

CRN MAGdrive

Installation and operating instructions

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EE LT LV ZH JP KO



CRN MAGdrive

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

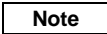
1. Symbols used in this document



Warning
If these safety instructions are not observed, it may result in personal injury!



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



Note
Notes or instructions that make the job easier and ensure safe operation.

2. Permanent magnets



Warning
Persons with pacemaker or other magnet-sensitive medical devices must not handle this pump. They must keep a distance of at least 1 metre from the MAGdrive, as there is a risk of influence from the magnetic fields of the pump. Credit cards, computers, watches and other magnet-sensitive objects should not be kept close to the pump.



Warning
The pump contains powerful magnets that may pose a risk of personal injury when servicing the pump. The pump should therefore only be dismantled and assembled by authorised personnel.

3. Product description

Grundfos CRN MAGdrive are 100 % leakage-free, sealless pumps. The motor torque is transmitted to the pump shaft by means of magnetic force.

Grundfos CRN MAGdrive pumps are suitable for the pumping of these liquids:

- Aggressive or corrosive liquids
- Toxic liquids
- Volatile liquids
- Obnoxious liquids
- Liquids without fibres and magnetic particles, as they may cause wear of the pump.

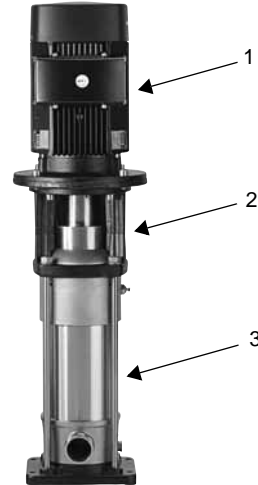


Fig. 1 CRN MAGdrive pump

Pos.	Description
1	Motor
2	Magnetic drive
3	Pump

4. Technical data

- Liquid temperature: -30 to 120 °C.
- Maximum system pressure: 25 bar.
- Viscosity: 0.3 to 300 cSt (mm²/s).

Minimum flow rate

The pump **must never** run without flow. The curve below shows the minimum flow rate as a percentage of the rated flow rate in relation to the liquid temperature.

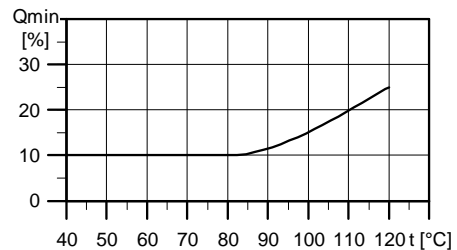


Fig. 2 Minimum flow rate

TM03 9119 3407

TM02 8290 4903

5. Type key

Example	CRN	5	-13	-M	-F	-G	-E
Type range							
Rated flow rate in m ³ /h							
Number of impellers							
Code for pump version							
M: CRN pump with magnetic drive							
Code for pipe connection							
CA: FlexiClamp							
CX: TriClamp							
F: DIN flange							
G: ANSI flange							
J: JIS flange							
P: PJE coupling							
Code for materials							
G: Wetted parts EN 1.4401/AISI 316							
Code for rubber parts of pump							
E: EPDM							
F: FXM (Fluoraz [®])							
K: FFKM (Kalrez [®])							
V: FKM (Viton [®])							

See also the installation and operating instructions of CR, CRI, CRN.

6. Mechanical installation



Warning
Installation and operation must comply with local regulations and accepted codes of good practice.

Before installation, check that

- the pump and its components are as ordered.
- no visible parts have been damaged.

6.1 Installation of pump

The pump must be installed and put into operation as described in the installation and operating instructions of CR, CRI, CRN.

It is advisable to protect CRN MAGdrive pumps against dry running by installing a flow switch, pressure switch or a LiqTec sensor close to the pump. The delay of the dry-running protection must be maximum 15 seconds.

6.2 Connection of sensor

A pressure sensor or a Grundfos LiqTec dry-running protection can be fitted in the threaded hole in the pump head.

Description	Dimension
Threaded connection:	RG 1/2
Max. installation length, sensor:	20 mm

7. Electrical connection

The pump must be installed as described in the installation and operating instructions of CR, CRI, CRN.

Pumps with 2-pole motors of 18.5 and 22 kW and 4 pole-motors as from 1.1 kW must be started via a soft starter.

7.1 Motor protection

As minimum the motor must be connected to an effective electronic motor protection with instantaneous release when the maximum setting of the current is reached. If a soft starter or a frequency converter is used it must also be with instantaneous release.

In order to ensure the optimum protection of the MAGdrive motor, the motor protection should be set in accordance with the following guidelines:

1. Set the overload protection to the rated full-load current ($I_{1/1}$) of the motor.

2. Start the pump and let it run for half an hour at the required duty point.
3. Measure the motor current. If not possible slowly grade down the scale indicator until the motor trip point is reached.
4. The setting of the motor protection must be 5 % higher than this value.
The highest permissible setting of the motor protection is the rated full load current ($I_{1/1}$) of the motor.

8. Start-up

Note

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

1. Open the isolating valve on the suction side of the pump.
2. Close the isolating valve on the discharge side of the pump.
3. Loosen the air vent screw in the pump head.
4. Slowly fill the pump with liquid.
5. Tighten the air vent screw when the pump has been completely filled with liquid.
6. Slowly open the isolating valve on the discharge side of the pump.
7. Start the pump.
8. Check the direction of rotation by means of the motor fan and the label on top of the fan cover.
9. After start-up, the pump should be vented again.
Slowly loosen the air vent screw in the pump head.

Warning



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

10. When liquid starts running out, tighten the air vent screw securely.

9. Maintenance

The pump requires no maintenance if it has been installed according to the instructions.

10. Fault finding

See the installation and operating instructions of CR, CRI, CRN.

11. Service

Warning



The pump contains powerful magnets that may pose a risk of personal injury when servicing the pump. The pump should therefore only be dismantled and assembled by authorised personnel.

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

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

11.1 Other documentation

Service and other documentation for CR pumps can be found at www.grundfos.com > International website > WebCAPS - pump curves/catalogue/product finder.

If you have any questions, please contact the nearest Grundfos company or service workshop.

12. Disposal

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.

Subject to alterations.

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