective equipment.

WARNING



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.



CR, CRN pumps are suitable for pumping liquids which are thin, clean, non-flammable, non-combustible or non-explosive liquids, not containing solid particles or fibres.

When pumping liquids with a density and/or viscosity higher than that of water, use motors with correspondingly higher outputs, if required.

Whether a pump is suitable for a particular liquid depends on a number of factors of which the most important are chloride content, pH value, temperature, content of chemicals and oils. Please consult Grundfos for information about which pump types are suitable for a specific liquid.

5.3 Operating the product

For operating the product safely, observe the following hazard statements.

WARNING

Contamination when pumping drinking water



- Death or serious personal injury
- Do not use the pump for drinking water if the internal parts have been in contact with particles or substances not suitable for water intended for human consumption.

WARNING

Airborne noise



- Death or serious personal injury
- Wear personal protective equipment.

The sound pressure levels on page 28 relate to airborne noise emitted by pumps with motors fitted by Grundfos.

WARNING

Too high pressure and leakage



- Death or serious personal injury
- Do not run the pump against a closed outlet valve.

WARNING

Intoxication if pumping toxic or corrosive liquids



- Death or serious personal injury
- Pumped liquid which is drained off or leaks from the pump must be collected for safe disposal.

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.



6. Servicing the product

DANGER

Electric shock

Death or serious personal injury

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



DANGER

Electric shock

Death or serious personal injury

- Close the inlet and outlet valves to eliminate flow through the pump which can cause the pump to act as a turbine and consequently generate a current in the motor.



WARNING

Electric shock

Death or serious personal injury

- Connect the pump to the same protective-earth (PE) potential as the motor if both motor bearings are of the insulated type such as ceramic bearings.



WARNING

Falling objects

Death or serious personal injury

- Do not use the motor eyebolts to lift the entire pump if the pump is fitted with a motor of another make than Grundfos MG and MGE.
- Follow the lifting instructions.
- Use lifting equipment which is approved for the weight of the product.
- Persons must keep a safe distance to the product during lifting operations.
- Wear personal protective equipment.



For lifting instructions, see section [2.4 Lifting the product](#).

WARNING

Falling objects

Death or serious personal injury

- Keep the product in a stable and fixed position when working on it.



WARNING

Contamination when pumping drinking water

Death or serious personal injury

- Before the pump is used for supplying drinking water, flush the pump thoroughly with clean water.
- Do not use the pump for drinking water if the internal parts have been in contact with particles or substances not suitable for water intended for human consumption.
- Always use original spare parts suitable for drinking water.



WARNING

Intoxication if pumping toxic or corrosive liquids

Death or serious personal injury

- Pumped liquid which is drained off or leaks from the pump must be collected for safe disposal.



WARNING

Corrosive liquids

Death or serious personal injury

- Wear personal protective equipment.



WARNING

Toxic liquids

Death or serious personal injury

- Wear personal protective equipment.



WARNING

Moving parts

Death or serious personal injury

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



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.



We recommend that you repair pumps with motors of 7.5 kW and up at the installation site. Necessary lifting equipment must be available.

6.1 Contaminated pumps

CAUTION

Biological hazard



Minor or moderate personal injury

- Flush the pump thoroughly with 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 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 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.

6.2 Service documentation

6.2.1 Pump

You can find detailed information about how to service your product in the service instructions which can be accessed via the QR code or link below:

Service instructions for CR, CRN 95 to 255



<http://net.grundfos.com/qr/i/99233360>

Additional service documentation including service videos are available in Grundfos Product Center > <http://product-selection.grundfos.com/>.

6.2.2 Motor

Grundfos MG and MGE motors

Service documentation is available in Grundfos Product Center > <http://product-selection.grundfos.com/>.

Motors of other makes

6.3 Contact the motor manufacturer. Maintaining the product

DANGER

Electric shock



Death or serious personal injury

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

WARNING

Falling objects

Death or serious personal injury

- Do not use the motor eyebolts to lift the entire pump if the pump is fitted with a motor of another make than Grundfos MG and MGE.
- Follow the lifting instructions.
- Use lifting equipment which is approved for the weight of the product.
- Persons must keep a safe distance to the product during lifting operations.
- Wear personal protective equipment.



For lifting instructions, see section [2.4 Lifting the product](#).

WARNING

Falling objects

Death or serious personal injury

- Keep the product in a stable and fixed position when working on it.



WARNING

Corrosive liquids

Death or serious personal injury

- Wear personal protective equipment.



WARNING

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.



6.3.1 Pump

The pump bearings and the shaft seal are maintenance-free.

6.3.2 Motor

Carry out maintenance as described in the instructions for the motor which are supplied with the pump.

7. Taking the product out of operation

7.1 Frost protection

CAUTION

Hot or cold liquid

- Minor or moderate personal injury
- Pay attention to the direction of the vent hole and drain plug when draining the pump. Make sure that the escaping liquid does not cause injury to persons.
 - Wear personal protective equipment.



Pay attention to the direction of the vent hole and drain plug when draining the pump. Make sure that the escaping liquid does not cause damage to the motor or other components.

Drain pumps which are not being used during periods of frost to avoid damage.

To drain the pump loosen the vent screw in the pump head and remove all drain plugs from one side of the pump base.

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

7.2 Taking the product permanently out of operation

Observe the following if the pump is to be permanently taken out of operation and removed from the pipe system.

DANGER

Electric shock

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



WARNING

Falling objects

- Death or serious personal injury
- Do not use the motor eyebolts to lift the entire pump if the pump is fitted with a motor of another make than Grundfos MG and MGE.
 - Follow the lifting instructions.
 - Use lifting equipment which is approved for the weight of the product.
 - Persons must keep a safe distance to the product during lifting operations.
 - Wear personal protective equipment.



For lifting instructions, see section [2.4 Lifting the product](#).

WARNING

Falling objects

- Death or serious personal injury
- Keep the product in a stable and fixed position when working on it.



WARNING

Corrosive liquids

- Death or serious personal injury
- Wear personal protective equipment.



WARNING

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.



8. Fault finding the product

DANGER

Electric shock



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

WARNING

Corrosive liquids



- Death or serious personal injury
- Wear personal protective equipment.

WARNING

Toxic liquids



- Death or serious personal injury
- Wear personal protective equipment.

WARNING

Falling objects



- Death or serious personal injury
- Keep the product in a stable and fixed position when working on it.

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.



Fault	Cause	Remedy
1. The motor does not run when started.	a) Supply failure.	Connect the power supply.
	b) The fuses are blown.	Replace the fuses.
	c) The motor-protective circuit breaker has tripped.	Reactivate the motor-protective circuit breaker.
	d) The thermal protection has tripped.	Reactivate the thermal protection.
	e) The main contacts in the motor-protective circuit breaker are not making contact or the coil is faulty.	Replace the contacts or the magnetic coil.
	f) The control circuit is defective.	Repair the control circuit.
	g) The motor is defective.	Replace the motor.
2. The motor-protective circuit breaker trips immediately when the power supply is switched on.	a) One fuse is blown or the automatic circuit breaker has tripped.	Replace the fuse or cut in the circuit breaker.
	b) The contacts in the motor-protective circuit breaker are faulty.	Replace the motor-protective circuit breaker contacts.
	c) The cable connection is loose or faulty.	Fasten or replace the cable connection.
	d) The motor winding is defective.	Replace the motor.
	e) The pump is mechanically blocked.	Remove the mechanical blocking of the pump.
	f) The motor-protective circuit breaker setting is too low.	Set the motor-protective circuit breaker correctly.
3. The motor-protective circuit breaker trips occasionally.	a) The motor-protective circuit breaker setting is too low.	Set the motor-protective circuit breaker correctly.
	b) Low voltage at peak times.	Ensure a stable power supply.
4. The motor-protective circuit breaker has not tripped, but the pump does not run.	a) Check 1a, 1b, 1d, 1e and 1f.	

Fault	Cause	Remedy
5. The pump performance is not constant.	a) The pump inlet pressure is too low (cavitation).	Check the inlet conditions.
	b) The inlet pipe or pump is partly blocked by impurities.	Clean the inlet pipe or pump.
	c) The pump draws in air.	Check the inlet conditions.
6. The pump runs, but gives no water.	a) The inlet pipe or pump is blocked by impurities.	Clean the inlet pipe or pump.
	b) The foot or non-return valve is blocked in closed position.	Repair the foot or non-return valve.
	c) There is a leakage in the inlet pipe.	Repair the inlet pipe.
	d) There is air in the inlet pipe or pump.	Check the inlet conditions.
	e) The motor runs in the wrong direction of rotation.	Change the direction of rotation of the motor.
7. The pump runs backwards when switched off.	a) There is a leakage in the inlet pipe.	Repair the inlet pipe.
	b) The foot or non-return valve is defective.	Repair the foot or non-return valve.
8. Leakage in the shaft seal.	a) The shaft seal is defective.	Replace the shaft seal.
9. Noise.	a) Cavitation.	Check the inlet conditions.
	b) The pump does not rotate freely due to frictional resistance as a result of incorrect pump shaft position.	Adjust the pump shaft as described in the service documentation. See section 6.2 Service documentation .
	c) Frequency converter operation.	See the instructions for the motor which are supplied with the pump.

9. Technical data

9.1 Operating conditions

9.1.1 Ambient temperature and altitude

See the instructions for the motor which are supplied with the pump.

9.1.2 Maximum system pressure and liquid temperature

The maximum permissible system pressure and liquid temperature are stated on the nameplate which is placed on the pump. For identification of the nameplate data, see section [5.1.1 Nameplate](#).

9.1.3 Maximum permissible operating pressure and liquid temperature for the shaft seal

The operating range of a shaft seal depends on the operating pressure, the liquid temperature and the type of shaft seal.

The selection charts show which shaft seals are suitable at a given temperature and a given pressure.

See figs [26](#) and [27](#). The charts apply to clean water.

Shaft seals for Ø22 shaft ends: CR, CRN with motors up to and including 55 kW

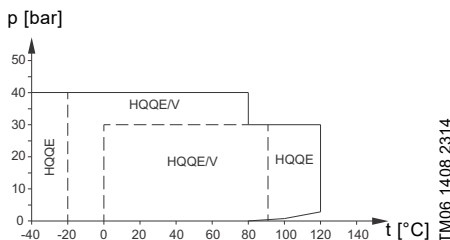


Fig. 26 Maximum permissible operating pressure and liquid temperature for pumps with Ø22 shaft seal, ≤ 55 kW

Shaft seals for Ø28, 75-110 kW, and Ø36, 132-200 kW, shaft ends

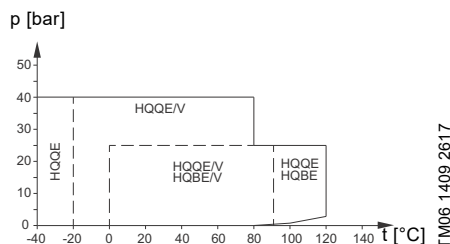


Fig. 27 Maximum permissible operating pressure and liquid temperature for pumps with Ø28 shaft seal, 75-110 kW, and Ø36 shaft seal, 132-200 kW

9.1.4 Minimum inlet pressure

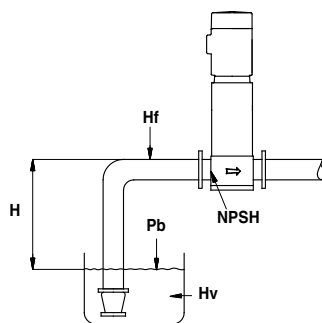


Fig. 28 Schematic view of open system with a CR pump

Calculate the maximum suction lift "H" in m head as follows:

$$H = Pb \times 10.2 - NPSH - Hf - Hv$$

$$Pb = \text{Barometric pressure in bar.}$$

Barometric pressure can be set to 1 bar.

In closed systems, Pb indicates the system pressure in bar.

NPSH = Net Positive Suction Head in m head, to be read from the NPSH curve on page [25](#) at the highest flow the pump will be delivering.

Hf = Friction loss in the inlet pipe in m head at the highest flow the pump will be delivering.

Hv = Vapour pressure for water in m head. See [Fig. E](#) on page [29](#).

If the pumped liquid is not water, then use the vapour pressure for the liquid which is being pumped.

tm = Liquid temperature.

If the calculated "H" is positive, the pump can operate at a suction lift of maximum "H" m head.

If the calculated "H" is negative, an inlet pressure of minimum "H" m head is required. There must be a pressure equal to the calculated "H" during operation.

TM02 0118 3800

TM06 1408 2314

TM06 1409 2617

Example

$P_b = 1 \text{ bar}$.

Pump type: CR 15, 50 Hz.

Flow rate: $15 \text{ m}^3/\text{h}$.

NPSH: 1.1 m head, from page 25.

$H_f = 3.0 \text{ m head}$.

Liquid temperature: $+60^\circ\text{C}$.

H_v : 2.1 m head (from Fig. E on page 29).

$H = P_b \times 10.2 - \text{NPSH} - H_f - H_v - H_s [\text{m head}]$.

$H = 1 \times 10.2 - 1.1 - 3.0 - 2.1 - 0.5 = 3.5 \text{ m head}$.

This means that the pump can operate at a suction lift of maximum 3.5 m head.

Pressure in bar: $3.5 \times 0.0981 = 0.343 \text{ bar}$.

Pressure in kPa: $3.5 \times 9.81 = 34.3 \text{ kPa}$.

9.1.5 Maximum permissible inlet pressure

The table on page 26 states the maximum permissible inlet pressure for vertically mounted pumps. However, the actual inlet pressure + the maximum pump pressure at no flow must always be lower than the maximum permissible system pressure which is stated on the pump nameplate. For identification of the nameplate data, see section 5.1.1 Nameplate.

The pumps are pressure-tested at a pressure of 1.5 times the maximum permissible system pressure.

9.1.6 Minimum flow rate**WARNING****Too high pressure and leakage**

Death or serious personal injury

- Do not run the pump against a closed outlet valve.

Due to the risk of overheating, do not use the pump at flows below the minimum flow rate.

The curves below show the minimum flow rate as a percentage of the rated flow rate in relation to the liquid temperature.

- - - = air-cooled top.

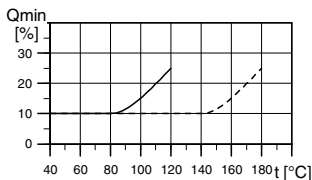


Fig. 29 Minimum flow rate in percentage of nominal flow

9.1.7 Frequency of starts and stops

See the instructions for the motor which are supplied with the pump.

9.2 Dimensions and weights

Dimensions: see page 27.

Weights: see label on the packing.

9.3 Electrical data

See the motor nameplate.

9.4 Sound pressure level

See page 28.

10. 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.

TM01 2816 2302

Fig. A
NPSH

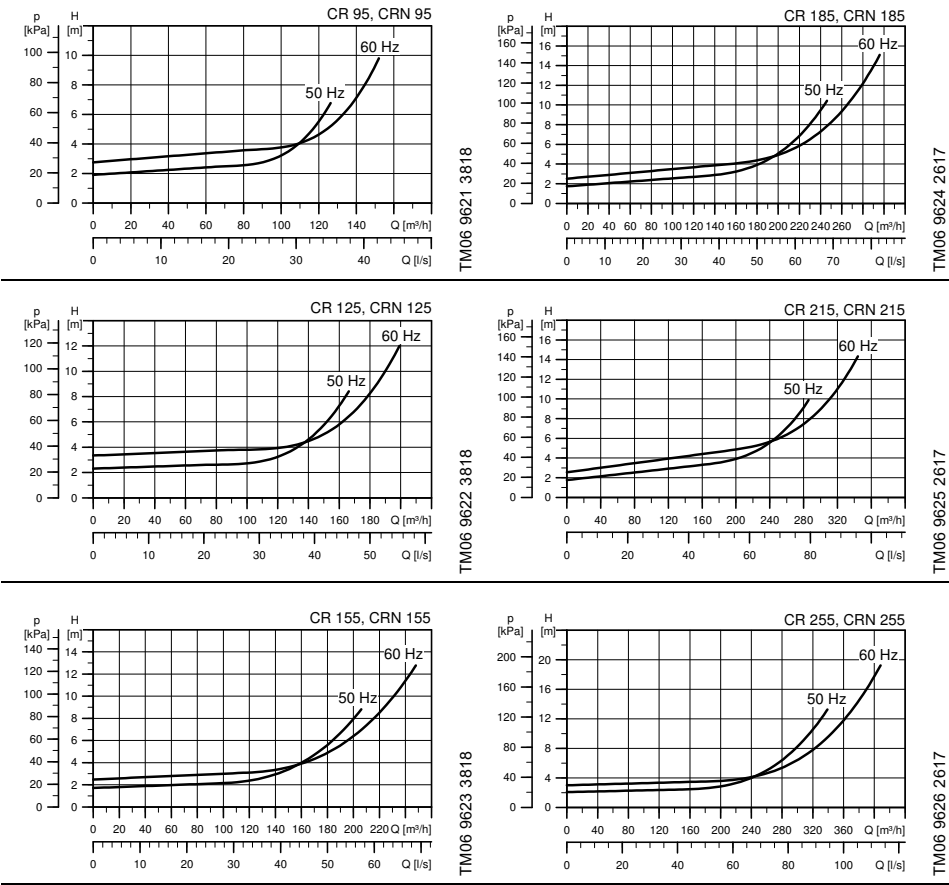


Fig. B

Maximum inlet pressure and flow rate for CR, CRN

50 Hz			
Pump type	Maximum inlet pressure		Maximum flow rate
	[bar]	[MPa]	[m³/h]
CR, CRN 95			120
95-1- → 95 1-1	4	0.4	
95-2 → 95-3-2	10	1	
95-3 → 95-6	15	1.5	
95-7 → 95-8-2	20	2	
CR, CRN 125			160
125-1 → 125-2-2	10	1	
125-2 → 125-4	15	1.5	
125-5 → 125-10	20	2	
CR, CRN 155			200
155-1 → 155-1-1	10	1	
155-2 → 155-3	15	1.5	
155-4-1 → 155-8-2	20	2	

60 Hz			
Pump type	Maximum inlet pressure		Maximum flow rate
	[bar]	[MPa]	[m³/h]
CR, CRN 95			150
95-1- → 95 1-1	10	1	
95-2 → 95-3-2	15	1.5	
95-4 → 95-5-3	20	2	
CR, CRN 125			190
125-1 → 125-2-2	10	1	
125-2 → 125-4	15	1.5	
125-5 → 125-6	20	2	
CR, CRN 155			230
155-1 → 155-1-1	10	1	
155-2 → 155-3-3	15	1.5	

Fig. C

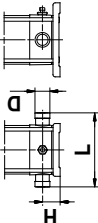
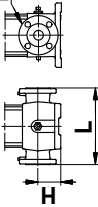
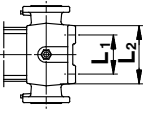
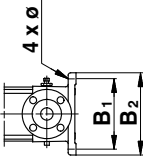
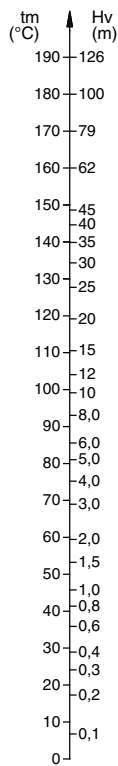
PJE			EN - FGJ			TM00 2252 3393			TM00 2255 3393			TM00 2256 3393		
Pump type														
	L [mm]	H [mm]	D [mm]	L [mm]	H [mm]	DN	L ₁ [mm]	L ₂ [mm]	B ₁ [mm]	B ₂ [mm]	Ø [mm]			
CR 95	-	-	-	380	140	100	225	275	350	419	18.5			
CRN 95	380	140	114	380	140	100	225	275	350	419	18.5			
CR 125	-	-	-	485	180	150	275	332	425	499	22.5			
CRN 125	485	180	168	485	180	150	275	332	425	499	22.5			
CR 155	-	-	-	485	180	150	275	332	425	499	22.5			
CRN 155	485	180	168	485	180	150	275	332	425	499	22.5			
CR 185	-	-	-	615	200	200	350	415	510	599	26.5			
CRN 185	615	200	219	615	200	200	350	415	510	599	26.5			
CR 215	-	-	-	615	200	200	350	415	510	599	26.5			
CRN 215	615	200	219	615	200	200	350	415	510	599	26.5			
CR 255	-	-	-	615	200	200	350	415	510	599	26.5			
CRN 255	615	200	219	615	200	200	350	415	510	599	26.5			

Fig. D

50 Hz	
Motor [kW]	L _{pA} [dB(A)] (ISO3743-2 / ISO1680 50 Hz)
0.37	50
0.55	50
0.75	50
1.1	52
1.5	54
2.2	54
3.0	55
4.0	62
5.5	60
7.5	60
11	60
15	60
18.5	60
22	66
30	67
37	67
45	67.5
55	71.5
75	74
90	73
110	74
132	73.5
160	77
200	76.5

60 Hz	
Motor [kW]	L _{pA} [dB(A)] (ISO3743-2 / ISO1680 60 Hz)
0.37	55
0.55	53
0.75	54
1.1	57
1.5	59
2.2	59
3.0	60
4.0	66
5.5	65
7.5	65
11	65
15	65
18.5	65
22	70
33.5	78
41.5	78
51	72
62	76
84	78
101	77.5
123	78.5
148	78
180	81.5
224	81.5

Fig. E



TM02 7445 3503

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.
Boomsesteenweg 81-83
B-2630 Aartselaar
Tel.: +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
Zmaja 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
Iztocna 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
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
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
Bd. Biruintei, nr 103
Pantelimon county Ilfov
Phone: +40 21 200 4100
Telefax: +40 21 200 4101
E-mail: romanian@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.
Leskovaška 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 Fuentecilla, s/n
E-28110 Algete (Madrid)
Tel.: +34-91-848 8800
Telefax: +34-91-628 0465

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
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

Бізнес Центр Європа
Столичне 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 31.03.2020

99078486 0420
ECM: 1278495

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.