

CMA - B - C - D - CMR

SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron



CMA-B-C-D

CMR

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

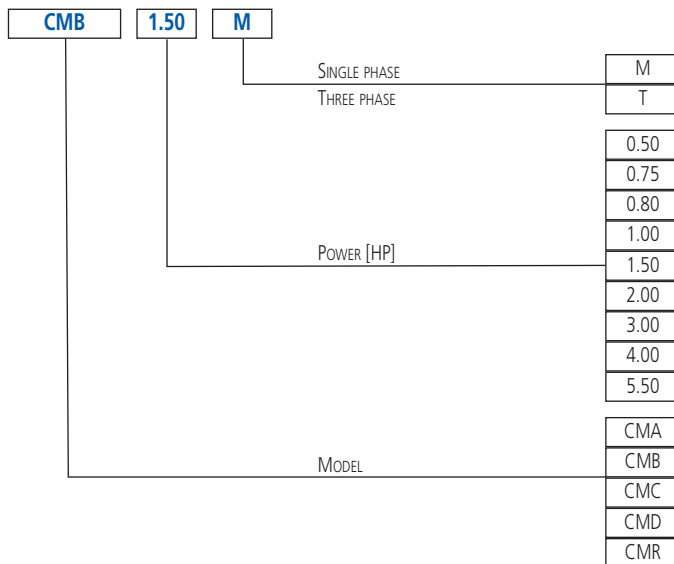
TECHNICAL DETAILS

- 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, G1¼ for CMA 1.50 - 2.00 - 3.00, G1½ for 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

CMA-B-C-D – CMR IDENTIFICATION CODE



ACCESSORIES (on request)

- 5 litre 10 bar ¾ 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 G¼ F pressure switch
- FYG-22 2.8÷7 bar G¼ 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)

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

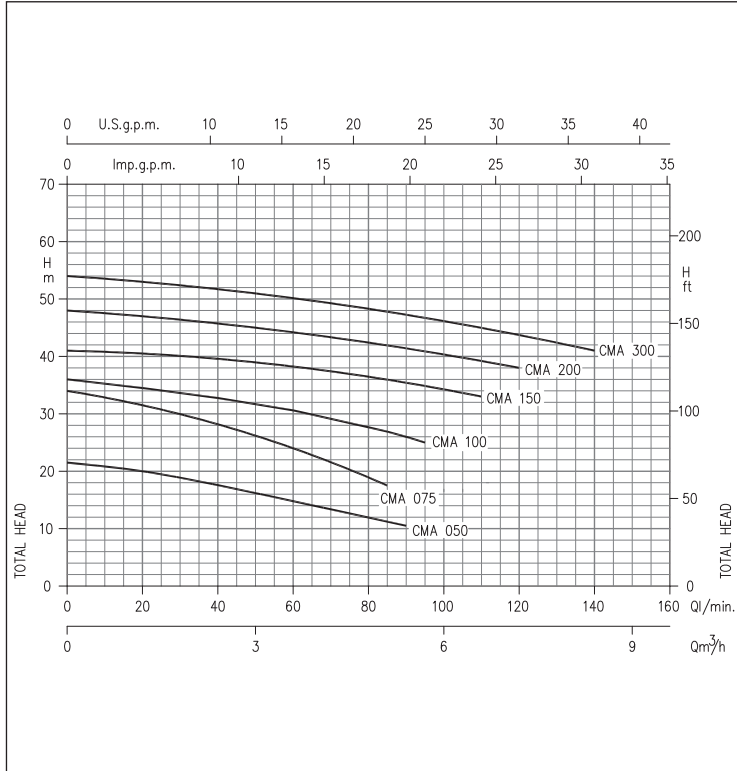
- 1EPBH (see page 68)

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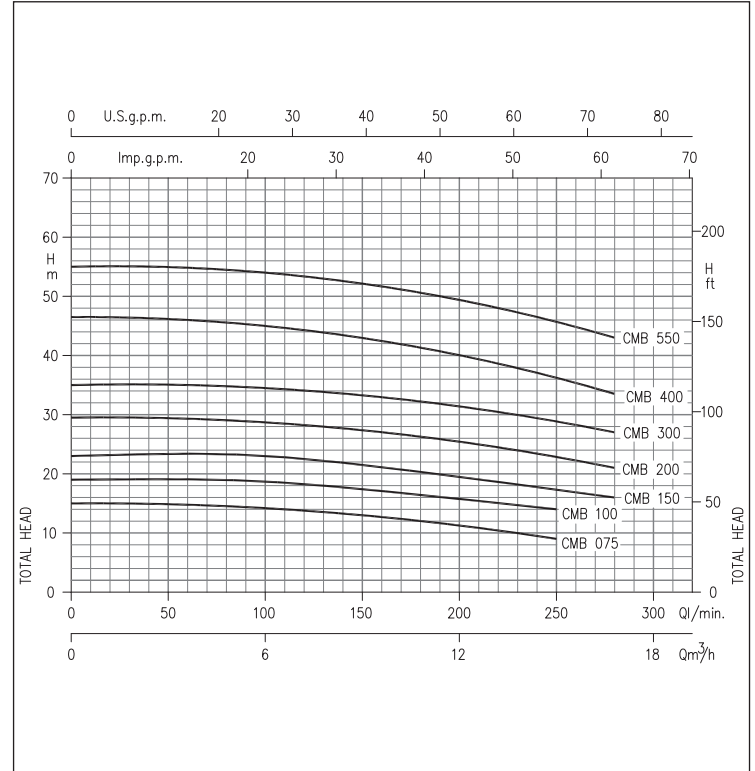
CMA range PERFORMANCE CURVES

(according to ISO 9906 Attachment A)



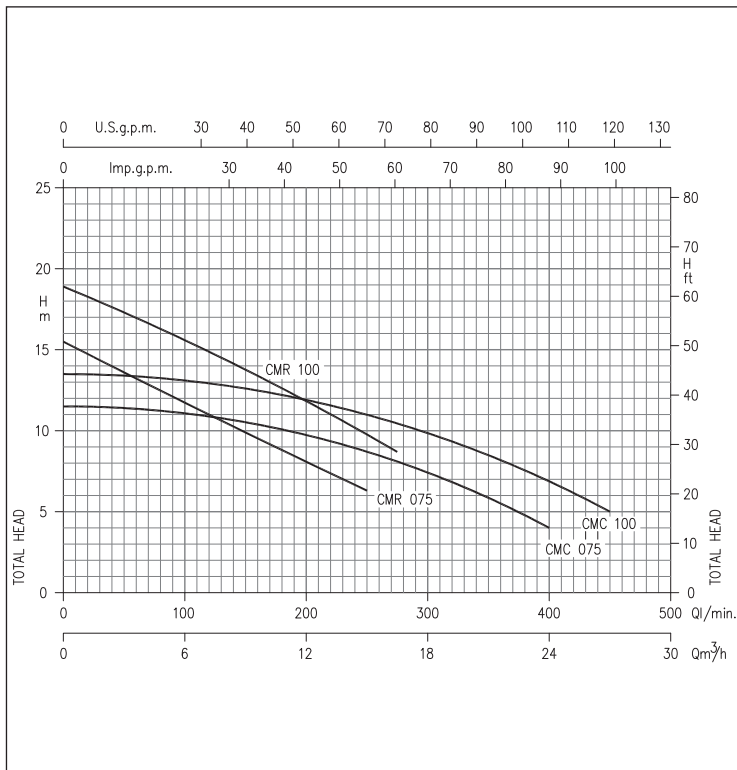
CMB range PERFORMANCE CURVES

(according to ISO 9906 Attachment A)



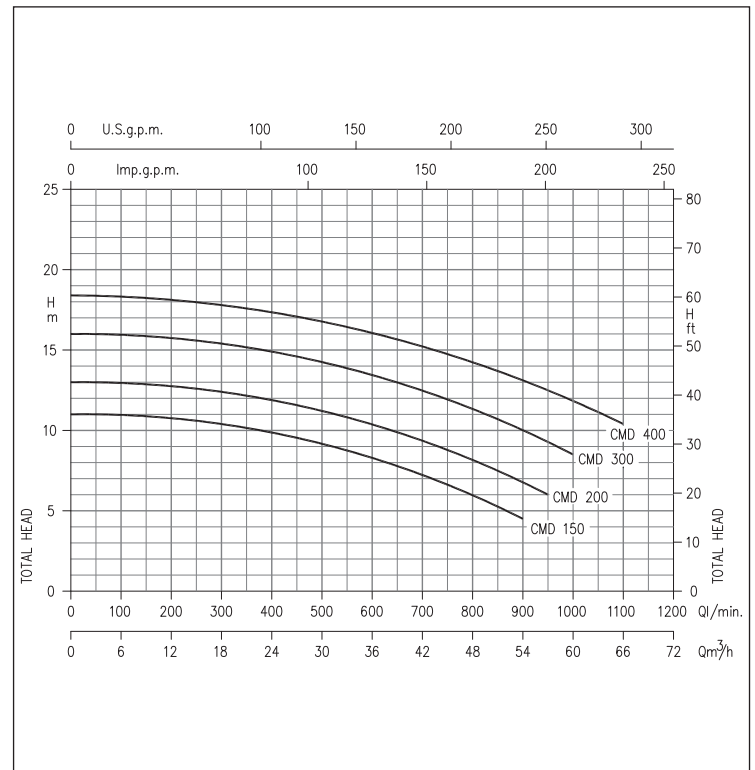
CMC-CMR range PERFORMANCE CURVES

(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 ₂		Q=Flow rate												
230V single phase	230/400V three phase	[HP]	[kW]	l/min m ³ /h	20 1,2	40 2,4	60 3,6	80 4,8	85 5,1	90 5,4	95 5,7	100 6	110 6,6	120 7,2	140 8,4	
				H=Head [m]												
CMA 0.50 M	CMA 0.50 T	0,5	0,37	20,0	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 ₂		Q=Flow rate						
230V single phase	230/400V three phase	[HP]	[kW]	l/min m ³ /h	100 6	140 8,4	180 10,8	220 13,2	250 15	280 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 ₂		Q=Flow rate						
230V single phase	230/400V three phase	[HP]	[kW]	l/min m ³ /h	50 3	150 9	250 15	350 21	400 24	450 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 ₂		Q=Flow rate								
230V single phase	230/400V three phase	[HP]	[kW]	l/min m ³ /h	300 18	400 24	600 36	800 48	900 54	950 57	1000 60	1100 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

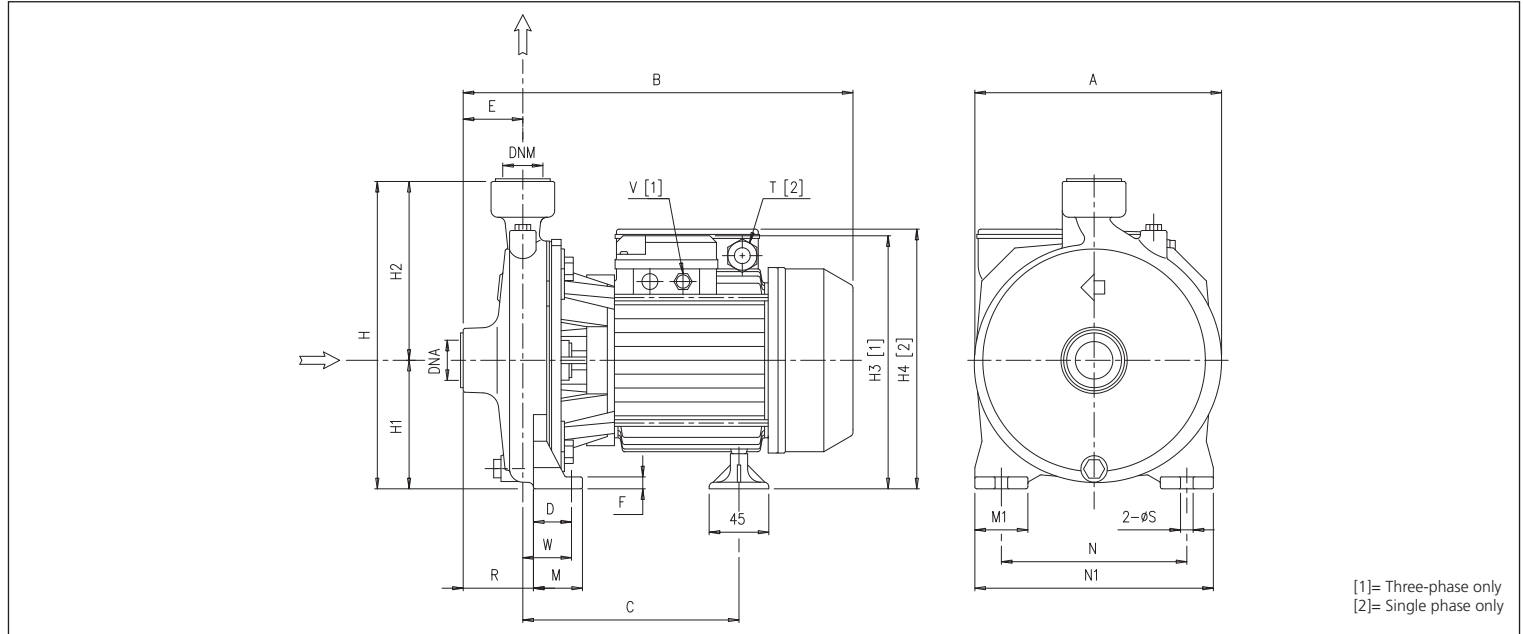
Model		P ₂		Q=Flow rate					
230V single phase	230/400V three phase	[HP]	[kW]	l/min m ³ /h	50 3	100 6	200 12	250 15	275 17,5
				H=Head [m]					
CMR 0.75 M	CMR 0.75 T	0,75	0,55	13,6	11,4	8,1	6,3	-	-
CMR 1.00 M	CMR 1.00 T	1	0,75	17,3	15,4	11,5	9,6	8,7	-

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CMA-B-C-D - CMR DIMENSIONS



DIMENSIONS TABLE

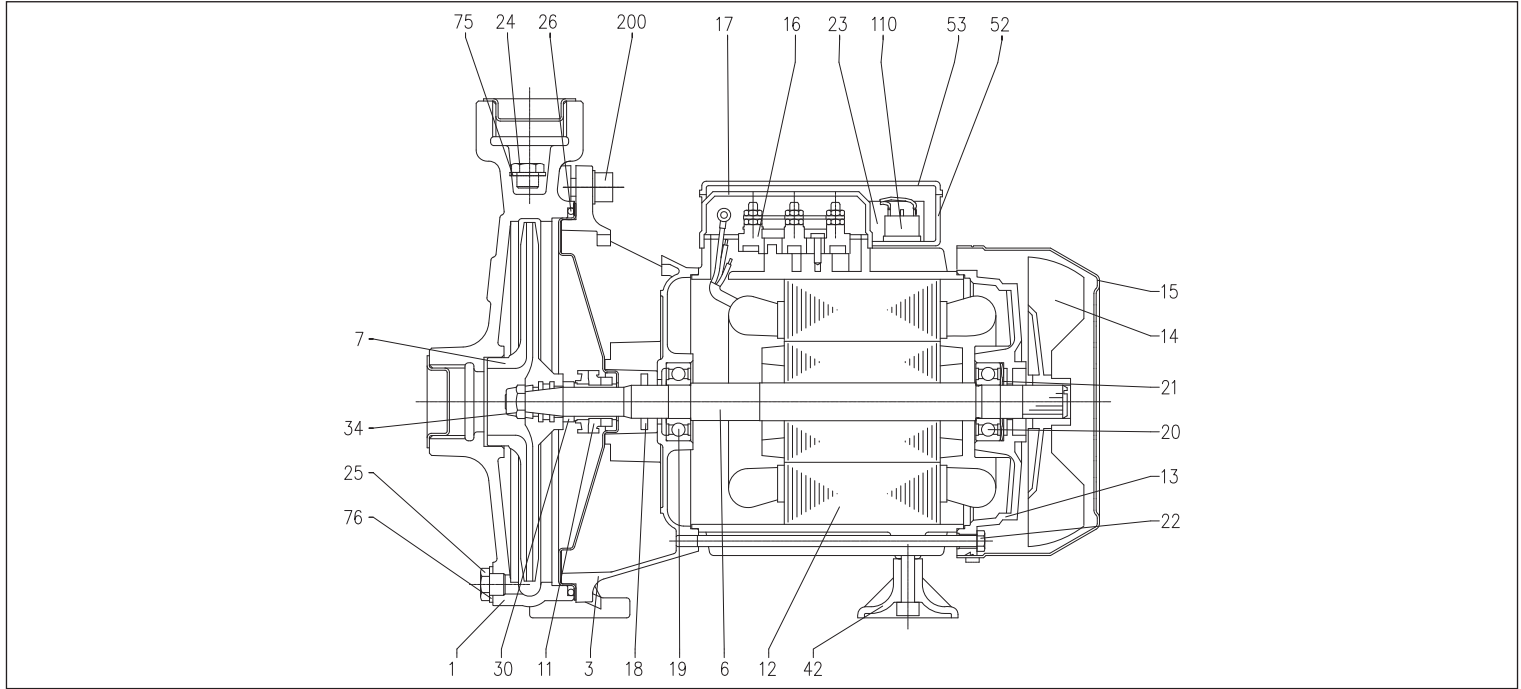
Model	Dimensions [mm]																				Weight [kg]		
	A	B	C	D	E	F	H	H1	H2	[1] H3	[2] H4	M	M1	N	N1	R	[2] T	[1] V	W	S		DNA	DNM
CMA 0.50 M	160	261,8	158,8	30	44	8	202	82	120	-	173	40	40	110	150	44	PG11	-	30	9,5	G 1	G 1	7,3
CMA 0.50 T	160	261,8	158,8	30	44	8	202	82	120	172,5	-	40	40	110	150	44	-	PG11	30	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 1/4	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 1/4	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 1/4	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 1/4	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 1/4	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 1/4	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 1/4	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 1/4	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 1/4	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 1/4	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 1/4	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 1/4	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 1/4	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 1/4	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 1/4	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 1/4	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 1/2	G 2 1/2	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 1/2	G 2 1/2	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 1/2	G 2 1/2	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 1/2	G 2 1/2	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 1/2	G 2 1/2	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 1/2	G 2 1/2	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 1/2	G 1 1/2	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 1/2	G 1 1/2	12,2

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

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)	-			

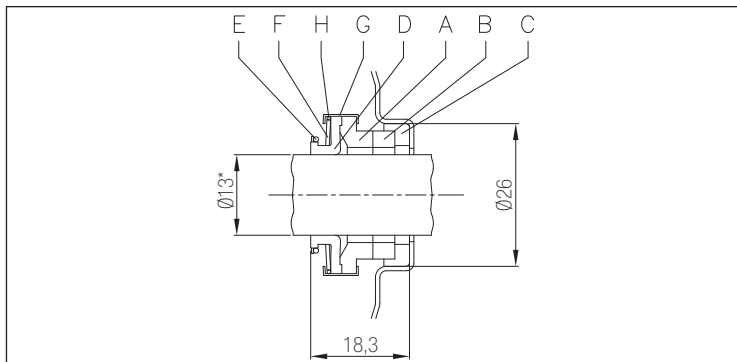
[1]= For three-phase only

[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

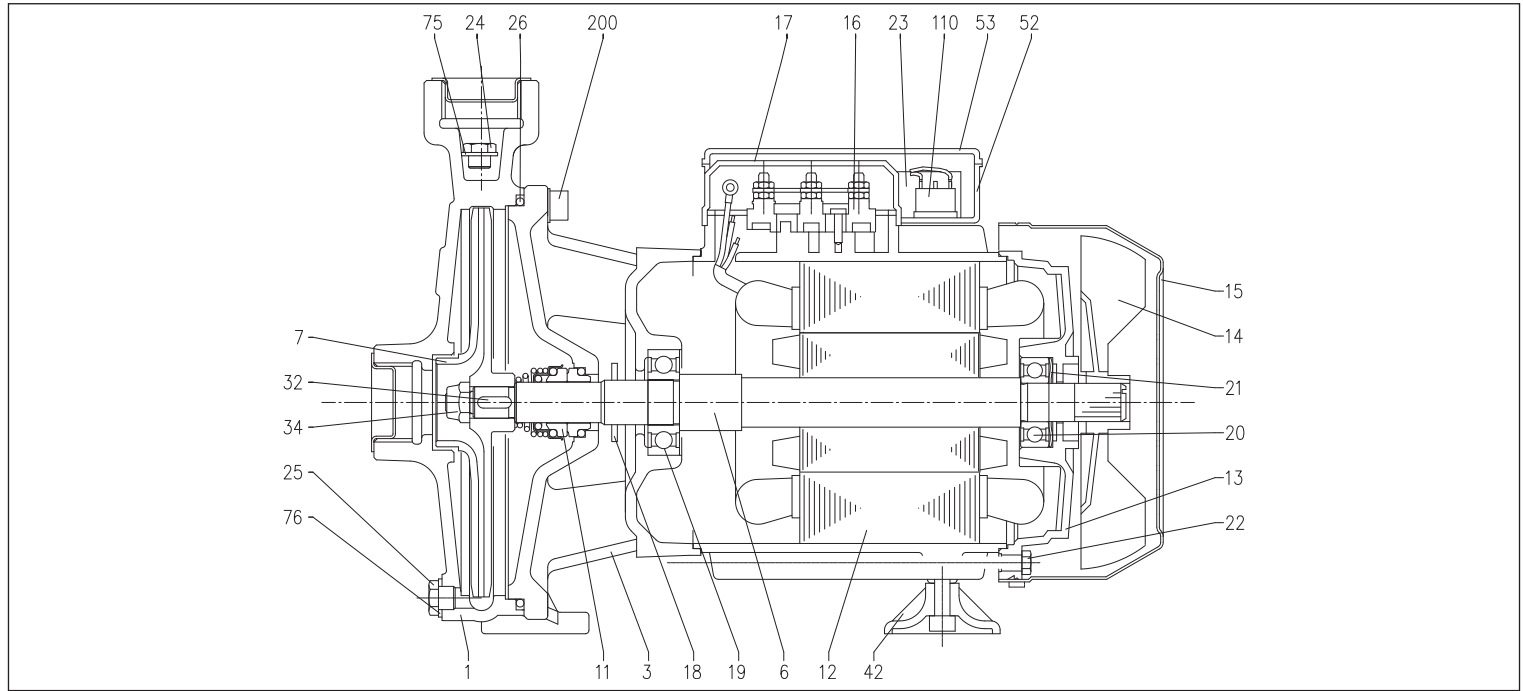
Ref.	Name	Material
A	Rotating part	Carbon
B	Fixed part	Ceramic
C	Gasket	NBR
D	Diaphragm	NBR
E	Ring	AISI 304
F	Spring	AISI 304
G	Structure/frame	AISI 304
H	Retainer ring	AISI 304

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

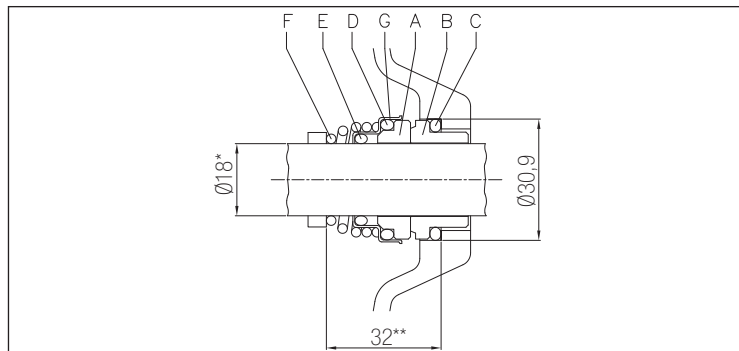


MATERIALS TABLE

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



*= Ø20 for CMB 4.00 - 5.50
 **= 33 for CMB 4.00 - 5.50

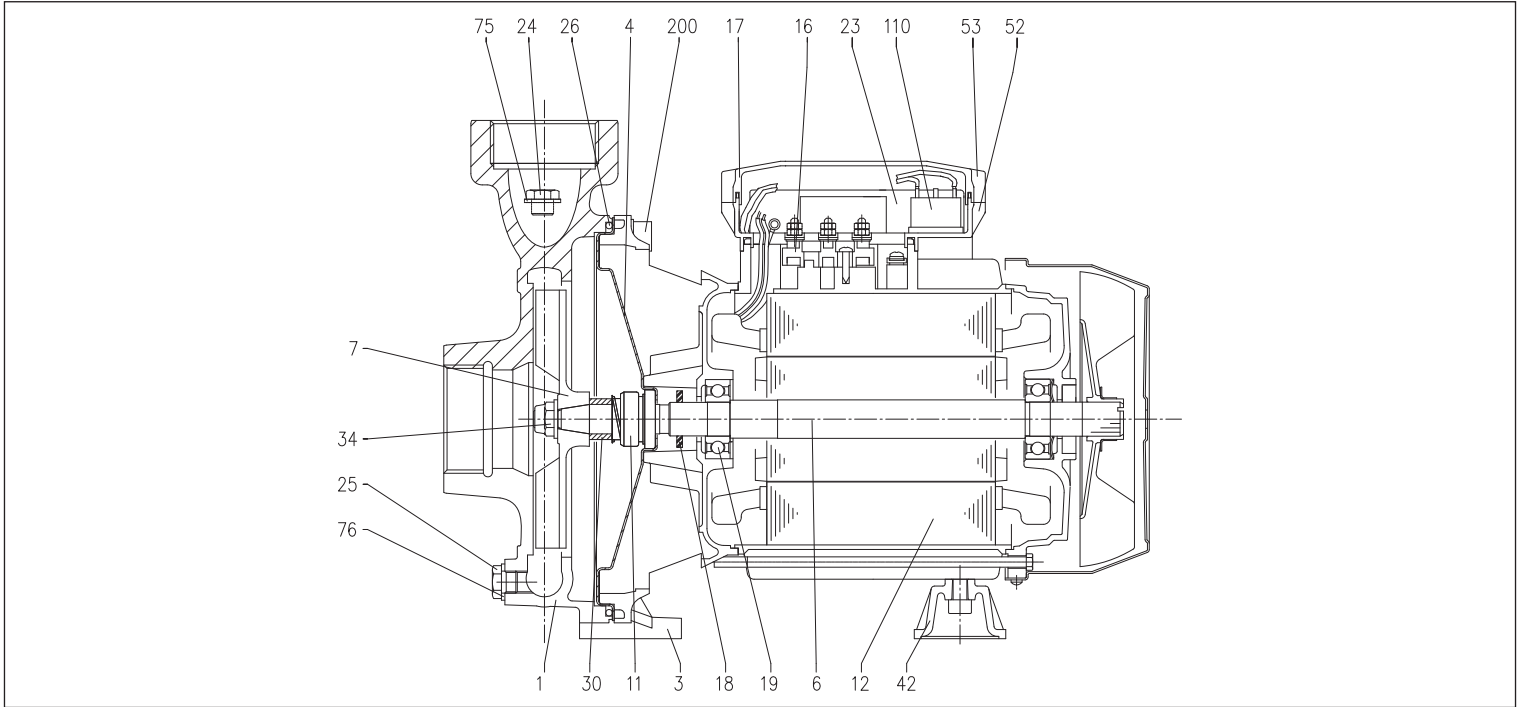
MATERIALS TABLE

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

SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

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SECTIONAL VIEW for CMR

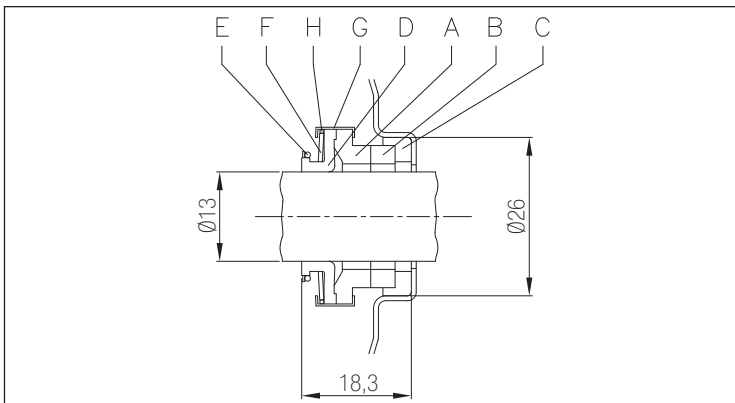


MATERIALS TABLE

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

SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

CMA-B-C-D – CMR ELECTRIC DATA TABLE

230V single phase	Model 230/400V three-phase	P ₂		Single phase Capacitor		P ₁		Absorbed Current [A]		
		[HP]	[kW]	μF	V _c	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
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