

## CM1-4 A-R-A-V-AQQV F-A-A-N

Grundfos pump 96989472



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<https://www.lenntech.com/grundfos/CMBASIS/96989472/CM1-4-A-R-A-V-AQQV.html>

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| Position | Qty. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|          | 1    | <p><b>CM1-4 A-R-A-V-AQQV</b></p>  <p>Product No.: On request</p> <p>Compact, reliable, horizontal, multistage, end-suction centrifugal pump with axial suction port and radial discharge port. The shaft, impellers and chambers are made of stainless steel. The inlet and discharge parts are made of cast iron. The mechanical shaft seal is a special designed, unbalanced O-ring seal. Pipework connection is via internal Whitworth pipe threads, Rp (ISO 7/1).</p> <p>The pump is fitted with a 3-phase, foot-mounted, fan-cooled asynchronous motor.</p> <p><b>Further product details</b></p> <p>Pump and motor are integrated in a compact and user-friendly design. The pump is fitted to a low base plate, making it ideal for installation in systems where compactness is important.</p> <p>The state-of-the-art design and materials of the shaft seal ensure high wear resistance, improved sticking and dry-running capabilities and long operating life.</p> <p>Servicing the pump requires no special service tools. Service parts are in stock for quick delivery and are available as kits, single parts or bulk. Service videos are available on <a href="http://www.youtube.com">www.youtube.com</a>.</p> <p><b>Pump</b></p> <p>A combination of a stop ring and a Nord-lock® washer secures a tight and reliable fixation of the impeller spacing pipes to the splined pump shaft. It is possible to remove and fit the hydraulic parts from the pump side. The inlet part, chambers and discharge part are hold together by four staybolts.</p> <p>The pump is fitted with an unbalanced O-ring seal with a rigid torque-transmission system. It has a fixed seal driver ensuring a reliable rotation of all parts. The dynamic secondary seal is an O-ring.</p> <p>Primary seal:</p> <ul style="list-style-type: none"> <li>• Rotating seal ring material: silicon carbide (SiC)</li> <li>• Stationary seat material: silicon carbide (SiC)</li> </ul> <p>This material pairing is used where higher corrosion resistance is required. The high hardness of this material pairing offers good resistance against abrasive particles.</p> <p>Secondary seal material: FKM (fluorocarbon rubber)</p> <p>FKM has excellent resistance to oils and chemicals. Above 90 °C, FKM should only be used in media without water.</p>  <p>The pump shaft is connected to the motor shaft through a left thread and tight fit. The shaft cannot be dismantled.</p> <p><b>Motor</b></p> <p>The motor is a totally enclosed, fan-cooled motor with principal dimensions to EN 50347. Electrical tolerances comply with EN 60034.</p> <p>The motor does not incorporate motor protection and must be connected to a motor-protective circuit breaker which can be manually reset. The motor-protective circuit breaker must be set according to the rated current of the motor (I1/1).</p> <p>An installation indicator is fitted to the motor fan cover. Based on the motor cooling air, it indicates the direction of rotation of the motor. The motor is fitted with a directional sticker.</p> |



## Technical data

### Liquid:

|                                      |                         |
|--------------------------------------|-------------------------|
| Pumped liquid:                       | Water                   |
| Liquid temperature range:            | -20 .. 90 °C            |
| Liquid temperature during operation: | 20 °C                   |
| Density:                             | 998.2 kg/m <sup>3</sup> |

### Technical:

|                         |                       |
|-------------------------|-----------------------|
| Rated flow:             | 1.7 m <sup>3</sup> /h |
| Rated head:             | 23.7 m                |
| Primary shaft seal:     | AQQV                  |
| Approvals on nameplate: | CE,WRAS,ACS,TR,EAC    |
| Curve tolerance:        | ISO9906:2012 3B       |

### Materials:

|               |                                                  |
|---------------|--------------------------------------------------|
| Pump housing: | Cast iron<br>EN-JL1030<br>ASTM 30 B              |
| Impeller:     | Stainless steel<br>DIN W.-Nr. 1.4301<br>AISI 304 |
| Rubber:       | FKM                                              |

### Installation:

|                              |                     |
|------------------------------|---------------------|
| Maximum ambient temperature: | 55 °C               |
| Maximum operating pressure:  | 10 bar              |
| Max pressure at stated temp: | 10 bar / 90 °C      |
| Flange standard:             | WHITWORTH THREAD RP |
| Pump inlet:                  | Rp 1                |
| Pump outlet:                 | Rp 1                |

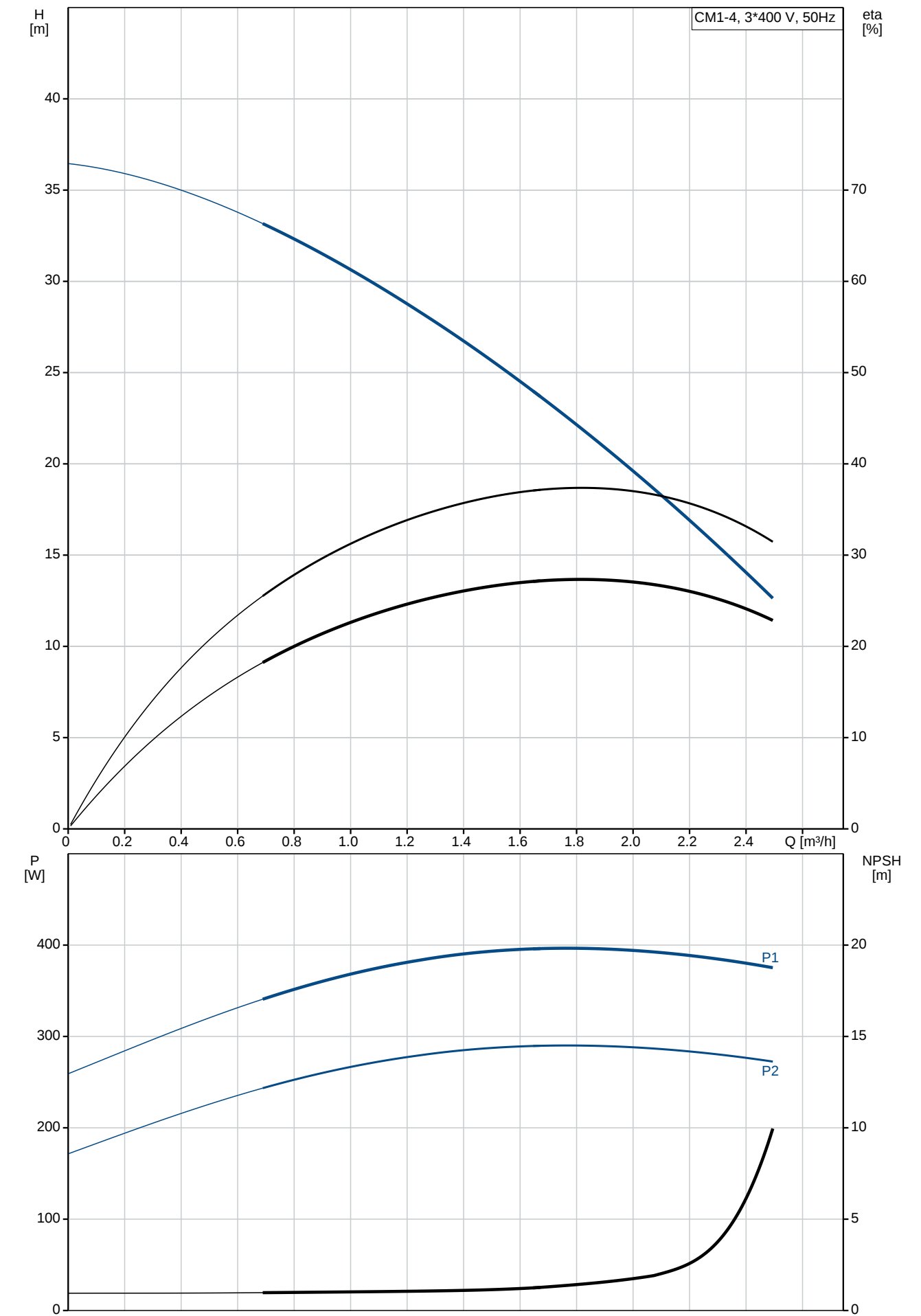
### Electrical data:

|                             |                         |
|-----------------------------|-------------------------|
| Motor type:                 | 71A                     |
| Rated power - P2:           | 0.46 kW                 |
| Mains frequency:            | 50 Hz                   |
| Rated voltage:              | 3 x 220-240D/380-415Y V |
| Service factor:             | 1                       |
| Rated current:              | 2,0-2,2/1,0-1,2 A       |
| Starting current:           | 490-530 %               |
| Rated speed:                | 2770-2820 rpm           |
| Enclosure class (IEC 34-5): | IP55                    |
| Insulation class (IEC 85):  | F                       |

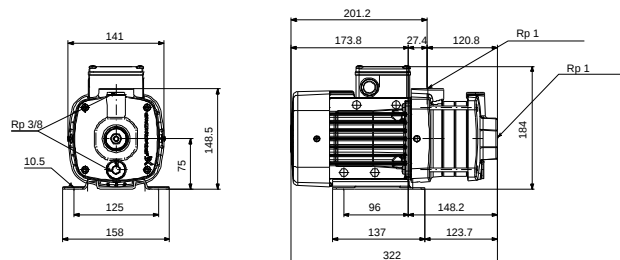
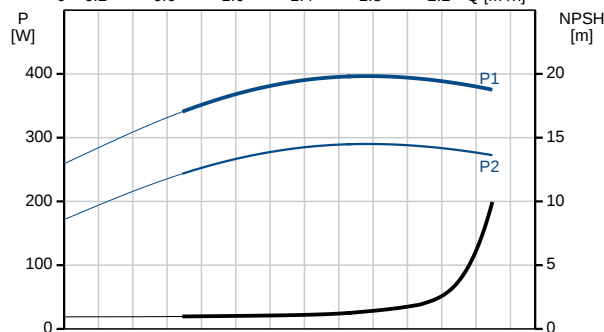
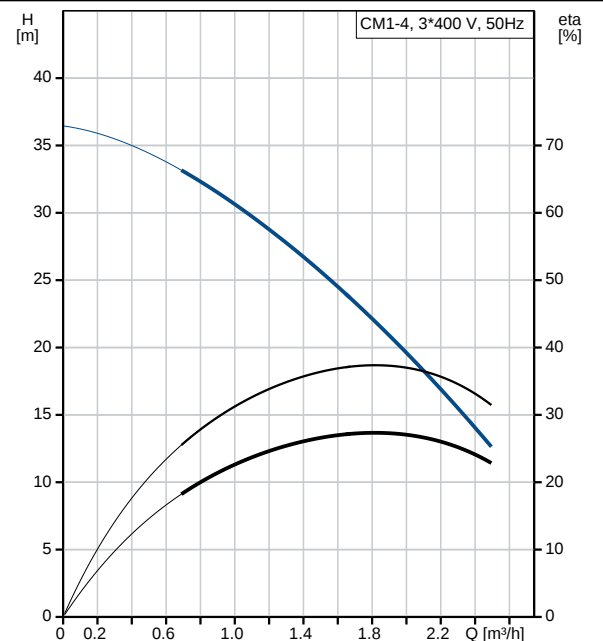
### Others:

|                                  |         |
|----------------------------------|---------|
| Minimum efficiency index, MEI ≥: | 0.7     |
| Net weight:                      | 11.5 kg |
| Gross weight:                    | 14 kg   |

On request CM1-4 A-R-A-V-AQQV 50 Hz



| Description                          | Value                   |
|--------------------------------------|-------------------------|
| <b>General information:</b>          |                         |
| Product name:                        | CM1-4 A-R-A-V-AQQV      |
| Product No:                          | On request              |
| EAN number:                          | On request              |
| <b>Technical:</b>                    |                         |
| Rated flow:                          | 1.7 m³/h                |
| Rated head:                          | 23.7 m                  |
| Impellers:                           | 4                       |
| Primary shaft seal:                  | AQQV                    |
| Approvals on nameplate:              | CE,WRAS,ACS,TR,EAC      |
| Curve tolerance:                     | ISO9906:2012 3B         |
| Pump version:                        | A                       |
| Model:                               | A                       |
| <b>Materials:</b>                    |                         |
| Pump housing:                        | Cast iron               |
|                                      | EN-JL1030               |
|                                      | ASTM 30 B               |
| Impeller:                            | Stainless steel         |
|                                      | DIN W.-Nr. 1.4301       |
|                                      | AISI 304                |
| Material code:                       | A                       |
| Rubber:                              | FKM                     |
| Code for rubber:                     | V                       |
| <b>Installation:</b>                 |                         |
| Maximum ambient temperature:         | 55 °C                   |
| Maximum operating pressure:          | 10 bar                  |
| Max pressure at stated temp:         | 10 bar / 90 °C          |
| Flange standard:                     | WHITWORTH THREAD RP     |
| Pump inlet:                          | Rp 1                    |
| Pump outlet:                         | Rp 1                    |
| Connect code:                        | R                       |
| <b>Liquid:</b>                       |                         |
| Pumped liquid:                       | Water                   |
| Liquid temperature range:            | -20 .. 90 °C            |
| Liquid temperature during operation: | 20 °C                   |
| Density:                             | 998.2 kg/m³             |
| <b>Electrical data:</b>              |                         |
| Motor type:                          | 71A                     |
| Rated power - P2:                    | 0.46 kW                 |
| Mains frequency:                     | 50 Hz                   |
| Rated voltage:                       | 3 x 220-240D/380-415Y V |
| Service factor:                      | 1                       |
| Rated current:                       | 2,0-2,2/1,0-1,2 A       |
| Starting current:                    | 490-530 %               |
| Rated speed:                         | 2770-2820 rpm           |
| Enclosure class (IEC 34-5):          | IP55                    |
| Insulation class (IEC 85):           | F                       |
| Motor protec:                        | NO                      |
| <b>Others:</b>                       |                         |
| Minimum efficiency index, MEI ≥:     | 0.7                     |
| Net weight:                          | 11.5 kg                 |
| Gross weight:                        | 14 kg                   |



# On request CM1-4 A-R-A-V-AQQV 50 Hz

cos phi  
eta

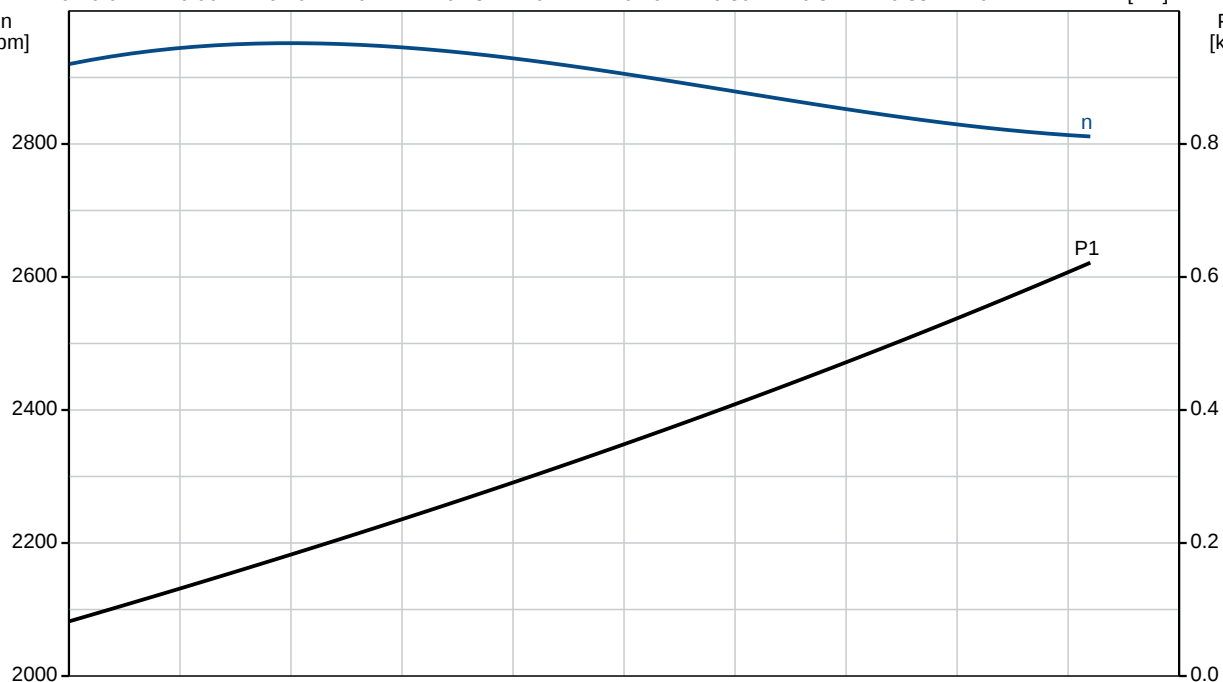
CM1-4 + 71A 0.46 kW 3\*400 V, 50 Hz, SF = 1

I  
[A]

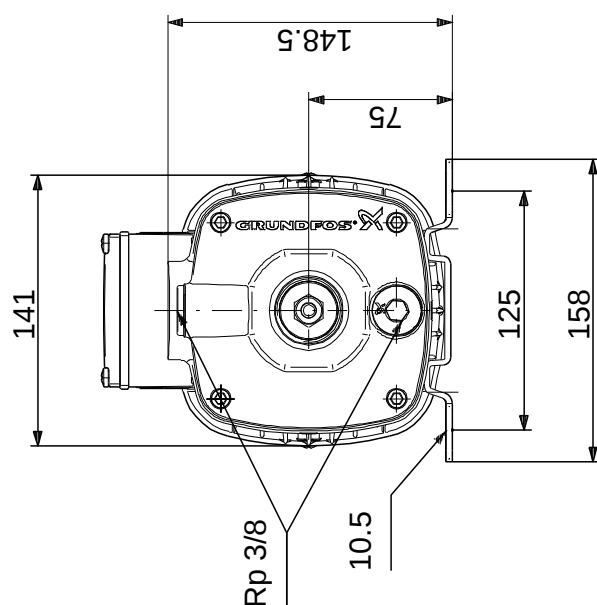
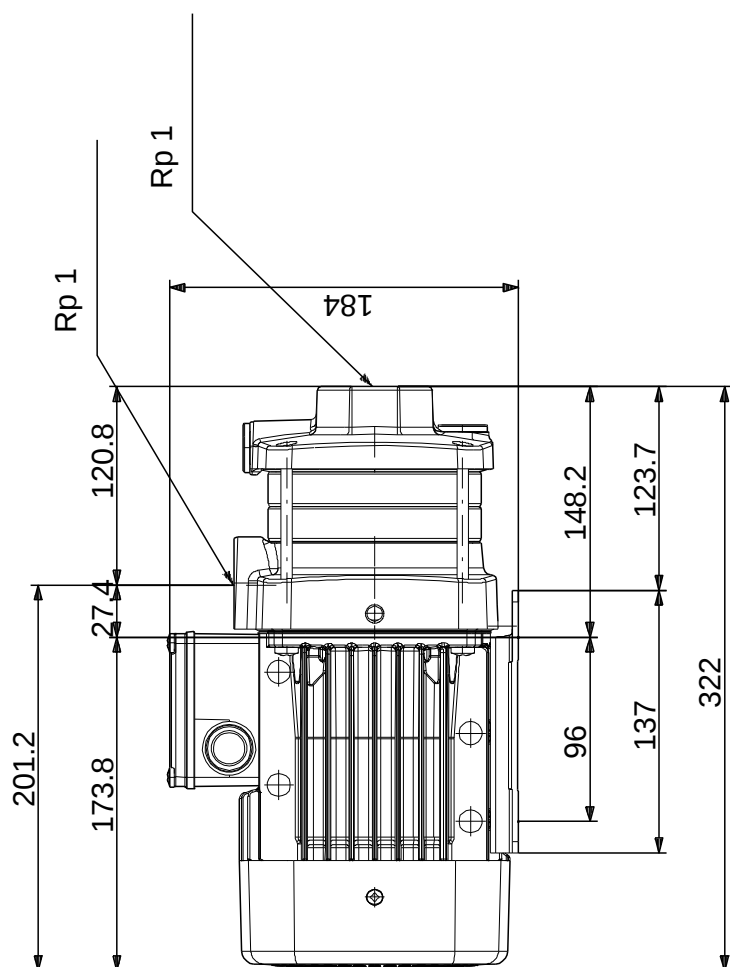


n  
[rpm]

P1  
[kW]



# On request CM1-4 A-R-A-V-AQQV 50 Hz



Note! All units are in [mm] unless others are stated.  
Disclaimer: This simplified dimensional drawing does not show all details.

# Exploded view



Sectional drawing (TM058200 for TPE2,TPE3)



TM058200

# Exploded view ( TM057026 for MGE model H/I )



**Parts list CM1-4, Product No. On request**  
**Valid from 2.7.2009 (0927)**

| Pos   | Description                    | Annotation | Données de classification | Référence | Quantité | Unité |
|-------|--------------------------------|------------|---------------------------|-----------|----------|-------|
|       | MG71A                          |            |                           |           | 1        | pcs   |
|       | Cross recess countersunk screw |            |                           |           | 4        | pcs   |
| - 4   | Chamber cpl.                   |            |                           |           | 2        | pcs   |
|       | Guide vane                     |            |                           |           | 6        |       |
|       | Plate                          |            |                           |           | 1        |       |
|       | Retainer                       |            |                           |           | 1        |       |
|       | Intermediate chamber           |            |                           |           | 1        |       |
|       | Vane                           |            |                           |           | 1        |       |
| 45    | Neck ring                      |            |                           |           | 1        |       |
| 65    | Retainer                       |            |                           |           | 1        |       |
| - 4.f | Chamber                        |            |                           |           | 1        | pcs   |
|       | Guide vane                     |            |                           |           | 6        |       |
|       | Plate                          |            |                           |           | 1        |       |
|       | Plate                          |            |                           |           | 1        |       |
|       | Retainer                       |            |                           |           | 1        |       |
| 45    | Neck ring                      |            |                           |           | 1        |       |
| 65    | Retainer                       |            |                           |           | 1        |       |
| - 5a  | Chamber cpl.                   |            |                           |           | 1        | pcs   |
|       | Retainer                       |            |                           |           | 1        |       |
|       | Intermediate chamber           |            |                           |           | 1        |       |
|       | Vane                           |            |                           |           | 1        |       |
| 45    | Neck ring                      |            |                           |           | 1        |       |
| 65    | Retainer                       |            |                           |           | 1        |       |
| 6     | Inlet part                     |            |                           |           | 1        | pcs   |
| - 25  | Drain plug cpl.                |            |                           |           | 2        | pcs   |
| 11    | O-ring                         |            | Diameter: 18,5            |           | 1        |       |
|       |                                |            | Material type: FKM        |           |          |       |
|       |                                |            | Thickness: 2              |           |          |       |
| 25    | Plug                           |            |                           |           | 1        |       |
| 26    | Hex socket head cap screw      |            | Length (mm): 95           |           | 4        | pcs   |
|       |                                |            | Thread: M06               |           |          |       |
| 36    | Lock nut                       |            | Thread: M8                |           | 1        | pcs   |
| 49    | Impeller cpl.                  |            |                           |           | 4        | pcs   |
| 51    | Pump shaft                     |            | Diameter: D12             |           | 1        | pcs   |
| 64    | Spacing pipe                   |            |                           |           | 3        | pcs   |
| 64.c  | Clamp                          |            |                           |           | 1        | pcs   |
| 66    | Wedge lock washer              |            |                           |           | 1        | pcs   |
| 76    | Nameplate                      |            |                           |           | 2        | pcs   |
| - 105 | Shaft seal                     |            |                           |           | 1        | pcs   |
| 102   | O-ring                         |            | Diameter: 17,86           |           | 1        |       |
|       |                                |            | Material type: FKM        |           |          |       |
|       |                                |            | Thickness: 2,62           |           |          |       |
| 103   | Seal ring, stationary          |            |                           |           | 1        |       |
| 104   | Seal ring, rotating            |            |                           |           | 1        |       |
| 107   | O-ring                         |            | Diameter: 11,5            |           | 1        |       |
|       |                                |            | Material type: FKM        |           |          |       |
|       |                                |            | Thickness: 3,18           |           |          |       |
| 108   | Compression spring             |            |                           |           | 1        |       |
| 111   | Retainer                       |            |                           |           | 1        |       |
| 112   | Driver for shaft seal          |            |                           |           | 1        |       |
| 111.a | Stop ring                      |            |                           |           | 1        | pcs   |
| 139.c | Gasket                         |            | Internal diameter: 103    |           | 5        | pcs   |
|       |                                |            | Outer diameter: 110       |           |          |       |
|       |                                |            | Thickness: 0,25           |           |          |       |
| 151   | Fan cover                      |            |                           |           | 1        | pcs   |
| 151.a | Installation indicator         |            |                           |           | 1        | pcs   |
| 152   | Pan head thread forming screw  |            |                           |           | 2        | pcs   |
| 156   | Fan                            |            |                           |           | 1        | pcs   |
| 191   | Base plate                     |            |                           |           | 1        | pcs   |

*Disclaimer: The information about the Grundfos pump in this document may be outdated.*

*Data may be subject to alterations without further notice.*

*Please contact us to verify the data above is still accurate/up-to-date.*

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