



Japanese Technology since 1912

CMR

Data Book 60Hz



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SPECIFICATIONS

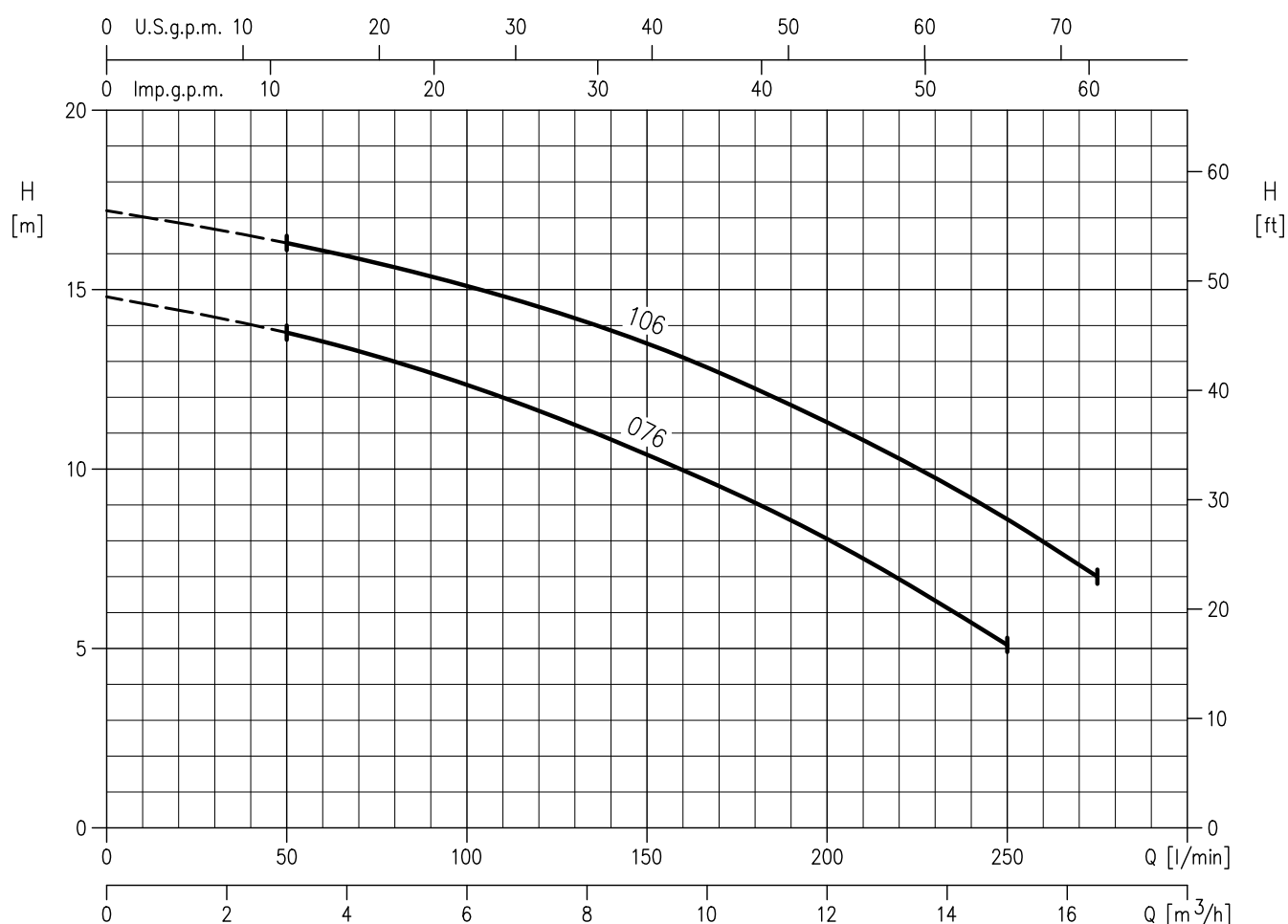
60Hz

Rev. G

PUMP		
Liquid Handled	Type of liquid	Clean water
	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 9006:2012 - Grade 3B

MOTOR		
Type	Electric - TEFC	
	Single Phase	Three Phase
Efficiency level (Rif. 1781/2019)	IE2	IE3
No. of Poles	2	
Rotation speed [min ⁻¹]	≈ 3450	
Insulation Class	F	
Protection degree	IP 44	
Power rating	[kW]	0.55 ÷ 0.75
	[HP]	0.75 ÷ 1
Frequency [Hz]	60	
Voltage [V]	220-230 ±6%	220/380 -6% +10% (from 0.55 kW to 0.75 kW) 220/380-460 ±10% (IE3* only for 0.75 kW 460 V)
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	

PERFORMANCE RANGE



SELECTION CHART

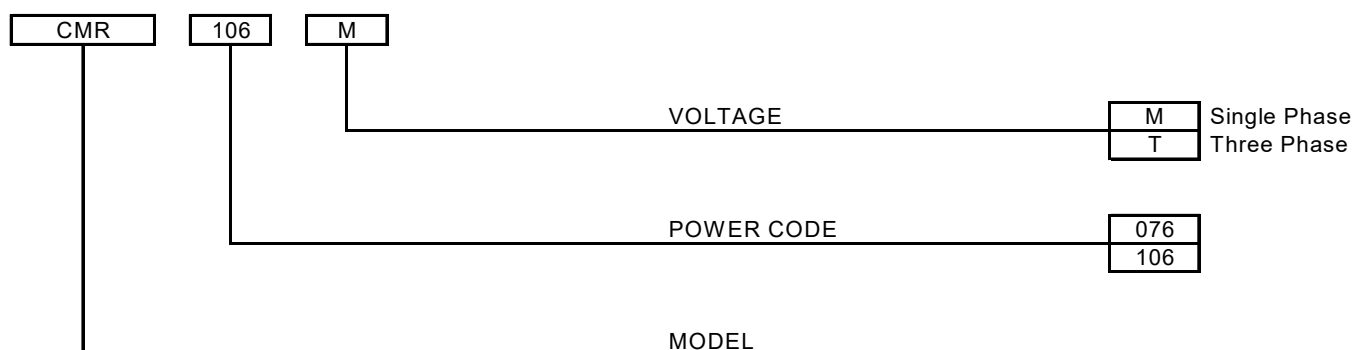
Pump type		Q =Capacity							
		l/min	0	50	100	150	200	250	275
Single-phase	Three-phase	m³/h	0	1,2	6	9	12	15	16,5
		H=Total manometric head in meters							
-	CMR 076 T	14.8	13.8	12.3	10.5	8	5.1	-	-
CMR 106 M	CMR 106 T	17.2	16.3	15.1	13.5	11.3	8.6	7	-

TYPE KEY and CURVE SPECIFICATIONS

60Hz

Rev. G

TYPE KEY



CURVE SPECIFICATIONS

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

Tolerances according to ISO 9006:2012 - Grade 3B

The curves refer to effective speed of asynchronous motors at 60 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)

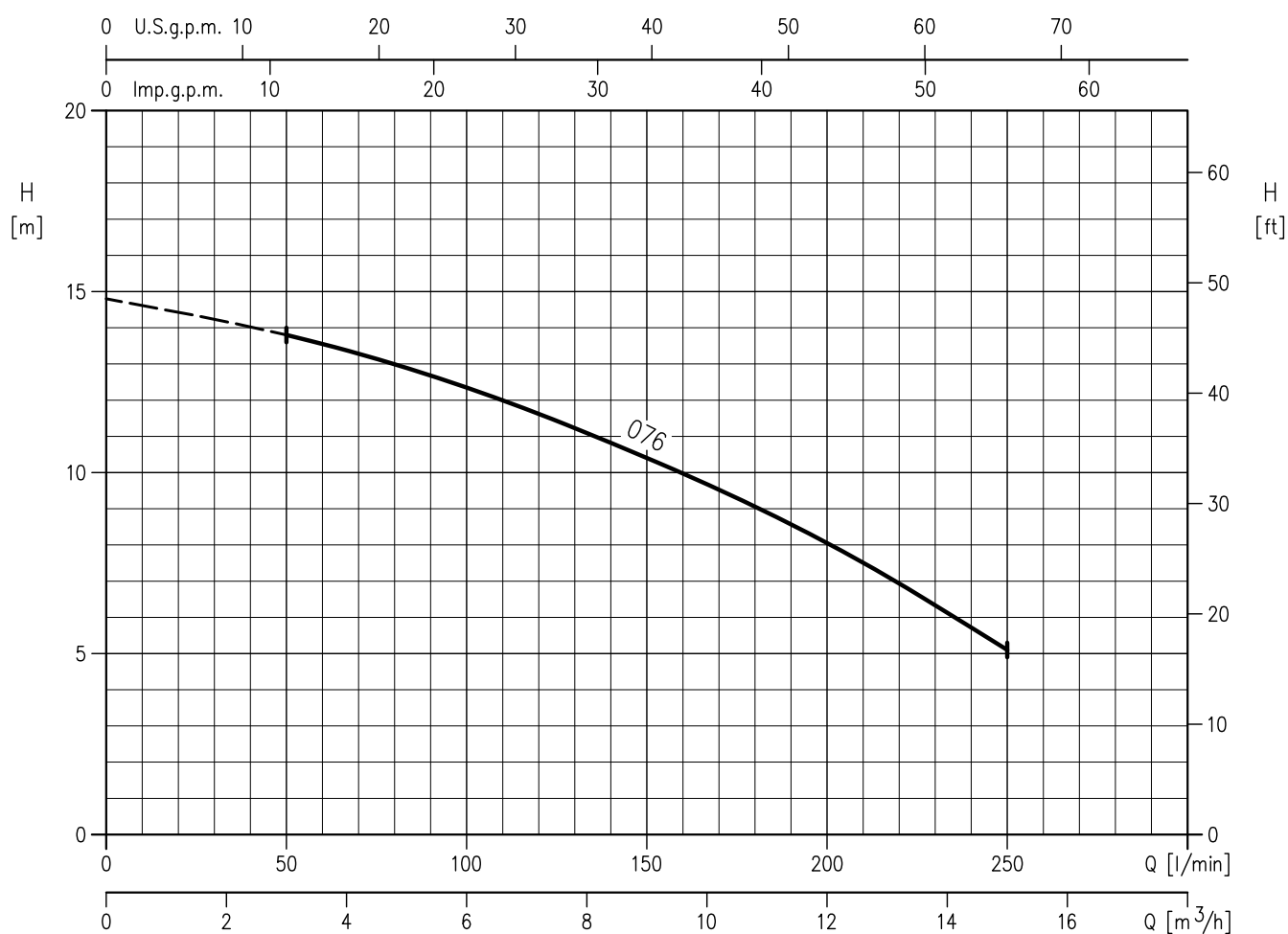
The continuous curves indicate the recommended working range. The dotted curve is only a guide.

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:

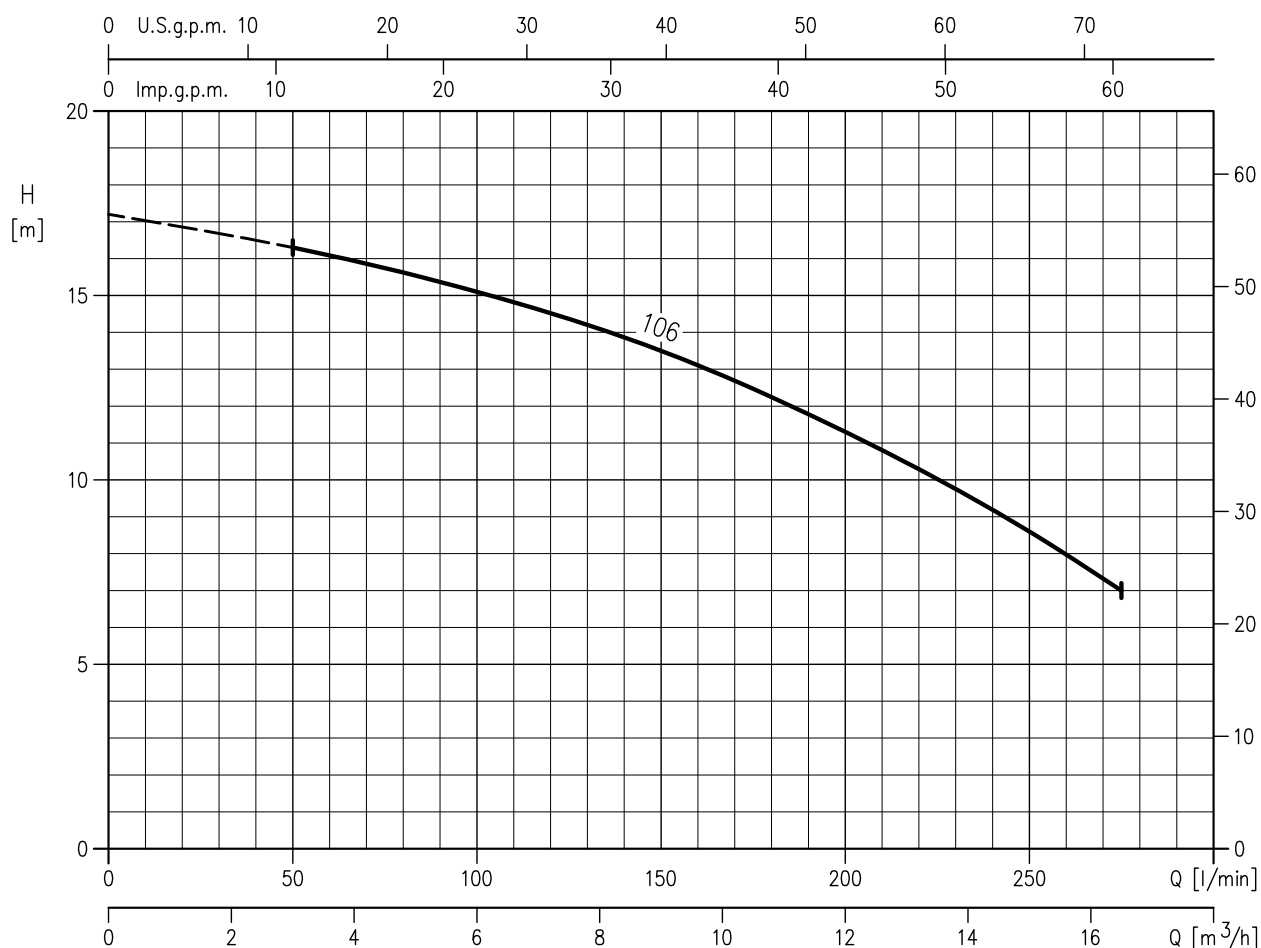
Q = volume flow rate
H = total head

CMR 076 - Impeller diameter = 99 mm



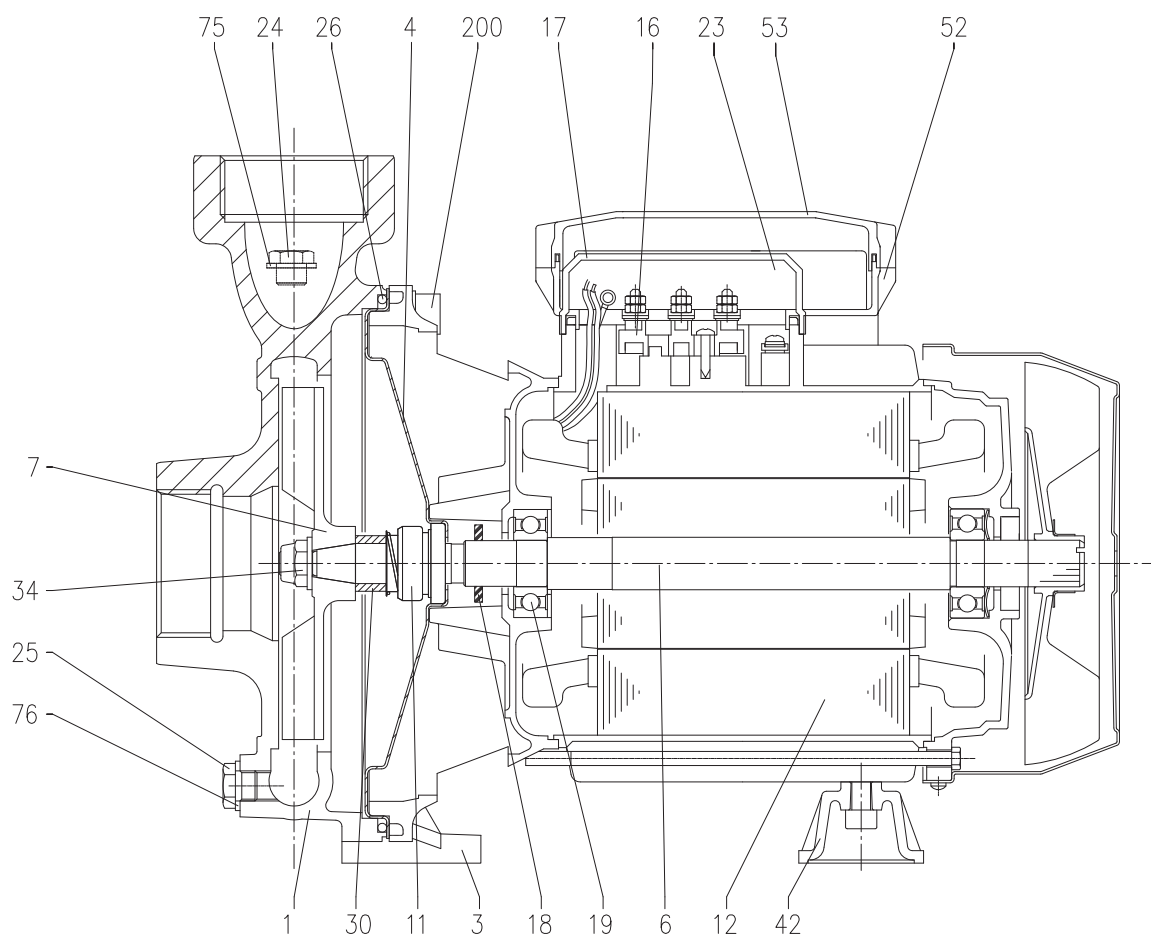
Rotation speed $\approx 3450 \text{ min}^{-1}$
Test standard: ISO 9006:2012 - Grade 3B

CMR 106 - Impeller diameter = 104 mm



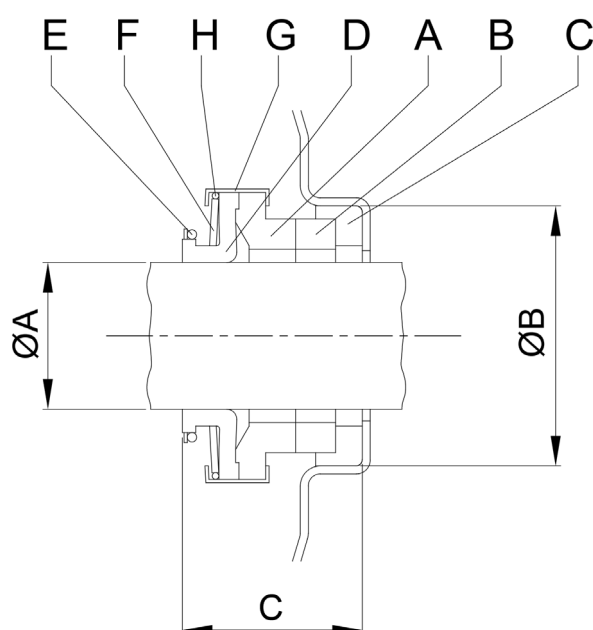
Rotation speed $\approx 3450 \text{ min}^{-1}$
Test standard: ISO 9006:2012 - Grade 3B

SECTIONAL VIEW



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

MECHANICAL SEAL

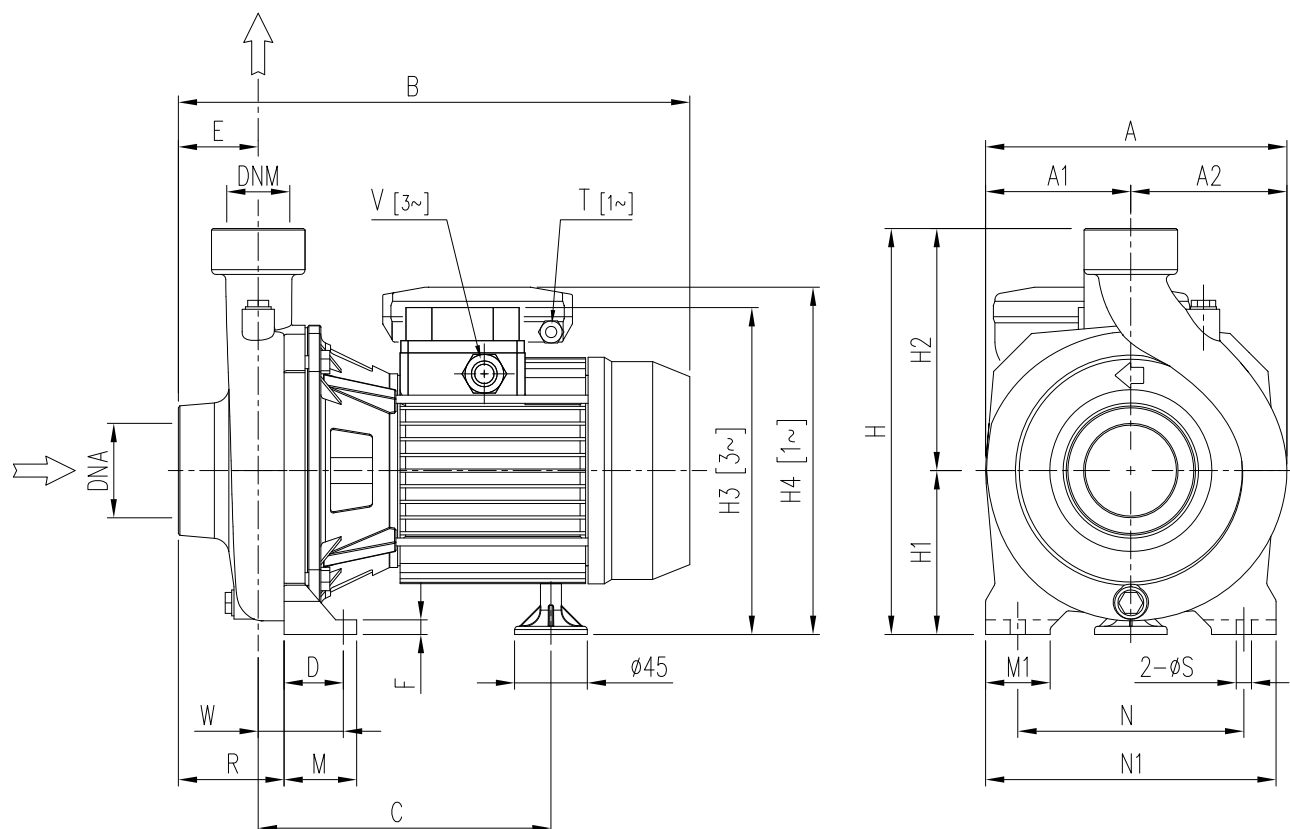


REF	PART NAME	MATERIAL
		Standard version
A	Rotary seal ring	Carbon Graphite
B	Stationary seal ring	Ceramic
C	Gasket	NBR
D	Bellows	NBR
E	Ring	AISI 304
F	Self driving spring	AISI 304
G	Frame	AISI 304
H	Retainer ring	AISI 304

BEARINGS

Type pumps		Ball Bearing	
Single phase	Three Phase	Pump side	Fan side
-	CMR 076T	6202	6202
CMR 106M	CMR 106T	6202	6202

PUMP

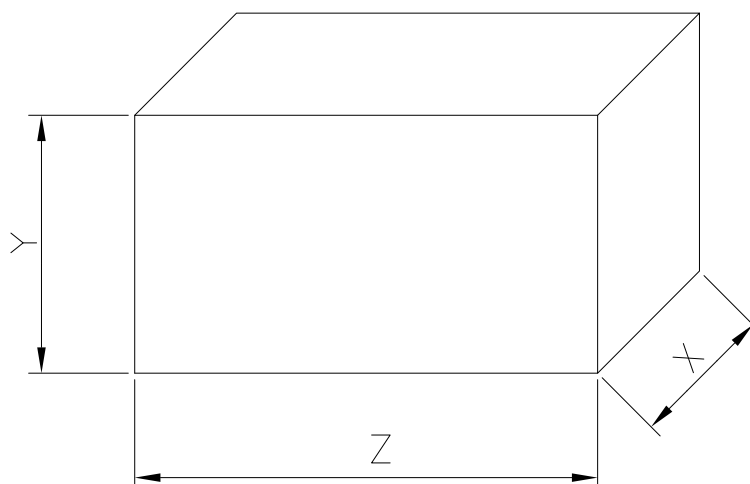


Pump type	Dimensions (mm)																								Weight [kgf]
	A	A1	A2	B	C	D	E	F	H	H1	H2	H3	H4	M	M1	N	N1	R	T	V	W	S	DNA	DNM	
CMR 076T	180	90	90	312	181	37	45	9	229	97	132	199	-	45	40	140	180	60,5	-	PG11	53	9,5	G1½	G1½	11
CMR 106M	180	90	90	311	182	37	45	9	229	97	132	-	198	45	40	140	180	60,5	PG11	-	53	9,5	G1½	G1½	13
CMR 106T	180	90	90	312	181	37	45	9	229	97	132	198	-	45	40	140	180	60,5	-	M16x1,5	53	9,5	G1½	G1½	12

[1~] Single phase

[3~] Three phase

PACKING



Pump type		Packing [mm]			Weight [kgf]	
Single Phase	Threee Phase	X	Y	Z	[1~]	[3~]
-	CMR 076T	210	290	370	-	11,7
CMR 106M	CMR 106T	210	290	355	14	12,7

[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]	50%	75%	100%	cos-φ		[A]		[A]	
Single Phase											110 V	220 V	110 V	220 V
CMR 106 M	0,75	1,0	IE2	25	450	63,1	69,8	78,3	0,94	0,96	-	4,7	-	32,3

Pump Type	Power		Efficiency Three Phase	Efficiency (% load) Three phase (380 V)			Efficiency (% load) Three phase (460 V)			Input [kW] Three Phase	Full load current [A] Three Phase			Locked rotor current [A] Three Phase		
	[kW]	[HP]		50%	75%	100%	50%	75%	100%		220 V	380 V	460 V	220 V	380 V	460 V
CMR 076 T	0,55	0,75	IE3	82,3	83,5	83,2	80,5	83,1	84,5	0,9	2,8	1,6	1,5	17,9	10,3	12,5
CMR 106 T	0,75	1	IE3	80,7	81,9	81,3	78,4	81,6	83,1	0,90	2,8	1,6	1,5	16,9	9,7	11,8



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