

## CR, CRN

- Ⓜ Installation and operating instructions
- Ⓝ Montage- und Betriebsanleitung
- ⓕ Notice d'installation et d'entretien
- Ⓡ Istruzioni di installazione e funzionamento
- ⓔ Instrucciones de instalación y funcionamiento
- Ⓟ Instruções de instalação e funcionamento
- Ⓜ Οδηγίες εγκατάστασης και λειτουργίας
- Ⓝ Installatie- en bedieningsinstructies
- Ⓞ Monterings- och driftsinstruktion
- ⓕ Asennus- ja käyttöohjeet
- Ⓝ Monterings- og driftsinstruktion



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Before beginning installation procedures, these installation and operating instructions should be studied carefully. The installation and operation should also be in accordance with local regulations and accepted codes of good practice.

## 1. Handling



The motors of the CR, CRN 2, 4, 8 and 16 pumps are supplied with lifting eyes which must not be used for lifting the entire pump.

When the entire pump is to be lifted, observe the following:

- CR, CRN 2, 4, 8 and 16 pumps fitted with GRUNDFOS MG motors should be lifted in the pump head by means of straps or the like.
- For other motor makes, it is recommended to lift the pump in the pump head by means of straps.

## 2. Type designation

### 2.1 Pump key for CR, CRN 2, 4, 8 and 16

Example	CR 8 - 30 / 2 - X - X - X - XXXX
Pump range: CR, CRN	CR
Nominal flow rate in m <sup>3</sup> /h	8
Number of stages x 10	30
Number of impellers (is only used if the pump has fewer impellers than chambers)	2
Code for pump version	X
Code for pipework connection	X
Code for materials	X
Code for shaft seal and rubber pump parts	XXXX

## 3. Applications

GRUNDFOS multistage in-line centrifugal pumps, types CR and CRN, are designed for a wide range of applications.

### 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.

### CR, CRN

For liquid transfer, circulation and pressure boosting of cold or hot clean water.

### CRN

In systems where all parts in contact with the liquid must be made of stainless steel, CRN pumps must be used.

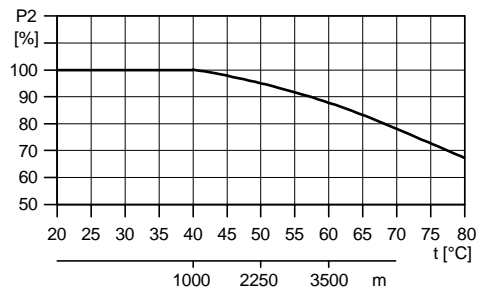
## 4. Technical data

### 4.1 Ambient temperature

Maximum +40°C.

If the ambient temperature exceeds +40°C, the motor output (P2) must be reduced, see fig. 1.

Fig. 1



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### 4.2 Liquid temperature

Pump type	Liquid temperature
CR, CRN 2, 4, 8 and 16	-20°C to +120°C

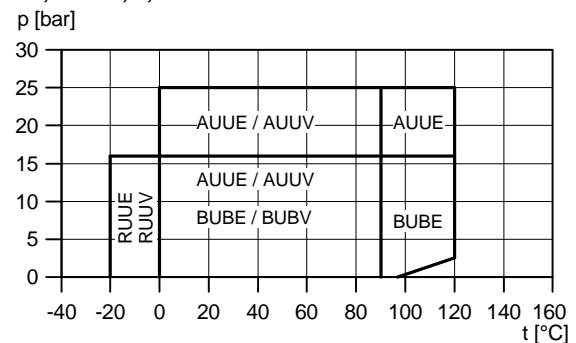
See also fig. A, page 63, which indicates the relationship between liquid temperature and maximum permissible operating pressure.

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

### 4.3 Maximum permissible operating pressure and liquid temperature for the shaft seal

Fig. 2

#### CR, CRN 2, 4, 8 and 16:



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Fig. C

Pump Type	PN 16			PJE			CLAMP			UNION			DIN			L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	B <sub>1</sub> [mm]	B <sub>2</sub> [mm]	ø [mm]
	L [mm]	H [mm]	D [Rp]	L [mm]	H [mm]	D [mm]	L [mm]	H [mm]	D [mm]	L [mm]	H [mm]	D [G]	L [mm]	H [mm]	DN					
CR 2	160	50	1													100	147	180	210	13
CRN 2				210	50	42,4	162	50	32	210	50	2	250	75	25	100	150	180	210	13
CR 4	160	50	1¼													100	147	180	210	13
CRN 4				210	50	42,4	162	50	32	210	50	2	250	75	32	100	150	180	210	13
CR 8	200	80	1½													130	190	215	246	13
CRN 8				261	80	60,3	202	80	51	261	80	2¾	280	80	40	130	199	215	247	14
CR 16																130	190	215	246	13
CRN 16				261	80	60,3	202	90	51	261	90	2¾	300	90	50	130	199	215	247	14

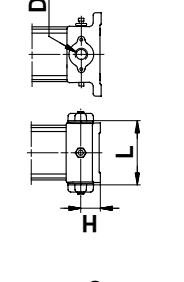
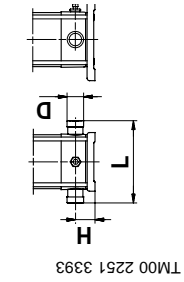
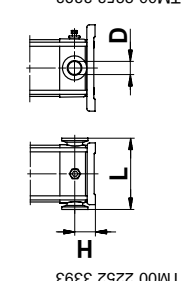
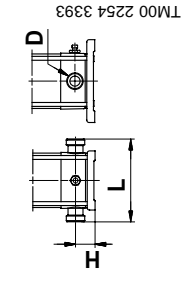
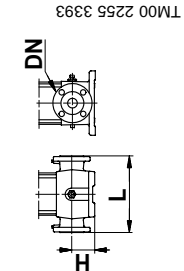
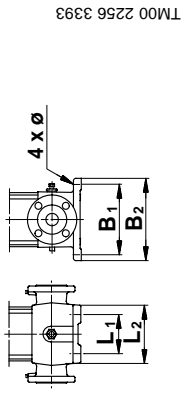
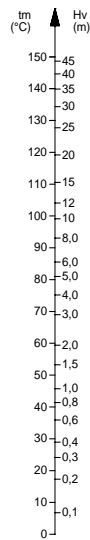


Fig. D

- Ⓒ **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)]
0.25	<70	<70
0.37	<70	<70
0.55	<70	<70
0.75	<70	<70
1.1	<70	<70
1.5	<70	<70
2.2	<70	<70
3.0	<70	<70
4.0	<70	<70
5.5	<70	<70
7.5	<70	72
11	80	84
15	72	77

Fig. E

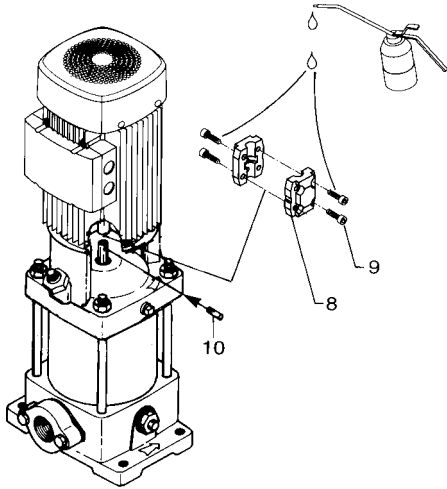


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CR, CRN 2 and 4

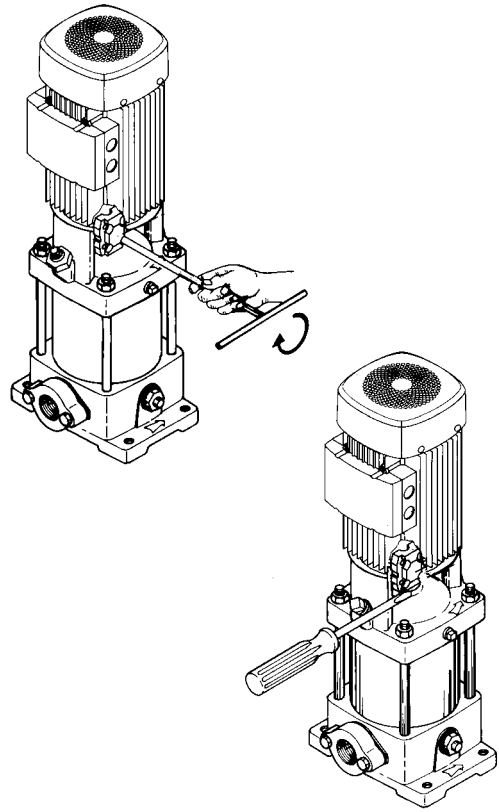
Fig. F

A



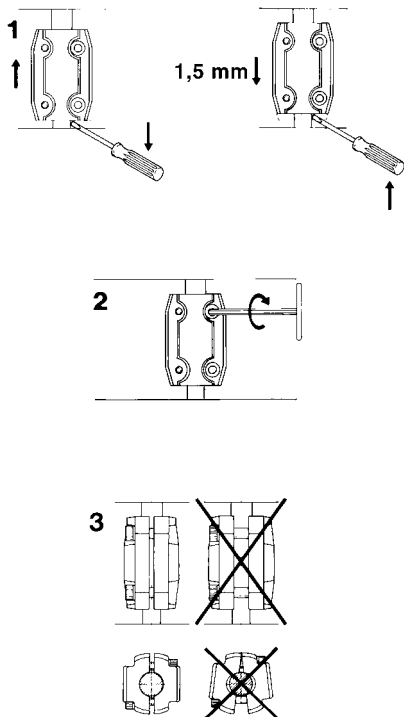
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B



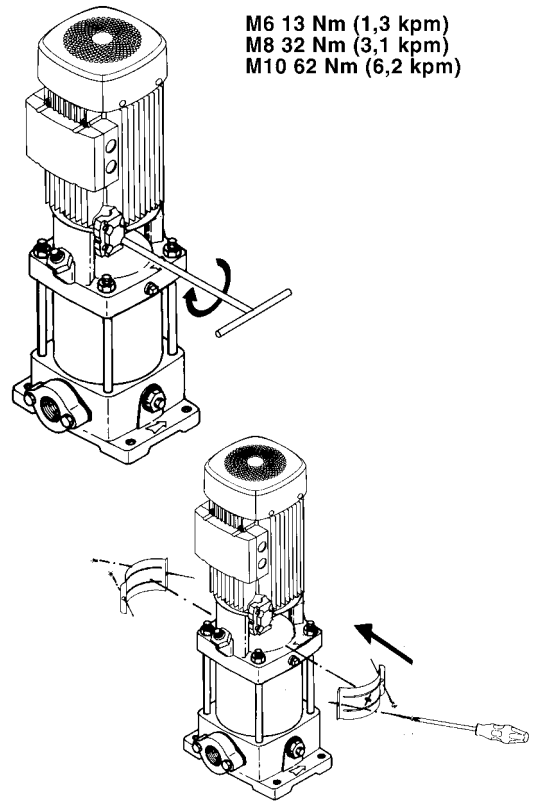
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C



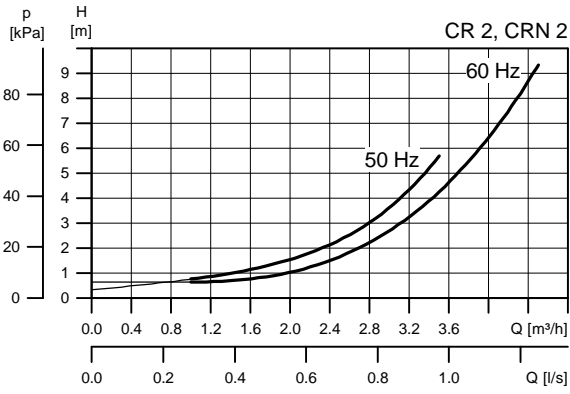
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D

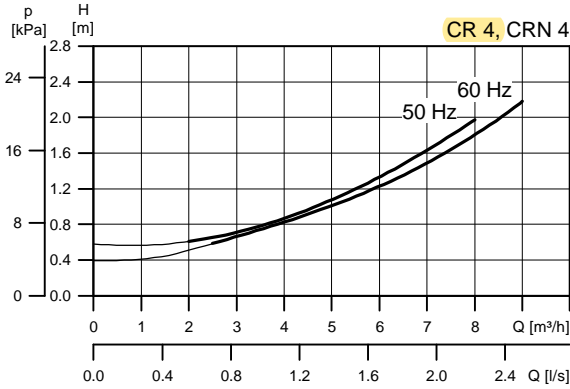


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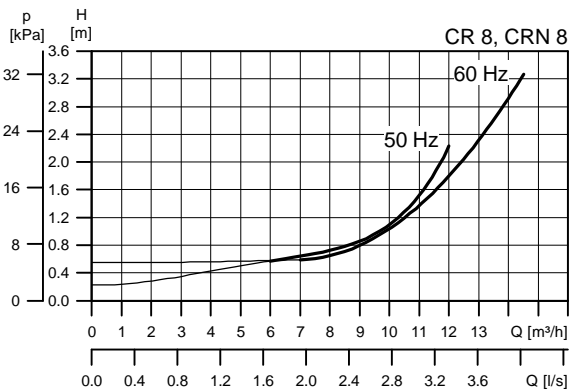
**NPSH**



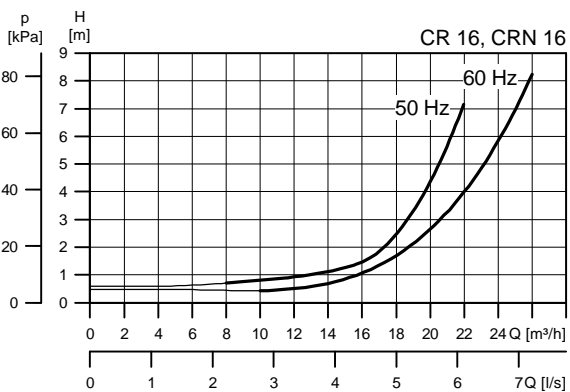
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