

# CMA - B - C - D - CMR

## SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

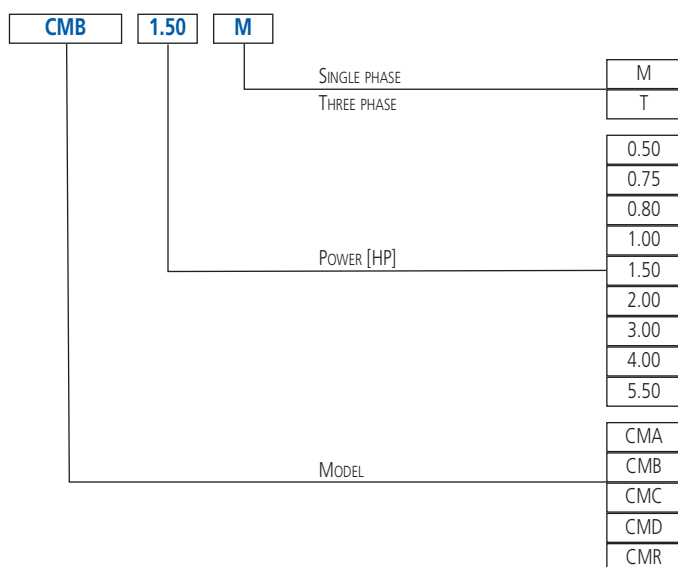
in cast iron



CMA-B-C-D

CMR

### CMA-B-C-D – CMR IDENTIFICATION CODE



### ACCESSORIES (on request)

- 5 litre 10 bar  $\frac{3}{4}$  EPDM vessel
- 24 litre 8 bar 1" EPDM vessel
- 24 litre 10 bar 1" EPDM vessel
- PVC 5m key float with counter-weight
- PVC 10m key float with counter-weight
- SQUARE-D FSG-2 1.4÷4.6 bar G $\frac{1}{4}$  F pressure switch
- FYG-22 2.8÷7 bar G $\frac{1}{4}$  F pressure switch
- Presscomfort - Pressure regulator (see page 70)
- Press•o•Matic - Variable speed control system (230V±10% single phase - power supply three phase 220V output – maximum motor power 2.2 kW - 3 HP - see page 71)

Cast iron self-priming electric pumps.

### APPLICATIONS

- Pressure boosting domestic plants
- Small-scale irrigation
- Moving non-aggressive liquids for civil and industrial use
- Washing plants
- Washing vehicles

### TECHNICAL DETAILS

- Available with brass impeller (CMA 0.50 M GO, CMA 0.75 M GO, CMA 1.00 M GO)
- The CMR version is equipped with an open impeller
- They can be inserted into machinery for industrial use

### TECHNICAL DATA

- Maximum working pressure:
  - 6 bar for CMA 0.50 - 0.75 - 1.00, CMB 0.75 - 1.00 - 1.50 - 2.00 - 3.00, CMC 0.75 - 1.00, CMD 1.50 - 2.00 - 3.00 - 4.00, CMR 0.75 - 1.00
  - 8 bar for CMA 1.50 - 2.00 - 3.00, CMB 4.00 - 5.50
- Maximum temperature of the liquid:
  - 40°C for CMA 0.50 - 0.75 - 1.00
  - 90°C for the rest of the range
- Self-ventilated 2 pole asynchronous motor
- Class of insulation F
- IP44 Protection rating
- 230V ±10%, 50Hz single phase voltage, 230/400V ±10%, 50Hz three phase voltage
- Permanent capacitor inserted and thermo-amperometric protection with automatic rearm incorporated for the single phase motor
- Protection under user's responsibility for the three phase version
- G1 suction connection for CMA 0.50 - 0.75 - 1.00, G1 $\frac{1}{4}$  for CMA 1.50 - 2.00 - 3.00, G1 $\frac{1}{2}$  for CMR, G2 for CMB - CMC, G2 $\frac{1}{2}$  for CMD
- G1 discharge connection for CMA, G1 $\frac{1}{4}$  for CMB, G1 $\frac{1}{2}$  for CMR, G2 for CMC, G2 $\frac{1}{2}$  for CMD

### MATERIALS

- Cast iron pump body
- Mechanical seal in Carbon/Ceramic/NBR
- Impeller:
  - in PPO reinforced with fibreglass for CMA 0.50 - 0.75 - 1.00
  - in brass for CMA 1.50 - 2.00 - 3.00, CMB 2.00 - 3.00 - 4.00 - 5.50, CMR 0.75 - 1.00
  - in cast iron for CMB 0.75 - 1.00 - 1.50, CMC, CMD
- Shaft:
  - in AISI 303 for CMA 1.50 - 2.00 - 3.00, CMB 1.50 - 2.00 - 3.00, CMD 1.50 - 2.00 - 3.00
  - in AISI 304 for CMB 4.00 - 5.50, CMD 4.00
  - in AISI 416 for CMA 0.50, CMR 0.75 - 1.00
  - in AISI 420 for CMA 0.75 - 1.00, CMB 0.75 - 1.00, CMC 0.75 - 1.00
- Support:
  - in aluminium for CMA 0.50 - 0.75 - 1.00, CMB 0.75 - 1.00, CMC 0.75 - 1.00, CMR 0.75 - 1.00
  - in cast iron for the rest of the range

### CONTROL PANELS

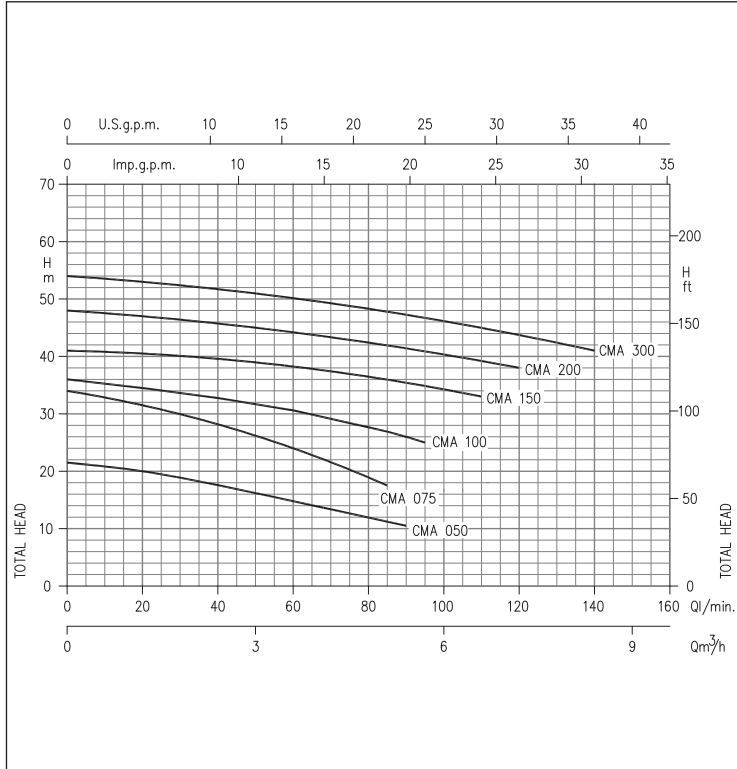
- 1EPBH (see page 68)

# CMA - B - C - D - CMR

## SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS in cast iron

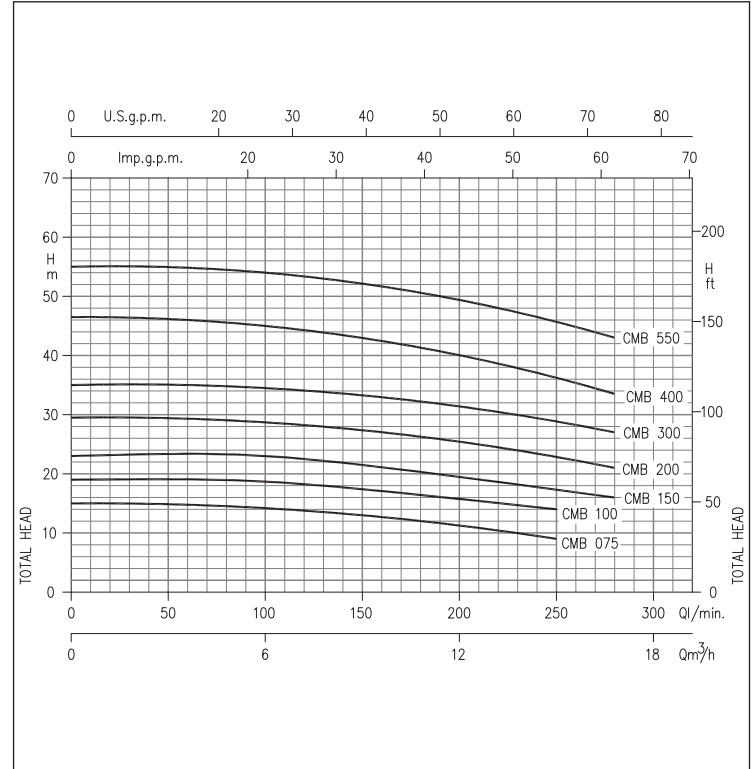
### CMA range PERFORMANCE CURVES

(according to ISO 9906 Attachment A)



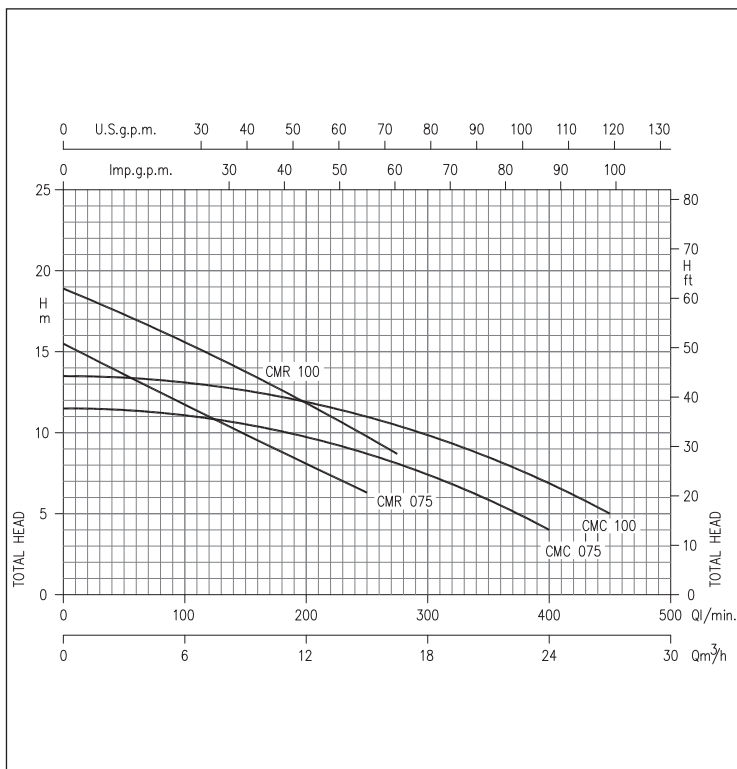
### CMB range PERFORMANCE CURVES

(according to ISO 9906 Attachment A)



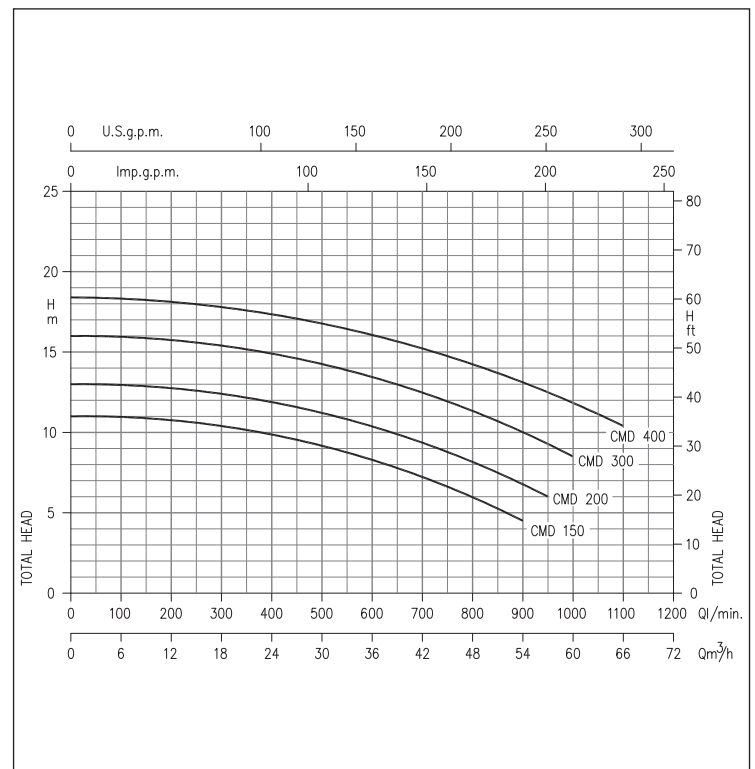
### CMC-CMR range PERFORMANCE CURVES

(according to ISO 9906 Attachment A)



### CMD range PERFORMANCE CURVES

(according to ISO 9906 Attachment A)



# CMA - B - C - D - CMR

## SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

**CMA PERFORMANCE TABLE**

| Model                |                         | P <sub>2</sub> |      | Q=Flow rate          |           |           |           |           |           |           |          |            |            |            |  |
|----------------------|-------------------------|----------------|------|----------------------|-----------|-----------|-----------|-----------|-----------|-----------|----------|------------|------------|------------|--|
| 230V<br>single phase | 230/400V<br>three phase | [HP]           | [kW] | l/min 20<br>m³/h 1,2 | 40<br>2,4 | 60<br>3,6 | 80<br>4,8 | 85<br>5,1 | 90<br>5,4 | 95<br>5,7 | 100<br>6 | 110<br>6,6 | 120<br>7,2 | 140<br>8,4 |  |
|                      |                         |                |      | H=Head [m]           |           |           |           |           |           |           |          |            |            |            |  |
| CMA 0.50 M           | CMA 0.50 T              | 0,5            | 0,37 | 20,0                 | 17,8      | 15,0      | 12,1      | 11,2      | 10,5      | -         | -        | -          | -          | -          |  |
| CMA 0.75 M           | CMA 0.75 T              | 0,75           | 0,55 | 31,5                 | 28,2      | 24,0      | 18,9      | 17,5      | -         | -         | -        | -          | -          | -          |  |
| CMA 1.00 M           | CMA 1.00 T              | 1              | 0,75 | 34,5                 | 32,8      | 30,6      | 27,7      | 26,9      | 26,0      | 25,0      | -        | -          | -          | -          |  |
| CMA 1.50 M           | CMA 1.50 T              | 1,5            | 1,1  | 40,5                 | 39,6      | 38,2      | 36,5      | 36,0      | 35,6      | 34,9      | 34,3     | 33,0       | -          | -          |  |
| CMA 2.00 M           | CMA 2.00 T              | 2              | 1,5  | 47,0                 | 45,8      | 44,2      | 42,4      | 41,9      | 41,4      | 40,9      | 40,3     | 39,2       | 38,0       | -          |  |
| -                    | CMA 3.00 T              | 3              | 2,2  | 53,0                 | 51,8      | 50,2      | 48,3      | 47,8      | 47,3      | 46,7      | 46,2     | 45,0       | 43,7       | 41,0       |  |

**CMB PERFORMANCE TABLE**

| Model                |                         | P <sub>2</sub> |      | Q=Flow rate   |          |            |             |             |           |             |
|----------------------|-------------------------|----------------|------|---------------|----------|------------|-------------|-------------|-----------|-------------|
| 230V<br>single phase | 230/400V<br>three phase | [HP]           | [kW] | l/min<br>m³/h | 100<br>6 | 140<br>8,4 | 180<br>10,8 | 220<br>13,2 | 250<br>15 | 280<br>16,9 |
|                      |                         |                |      | H=Head [m]    |          |            |             |             |           |             |
| CMB 0.75 M           | CMB 0.75 T              | 0,75           | 0,55 | 14,2          | 13,3     | 12,0       | 10,4        | 9,0         | -         | -           |
| CMB 1.00 M           | CMB 1.00 T              | 1              | 0,75 | 18,4          | 17,4     | 16,1       | 15,2        | 14,0        | -         | -           |
| CMB 1.50 M           | CMB 1.50 T              | 1,5            | 1,1  | 22,4          | 21,1     | 19,8       | 18,0        | 17,1        | 16,0      | -           |
| CMB 2.00 M           | CMB 2.00 T              | 2              | 1,5  | 28,7          | 27,7     | 26,3       | 24,5        | 22,8        | 21,0      | -           |
| -                    | CMB 3.00 T              | 3              | 2,2  | 34,5          | 33,7     | 32,1       | 30,3        | 28,8        | 27,0      | -           |
| -                    | CMB 4.00 T              | 4              | 3    | 45,0          | 43,4     | 41,5       | 38,4        | 36,2        | 33,5      | -           |
| -                    | CMB 5.50 T              | 5,5            | 4    | 54,0          | 52,3     | 50,4       | 48,1        | 45,7        | 43,0      | -           |

**CMC PERFORMANCE TABLE**

| Model                |                         | P <sub>2</sub> |      | Q=Flow rate   |         |          |           |           |           |           |
|----------------------|-------------------------|----------------|------|---------------|---------|----------|-----------|-----------|-----------|-----------|
| 230V<br>single phase | 230/400V<br>three phase | [HP]           | [kW] | l/min<br>m³/h | 50<br>3 | 150<br>9 | 250<br>15 | 350<br>21 | 400<br>24 | 450<br>27 |
|                      |                         |                |      | H=Head [m]    |         |          |           |           |           |           |
| CMC 0.75 M           | CMC 0.75 T              | 0,75           | 0,55 | 11,4          | 10,6    | 8,8      | 5,9       | 4,0       | -         |           |
| CMC 1.00 M           | CMC 1.00 T              | 1              | 0,75 | 13,4          | 12,6    | 11,0     | 8,6       | 6,8       | 5,0       |           |

**CMD PERFORMANCE TABLE**

| Model                |                         | P <sub>2</sub> |      | Q=Flow rate   |           |           |           |           |           |           |            |            |
|----------------------|-------------------------|----------------|------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|
| 230V<br>single phase | 230/400V<br>three phase | [HP]           | [kW] | l/min<br>m³/h | 300<br>18 | 400<br>24 | 600<br>36 | 800<br>48 | 900<br>54 | 950<br>57 | 1000<br>60 | 1100<br>66 |
|                      |                         |                |      | H=Head [m]    |           |           |           |           |           |           |            |            |
| CMD 1.50 M           | CMD 1.50 T              | 1,5            | 1,1  | 10,4          | 9,9       | 8,4       | 6         | 4,5       | -         | -         | -          | -          |
| CMD 2.00 M           | CMD 2.00 T              | 2              | 1,5  | 12,4          | 11,9      | 10,5      | 8,3       | 6,8       | 6         | -         | -          | -          |
| -                    | CMD 3.00 T              | 3              | 2,2  | 15,4          | 14,9      | 13,5      | 11,4      | 10        | 9,3       | 8,5       | -          | -          |
| -                    | CMD 4.00 T              | 4              | 3    | 17,8          | 17,3      | 16,1      | 14,2      | 13,1      | 12,5      | 11,8      | 10,4       | -          |

**CMR PERFORMANCE TABLE**

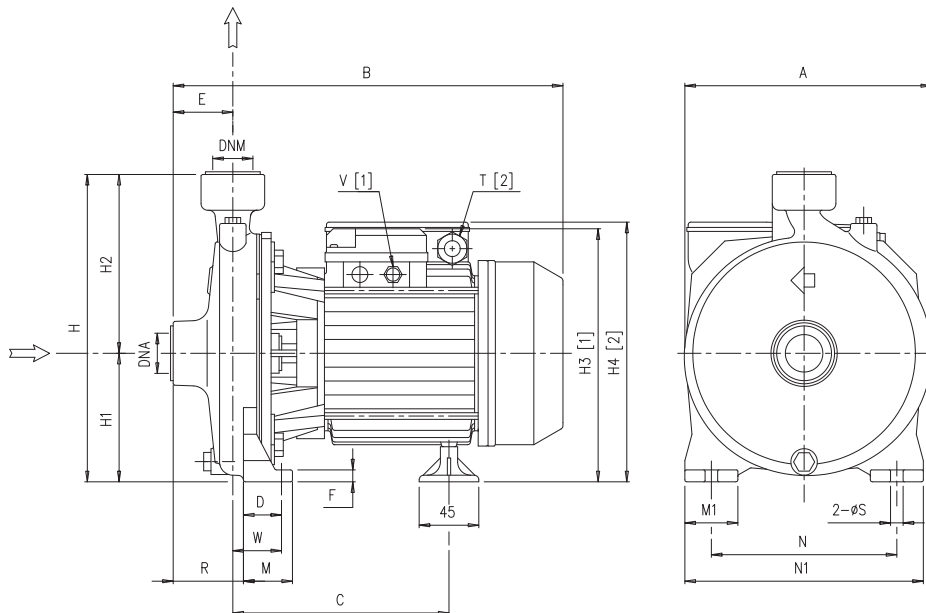
| Model                |                         | P <sub>2</sub> |      | Q=Flow rate   |         |          |           |           |             |
|----------------------|-------------------------|----------------|------|---------------|---------|----------|-----------|-----------|-------------|
| 230V<br>single phase | 230/400V<br>three phase | [HP]           | [kW] | l/min<br>m³/h | 50<br>3 | 100<br>6 | 200<br>12 | 250<br>15 | 275<br>17,5 |
|                      |                         |                |      | H=Head [m]    |         |          |           |           |             |
| CMR 0.75 M           | CMR 0.75 T              | 0,75           | 0,55 | 13,6          | 11,4    | 8,1      | 6,3       | -         |             |
| CMR 1.00 M           | CMR 1.00 T              | 1              | 0,75 | 17,3          | 15,4    | 11,5     | 9,6       | 8,7       |             |

# CMA - B - C - D - CMR

## SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

### CMA-B-C-D - CMR DIMENSIONS



[1]= Three-phase only  
[2]= Single phase only

### DIMENSIONS TABLE

| Model      | Dimensions [mm] |       |       |      |      |    |       |       |     |        |        |    |    |     |     |       |        |       |      |     |       |       | Weight [kg] |
|------------|-----------------|-------|-------|------|------|----|-------|-------|-----|--------|--------|----|----|-----|-----|-------|--------|-------|------|-----|-------|-------|-------------|
|            | A               | B     | C     | D    | E    | F  | H     | H1    | H2  | [1] H3 | [2] H4 | M  | M1 | N   | N1  | R     | [2] T  | [1] V | W    | S   | DNA   | DNM   |             |
| CMA 0.50 M | 160             | 261,8 | 158,8 | 30   | 44   | 8  | 202   | 82    | 120 | -      | 173    | 40 | 40 | 110 | 150 | 44    | PG11   | -     | 30   | 9,5 | G 1   | G 1   | 7,3         |
| CMA 0.50 T | 160             | 261,8 | 158,8 | 30   | 44   | 8  | 202   | 82    | 120 | 172,5  | -      | 40 | 40 | 110 | 150 | 44    | -      | PG11  | 30   | 9,5 | G 1   | G 1   | 7,3         |
| CMA 0.75 M | 185             | 300,3 | 171,8 | 36,8 | 45   | 9  | 232   | 97    | 135 | -      | 198    | 45 | 40 | 140 | 180 | 45    | PG11   | -     | 36,8 | 9,5 | G 1   | G 1   | 11,7        |
| CMA 0.75 T | 185             | 300,3 | 171,8 | 36,8 | 45   | 9  | 232   | 97    | 135 | 197,5  | -      | 45 | 40 | 140 | 180 | 45    | -      | PG11  | 36,8 | 9,5 | G 1   | G 1   | 11,7        |
| CMA 1.00 M | 185             | 300,3 | 171,8 | 36,8 | 45   | 9  | 232   | 97    | 135 | -      | 198    | 45 | 40 | 140 | 180 | 45    | PG11   | -     | 36,8 | 9,5 | G 1   | G 1   | 12,0        |
| CMA 1.00 T | 185             | 300,3 | 171,8 | 36,8 | 45   | 9  | 232   | 97    | 135 | 197,5  | -      | 45 | 40 | 140 | 180 | 45    | -      | PG11  | 36,8 | 9,5 | G 1   | G 1   | 12,0        |
| CMA 1.50 M | 200             | 347,3 | 208,3 | 41,8 | 45,5 | 9  | 252   | 100   | 152 | -      | 232    | 50 | 40 | 155 | 194 | 45,5  | PG13,5 | -     | 41,8 | 9,5 | G 1 ¼ | G 1   | 19,4        |
| CMA 1.50 T | 200             | 347,3 | 208,3 | 41,8 | 45,5 | 9  | 252   | 100   | 152 | 214    | -      | 50 | 40 | 155 | 194 | 45,5  | -      | PG11  | 41,8 | 9,5 | G 1 ¼ | G 1   | 19,4        |
| CMA 2.00 M | 225             | 360,3 | 208,3 | 41,8 | 45,5 | 9  | 285   | 115   | 170 | -      | 247    | 50 | 40 | 180 | 220 | 45,5  | PG13,5 | -     | 41,8 | 9,5 | G 1 ¼ | G 1   | 21,3        |
| CMA 2.00 T | 225             | 347,3 | 208,3 | 41,8 | 45,5 | 9  | 285   | 115   | 170 | 229    | -      | 50 | 40 | 180 | 220 | 45,5  | -      | PG11  | 41,8 | 9,5 | G 1 ¼ | G 1   | 21,3        |
| CMA 3.00 T | 225             | 360,3 | 208,3 | 41,8 | 45,5 | 9  | 285   | 115   | 170 | 229    | -      | 50 | 40 | 180 | 220 | 45,5  | -      | PG11  | 41,8 | 9,5 | G 1 ¼ | G 1   | 22,0        |
| CMB 0.75 M | 188             | 315,3 | 182,3 | 36,8 | 49,5 | 9  | 251,5 | 101,5 | 150 | -      | 127,5  | 45 | 40 | 140 | 180 | 65,5  | PG11   | -     | 52,8 | 9,5 | G 2   | G 1 ¼ | 12,5        |
| CMB 0.75 T | 188             | 315,3 | 182,3 | 36,8 | 49,5 | 9  | 251,5 | 101,5 | 150 | 127    | -      | 45 | 40 | 140 | 180 | 65,5  | -      | PG11  | 52,8 | 9,5 | G 2   | G 1 ¼ | 12,5        |
| CMB 1.00 M | 188             | 315,3 | 182,3 | 36,8 | 49,5 | 9  | 251,5 | 101,5 | 150 | -      | 127,5  | 45 | 40 | 140 | 180 | 65,5  | PG11   | -     | 52,8 | 9,5 | G 2   | G 1 ¼ | 13,8        |
| CMB 1.00 T | 188             | 315,3 | 182,3 | 36,8 | 49,5 | 9  | 251,5 | 101,5 | 150 | 127    | -      | 45 | 40 | 140 | 180 | 65,5  | -      | PG11  | 52,8 | 9,5 | G 2   | G 1 ¼ | 13,8        |
| CMB 1.50 M | 188             | 349,3 | 206,3 | 36,8 | 49,5 | 9  | 251,5 | 101,5 | 150 | -      | 233,5  | 45 | 40 | 140 | 180 | 65,5  | PG13,5 | -     | 52,8 | 9,5 | G 2   | G 1 ¼ | 20,5        |
| CMB 1.50 T | 188             | 349,3 | 206,3 | 36,8 | 49,5 | 9  | 251,5 | 101,5 | 150 | 215,5  | -      | 45 | 40 | 140 | 180 | 65,5  | -      | PG11  | 52,8 | 9,5 | G 2   | G 1 ¼ | 20,5        |
| CMB 2.00 M | 200             | 373,3 | 209,3 | 36,8 | 57,5 | 9  | 271,5 | 111,5 | 160 | -      | 243,5  | 45 | 40 | 160 | 200 | 76,5  | PG13,5 | -     | 55,8 | 9,5 | G 2   | G 1 ¼ | 21,5        |
| CMB 2.00 T | 200             | 360,3 | 209,3 | 36,8 | 57,5 | 9  | 271,5 | 111,5 | 160 | 225,5  | -      | 45 | 40 | 160 | 200 | 76,5  | -      | PG11  | 55,8 | 9,5 | G 2   | G 1 ¼ | 21,5        |
| CMB 3.00 T | 200             | 373,3 | 209,3 | 36,8 | 57,5 | 9  | 271,5 | 111,5 | 160 | 225,5  | -      | 45 | 40 | 160 | 200 | 76,5  | -      | PG11  | 55,8 | 9,5 | G 2   | G 1 ¼ | 21,5        |
| CMB 4.00 T | 247             | 428,8 | 222,3 | 48   | 60   | 12 | 323,5 | 133,5 | 190 | 264,5  | -      | 60 | 50 | 190 | 240 | 77,5  | -      | PG16  | 65,5 | 12  | G 2   | G 1 ¼ | 39,0        |
| CMB 5.50 T | 247             | 428,8 | 222,3 | 48   | 60   | 12 | 323,5 | 133,5 | 190 | 264,5  | -      | 60 | 50 | 190 | 240 | 77,5  | -      | PG16  | 65,5 | 12  | G 2   | G 1 ¼ | 41,0        |
| CMC 0.75 M | 186             | 313,3 | 186,8 | 36,8 | 43   | 9  | 247   | 97    | 150 | -      | 198    | 45 | 40 | 140 | 180 | 63,5  | PG11   | -     | 57,3 | 9,5 | G 2   | G 2   | 12,0        |
| CMC 0.75 T | 186             | 313,3 | 186,8 | 36,8 | 43   | 9  | 247   | 97    | 150 | 197,5  | -      | 45 | 40 | 140 | 180 | 63,5  | -      | PG11  | 57,3 | 9,5 | G 2   | G 2   | 12,0        |
| CMC 1.00 M | 186             | 313,3 | 186,8 | 36,8 | 43   | 9  | 247   | 97    | 150 | -      | 198    | 45 | 40 | 140 | 180 | 63,5  | PG11   | -     | 57,3 | 9,5 | G 2   | G 2   | 13,0        |
| CMC 1.00 T | 186             | 313,3 | 186,8 | 36,8 | 43   | 9  | 247   | 97    | 150 | 197,5  | -      | 45 | 40 | 140 | 180 | 63,5  | -      | PG11  | 57,3 | 9,5 | G 2   | G 2   | 13,0        |
| CMD 1.50 M | 213             | 384,3 | 222,8 | 36,8 | 68   | 12 | 271,5 | 111,5 | 160 | -      | 243,5  | 45 | 40 | 160 | 200 | 100,5 | PG13,5 | -     | 69,3 | 9,5 | G 2 ½ | G 2 ½ | 22,0        |
| CMD 1.50 T | 213             | 384,3 | 222,8 | 36,8 | 68   | 12 | 271,5 | 111,5 | 160 | 225,5  | -      | 45 | 40 | 160 | 200 | 100,5 | -      | PG11  | 69,3 | 9,5 | G 2 ½ | G 2 ½ | 22,0        |
| CMD 2.00 M | 213             | 397,3 | 222,8 | 36,8 | 68   | 12 | 271,5 | 111,5 | 160 | -      | 243,5  | 45 | 40 | 160 | 200 | 100,5 | PG13,5 | -     | 69,3 | 9,5 | G 2 ½ | G 2 ½ | 24,0        |
| CMD 2.00 T | 213             | 384,3 | 222,8 | 36,8 | 68   | 12 | 271,5 | 111,5 | 160 | 225,5  | -      | 45 | 40 | 160 | 200 | 100,5 | -      | PG11  | 69,3 | 9,5 | G 2 ½ | G 2 ½ | 24,0        |
| CMD 3.00 T | 213             | 397,3 | 222,8 | 36,8 | 68   | 12 | 271,5 | 111,5 | 160 | 225,5  | -      | 45 | 40 | 160 | 200 | 100,5 | -      | PG11  | 69,3 | 9,5 | G 2 ½ | G 2 ½ | 24,0        |
| CMD 4.00 T | 213             | 449,3 | 234,8 | 36,8 | 68   | 12 | 271,5 | 111,5 | 160 | 354    | -      | 45 | 50 | 160 | 200 | 100,5 | -      | PG16  | 69,3 | 9,5 | G 2 ½ | G 2 ½ | 31,5        |
| CMR 0.75   | 180             | 310,3 | 181,8 | 36,8 | 45   | 9  | 229   | 97    | 132 | 197,5  | 198    | 45 | 40 | 140 | 180 | 60,5  | PG11   | PG11  | 52,3 | 9,5 | G 1 ½ | G 1 ½ | 11,0        |
| CMR 1.00   | 180             | 310,3 | 181,8 | 36,8 | 45   | 9  | 229   | 97    | 132 | 197,5  | 198    | 45 | 40 | 140 | 180 | 60,5  | PG11   | PG11  | 52,3 | 9,5 | G 1 ½ | G 1 ½ | 12,2        |

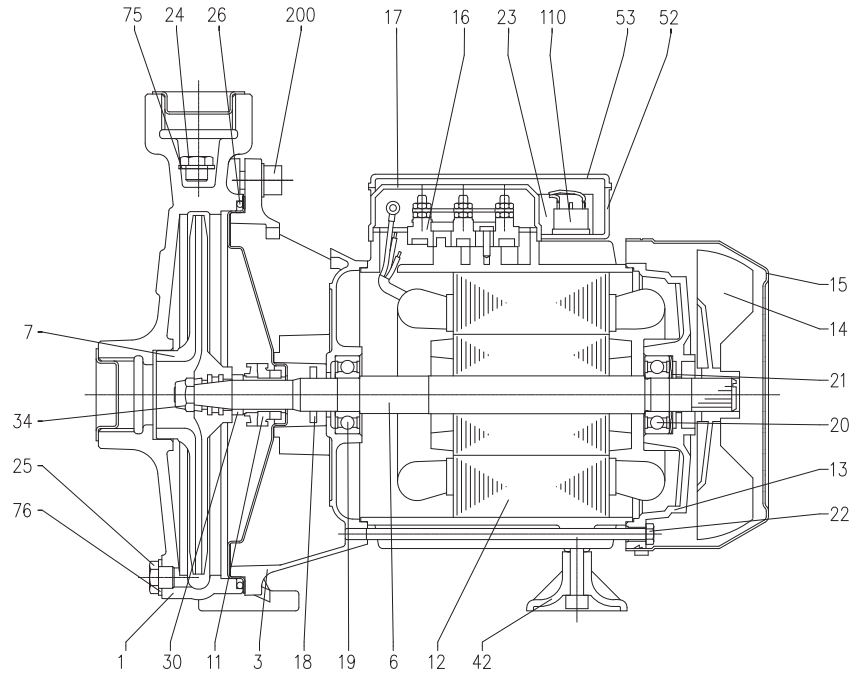
[1]= Three-phase only  
[2]= Single phase only

# CMA - B - C - D - CMR

## SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

### SECTIONAL VIEW for CMA-B-C-D up to 1.00 HP



### MATERIALS TABLE

| Ref. | Name                     | Material           | Ref. | Name                           | Material                   |
|------|--------------------------|--------------------|------|--------------------------------|----------------------------|
| 1    | Pump body                | Cast iron          | 21   | Adjusting ring                 | Steel C70                  |
| 3    | Motor support            | Aluminium          | 22   | Tie-rod                        | Galvanised Fe 42           |
| 4    | Seal housing disc        | AISI 304           | 23   | Capacitor [2]                  | -                          |
| 6    | Shaft                    | see page 16        | 24   | Filler cap                     | Brass                      |
| 7    | Impeller                 | see page 16        | 25   | Drain plug                     | Brass                      |
| 11   | Mechanical seal          | Carbon/Ceramic/NBR | 26   | O-Ring                         | NBR                        |
| 12   | Motor casing with stator | -                  | 30   | Seal spacer [3]                | Brass                      |
| 13   | Motor cover [1]          | Aluminium          | 34   | Impeller nut [4]               | AISI 304                   |
| 14   | Fan                      | PA6                | 42   | Foot                           | PVC                        |
| 15   | Fan cover                | Galvanised Fe P04  | 52   | Capacitor-holder box [2]       | ABS                        |
| 16   | Terminal box             | -                  | 53   | Capacitor-holder box cover [2] | ABS                        |
| 17   | Terminal box cover [1]   | Aluminium          | 75   | Washer                         | Aluminium                  |
| 18   | Spray protector ring     | NBR                | 76   | Washer                         | Aluminium                  |
| 19   | Bearing (pump side)      | -                  | 200  | Screw (pump body)              | A2 UNI7323 stainless steel |
| 20   | Bearing (motor side)     | -                  |      |                                |                            |

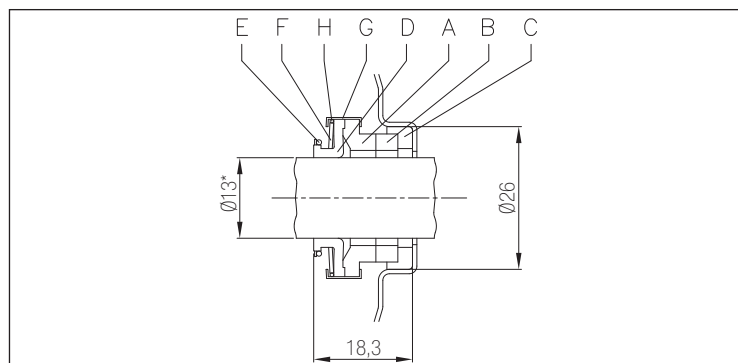
[1]= For three-phase only

[3]= For CMA 0.50, CMB 0.75-1.00, CMC 0.75-1.00 only

[2]= For single phase only

[4]= Except for CMA 0.50

### MECHANICAL SEAL for CMA-B-C-D up to 1.00 HP



\*= Ø12 for CMA 0.50

### MATERIALS TABLE

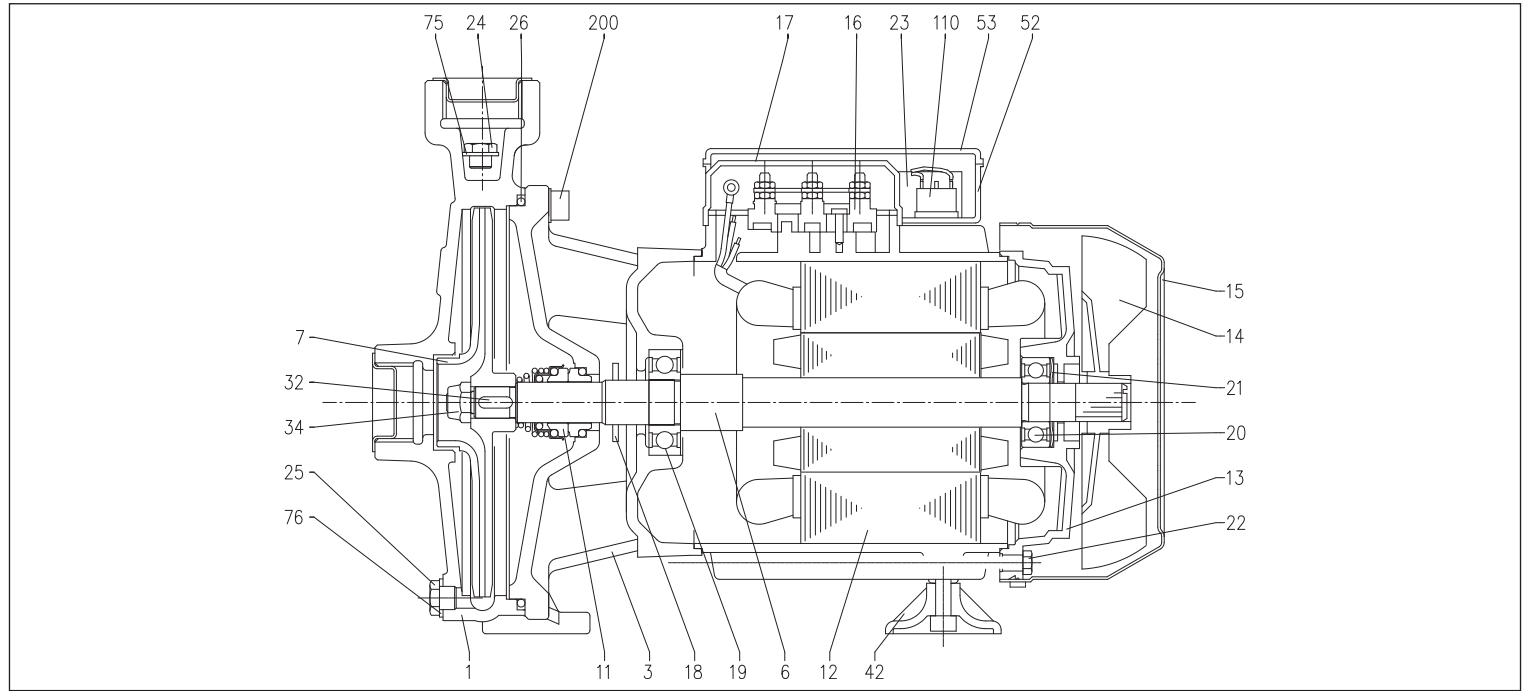
| Ref. | Name            | Material |
|------|-----------------|----------|
| A    | Rotating part   | Carbon   |
| B    | Fixed part      | Ceramic  |
| C    | Gasket          | NBR      |
| D    | Diaphragm       | NBR      |
| E    | Ring            | AISI 304 |
| F    | Spring          | AISI 304 |
| G    | Structure/frame | AISI 304 |
| H    | Retainer ring   | AISI 304 |

# CMA - B - C - D - CMR

## SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

### SECTIONAL VIEW for CMA-B-C-D up to 1.50 HP and over

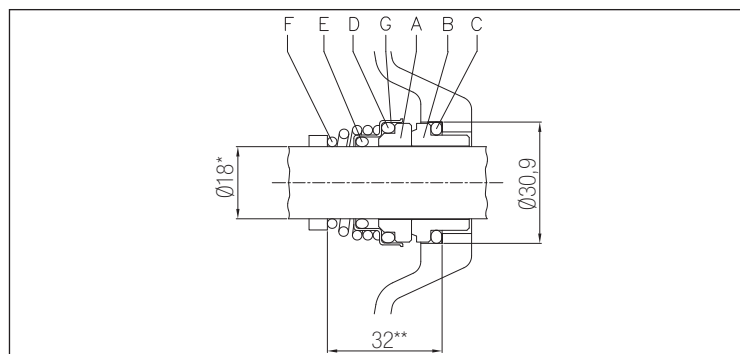


### MATERIALS TABLE

| Ref. | Name                   | Material           | Ref. | Name                           | Material                   |
|------|------------------------|--------------------|------|--------------------------------|----------------------------|
| 1    | Pump body              | Cast iron          | 22   | Tie-rod                        | Galvanised Fe 42           |
| 3    | Motor support          | Cast iron          | 23   | Capacitor [1]                  | -                          |
| 6    | Rotor shaft            | see page 16        | 24   | Filler cap                     | Brass                      |
| 7    | Impeller               | see page 16        | 25   | Drain plug                     | Brass                      |
| 11   | Mechanical seal        | Carbon/Ceramic/NBR | 26   | O-Ring                         | NBR                        |
| 12   | Motor case             | -                  | 32   | Key                            | AISI 304                   |
| 13   | Motor cover [1]        | Aluminium          | 34   | Impeller nut                   | AISI 304                   |
| 14   | Fan                    | PA6                | 42   | Foot                           | PVC                        |
| 15   | Fan cover              | Galvanised Fe P04  | 52   | Capacitor-holder box [2]       | ABS                        |
| 16   | Terminal box           | -                  | 53   | Capacitor-holder box cover [2] | ABS                        |
| 17   | Terminal box cover [1] | Aluminium          | 75   | Washer                         | Aluminium                  |
| 18   | Spray protector ring   | NBR                | 76   | Washer                         | Aluminium                  |
| 19   | Bearing (pump side)    | -                  | 101  | Seeger ring                    | AISI 420                   |
| 20   | Bearing (motor side)   | -                  | 110  | Motorprotector                 | -                          |
| 21   | Adjusting ring         | Steel C70          | 200  | Screw (pump body)              | A2 UNI7323 stainless steel |

[1]= Three phase only [2]= Single phase only

### MECHANICAL SEAL for CMA-B-C-D up to 1.50 HP and over



\*=  $\varnothing 20$  for CMB 4.00 - 5.50  
 \*\*= 33 for CMB 4.00 - 5.50

### MATERIALS TABLE

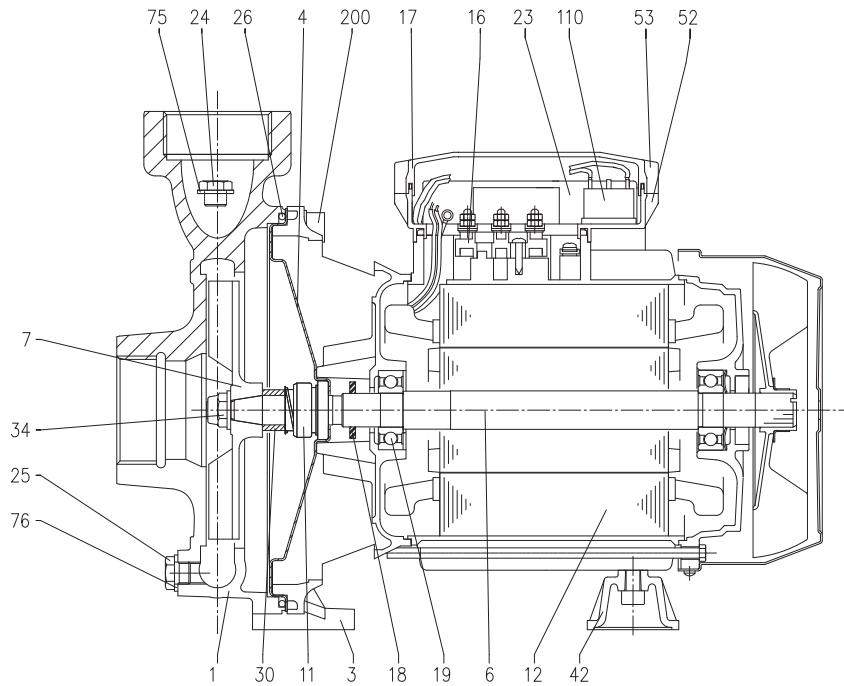
| Ref. | Name            | Material |
|------|-----------------|----------|
| A    | Rotating part   | Ceramic  |
| B    | Fixed part      | Carbon   |
| C    | O-Ring          | NBR      |
| D    | O-Ring          | NBR      |
| E    | O-Ring          | NBR      |
| F    | Spring          | AISI 316 |
| G    | Structure/frame | AISI 304 |

# CMA - B - C - D - CMR

## SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

### SECTIONAL VIEW for CMR

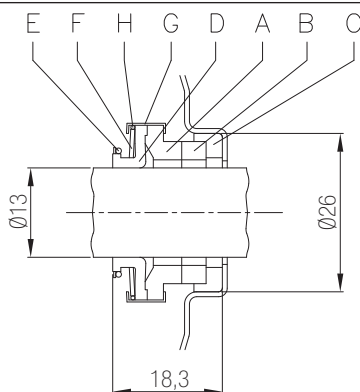


### MATERIALS TABLE

| Ref. | Name                   | Material           | Ref. | Name                           | Material                   |
|------|------------------------|--------------------|------|--------------------------------|----------------------------|
| 1    | Pump body              | Cast iron          | 21   | Adjusting ring                 | Steel C70                  |
| 3    | Motor support          | Aluminium          | 22   | Tie-rod                        | Galvanised Fe 42           |
| 4    | Seal housing disc      | AISI 304           | 23   | Capacitor [2]                  | -                          |
| 6    | Rotor shaft            | AISI 420           | 24   | Filler cap                     | Brass                      |
| 7    | Impeller               | Brass              | 25   | Drain plug                     | Brass                      |
| 11   | Mechanical seal        | Carbon/Ceramic/NBR | 26   | O-Ring                         | NBR                        |
| 12   | Motor case             | -                  | 30   | Seal spacer                    | Brass                      |
| 13   | Motor cover [1]        | Aluminium          | 34   | Impeller nut                   | AISI 304                   |
| 14   | Fan                    | Polypropylene      | 42   | Foot                           | PVC                        |
| 15   | Fan cover              | Galvanised Fe P04  | 52   | Capacitor-holder box [2]       | Polypropylene              |
| 16   | Terminal box           | -                  | 53   | Capacitor-holder box cover [2] | Polypropylene              |
| 17   | Terminal box cover [1] | Aluminium          | 75   | Washer                         | Aluminium                  |
| 18   | Spray protector ring   | NBR                | 76   | Washer                         | Aluminium                  |
| 19   | Bearing (pump side)    | -                  | 200  | Screw (pump body)              | A2 UNI7323 stainless steel |
| 20   | Bearing (motor side)   | -                  |      |                                |                            |

[1]= For three phase only [2]= For single phase only

### MECHANICAL SEAL for CMR



### MATERIALS TABLE

| Ref. | Name            | Material |
|------|-----------------|----------|
| A    | Rotating part   | Carbon   |
| B    | Fixed part      | Ceramic  |
| C    | Gasket          | NBR      |
| D    | Diaphragm       | NBR      |
| E    | Ring            | AISI 304 |
| F    | Spring          | AISI 304 |
| G    | Structure/frame | AISI 304 |
| H    | Retainer ring   | AISI 304 |

# CMA - B - C - D - CMR

## SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

CMA-B-C-D – CMR ELECTRIC DATA TABLE

| Model             |                      | P <sub>2</sub> |      | Single phase Capacitor |                | P <sub>1</sub>    |                  | Absorbed Current [A] |                  |                  |
|-------------------|----------------------|----------------|------|------------------------|----------------|-------------------|------------------|----------------------|------------------|------------------|
| 230V single phase | 230/400V three-phase | [HP]           | [kW] | μF                     | V <sub>c</sub> | Single phase [kW] | Three phase [kW] | Single phase 230V    | Three phase 230V | Three phase 400V |
| CMA 0.50 M        | CMA 0.50 T           | 0,5            | 0,37 | 10                     | 450            | 0,66              | 0,63             | 3,2                  | 2,4              | 1,4              |
| CMA 0.75 M        | CMA 0.75 T           | 0,75           | 0,55 | 16                     | 450            | 1,02              | 0,97             | 4,7                  | 3,2              | 1,8              |
| CMA 1.00 M        | CMA 1.00 T           | 1              | 0,75 | 20                     | 450            | 1,35              | 1,29             | 6,2                  | 4,3              | 2,5              |
| CMA 1.50 M        | CMA 1.50 T           | 1,5            | 1,1  | 35                     | 450            | 1,9               | 1,85             | 9,2                  | 5,7              | 3,3              |
| CMA 2.00 M        | CMA 2.00 T           | 2              | 1,5  | 40                     | 450            | 2,4               | 2,3              | 10,8                 | 7,8              | 4,5              |
| -                 | CMA 3.00 T           | 3              | 2,2  | -                      | -              | -                 | 3                | -                    | 9,9              | 5,7              |
| CMB 0.75 M        | CMB 0.75 T           | 0,75           | 0,55 | 14                     | 450            | 0,98              | 0,95             | 4,5                  | 3,0              | 1,7              |
| CMB 1.00 M        | CMB 1.00 T           | 1              | 0,75 | 20                     | 450            | 1,33              | 1,28             | 6                    | 4                | 2,3              |
| CMB 1.50 M        | CMB 1.50 T           | 1,5            | 1,1  | 31,5                   | 450            | 1,77              | 1,73             | 8,5                  | 5,5              | 3,2              |
| CMB 2.00 M        | CMB 2.00 T           | 2              | 1,5  | 40                     | 450            | 2,3               | 2,2              | 10,8                 | 7,5              | 4,3              |
| -                 | CMB 3.00 T           | 3              | 2,2  | -                      | -              | -                 | 2,65             | -                    | 8,3              | 4,8              |
| -                 | CMB 4.00 T           | 4              | 3    | -                      | -              | -                 | 3,7              | -                    | 12,5             | 7,2              |
| -                 | CMB 5.50 T           | 5,5            | 4    | -                      | -              | -                 | 4,9              | -                    | 16,3             | 9,4              |
| CMC 0.75 M        | CMC 0.75 T           | 0,75           | 0,55 | 14                     | 450            | 0,92              | 0,9              | 4,2                  | 2,8              | 1,6              |
| CMC 1.00 M        | CMC 1.00 T           | 1              | 0,75 | 20                     | 450            | 1,15              | 1,1              | 5,3                  | 3,5              | 2                |
| CMD 1.50 M        | CMD 1.50 T           | 1,5            | 1,1  | 31,5                   | 450            | 1,86              | 1,8              | 8,9                  | 5,9              | 3,4              |
| CMD 2.00 M        | CMD 2.00 T           | 2              | 1,5  | 40                     | 450            | 2,3               | 2,2              | 10,8                 | 7,5              | 4,3              |
| -                 | CMD 3.00 T           | 3              | 2,2  | -                      | -              | -                 | 2,9              | -                    | 9                | 5,2              |
| -                 | CMD 4.00 T           | 4              | 3    | -                      | -              | -                 | 3,85             | -                    | 12,3             | 7,1              |
| CMR 0.75 M        | CMR 0.75 T           | 0,75           | 0,55 | 14                     | 450            | 1                 | 0,98             | 4,5                  | 3                | 1,7              |
| CMR 1.00 M        | CMR 1.00 T           | 1              | 0,75 | 20                     | 450            | 1,2               | 1,15             | 5,5                  | 3,6              | 2,1              |