

**EBARA**

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## CENTRIFUGAL PUMPS

PRA

## SPECIFICATIONS

50Hz

PUMP		
Liquid Handled	Type of liquid	Clean water
	Max temperature [°C]	80
Maximum working pressure	[MPa]	0.6 (PRA 0.50) 0.75 (PRA 0.80) 1.2 (PRA 1.00-1.50-2.00)
Construction	Impeller	Peripheral turbine type
	Shaft seal type	Mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction [inch]	G 1
	Discharge [inch]	G 1
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

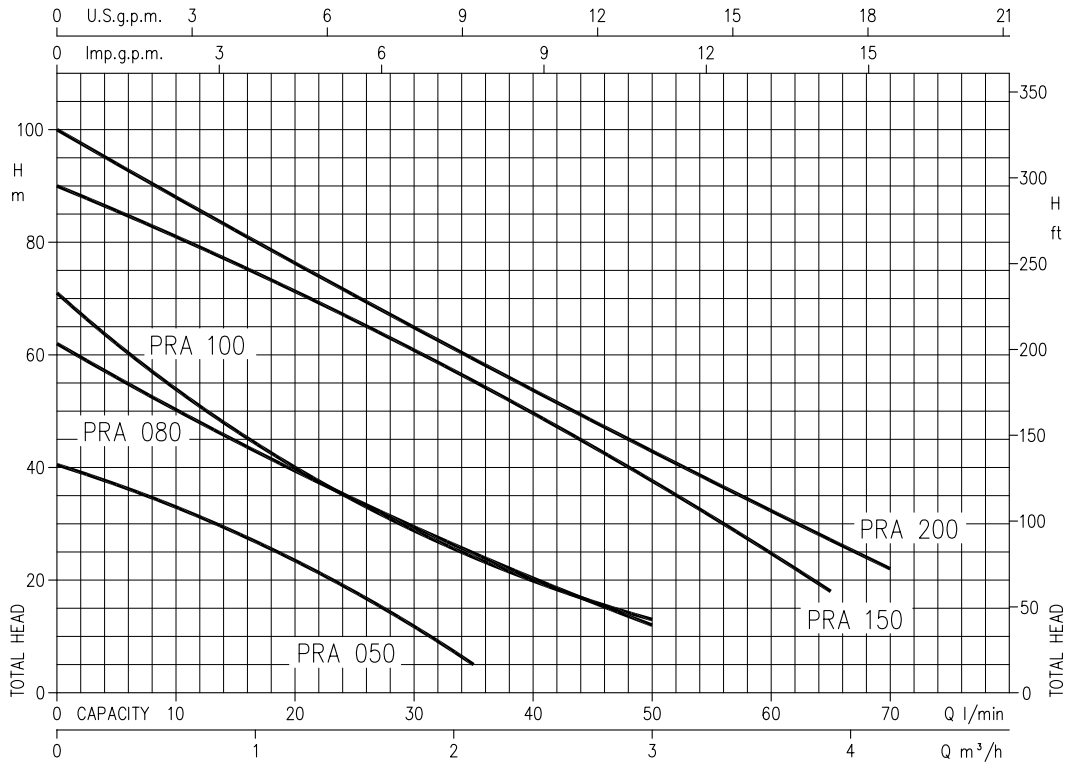
MOTOR		
Type	Electric - TEFC	
	Single Phase	Three Phase
No. of Poles	2	
Synchronous speed [min <sup>-1</sup> ]	3000	
Insulation Class	Class F	
Protection degree	IP 44	
kW/HP Rating	[kW]	0.37 ÷ 1.5
	[HP]	0.5 ÷ 2
Frequency [Hz]	50	
Voltage [V]	230 ±10%	230/400 ±10%
Capacitor	Built in	-
Over load protection	Built in	Provided by the user
Casing material	Aluminium	
Base material	Aluminium	
Dimensions of cable entry	PG 11 - PG 13.5 (see dimensions page 400)	

# CENTRIFUGAL PUMPS

# PRA

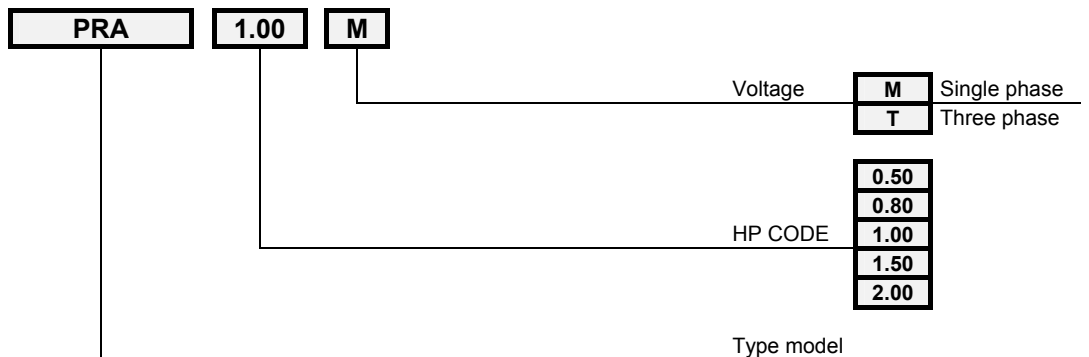
## SELECTION CHART

50Hz



Type pumps		kW	HP	Q=Capacity									
Single phase 230 V 50 Hz	Three phase 230/400 V 50 Hz			l/min	5	10	15	20	25	30	35	50	65
		m³/h											
		H=Total manometric head in meters											
PRA 0.50 M	PRA 0.50 T	0.37	0.5	37	33.3	28.7	23.7	5	-	-	-	-	-
PRA 0.80 M	PRA 0.80 T	0.6	0.8	56	50.7	45.1	39.8	25	12	-	-	-	-
PRA 1.00 M	PRA 1.00 T	0.75	1	62	54.4	47	40.4	24.3	13	-	-	-	-
PRA 1.50 M	PRA 1.50 T	1.1	1.5	-	81	76.9	71.9	55.8	37.9	18	-	-	-
PRA 2.00 M	PRA 2.00 T	1.5	2	-	88	82.9	77	59.8	43.3	27.4	22	-	-

**TYPE KEY:**



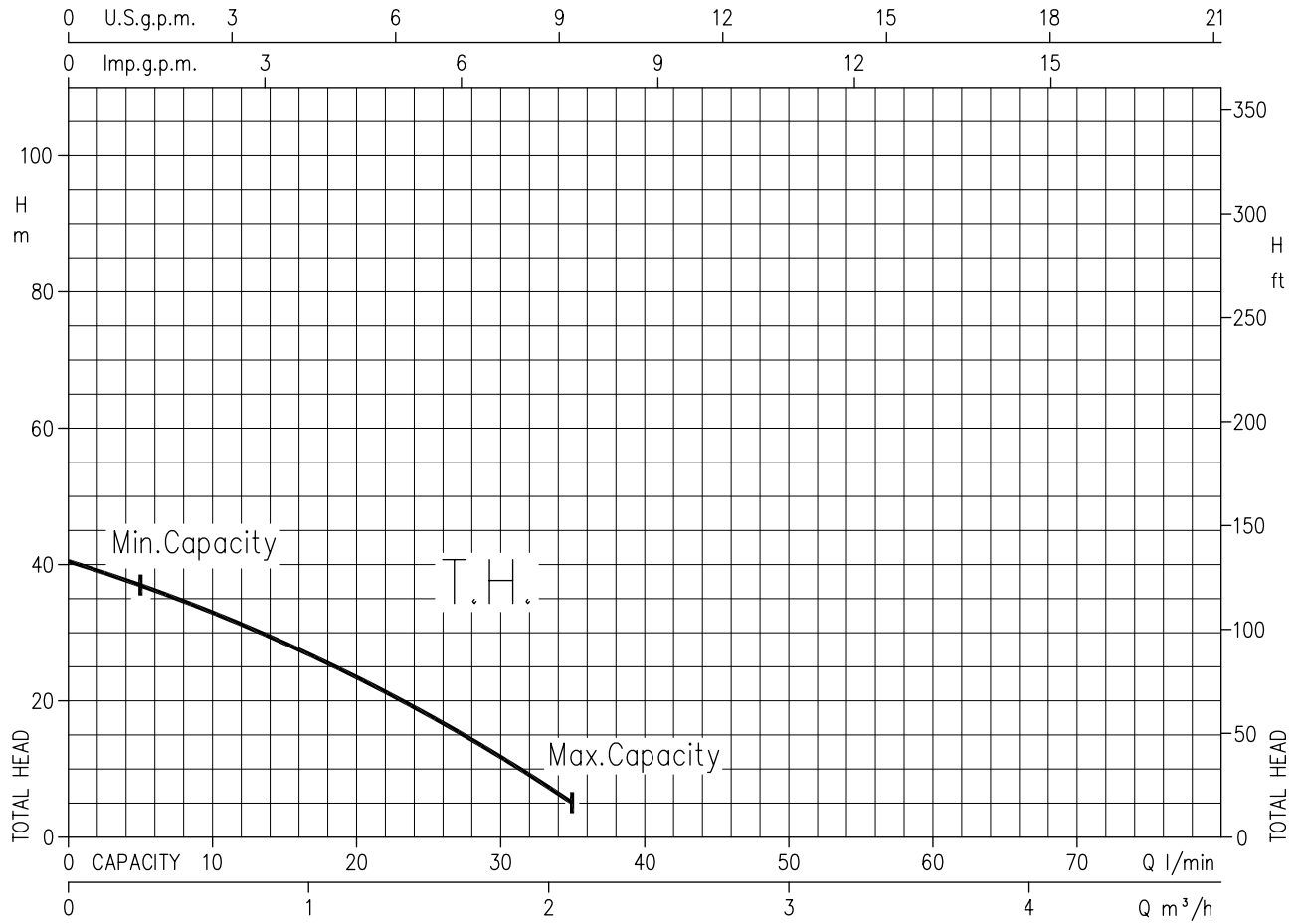
**CENTRIFUGAL PUMPS**

**PRA**

**PERFORMANCE CURVE**

**50Hz**

**PRA 0.50 (0.37 kW)  
SYNCHRONOUS SPEED: 3000 min<sup>-1</sup>**



Temperature of water: 20°C  
 Impeller diameter = 60 mm  
 Applicable standard of test: ISO 9906 – Annex A

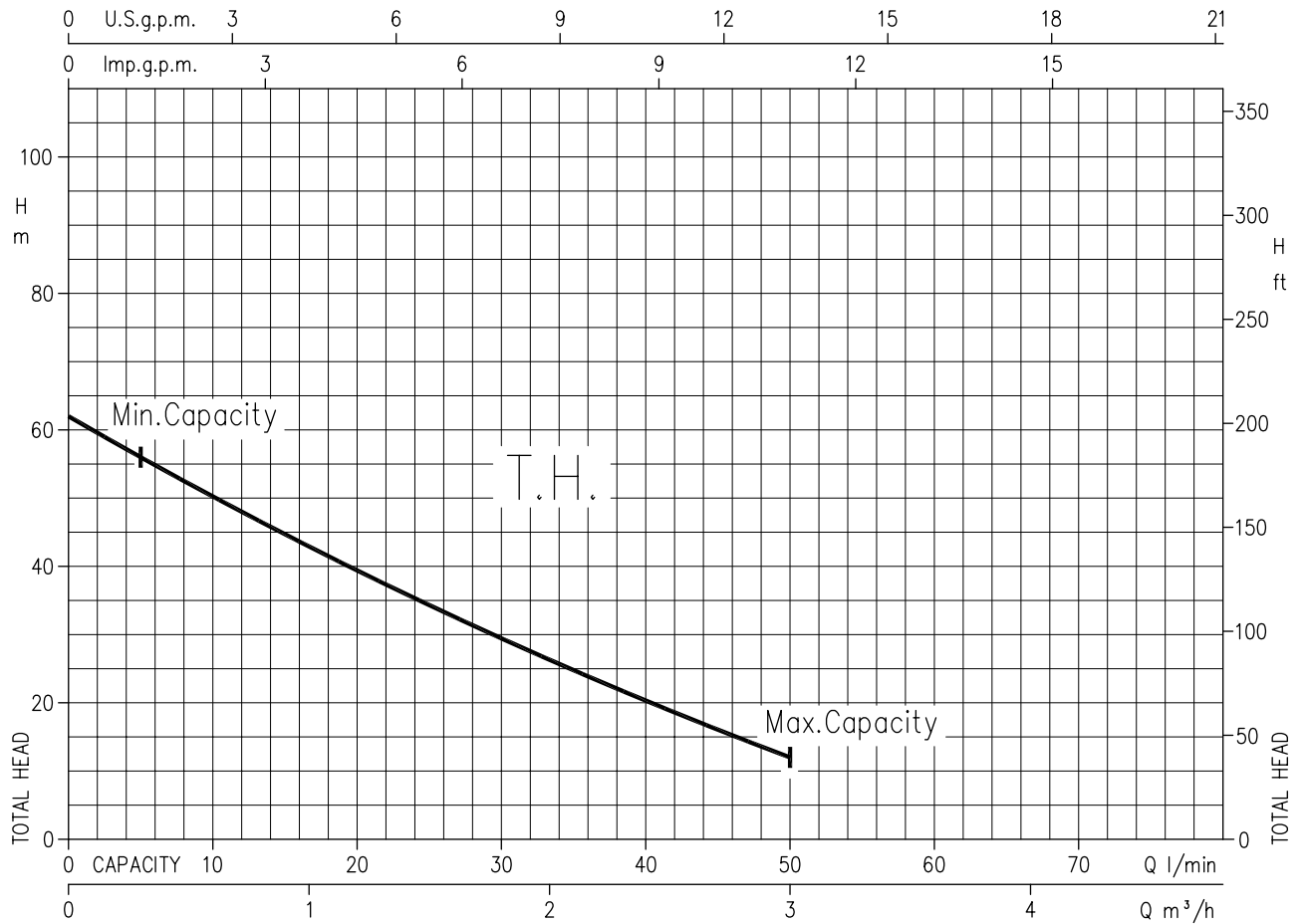
**CENTRIFUGAL PUMPS**

**PRA**

**PERFORMANCE CURVE**

**50Hz**

**PRA 0.80 (0.6 kW)  
SYNCHRONOUS SPEED: 3000 min<sup>-1</sup>**



Temperature of water: 20°C  
 Impeller diameter = 70 mm  
 Applicable standard of test: ISO 9906 – Annex A

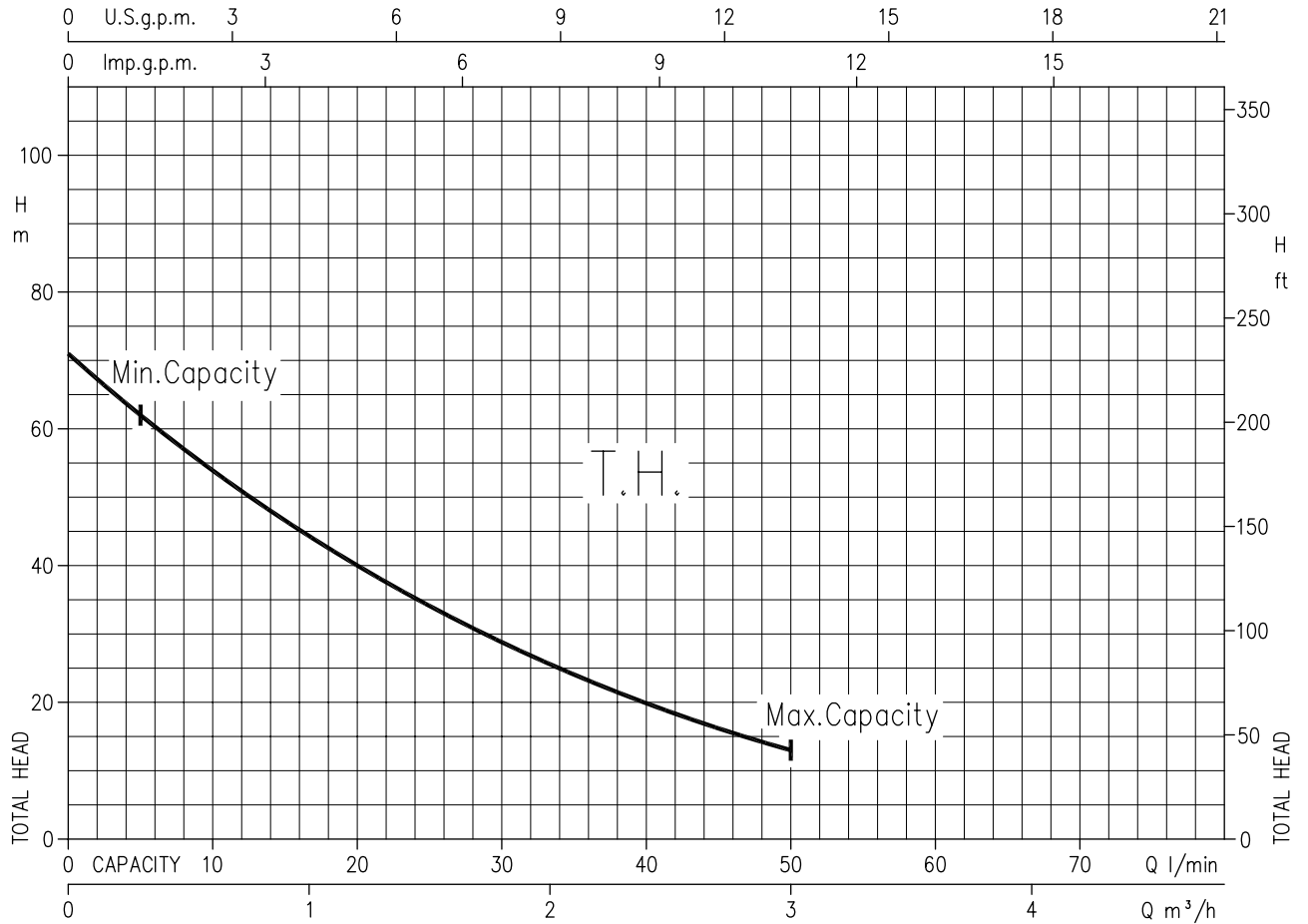
**CENTRIFUGAL PUMPS**

**PRA**

**PERFORMANCE CURVE**

**50Hz**

**PRA 1.00 (0.75 kW)  
SYNCHRONOUS SPEED: 3000 min<sup>-1</sup>**



Temperature of water: 20°C  
 Impeller diameter = 70.8 mm  
 Applicable standard of test: ISO 9906 – Annex A

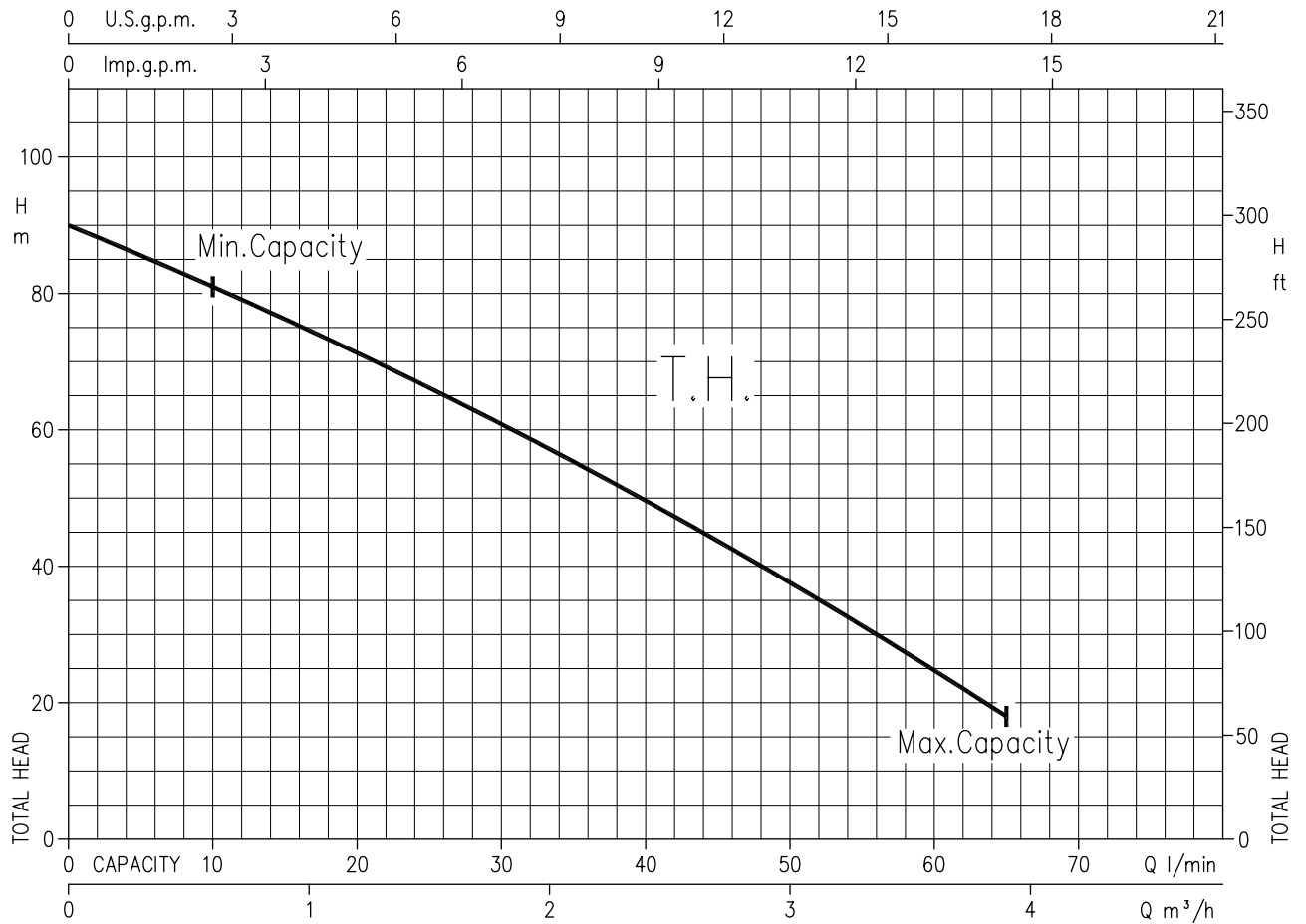
**CENTRIFUGAL PUMPS**

**PRA**

**PERFORMANCE CURVE**

**50Hz**

**PRA 1.50 (1.1 kW)  
SYNCHRONOUS SPEED: 3000 min<sup>-1</sup>**



Temperature of water: 20°C  
 Impeller diameter = 77 mm  
 Applicable standard of test: ISO 9906 – Annex A



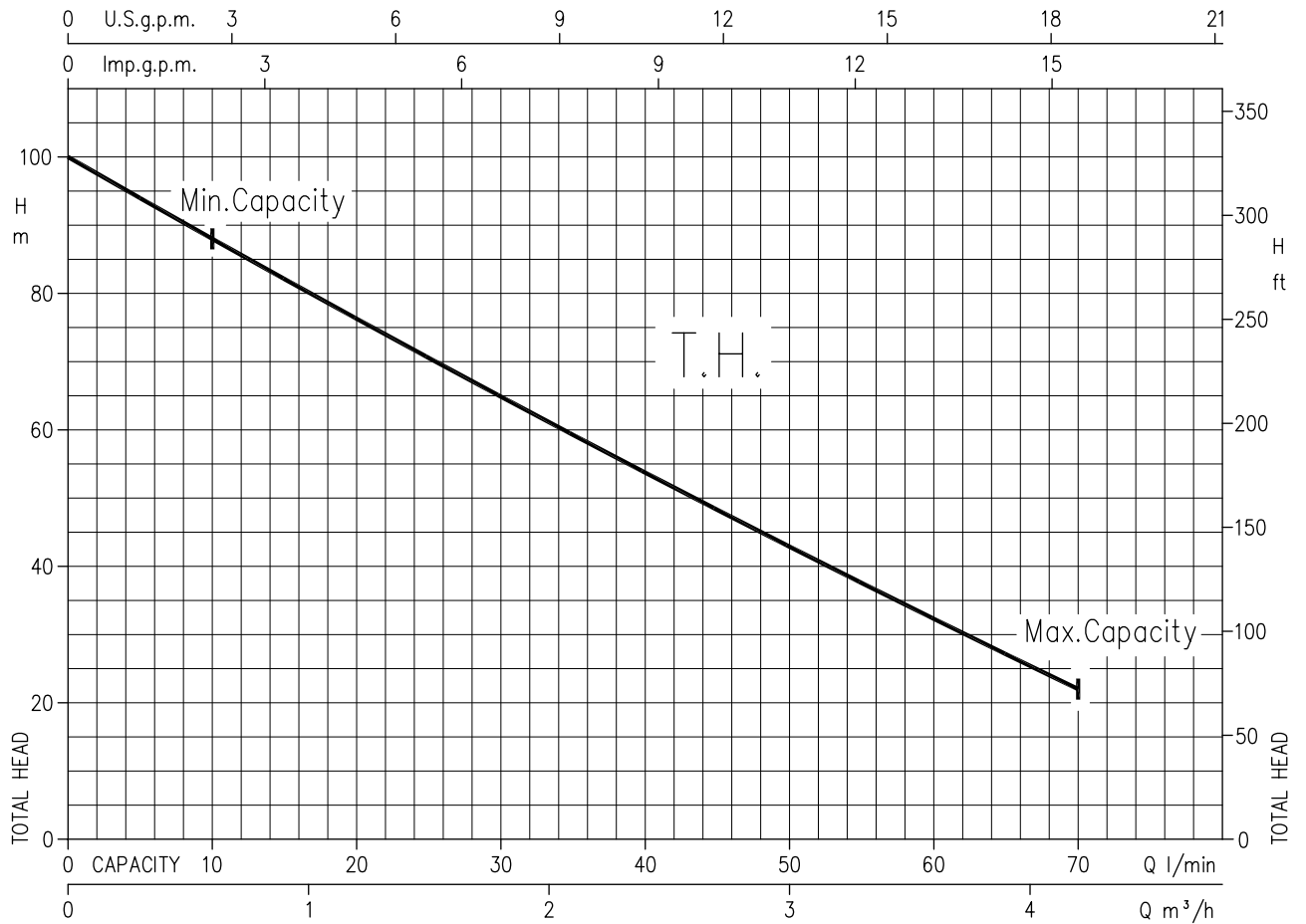
**CENTRIFUGAL PUMPS**

**PRA**

**PERFORMANCE CURVE**

**50Hz**

**PRA 2.00 (1.5 kW)  
SYNCHRONOUS SPEED: 3000 min<sup>-1</sup>**



Temperature of water: 20°C  
 Impeller diameter = 78.2 mm  
 Applicable standard of test: ISO 9906 – Annex A

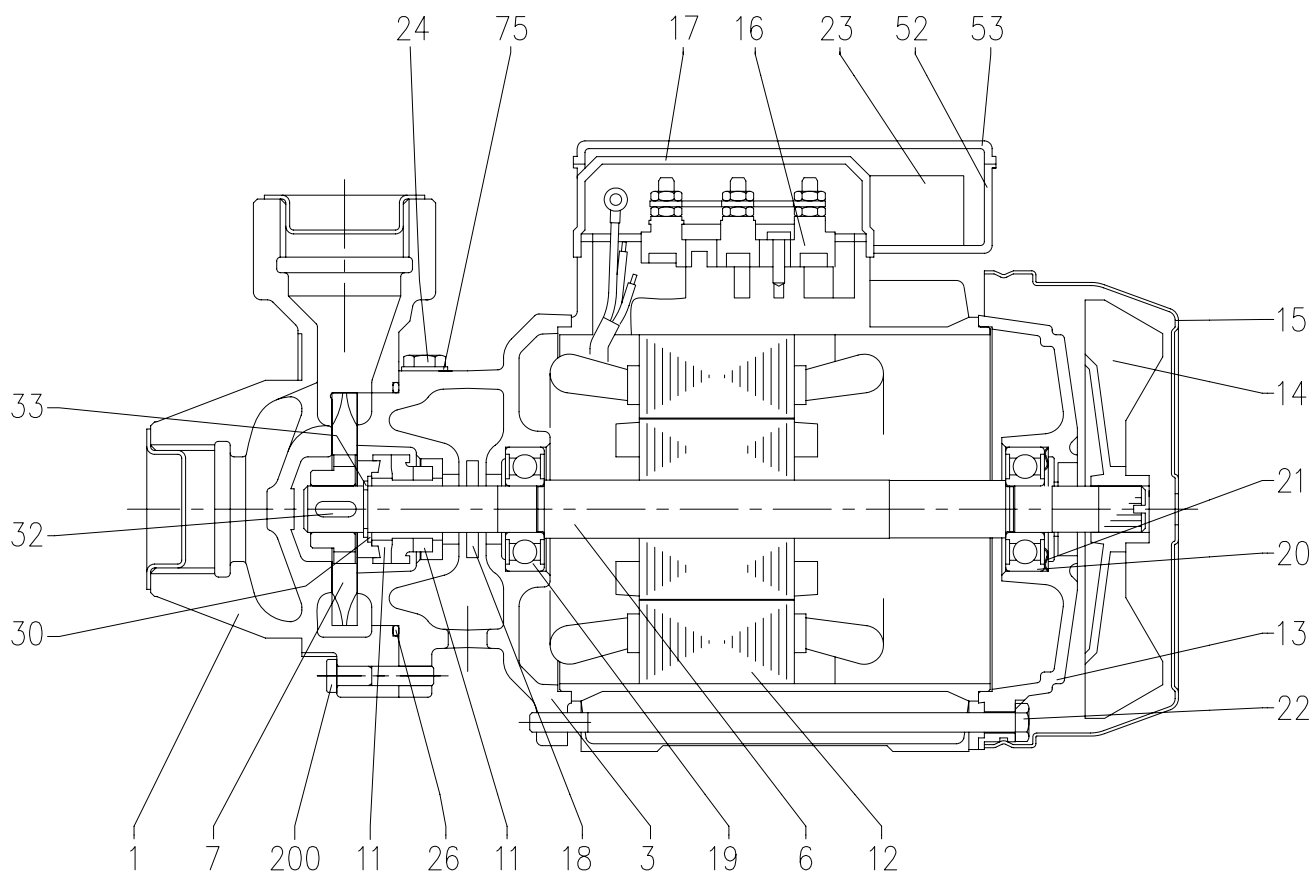
## CENTRIFUGAL PUMPS

PRA

## CONSTRUCTIONS

50Hz

## SECTIONAL VIEW



N°	PART NAME	MATERIAL	NO.FOR 1 UNIT	N°	PART NAME	MATERIAL	NO.FOR 1 UNIT
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 Zinked	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	Polypropilene	1	32	Key	AISI 304	1
15	Fan cover	Fe P04 Zinkend	1	33	Seeger ring	AISI 304	1
16	Terminal box	-	1	52	Capacitor box [4]	Polypropilene	1
17	Terminal box cover [3]	Aluminium	1	53	Capacitor box cover [4]	Polypropilene	1
18	Splash ring	NBR	1	75	Washer	Aluminium	1
19	Pump side ball bearing	-	1	200	Screw	Stainless steel A2 UNI 7323	3

[1] Material: C10 for version PRA 0.50  
 AISI 420 for PRA 0.80 and PRA 1.00  
 AISI 303 (wet extension) for the other version

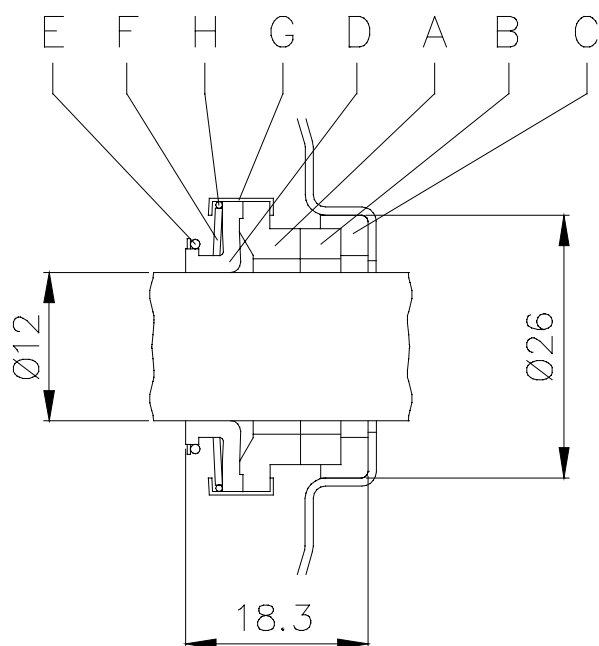
[2] See constructions mechanical seal page 301-302

[3] Only for three phase

[4] Only for single phase

300

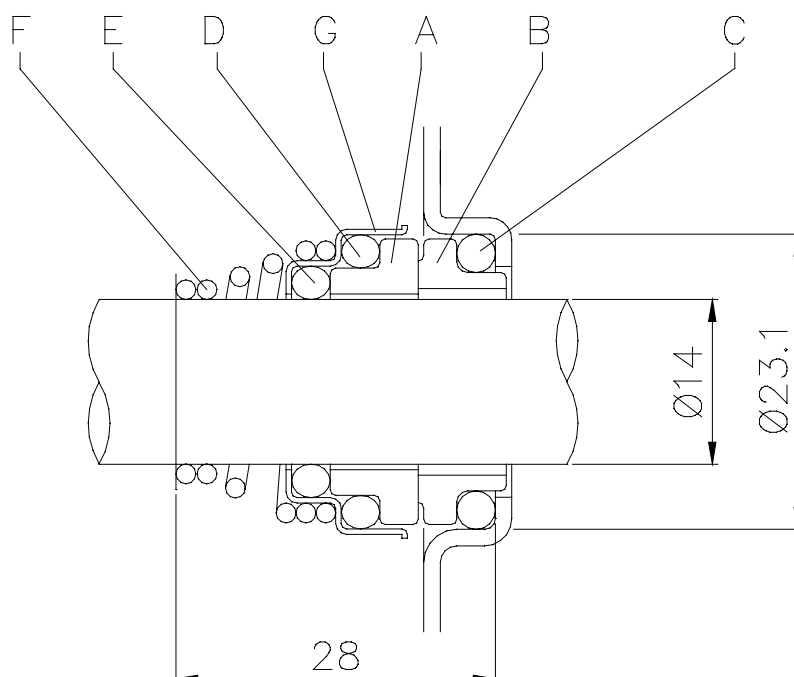
## MECHANICAL SEAL



REF	PART NAME	MATERIAL product standard
		PRA
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

Version : PRA 0.50 - PRA 0.80 - PRA 1.00

## MECHANICAL SEAL



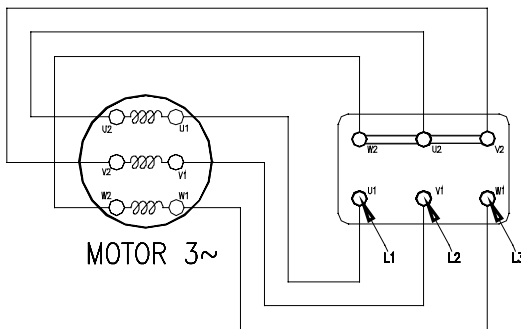
REF	PART NAME	MATERIAL product standard
		PRA
A	Rotary seal ring	ceramic
B	Stationary seal ring	carbon graphite
C	O Ring	NBR
D	O Ring	NBR
E	O Ring	NBR
F	Self driving spring	AISI 316
G	Frame	AISI 304

Version : PRA 1.50 - PRA 2.00

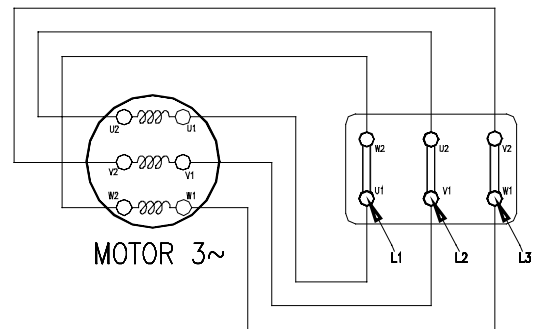
DIAGRAM AND ELECTRIC CONNECTIONS

THREE PHASE MOTOR

STAR CONNECTION

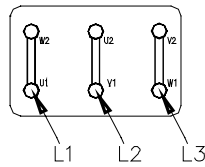


DELTA CONNECTION



FOR MOTOR 4 kW AND BELOW

DELTA CONNECTION 230 V



STAR CONNECTION 400 V

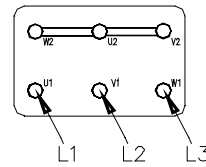
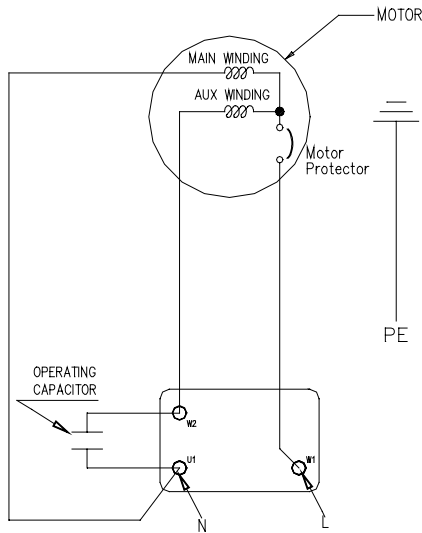


DIAGRAM AND ELECTRIC CONNECTIONS

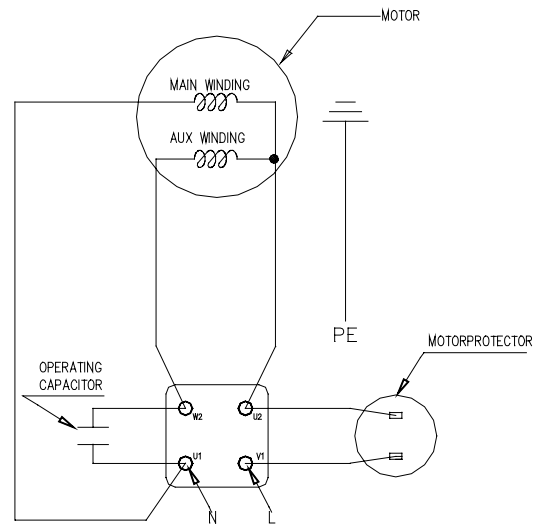
SINGLE PHASE MOTOR

FOR MOTORS WITH LOCKED ROTOR CURRENT UP TO 25 [A]  
(INTERNAL MOTORPROTECTOR)



PRA 0.50 M  
PRA 0.80 M  
PRA 1.00 M

FOR MOTORS WITH LOCKED ROTOR CURRENT OVER 25 [A]  
(EXTERNAL MOTORPROTECTOR)



For model

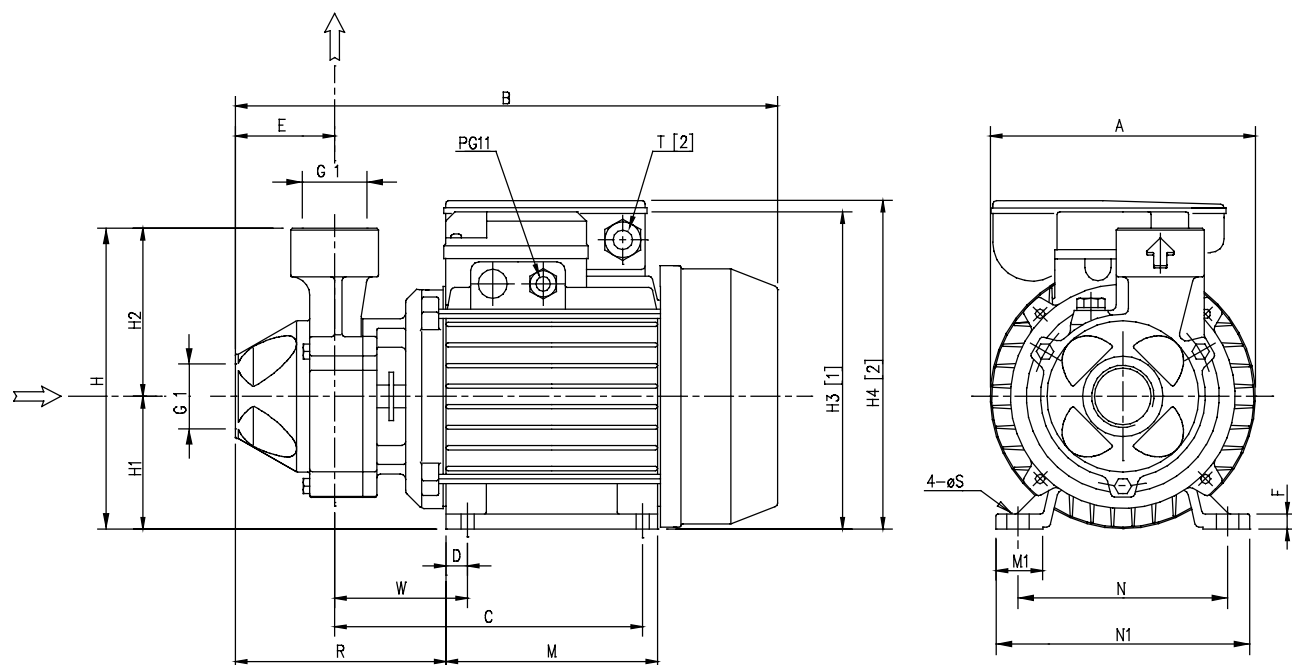
PRA 1.50 M  
PRA 2.00 M

## CENTRIFUGAL PUMPS

PRA

## DIMENSIONS

50Hz



Type pumps	Dimensions mm																		
	A	B	C	D	E	F	H	H1	H2	H3	H4	M	M1	N	N1	R	T	W	S
PRA 0.50M	130	263.5	148.5	10	50	7	143	63	80	-	160	100	23	100	120	118.5	PG11	69	7
PRA 0.50T	130	263.5	148.5	10	50	7	143	63	80	149.5	-	100	23	100	120	118.5	-	69	7
PRA 0.80M	130	290.5	159.3	11	53.8	9	161	71	90	-	178	112	25	112	135	122	PG11	69	7
PRA 0.80T	150	290.5	159.3	11	53.8	9	161	71	90	167.5	-	112	25	112	135	122	-	69	7
PRA 1.00M	150	290.5	159.3	11	53.8	9	161	71	90	-	178	112	25	112	135	122	PG11	69	7
PRA 1.00T	150	290.5	159.3	11	53.8	9	161	71	90	167.5	-	112	25	112	135	122	-	69	7
PRA 1.50M	162	330.5	188	12	57	12	175	80	95	-	212	124	28	125	152	144	PG13.5	88	9
PRA 1.50T	162	330.5	188	12	57	12	175	80	95	186.5	-	124	28	125	152	144	-	88	9
PRA 2.00M	162	330.5	188	12	57	12	175	80	95	-	212	124	28	125	152	144	PG13.5	88	9
PRA 2.00T	162	330.5	188	12	57	12	175	80	95	186.5	-	124	28	125	152	144	-	88	9

[1] = Only for three phase

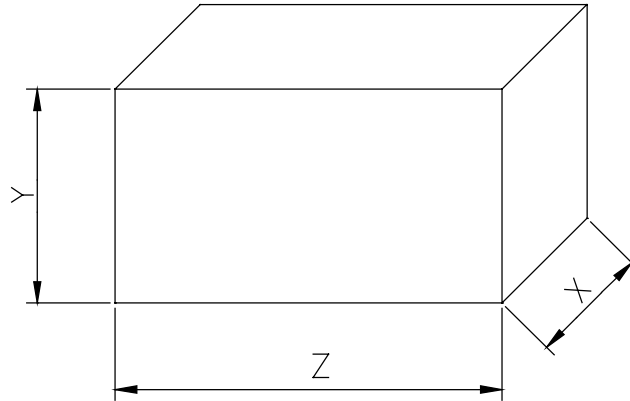
[2] = Only for single phase

## CENTRIFUGAL PUMPS

**PRA**

## PACKING AND WEIGHT

50Hz



TYPE PUMPS		PACKING [mm]			WEIGHT [kg]	
Single phase	Three phase	X	Y	Z	Single phase	Three phase
PRA 0.50 M	PRA 0.50	285	165	145	5.6	5.6
PRA 0.80 M	PRA 0.80	310	195	165	9.2	9.2
PRA 1.00 M	PRA 1.00	310	95	165	9.7	9.7
PRA 1.50 M	PRA 1.50	350	230	190	14.5	14.5
PRA 2.00 M	PRA 2.00	350	230	190	15.8	15.8



## CENTRIFUGAL PUMPS

**PRA**

## TECHNICAL DATA

50 Hz

Type pumps		kW	HP	Capacitor		Input		Full load current			Locked rotor current		
Single phase 230 V 50 Hz	Three phase 230/400 V 50 Hz			Single phase $\mu\text{F}$	Vc	Single Phase	Three Phase	Single Phase	Three Phase	230 V	400 V	Single phase 230 V	Three phase 230 V
PRA 0.50 M	PRA 0.50	0.37	0.5	10	450	0.6	0.5	2.6	1.7	1.0	6.9	6.6	3.8
PRA 0.80 M	PRA 0.80	0.6	0.8	16	450	1.1	1.1	4.9	3.6	2.1	16.5	17.3	10
PRA 1.00 M	PRA 1.00	0.75	1	20	450	1.3	1.3	5.6	4.1	2.4	19	21.7	12.5
PRA 1.50 M	PRA 1.50	1.1	1.5	35	450	2.3	2.0	10.0	6.3	3.6	39	39.8	23
PRA 2.00 M	PRA 2.00	1.5	2	40	450	2.5	2.3	10.9	7.0	4.0	43	42.4	24.5

Type pumps		Ball bearing	
Single phase 230 V	Three phase 230/400 V	Pump side	Fan side
PRA 0.50 M	PRA 0.50	6201 ZZ	6201 ZZ
PRA 0.80 M	PRA 0.80	6202 ZZ	6202 ZZ
PRA 1.00 M	PRA 1.00	6202 ZZ	6202 ZZ
PRA 1.50 M	PRA 1.50	6204 ZZ	6203 ZZ
PRA 2.00 M	PRA 2.00	6204 ZZ	6203 ZZ