
EBARA

CONTENTS

50Hz

Rev. G

SPECIFICATION 50Hz

Rev. G

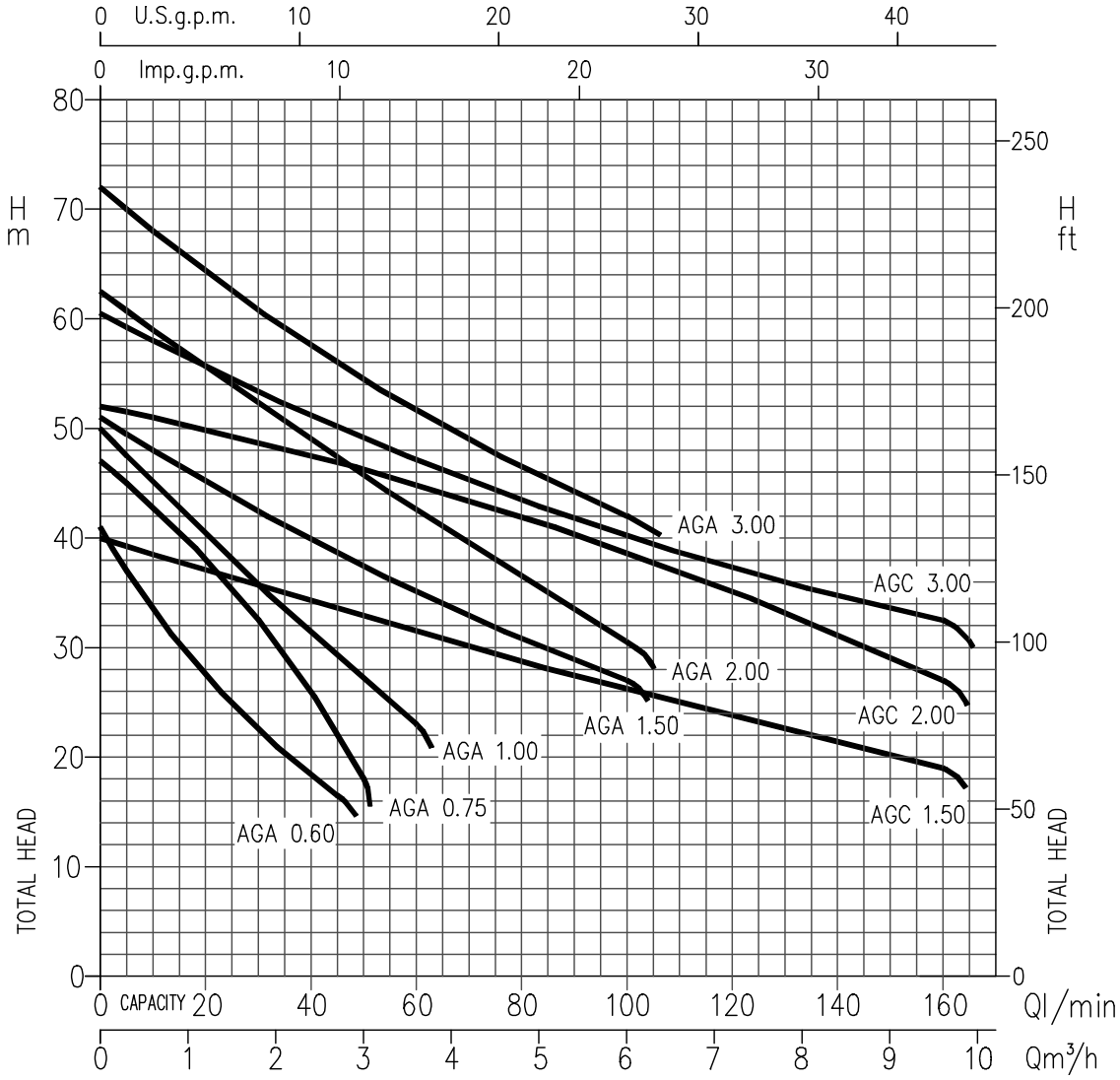
PUMP			
Liquid Handled	Type of liquid		Clean water
	Max temperature [°C]		45
Maximum working pressure [MPa]			0.6 (AGA 0.60-0.75-1.00) 1.0 (AGA 1.50-2.00-3.00; all AGC)
Maximum suction depth [m]			8
Construction	Impeller		Closed centrifugal type
	Shaft seal type		Mechanical seal
	Bearing		Sealed ball bearing
Pipe Connection	Suction	G 1” (AGA 0.60-0.75-1.00)	UNI ISO 228
		G 1”½ (AGA 1.50-2.00-3.00; all AGC)	UNI ISO 228
	Discharge	G 1”	UNI ISO 228
Material	Casing	Cast iron	
	Impeller	PPE+PS glass fibre reinforced (AGA 0.60-0.75-1.00)	
		Brass (AGA 1.50-2.00-3.00; all AGC)	
	Shaft seal	Ceramic/Carbon/NBR	
	Casing cover	AISI 304 (AGA 0.60-0.75-1.00)	
		Cast iron built-in on the motor bracket (AGA 1.50-2.00-3.00; all AGC)	
	Shaft	AISI 303 (wet extension)	
	Bracket	Aluminium (AGA 0.60-0.75-1.00)	
		Cast iron (AGA 1.50-2.00-3.00; all AGC)	
	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}]	≈ 2800	
Insulation Class		F	
Protection degree		IP 44	
Power rating	[kW]	0.44÷1.5	0.44÷2.2
	[HP]	0.6÷2	0.6÷3
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/motor support		Plastic foot /Cast iron	
Dimensions of cable entry		PG11 - PG13.5 (see dimensions page 400)	

SELECTION CHART

50Hz

Rev. G

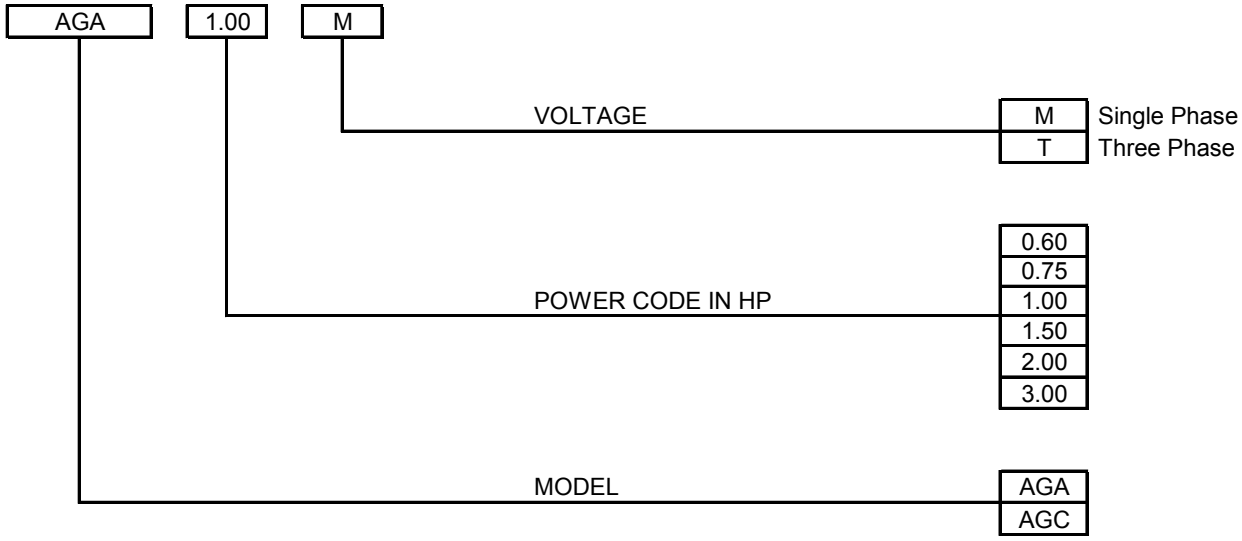


Type pumps		kW	HP	Q=Capacity											
				l/min	0	5	10	20	30	45	50	60	80	100	130	160
Single Phase	Three Phase			m³/h	0	0.3	0.6	1.2	1.8	2.7	3.0	3.6	4.8	6	7.8	9.6
				H=Total manometric head in meters												
AGA 0.60 M	AGA 0.60 T	0.44	0.6	41.5	37	33.4	27.1	22	16.5	-	-	-	-	-	-
AGA 0.75 M	AGA 0.75 T	0.55	0.75	47	45	42.8	37.9	32	21.9	18	-	-	-	-	-
AGA 1.00 M	AGA 1.00 T	0.75	1	50	47.5	45	40.3	35.7	29.1	27	23	-	-	-	-
AGA 1.50 M	AGA 1.50 T	1.1	1.5	51	-	48	45.1	42.4	38.6	37.4	35.1	30.8	27	-	-
AGA 2.00 M	AGA 2.00 T	1.5	2	62.5	-	59	55.6	52.2	47.3	45.7	42.5	36.4	30.5	-	-
-	AGA 3.00 T	2.2	3	72	-	68	64.3	60.8	55.9	54.4	51.6	46.4	42	-	-
AGC 1.50 M	AGC 1.50 T	1.1	1.5	40	-	38.5	37	35.6	33.5	32.7	31.4	28.7	26.1	22.4	19
AGC 2.00 M	AGC 2.00 T	1.5	2	52	-	51	49.9	48.8	46.9	46.3	44.9	42	38.7	33.2	27
-	AGC 3.00 T	2.2	3	60.5	-	58	55.6	53.3	50.1	49.1	47.1	43.4	40.2	35.9	32.5

TYPE KEY AND CURVE SPECIFICATIONS 50Hz

Rev. G

TYPE KEY



PERFORMANCE CURVE SPECIFICATIONS

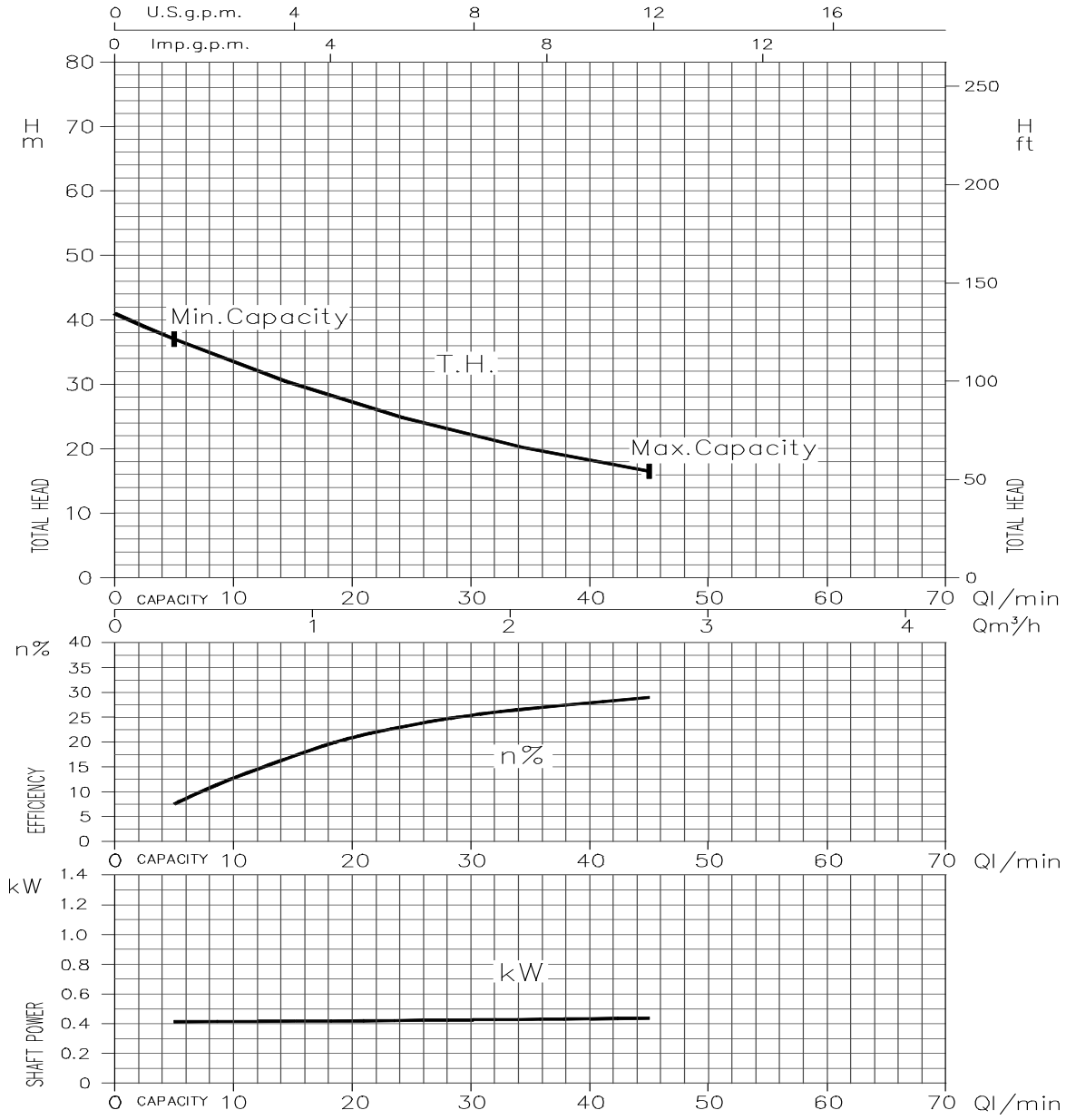
The specifications below qualify the curves shown on the following pages.

Tolerances according to ISO 9906 Annex A
The curves refer to effective speed of asynchronous motors at 50 Hz
Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of ν = 1 mm^2/s (1 cSt)
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
P_2 = pump power input (shaft power)
η = pump efficiency

AGA 0.60 (0.45 kW) - Impeller diameter = 130 mm



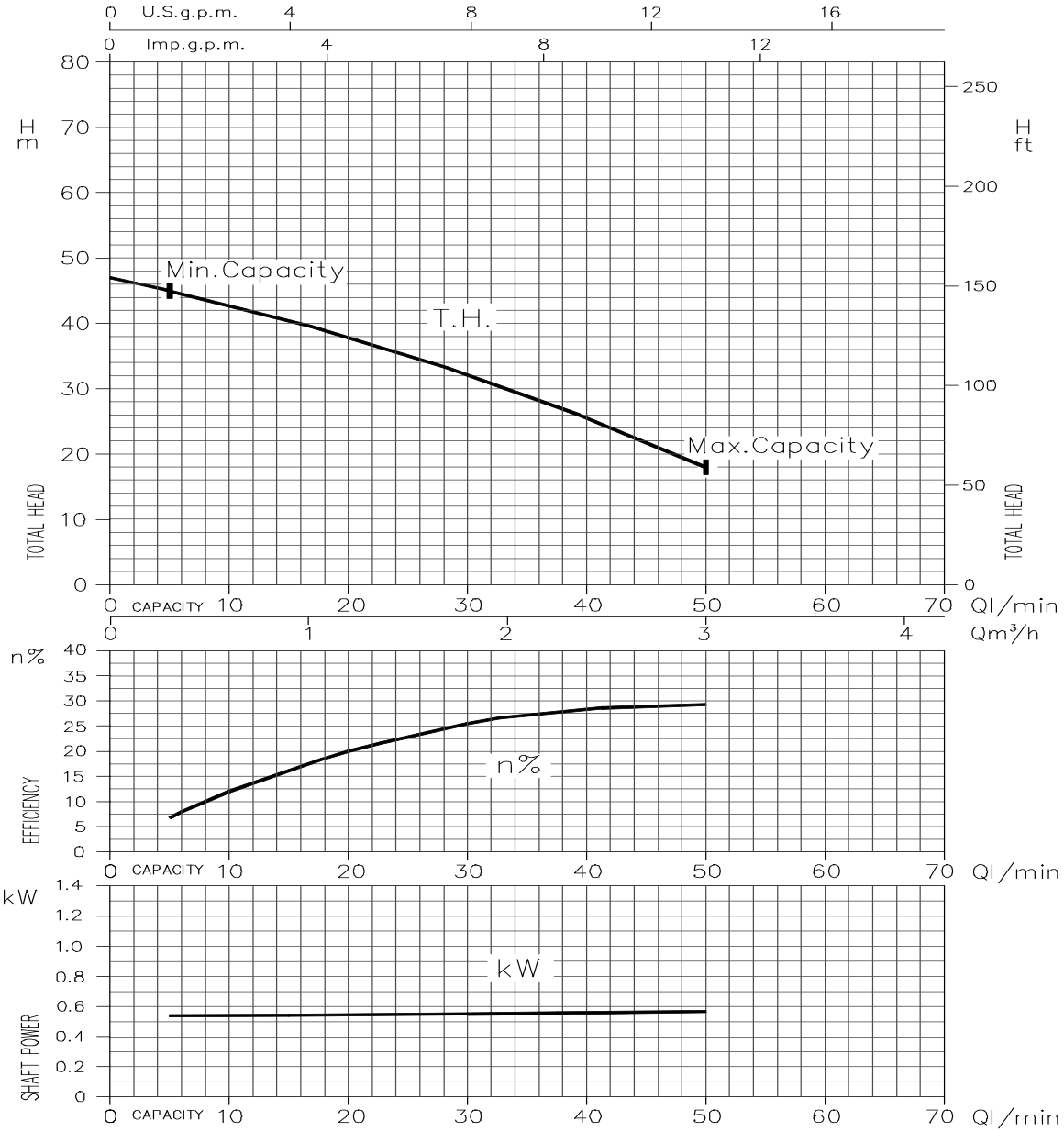
Rotation speed ≈ 2800 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

50Hz

Rev. G

AGA 0.75 (0.55 kW) - Impeller diameter = 130 mm



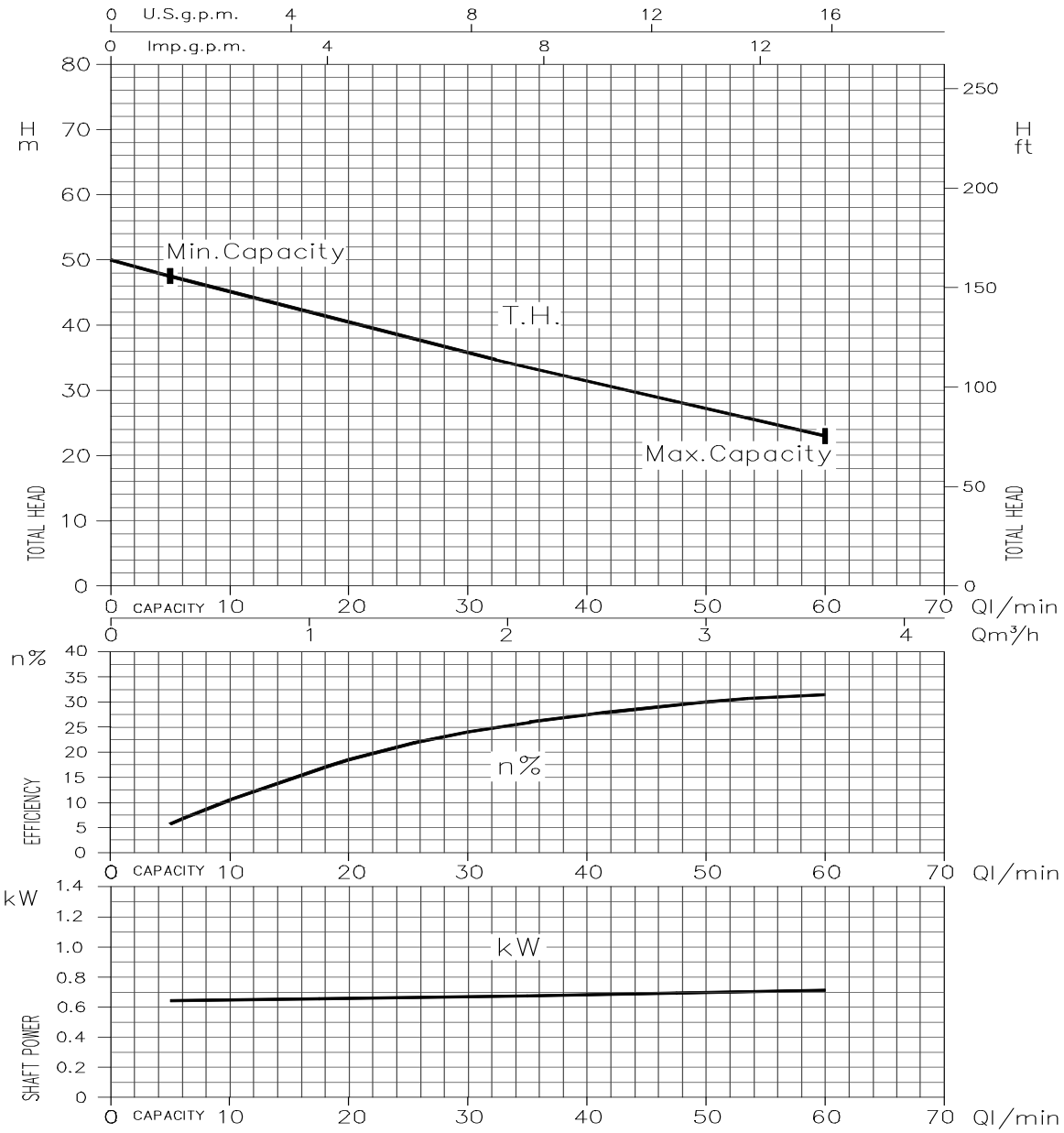
Rotation speed ≈ 2800 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

50Hz

Rev. G

AGA 1.00 (0.75 kW) - Impeller diameter = 130 mm



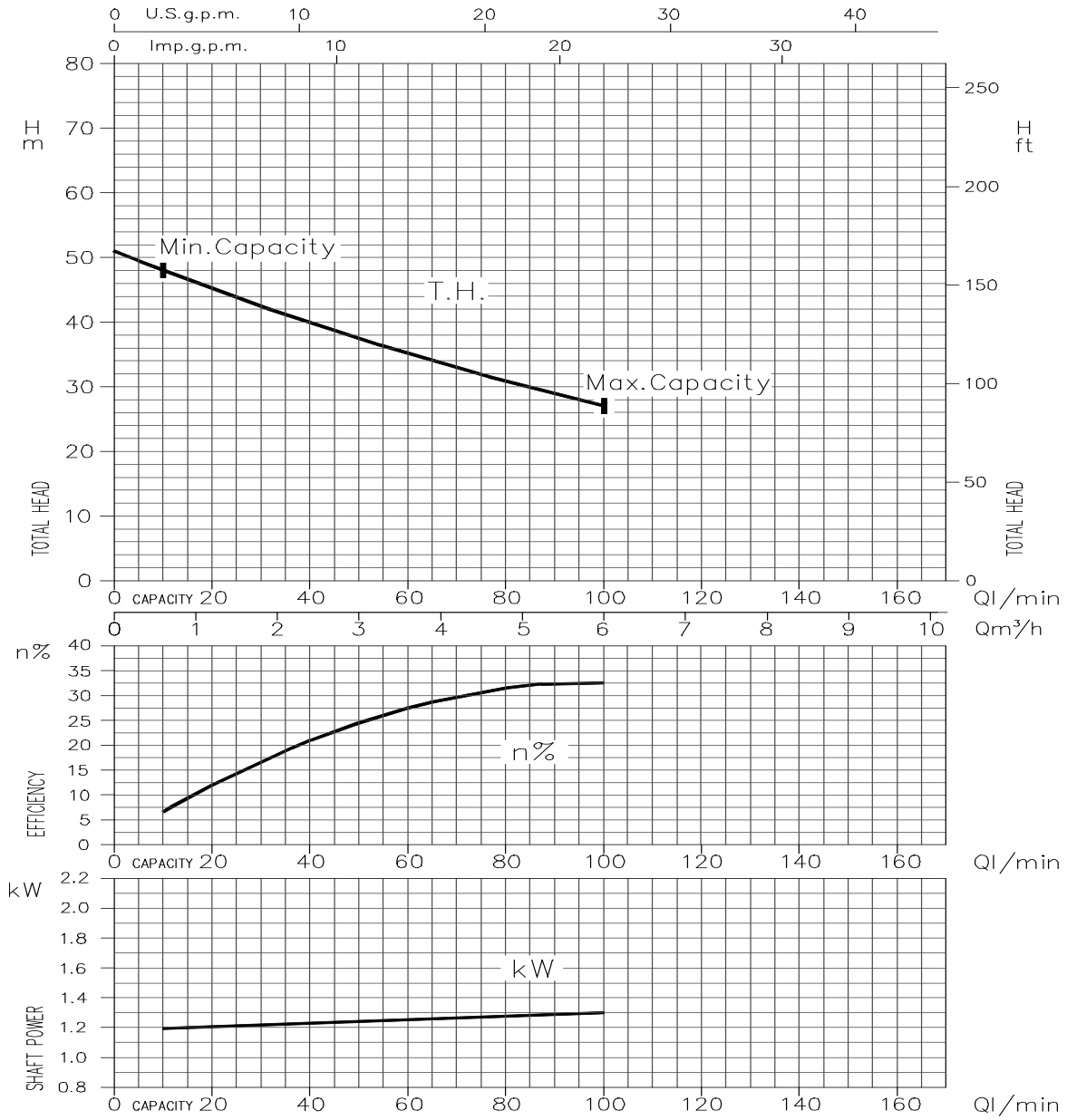
Rotation speed ≈ 2800 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

50Hz

Rev. G

AGA 1.50 (1.1 kW) - Impeller diameter = 143 mm



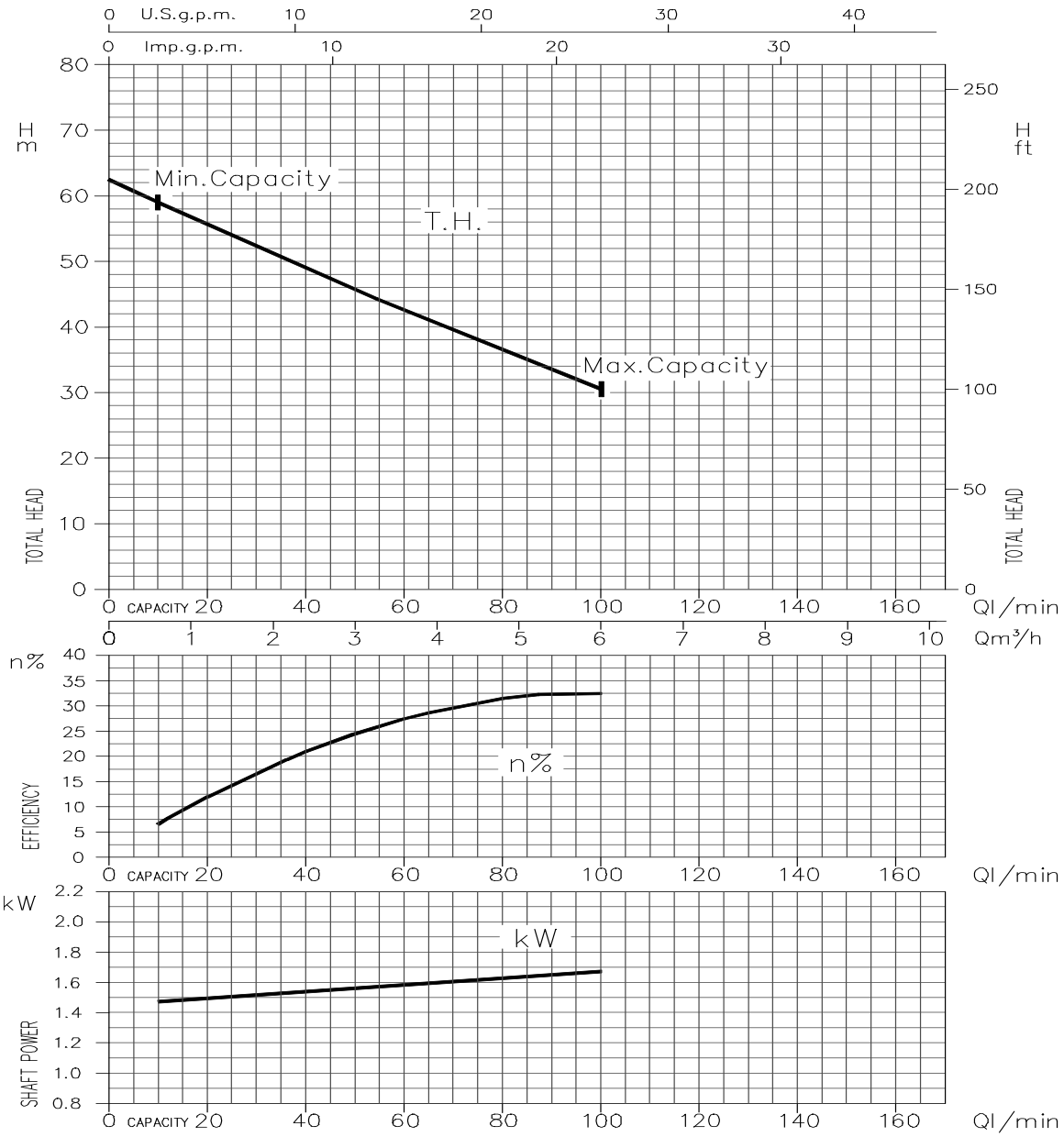
Rotation speed ≈ 2850 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

50Hz

Rev. G

AGA 2.00 (1.5 kW) - Impeller diameter = 157 mm



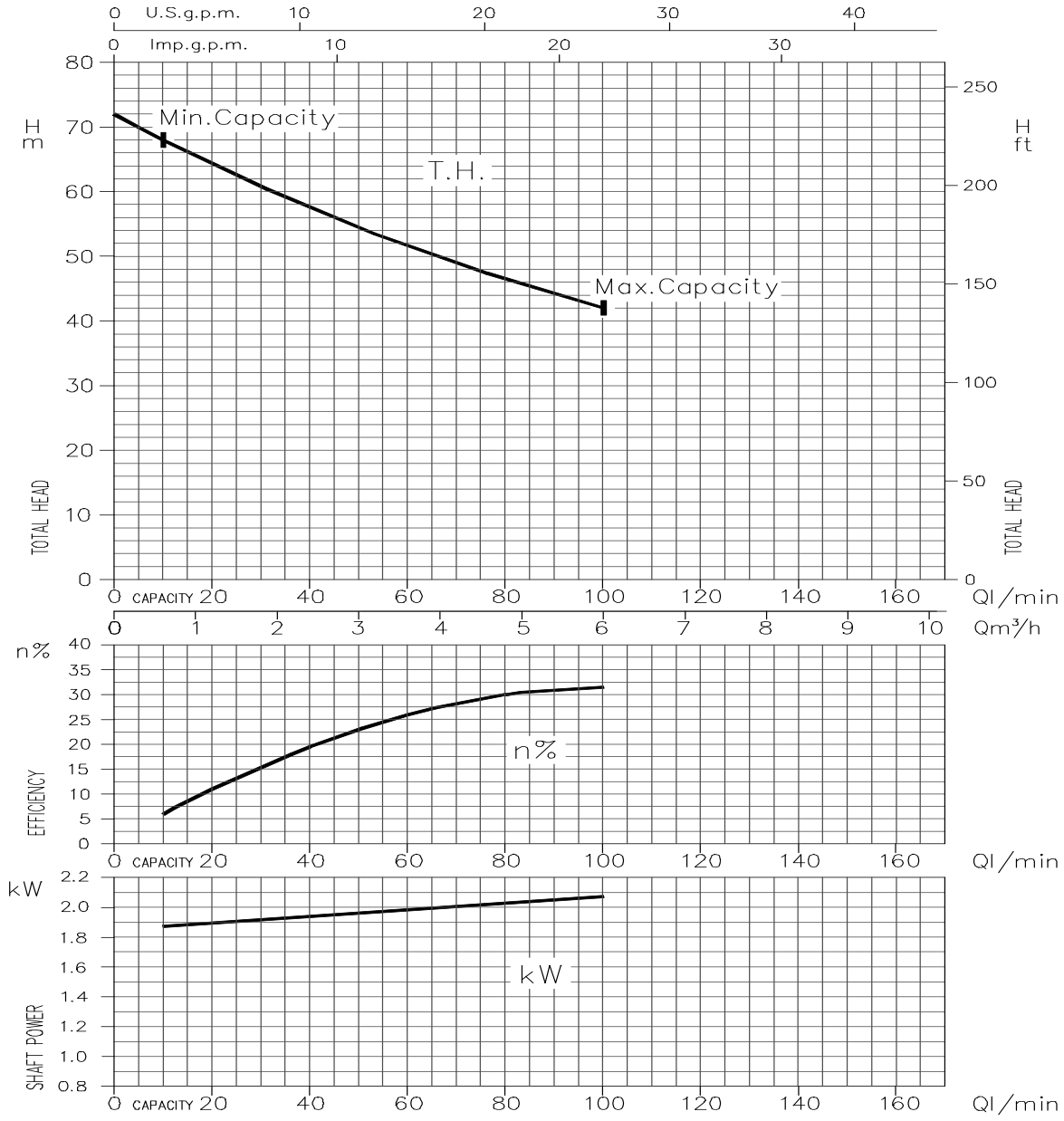
Rotation speed ≈ 2850 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

50Hz

Rev. G

AGA 3.00 (2.2 kW) - Impeller diameter = 164 mm



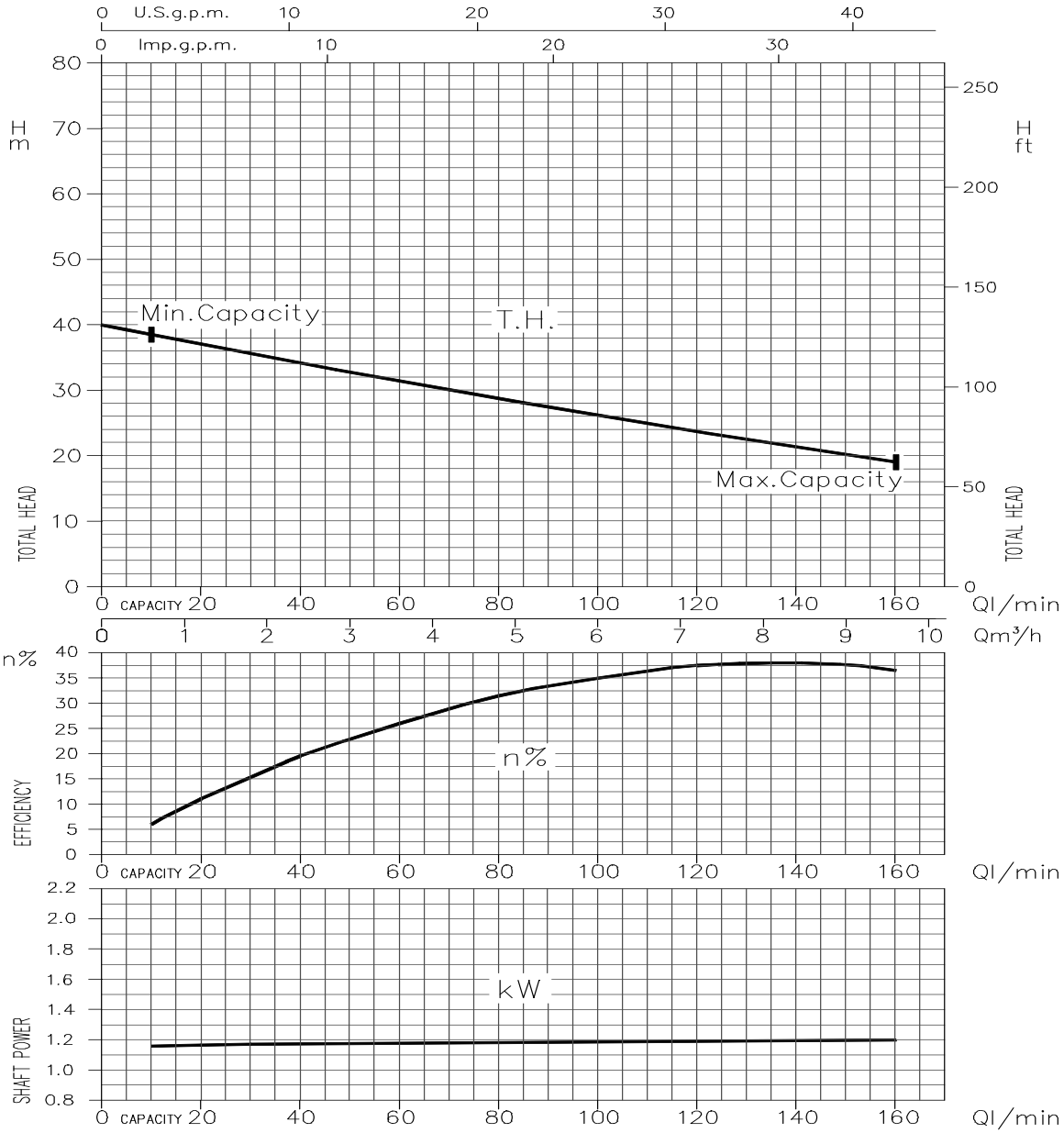
Rotation speed ≈ 2850 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

50Hz

Rev. G

AGC 1.50 (1.1 kW) - Impeller diameter = 143 mm



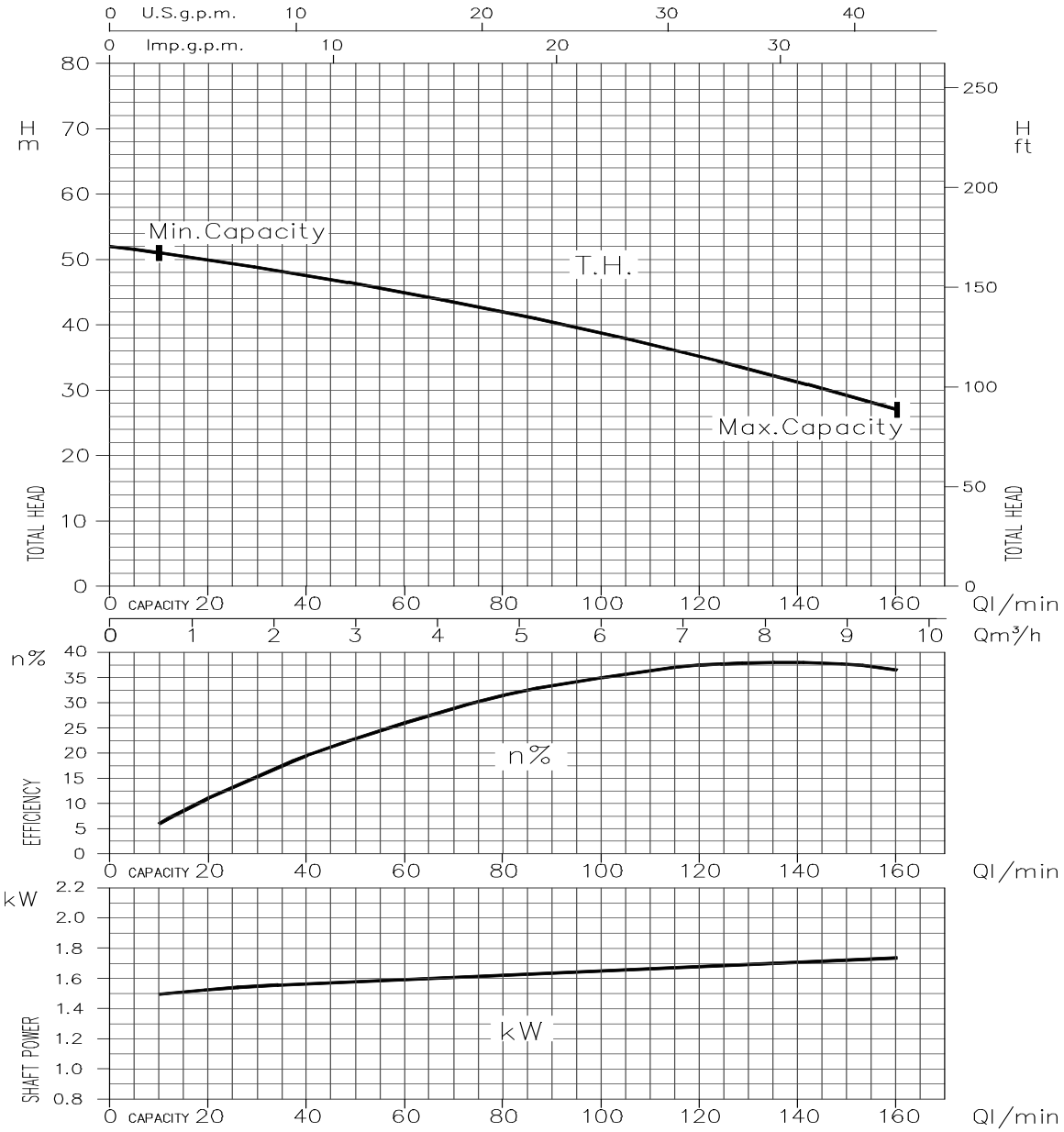
Rotation speed ≈ 2850 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

50Hz

Rev. G

AGC 2.00 (1.5 kW) - Impeller diameter = 157 mm



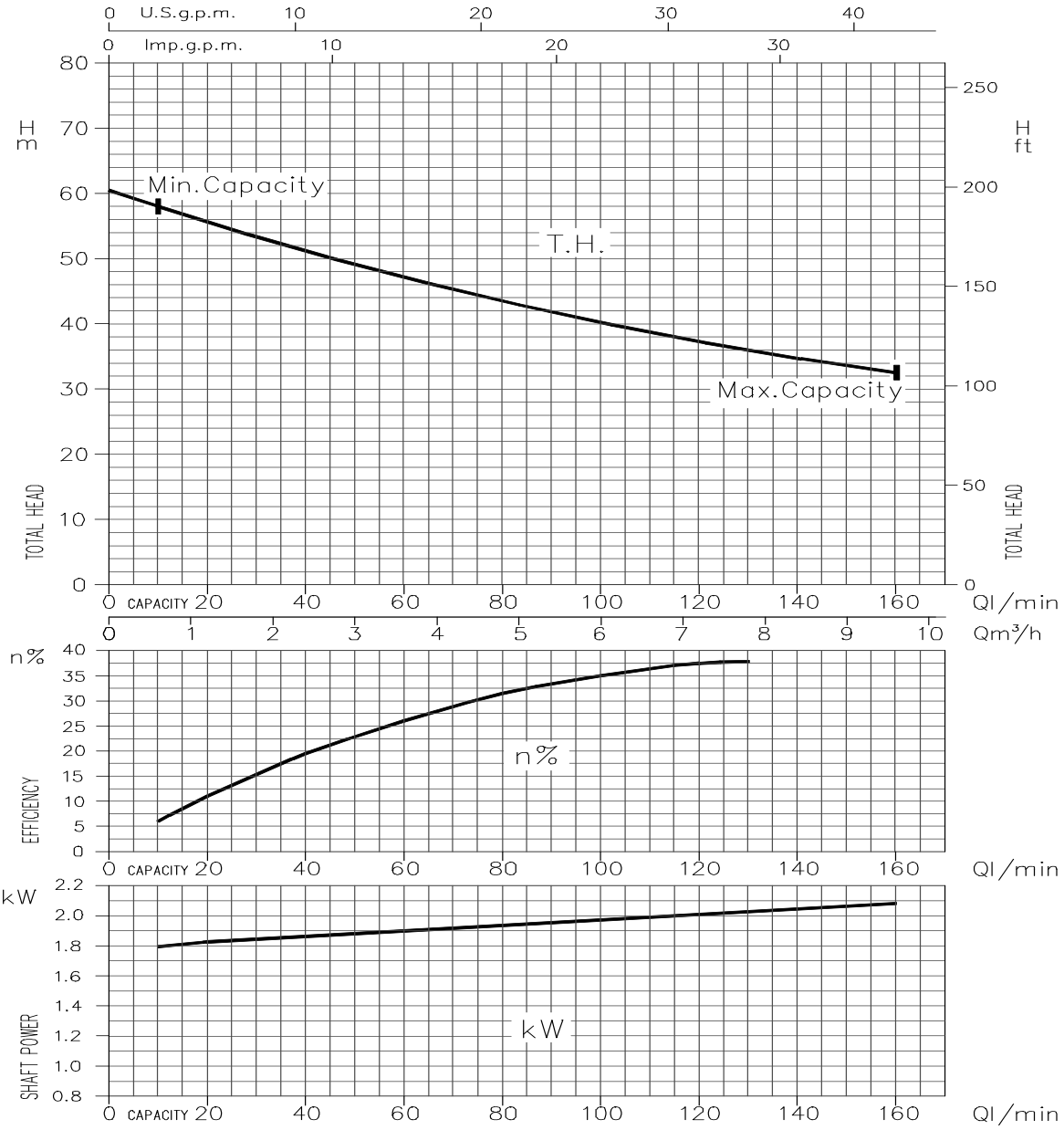
Rotation speed ≈ 2850 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

50Hz

Rev. G

AGC 3.00 (2.2 kW) - Impeller diameter = 164 mm



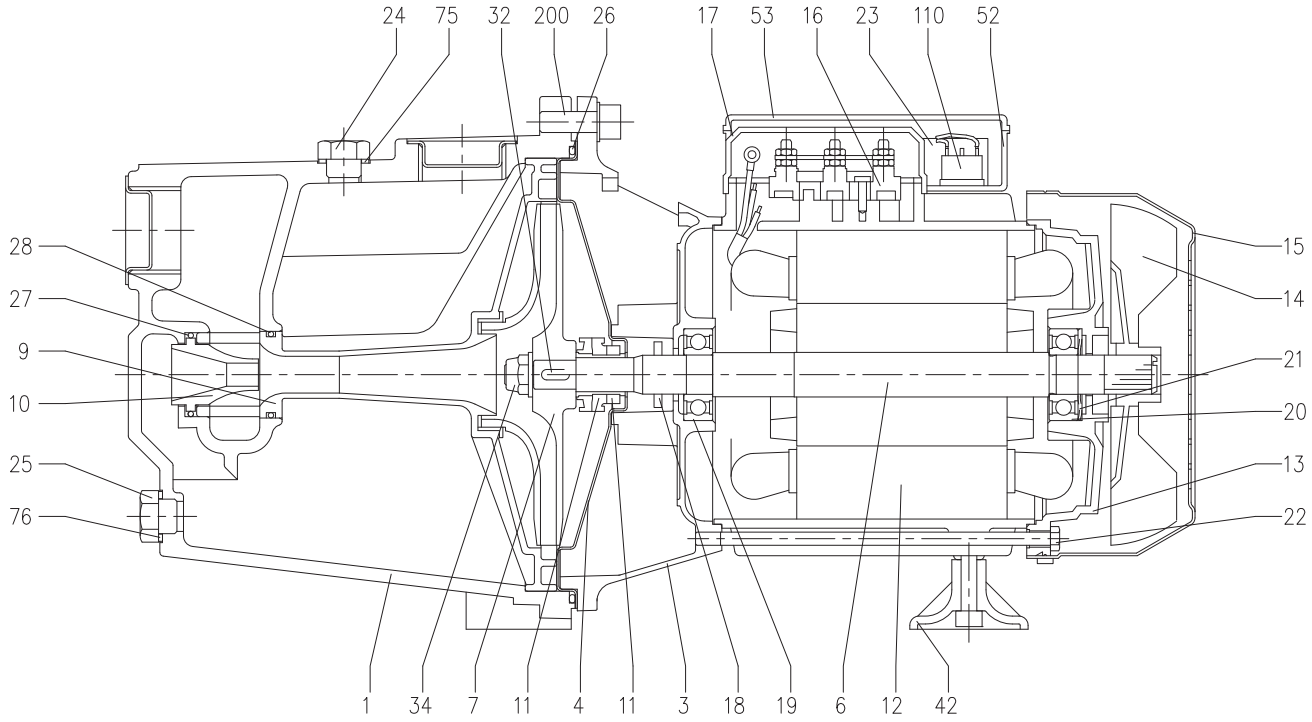
Rotation speed ≈ 2850 min^{-1}
Test standard: ISO 9906 – Annex A

CONSTRUCTION

50Hz

Rev. G

SECTIONAL VIEW

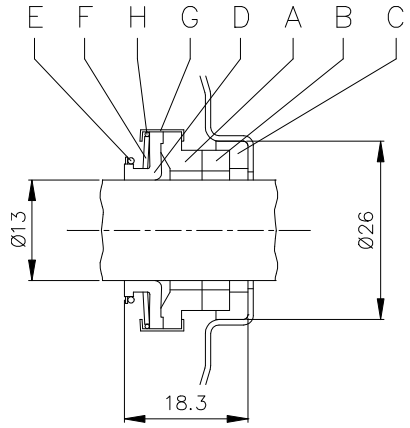


N°	PART NAME	MATERIAL	Q.TY	N°	PART NAME	MATERIAL	Q.TY
1	Casing	Cast iron	1	21	Adjusting ring	Steel C70	1
3	Motor bracket	[1]	1	22	Tie rod	Fe 42 Zincate	4
4	Casing cover	AISI 304 [2]	1	23	Capacitor [6]	-	1
6	Shaft with rotor	AISI 303 (wet extension)	1	24	Priming plug	Brass	1
7	Impeller	[3]	1	25	Drain 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 [6] [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	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 1.50 - AGA 2.00 - AGA 3.00 - AGC 1.50 - AGC 2.00 - AGC 3.00
Aluminium for version AGA 0.60 - AGA 0.75 - AGA 1.00
[2] Only for version AGA 0.60 - AGA 0.75 - AGA 1.00
[3] Material : PPE+PS glass fibre reinforced for version AGA 0.60 - AGA 0.75 - AGA 1.00
Brass for version AGA 1.50 - AGA 2.00 - AGA 3.00 - AGC 1.50 - AGC 2.00 - AGC 3.00
[4] See constructions mechanical seal page 301
[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 1.50 - AGA 2.00 - AGC 1.50 - AGC 2.00
[9] With gasket in NBR only for version single phase AGA 0.60 - AGA 0.75 – AGA 1.00

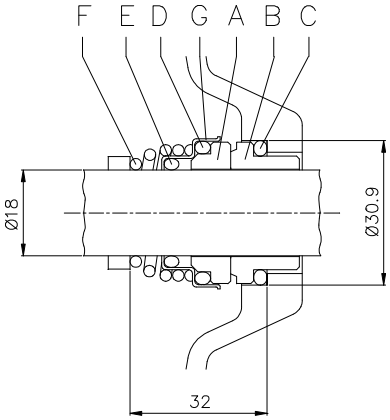
MECHANICAL SEAL

UP TO 0.75 kW



REF	PART NAME	MATERIAL product standard AGA-AGC
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

1.1 kW AND ABOVE



REF	PART NAME	MATERIAL product standard AGA-AGC
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

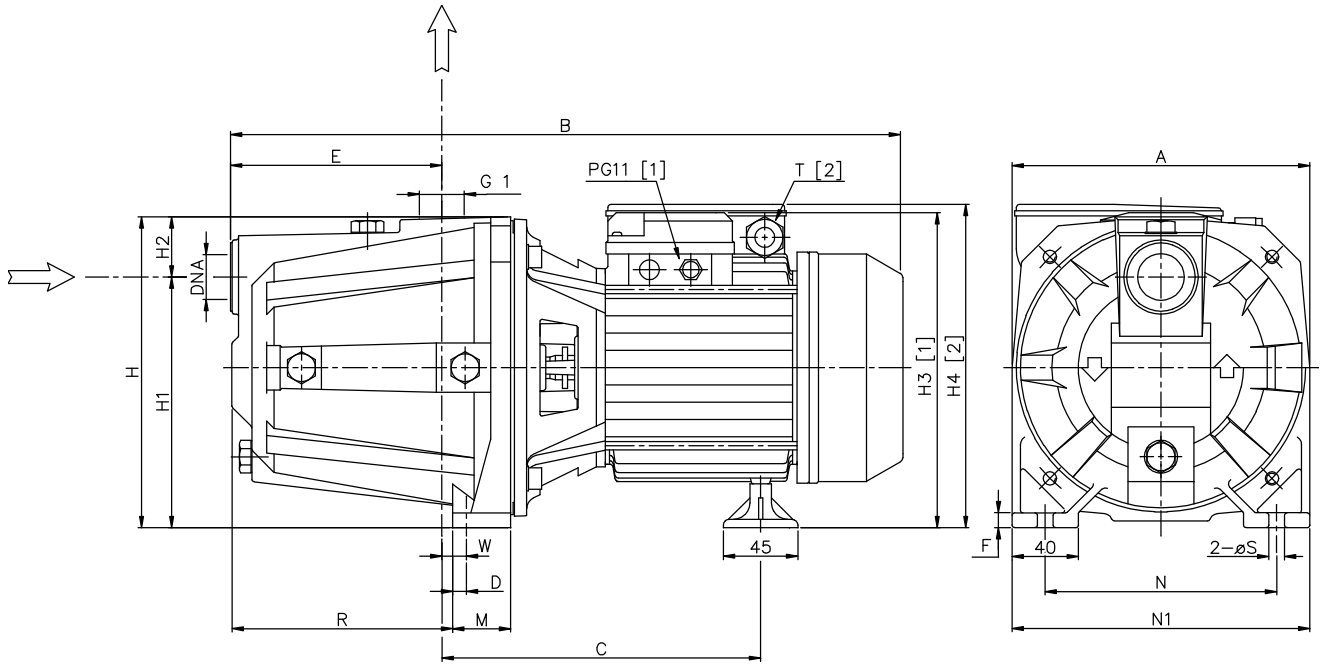
Type pumps		Ball Bearing	
Single Phase	Three Phase	Pump side	Fan side
AGA 0.60 M	AGA 0.60 T	6202 2RSH	6202 2RSH
AGA 0.75 M	AGA 0.75 T	6202 2RSH	6202 2RSH
AGA 1.00 M	AGA 1.00 T	6202 2RSH	6202 2RSH
AGA 1.50 M	AGA 1.50 T	6204 2RSH	6203 2RSH
AGA 2.00 M	AGA 2.00 T	6204 2RSH	6203 2RSH
-	AGA 3.00 T	6204 2RSH	6203 2RSH
AGC 1.50 M	AGC 1.50 T	6204 2RSH	6203 2RSH
AGC 2.00 M	AGC 2.00 T	6204 2RSH	6203 2RSH
-	AGC 3.00 T	6204 2RSH	6203 2RSH

DIMENSIONS AND WEIGHT

50Hz

Rev. G

PUMP



Pump type	Dimensions [mm]																			Weight [kgf]
	A	B	C	D	E	F	H	H1	H2	[1] H3	[2] H4	M	N	N1	R	[2] T	W	S	DNA	
AGA 0.60 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
AGA 0.60 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
AGA 0.75 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 0.75 T	180	405	195	10.3	127	9	185	152	33	197.5	-	40	140	180	128.5	-	11.8	9.5	G 1	12.3
AGA 1.00 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 1.00 T	180	405	195	10.3	127	9	185	152	33	197.5	-	40	140	180	128.5	-	11.8	9.5	G 1	14
AGA 1.50 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	26.4
AGA 1.50 T	220	495	244	10	157	10	223	170	53	229	-	48	180	220	167.5	-	15.5	9	G 1 1/2	24.5
AGA 2.00 M	220	508	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 2.00 T	220	495	244	10	157	10	223	170	53	229	-	48	180	220	167.5	-	15.5	9	G 1 1/2	25.8
AGA 3.00 T	220	508	244	10	157	10	223	170	53	229	-	48	180	220	167.5	-	15.5	9	G 1 1/2	28.1
AGC 1.50 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
AGC 1.50 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
AGC 2.00 M	220	508	244	10	157	10	223	170	53	-	247	48	180	220	167.5	PG13.5	15.5	9	G 1 1/2	26.6
AGC 2.00 T	220	495	244	10	157	10	223	170	53	229	-	48	180	220	167.5	-	15.5	9	G 1 1/2	25.8
AGC 3.00 T	220	508	244	10	157	10	223	170	53	229	-	48	180	220	167.5	-	15.5	9	G 1 1/2	28.1

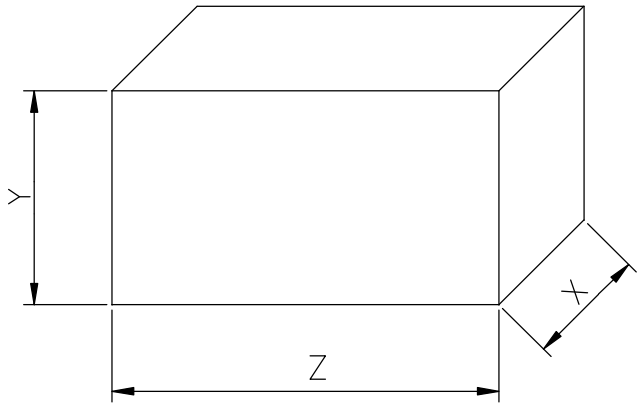
[1] = Three phase
[2] = Single phase

DIMENSIONS AND WEIGHT

50Hz

Rev. G

PACKING



Type pumps		Packing [mm]			Weight [kgf]	
Single Phase	Three Phase	X	Y	Z	1~	3~
AGA 0.60 M	AGA 0.60 T	205	250	445	12.7	12.7
AGA 0.75 M	AGA 0.75 T	205	250	445	13.3	13
AGA 1.00 M	AGA 1.00 T	205	250	445	14.6	14.8
AGA 1.50 M	AGA 1.50 T	232	275	534	26.4	24.5
AGA 2.00 M	AGA 2.00 T	232	275	534	27.7	26.9
-	AGA 3.00 T	232	275	534	-	27.3
AGC 1.50 M	AGC 1.50 T	232	275	534	26.4	26.4
AGC 2.00 M	AGC 2.00 T	232	275	534	27.7	26.9
-	AGC 3.00 T	232	275	534	-	29

TECHNICAL DATA

50Hz

Rev. G

Pump type		Power		Locked rotor current [A]			Capacitor		Input [kW]		Full load current [A]		
Single Phase	Three Phase	kW	HP	Single Phase	Three Phase		230 V		Single Phase	Three Phase	Single Phase	Three Phase	
				230 V	230 V	400 V	[μF]	[V]			230 V	230 V	400 V
AGA 0.60 M	AGA 0.60 T	0.45	0.6	10.2	11.1	6.4	12.5	450	0.70	0.65	3.1	2.1	1.2
AGA 0.75 M	AGA 0.75 T	0.55	0.75	13.5	12.3	7.1	14	450	0.92	0.84	4.0	2.8	1.6
AGA 1.00 M	AGA 1.00 T	0.75	1	17.5	21.7	12.5	20	450	1.15	1.02	5.5	3.6	2.1
AGA 1.50 M	AGA 1.50 T	1.1	1.5	38	32.9	19	35	450	1.65	1.60	8.1	5.3	3.0
AGA 2.00 M	AGA 2.00 T	1.5	2	44	38.1	22	40	450	2.10	2.05	9.8	6.3	3.6
-	AGA 3.00 T	2.2	3	-	50.2	29	-	-	-	2.50	-	7.9	4.7
AGC 1.50 M	AGC 1.50 T	1.1	1.5	38	32.9	19	35	450	1.80	1.75	8.6	5.8	3.3
AGC 2.00 M	AGC 2.00 T	1.5	2	44	42.4	24.5	40	450	2.30	2.25	10.5	6.8	3.9
-	AGC 3.00 T	2.2	3	-	50.2	29	-	-	-	2.60	-	7.9	4.6