



EBARA

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SPECIFICATION

60Hz

Rev. A

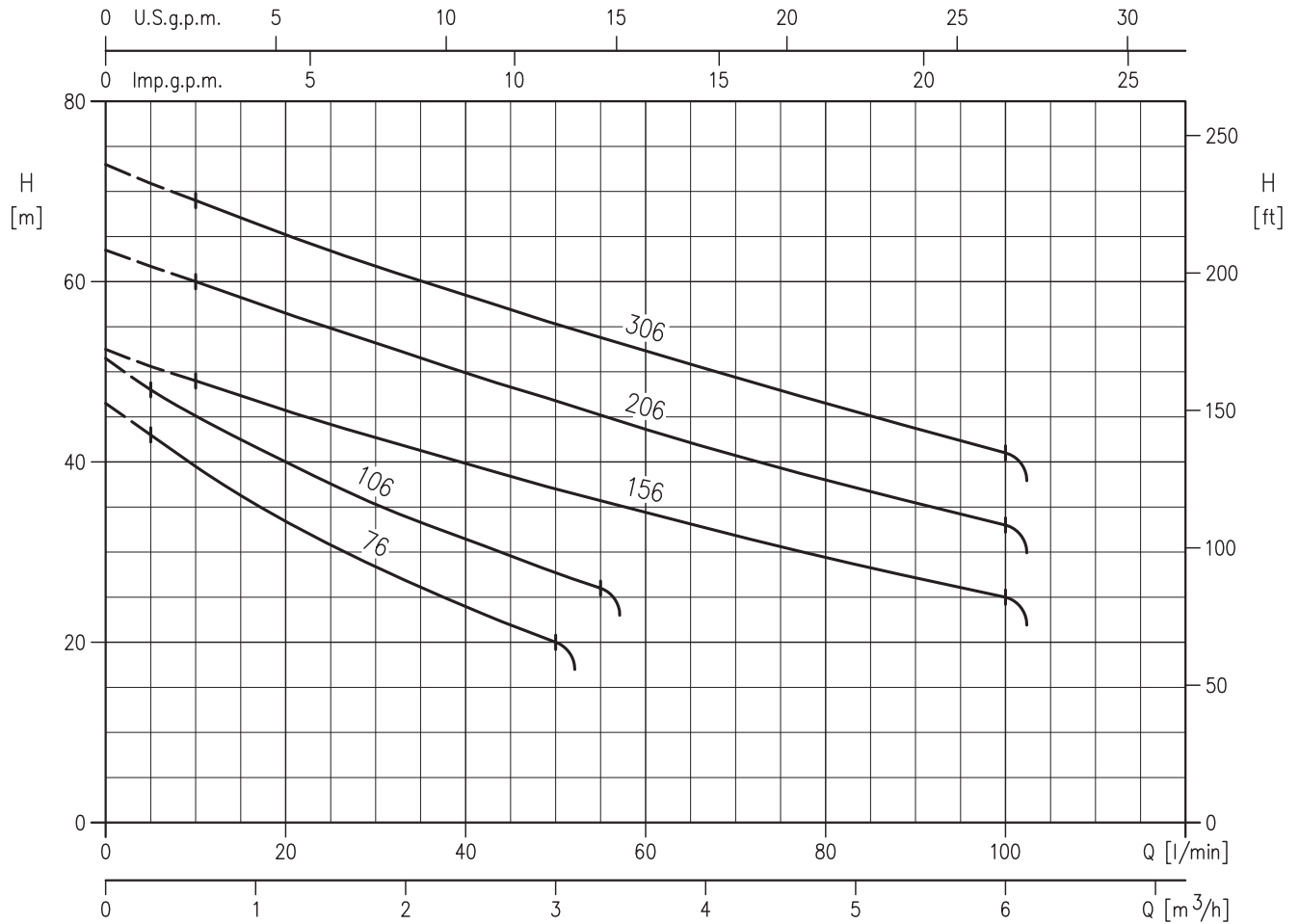
PUMP		
Liquid Handled	Type of liquid	Clean water
	Temperature [°C]	min. +5 max. +45
Maximum working pressure	[MPa]	0.6 (AGA 076-106) 1.0 (AGA 156-206-306)
Maximum suction depth	[m]	8
Construction	Impeller	Closed centrifugal type
	Shaft seal type	Mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction	G 1 (AGA 076-106) UNI ISO 228 G 1½ (AGA 156-206-306) UNI ISO 228
	Discharge	G 1 UNI ISO 228
Material	Casing	Cast iron
	Impeller	PPE+PS glass fibre reinforced (AGA 076-106) Brass (AGA 156-206-306)
	Shaft seal	Ceramic/Carbon/NBR
	Casing cover	AISI 304 (AGA 076-106)
		Cast iron built-in the motor bracket (AGA 156-206-306)
	Shaft	AISI 303 (wet extension)
	Bracket	Aluminium (AGA 076-106)
		Cast iron (AGA 156-206-306)
Ejector	PPE+PS glass fibre reinforced	
Diffuser	PPE+PS glass fibre reinforced	
Applicable standard of test		ISO 9906 – Annex A

MOTOR		
Type	Electric - TEFC	
	Single Phase	Three Phase
No. of Poles	2	
Rotation speed [min ⁻¹]	≈3450	
Insulation Class	F	
Protection degree (CEI EN 60034-5)	IP 44	
Power rating	[kW]	0.44÷1.5
	[HP]	0.6÷2
Frequency [Hz]	60	
Voltage [V]	220-230 ±6%	220/380 –6 +10%
Capacitor	Built in	-
Over load protection	Built in	Provided by the user
Casing material	Aluminium	
Base material / Motor support	Plastic foot / Cast iron	
Dimensions of cable entry	PG11 - PG13.5 (see dimensions page 400)	

SELECTION CHART

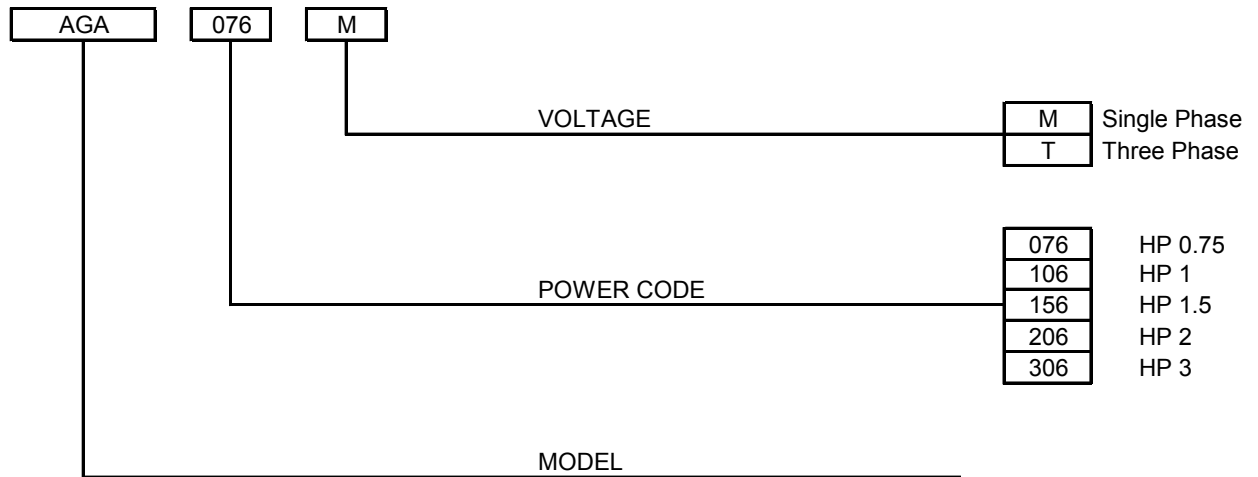
60Hz

Rev. A



Pump type		Power		Q = Capacity										
				l/min	0	5	10	20	30	45	50	55	80	100
Single phase	Three phase	[kW]	[HP]	m³/h	0	0.3	0.6	1.2	1.8	2.7	3	3.3	4.8	6
				H=Total head [m]										
AGA 076 M	AGA 076 T	0.55	0.75	46.5	43	39.5	33.4	28.4	21.9	20	-	-	-	-
AGA 106 M	AGA 106 T	0.75	1	51.5	48	45.1	40	35.3	29.6	27.7	26	-	-	-
AGA 156 M	AGA 156 T	1.1	1.5	52.5	-	49	45.7	42.7	38.4	37	35.7	29.4	25	-
AGA 206 M	AGA 206 T	1.5	2	63.5	-	60	56.5	53.2	48.3	46.8	45.2	38	33	-
-	AGA 306 T	2.2	3	73	-	69	65.2	61.7	56.9	55.3	53.8	46.5	41	-

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)

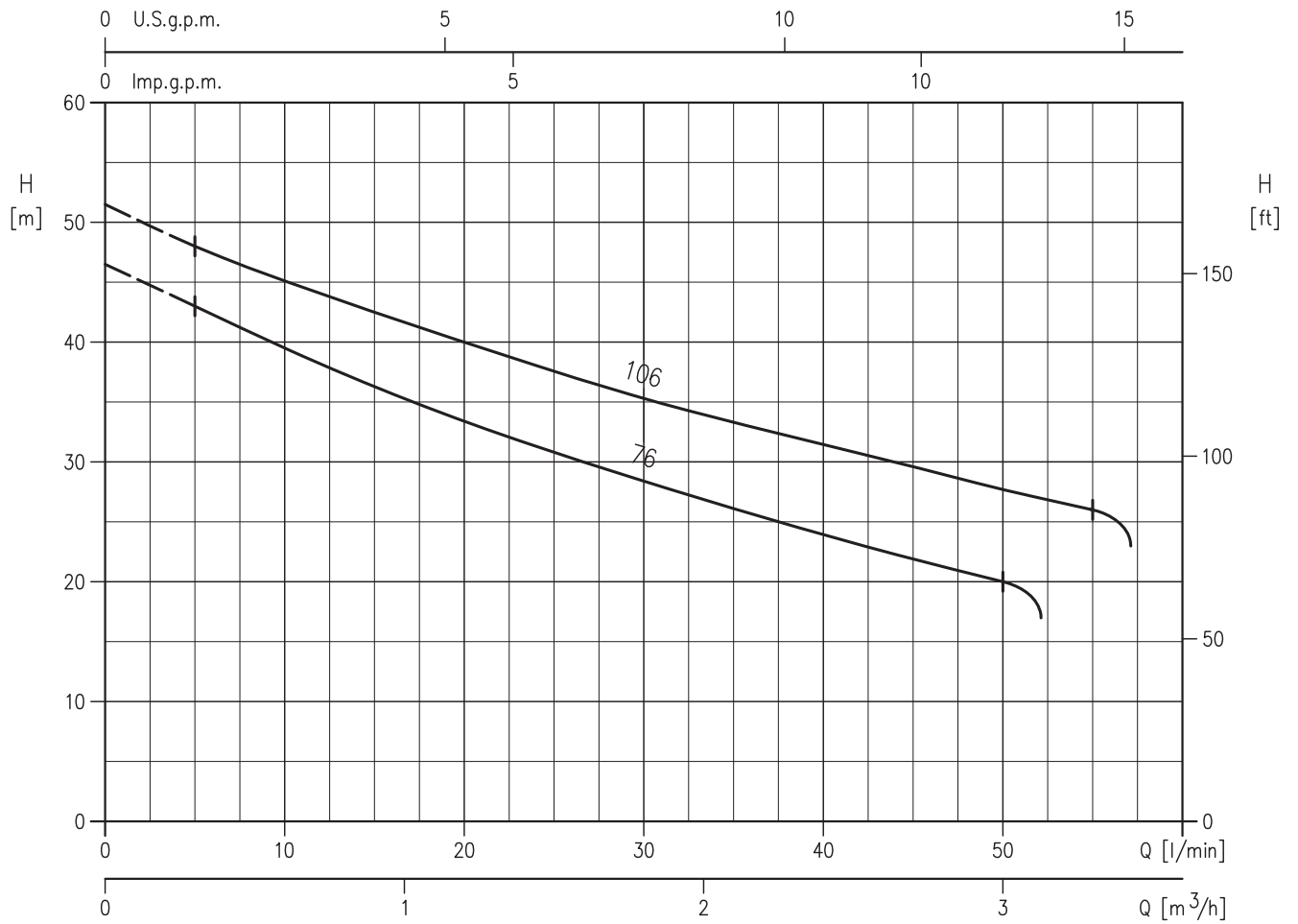
The continuous curves indicate the recommended working range. The dotted curve is only a guide.

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:

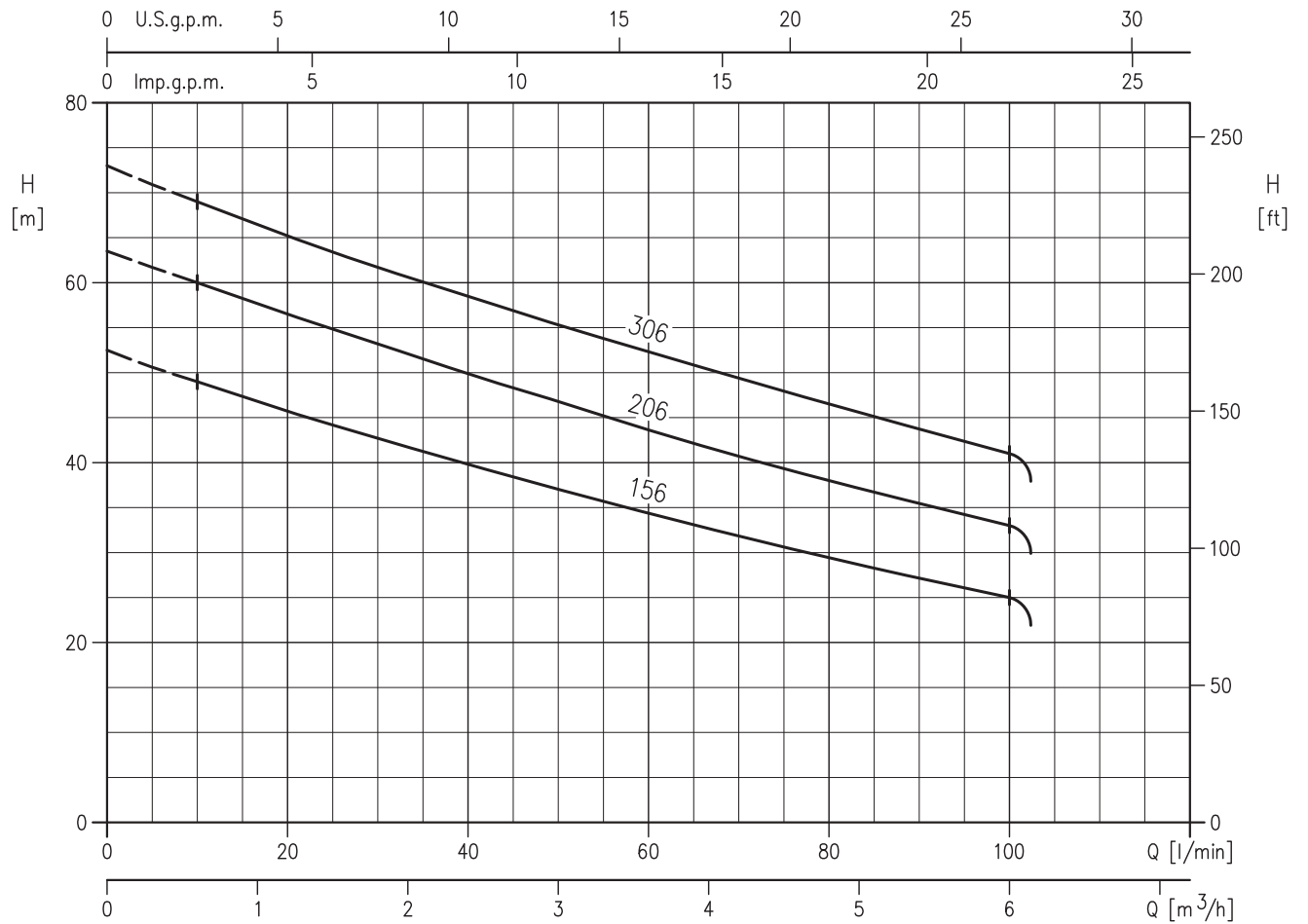
- Q = volume flow rate
- H = total head

AGA 076- Impeller diameter = 110 mm
AGA 106- Impeller diameter = 116 mm



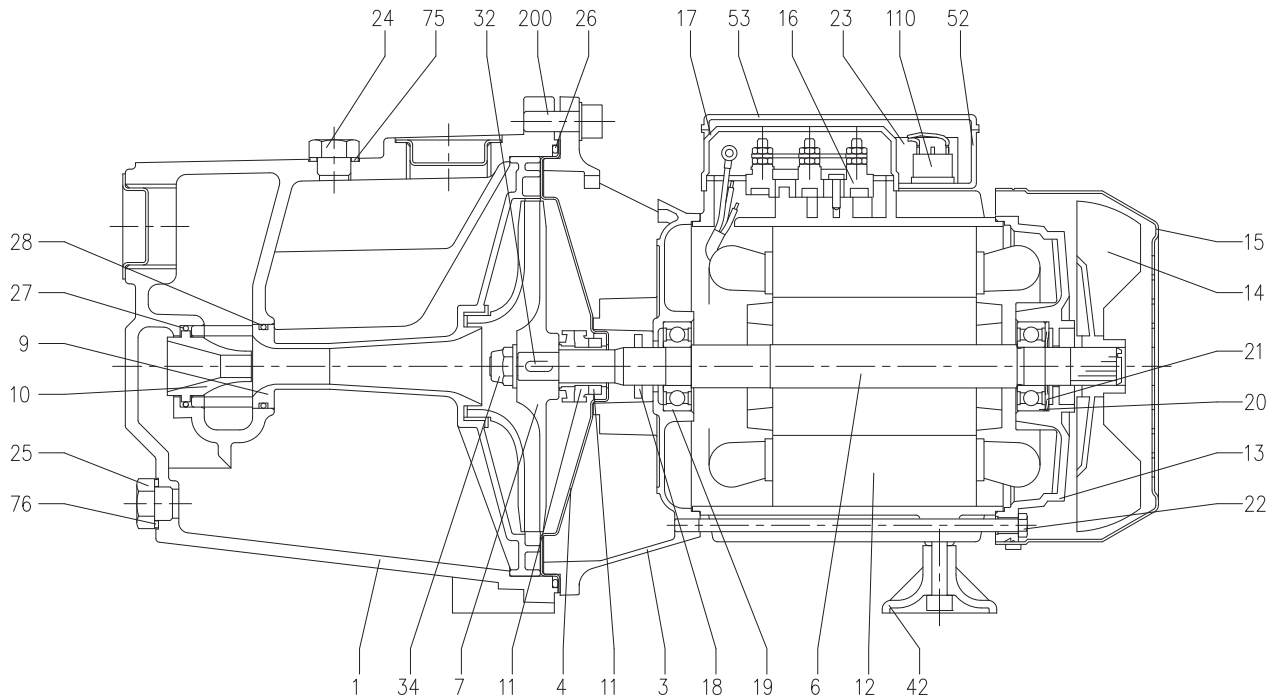
Rotation speed $\approx 3450 \text{ min}^{-1}$
Test standard: ISO 9906 – Annex A

AGA 156- Impeller diameter = 122 mm
AGA 206- Impeller diameter = 135 mm
AGA 306- Impeller diameter = 144 mm



Rotation speed $\approx 3450 \text{ min}^{-1}$
 Test standard: ISO 9906 – Annex A

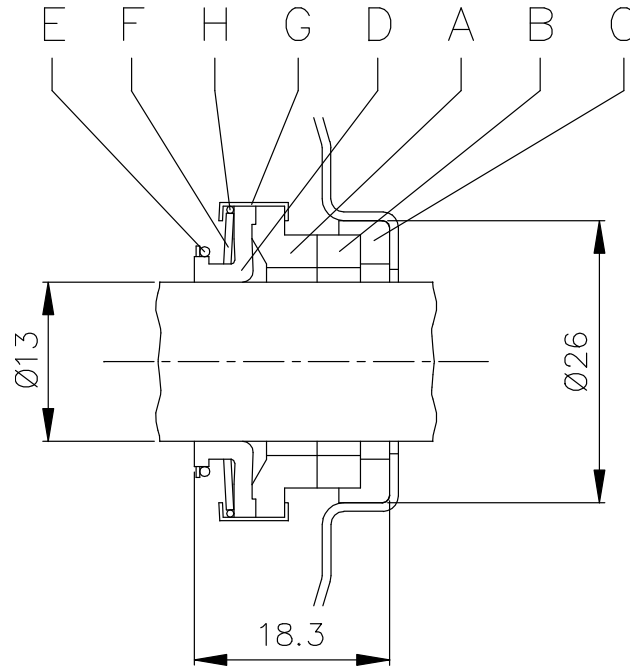
SECTIONAL VIEW



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	[1]	1	22	Tie rod	Fe 42 Zincate	4
4	Casing cover	AISI 304 [2]	1	23	Capacitor [6]	-	1
6	Shaft with rotor	AISI 303 (wet extension)	1	24	Priming plug	Brass	1
7	Impeller	[3]	1	25	Drain plug	Brass	1
9	Diffuser + Venturi tube	PPE+PS glass fibre reinforced	1	26	O-ring	NBR	1
10	Venturi nozzle	PPE+PS glass fibre reinforced	1	27	O-ring	NBR	1
11	Mechanical seal [4]	Carbon/Ceramic/NBR	1	28	O-ring	NBR	1
12	Motor frame with stator	-	1	32	Key	AISI 316	1
13	Motor cover	Aluminium	1	34	Impeller nut [7]	AISI 304	1
14	Fan	PA6	1	42	Foot	PP	1
15	Fan cover	Fe P04 Zincate	1	52	Capacitor box [6]	ABS	1
16	Terminal board	-	1	53	Capacitor box cover [9]	ABS [9]	1
17	Terminal box cover [5]	Aluminium	1	75	Washer	Aluminium	1
18	Splash ring	NBR	1	76	Washer	Aluminium	1
19	Pump side ball bearing	-	1	110	Motor protector [8]	-	1
20	Fan side ball bearing	-	1	200	Screw	Zn Steel Cl. 8.8 ISO 898-1	4

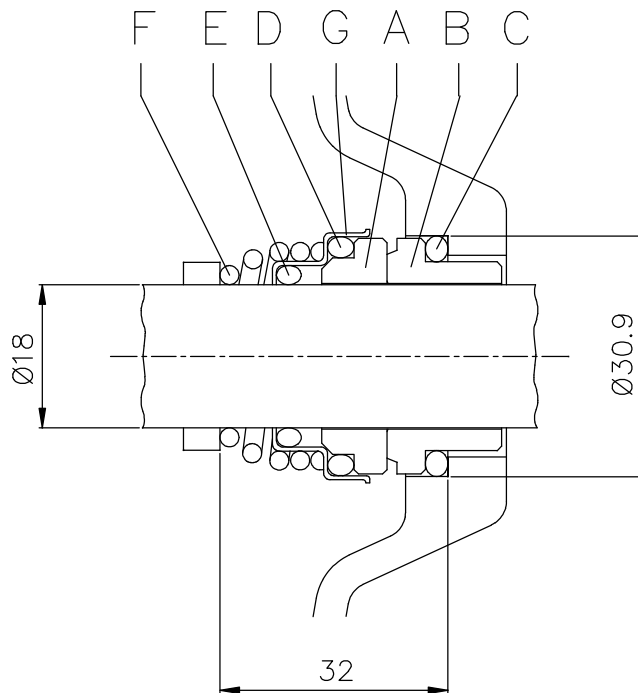
- [1] Material : Cast iron for version AGA 156 - AGA 206 - AGA 306
Aluminium for version AGA 076 - AGA 106
- [2] Only for version AGA 076 - AGA 106
- [3] Material : PPE+PS glass fibre reinforced for type : AGA 076 - AGA 106
Brass for type : AGA 156 - AGA 206 - AGA 306
- [4] See constructions mechanical seal page 301-302
- [5] Only for three phase
- [6] Only for single phase
- [7] Only for version with impeller in Brass
- [8] Only for version single phase AGA 156 - AGA 206
- [9] With gasket in NBR only for version single phase AGA 106

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



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

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

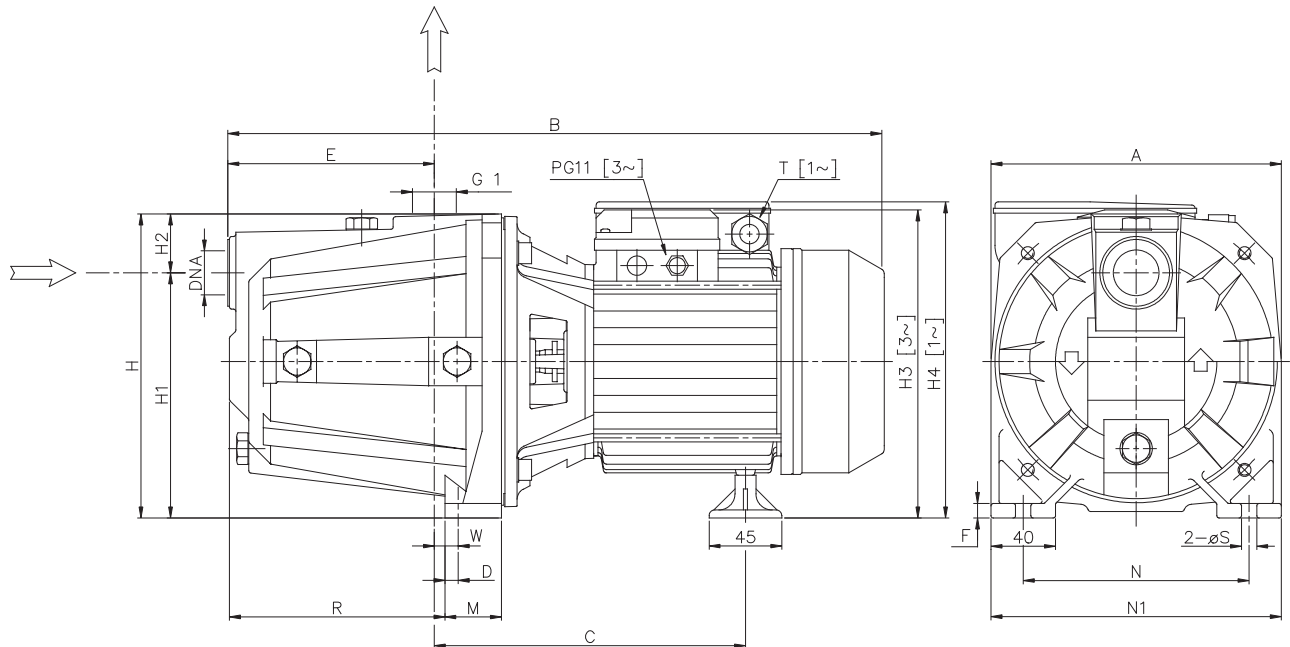


REF	PART NAME	MATERIAL Standard version
A	Rotary seal ring	ceramic
B	Stationary seal ring	carbon graphite
C	O-Ring	NBR
D	O-Ring	NBR
E	O-Ring	NBR
F	Self driving spring	AISI 316
G	Frame	AISI 304

BEARINGS

Type pumps		Ball Bearing	
Single Phase	Three Phase	Pump side	Fan side
AGA 076 M	AGA 076 T	6202 2RSH	6202 2RSH
AGA 106 M	AGA 106 T	6202 2RSH	6202 2RSH
AGA 156 M	AGA 156 T	6204 2RSH	6203 2RSH
AGA 206 M	AGA 206 T	6204 2RSH	6203 2RSH
-	AGA 306 T	6204 2RSH	6203 2RSH

PUMP

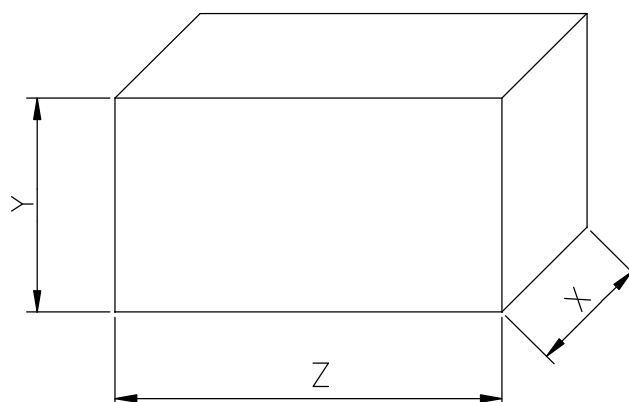


Pump type	Dimensions [mm]																			Weight [kgf]
	A	B	C	D	E	F	H	H1	H2	[3~] H3	[1~] H4	M	N	N1	R	[1~] T	W	S	DNA	
AGA 076 M	180	405	195	10.3	127	9	185	152	33	-	199	40	140	180	128.5	PG11	11.8	9.5	G 1	12.5
AGA 076 T	180	405	195	10.3	127	9	185	152	33	197.5	-	40	140	180	128.5	-	11.8	9.5	G 1	12.5
AGA 106 M	180	405	195	10.3	127	9	185	152	33	-	199	40	140	180	128.5	PG11	11.8	9.5	G 1	13.8
AGA 106 T	180	405	195	10.3	127	9	185	152	33	197.5	-	40	140	180	128.5	-	11.8	9.5	G 1	13.8
AGA 156 M	220	495	244	10	157	10	223	170	53	-	247	48	180	220	167.5	PG13.5	15.5	9	G 1 1/2	25.5
AGA 156 T	220	495	244	10	157	10	223	170	53	229	-	48	180	220	167.5	-	15.5	9	G 1 1/2	25.5
AGA 206 M	220	521	244	10	157	10	223	170	53	-	247	48	180	220	167.5	PG13.5	15.5	9	G 1 1/2	26.6
AGA 206 T	220	495	244	10	157	10	223	170	53	229	-	48	180	220	167.5	-	15.5	9	G 1 1/2	27.6
AGA 306 T	220	508	244	10	157	10	223	170	53	229	-	48	180	220	167.5	-	15.5	9	G 1 1/2	27.7

[1~] Single phase

[3~] Three phase

PACKING



Type pumps		Packing [mm]			Weight [kgf]	
Single Phase	Three Phase	X	Y	Z	[1~]	[3~]
AGA 076 M	AGA 076 T	205	250	445	13.3	13.3
AGA 106 M	AGA 106 T	205	250	445	14.6	14.6
AGA 156 M	AGA 156 T	232	275	547	26.4	26.4
AGA 206 M	AGA 206 T	232	275	547	27.7	27.7
-	AGA 306 T	232	275	547	-	28.5

MOTOR DATA

Pump type		Power		Capacitor				Efficiency (% load)			Efficiency (% load)			Input		Full load current				Locked rotor current							
Single Phase	Three Phase	[kW]	[HP]	110-115 V		220-230 V		Three phase (380 V)			Three phase (460 V)			Single Phase	Three Phase	[A]				[A]							
				[μF]	[V]	[μF]	[V]	50%	75%	100%	50%	75%	100%			Single Phase	Three Phase	110-115 V	220-230 V	220 V	380 V	110-115 V	220-230 V	220 V	380 V		
AGA 076 M	AGA 076 T	0.55	0.75	60	250	16	450	-	-	-	-	-	-	0.94	0.90	9.5	4.3	2.8	1.6	-	-	-	-	52	26	20.6	11.9
AGA 106 M	AGA 106 T	0.75	1.0	60	250	20	450	77.2	79.5	79.3	76.6	80.9	82.3	1.10	1.00	11.4	5.5	2.9	1.7	-	-	-	-	49.4	38.8	22.4	
AGA 156 M	AGA 156 T	1.1	1.5	100	250	35	450	78.3	80.4	81.0	76.5	81.3	83.4	1.65	2.00	17.1	8.0	5.7	3.3	-	-	-	-	-	-	38.8	22.4
AGA 206 M	AGA 206 T	1.5	2.0	-	-	35	450	78.3	80.4	81.0	76.5	81.3	83.4	2.10	2.00	-	11.0	5.7	3.3	-	-	-	-	-	-	38.8	22.4
-	AGA 306 T	2.2	3.0	-	-	-	-	82.4	83.0	82.2	79.5	82.9	83.8	-	2.90	-	-	8.1	4.7	-	-	-	-	-	-	54.4	31.4