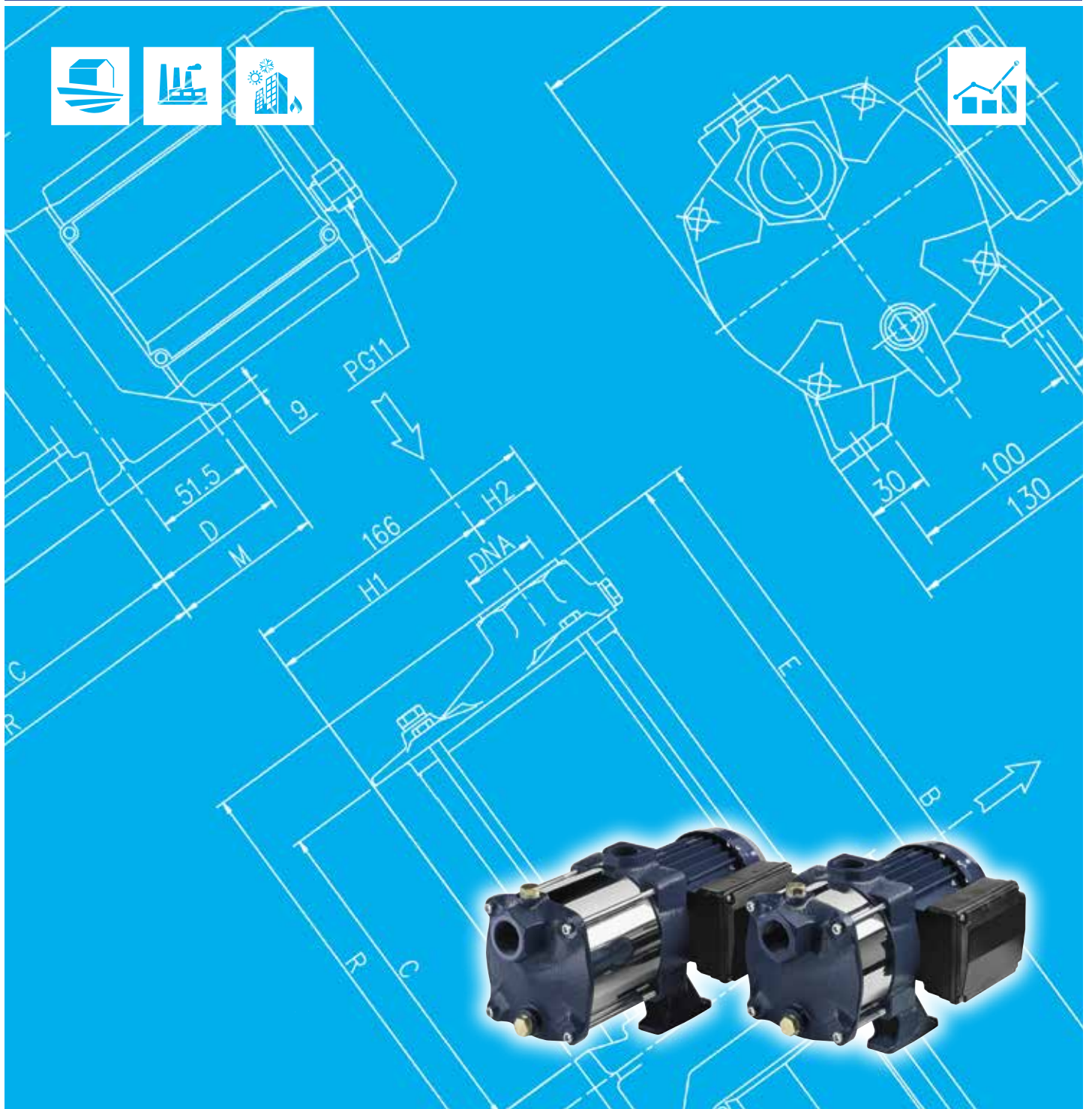




Japanese Technology since 1912


# COMPACT

Data Book 50Hz



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**SPECIFICATION**

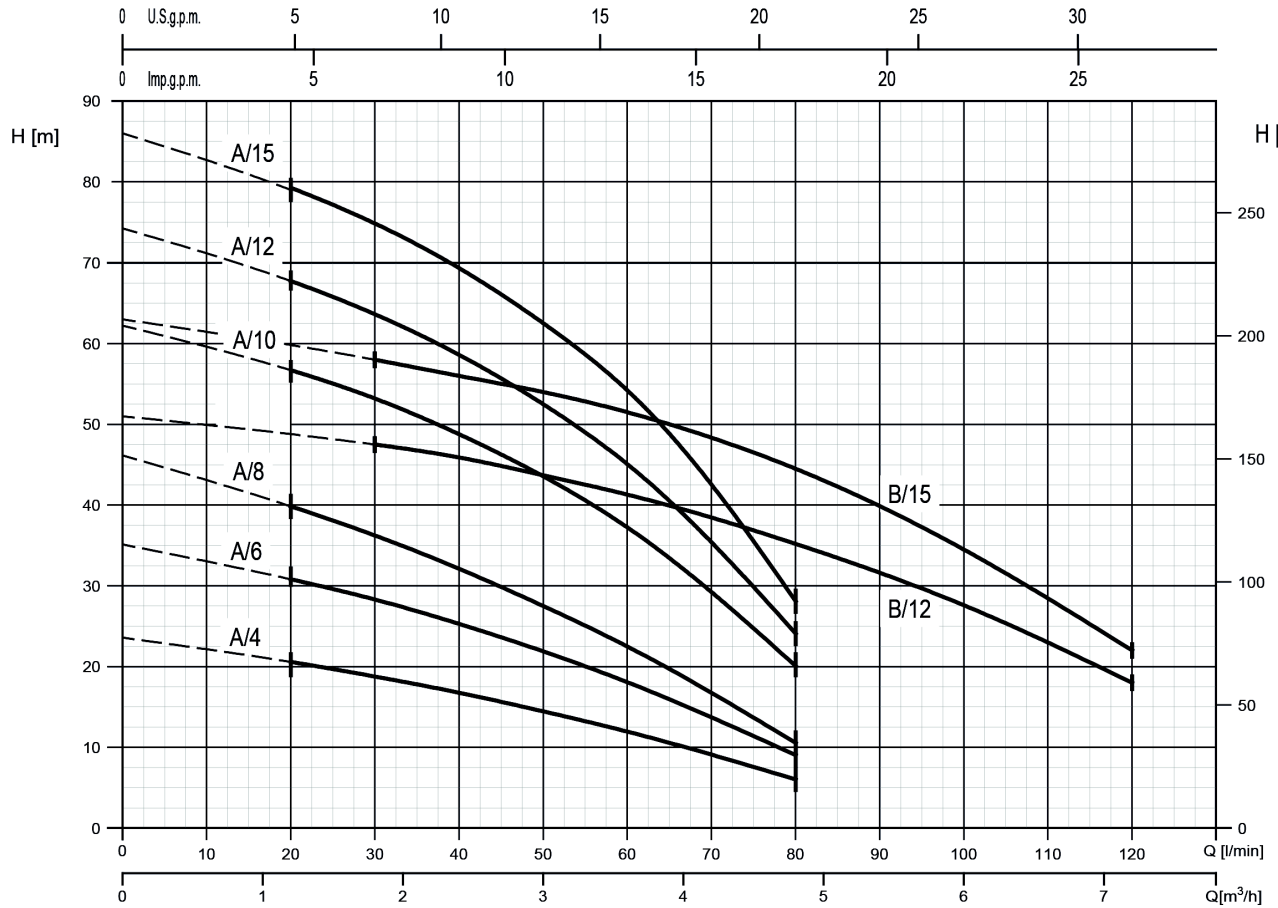
50Hz

Rev. J

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 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. 640/2009)	-	- from 0.3 kW up to 0.6 kW IE3 from 0.75 kW up to 1.1 kW
No. of Poles	2	
Rotation speed [min <sup>-1</sup> ]	≈ 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	

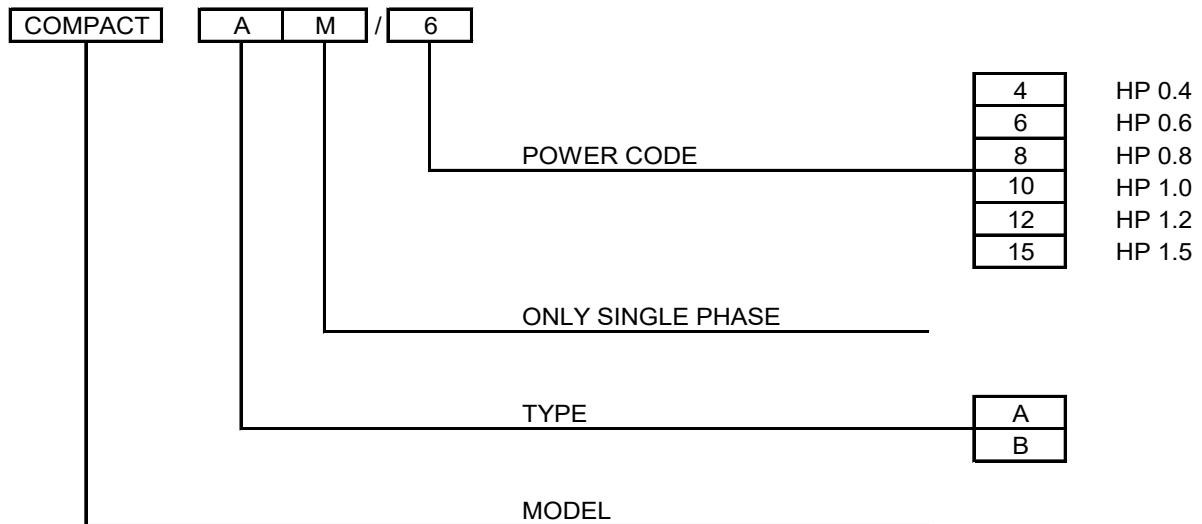
**PERFORMANCE RANGE**



**SELECTION CHART**

Pump type		Power		Q=Capacity								
Single Phase	Three Phase	[kW]	[HP]	l/min	20	30	40	50	60	80	100	120
				m³/h	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	0.3	0.4	23.5	20.5	18.7	16.7	14.4	11.9	6	-	-
COMPACT AM/6	COMPACT A/6	0.44	0.6	35	30.7	28.2	25.2	21.8	18	9	-	-
COMPACT AM/8	COMPACT A/8	0.6	0.8	46	39.7	36.1	32	27.4	22.4	10.5	-	-
COMPACT AM/10	COMPACT A/10	0.75	1	62	56.5	53	48.5	43.5	37.1	20	-	-
COMPACT AM/12	COMPACT A/12	0.9	1.2	74	67.5	63.5	58.5	52.5	45	24	-	-
COMPACT AM/15	COMPACT A/15	1.1	1.5	86	79	74.5	69	62.5	54	28	-	-
COMPACT BM/12	COMPACT B/12	0.9	1.2	51	-	47.5	46	43.5	41.5	35.2	27.6	18
COMPACT BM/15	COMPACT B/15	1.1	1.5	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.

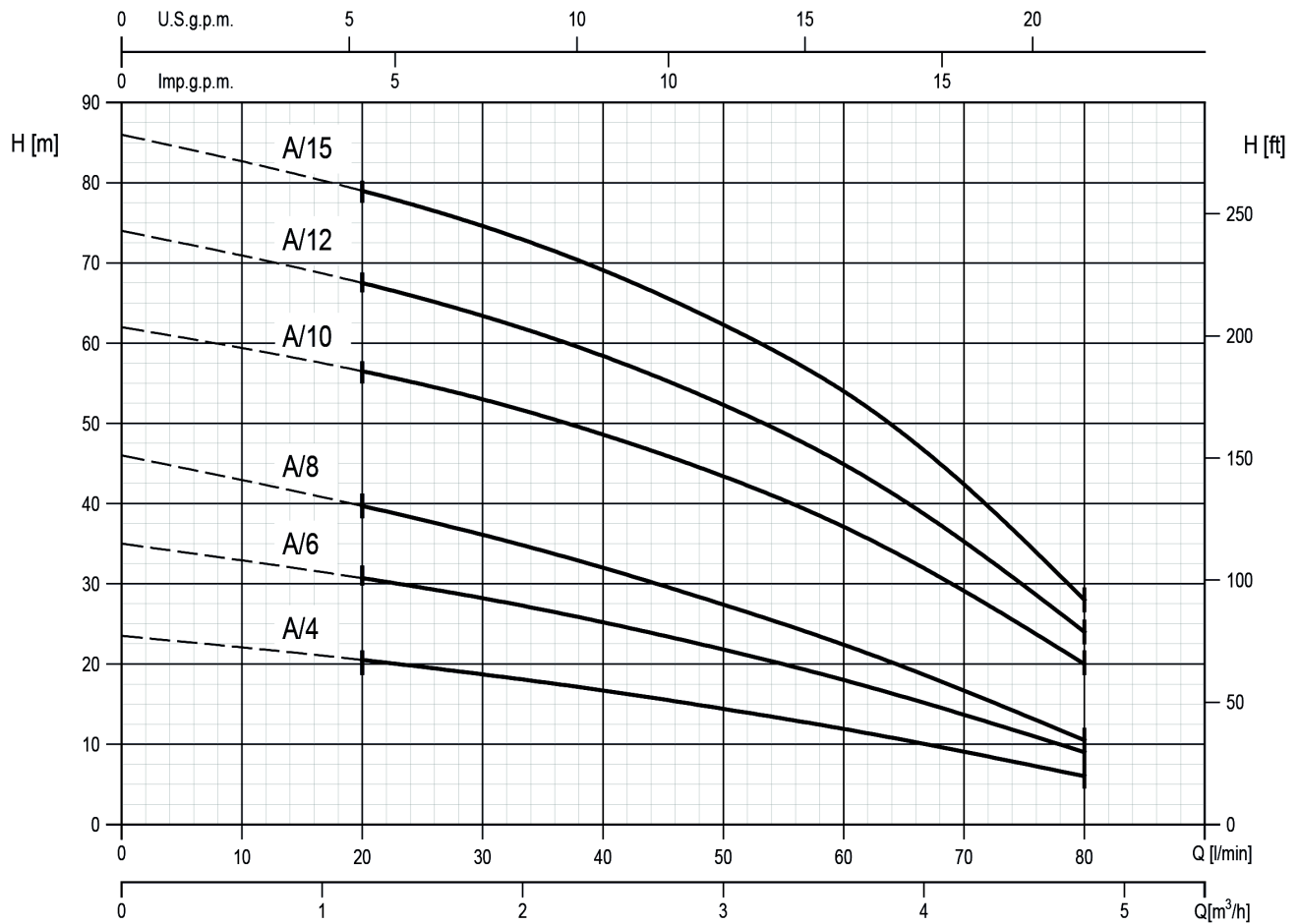
In order to avoid the risk of over-heating, the pumps should not be used at a flow rate below 10% of best efficiency point.

Symbols explanation:

Q = volume flow rate

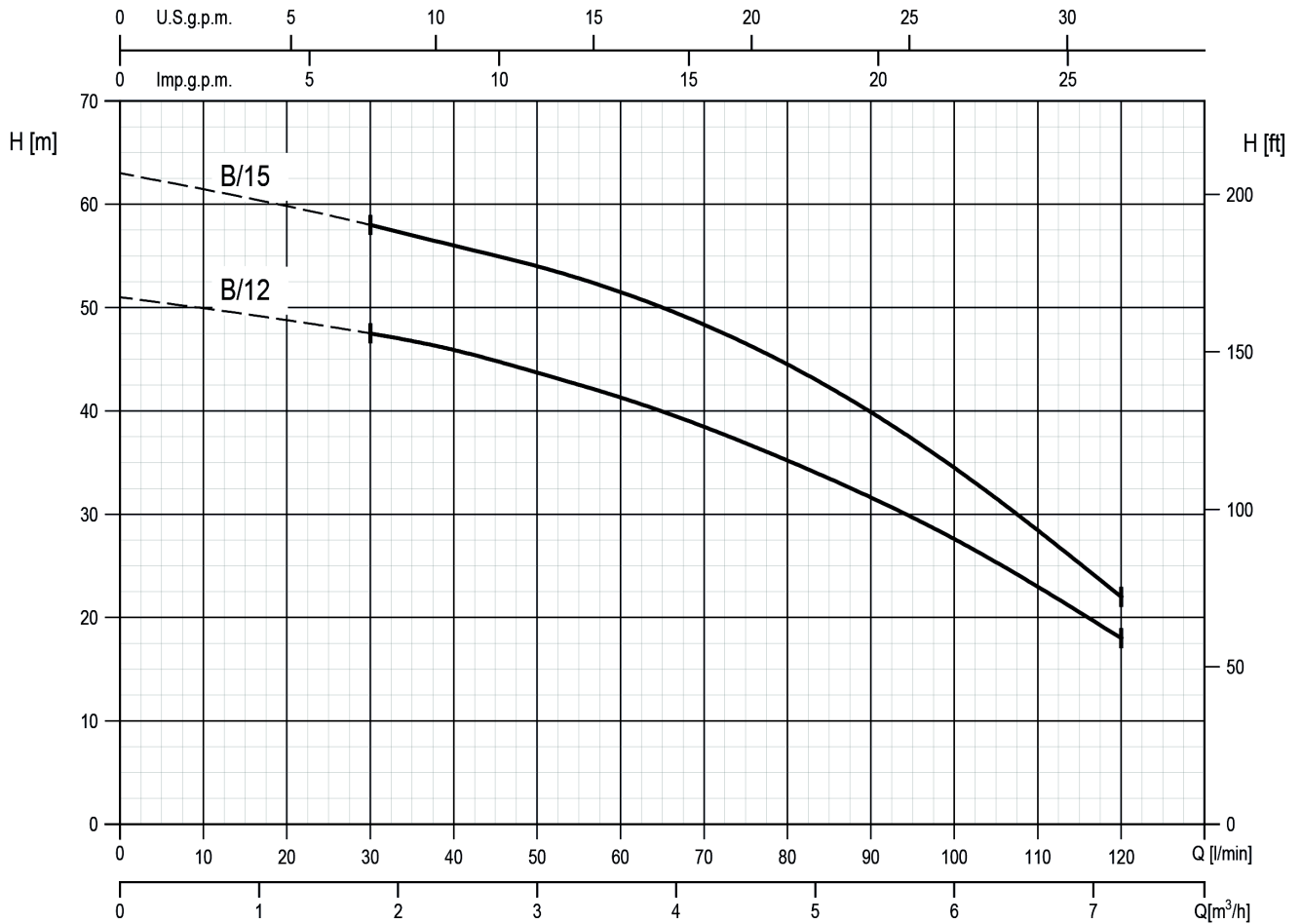
H = total head

**COMPACT A/4 (0.3 kW) - Impeller diameter = 104 mm**  
**COMPACT A/6 (0.44 kW) - Impeller diameter = 104 mm**  
**COMPACT A/8 (0.6 kW) - Impeller diameter = 104 mm**  
**COMPACT A/10 (0.75 kW) - Impeller diameter = 104 mm**  
**COMPACT A/12 (0.9 kW) - Impeller diameter = 104 mm**  
**COMPACT A/15 (1.1 kW) - Impeller diameter = 104 mm**



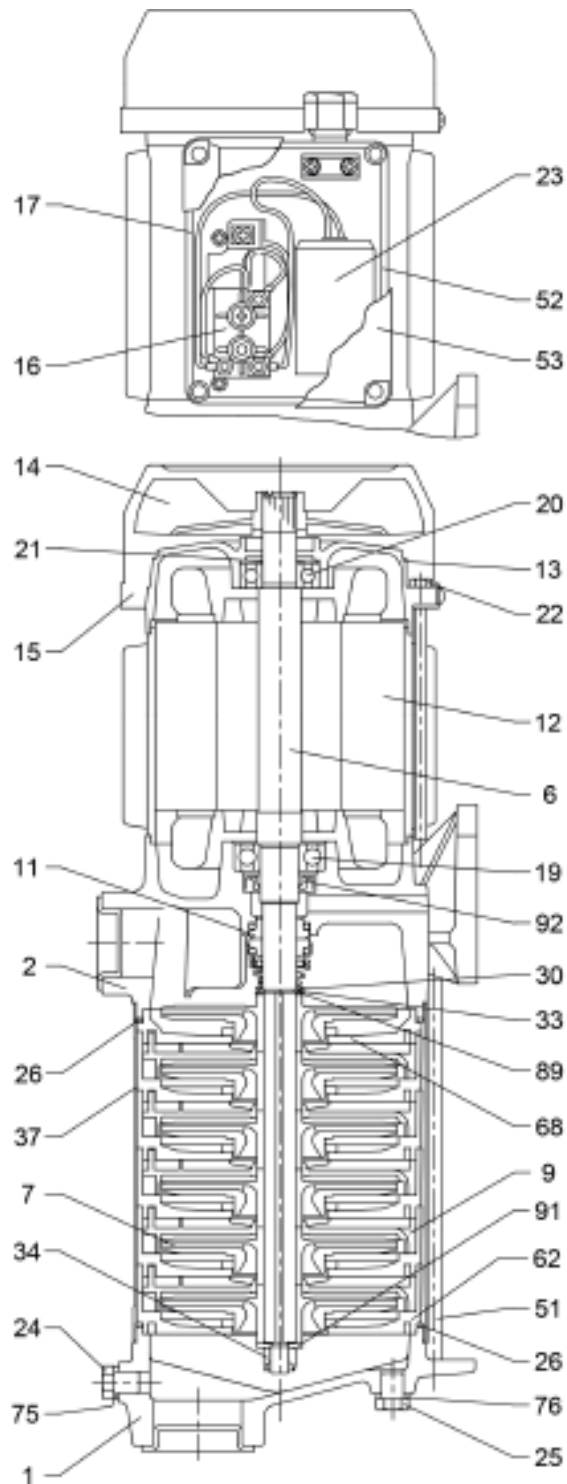
Rotation speed  $\approx 2800 \text{ min}^{-1}$   
 Test standard: ISO 9906:2012 - Grade 3B

**COMPACT B/12 (0.9 kW) - Impeller diameter = 102 mm**  
**COMPACT B/15 (1.1 kW) - Impeller diameter = 102 mm**



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

SECTIONAL VIEW



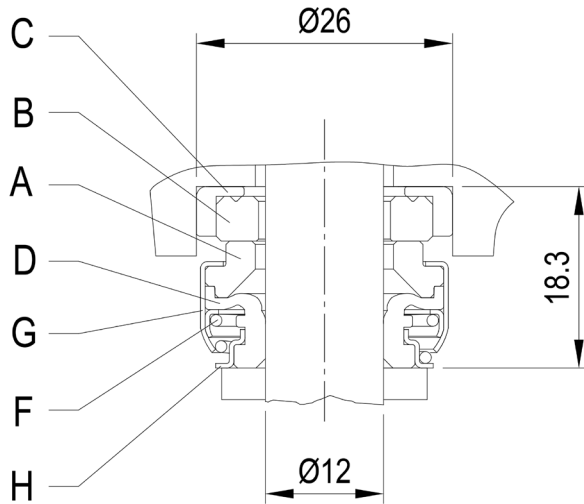


N°	PART NAME	MATERIAL	Q.TY
1	Suction casing	G20	1
2	Delivery casing	G20	1
6	Shaft with rotor	AISI 416	1
7	Impeller	PPE+PS Glass Fibre Reinforced	[3]
9	Diffuser	PPE+PS Glass Fibre Reinforced	[3]
11	Mechanical seal [2]	Carbon/Ceramic/NBR	1
12	Motor frame with stator	-	1
13	Motor cover	Aluminium	1
14	Fan	PP	1
15	Fan cover	Fe P04 Zincate	1
16	Terminal board	-	1
17	Terminal box cover [2]	Aluminium PP [1]	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

- [1] Only for single phase
- [2] See **MECHANICAL SEAL** page 301
- [3] See **QUANTITY FOR MODEL** page 302

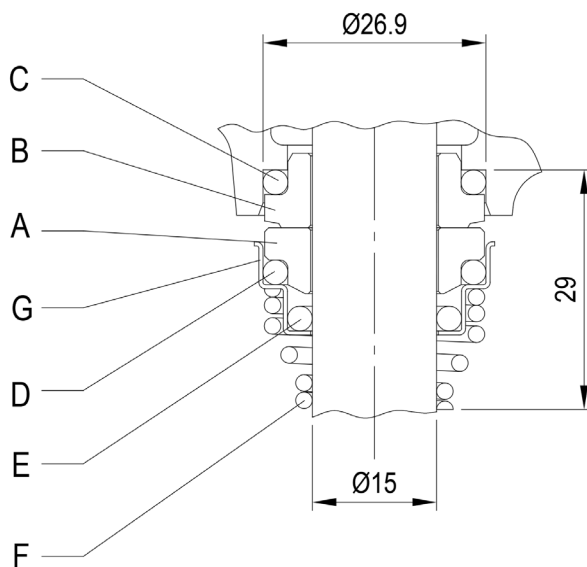
**MECHANICAL SEAL**

**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

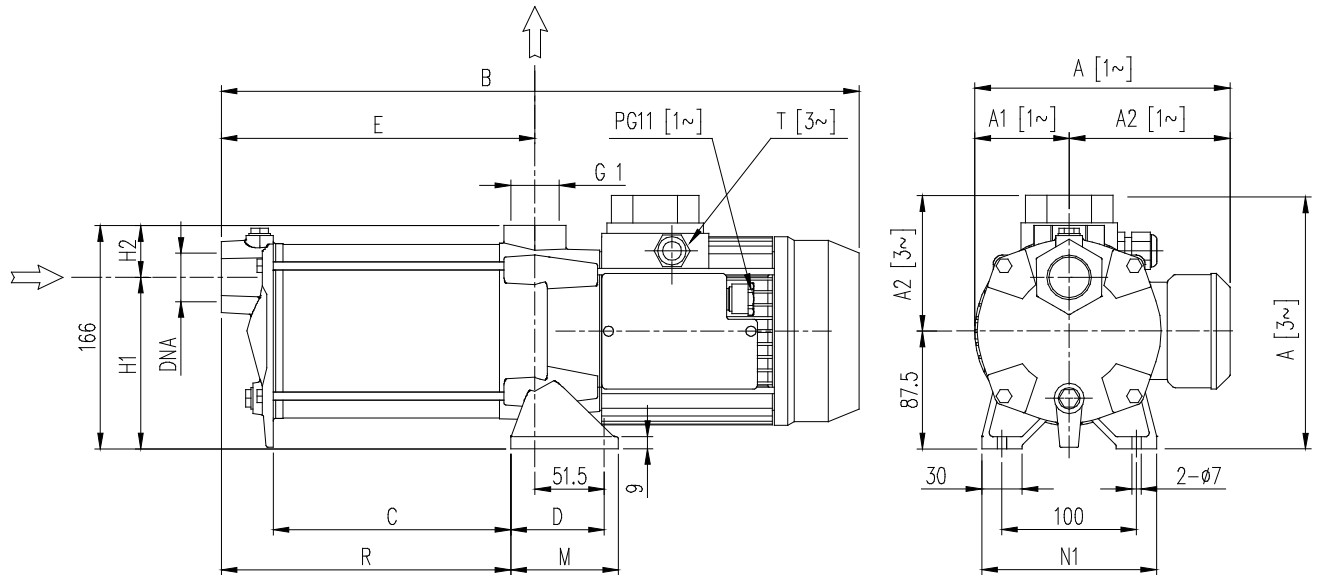
**BEARINGS**

Type pumps		Pump side		Fan side	
Single Phase	Three Phase	[1~]	[3~]	[1~]	[3~]
COMPACT AM/4	COMPACT A/4	6201 2RSH	6201 2RSH	6201 2RSH	6201 2RSH
COMPACT AM/6	COMPACT A/6	6201 2RSH	6201 2RSH	6201 2RSH	6201 2RSH
COMPACT AM/8	COMPACT A/8	6201 2RSH	6201 2RSH	6201 2RSH	6201 2RSH
COMPACT AM/10	COMPACT A/10	6203 2RSH	6203-ZZ C3	6202 2RSH	6202-ZZ C3
COMPACT AM/12	COMPACT A/12	6203 2RSH	6203-ZZ C3	6202 2RSH	6202-ZZ C3
COMPACT AM/15	COMPACT A/15	6203 2RSH	6203-ZZ C3	6202 2RSH	6202-ZZ C3
COMPACT BM/12	COMPACT B/12	6203 2RSH	6203-ZZ C3	6202 2RSH	6202-ZZ C3
COMPACT BM/15	COMPACT B/15	6203 2RSH	6203-ZZ C3	6202 2RSH	6202-ZZ C3

**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

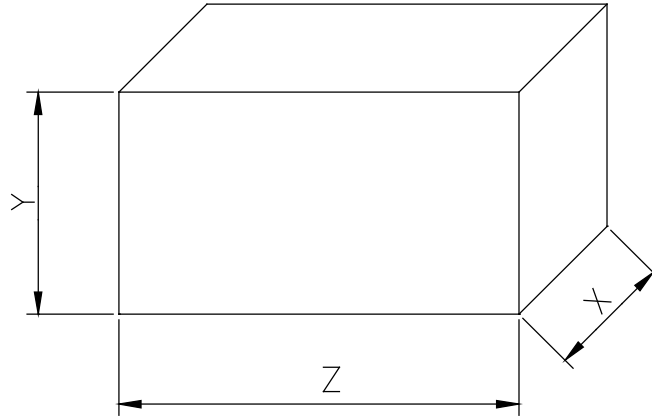
PUMP



Pump type		Dimensions mm														Weight [kgf]	
Single phase [1~]	Three phase [3~]	A		B		C	D	E	H1	H2	M	R	T	DNA	[1~]	[3~]	
		[3~]	[1~]	[1~]	[3~]								IE3				
COMPACT AM/4	COMPACT A/4	159	183.5	307.5	307.5	82	51.5	120.5	127.5	38.5	62	120.5	PG11	-	G 1"	8.4	8.4
COMPACT AM/6	COMPACT A/6	159	183.5	333.5	333.5	108	51.5	146.5	127.5	38.5	62	146.5	PG11	-	G 1"	9.3	9.3
COMPACT AM/8	COMPACT A/8	159	183.5	359.5	359.5	134	51.5	172.5	127.5	38.5	62	172.5	PG11	-	G 1"	10.3	10.3
COMPACT AM/10	COMPACT A/10	169	193.5	426	426	142	69.5	198.5	123.5	42.5	80	180.5	PG11	M16x1.5	G 1"	14.5	14.5
COMPACT AM/12	COMPACT A/12	169	193.5	452	464	168	69.5	224.5	123.5	42.5	80	206.5	PG11	M16x1.5	G 1"	15.5	16.3
COMPACT AM/15	COMPACT A/15	169	193.5	490	490	194	69.5	250.5	123.5	42.5	80	232.5	PG11	M16x1.5	G 1"	16.7	16.7
COMPACT BM/12	COMPACT B/12	169	193.5	400	412	116	69.5	172.5	123.5	42.5	80	154.5	PG11	M16x1.5	G 1 1/4"	14.9	15.7
COMPACT BM/15	COMPACT B/15	169	193.5	438	438	142	69.5	198.5	123.5	42.5	80	180.5	PG11	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~]
COMPACT AM/4	COMPACT A/4	185	195	375	8.9	8.9
COMPACT AM/6	COMPACT A/6	185	195	375	9.8	9.8
COMPACT AM/8	COMPACT A/8	185	195	375	10.8	10.8
COMPACT AM/10	COMPACT A/10	212	201	515	15.5	15.5
COMPACT AM/12	COMPACT A/12	212	201	515	16.6	17.3
COMPACT AM/15	COMPACT A/15	212	201	515	17.7	17.9
COMPACT BM/12	COMPACT B/12	212	201	515	15.9	16.7
COMPACT BM/15	COMPACT B/15	212	201	515	16.9	16.9

[1~] Single phase

[3~] Three phase

**MOTOR DATA**

Pump type		Power		Efficiency		Capacitor		Efficiency (% load)			Input [kW]		Full load current [A]			Locked rotor current [A]		
Single Phase	Three Phase	[kW]	[HP]	Single Phase	Three Phase	Single Phase [μF]	Three Phase [V]	Three phase η %			Single Phase	Three Phase	Single Phase	Three Phase		Single Phase	Three Phase	
								50%	75%	100%	Phase	Phase	230 V	230 V	400 V	230 V	230 V	400 V
COMPACT AM/4	COMPACT A/4	0.3	0.4	-	-	10	450	-	-	-	0.53	0.50	2.5	1.9	1.1	8.6	9.0	5.0
COMPACT AM/6	COMPACT A/6	0.44	0.6	-	-	12.5	450	-	-	-	0.70	0.65	3.0	2.3	1.3	10.6	11.0	6.1
COMPACT AM/8	COMPACT A/8	0.6	0.8	-	-	14	450	-	-	-	0.90	0.82	4.0	2.6	1.5	13.2	13.0	7.6
COMPACT AM/10	COMPACT A/10	0.75	1.0	-	IE3	20	450	80.9	82.3	82.1	1.25	1.03	6.0	3.3	1.9	24.0	19.7	11.4
COMPACT AM/12	COMPACT A/12	0.9	1.2	-	IE3	31.5	450	81.7	83.1	82.4	1.38	1.34	6.2	4.3	2.5	25.0	28.8	16.6
COMPACT AM/15	COMPACT A/15	1.1	1.5	-	IE3	31.5	450	81.7	83.1	82.4	1.60	1.34	7.3	4.3	2.5	31.0	28.8	16.6
COMPACT BM/12	COMPACT B/12	0.9	1.2	-	IE3	31.5	450	81.7	83.1	82.4	1.30	1.34	5.8	4.3	2.5	25.0	28.8	16.6
COMPACT BM/15	COMPACT B/15	1.1	1.5	-	IE3	31.5	450	81.7	83.1	82.4	1.60	1.34	7.3	4.3	2.5	31.0	28.8	16.6

**NOISE DATA**

Pump type		Power		L <sub>pA</sub> - dB(A) *
Single Phase	Three Phase	[kW]	[HP]	
COMPACT AM/4	COMPACT A/4	0.3	0.4	<70
COMPACT AM/6	COMPACT A/6	0.44	0.6	
COMPACT AM/8	COMPACT A/8	0.6	0.8	
COMPACT AM/10	COMPACT A/10	0.75	1.0	
COMPACT AM/12	COMPACT A/12	0.9	1.2	
COMPACT AM/15	COMPACT A/15	1.1	1.5	
COMPACT BM/12	COMPACT B/12	0.9	1.2	
COMPACT BM/15	COMPACT B/15	1.1	1.5	

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