



Japanese Technology since 1912

CMR

Data Book 50Hz



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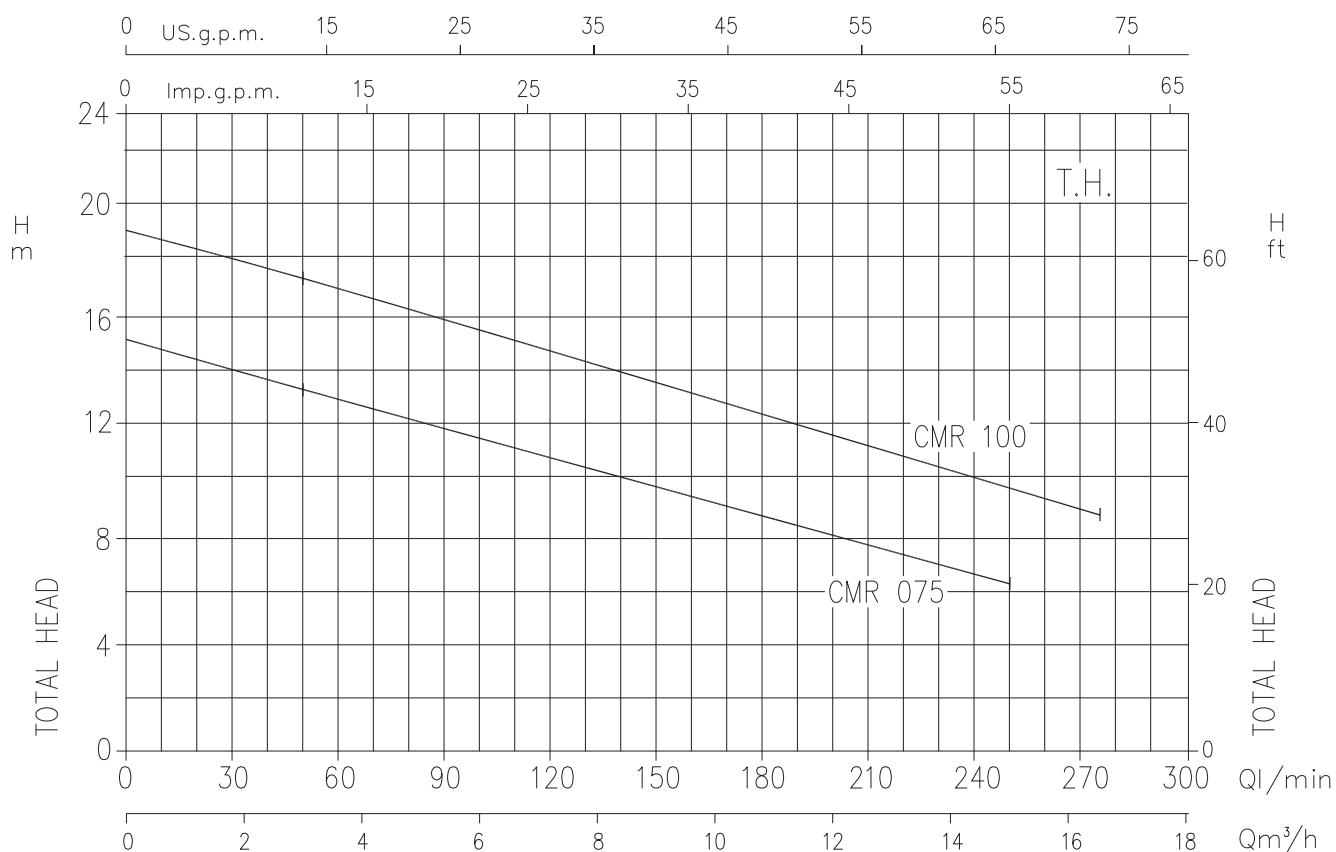
SPECIFICATION

50Hz

Rev.M

PUMP		
Liquid	Type of liquid	Clean water
Handled	Temperature [°C]	min. +5 max. +90
Max solid size	[mm]	10
Maximum working pressure	[MPa]	0.6
Construction	Impeller	Open centrifugal
	Shaft seal type	Mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction	G 1"½ UNI ISO 228
	Discharge	G 1"½ UNI ISO 228
Material	Casing	Cast iron
	Impeller	Brass
	Shaft seal	Ceramic/Carbon/NBR
	Shaft	AISI 303 (wet extension)
	Bracket	Aluminium
	Casing cover	AISI 304
Applicable standard of test		ISO 9906 – Annex A

MOTOR		
Type	Electric - TEFC	
	Single Phase	Three Phase
Efficiency level (Reg. 1781/2019)	IE2	IE3
No. Of Poles	2	
Rotation speed [min ⁻¹]	≈ 2800	
Insulation Class	F	
Protection degree (CEI EN 60034-5)	IP 44	
Power rating	[kW]	0.55 ÷ 0.75
	[HP]	0.75 ÷ 1
Frequency [Hz]	50	
Voltage [V]	230 ±10%	230/400 ±10%
Capacitor	Built in	-
Over load protection	Built in	Provided by the user
Casing material	Aluminium	
Base material / motor support	Cast iron / Plastic foot	
Dimensions of cable entry	PG11 - M16x1.5	



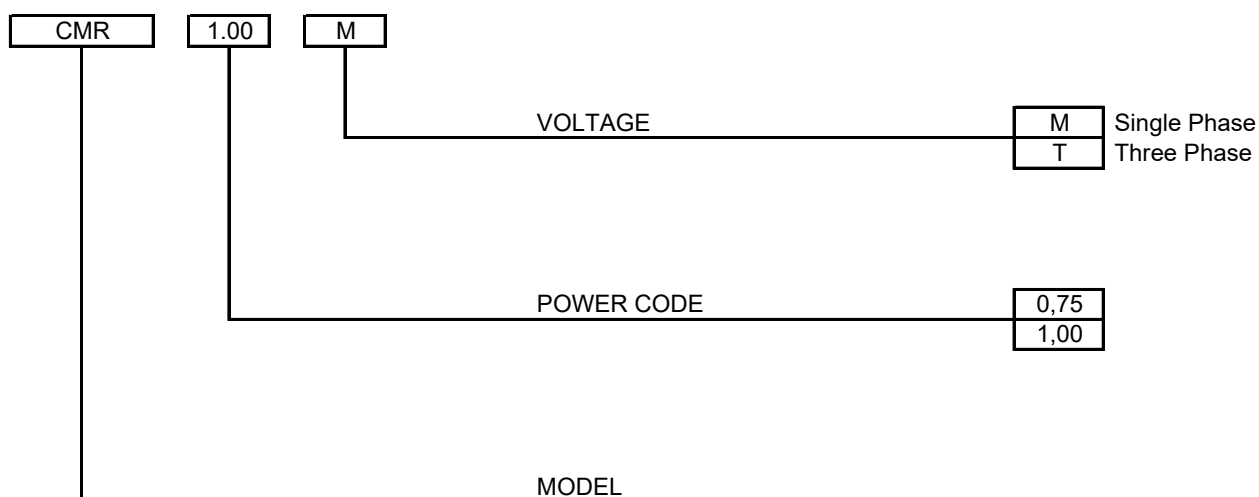
Type pumps		Q=Capacity						
		l/min	0	50	100	200	250	275
Single phase	Three phase	m³/h	0	3	6	12	15	16,5
		H=Total manometric head in meters						
CMR 0.75 M	CMR 0.75 T		15,5	13,6	11,4	8,1	6,3	-
CMR 1.00 M	CMR 1.00 T		18.9	17.3	15.4	11.5	9.6	8.7

TYPE KEY AND CURVE SPECIFICATIONS

50Hz

Rev.M

TYPE KEY



PERFORMANCE CURVE SPECIFICATIONS

The specifications below qualify the curves shown on the following pages.

Tolerances according to ISO 9906 Annex A

The curves refer to effective speed of asynchronous motors at 50 Hz

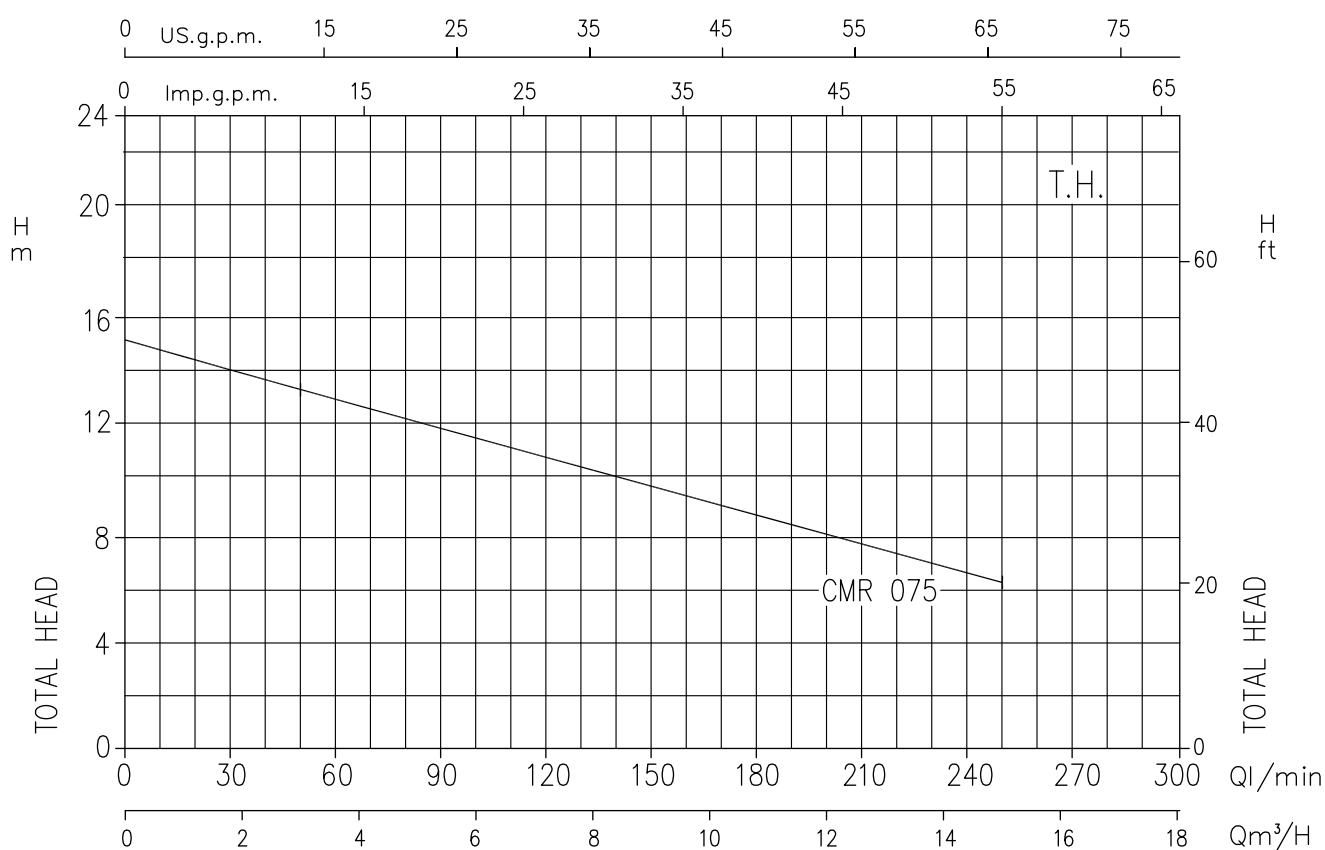
Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of $\nu = 1 \text{ mm}^2/\text{s}$ (1 cSt)

In order to avoid the risk of over-heating, the pumps should not be used at a flow rate below 10% of best efficiency point.

Symbols explanation:

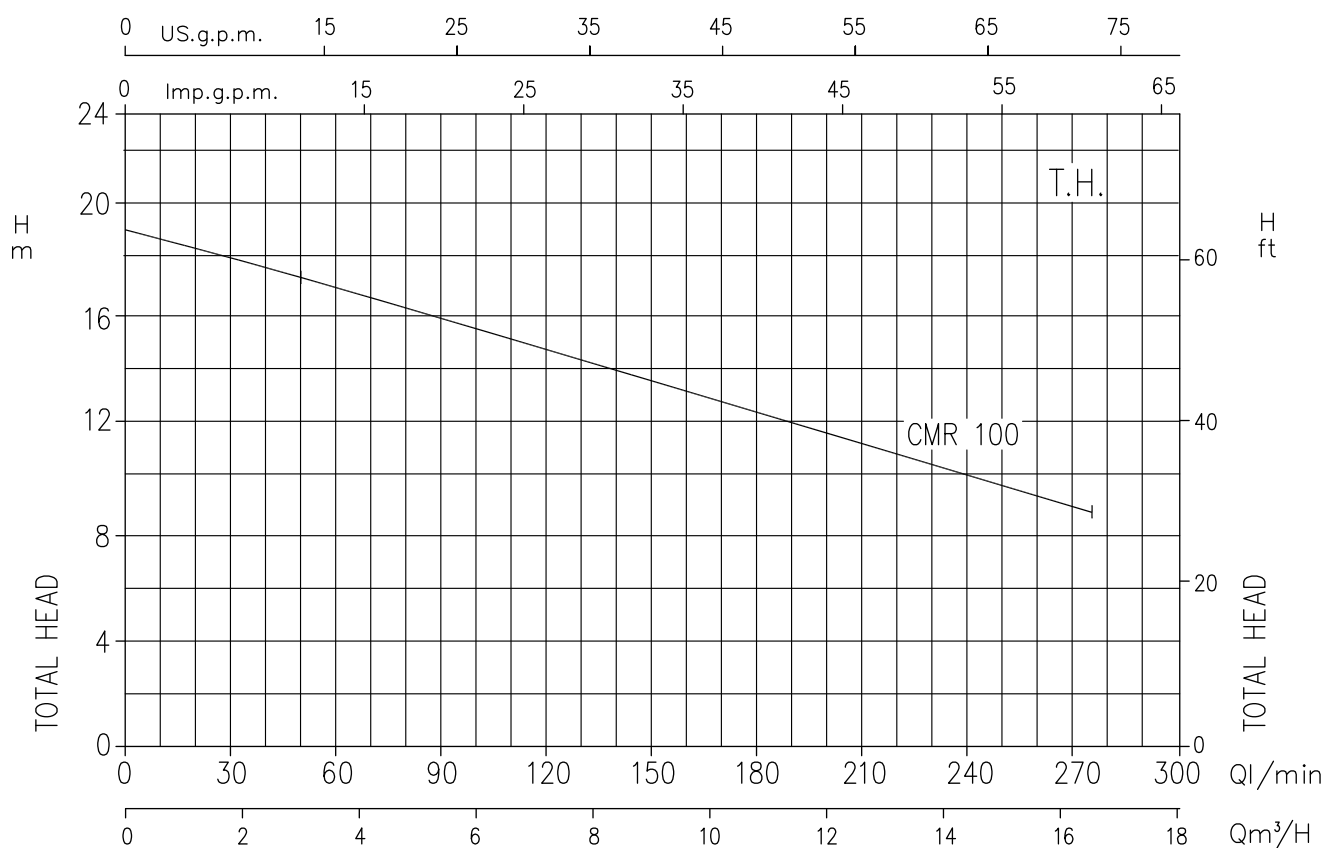
Q = volume flow rate
H = total head

CMR 0.75 - Impeller diameter = 114 mm



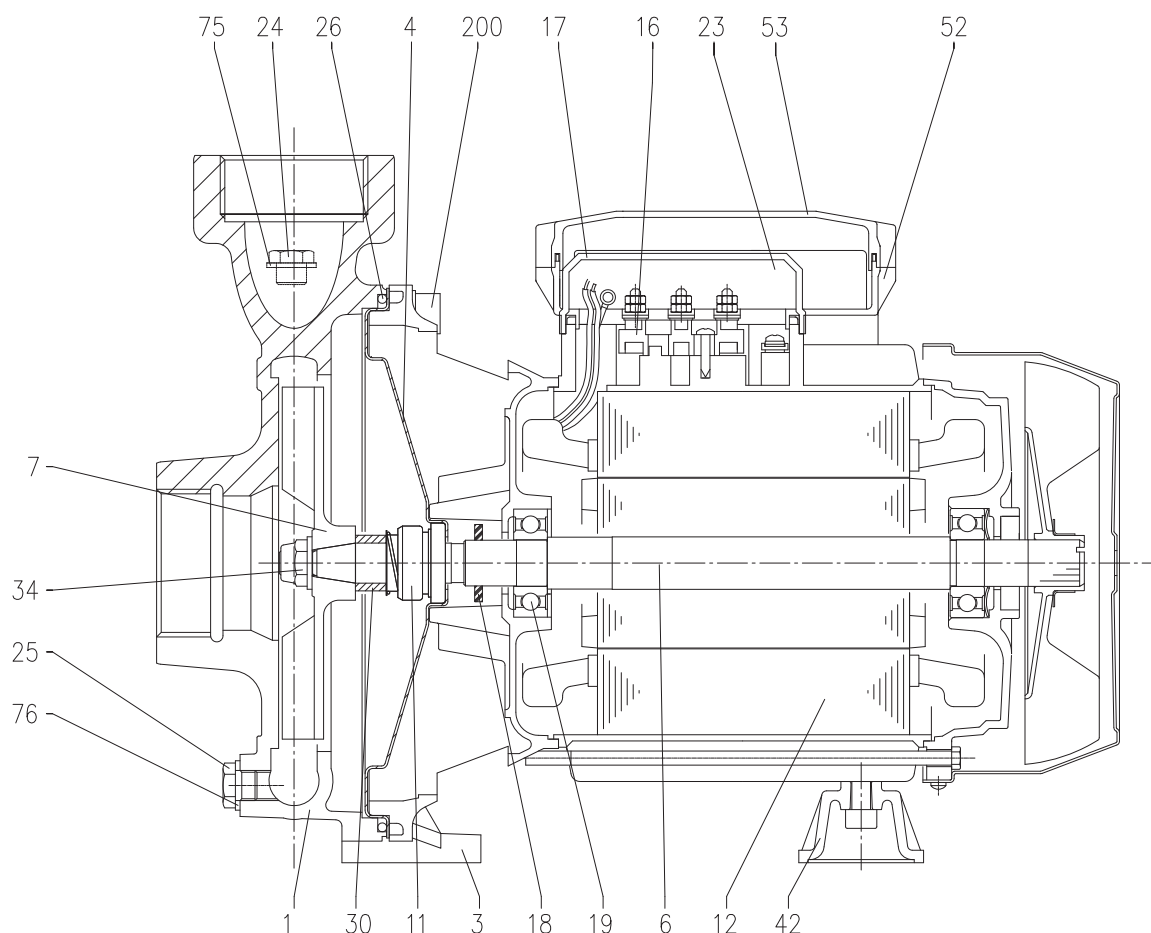
Rotation speed $\approx 2800 \text{ min}^{-1}$
Test standard: ISO 9906 – Annex A

CMR 1.00 - Impeller diameter = 120 mm



Rotation speed $\approx 2800 \text{ min}^{-1}$
Test standard: ISO 9906 – Annex A

SECTIONAL VIEW

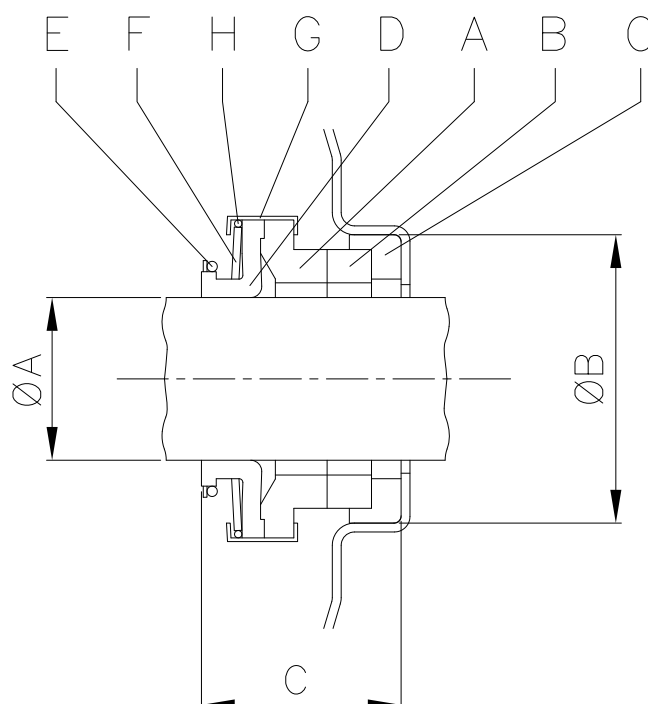


N°	PART NAME	MATERIAL	Q.TY	N°	PART NAME	MATERIAL	Q.TY
1	Casing	Cast iron	1	21	Adjusting ring	Steel C70	1
3	Motor bracket	Aluminium	1	22	Tie rod	Fe 42 Zincate	4
4	Casing cover	AISI 304	1	23	Capacitor [2]	-	1
6	Shaft with rotor	AISI 303 (wet extension)	1	24	Priming plug	Brass	1
7	Impeller	Brass	1	25	Drain plug	Brass	1
11	Mechanical seal	Carbon/Ceramic/NBR	1	26	O-ring	NBR	1
12	Motor frame with stator	-	1	30	Mechanical seal spacer	Brass	1
13	Motor cover [1]	Aluminium	1	34	Impeller nut	AISI 304	1
14	Fan	PP	1	42	Foot	PP	1
15	Fan cover	Fe P04 Zincate	1	52	Capacitor box [2]	ABS class V-0	1
16	Terminal box	-	1	53	Capacitor box cover with gasket [2]	ABS class V-0 + NBR	1
17	Terminal box cover [1]	Aluminium	1	75	Washer	Aluminium	1
18	Splash ring	NBR	1	76	Washer	Aluminium	1
19	Pump side ball bearing	-	1	200	Screw	Zn Steel Cl. 8.8 ISO 898-1	4
20	Fan side ball bearing	-	1				

[1] Three phase

[2] Single phase

MECHANICAL SEAL

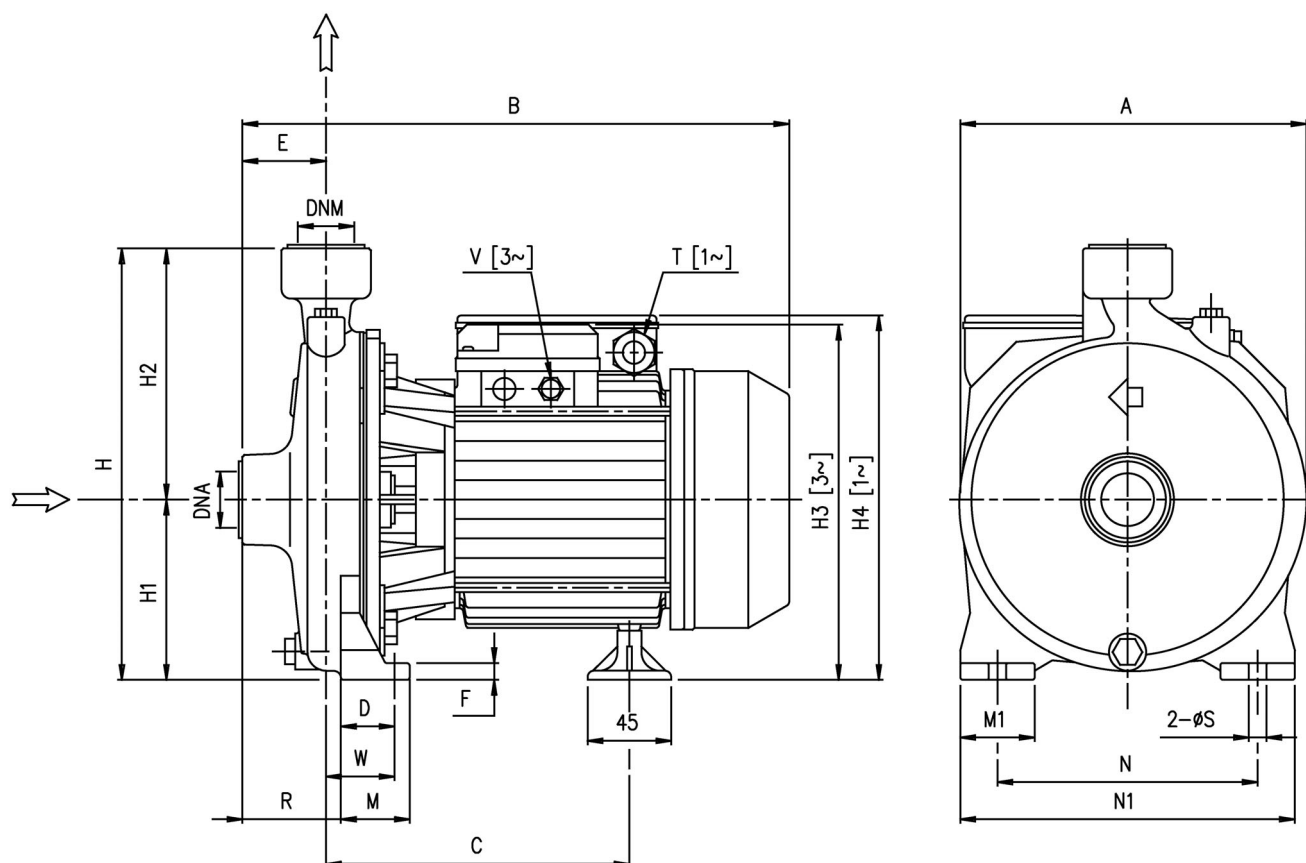


REF	PART NAME	MATERIAL product standard
A	Rotary seal ring	carbon graphite
B	Stationary seal ring	ceramic
C	Gasket	NBR
D	Bellows	NBR
E	Ring	AISI 304
F	Self driving spring	AISI 304
G	Frame	AISI 304
H	Retainer ring	AISI 304

BEARINGS

Type pumps		Ball Bearing	
Single phase	Three Phase	Pump side	Fan side
CMR 0.75M	CMR 0.75T	6202	6202
CMR 1.00M	CMR 1.00T	6202	6202

PUMP

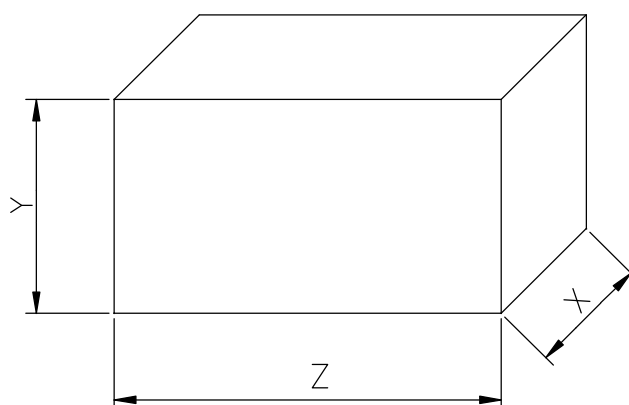


Pump type	Dimensions [mm]																					Weight [kgf]		
	A	B	C	D	E	F	H	H1	H2	H3	H4	M	M1	N	N1	R	T	V	W	S	DNA	DNM	[1~]	[3~]
CMR 0.75	180	310	182	37	45	9	229	97	132	198	198	45	40	140	180	61	PG11	M16x1.5	52	10	G 1 ½	G 1 ½	12,5	10,9
CMR 1.00	180	310	182	37	45	9	229	97	132	198	198	45	40	140	180	61	PG11	M16x1.5	52	10	G 1 ½	G 1 ½	13	12,7

[1~] Single phase

[3~] Three phase

PACKING



Type pumps		Packing [mm]				Weight [kgf]	
Single Phase	Three Phase	X	Y	Z		[1~]	[3~]
CMR 0.75M	CMR 0.75T	210	290	[1~]	[3~]	3,5	11,7
CMR 1.00M	CMR 1.00T	210	290	[1~]	[3~]	14	13,5

[1~] Single phase

[3~] Three phase

MOTOR DATA

Pump type	Power		Efficiency [IE2 / IE3]	Capacitor		Efficiency (% load) and power factor				Input [kW]	Full load current		Locked rotor current	
	[kW]	[HP]		[μF]	[V]	η %			cos-φ		[A]		[A]	
						50%	75%	100%			110 V	230 V	110 V	230 V
CMR 0.75M	0,55	0,75	IE2	20	450	62,3	70,4	74,8	0,93	0,75	-	3,5	-	18,9
CMR 1.00M	0,75	1,0	IE2	25	450	61,0	70,8	79,2	0,93	0,95	-	4,4	-	24,0

Pump type	Power		Efficiency	Efficiency (% load)			Input [kW]	Full load current		Locked rotor current	
	[kW]	[HP]		η %				[A]		[A]	
				50%	75%	100%		230 V	400 V	230 V	400 V
CMR 0.75T	0,55	0,75	IE3	75,1	78,5	78,0	0,71	2,4	1,4	12,7	7,3
CMR 1.00T	0,75	1	IE3	80,9	82,3	82,1	0,91	3,0	1,7	19,7	11,4

NOISE DATA

Pump type		Power		L _{pA} - dB(A) *
Single Phase	Three Phase	[kW]	[HP]	
CMR 0.75M	CMR 0.75T	0.55	0.75	
CMR 1.00M	CMR 1.00T	0.75	1	<70

* Mean value of several measures at 1m distance around the pump.

Tolerance ± 2.5 dB.