

EBARA

	Page
- SPECIFICATIONS	200
SELECTION CHART	201
TYPE KEY AND CURVE SPECIFICATIONS	202
PERFORMANCE CURVE 056	203
PERFORMANCE CURVE 086	203
PERFORMANCE CURVE 106	203
PERFORMANCE CURVE 156	203
PERFORMANCE CURVE 206	203
- CONSTRUCTIONS	300
SECTIONAL VIEW	300
MECHANICAL SEAL (UP TO 0.75 kW)	301
MECHANICAL SEAL(1.1 kW AND ABOVE)	302
BEARINGS	302
- DIMENSIONS AND WEIGHT	400
PUMP	400
PACKING	401
- TECHNICAL DATA	500
MOTOR DATA	500

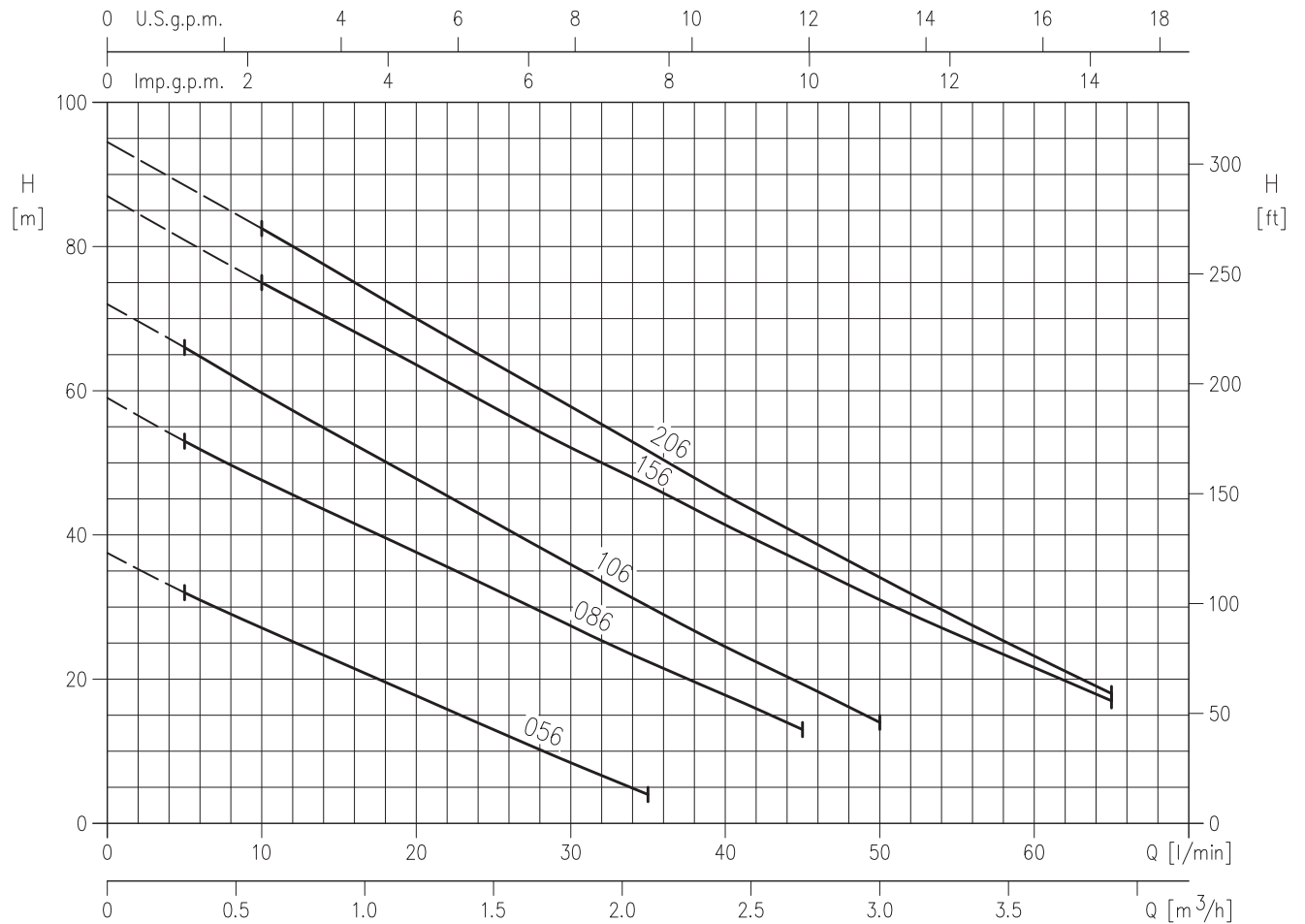
SPECIFICATION

60Hz

Rev. A

PUMP		
Liquid Handled	Type of liquid	Clean water
	Temperature [°C]	min. +5 max. +80
Maximum working pressure	[MPa]	0.6 (PRA 056) 0.75 (PRA 086) 1.2 (PRA 106-156-206)
Construction	Impeller	Peripheral turbine type
	Shaft seal type	Mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction [inch]	G 1 UNI ISO 228
	Discharge [inch]	G 1 UNI ISO 228
Material	Casing	Cast iron
	Impeller	Brass
	Shaft seal	Ceramic/Carbon/NBR
	Shaft	Carbon steel - AISI 303 (wet extension)
	Bracket	Cast iron
Applicable standard of test		ISO 9906 – Annex A

MOTOR		
Type	Electric - TEFC	
	Single Phase	Three Phase
No. of Poles	2	
Rotation speed [min ⁻¹]	≈ 3350	
Insulation Class	Class F	
Protection degree	IP 44	
Power rating	[kW]	0.37 ÷ 1.5
	[HP]	0.5 ÷ 2
Frequency	[Hz]	60
Voltage	[V]	110-115 ±6% 220-230 ±6%
		220/380 -6% +10%
Capacitor	Built in	-
Over load protection	Built in	Provided by the user
Casing material	Aluminium	
Base material	Aluminium	
Dimensions of cable entry	PG 11 - PG 13.5 (see dimensions page 400)	



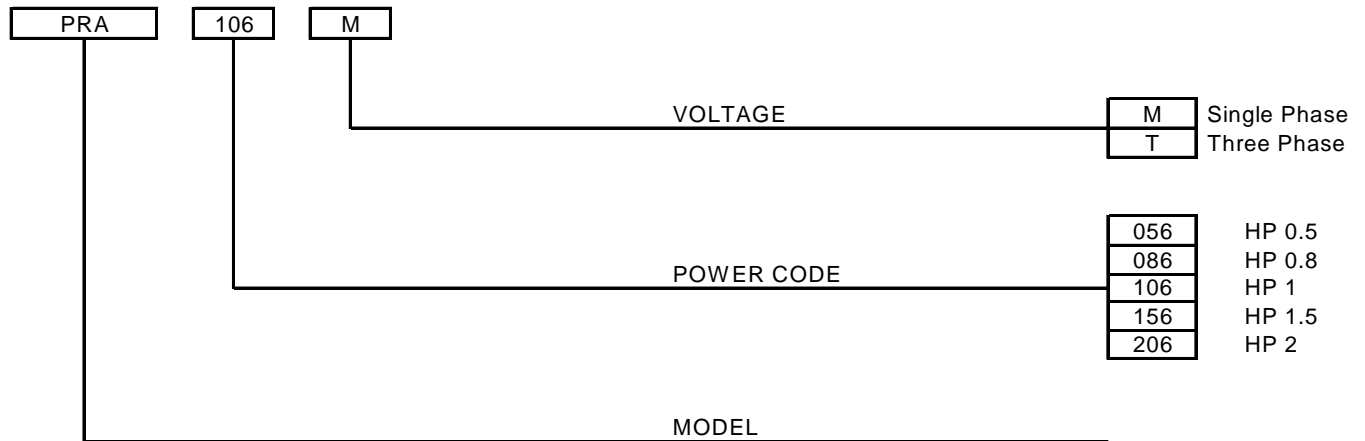
Pump type		Power		Q=Capacity											
				l/min.	0	5	10	20	30	35	40	45	50	60	65
Single Phase	Three Phase	[kW]	[HP]	m³/h	0	0.3	0.6	1.2	1.8	2.1	2.4	2.7	3.0	3.6	3.9
H=Total manometric head in meters															
PRA 056 M	PRA 056 T	0.37	0.5	37.5	32	27	17.7	8.4	4	-	-	-	-	-	-
PRA 086 M	PRA 086 T	0.6	0.8	59	53	48	37.6	27.5	22.2	17.9	13	-	-	-	-
PRA 106 M	PRA 106 T	0.75	1	72	66	60	48	35.9	30.1	24.5	19.4	14	-	-	-
PRA 156 M	PRA 156 T	1.1	1.5	87	-	75	63.5	52	47	41.5	36.2	31	21.8	17	-
-	PRA 206 T	1.5	2.0	94.5	-	82.5	70	57.8	51.6	45.5	39.8	34.1	23.2	18	-

TYPE KEY AND CURVE SPECIFICATIONS

60Hz

Rev. A

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 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)

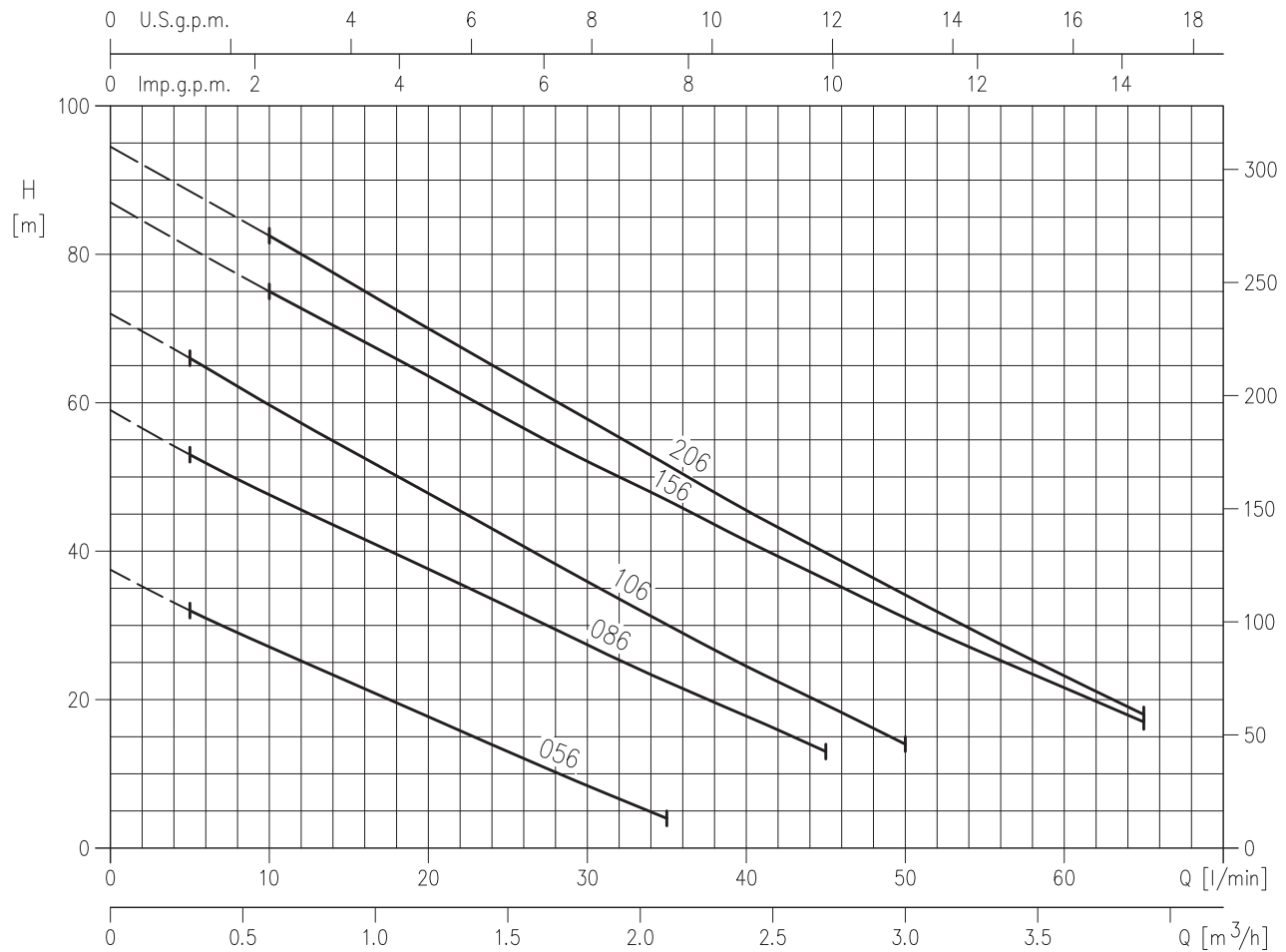
The continuous curves indicate the recommended working range. The dotted curve is only a guide.

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:

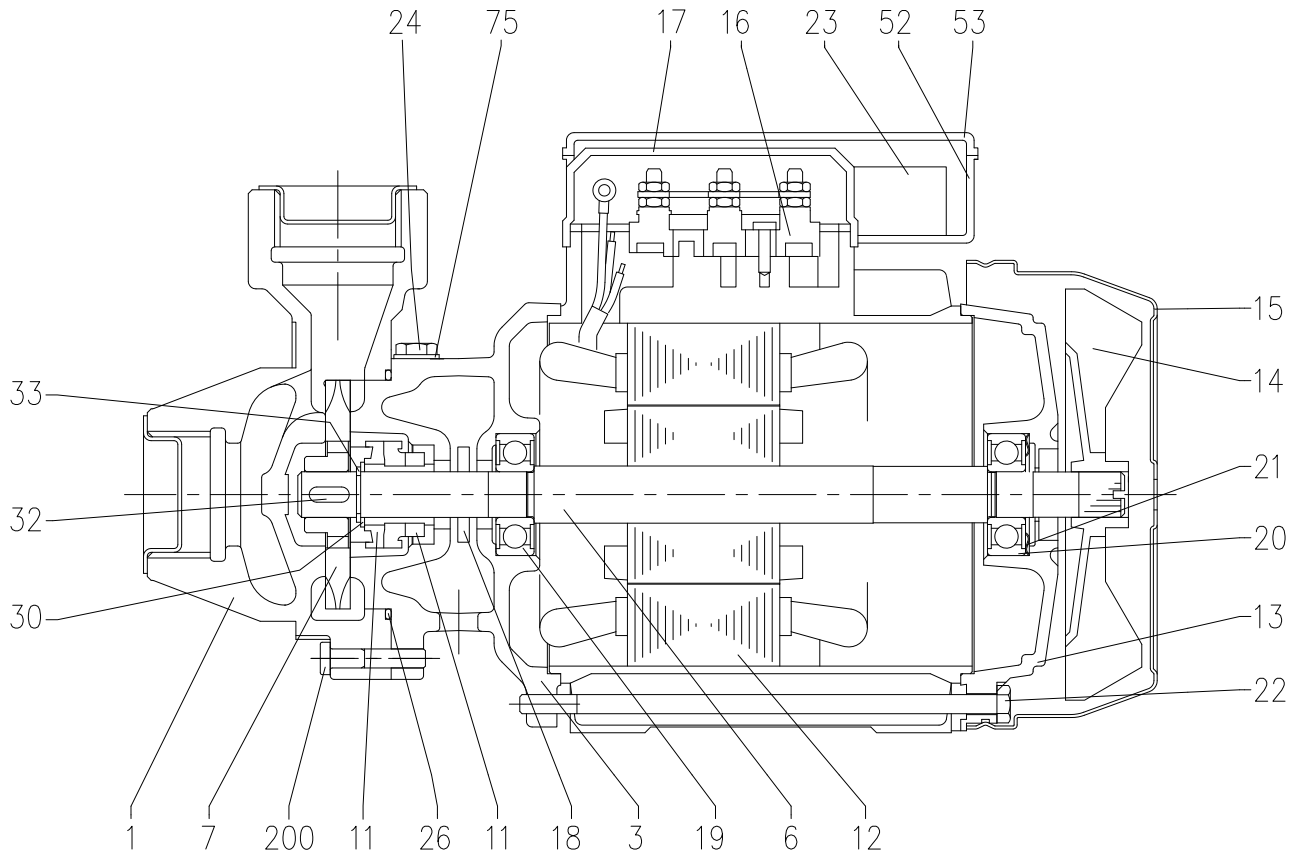
- Q = volume flow rate
- H = total head

PRA 056 (0.37 kW) - Impeller dimension = 57 mm
PRA 086 (0.6 kW) - Impeller dimension = 67 mm
PRA 106 (0.75 kW) - Impeller dimension = 68 mm
PRA 156 (1.1 kW) - Impeller dimension = 74 mm
PRA 206 (1.5 kW) - Impeller dimension = 74.5 mm



Rotation speed $\approx 3350 \text{ min}^{-1}$
 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	20	Fan side ball bearing	-	1
3	Motor bracket	Cast Iron	1	21	Adjusting ring	Steel C70	1
6	Shaft with rotor	[1]	1	22	Tie rod	Fe 42 Zincate	4
7	Impeller	Brass	1	23	Capacitor [4]	-	1
11	Mechanical seal [2]	Carbon/Ceramic/NBR	1	24	Priming plug	Brass	1
12	Motor frame with stator	-	1	26	O-Ring	NBR	1
13	Motor cover	Aluminium	1	30	Washer	AISI 304	1
14	Fan	PP	1	32	Key	AISI 316	1
15	Fan cover	Fe P04 Zincate	1	33	Seeger ring	AISI 304	1
16	Terminal box	-	1	52	Capacitor box [4]	ABS	1
17	Terminal box cover [3]	Aluminium	1	53	Capacitor box cover [4] [5]	ABS [5]	1
18	Splash ring	NBR	1	75	Washer	Aluminium	1
19	Pump side ball bearing	-	1	200	Screw	Zn Steel Cl. 8.8 ISO 898-1	3

[1] Material: 1.0736 for version PRA 056
AISI 303 (wet extension) for the other version

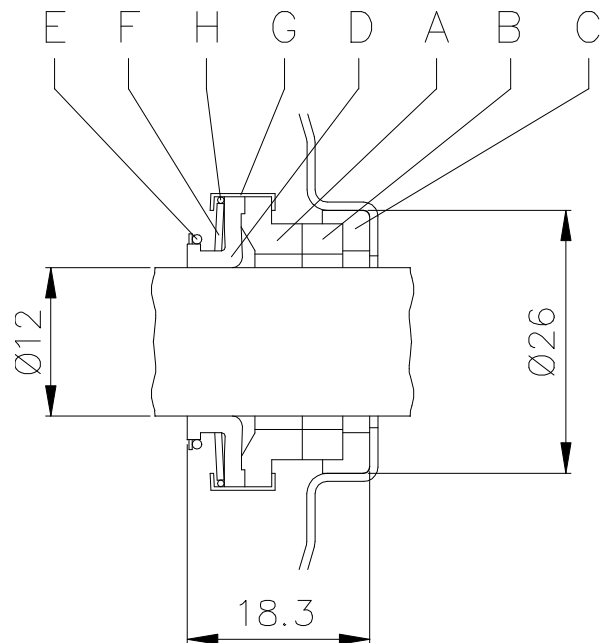
[2] See constructions mechanical seal page 301-302

[3] Only for three phase

[4] Only for single phase

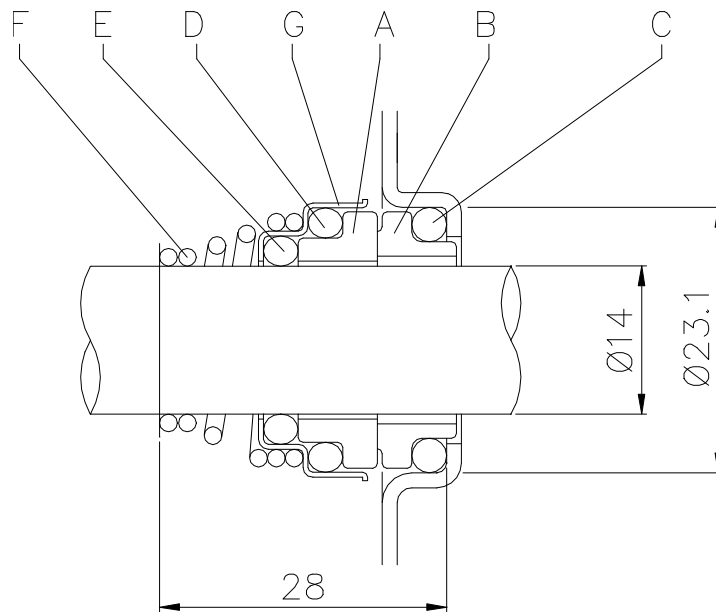
[5] With gasket in NBR for version single phase PRA 056, PRA 086, PRA 106

**MECHANICAL SEAL
(UP TO 0.75 kW)**



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	Reatainer ring	AISI 304

**MECHANICAL SEAL
(1.1 kW AND ABOVE)**

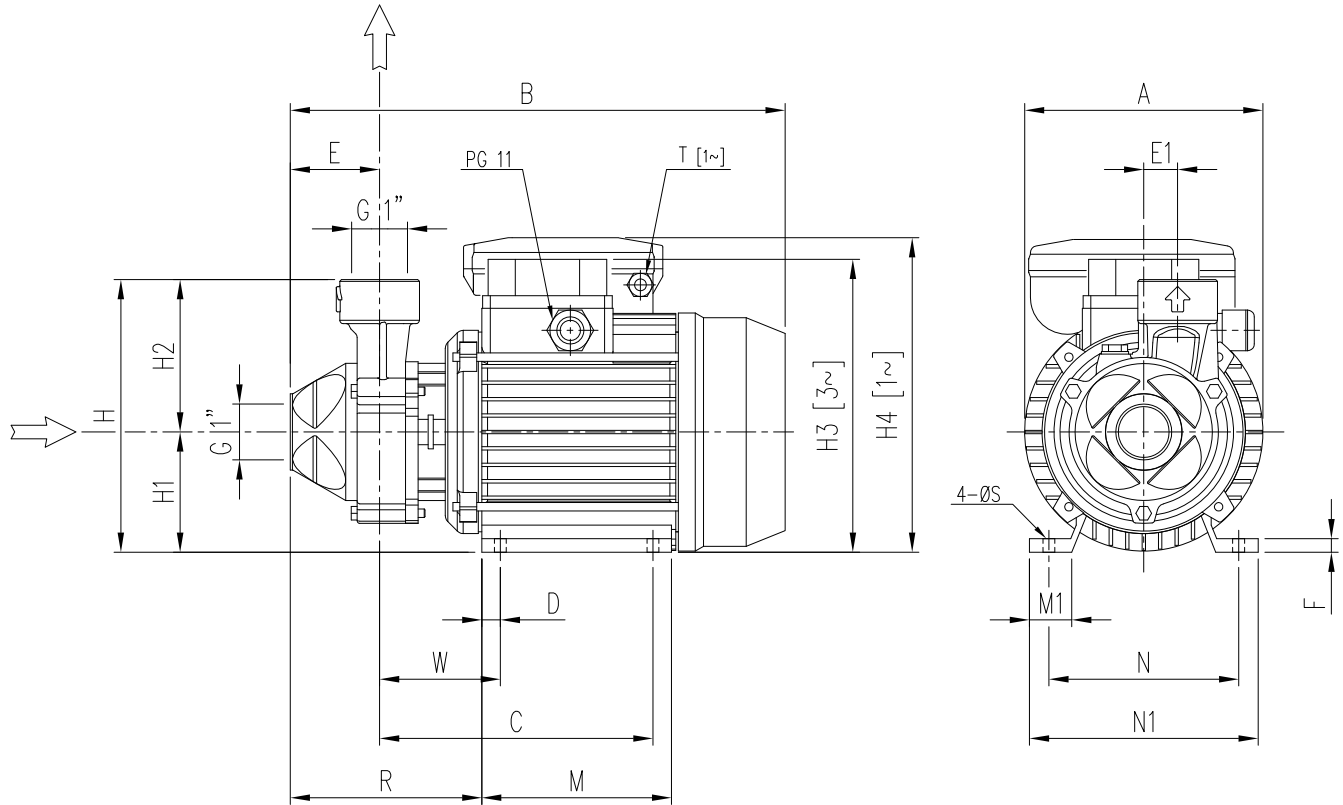


REF	PART NAME	MATERIAL product standard
A	Rotary seal ring	ceramic
B	Stationary seal ring	carbon graphite
C	O Ring	NBR
D	O Ring	NBR
E	O Ring	NBR
F	Self driving spring	AISI 316
G	Frame	AISI 304

BEARINGS

Pump type		Ball Bearing	
Single phase	Three phase	Pump side	Fan side
PRA 056 M	PRA 056 T	6201 2RSH	6201 2RSH
PRA 086 M	PRA 086 T	6202 2RSH	6202 2RSH
PRA 106 M	PRA 106 T	6202 2RSH	6202 2RSH
PRA 156 M	PRA 156 T	6204 2RSH	6203 2RSH
-	PRA 206 T	6204 2RSH	6203 2RSH

PUMP

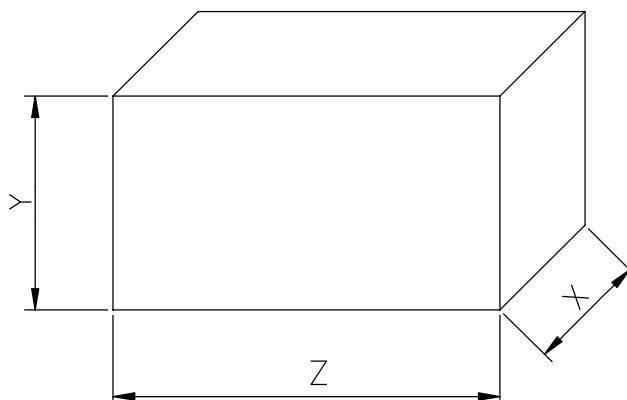


Pump type	Dimensions mm																			Weight [kgf]	
	A	B	C	D	E	E1	F	H	H1	H2	H3	H4	M	M1	N	N1	R	T	W		S
PRA 056 M	125	263.5	151	10	50	20	7	143	63	80	-	160	100	22	100	120	111	PG11	71	7	5.6
PRA 056 T	125	265.5	151	10	50	20	7	143	63	80	156	-	100	22	100	120	111	-	71	7	5.6
PRA 086 M	141	290.5	161.3	11	52.7	20	9	161	71	90	-	178	112	25	112	135	113	PG11	71.3	7	9.2
PRA 086 T	141	292	161.3	11	52.7	20	8	161	71	90	172	-	112	25	112	135	113	-	71.3	7	9.2
PRA 106 M	141	290.5	161.3	11	52.7	20	9	161	71	90	-	178	112	25	112	135	113	PG11	71.3	7	9.7
PRA 106 T	141	292	161.3	11	52.7	20	8	161	71	90	172	-	112	25	112	135	113	-	71.3	7	9.7
PRA 156 M	160	330.5	191	12	56	20	10	175	80	95	-	212	124	26	125	152	135	PG13,5	91	9	14.5
PRA 156 T	160	335	191	12	56	20	10	175	80	95	199	-	124	26	125	152	135	-	91	9	14.5
PRA 206 T	160	348	191	12	56	20	10	175	80	95	199	-	124	26	125	152	135	-	91	9	15.8

[1~] Single Phase

[3~] Three Phase

PACKING



Pump type		Packing [mm]			Weight [kgf]	
Single Phase	Threee Phase	X	Y	Z	[1~]	[3~]
PRA 056 M	PRA 056 T	155	195	285	6.1	6.1
PRA 086 M	PRA 086 T	180	200	305	10	10
PRA 106 M	PRA 106 T	180	200	305	10.5	10.5
PRA 156 M	PRA 156 T	195	230	372	15.3	15.3
-	PRA 206 T	160	205	355	-	16.6

[1~] Single Phase

[3~] Three Phase

MOTOR DATA

Pump type		Power		Capacitor				Efficiency (% load)			Efficiency (% load)			Input [kW]		Full load current [A]				Locked rotor current [A]			
Single Phase	Three Phase	[kW]	[HP]	110-115 V		220-230 V		Three phase (380 V)			Three phase (460 V)			Single Phase	Three Phase	Single Phase		Three Phase		Single Phase		Three Phase	
				[μF]	[V]	[μF]	[V]	50%	75%	100%	50%	75%	100%			110-115 V	220-230 V	220 V	380 V	110-115 V	220-230 V	220 V	380 V
PRA 056 M	PRA 056 T	0.37	0.5	31.5	250	8	450	-	-	-	-	-	-	0.58	0.56	5.5	2.8	1.9	1.1	15.5	7.55	5.5	3.2
PRA 086 M	PRA 086 T	0.6	0.8	60	250	14	450	-	-	-	-	-	-	1.37	1.33	12.5	6.3	4.0	2.3	48.8	23.2	16.4	9.5
PRA 106 M	PRA 106 T	0.75	1.0	60	250	20	450	77.2	79.5	79.3	76.6	80.9	82.3	1.54	1.00	15.3	7.1	2.9	1.7	52.0	26.0	20.6	11.9
PRA 156 M	PRA 156 T	1.1	1.5	-	-	35	450	78.3	80.4	81.0	76.5	81.3	83.4	2.20	2.00	-	10.4	5.7	3.3	-	69.0	38.8	22.4
-	PRA 206 T	1.5	2.0	-	-	-	-	82.4	83.0	82.2	79.5	82.9	83.8	-	2.90	-	-	8.1	4.7	-	-	54.4	31.4