

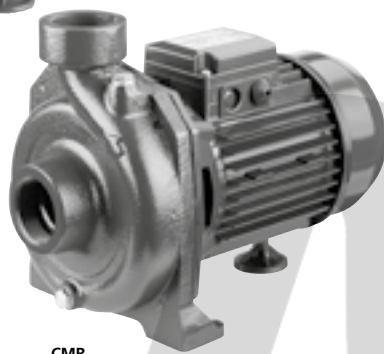
# CMA - B - C - D - CMR

## SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

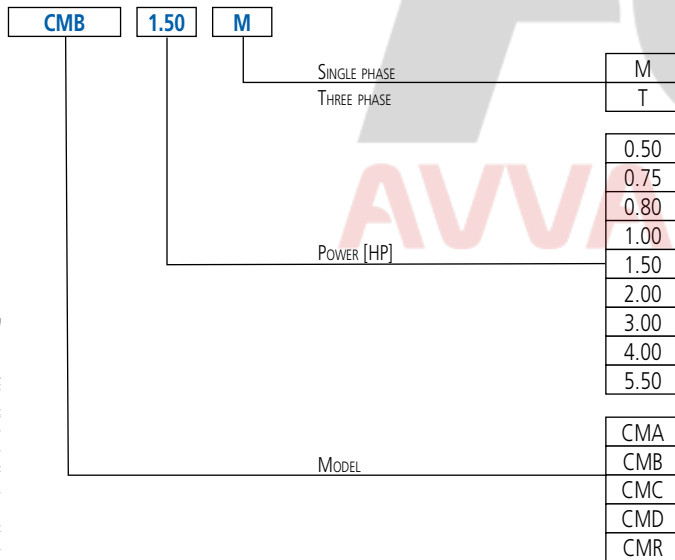


CMA-B-C-D



CMR

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



### ACCESSORIES (On request)

- Electric panels
- Vessels
- Floats
- Pressure switches
- Presscomfort - Pressure regulator
- E-power - Variable speed control system
- E-drive - Frequency converter

Cast iron single impeller centrifugal electric pump.

### APPLICATIONS

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

### TECHNICAL DETAILS

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

### PUMP 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, CMD, CMR
  - 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
- G1 suction connection for CMA 0.50 - 0.75 - 1.00, G1¼ for CMA 1.50 - 2.00 - 3.00, G1½ per CMR, G2 for CMB - CMC, G2½ for CMD
- G1 discharge connection for CMA, G1¼ for CMB, G1½ for CMR, G2 for CMC, G2½ for CMD
- MEI > 0.4

For further information please see our Data Book on the web site [www.ebaraurope.com](http://www.ebaraurope.com)

### MOTOR TECHNICAL DATA

- IE2 and IE3 high energy-efficiency motors starting from 0.75kW
- Self-ventilated 2 pole asynchronous motor
- Class of insulation F
- IP44 Protection degree
- 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

### MATERIALS

- Cast iron pump casing
- Mechanical seal in Carbon/Ceramic/NBR
- Impeller:
  - in PPE+PS 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 416 (integral) for CMA 0.50
  - in AISI 303 (part in contact with the liquid) for CMA 0.75 - 1.00 - 1.50 - 2.00 - 3.00, CMB 0.75 - 1.00 - 1.50 - 2.00 - 3.00, CMC 0.75 - 1.00, CMD 1.50 - 2.00 - 3.00, CMR 0.75 - 1.00
  - in AISI 304 (part in contact with the liquid) for CMB 4.00 - 5.50, CMD 4.00
- Bracket:
  - 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

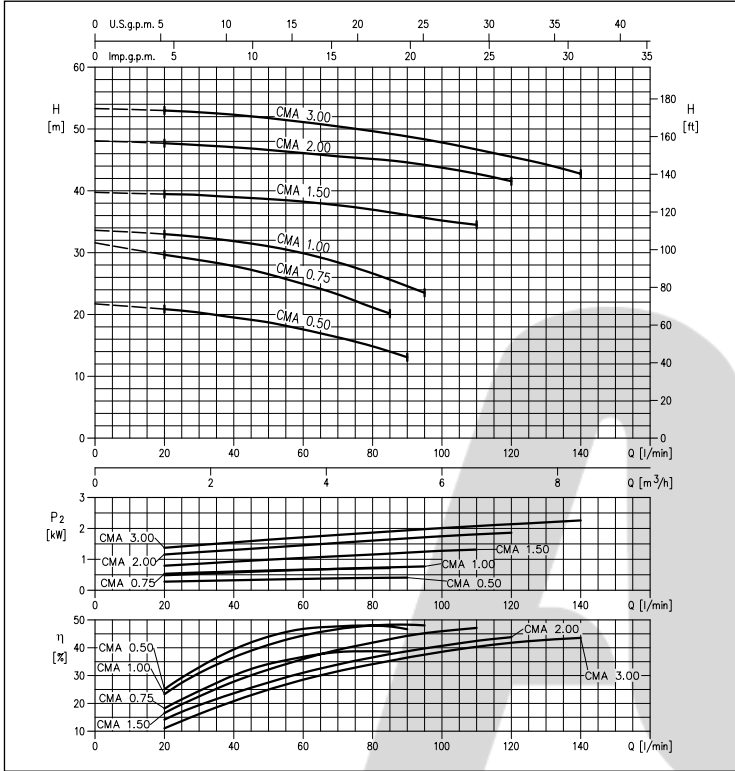
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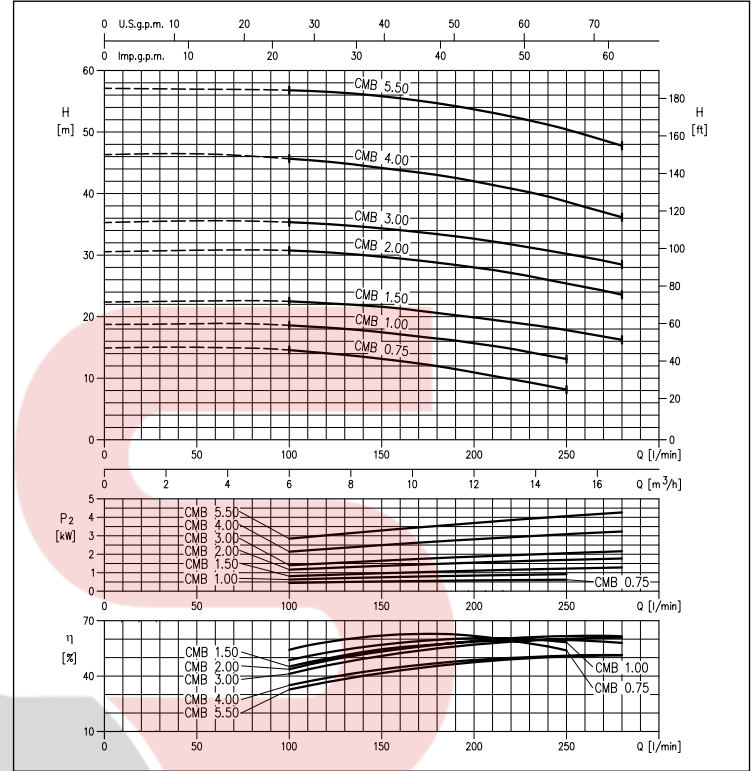
# CMA - B - C - D - CMR

## SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS in cast iron

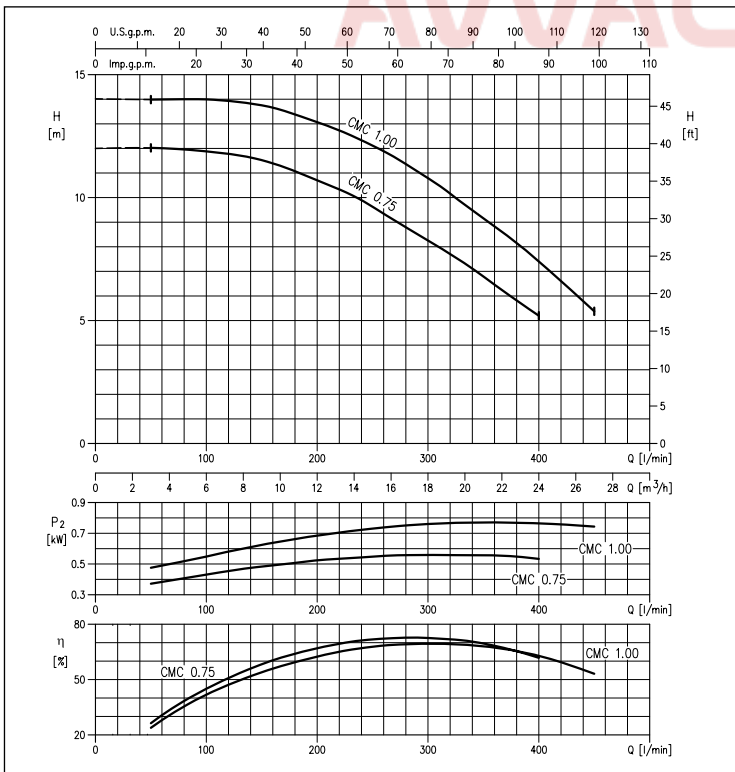
**CMA range PERFORMANCE CURVES**  
(according to ISO 9906 Attachment A)



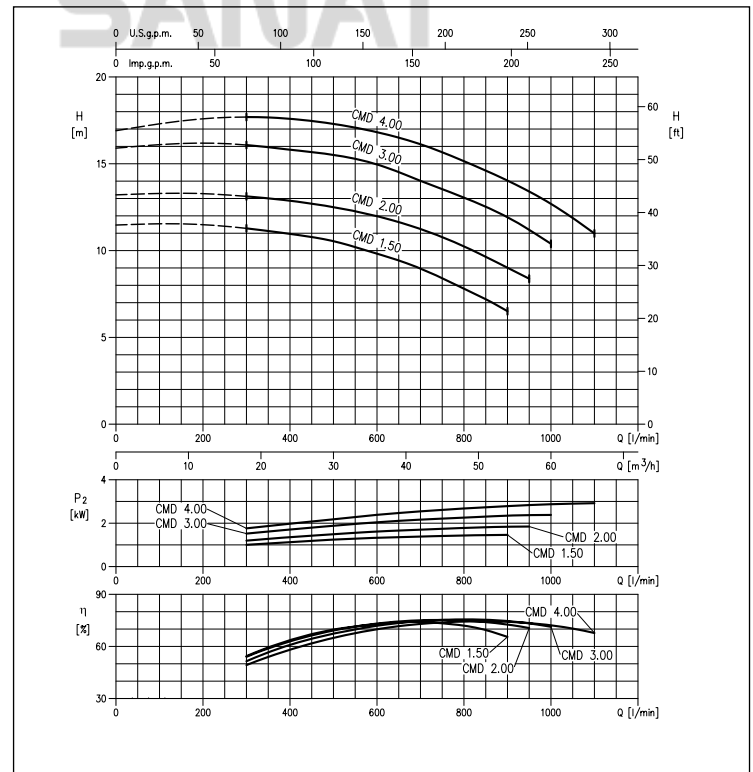
**CMB range PERFORMANCE CURVES**  
(according to ISO 9906 Attachment A)



**CMC range PERFORMANCE CURVES**  
(according to ISO 9906 Attachment A)



**CMD range PERFORMANCE CURVES**  
(according to ISO 9906 Attachment A)



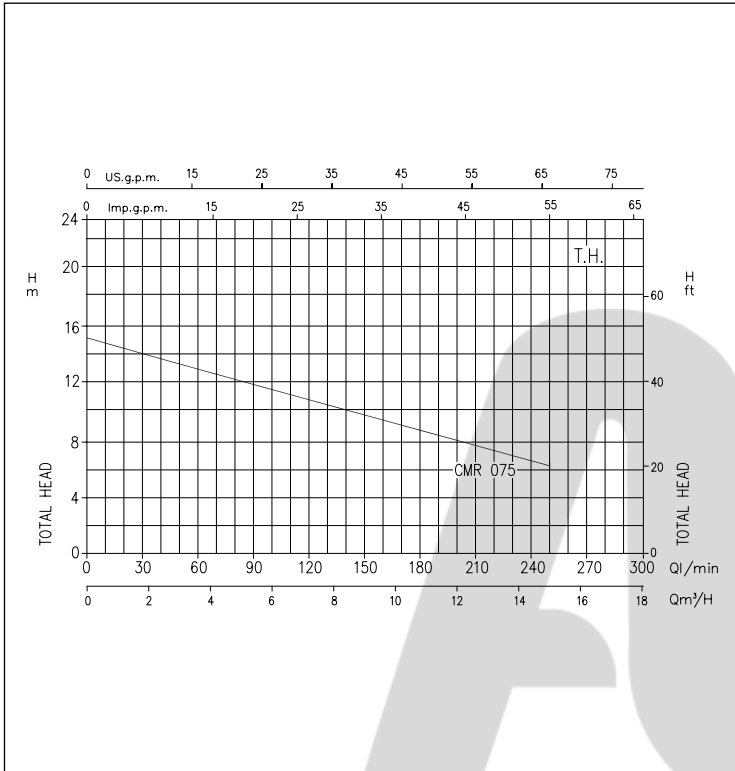
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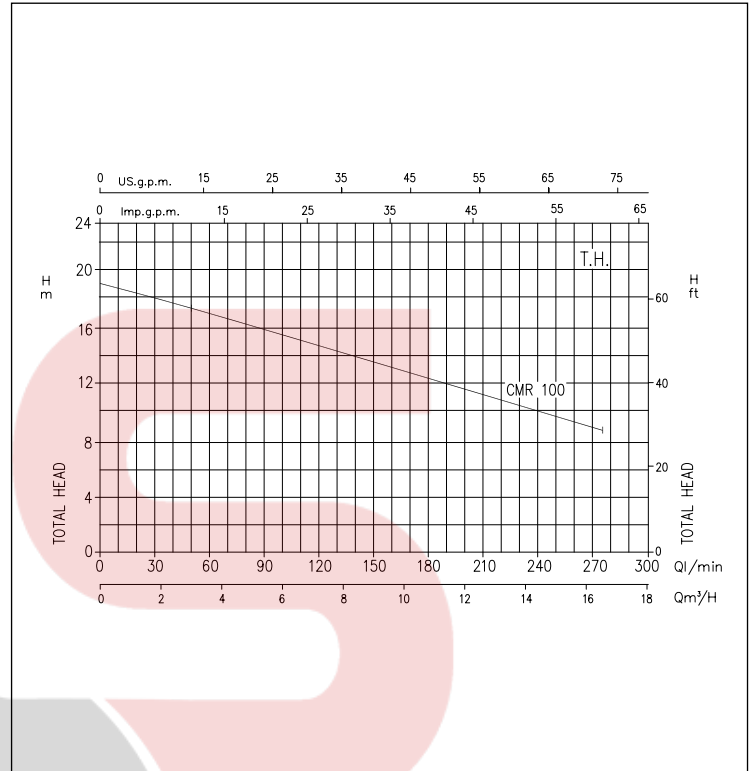
# CMA - B - C - D - CMR

## SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS in cast iron

**CMR 0.75 range PERFORMANCE CURVES**  
(according to ISO 9906 Attachment A)



**CMR 1.00 range PERFORMANCE CURVES**  
(according to ISO 9906 Attachment A)



AVVAL SANAT

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# CMA - B - C - D - CMR

## SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

### CMA PERFORMANCE CHART

Model		P <sub>2</sub>		Q = Flow Rate											
Single phase 230V	Three phase 230/400V	[HP]	[kW]	l/min m <sup>3</sup> /h	20 1.2	40 2.4	60 3.6	80 4.8	85 5.1	90 5.4	95 5.7	110 6.6	120 7.2	140 8.4	
				H=Head [m]											
CMA 0.50 M	CMA 0.50 T	0.5	0.37	20.9	19.5	17.6	14.9	14.0	13.1	-	-	-	-	-	-
CMA 0.75 M	CMA 0.75 T	0.75	0.55	29.7	27.8	24.9	21.1	20.2	-	-	-	-	-	-	-
CMA 1.00 M	CMA 1.00 T	1	0.75	33.0	31.9	29.9	26.6	25.6	24.6	23.5	-	-	-	-	-
CMA 1.50 M	CMA 1.50 T	1.5	1.1	39.5	39.0	38.3	37.0	36.5	36.1	35.6	34.5	-	-	-	-
CMA 2.00 M	CMA 2.00 T	2	1.5	47.5	47.0	46.0	45.0	45.0	44.5	44.0	43.0	42.0	-	-	-
-	CMA 3.00 T	3	2.2	53.0	52.5	51.0	495	49.0	49.0	48.5	46.5	45.5	42.5	-	-

### CMB PERFORMANCE CHART

Model		P <sub>2</sub>		Q = Flow Rate					
Single phase 230V	Three phase 230/400V	[HP]	[kW]	l/min m <sup>3</sup> /h	100 6	150 9	200 12	250 15.1	280 16.9
				H=Head [m]					
CMB 0.75 M	CMB 0.75 T	0.75	0.55	14.6	13.2	10.9	81.0	-	-
CMB 1.00 M	CMB 1.00 T	1	0.75	18.6	17.5	15.7	13.1	-	-
CMB 1.50 M	CMB 1.50 T	1.5	1.1	22.5	21.6	20.0	17.8	16.2	-
CMB 2.00 M	CMB 2.00 T	2	1.5	30.8	29.7	28.0	25.4	23.6	-
-	CMB 3.00 T	3	2.2	35.4	34.4	32.7	30.2	28.5	-
-	CMB 4.00 T	4	3	45.5	44.0	42.0	37.8	36.2	-
-	CMB 5.50 T	5.5	4	57.0	56.0	53.5	50.5	48.0	-

### CMC PERFORMANCE CHART

Model		P <sub>2</sub>		Q = Flow Rate						
Single phase 230V	Three phase 230/400V	[HP]	[kW]	l/min m <sup>3</sup> /h	50 3	100 6	200 12	300 18.1	400 24.1	450 27.1
				H=Head [m]						
CMC 0.75 M	CMC 0.75 T	0.75	0.55	12.0	11.9	10.7	8.3	5.2	-	-
CMC 1.00 M	CMC 1.00 T	1	0.75	14.0	14.0	13.1	10.8	7.4	5.4	-

### CMD PERFORMANCE CHART

Model		P <sub>2</sub>		Q = Flow Rate							
Single phase 230V	Three phase 230/400V	[HP]	[kW]	l/min m <sup>3</sup> /h	250 18	400 24	600 36	800 48	900 54	950 57	1000 60
				H=Head [m]							
CMD 1.50 M	CMD 1.50 T	1.5	1.1	11.3	11.0	9.8	7.8	6.5	-	-	-
CMD 2.00 M	CMD 2.00 T	2	1.5	13.1	12.9	12.0	10.2	9.0	8.4	-	-
-	CMD 3.00 T	3	2.2	16.1	15.8	15.0	13.1	11.9	11.2	10.4	-
-	CMD 4.00 T	4	3	17.7	17.6	16.8	15.2	14.0	13.4	12.7	-

### CMR PERFORMANCE CHART

Model		P <sub>2</sub>		Q = Flow Rate					
Single phase 230V	Three phase 230/400V	[HP]	[kW]	l/min m <sup>3</sup> /h	50 3	100 6	200 12	250 15	275 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	-

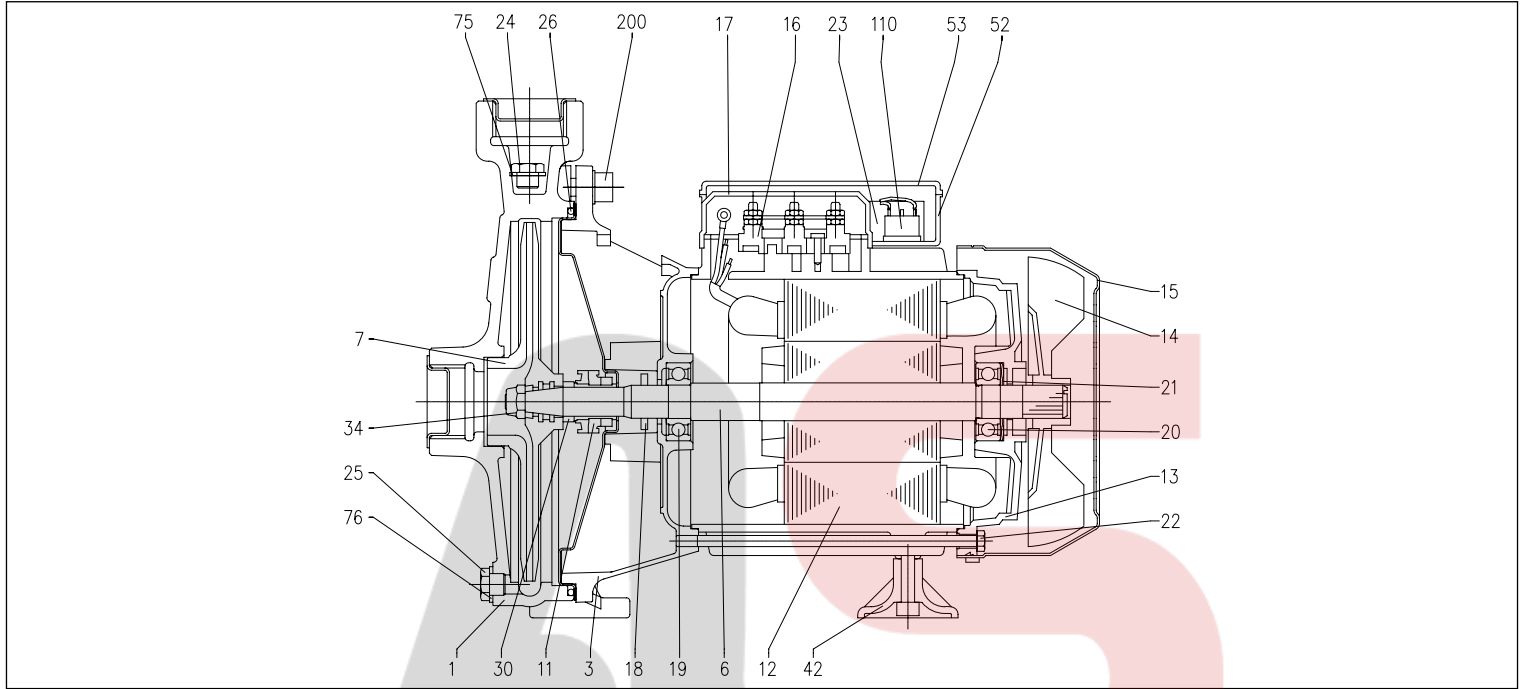


# CMA - B - C - D - CMR

## SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

### 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	Adjustment ring	Steel C70
3	Motor support	Aluminium	22	Tie-rod	Galvanised Fe 42
4	Seal housing disc	AISI 304	23	Capacitor [2]	-
6	Shaft	[3]	24	Filler cap	Brass
7	Impeller	[4]	25	Drain plug	Brass
11	Mechanical seal	Carbon/Ceramic/NBR	26	O-Ring	NBR
12	Motor casing with stator	-	30	Seal spacer [5]	Brass
13	Motor cover	Aluminium	34	Impeller nut [6]	AISI 304
14	Fan	PA6	42	Foot	PP
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)	-	110	Protector [2]	-
20	Bearing (motor side)	-	200	Screw (pump body)	Zn. stainless steel Cl. 8.8 ISO 898-1

[1]= Three phase only

[3] = AISI 416 (integral) for CMA 0.50, AISI 303 (part in contact with the liquid) for the rest of the models

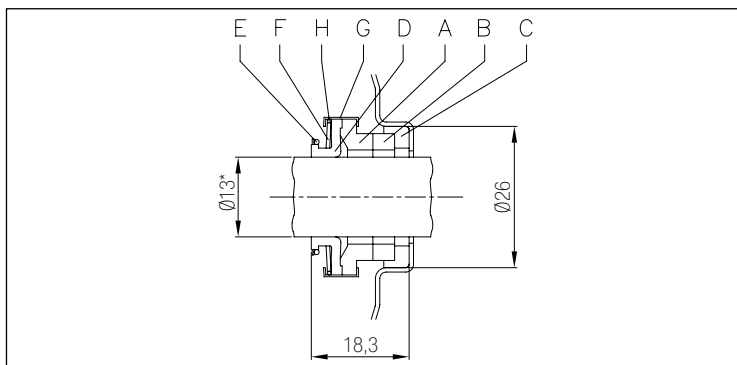
[5]= CMA 0.50, CMB 0.75 - 1.00, CMC 0.75 - 1.00 only

[2]= Single phase only

[4]= PPE+PS reinforced in fibreglass for CMA, cast iron for CMB, CMC

[6] = Except for CMA 0.50

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



### MATERIALS TABLE

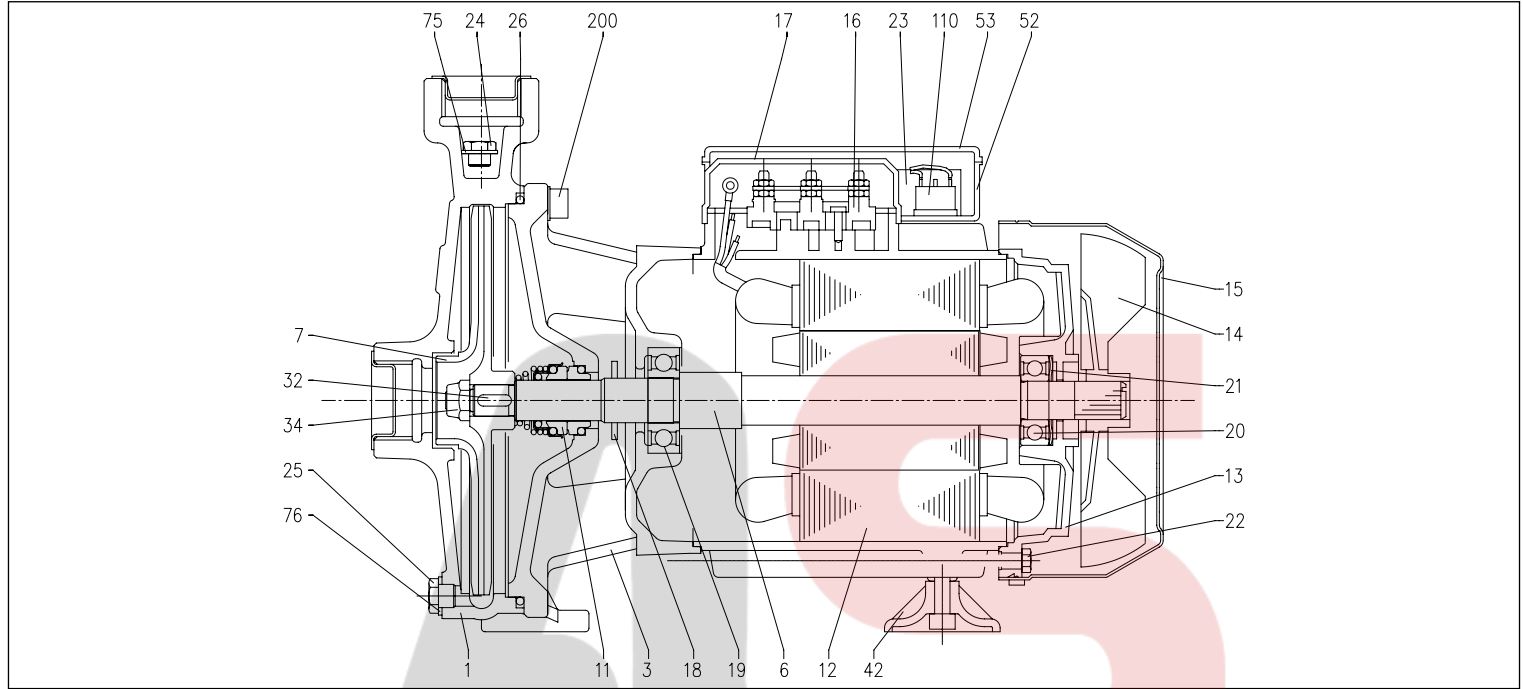
Ref.	Name	Material
A	Rotating part	Carbon
B	Fixed part	Ceramic
C	Gasket	NBR
D	Diaphragm	NBR
E	Ring	AISI 304
F	Spring	AISI 304
G	Structure/frame	AISI 304
H	Retainer ring	AISI 304

# 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 [2]	-
6	Rotor shaft	[3]	24	Filler cap	Brass
7	Impeller	[4]	25	Drain plug	Brass
11	Mechanical seal	Carbon/Ceramic/NBR	26	O-Ring	NBR
12	Motor case	-	32	Key	AISI 316
13	Motor cover [1]	Aluminium	34	Impeller nut	AISI 304
14	Fan	PA6	42	Foot	PP
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)	-	110	Motor protector	-
20	Bearing (motor side)	-	200	Screw (pump body)	Zn. stainless steel Cl. 8.8 ISO 898-1
21	Adjustment ring	Steel C70			

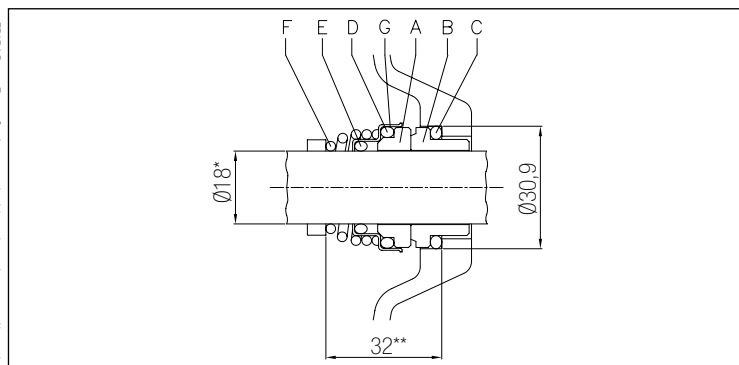
[1]=For three phase only

[2]= For single phase only

[3]= AISI 303 (part in contact with the liquid) for CMA, CMB 1.50 - 2.00 - 3.00, CMD 1.50 - 2.00 - 3.00, AISI 304 (part in contact with the liquid) for CMB 4.00 - 5.50, CMD 4.00

[4]= Brass for CMA, CMB 2.00 - 3.00 - 4.00 - 5.50, cast iron for CMB 1.50, CMD

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



### 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

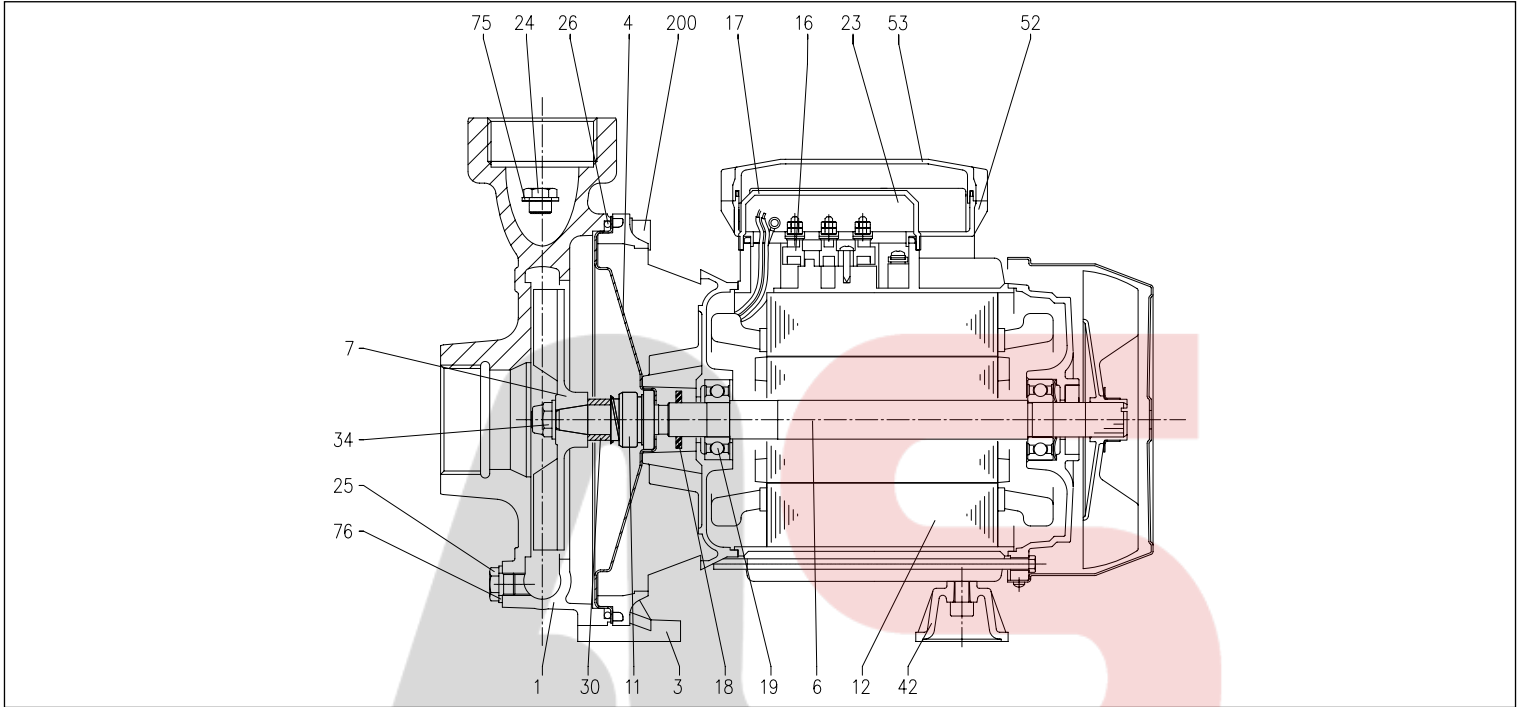
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# CMA - B - C - D - CMR

## SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

### SECTIONAL VIEW for CMR

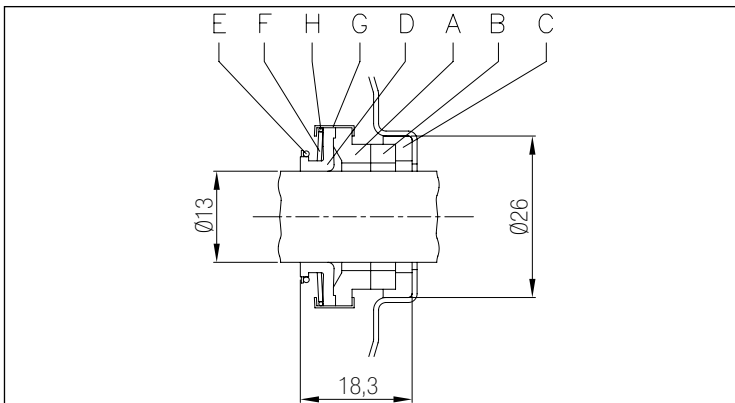


### MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
1	Pump body	Cast iron	21	Adjustment 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 303 (part in contact with the liquid)	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	PP	42	Foot	PP
15	Fan cover	Galvanised Fe P04	52	Capacitor-holder box [2]	ABS
16	Terminal Box	-	53	Capacitor-holder box cover [2]	ABS + NBR
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)	Zn. stainless steel Cl. 8.8 ISO 898-1
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>		Efficiency		Capacitor		Efficiency (%)			P <sub>1</sub>		Absorbed Current [A]		
Single phase 230V	Three phase 230/400V	[HP]	[kW]	Single phase	Three phase	Single phase μF	V <sub>c</sub>	50%	75%	100%	Single phase [kW]	Three phase [kW]	Single phase 230V	Three phase 230V	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
CDA 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	-	IE2	20	450	77.2	80.9	81.3	1.35	1.11	6.2	3.4	2.0
-	-	1	0.75	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
CMA 1.50 M	CMA 1.50 T	1.5	1.1	-	IE2	40	450	79.7	82.5	83.0	1.73	1.80	8.0	5.6	3.2
-	CMA 1.50 T	1.5	1.1	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
CMA 2.00 M	CMA 2.00 T	2	1.5	-	IE2	40	450	80.3	83.4	83.8	2.4	2.33	10.3	7.6	4.4
-	-	2	1.5	-	IE3	-	-	84.2	86.8	86.9	-	2.01	-	7.1	4.1
-	-	3	2.2	-	IE2	-	-	83.0	84.4	83.8	-	2.77	-	8.5	4.9
-	CMA 3.00 T	3	2.2	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7
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	-	IE2	20	450	77.2	80.9	81.3	1.33	1.17	6.0	3.4	2.0
-	-	1	0.75	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
CMB 1.50 M	CMB 1.50 T	1.5	1.1	-	IE2	40	450	79.7	82.5	83.0	1.77	1.80	8.2	5.6	3.2
-	-	1.5	1.1	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
CMB 2.00 M	CMB 2.00 T	2	1.5	-	IE2	40	450	80.3	83.4	83.8	2.3	2.09	10.3	7.0	4.0
-	-	2	1.5	-	IE3	-	-	84.2	86.8	86.9	-	2.01	-	7.1	4.1
-	-	3	2.2	-	IE2	-	-	83.0	84.4	83.8	-	2.63	-	8.2	4.7
-	-	3	2.2	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7
-	CMB 4.00 T	4	3	-	IE2	-	-	83.1	86.3	86.8	-	3.76	-	11.8	6.8
-	-	4	3	-	IE3	-	-	85.9	87.5	87.1	-	3.44	-	11.1	6.4
CMC 0.75 M	CMB 5.50 T	5.5	4	-	IE2	-	-	84.3	87.2	87.8	-	4.56	-	15.1	8.7
CMC 1.00 M	CMB 5.50 T	5.5	4	-	IE3	-	-	85.8	88.3	88.4	-	4.52	-	15.1	8.7
-	CMC 0.75 T	0.75	0.55	-	-	14	450	-	-	-	0.92	0.9	4.2	2.8	1.6
CMD 1.50 M	CMC 1.00 T	1	0.75	-	IE2	20	450	77.2	80.9	81.3	1.15	0.92	5.3	3.0	1.7
-	-	1	0.75	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
CMD 2.00 M	CMD 1.50 T	1.5	1.1	-	IE2	40	450	79.7	82.5	83.0	1.86	1.80	8.5	5.6	3.2
-	-	1.5	1.1	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
-	CMD 2.00 T	2	1.5	-	IE2	40	450	80.3	83.4	83.8	2.3	2.09	10.3	7.0	4.0
-	-	2	1.5	-	IE3	-	-	84.2	86.8	86.9	-	2.01	-	7.1	4.1
-	-	3	2.2	-	IE2	-	-	83.0	84.4	83.8	-	2.63	-	8.2	4.7
-	-	3	2.2	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7
-	CMD 4.00 T	4	3	-	IE2	-	-	83.1	86.3	86.8	-	3.46	-	11.3	6.5
-	-	4	3	-	IE3	-	-	-	-	-	-	-	-	-	-
CMR 0.75 M	CMR 0.75 T	0.55	0.75	-	-	14	450	-	-	-	0.84	0.8	3.8	2.8	1.6
CDA 1.00M	CMR 1.00T	0.75	1	-	IE2	20	450	77.2	80.9	81.3	1.07	0.92	4.85	2.9	1.7
-	-	0.75	1	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7

NOISE DATA TABLE

Model		P <sub>2</sub>		L <sub>pa</sub> - dB(A)*
Single phase 230V	Three phase 230/400V	[HP]	[kW]	
CMA 0.50 M	CMA 0.50 T	0.5	0.37	<70
CMA 0.75 M	CMA 0.75 T	0.75	0.55	
CMA 1.00 M	CMA 1.00 T	1	0.75	
CMA 1.50 M	CMA 1.50 T	1.5	1.1	
CMA 2.00 M	CMA 2.00 T	2	1.5	
-	CMA 3.00 T	3	2.2	
CMB 0.75 M	CMB 0.75 T	0.75	0.55	<70
CMB 1.00 M	CMB 1.00 T	1	0.75	
CMB 1.50 M	CMB 1.50 T	1.5	1.1	
CMB 2.00 M	CMB 2.00 T	2	1.5	
-	CMB 3.00 T	3	2.2	
-	CMB 4.00 T	4	3	
-	CMB 5.50 T	5.5	4	72
CMC 0.75 M	CMC 0.75 T	0.75	0.55	<70
CMC 1.00 M	CMC 1.00 T	1	0.75	
CMD 1.50 M	CMD 1.50 T	1.5	1.1	<70
CMD 2.00 M	CDA 2.00T	2	1.5	
-	CMD 3.00 T	3	2.2	
-	CMD 4.00 T	4	3	72
CMR 0.75 M	CMR 0.75 T	0.75	0.55	<70
CMR 1.00 M	CMR 1.00 T	1	0.75	

\* Average noise level measured at 1 m from the motor pump.  
Tolerance ± 2.5 dB.