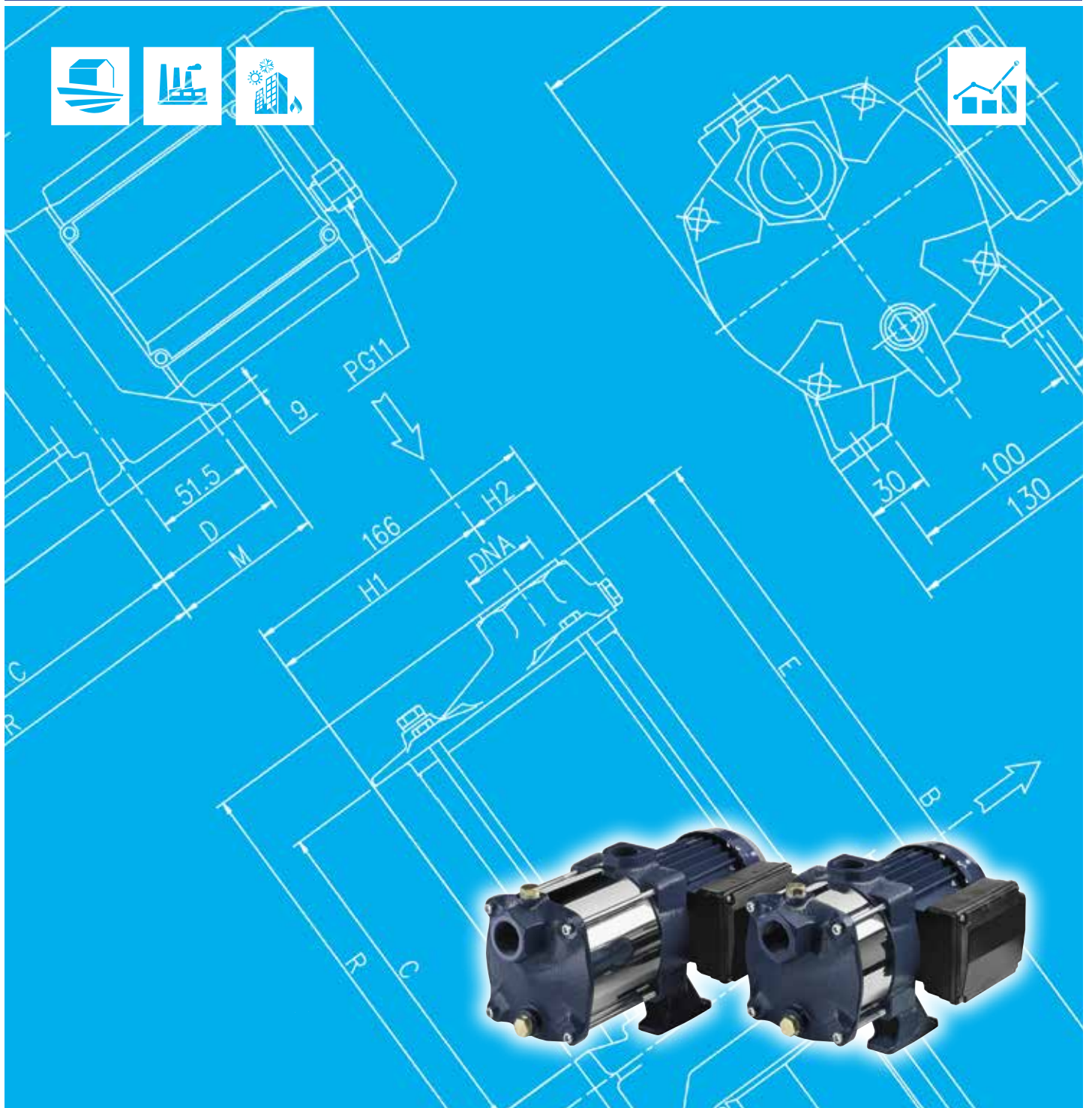




Japanese Technology since 1912

COMPACT

Data Book 60Hz



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SPECIFICATIONS

60Hz

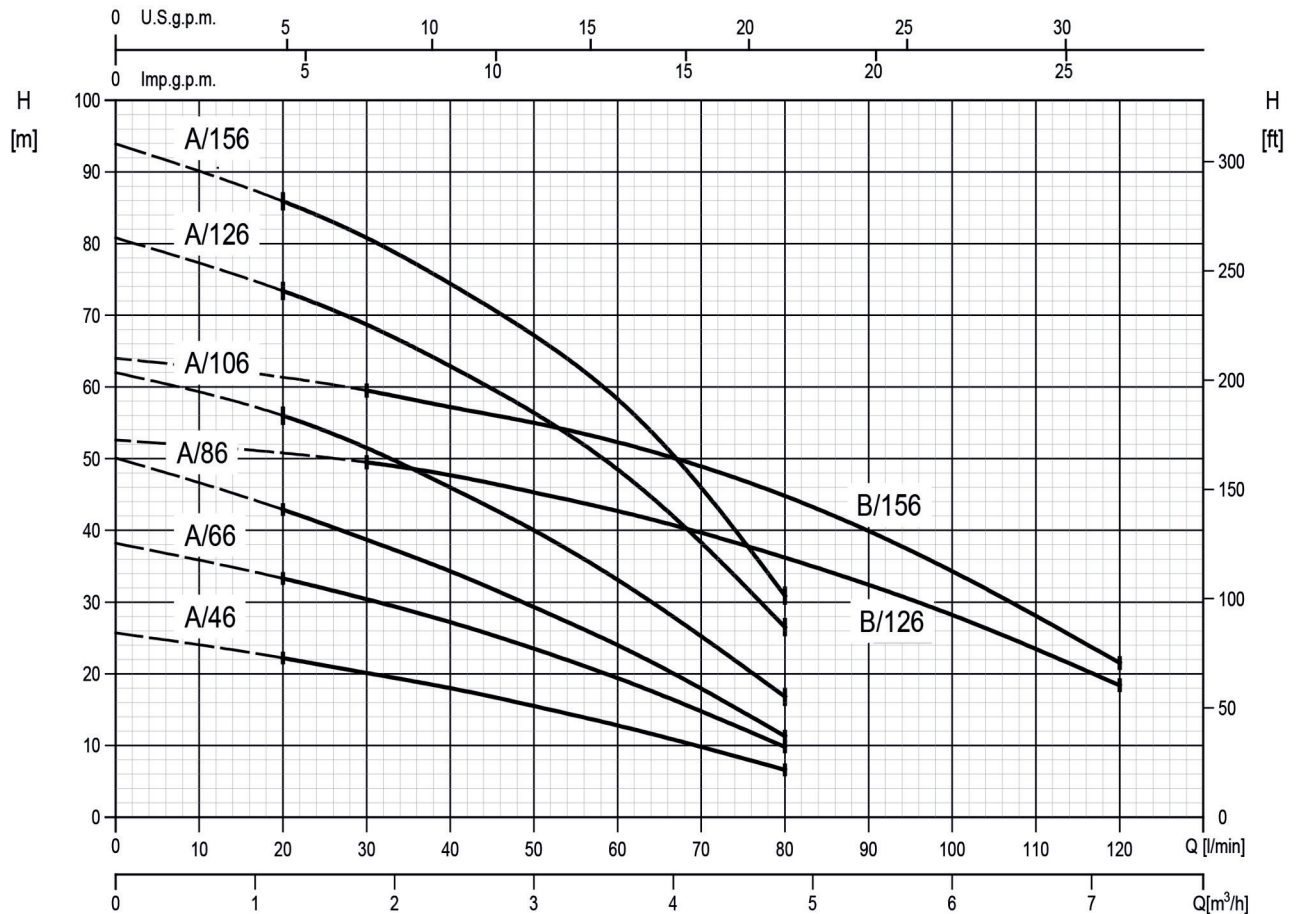
Rev. H

PUMP		
Liquid Handled	Type of liquid	Clean water
	Temperature [°C]	min. +5 max. +40
Maximum working pressure	[MPa]	1
Construction	Impeller	Closed centrifugal
	Shaft seal type	Mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction	G 1" (Compact A version) UNI ISO 228
		G 1 1/4" (Compact B version) UNI ISO 228
	Discharge	G 1" (All version) UNI ISO 228
Material	Casing	Cast iron
	Impeller	PPE+PS glass fibre reinforced
	Shaft seal	Ceramic/Carbon/NBR
	External pump casing	AISI 304
	Shaft	AISI 416
	Stages	PPE+PS glass fibre reinforced/PTFE
	Diffuser	PPE+PS glass fibre reinforced
Bracket	Cast iron	
Applicable standard of test		ISO 9906:2012 - Grade 3B

MOTOR		
Type	Electric - TEFC	
	Single Phase	Three Phase
Efficiency level (Reg.1781/2019)	IE2*	IE3
No. of Poles	2	
Rotation speed [min ⁻¹]	≈ 3400	
Insulation Class	F	
Protection degree	IP 44	
Power rating	[kW]	0.3 ÷ 1.1
	[HP]	0.4 ÷ 1.5
Frequency [Hz]	60	
Voltage [V]	220 - 230 ±6%	220/380 -6%+10% (from 0.3 kW up to 1.1 kW)
		220/380-460 ±10% (IE3* from 0.75 kW up to 1.1 kW)
Capacitor	Built in	-
Over load protection	Built in	Provided by the user
Casing material	Aluminium	
Base material/motor support	Cast iron	
Dimensions of cable entry	PG11 - M16x1.5 (see dimensions table page 400)	

*IE2 only AM46/66/86/106 models

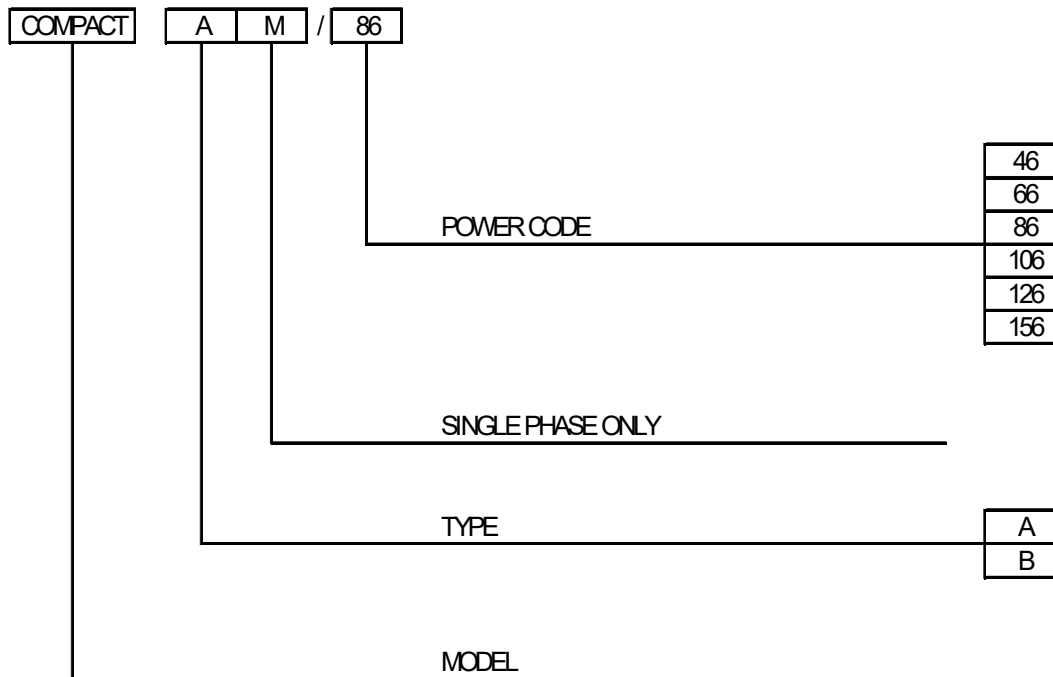
PERFORMANCE RANGE



SELECTION CHART

Pump type		Q=Capacity									
		l/min	0	20	30	40	50	60	80	100	120
Single Phase	Three Phase	m³/h	0	1.2	1.8	2.4	3.0	3.6	4.8	6.0	7.2
		H=Total manometric head in meters									
COMPACT AM/46	COMPACT A/46	25.7	22.2	20.1	18	15.5	12.8	6.6	-	-	-
COMPACT AM/66	COMPACT A/66	38.2	33.3	30.4	27.2	23.5	19.4	9.8	-	-	-
COMPACT AM/86	COMPACT A/86	50	43	38.7	34.3	29.3	24	11.3	-	-	-
COMPACT AM/106	COMPACT A/106	62	56	51.5	46	40	33.1	16.8	-	-	-
COMPACT AM/126	COMPACT A/126	81	73.5	68.5	63	56.5	48.5	26.5	-	-	-
COMPACT AM/156	COMPACT A/156	94	86	81	74.5	67	58.5	30.9	-	-	-
COMPACT BM/126	COMPACT B/126	52.5	-	49.5	47.5	45.5	42.5	36.2	28.2	18.4	-
COMPACT BM/156	COMPACT B/156	64	-	59.5	57	55	52.5	45	34.3	21.5	-

TYPE KEY



CURVES SPECIFICATIONS

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

Tolerances according to ISO 9906:2012 - Grade 3B

The curves refer to effective speed of asynchronous motors at 60 Hz, 2 poles.

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)

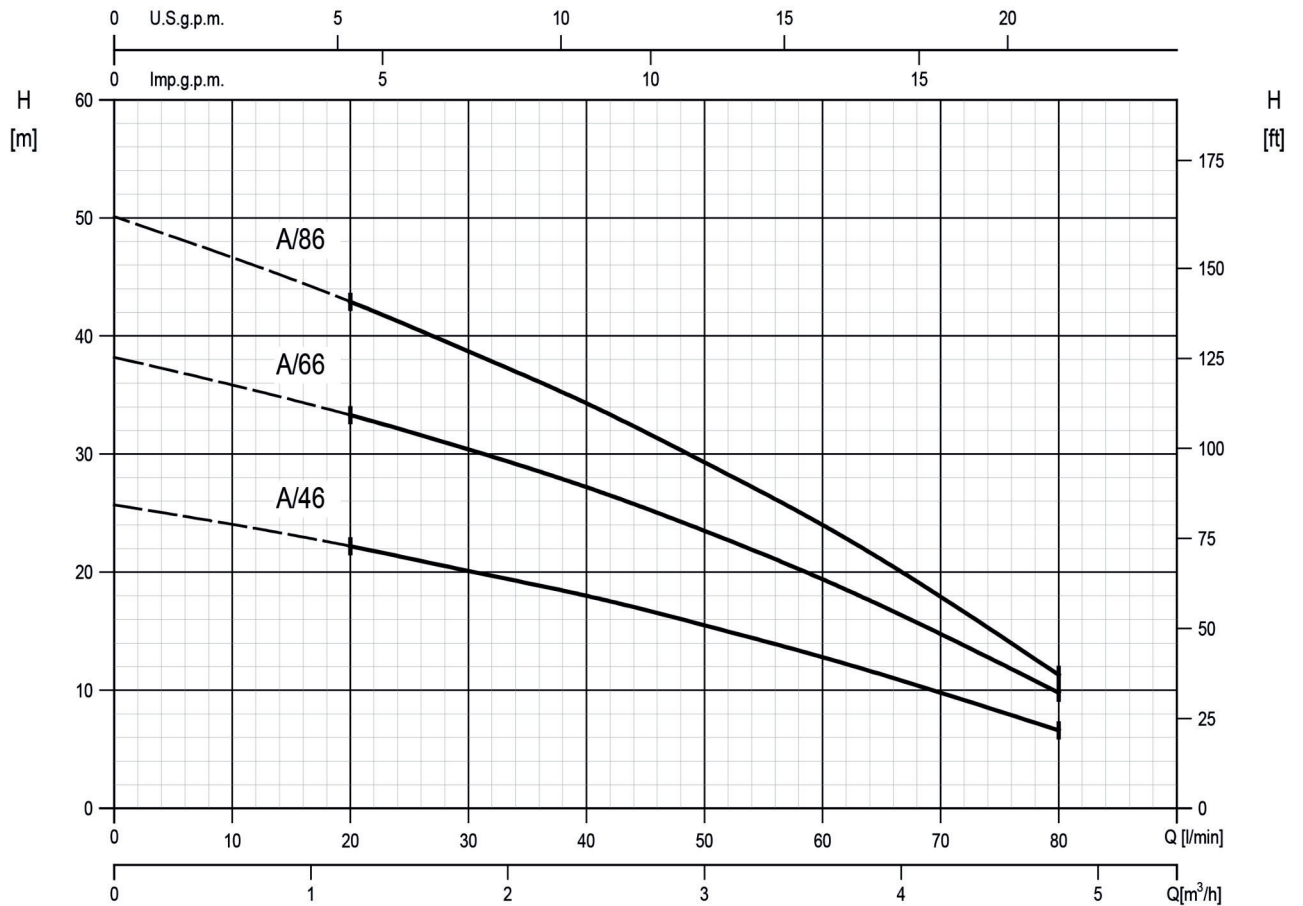
The continuous curves indicate the recommended working range. The dotted curve is only a guide.

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:

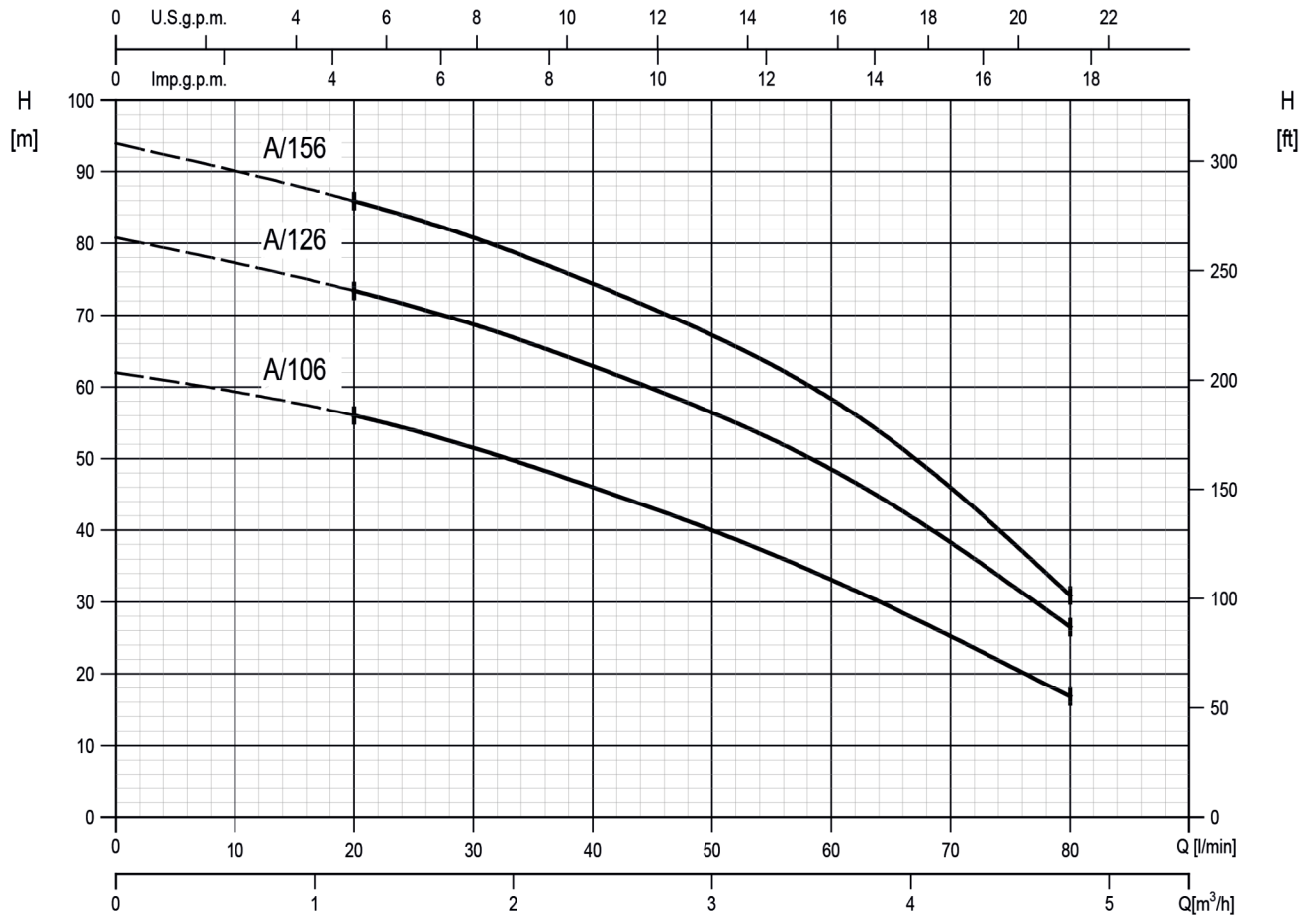
- Q = volume flow rate
- H = total head

COMPACT A/46 - Impeller diameter = 90 mm
COMPACT A/66 - Impeller diameter = 90 mm
COMPACT A/86 - Impeller diameter = 90 mm



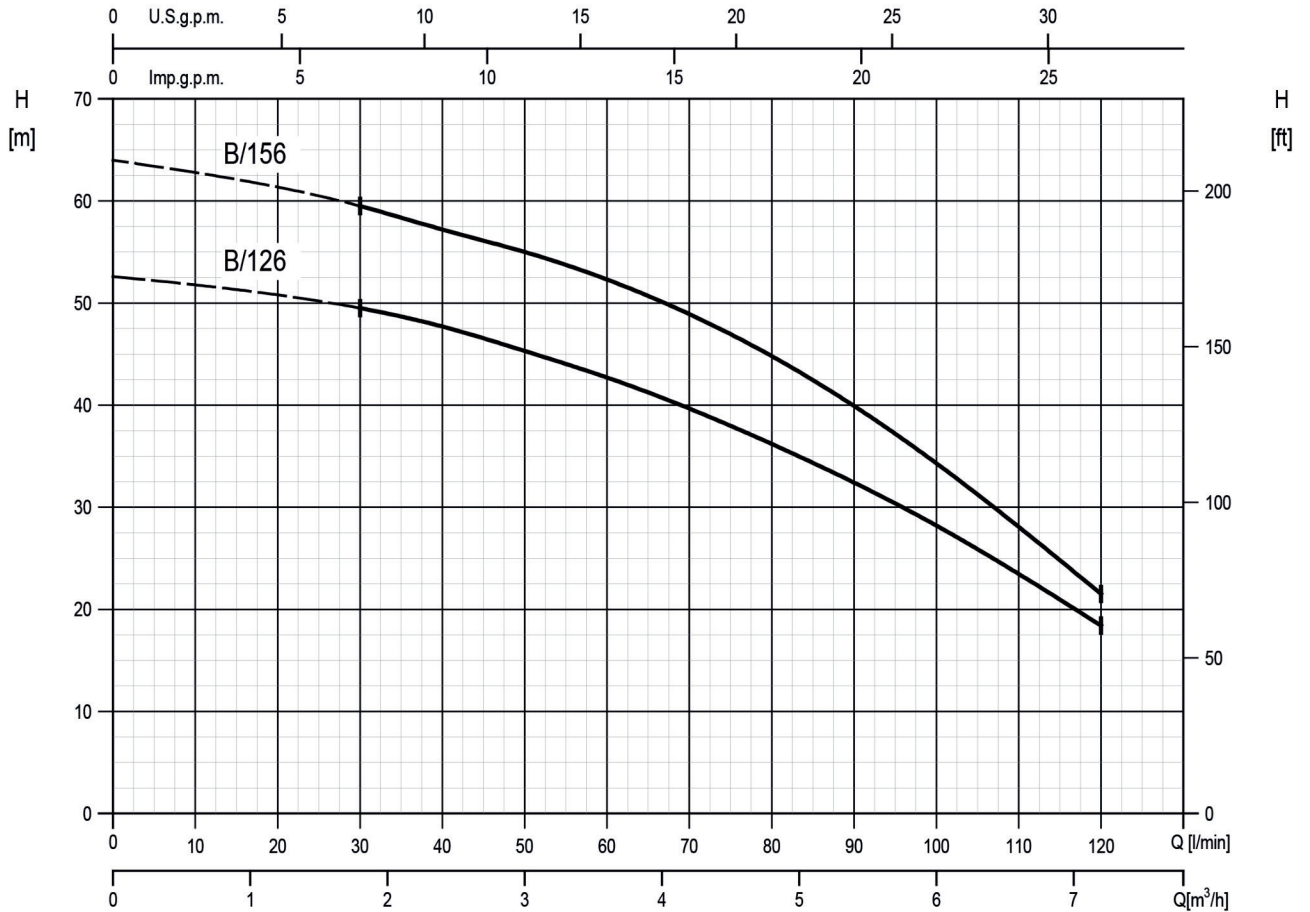
Rotation speed $\approx 3400 \text{ min}^{-1}$
 Test standard: ISO 9906:2012 - Grade 3B

COMPACT A/106 - Impeller diameter = 90 mm
 COMPACT A/126 - Impeller diameter = 90 mm
 COMPACT A/156 - Impeller diameter = 90 mm



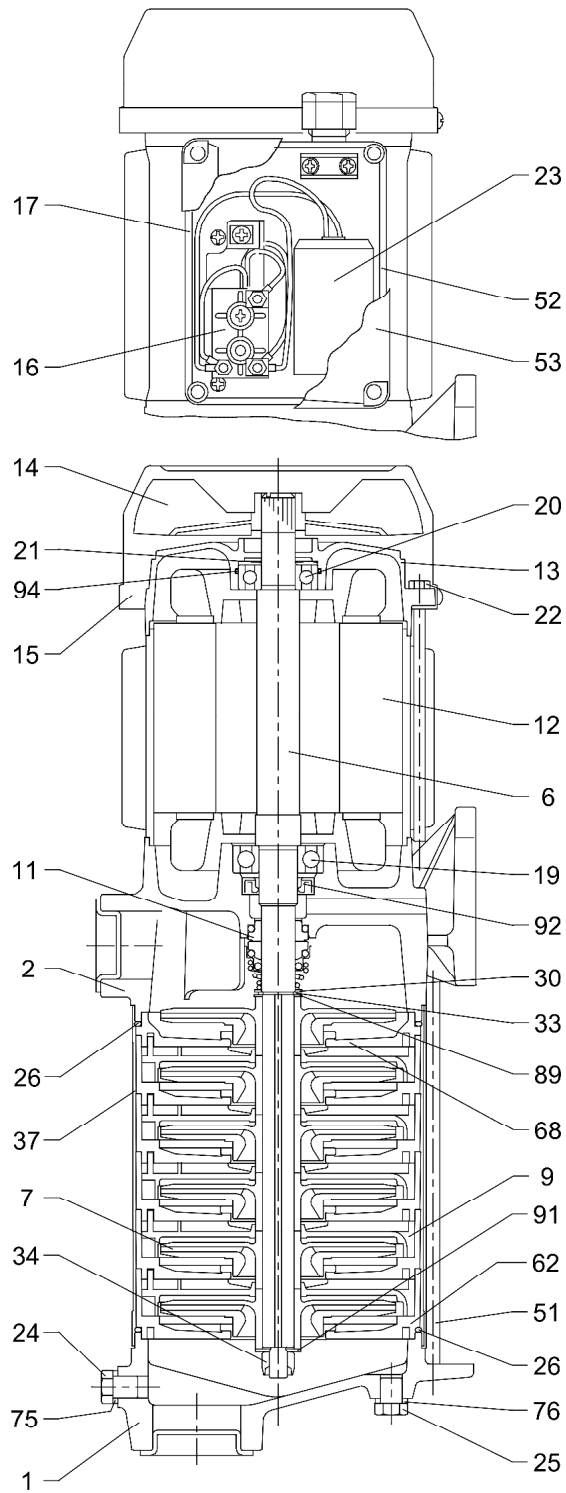
Rotation speed $\approx 3400 \text{ min}^{-1}$
 Test standard: ISO 9906:2012 - Grade 3B

COMPACT B/126 - Impeller diameter = 88 mm
COMPACT B/156 - Impeller diameter = 88 mm



Rotation speed $\approx 3400 \text{ min}^{-1}$
 Test standard: ISO 9906:2012 - Grade 3B

SECTIONAL VIEW DRAWING



SECTIONAL VIEW TABLE

N°	PART NAME	MATERIAL	DIMENSIONS	STANDARD	Q.TY
1	Suction casing	Cast iron EN-GJL-200-EN 1561	-	-	1
2	Delivery casing	Cast iron EN-GJL-200-EN 1561	-	-	1
6	Shaft with rotor	EN 1.4005 (AISI 416)	-	-	1
7	Impeller	PPE+PS fiber glass reinforced	-	-	[1]
9	Diffuser	PPE+PS fiber glass reinforced	-	-	[1]
11	Mechanical seal [2]	Carbon / Ceramic / NBR	-	-	1
12	Motor frame with stator	-	-	-	1
13	Motor cover + Spacer [6]	Aluminium	-	-	1
14	Fan	PA6	-	-	1
15	Fan cover	Galvanized Fe P04	-	-	1
16	Terminal board	-	-	-	1
17	Terminal box cover [3]	Aluminium	-	-	1
19	Pump side ball bearing	-	[4]	-	1
20	Fan side ball bearing	-	[4]	-	1
21	Adjusting ring	Steel C70	-	-	1
22	Motor tie rod	Galvanized Fe 42	M5xL	EBARA DRAWING	4
23	Capacitor [5]	-	-	-	1
24	Priming plug	OT 58 UNI 5705	G 1/8"	UNI ISO 228	1
25	Drain plug	OT 58 UNI 5705	G 1/8"	UNI ISO 228	1
26	O-ring	NBR	120x3	-	2
30	Washer	EN 1.4301 (AISI 304)	12x21x1 - [UP to 0,6kW]	EBARA DRAWING	1
			15x22x1 - [0,75 kW and above]		
33	Seeger ring	EN 1.4021 (AISI 420)	12	UNI 7435	1
		EN 1.4301 (AISI 304)	14	JIS B2804-1978	
34	Impeller nut	EN 1.4301 (AISI 304)	M8x1 - [UP to 0,6kW]	UNI 7474	1
			M10x1,25 - [0,75 kW and above]		
37	External pump casing	EN 1.4301 (AISI 304)	-	-	1
51	Tie rod	Galvanized Fe P04	M6xL	EBARA DRAWING	4
52	Capacitor box [5]	PP class V-0	-	-	1
53	Capacitor box cover [5]	PP class V-0	-	-	1
62	Stage housing	PPE+PS fiber glass reinforced/PTFE	-	-	[1]
68	Stage	PPE+PS fiber glass reinforced/PTFE	-	-	1
75	Washer	Aluminium	10x16x1,5	EBARA DRAWING	1
76	Washer	Aluminium	10x16x1,5	EBARA DRAWING	1
89	Washer	EN 1.4301 (AISI 304)	12x21x1 - [UP to 0,6kW]	EBARA DRAWING	1
			14,1x22x1 - [0,75 kW and above]		
91	Washer	EN 1.4301 (AISI 304)	8,4x17x1,6 - [UP to 0,6kW]	UNI EN ISO 7089	1
			10,2x20x2,5 - [0,75 kW and above]	EBARA DRAWING	
92	Lip seal	NBR	12x24x4	EBARA DRAWING	1
			17x32x6		
94	O-ring [7]	NBR	34.65x1.78	-	1

- [1] See **QUANTITY FOR MODEL** page 302
- [2] See **MECHANICAL SEAL** page 303
- [3] Only for three phase
- [4] See **BEARINGS** page 302
- [5] Only for single phase
- [6] Spacer only for A/8 3~model
- [7] Only for A/126, B/126, AM/156, A/156, BM/156, B/156 models

QUANTITY FOR MODEL

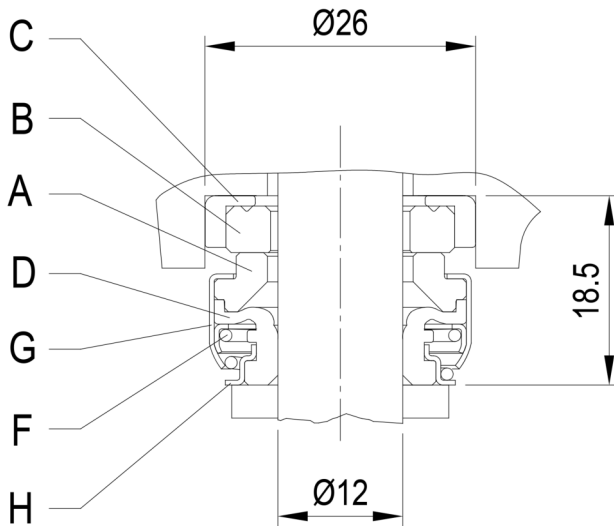
Pump type	N° 7 Impeller	N° 9 Diffuser	N° 62 Stage housing
COMPACT A/46	2	1	1
COMPACT A/66	3	2	2
COMPACT A/86	4	3	3
COMPACT A/106	5	4	4
COMPACT A/126	6	5	5
COMPACT A/156	7	6	6
COMPACT B/126	4	3	3
COMPACT B/156	5	4	4

BEARINGS

Pump type		Ball Bearing	
Single Phase	Three Phase	Pump side	Fan side
COMPACT AM/46	COMPACT A/46	6201	6201
COMPACT AM/66	COMPACT A/66		
COMPACT AM/86	COMPACT A/86		
COMPACT AM/106	COMPACT A/106	6203	6202
COMPACT AM/126	COMPACT B/126		
COMPACT AM/156	COMPACT B/156		
COMPACT BM/126	COMPACT B/126		

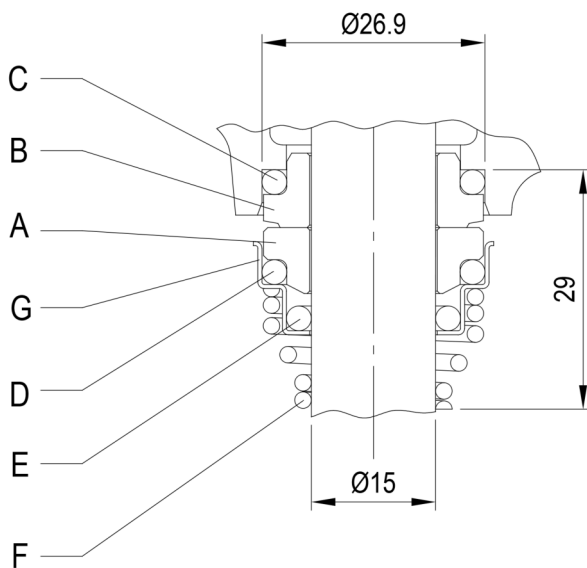
MECHANICAL SEAL

UP TO 0.6 kW



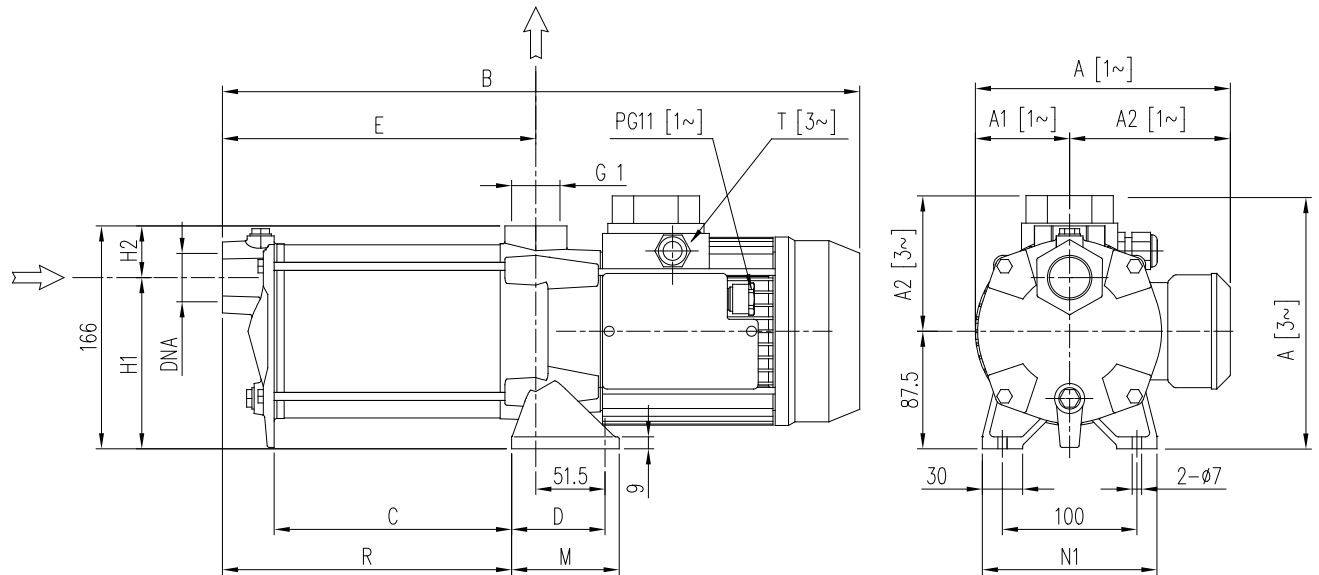
REF	PART NAME	MATERIAL Standard version
A	Rotary seal ring	Carbon Graphite
B	Stationary seal ring	Ceramic
C	Gasket	NBR
D	Bellows	NBR
F	Self driving spring	AISI 304
G	Frame	AISI 304
H	Retainer ring	AISI 304

0.75 kW 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

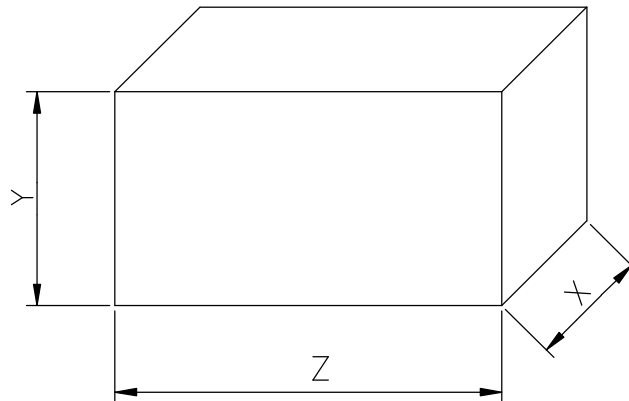
PUMP



Pump type	Three phase [3~]	Dimensions mm												Weight [kgf]		
		A [3~]	A [1~]	B [1~]	B [3~]	C	D	E	H1	H2	M	R	T	DNA	[1~]	[3~]
COMPACT AM/46	COMPACT A/46	159	183.5	307.5	307.5	82	51.5	120.5	127.5	38.5	62	120.5	PG11	G 1"	8.5	8.5
COMPACT AM/66	COMPACT A/66	159	193.5	376	333.5	90	69.5	146.5	123.5	42.5	80	128.5	M16x1.5	G 1"	16	9.4
COMPACT AM/86	COMPACT A/86	159	193.5	402	378.0	116	69.5	172.5	123.5	42.5	80	154.5	M16x1.5	G 1"	16.5	10.5
COMPACT AM/106	COMPACT A/106	169	193.5	438	426	142	69.5	198.5	123.5	42.5	80	180.5	M16x1.5	G 1"	15.5	14.5
COMPACT AM/126	COMPACT A/126	169	193.5	508	464	126	69.5	224.5	123.5	42.5	80	206.5	M16x1.5	G 1"	15.5	16.3
COMPACT AM/156	COMPACT A/156	169	193.5	490	490	194	69.5	250.5	123.5	42.5	80	232.5	M16x1.5	G 1"	16.7	16.7
COMPACT BM/126	COMPACT B/126	169	193.5	400	412	116	69.5	172.5	123.5	42.5	80	154.5	M16x1.5	G 1 1/4"	14.9	15.7
COMPACT BM/156	COMPACT B/156	169	193.5	438	438	142	69.5	198.5	123.5	42.5	80	180.5	M16x1.5	G 1 1/4"	15.9	15.9

[1~] Single phase
[3~] Three phase

PACKING



Type pumps		Packing [mm]						Weight [kgf]	
Single Phase	Three Phase	X		Y		Z		[1~]	[3~]
		[1~]	[3~]	[1~]	[3~]	[1~]	[3~]		
COMPACT AM/46	COMPACT A/46	202	202	212	212	384	384	9,0	9,0
COMPACT AM/66	COMPACT A/66	222	202	201	212	515	384	16,5	9,9
COMPACT AM/86	COMPACT A/86	222	202	201	212	515	384	17,3	11,0
COMPACT AM/106	COMPACT A/106	222	222	201	201	515	515	16,5	15,5
COMPACT AM/126	COMPACT A/126	222	222	201	201	515	515	16,6	17,3
COMPACT AM/156	COMPACT A/156	222	222	201	201	515	515	17,7	17,9
COMPACT BM/126	COMPACT B/126	222	222	201	201	515	515	15,9	16,7
COMPACT BM/156	COMPACT B/156	222	222	201	201	515	515	16,9	16,9

[1~] Single phase

[3~] Three phase

MOTOR DATA

Pump type	Power		Efficiency [IE2 / IE3]	Capacitor		Efficiency (% load) and power factor				Input [kW]	Full load current		Locked rotor current		Speed [rpm]	Locked rotor torque	
	[kW]	[HP]		[μF]	[V]	η %			cos-φ		[A]		[A]			[Nm]	
						50%	75%	100%			110 V	220 V	110 V	220 V		110 V	220 V
COMPACT AM/46	0,37	0,5	IE2	12,5	450	63,8	70,5	72,4	0,99	0,51	-	2,4	-	8,8	3275	-	0,58
COMPACT AM/66	0,55	0,75	IE2	12,5	450	63,8	71,2	75,7	0,96	0,75	-	3,6	-	17,4	3410	-	0,47
COMPACT AM/86	0,55	0,75	IE2	12,5	450	63,8	71,2	75,7	0,96	0,75	-	3,6	-	17,4	3410	-	0,47
COMPACT AM/106	0,9	1,2	IE2	31,5	450	64,1	73,2	79,4	0,86	1,17	-	5,9	-	45,3	3495	-	1,88
COMPACT AM/126	1,1	1,5	-	25	450	-	-	-	0,97	1,54	-	7,3	-	35,0	3450	-	-
COMPACT AM/156	1,1	1,5	-	31,5	450	-	-	-	0,95	1,47	-	7,1	-	30,7	3430	-	-
COMPACT BM/126	1,1	1,5	-	25	450	-	-	-	0,97	1,54	-	7,3	-	35,0	3450	-	-
COMPACT BM/156	1,1	1,5	-	31,5	450	-	-	-	0,95	1,47	-	7,1	-	30,7	3430	-	-

Pump type	Power		Efficiency Three Phase	Efficiency (% load) Three phase (380 V)			Efficiency (% load) Three phase (460 V)			Input [kW] Three Phase	Full load current [A] Three Phase			Locked rotor current [A] Three Phase		
	[kW]	[HP]		η %			η %				220 V 380 V 460 V			220 V 380 V 460 V		
				50%	75%	100%	50%	75%	100%		220 V	380 V	460 V	220 V	380 V	460 V
COMPACT A/46	0.3	0.4	IE3	77.3	78.8	76.4	69.8	76.6	77.8	0.49	1.5	0.9	0.9	6.8	3.9	4.8
COMPACT A/66	0.44	0.6	IE3	75.7	77.1	75.9	71.8	75.1	78.6	0.55	1.8	1.0	1.0	8.6	4.9	6.0
COMPACT A/86	0.6	0.8	IE3	80.9	80.1	78.5	76.9	80.1	80.3	0.74	2.2	1.3	1.3	11.8	6.8	8.3
COMPACT A/106	0.75	1.0	IE3	80.7	81.9	81.3	78.4	81.6	83.1	0.9	2.8	1.6	1.5	16.9	9.7	11.8
COMPACT A/126	0.9	1.2	IE3	84.8	84.5	82.7	82	84.4	84.5	1.30	4.0	2.3	2.2	24.6	14.2	17.2
COMPACT A/156	1.1	1.5	IE3	84.8	84.5	82.7	82	84.4	84.5	1.30	4.0	2.3	2.2	24.6	14.2	17.2
COMPACT B/126	0.9	1.2	IE3	84.8	84.5	82.7	82	84.4	84.5	1.30	4.0	2.3	2.2	24.6	14.2	17.2



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