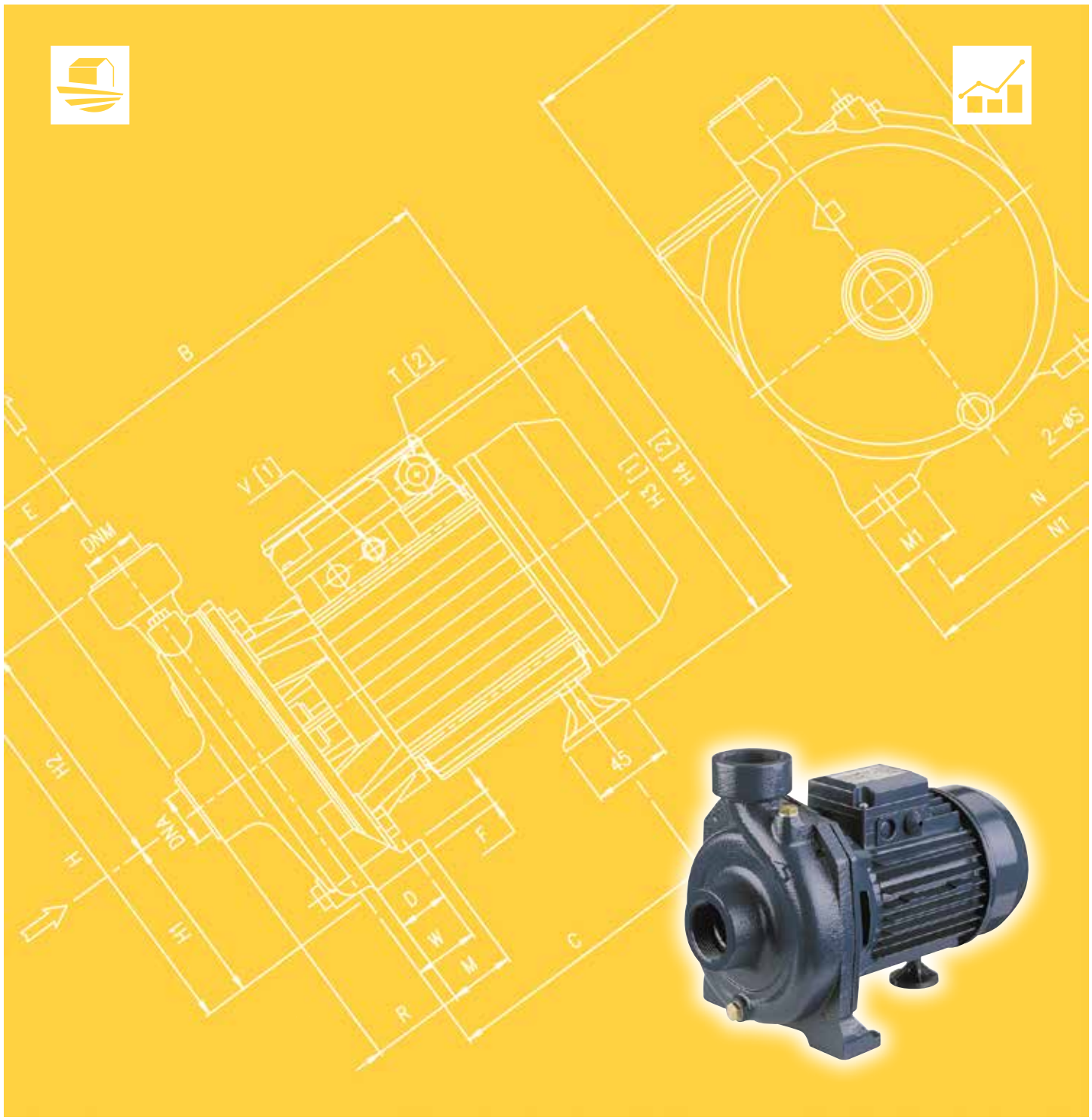




Japanese Technology since 1912

CMR

Data Book 60Hz



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SPECIFICATIONS

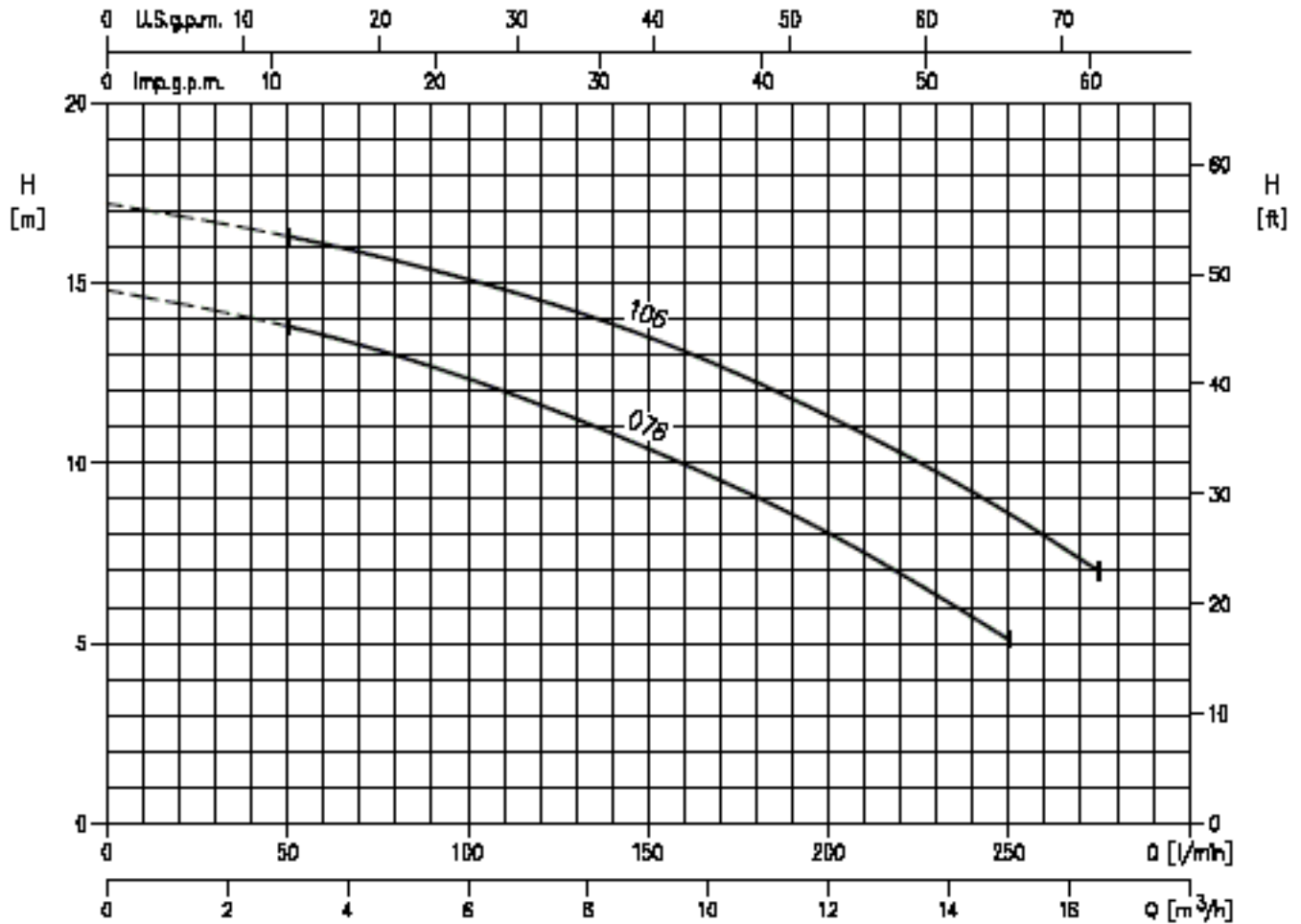
60Hz

Rev. E

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 ¹ / ₂ UNI ISO 228
	Discharge	G 1 ¹ / ₂ 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)	-	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		Power		Q =Capacity						
Single-phase	Three-phase	[kW]	[HP]	l/min	50	100	150	200	250	275
				m³/h	1,2	6	9	12	15	16,5
CMR 076 M	CMR 076 T	0,55	0,75	14.8	13.8	12.3	10.5	8	5.1	-
CMR 106 M	CMR 106 T	0,75	1	17.2	16.3	15.1	13.5	11.3	8.6	7

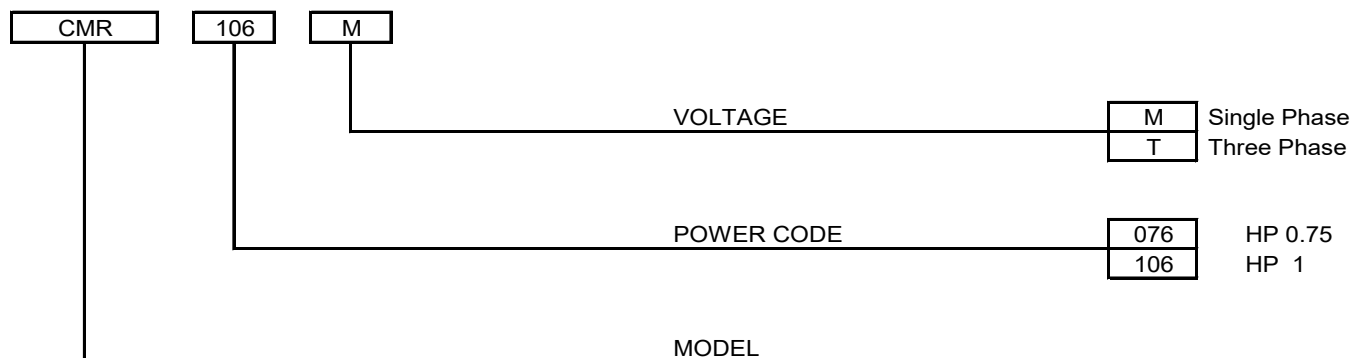
H=Total manometric head in meters

TYPE KEY and CURVE SPECIFICATIONS

60Hz

Rev. E

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)

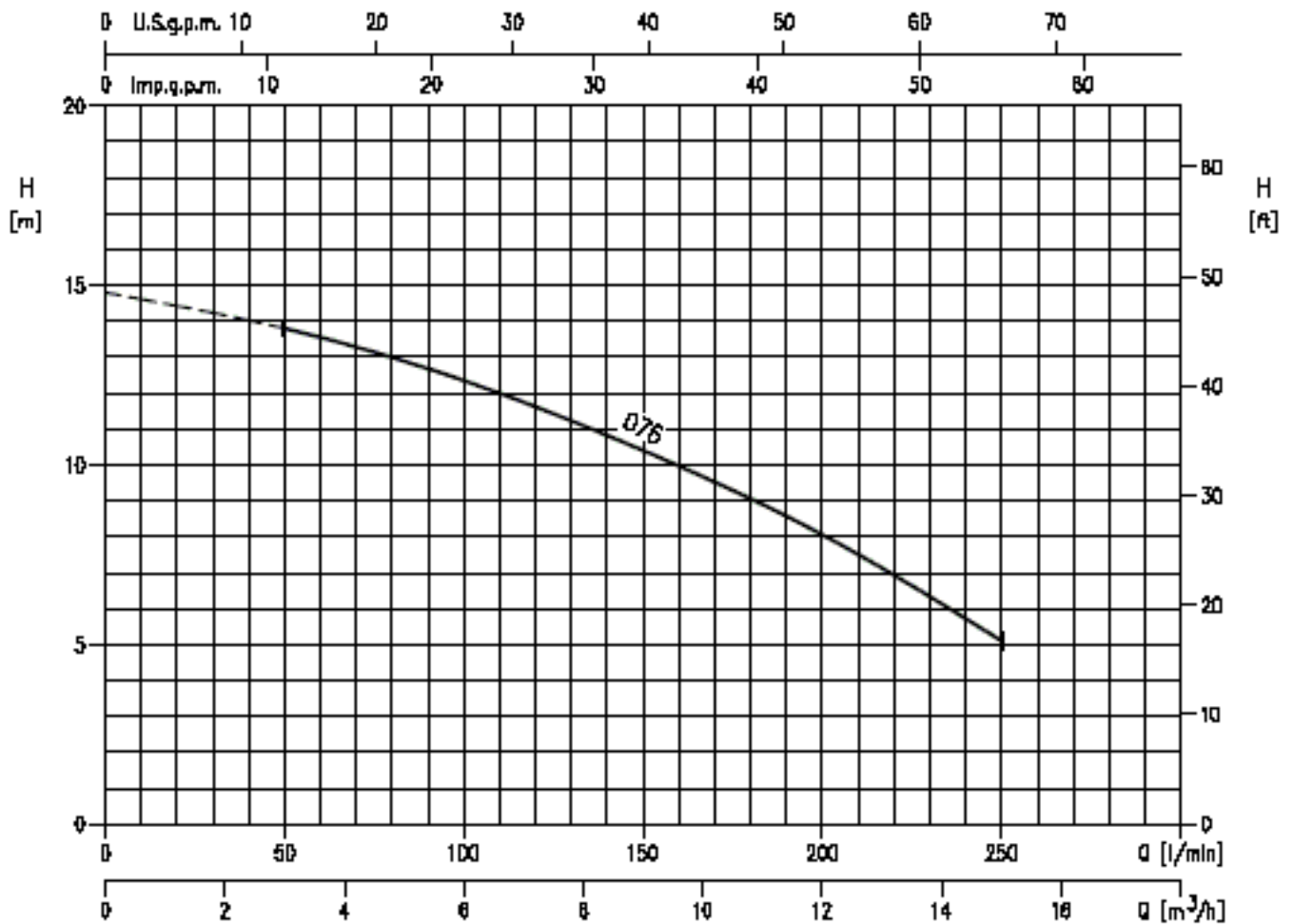
The continuous curves indicate the recommended working range. The dotted curve is only a guide.

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:

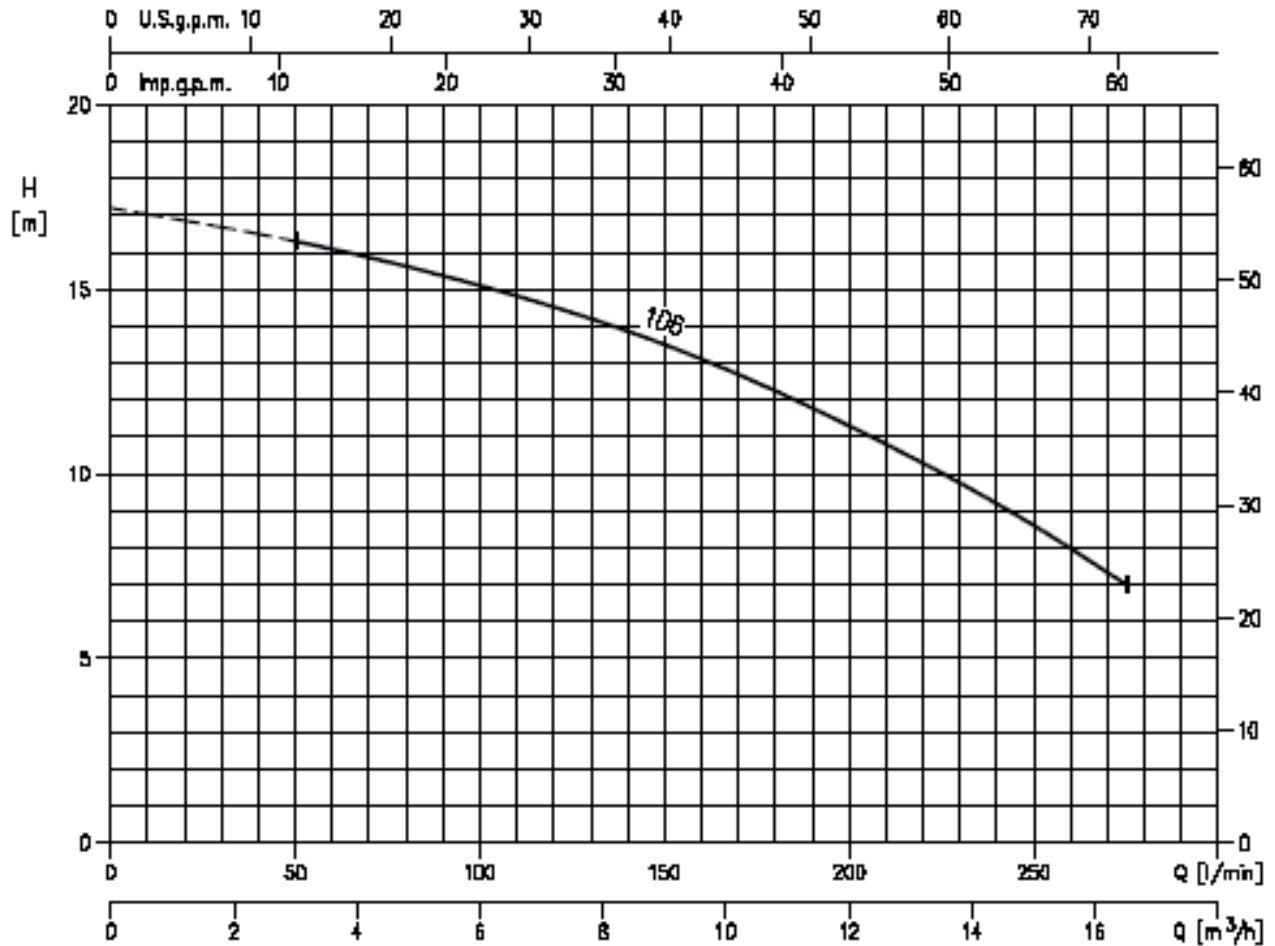
- Q = volume flow rate
- H = total head

CMR 076 (0.55 kW) - Impeller diameter = 99 mm



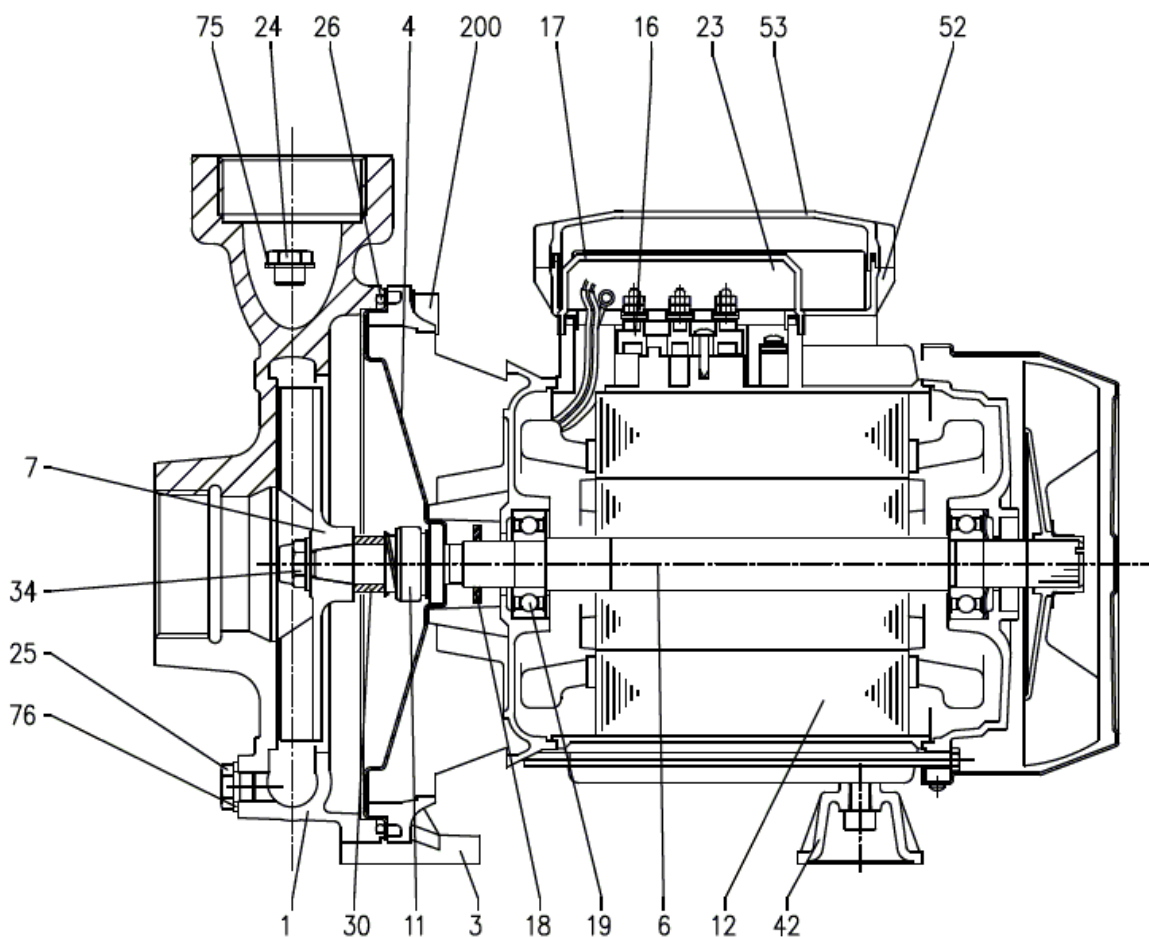
Rotation speed $\approx 3450\text{min}^{-1}$
 Test standard: ISO 9006:2012 - Grade 3B

CMR 106 (0.75 kW) - Impeller diameter = 104 mm



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

SECTIONAL VIEW

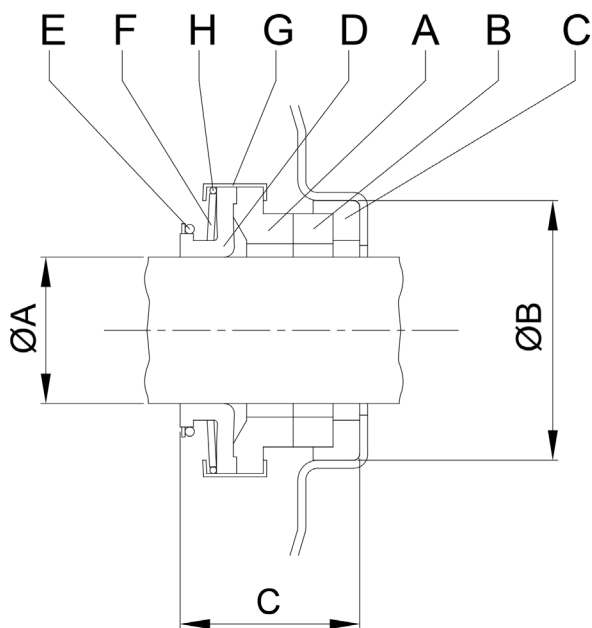


N°	PART NAME	MATERIAL	Q.TY	N°	PART NAME	MATERIAL	Q.TY
1	Casing	Cast iron	1	21	Adjusting ring	Steel C70	1
3	Motor bracket	Aluminium	1	22	Tie rod	Fe 42 Zincate	4
4	Casing cover	AISI 304	1	23	Capacitor [2]	-	1
6	Shaft w ith rotor	AISI 303 (w et w xtension)	1	24	Priming plug	Brass	1
7	Impeller	Brass	1	25	Drain plug	Brass	1
11	Mechanical seal	Carbon/Ceramic/NBR	1	26	O-ring	NBR	1
12	Motor frame w ith 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 w ith 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	Zincate Steel Cl. 8.8 ISO 898-1	4
20	Fan side ball bearing	-	1				

[1] Three phase

[2] Single phase

MECHANICAL SEAL

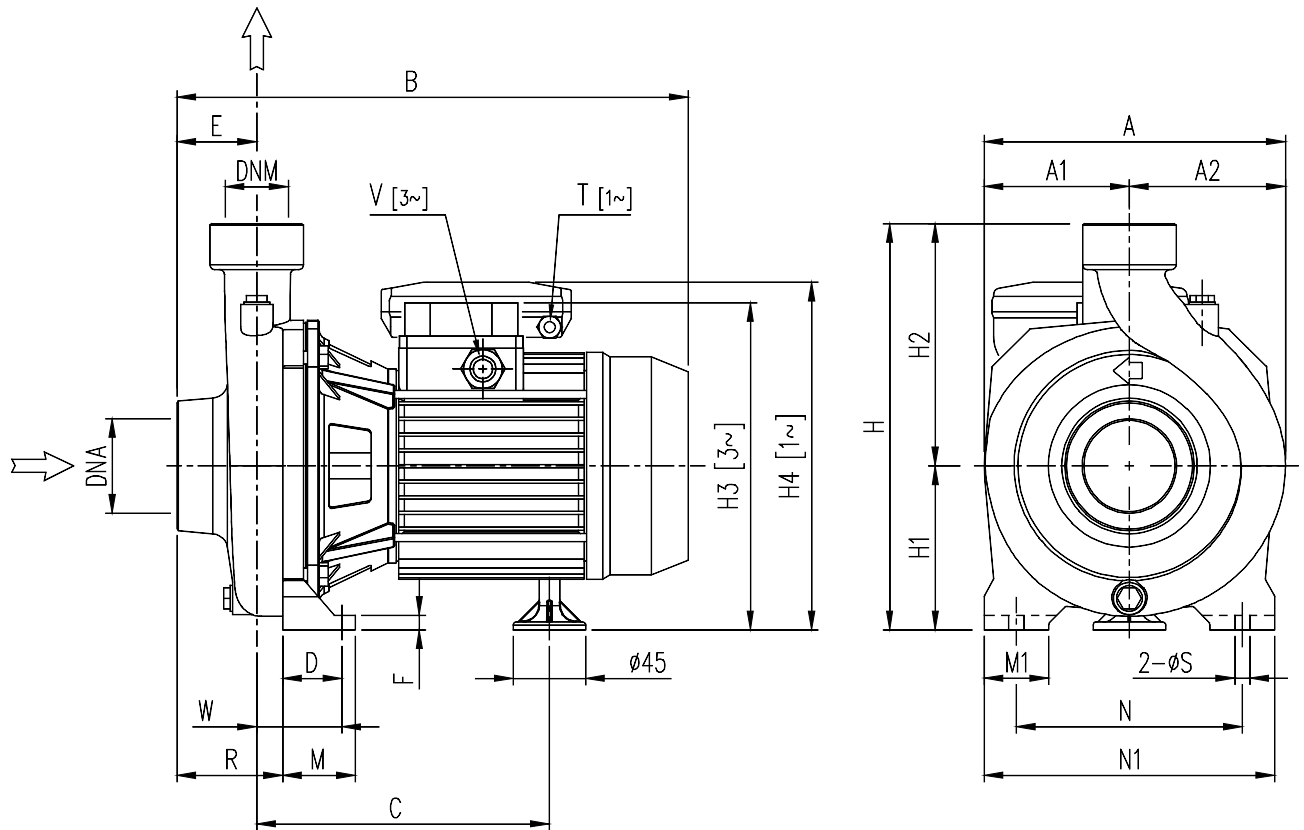


REF	PART NAME	MATERIAL Standard version
A	Rotary seal ring	Carbon Graphite
B	Stationary seal ring	Ceramic
C	Gasket	NBR
D	Bellows	NBR
E	Ring	AISI 304
F	Self driving spring	AISI 304
G	Frame	AISI 304
H	Retainer ring	AISI 304

BEARINGS

Type pumps		Ball Bearing	
Single phase	Three Phase	Pump side	Fan side
CMR 076M	CMR 076T	6202 2DW C3	6202 2DW C3
CMR 106M	CMR 106T	6202-ZZ C3	6202-ZZ C3

PUMP

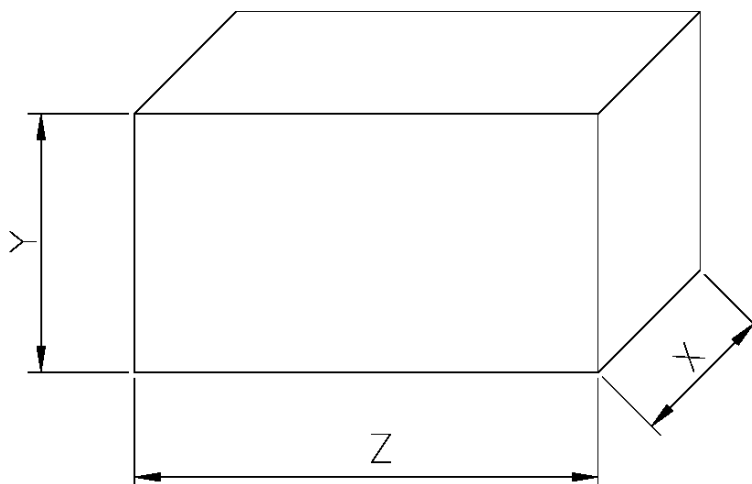


Pump type	Dimensions (mm)																							Weight [kgf]	
	A	A1	A2	B	C	D	E	F	H	H1	H2	H3	H4	M	M1	N	N1	R	T	V	W	S	DNA		DNM
CMR 076M	180	90	90	311	182	37	45	9	229	97	132	-	198	45	40	140	180	60,5	PG11	-	53	9,5	G1½	G1½	10,7
CMR 076T	180	90	90	312	181	37	45	9	229	97	132	199	-	45	40	140	180	60,5	-	PG11	53	9,5	G1½	G1½	10,9
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	11,9
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	11,9

[1~] Single phase

[3~] Three phase

PACKING



Pump type		Packing [mm]			Weight [kgf]	
Single Phase	Three Phase	X	Y	Z	[1~]	[3~]
CMR 076M	CMR 076T	210	290	370	11,5	11,7
CMR 106M	CMR 106T	210	290	370	12,7	12,7

[1~] Single phase

[3~] Three phase

MOTOR DATA

Pump type		Power		Efficiency		Capacitor		Efficiency (% load)			Efficiency (% load)			Input		Full load current				Locked rotor current				
Single Phase	Three Phase	[KW]	[HP]	Single Phase	Three Phase	Single Phase		Three phase (380 V)			Three phase (460 V)			Single Phase	Three Phase	[A]			[A]					
				Phase	Phase	[µF]	[V]	50%	75%	100%	50%	75%	100%	Phase	Phase	220-230 V	220 V	380 V	460 V	220-230 V	220 V	380 V	460 V	
CMR 076 M	CMR 076 T	0,55	0,75	-	IE3	12,5	450	82,3	83,5	83,2	80,5	83,1	84,5	0,84	0,9	3,9	2,8	1,6	1,5					
CMR 106 M	CMR 106 T	0,75	1	-	IE3	20	450	80,7	81,9	81,3	78,4	81,6	83,1	1,07	0,90	5,0	2,8	1,6	1,5	26	16,9	9,7	11,8	