

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

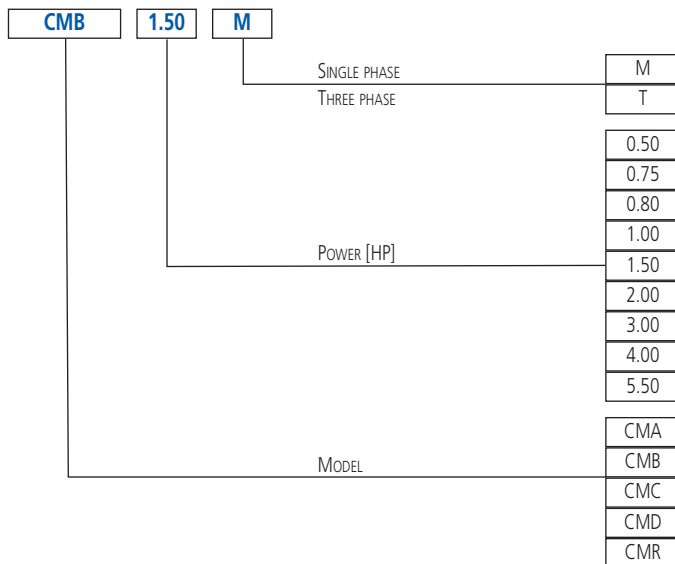
TECHNICAL DETAILS

- 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

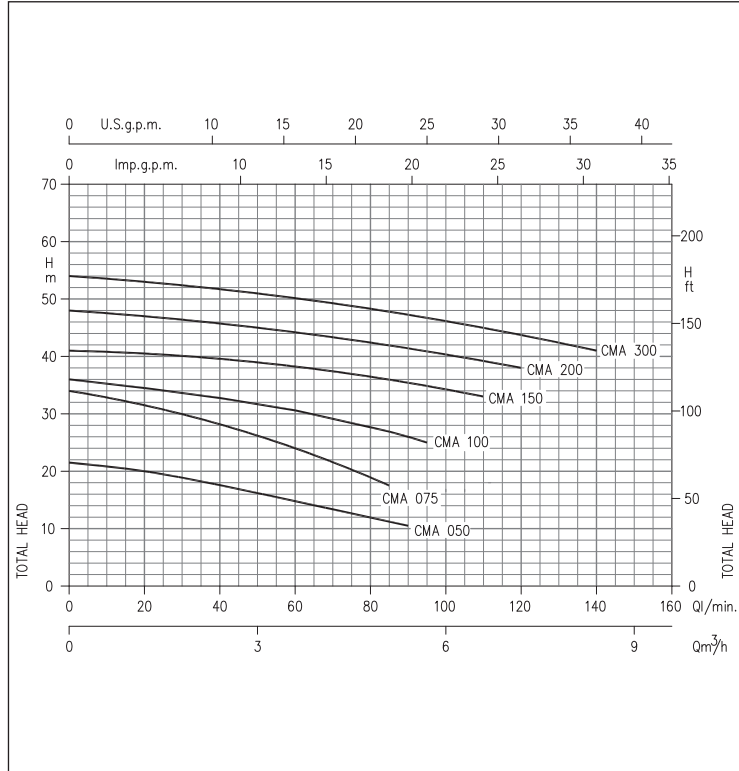
CONTROL PANELS

- 1EPBH (see page 68)

SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS in cast iron

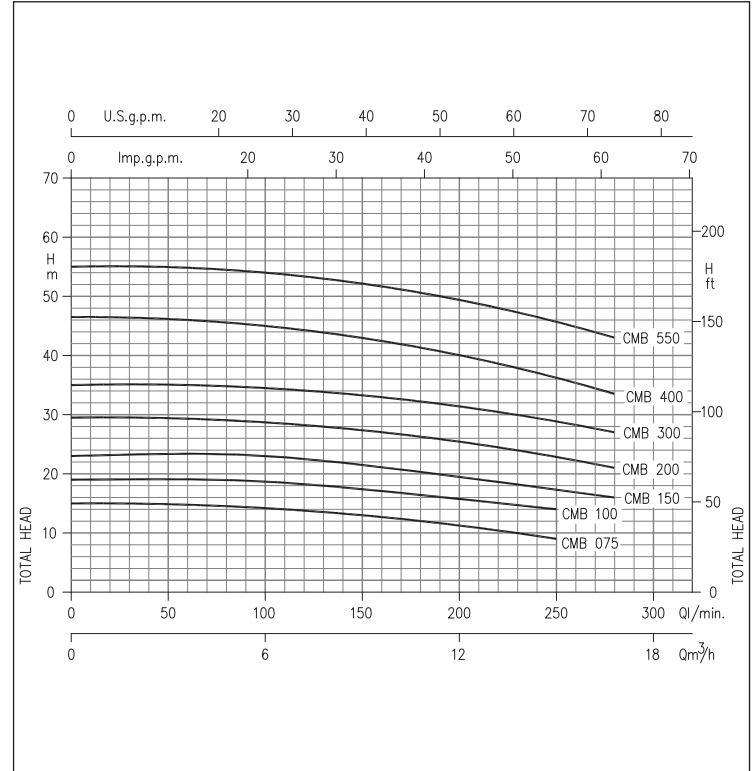
CMA range PERFORMANCE CURVES

(according to ISO 9906 Attachment A)



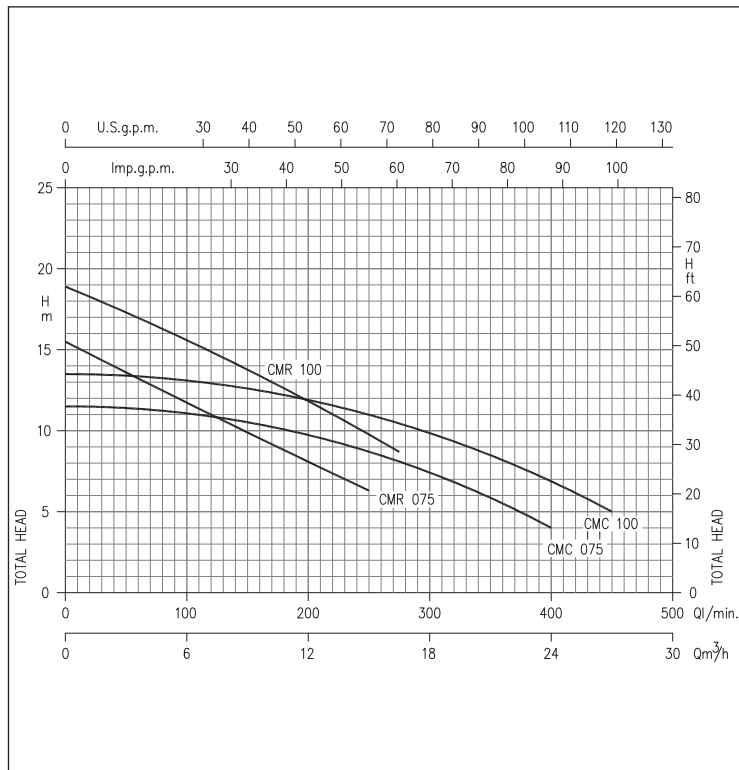
CMB range PERFORMANCE CURVES

(according to ISO 9906 Attachment A)



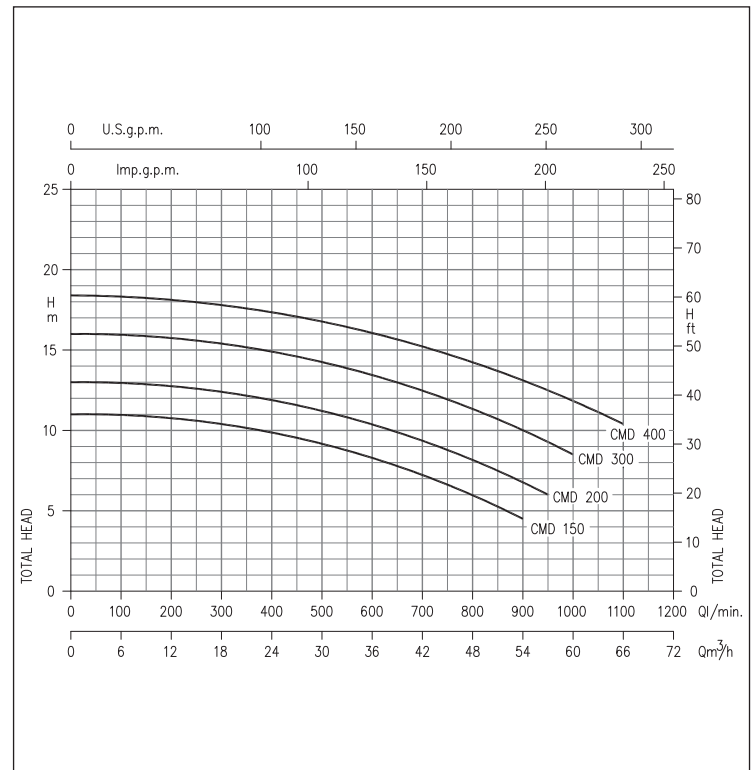
CMC-CMR range PERFORMANCE CURVES

(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 ₂		Q=Flow rate											
230V single phase	230/400V three phase	[HP]	[kW]	H=Head [m]											
				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
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]	H=Head [m]						
				l/min m ³ /h	100 6	140 8,4	180 10,8	220 13,2	250 15	280 16,9
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]	H=Head [m]					
				l/min m ³ /h	50 3	150 9	250 15	350 21	400 24
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]	H=Head [m]								
				l/min m ³ /h	300 18	400 24	600 36	800 48	900 54	950 57	1000 60	1100 66
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

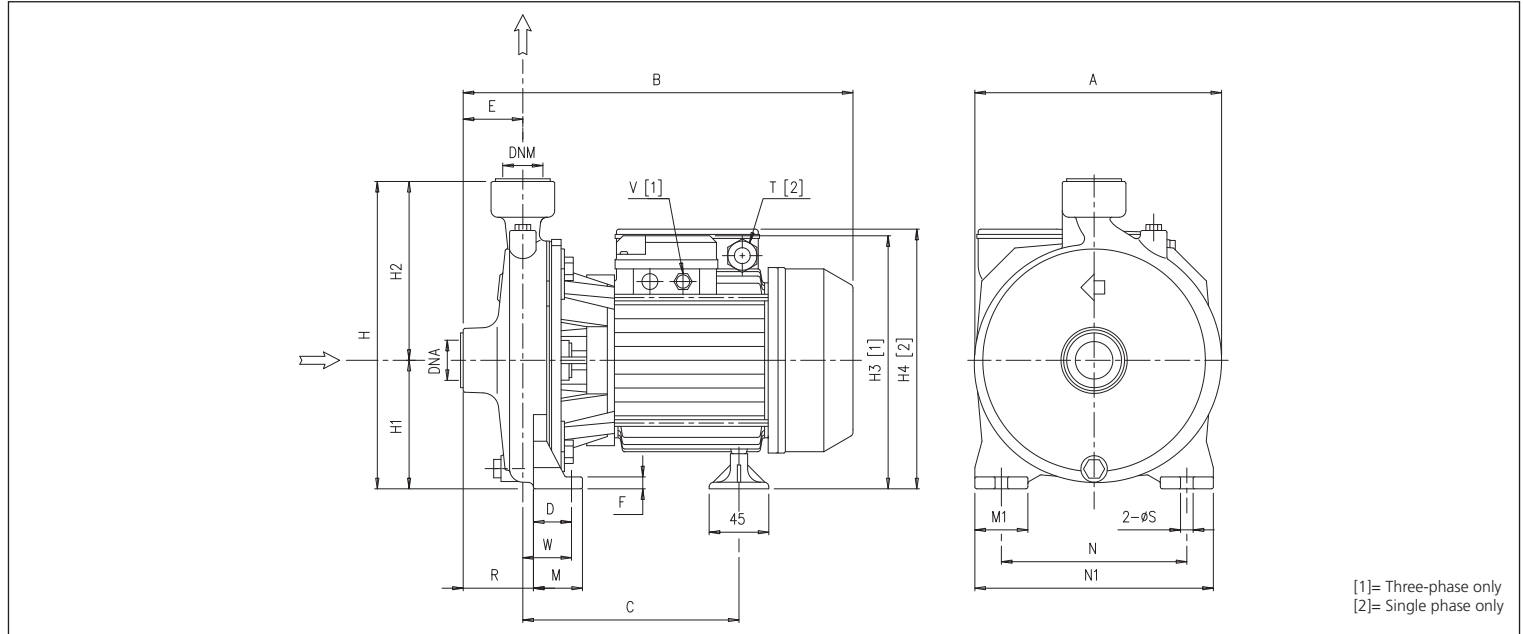
Model		P ₂		Q=Flow rate				
230V single phase	230/400V three phase	[HP]	[kW]	H=Head [m]				
				l/min m ³ /h	50 3	100 6	200 12	250 15
CMR 0.75 M	CMR 0.75 T	0,75	0,55	13,6	11,4	8,1	6,3	-
CMR 1.00 M	CMR 1.00 T	1	0,75	17,3	15,4	11,5	9,6	8,7

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CMA-B-C-D – CMR DIMENSIONS



DIMENSIONS TABLE

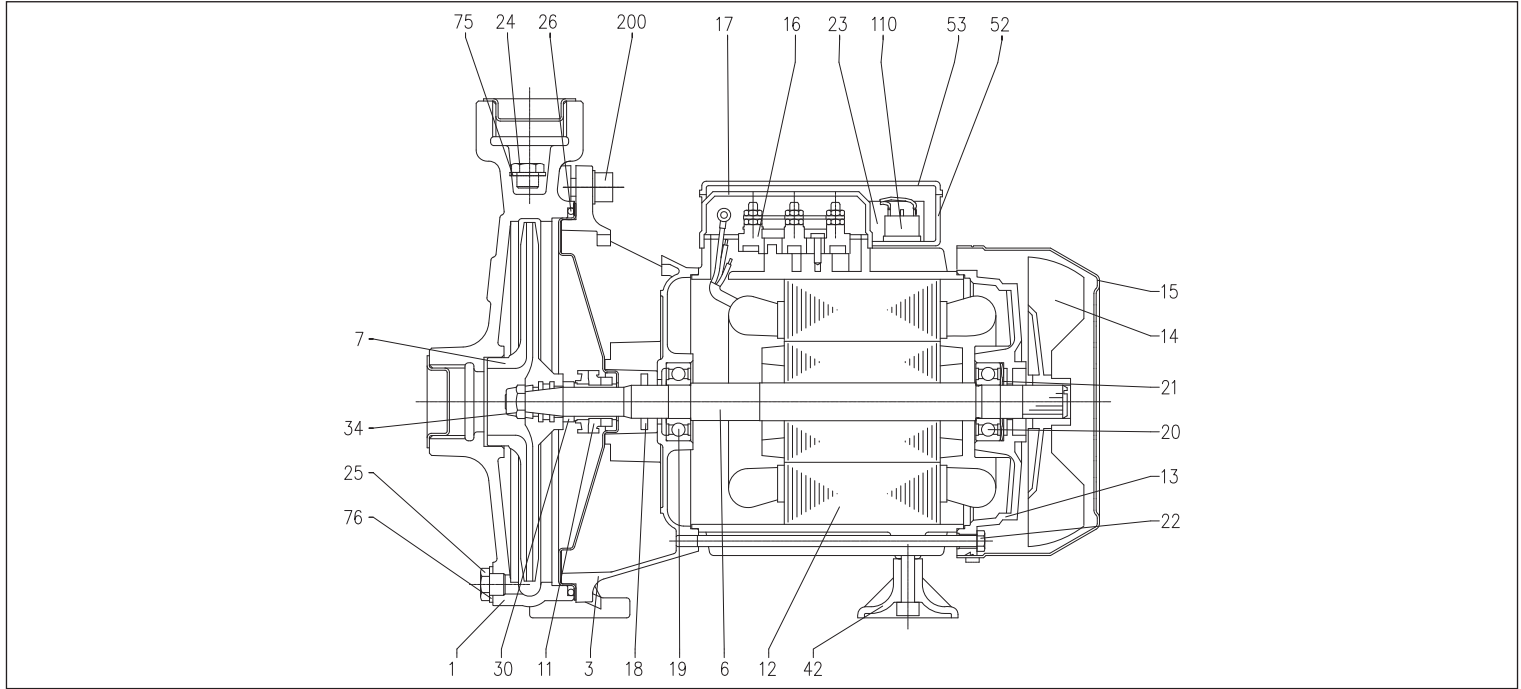
Model	Dimensions [mm]																				Weight [kg]		
	A	B	C	D	E	F	H	H1	H2	[1] H3	[2] H4	M	M1	N	N1	R	[2] T	[1] V	W	S		DNA	DNM
CMA 0.50 M	160	261,8	158,8	30	44	8	202	82	120	-	173	40	40	110	150	44	PG11	-	30	9,5	G 1	G 1	7,3
CMA 0.50 T	160	261,8	158,8	30	44	8	202	82	120	172,5	-	40	40	110	150	44	-	PG11	30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

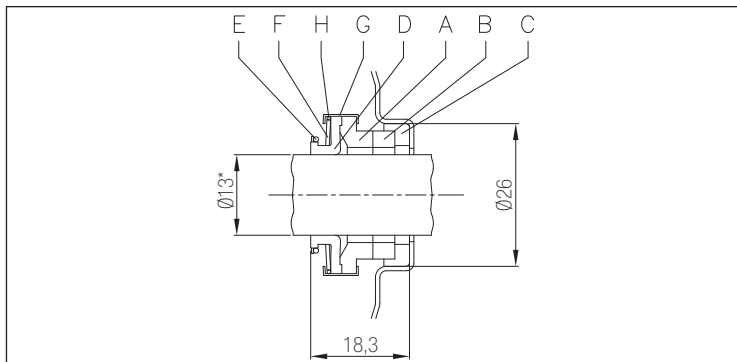
[1]= For three-phase only

[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

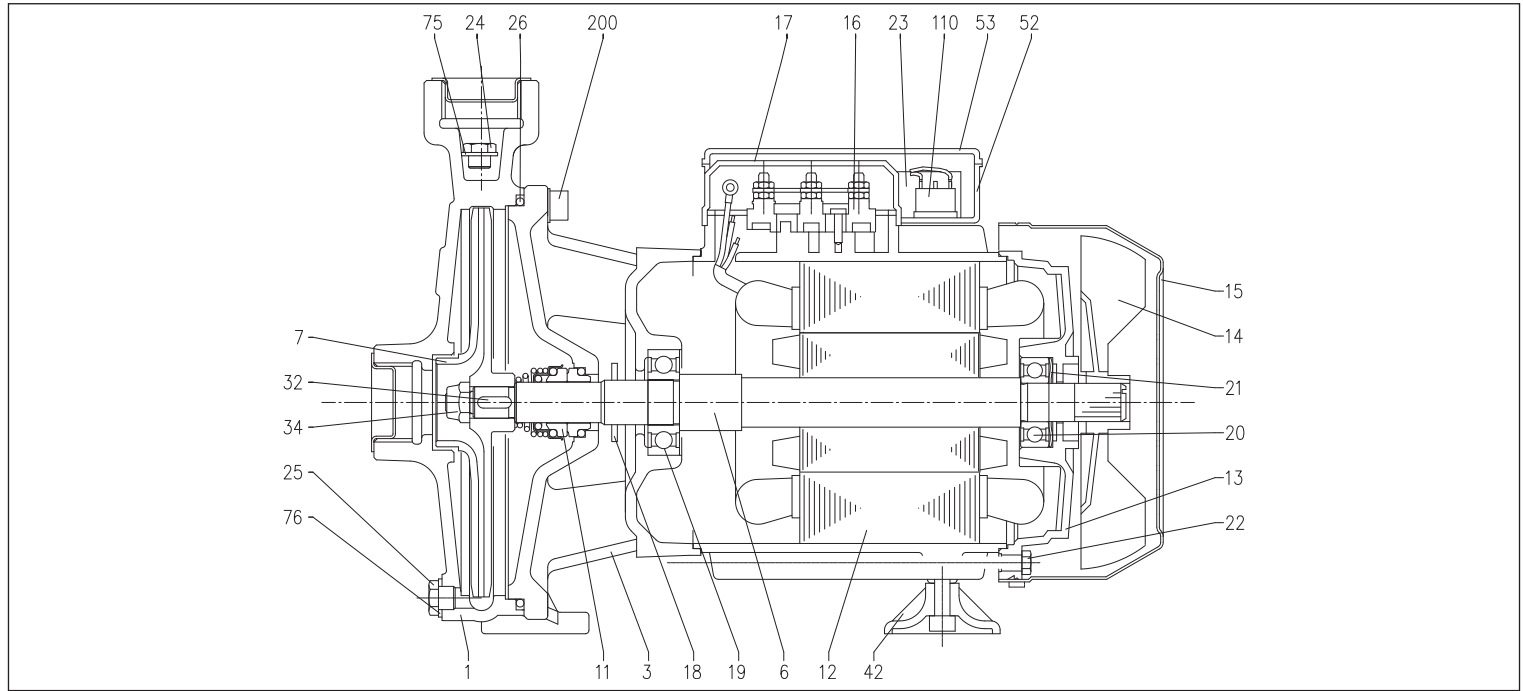
MATERIALS TABLE

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

SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

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

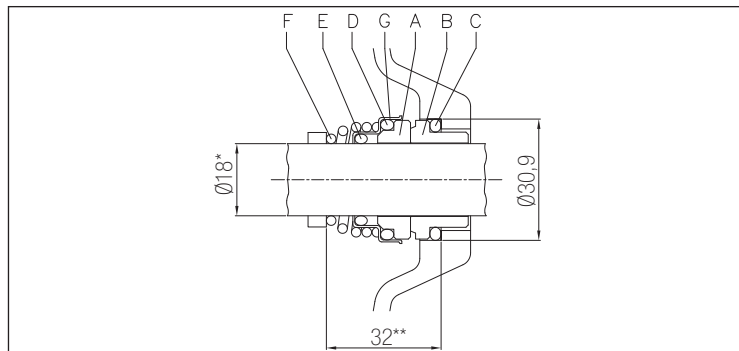


MATERIALS TABLE

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

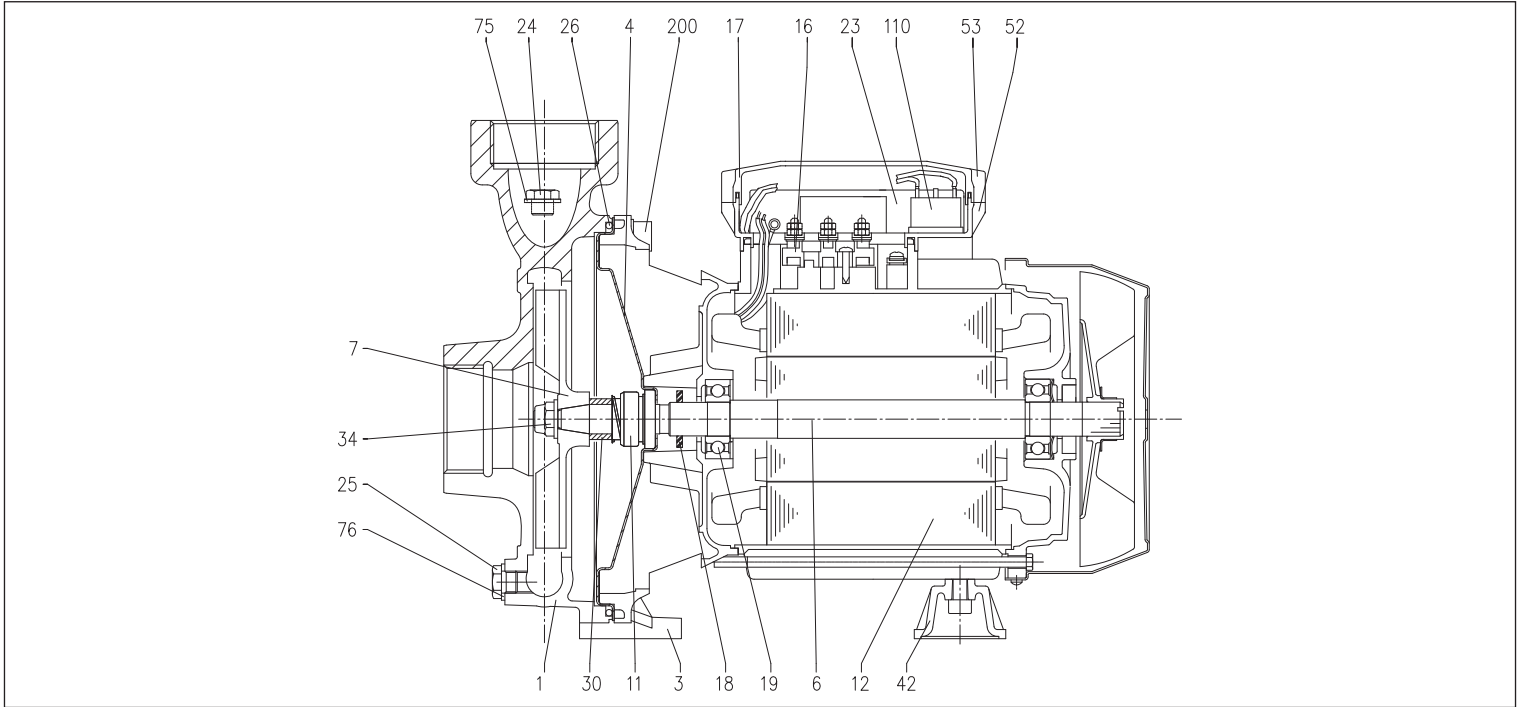
MATERIALS TABLE

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

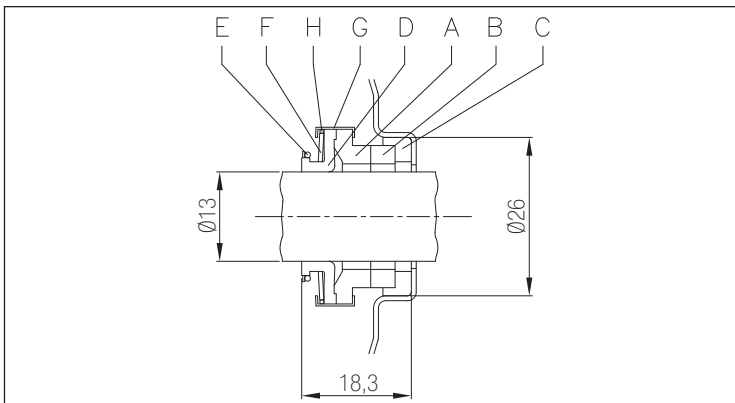


MATERIALS TABLE

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