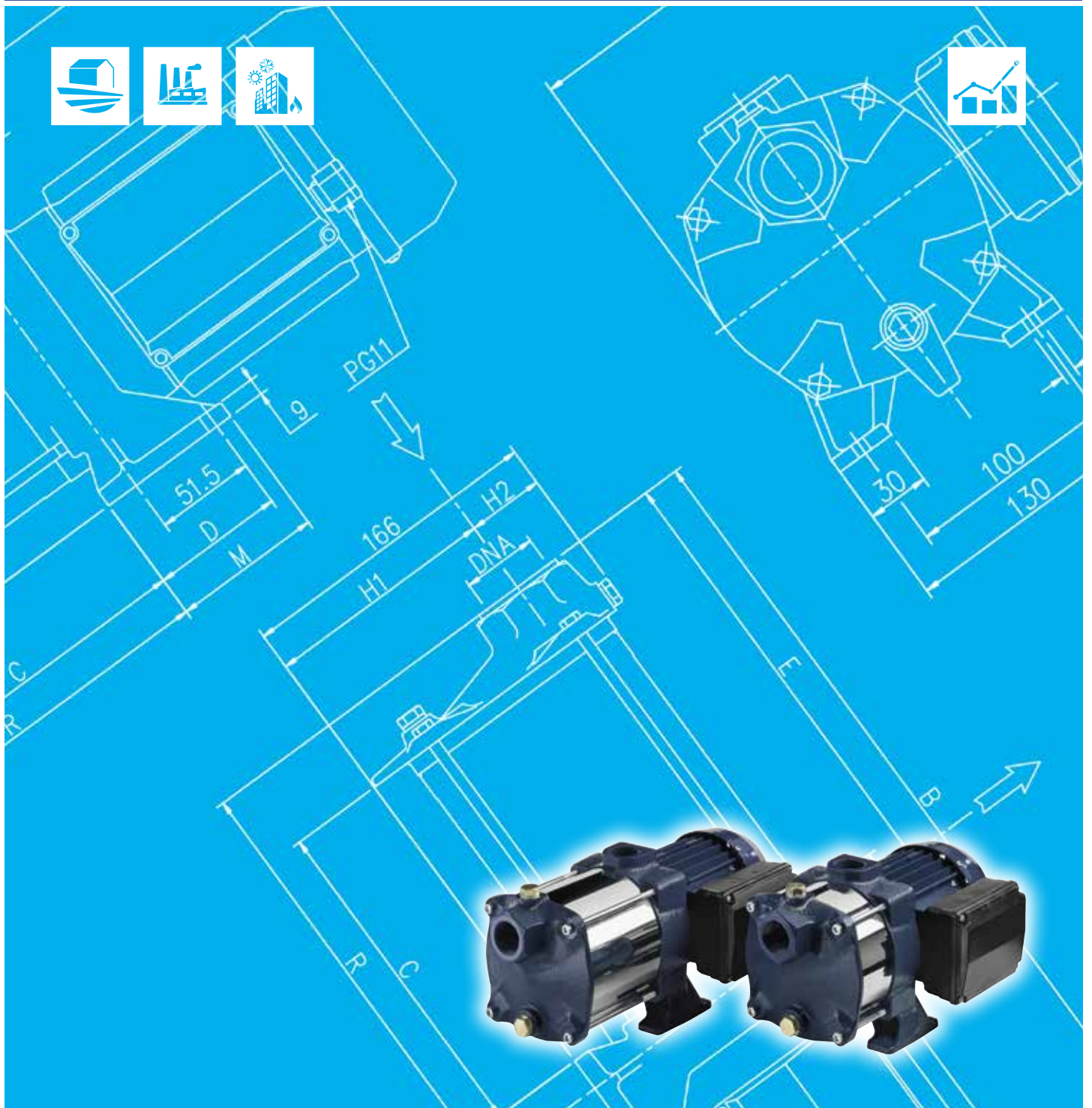




Japanese Technology since 1912

COMPACT

Data Book 50Hz



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SPECIFICATION

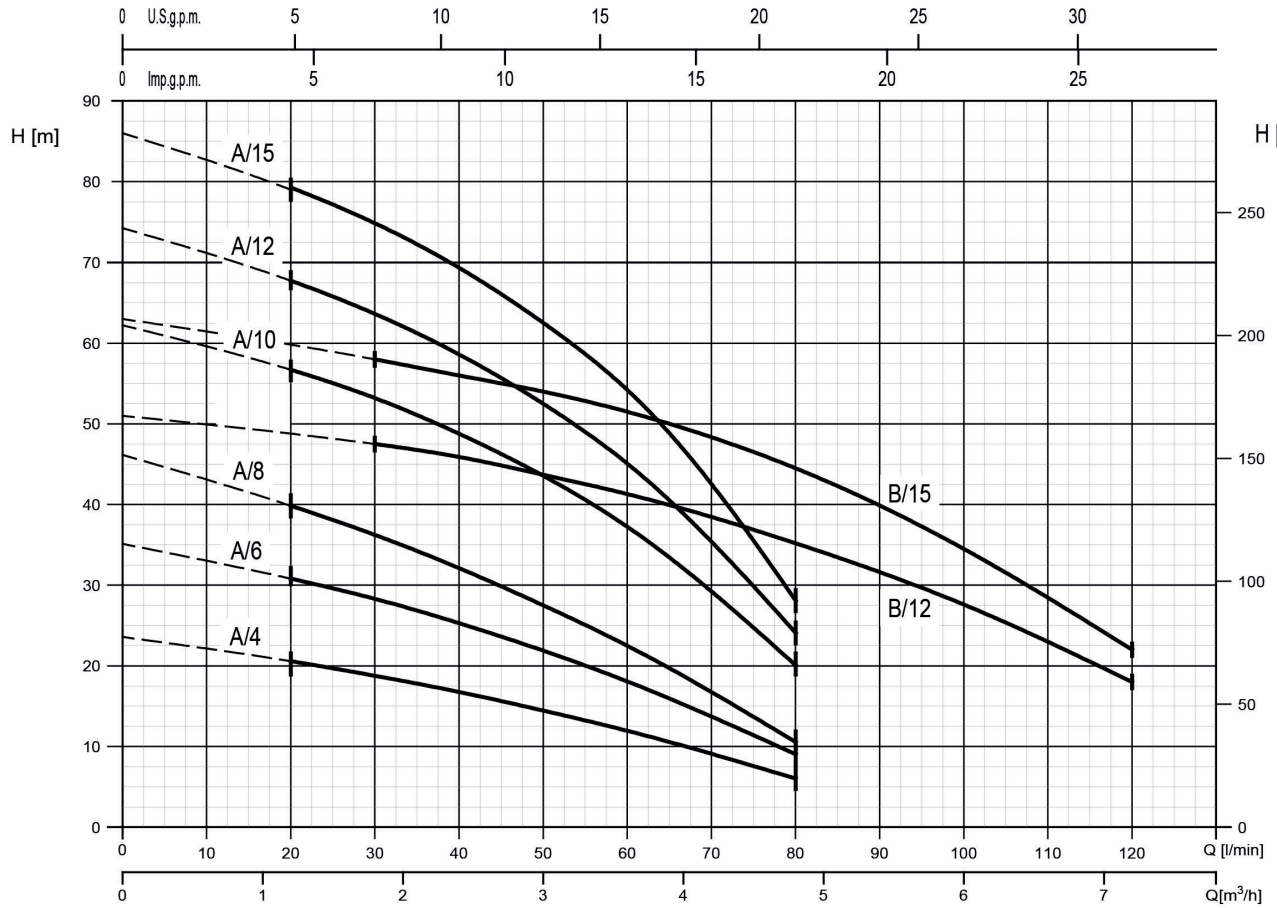
50Hz

Rev.O

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"¼ (Compact B version) UNI ISO 228
	Discharge	G 1" (All version) UNI ISO 228
Material	Casing	Cast iron
	Impeller	PPE+PS Glass Fiber Reinforced
	Shaft seal	Ceramic/Carbon/NBR
	External pump casing	AISI 304
	Shaft	AISI 416
	Stages	PPE+PS Glass Fiber Reinforced/PTFE
	Diffuser	PPE+PS Glass Fiber 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]	≈ 2800	
Insulation Class	F	
Protection degree (CEI EN 60034-5)	IP 44	
Power rating	[kW]	0.3 ÷ 1.1
	[HP]	0.4 ÷ 1.5
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	Cast iron	
Dimensions of cable entry	PG11 - M16x1.5	

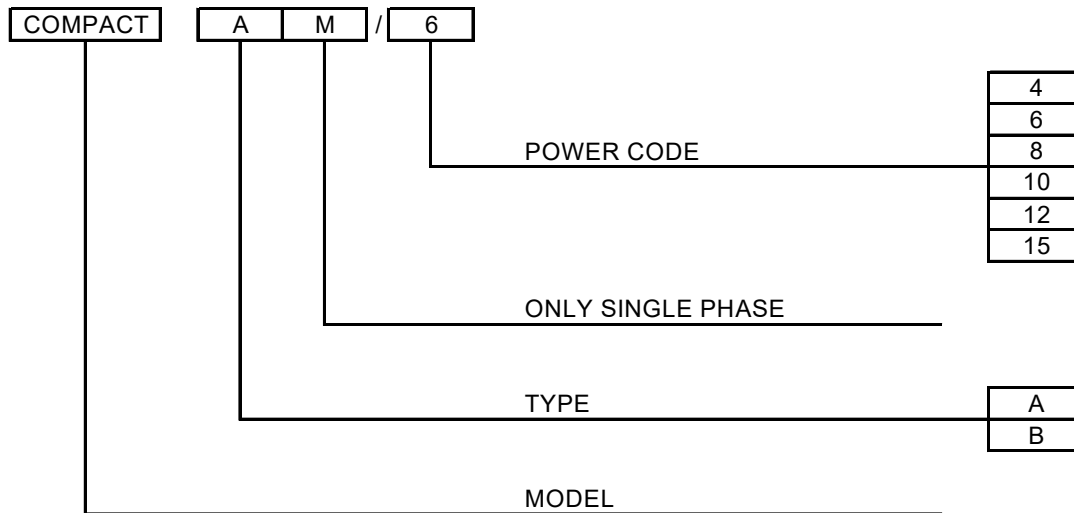
PERFORMANCE RANGE



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/4	COMPACT A/4	23.5	20.5	18.7	16.7	14.4	11.9	6	-	-	-
COMPACT AM/6	COMPACT A/6	35	30.7	28.2	25.2	21.8	18	9	-	-	-
COMPACT AM/8	COMPACT A/8	46	39.7	36.1	32	27.4	22.4	10.5	-	-	-
COMPACT AM/10	COMPACT A/10	62	56.5	53	48.5	43.5	37.1	20	-	-	-
COMPACT AM/12	COMPACT A/12	74	67.5	63.5	58.5	52.5	45	24	-	-	-
COMPACT AM/15	COMPACT A/15	86	79	74.5	69	62.5	54	28	-	-	-
COMPACT BM/12	COMPACT B/12	51	-	47.5	46	43.5	41.5	35.2	27.6	18	-
COMPACT BM/15	COMPACT B/15	63	-	58	56	54	51.5	44.5	34.5	22	-

TYPE KEY



CURVE 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 50 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 NPSH curve is an average curve obtained in the same conditions of performance curves.

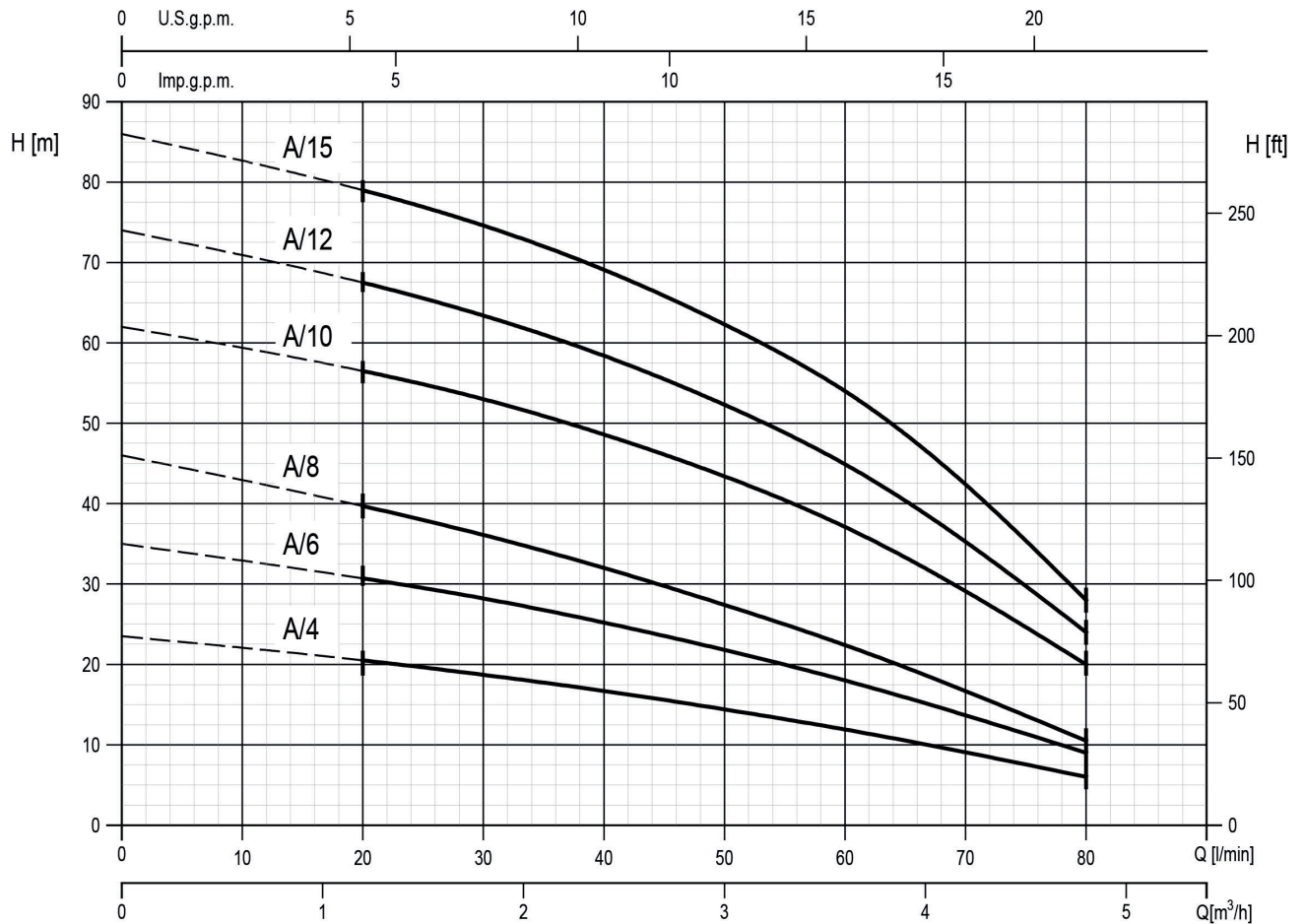
The continuous curves indicate the recommended working range. The dotted curve is only a guide.

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:

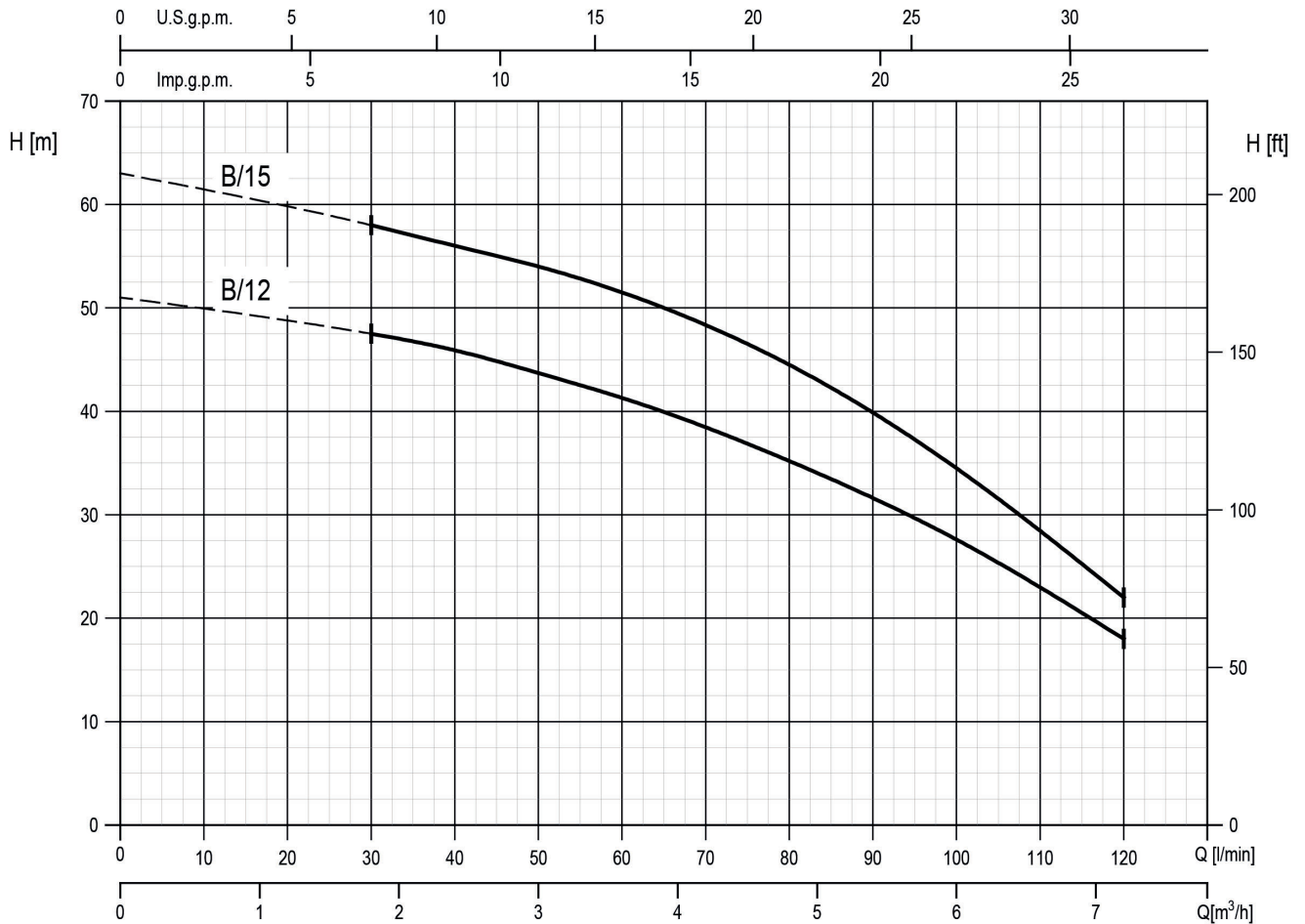
- Q = volume flow rate
- H = total head

COMPACT A/4 - Impeller diameter = 104 mm
COMPACT A/6 - Impeller diameter = 104 mm
COMPACT A/8 - Impeller diameter = 104 mm
COMPACT A/10 - Impeller diameter = 104 mm
COMPACT A/12 - Impeller diameter = 104 mm
COMPACT A/15 - Impeller diameter = 104 mm



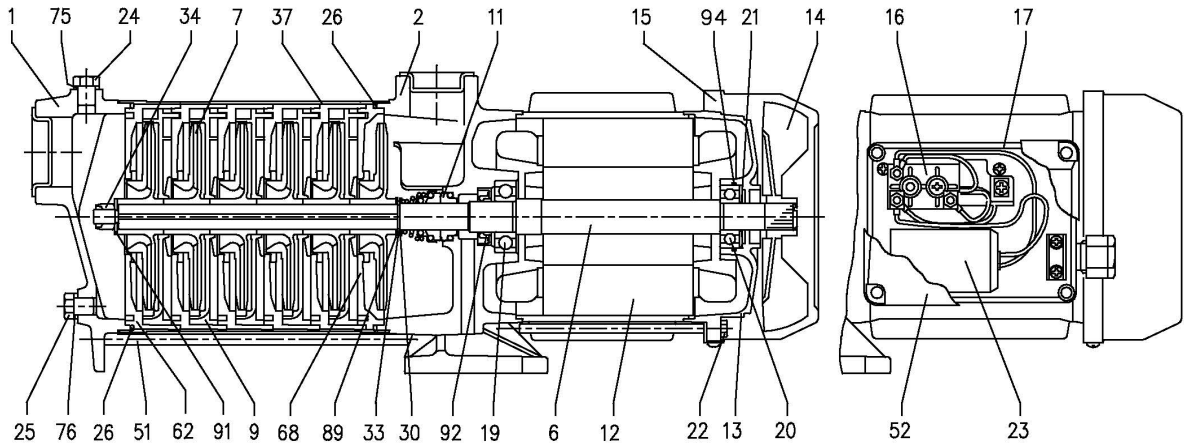
Rotation speed $\approx 2800 \text{ min}^{-1}$
 Test standard: ISO 9906:2012 - Grade 3B

COMPACT B/12 - Impeller diameter = 102 mm
COMPACT B/15 - Impeller diameter = 102 mm



Rotation speed $\approx 2800 \text{ min}^{-1}$
 Test standard: ISO 9906:2012 - Grade 3B

SECTIONAL VIEW

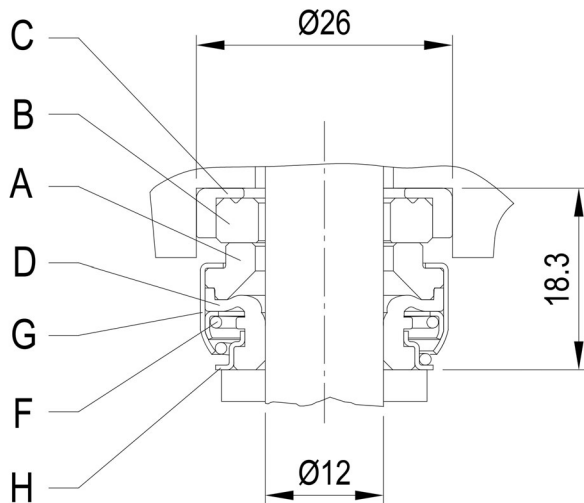


N°	PART NAME	MATERIAL	Q.TY
1	Suction casing	G20	1
2	Delivery casing	G20	1
6	Shaft with rotor	AISI 416	1
7	Impeller	PPE+PS Glass Fibre Reinforced	[3]
9	Diffuser	PPE+PS Glass Fibre Reinforced	[3]
11	Mechanical seal [2]	Carbon/Ceramic/NBR	1
12	Motor frame with stator	-	1
13	Motor cover + Spacer [4]	Aluminium	1
14	Fan	PP	1
15	Fan cover	Fe P04 Zincate	1
16	Terminal board	-	1
17	Terminal box cover [2]	Aluminium	1
		PP [1]	
19	Pump side ball bearing	-	1
20	Fan side ball bearing	-	1
21	Adjusting ring	Steel C70	1
22	Tie rod	Fe 42 Zincate	4
23	Capacitor [1]	-	1
24	Priming plug	Brass	1
25	Drain plug	Brass	1
26	O-ring	NBR	2
30	Washer	AISI 304	1
33	Seeger ring	AISI 304	1
34	Impeller nut	AISI 304	1
37	External pump casing	AISI 304	1
51	Tie rod	Fe P04 Zincate	4
52	Capacitor box [1]	PP class V-0	1
62	Stage housing	PPE+PS Glass Fibre Reinforced	[3]
68	Stage	PPE+PS Glass Fibre Reinforced/PTFE	1
75	Washer	AISI 304	1
76	Washer	AISI 304	1
89	Washer	AISI 304	1
91	Washer	AISI 304	1
92	Lip seal	-	1
94	O-ring [5]	NBR	1

- [1] Only for single phase
- [2] See **MECHANICAL SEAL** page 301
- [3] See **QUANTITY FOR MODEL** page 302
- [4] Spacer – Only for A/8 3~model
- [5] Only for A/12, B/12, A/15, AM/15, B/15, BM/15 models

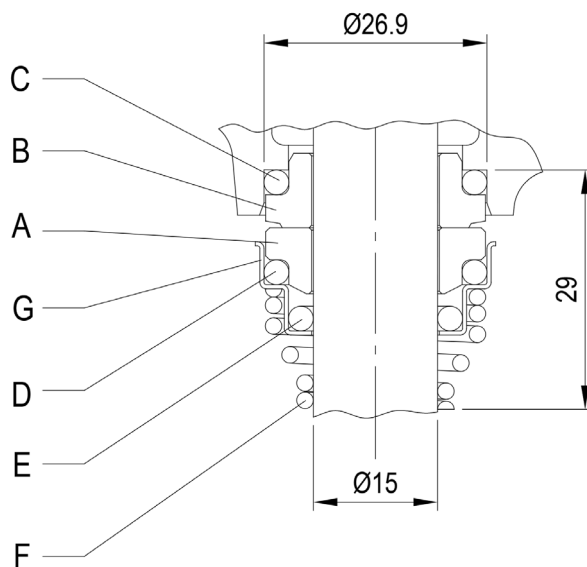
MECHANICAL SEAL

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

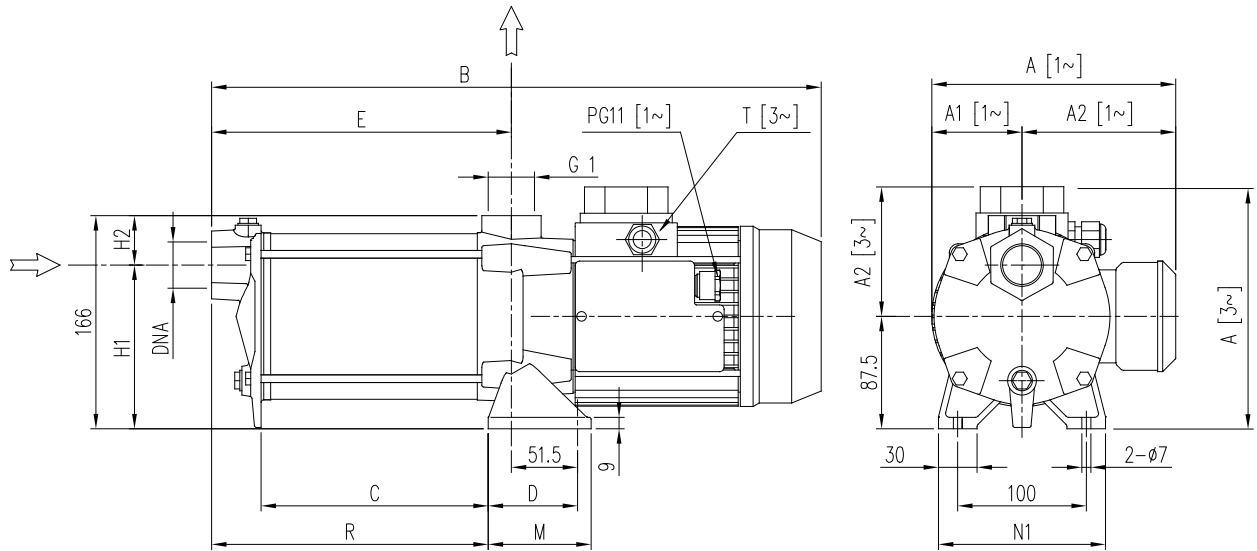
BEARINGS

Type pumps		Pump side		Fan side	
Single Phase	Three Phase	[1~]	[3~]	[1~]	[3~]
COMPACT AM/4	COMPACT A/4	6201	6201	6201	6201
COMPACT AM/6	COMPACT A/6				
COMPACT AM/8	COMPACT A/8				
COMPACT AM/10	COMPACT A/10	6203	6203	6202	6202
COMPACT AM/12	COMPACT A/12				
COMPACT AM/15	COMPACT A/15				
COMPACT BM/12	COMPACT B/12				
COMPACT BM/15	COMPACT B/15				

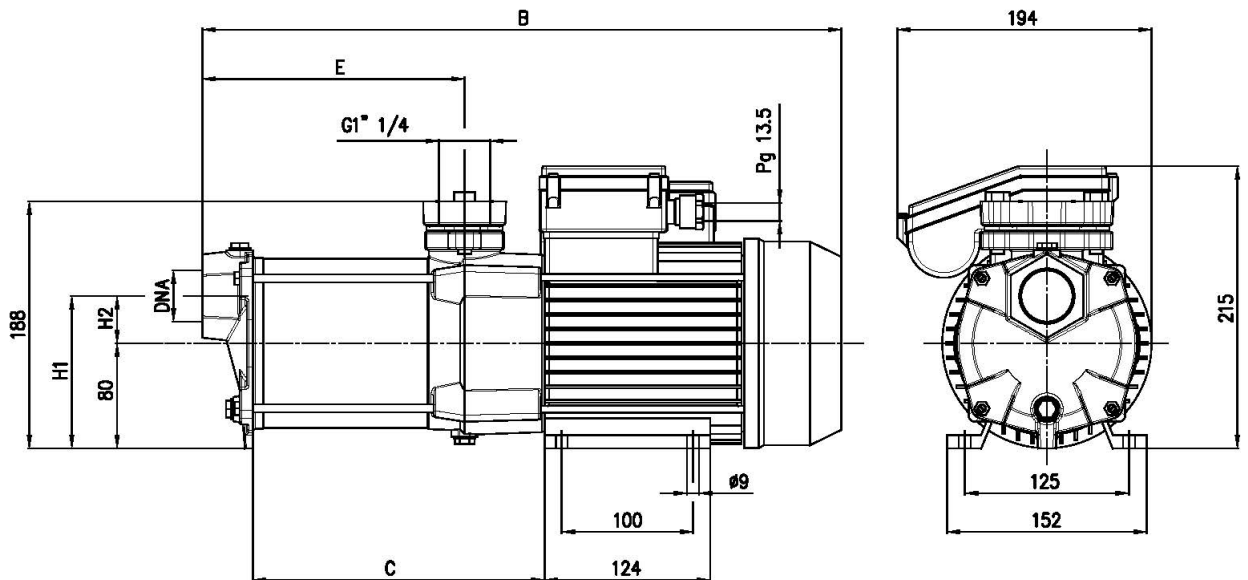
QUANTITY FOR MODEL

PUMP	N° 7 Impeller	N° 9 Diffuser	N° 62 Stage housing
COMPACT A/4	2	1	1
COMPACT A/6	3	2	2
COMPACT A/8	4	3	3
COMPACT A/10	5	4	4
COMPACT A/12	6	5	5
COMPACT A/15	7	6	6
COMPACT B/12	4	3	3
COMPACT B/15	5	4	4

Pump



AM15/BM15



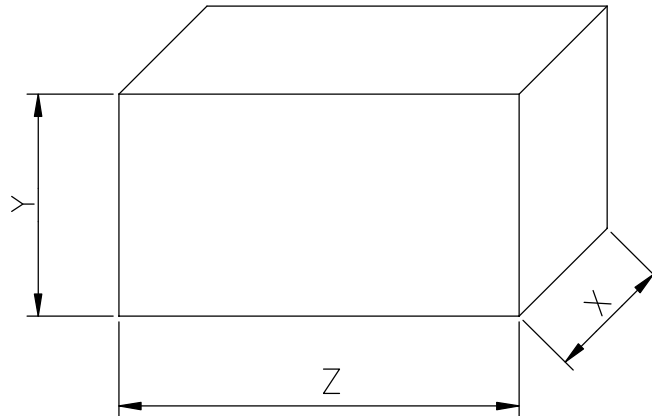
Pump type Type	Phase	Dimensions mm											Weight [kgf]
		A	B	C	D	E	H1	H2	M	R	T	DNA	
COMPACT AM/4	1~	183.5	308	82	51.5	120.5	127.5	38.5	62	120.5	PG11	G 1"	8.5
COMPACT A/4	3~	159	307.5	82	51.5	120.5	127.5	38.5	62	120.5	PG11	G 1"	8.5
COMPACT AM/6	1~	193,5	362	90	69,5	146.5	127.5	38.5	80	128,5	PG11	G 1"	14
COMPACT A/6	3~	159	333.5	108	51,5	146.5	127.5	38.5	62	146,5	PG11	G 1"	9.5
COMPACT AM/8	1~	193,5	359,5	116	69,5	172.5	127.5	38.5	80	154,5	PG11	G 1"	14.5
COMPACT A/8	3~	159	377	134	51,5	172.5	127.5	38.5	62	172,5	PG11	G 1"	10.6
COMPACT AM/10	1~	193.5	438	142	69.5	198.5	127.5	38.5	80	180.5	M16x1.5	G 1"	15
COMPACT A/10	3~	169	426	142	69.5	198.5	127.5	38.5	80	180.5	M16x1.5	G 1"	14.5
COMPACT AM/12	1~	193.5	452	168	69.5	224.5	127.5	38.5	80	206.5	M16x1.5	G 1"	16
COMPACT A/12	3~	169	464	168	69.5	224.5	127.5	38.5	80	206.5	M16x1.5	G 1"	16.3
COMPACT A/15	3~	169	490	194	69.5	250.5	123,5	42.5	80	232.5	M16x1.5	G 1"	16.7
COMPACT BM/12	1~	193.5	400	116	69.5	172.5	123.5	42.5	80	154.5	M16x1.5	G 1 1/4"	15
COMPACT B/12	3~	169	412	116	69.5	172.5	123.5	42.5	80	154.5	M16x1.5	G 1 1/4"	15.7
COMPACT B/15	3~	169	438	142	69.5	198.5	123,5	42.5	80	180.5	M16x1.5	G 1 1/4"	15.9

Pump type Type	Phase	Dimensions mm						Weight [kgf]
		B	C	E	H1	H2	DNA	
COMPACT AM/15	1~	540	274	252	116	36	G 1"	20
COMPACT BM/15	1~	488	222	200	120	40	G 1 1/4"	20,8

[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/4	COMPACT A/4	185	185	195	195	378	375	9,4	9.0
COMPACT AM/6	COMPACT A/6	222	185	201	195	515	375	14,8	9.9
COMPACT AM/8	COMPACT A/8	222	201	201	222	515	515	15,2	11.0
COMPACT AM/10	COMPACT A/10	222	222	201	201	508	515	15,9	15.5
COMPACT AM/12	COMPACT A/12	222	222	201	201	508	515	16,8	17.3
COMPACT AM/15	COMPACT A/15	222	222	258	201	562	515	20,9	17.9
COMPACT BM/12	COMPACT B/12	222	222	201	201	508	515	15,7	16.7
COMPACT BM/15	COMPACT B/15	222	222	258	201	562	515	21	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	
	[kW]	[HP]		[μF]	[V]	η %	□	cos-φ	[kW]		[A]		[A]	
											50%	75%	100%	110 V
COMPACT AM/4	0,37	0,5	IE2	12,5	450	60,0	67,6	69,8	0,92	0,55	-	2,6	-	9,6
COMPACT AM/6	0,45	0,6	IE2	14	450	55,7	65,6	72,5	0,94	0,65	-	3,0	-	13,4
COMPACT AM/8	0,55	0,75	IE2	20	450	62,3	70,4	74,8	0,93	0,75	-	3,5	-	18,9
COMPACT AM/10	0,9	1,2	IE2	31,5	450	67,0	75,3	79,0	0,92	1,15	-	5,4	-	31,3
COMPACT AM/12	0,9	1,2	IE2	31,5	450	67,0	75,3	79,0	0,92	1,15	-	5,4	-	31,3
COMPACT AM/15	1,3	1,75	IE2	40	450	71,5	78,0	81,8	0,97	1,64	-	7,4	-	51,3
COMPACT BM/12	0,9	1,2	IE2	31,5	450	67,0	75,3	79,0	0,92	1,15	-	5,4	-	31,3
COMPACT BM/15	1,3	1,75	IE2	40	450	71,5	78,0	81,8	0,97	1,64	-	7,4	-	51,3

Pump type	Power		Efficiency	Efficiency (% load)			Input [kW]	Full load current		Locked rotor current		
	[kW]	[HP]		η %	50%	75%		100%	[A]		[A]	
									230 V	400 V	230 V	400 V
COMPACT A/4	0.3	0.4	IE3	70.2	73.1	74.5	0.51	1.7	1.0	7.1	4.1	
COMPACT A/6	0.44	0.6	IE3	69.0	74.6	75.1	0.55	1.8	1.1	9.6	5.5	
COMPACT A/8	0.6	0.8	IE3	76.7	78.6	78.5	0.76	2.6	1.5	13.0	7.5	
COMPACT A/10	0.75	1.0	IE3	80.9	82.3	82.1	1.03	3.3	1.9	19.7	11.4	
COMPACT A/12	0.9	1.2	IE3	81.7	83.1	82.4	1.34	4.3	2.5	28.8	16.6	
COMPACT A/15	1.1	1.5	IE3	81.7	83.1	82.4	1.34	4.3	2.5	28.8	16.6	
COMPACT B/12	0.9	1.2	IE3	81.7	83.1	82.4	1.34	4.3	2.5	28.8	16.6	
COMPACT B/15	1.1	1.5	IE3	81.7	83.1	82.4	1.34	4.3	2.5	28.8	16.6	

NOISE DATA

Pump type		L _{pA} - dB(A) *
Single Phase	Three Phase	
COMPACT AM/4	COMPACT A/4	<70
COMPACT AM/6	COMPACT A/6	
COMPACT AM/8	COMPACT A/8	
COMPACT AM/10	COMPACT A/10	
COMPACT AM/12	COMPACT A/12	
COMPACT AM/15	COMPACT A/15	
COMPACT BM/12	COMPACT B/12	
COMPACT BM/15	COMPACT B/15	

* Mean value of several measures at 1m distance around the pump.
Tolerance ± 2.5 dB.



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