INDEX

**= TIFQ certified product in compliance to DM 174, pumps are fit for contact with water intended for human consumption.*

JES - JE

SELF-PRIMING ELECTRIC PUMPS

in AISI 304

Self-priming electric pumps in AISI 304 stainless steel.

APPLICATIONS

- Supply of drinking water
- Domestic pressure boosting
- Small-scale garden irrigation
- Emptying reservoirs and swimming pools
- Pumping clean water in general

TECHNICAL DETAILS

- Practical
- Light and easy to transport

PUMP TECHNICAL DATA

- Maximum working pressure: 6 bar
- Maximum temperature of the liquid: 45°C
- Maximum suction depth: 8 m
- G1 suction connection for JES, G1¼ for JE
- G1 discharge connection

MOTOR TECHNICAL DATA

- IE2 and IE3 high energy-efficiency motors starting from 0.75kW
- 2-poles self-ventilated closed asynchronous motor with internal ventilation
- Class of insulation F
- Protection degree IP44 (on request IP55)
- 230V ±10% 50Hz single phase voltage, 230/400V ±10% 50Hz three phase voltage
- Permanent capacitor inserted and thermo-amperometric protection with automatic rearm incorporated for the single phase motor
- Protection under user's responsibility for the three phase version

MATERIALS

- Pump body, motor bracket, seal housing disc, motor case and fan cover in AISI 304
- Shaft in AISI 303 (part in contact with the liquid)
- Impeller in AISI 304 for JE, in PPE + PS reinforced with fibreglass for JES
- Mechanical seal in Ceramic/Carbon/NBR

ACCESSORIES (On request)

- Electric panels
- Vessels
- Floats
- Pressure switches
- Presscomfort - Pressure regulator
- E-power - Variable speed control system
- E-*drive* - Frequency converter

JES IDENTIFICATION CODE

JES	M	6

- 6 → Power HPx10: 5, 6, 8
- M → Single phase
- JES → Model

JE IDENTIFICATION CODE

JE	M	120

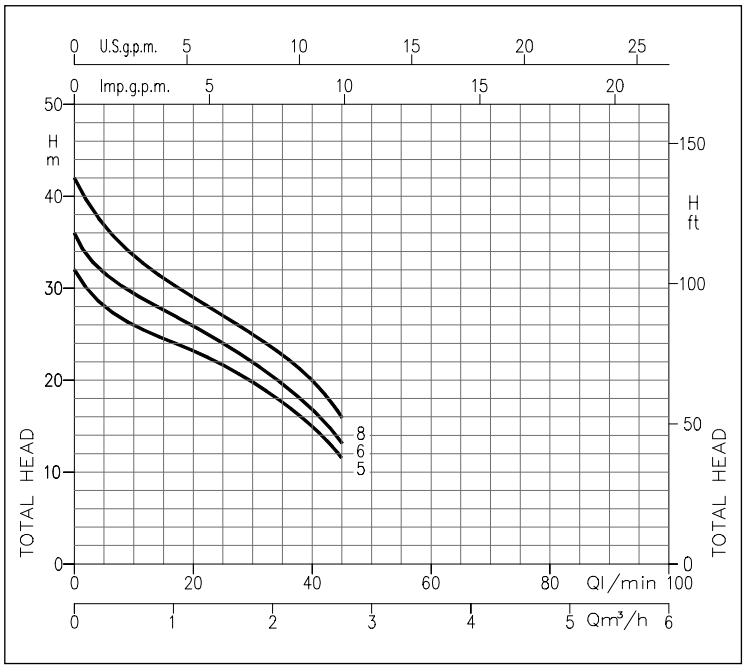
- 120 → Power HPx100: 80, 100, 120, 150
- M → Single phase
- JE → Model

JES - JE

SELF-PRIMING ELECTRIC PUMPS

in AISI 304

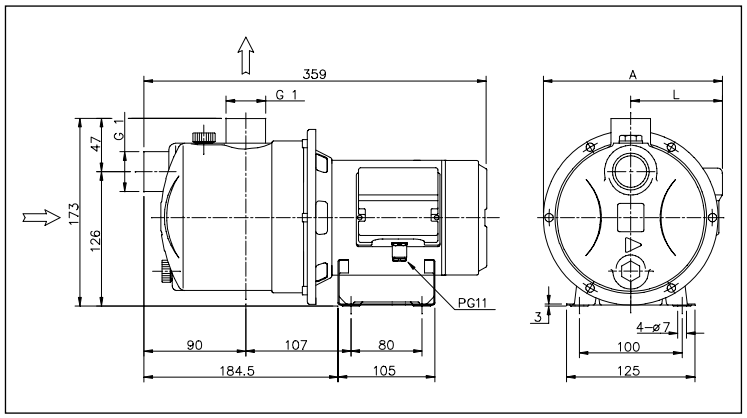
PERFORMANCE CURVES (according to ISO 9906 Attachment A)



JES PERFORMANCE CHART

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	Q = Flow Rate l/min 5	20	40	45
				m³/h 0.3	1.2	2.4	2.7
				H=Head [m]			
JESM 5	JES 5	0.5	0.37	28.0	23.0	15.0	11.5
JESM 6	JES 6	0.6	0.44	31.5	26.0	17.0	13.5
JESM 8	JES 8	0.8	0.6	37.0	29.0	20.0	16.0

JES DIMENSIONS

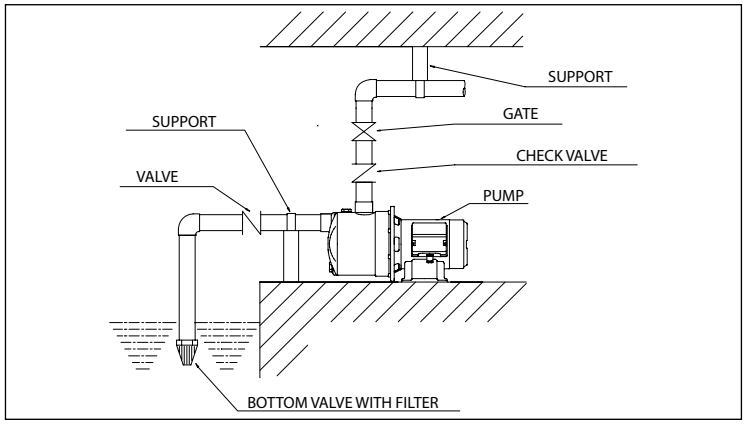


DIMENSIONS TABLE

Model	Dimensions [mm] A [2]	A [1]	L [2]	L [1]	Weight [kg]
JES(M) 5	181	177	96	92	5.6
JES(M) 6	181	177	96	92	5.8
JES(M) 8	181	177	96	92	6.0

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

INSTALLATION



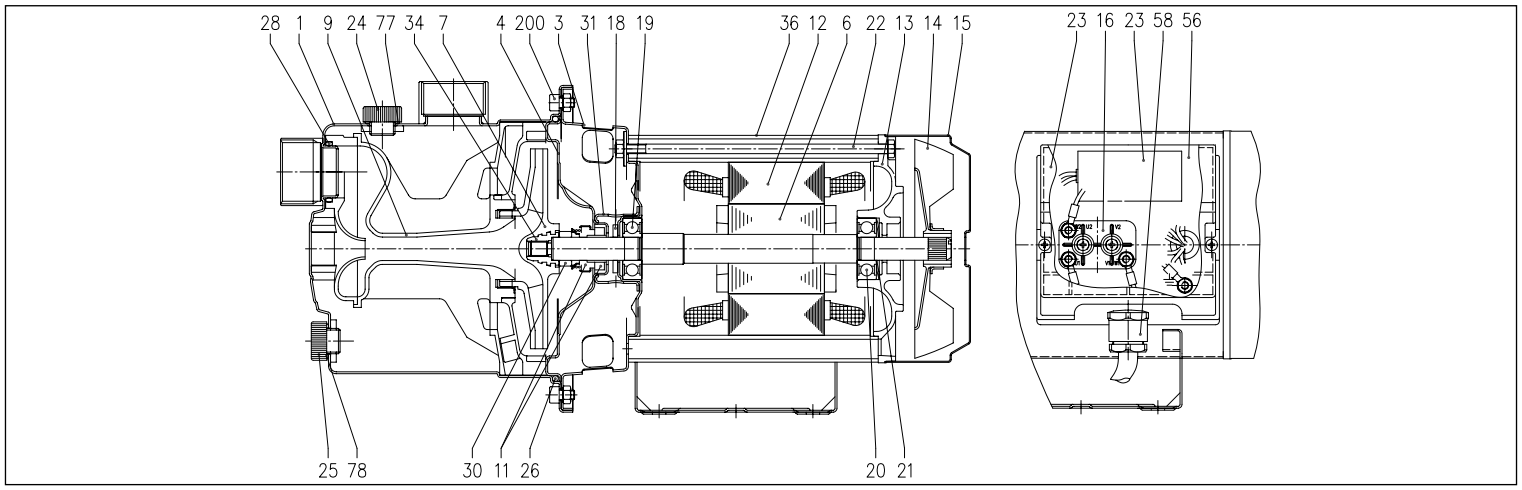
For correct installation of the system, it is recommended to fit a foot valve on the suction and support/anchorage for the piping.

JES - JE

SELF-PRIMING ELECTRIC PUMPS

in AISI 304

JES SECTIONAL VIEW

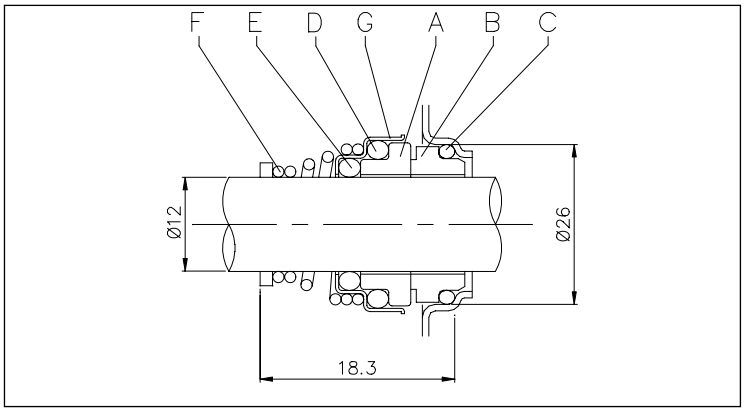


MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
1	Pump body	AISI 304	21	Adjustment ring	Steel C70
3	Motor support	AISI 304	22	Tie-rod	Galvanised Fe 42
4	Seal housing disc	AISI 304	23	Capacitor [2]	-
6	Rotor shaft	AISI 303 (part in contact with the liquid)	24	Filler cap	PA6
7	Impeller	PPE+PS reinforced with fibreglass	25	Drain plug	PA6
9	Venturi Unit + nozzle	PPE+PS reinforced with fibreglass	26	O-Ring	NBR
11	Mechanical seal	Ceramic/Carbon/NBR	28	O-Ring	NBR
12	Motor case	-	30	Mechanical seal spacer	Brass
13	Motor cover	Aluminium	31	Disc/seal spacer	AISI 304
14	Fan	PA6	34	Impeller nut [1]	AISI 304
15	Fan cover	Galvanised Fe P04	36	Motor casing	AISI 304
16	Terminal Box	-	56	Terminal box cover gasket	NBR
17	Terminal Box cover	PA66 reinforced with fibreglass	58	Cable gland	-
18	Spray protector washer	NBR	77	O-Ring	NBR
19	Bearing (pump side)	-	78	O-Ring	NBR
20	Bearing (motor side)	-	200	Screw (pump body)	Stainless steel A2 UNI7323

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

JES MECHANICAL SEAL



MATERIALS TABLE

Ref.	Name	Material
A	Rotating part	Ceramic
B	Fixed part	Carbon
C	O-Ring	NBR
D	O-Ring	NBR
E	O-Ring	NBR
F	Spring	AISI 316
G	Structure/frame	AISI 304

JES ELECTRIC DATA TABLE

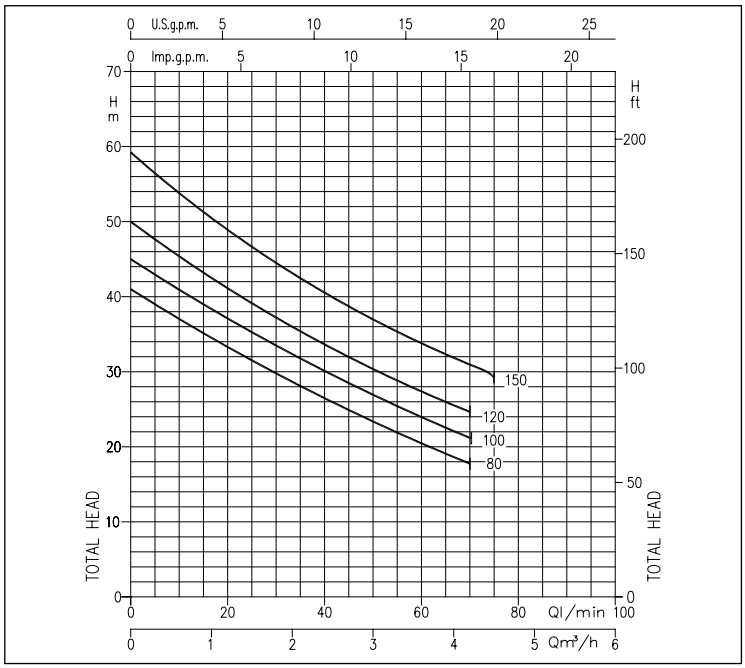
Model		P_2		Capacitor Single phase		P_1		Absorbed Current [A]		
Single phase 230V	Three phase 230/400V	[HP]	[kW]	µF	V_c	Single phase [kW]	Three phase [kW]	Single phase 230V	Three phase 230V	Three phase 400V
JESM 5	JES 5	0.5	0.37	10	450	0.44	0.43	2.1	1.5	0.85
JESM 6	JES 6	0.6	0.45	10	450	0.54	0.49	2.4	1.9	1.1
JESM 8	JES 8	0.8	0.6	12.5	450	0.63	0.58	3.0	2.25	1.3

JES - JE

SELF-PRIMING ELECTRIC PUMPS

in AISI 304

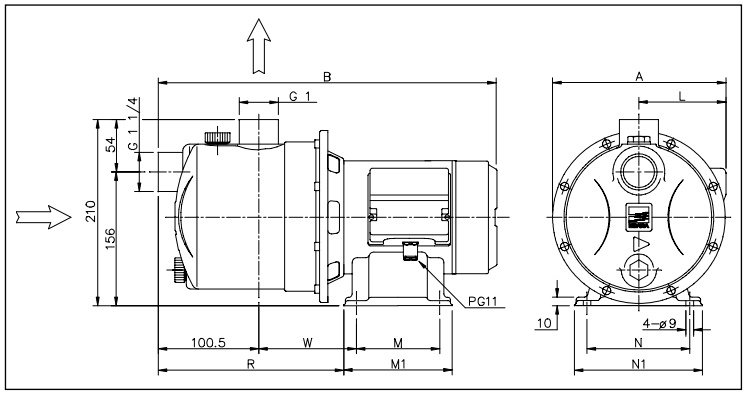
PERFORMANCE CURVES (according to ISO 9906 Attachment A)



JES PERFORMANCE CHART

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	Q = Flow Rate l/min	20	30	40	50	60	70	75
				m³/h	1.2	1.8	2.4	3	3.6	4.2	4.5
				H=Head [m]							
JEM 80	JE 80	0.8	0.6		33.0	29.0	26.5	23.5	20.5	18.0	-
JEM 100	JE 100	1	0.75		37.0	33.5	30.0	27.0	24.0	21.0	-
JEM 120	JE 120	1.2	0.88		41.0	37.0	34.0	30.5	27.5	24.5	-
JEM 150	JE 150	1.5	1.1		49.0	44.5	40.5	37.0	34.0	31.0	29.5

JE DIMENSIONS

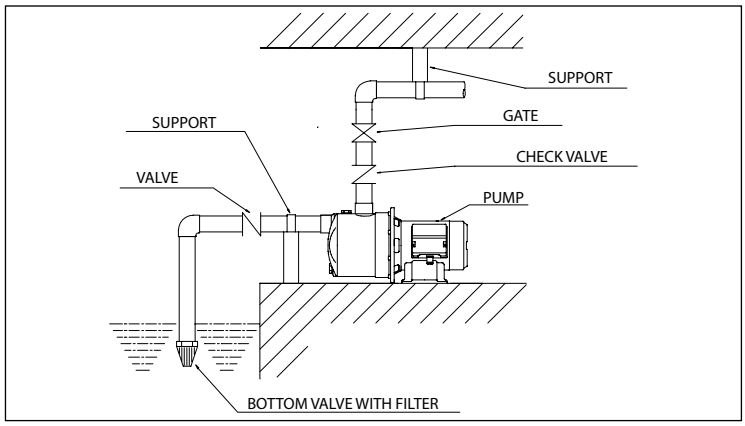


DIMENSIONS TABLE

Model	Dimensions [mm] A [2]	A [1]	B [2]	B [1]	L [2]	L [1]	M	M1	N	N1	R	W	Weight [kg] [2]	Weight [kg] [1]	Weight [kg] *
JE(M) 80	211	208	396	396	107	103	100	131	120	150	213	128	10.5	10.5	-
JE(M) 100	211	208	426	426	107	103	100	131	120	150	228	143	12.0	12.0	12
JE(M) 120	211	208	426	426	107	103	100	131	120	150	228	143	12.5	12.5	12.5
JE(M) 150	215.5	215.5	433.5	433.5	111.5	111.5	120	150	140	170	231	145.5	14.1	16.4	17.3

[1]= Three phase only
[2]= Single phase only
* Models with IE3 motor only

INSTALLATION



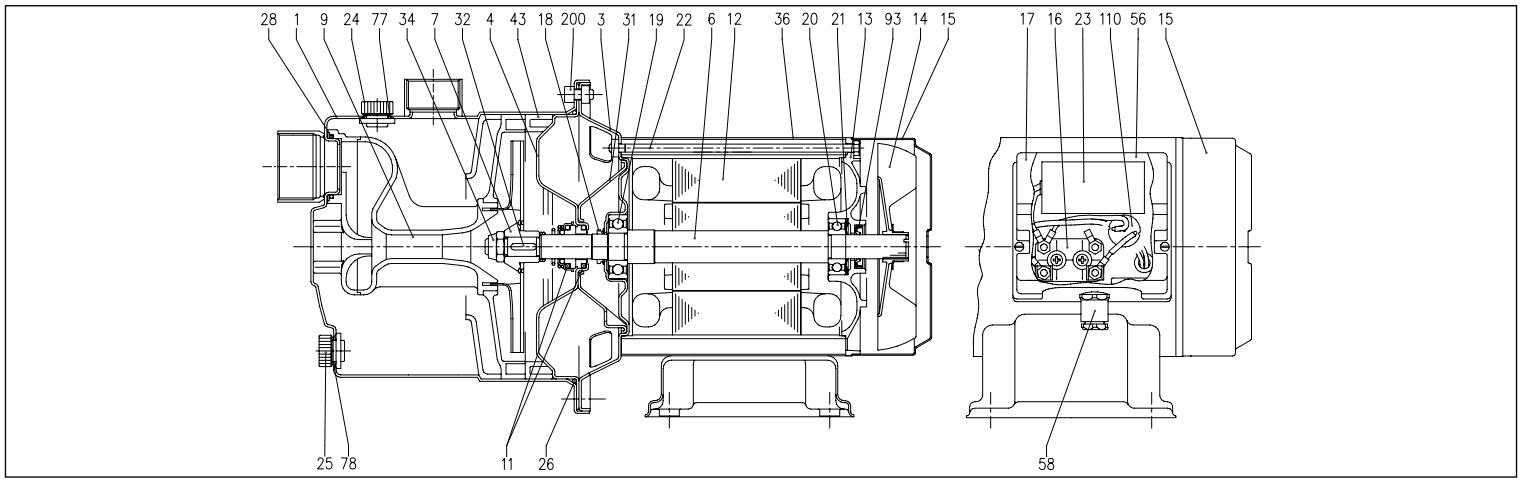
For correct installation of the system, it is recommended to fit a foot valve on the suction and support/anchorage for the piping.

JES - JE

SELF-PRIMING ELECTRIC PUMPS

in AISI 304

JE SECTIONAL VIEW

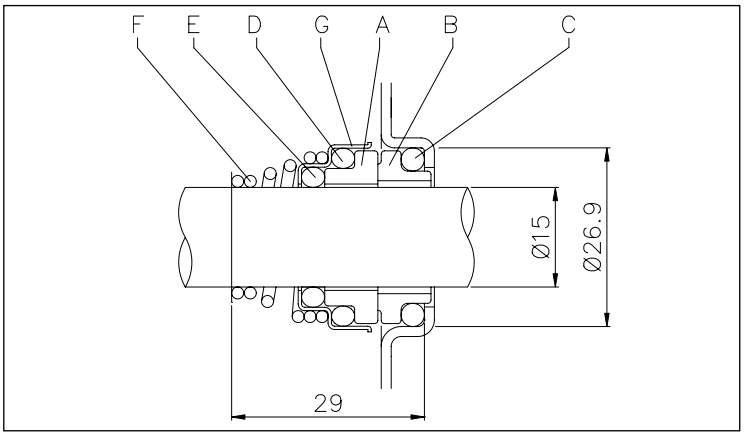


MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
1	Pump body	AISI 304	23	Capacitor [2]	-
3	Motor support	AISI 304	24	Filler cap	PA6
4	Seal housing disc	AISI 304	25	Drain plug	PA6
6	Rotor shaft	AISI 303 (part in contact with the liquid)	26	O-Ring	NBR
7	Impeller	AISI 304	28	O-Ring	NBR
9	Venturi Unit + nozzle	PPE+PS reinforced with fibreglass	31	Disc/seal spacer	AISI 304
11	Mechanical seal	Ceramic/Carbon/NBR	32	Key	AISI 304
12	Motor case	-	34	Impeller nut	AISI 304
13	Motor cover	Aluminium	36	Motor casing	AISI 304
14	Fan	PA6	43	Nozzle spacer	PPE+PS reinforced with fibreglass
15	Fan cover	AISI 304	56	Terminal box cover gasket	NBR
16	Terminal Box	-	58	Cable gland	-
17	Terminal Box cover	PA66 reinforced with fibreglass	77	O-Ring	NBR
18	Spray protector washer	NBR	78	O-Ring	NBR
19	Bearing (pump side)	-	93	Sealing ring [1]	NBR
20	Bearing (motor side)	-	110	Motor protector [2]	-
21	Adjustment ring	Steel C70	200	Screw (pump body)	Stainless steel A2 UNI7323
22	Tie-rod	Galvanised Fe 42			

[1] = For IP 55 only
[2]= Single phase only

JE MECHANICAL SEAL



MATERIALS TABLE

Ref.	Name	Material
A	Rotating part	Ceramic
B	Fixed part	Carbon
C	O-Ring	NBR
D	O-Ring	NBR
E	O-Ring	NBR
F	Spring	AISI 316
G	Structure/frame	AISI 304

SELF-PRIMING ELECTRIC PUMPS

in AISI 304

JE ELECTRIC DATA TABLE

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	Efficiency Single phase	Efficiency Three phase	Capacitor Single phase µF	Capacitor Single phase V_c	Efficiency (%) Three phase η % 50%	η % 75%	η % 100%	P_1 Single phase [kW]	P_1 Three phase [kW]	Absorbed Current [A] Single phase 230V	Absorbed Current [A] Three phase 230V	Absorbed Current [A] Three phase 400V
JEM 80	JE 80	0.8	0.6	-	-	16	450	-	-	-	1.05	0.97	4.7	3.3	1.9
JEM 100	JE 100	1.0	0.75	-	IE2	20	450	77.2	80.9	81.3	1.33	1.13	6.4	3.5	2.0
-		1.0	0.75	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
JEM 120	JE 120	1.2	0.88	-	IE2	20	450	77.2	80.9	81.3	1.39	1.15	6.7	3.6	2.1
-		1.2	0.88	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
JEM 150	JE 150	1.5	1.1	-	IE2	35	450	79.7	82.5	83.0	1.70	1.80	7.6	5.6	3.2
-		1.5	1.1	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3

JE NOISE DATA TABLE

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	L_{pA} - dB(A)*
JEM 80	JE 80	0.8	0.6	71
JEM 100	JE 100	1	0.75	71
JEM 120	JE 120	1.2	0.88	71
JEM 150	JE 150	1.5	1.1	76

* Average noise level measured at 1 m from the motor pump.
Tolerance ± 2.5 dB.

JESX - JEX

SELF-PRIMING ELECTRIC PUMPS

in AISI 304

Self-priming electric pumps in AISI 304 stainless steel.

APPLICATIONS

- Supply of drinking water
- Domestic pressure boosting
- Small-scale garden irrigation
- Emptying reservoirs and swimming pools
- Pumping clean water in general

TECHNICAL DETAILS

- Practical
- Easy to transport
- Light

PUMP TECHNICAL DATA

- Maximum working pressure: 6 bar
- Maximum temperature of the liquid: 45°C
- Maximum suction depth: 8 m
- G1 suction connection for JESX, G1¼ for JEX
- G1 discharge connection

PUMP TECHNICAL DATA

- IE2 and IE3 high energy-efficiency motors starting from 0.75kW
- Self-ventilated 2 pole asynchronous motor
- Class of insulation F
- Protection degree IP54 (on request IP55)
- 230V ±10% 50Hz single phase voltage, 230/400V ±10% 50Hz three phase voltage
- Permanent capacitor inserted and thermo-amperometric protection with automatic rearm incorporated for the single phase motor
- Protection under user's responsibility for the three phase version

MATERIALS

- Pump casing and seal housing disc in AISI 304
- Shaft in AISI 303 (part in contact with the liquid)
- Impeller in AISI 304 for JEX, in PPE + PS reinforced with fibreglass for JESX
- Venturi Unit + nozzle in PPO reinforced with fibreglass
- Mechanical seal in Ceramic/Carbon/NBR
- Bracket and motor casing in aluminium

ACCESSORIES (On request)

- Electric panels
- Vessels
- Floats
- Pressure switches
- Presscomfort - Pressure regulator
- E-power - Variable speed control system
- E-*drive* - Frequency converter

JESX IDENTIFICATION CODE

JES	X	M	6

- 6 → Power HPx10 (5, 6, 8)
- M → Single phase
- X → Bracket and motor casing in aluminium
- JES → Model

JEX IDENTIFICATION CODE

JE	X	M	120

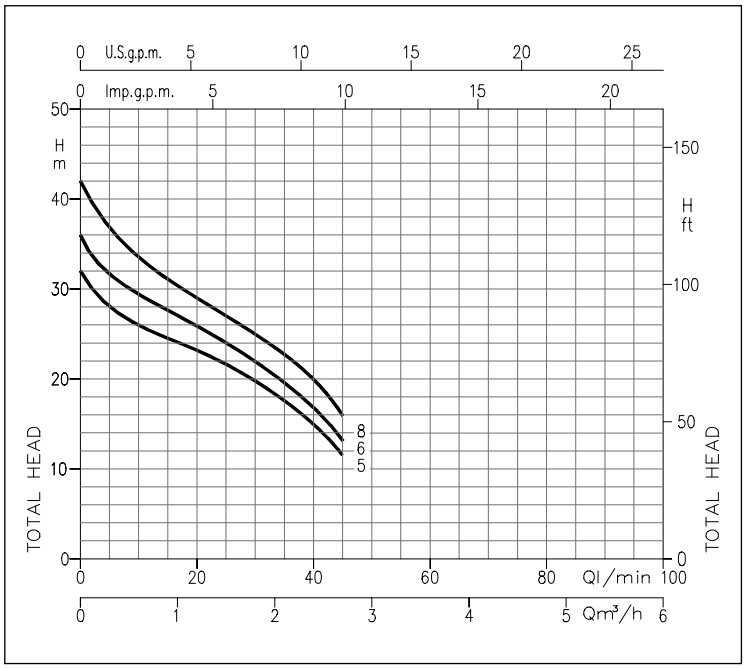
- 120 → Power HPx100 (80, 100, 120, 150)
- M → Single phase
- X → Bracket and motor casing in aluminium
- JE → Model

JESX - JEX

SELF-PRIMING ELECTRIC PUMPS

in AISI 304

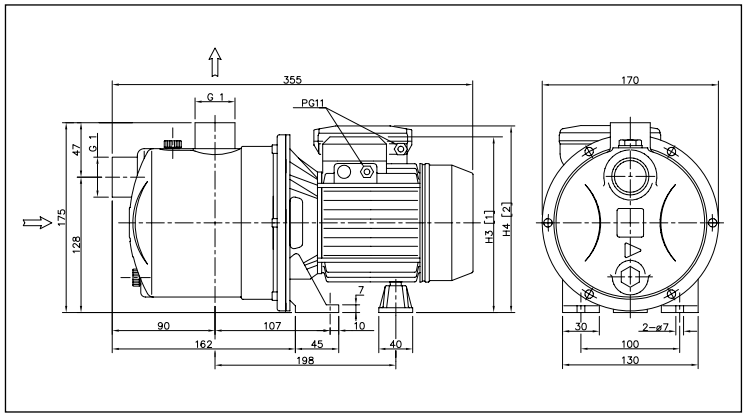
PERFORMANCE CURVES (according to ISO 9906 Attachment A)



JESX PERFORMANCE CHART

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	Q = Flow Rate l/min 5	20	40	45
				m^3/h 0.3	1.2	2.4	2.7
				H=Head [m]			
JESXM 5	JESX 5	0.5	0.37	28.0	23.0	15.0	11.5
JESXM 6	JESX 6	0.6	0.44	31.5	26.0	17.0	13.5
JESXM 8	JESX 8	0.8	0.6	37.0	29.0	20.0	16.0

JESX DIMENSIONS

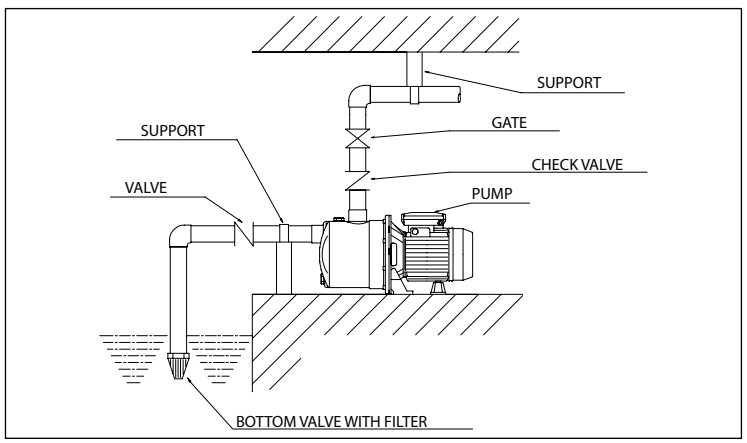


DIMENSIONS TABLE

Model	Dimensions [mm] [1] H3	Dimensions [mm] [2] H4	Weight [kg]
JESX(M) 5	175	200	5.1
JESX(M) 6	175	200	5.5
JESX(M) 8	175	200	6.1

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

INSTALLATION



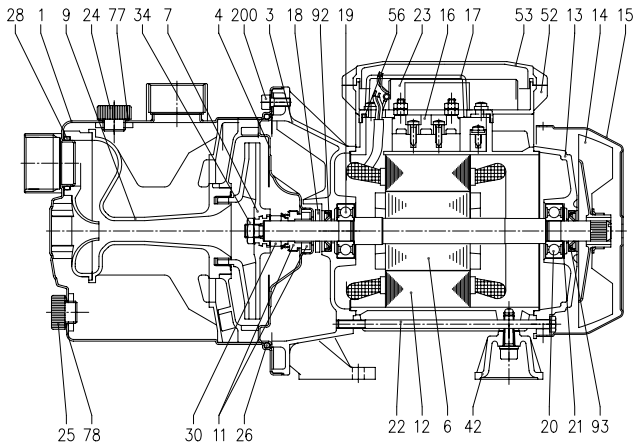
For correct installation of the system, it is recommended to fit a foot valve on the suction and support/anchorage for the piping.

JESX - JEX

SELF-PRIMING ELECTRIC PUMPS

in AISI 304

JESX SECTIONAL VIEW

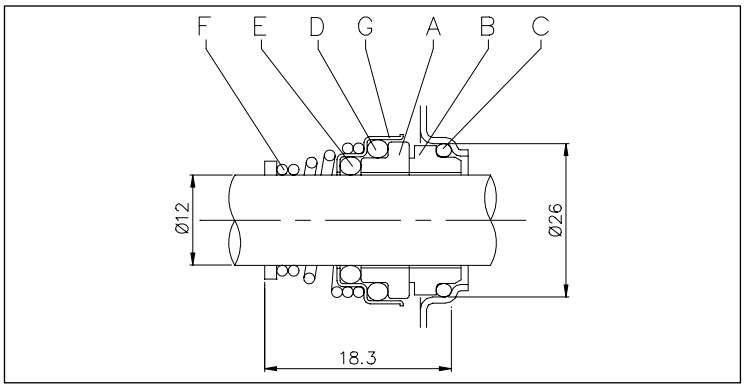


MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
1	Pump body	AISI 304	22	Tie-rod	Galvanised Fe 42
3	Motor support	Aluminium	23	Capacitor [2]	-
4	Seal housing disc	AISI 304	24	Filler cap	PA
6	Rotor shaft	AISI 303 (Part in contact with the liquid)	25	Drain plug	PA
7	Impeller	PPE+PS reinforced with fibreglass	26	O-Ring	NBR
9	Venturi Unit + nozzle	PPE+PS reinforced with fibreglass	28	O-Ring	NBR
11	Mechanical seal	Ceramic/Carbon/NBR	30	Mechanical seal spacer	Brass
12	Motor case	-	34	Impeller nut [1]	AISI 304
13	Motor cover	Aluminium	42	Foot	Aluminium
14	Fan	PA	52	Capacitor-holder box [2]	ABS
15	Fan cover	Galvanised Fe P04	53	Terminal box cover with gasket	ABS + NBR
16	Terminal Box	-	56	Terminal box cover gasket	NBR
17	Terminal Box cover [1]	Aluminium	77	O-Ring	NBR
18	Spray protector washer	NBR	78	O-Ring	NBR
19	Bearing (pump side)	-	92	Sealing ring [3]	-
20	Bearing (motor side)	-	93	Sealing ring [3]	-
21	Adjustment ring	Steel C70	200	Screw (pump body)	Stainless steel A2 UNI7323

[1]= Three phase only
[2]= Single phase only
[3]= For IP55 only

JESX MECHANICAL SEAL



MATERIALS TABLE

Ref.	Name	Material
A	Rotating part	Ceramic
B	Fixed part	Carbon
C	O-Ring	NBR
D	O-Ring	NBR
E	O-Ring	NBR
F	Spring	AISI 316
G	Structure/frame	AISI 304

JESX - JEX

SELF-PRIMING ELECTRIC PUMPS

in AISI 304

JESX ELECTRIC DATA TABLE

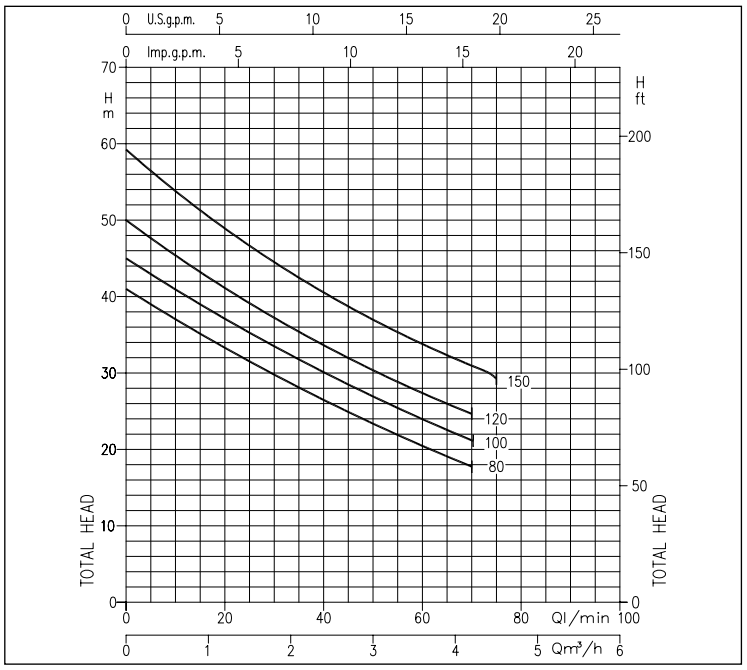
Model		P_2		Capacitor Single phase		P_1		Absorbed Current [A]		
Single phase 230V	Three phase 230/400V	[HP]	[kW]	µF	V_c	Single phase [kW]	Three phase [kW]	Single phase 230V	Three phase 230V	Three phase 400V
JESXM 5	JESX 5	0.5	0.37	10	450	0.44	0.43	2.1	1.5	0.85
JESXM 6	JESX 6	0.6	0.44	10	450	0.54	0.49	2.4	1.9	1.1
JESXM 8	JESX 8	0.8	0.6	12.5	450	0.63	0.58	3.0	2.25	1.3

JEX NOISE DATA TABLE

Model		P_2		L_{pA} - dB(A)*
Single phase 230V	Three phase 230/400V	[HP]	[kW]	
JESXM 5	JESX 5	0.5	0.37	<70
JESXM 6	JESX 6	0.6	0.44	<70
JESXM 8	JESX 8	0.8	0.6	<70

* Average noise level measured at 1 m from the motor pump.
Tolerance ± 2.5 dB.

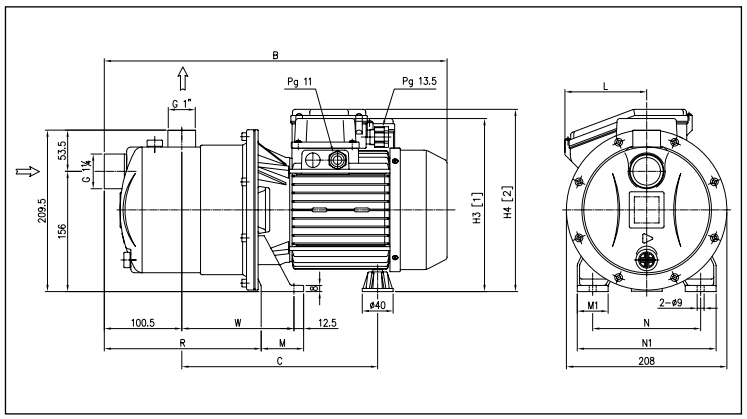
PERFORMANCE CURVES (according to ISO 9906 Attachment A)



JEX PERFORMANCE CHART

Model		P_2		Q = Flow Rate							
Single phase 230V	Three phase 230/400V	[HP]	[kW]	l/min	20	30	40	50	60	70	75
				m^3/h	1.2	1.8	2.4	3	3.6	4.2	4.5
				H=Head [m]							
JEXM 80	JEX 80	0.8	0.6	33.0	29.0	26.5	23.5	20.5	18.0	-	
JEXM 100	JEX 100	1	0.75	37.0	33.5	30.0	27.0	24.0	21.0	-	
JEXM 120	JEX 120	1.2	0.88	41.0	37.0	34.0	30.5	27.5	24.5	-	
JEXM 150	JEX 150	1.5	1.1	49.0	44.5	40.5	37.0	34.0	31.0	29.5	

JEX DIMENSIONS



DIMENSIONS TABLE

Model	Dimensions [mm]															Weight [kg]		
	B	*	C	H3 [1]	H4 [2]	L [2]	M	M1	N	N1	R	T	V [1]	*	W	[2]	[1]	*
JEX(M) 80	419	-	232.5	207.5	216	84	50	38	120	160	206.5	PG11	-	PG11	143.5	10.2	10.2	-
JEX(M) 100	419	419	232.5	207.5	216	84	50	38	120	160	206.5	PG11	M16x1.5	PG11	143.5	11.6	11.6	11.6
JEX(M) 120	419	419	232.5	207.5	216	84	50	38	120	160	206.5	PG11	M16x1.5	PG11	143.5	11.6	11.6	11.6
JEX(M) 150	444.5	469.5	254	224.5	236.5	106	55	40	140	180	203.5	PG13.5	M20x1.5	PG11	145.5	14.3	15.3	16.2

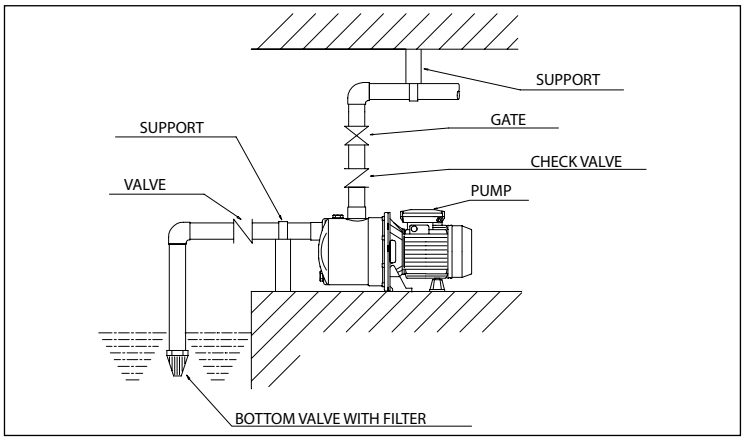
[1]= Three phase only
[2]= Single phase only
* Models with IE3 motor only

JESX - JEX

SELF-PRIMING ELECTRIC PUMPS

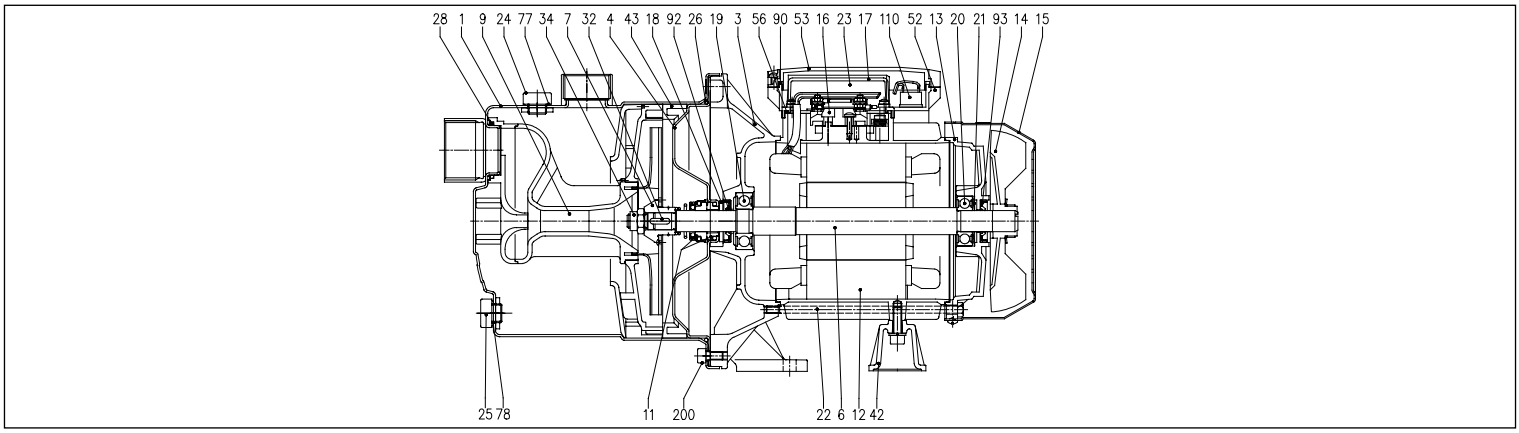
in AISI 304

INSTALLATION



For correct installation of the system, it is recommended to fit a foot valve on the suction and support/anchorage for the piping.

JEX SECTIONAL VIEW



MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
1	Pump body	AISI 304	24	Filler cap	PA
3	Motor support	Aluminium	25	Drain plug	PA
4	Seal housing disc	AISI 304	26	O-Ring	NBR
6	Rotor shaft	AISI 303 (Part in contact with the liquid)	28	O-Ring	NBR
7	Impeller	AISI 304	32	Key	AISI 304
9	Venturi Unit + nozzle	PPE+PS reinforced with fibreglass	34	Impeller nut	AISI 304
11	Mechanical seal	Ceramic/Carbon/NBR	42	Foot	Aluminium
12	Motor case	-	43	Nozzle spacer	PPE+PS reinforced with fibreglass
13	Motor cover	Aluminium	52	Capacitor-holder box [2]	ABS
14	Fan	PA	53	Capacitor-holder box cover [4]	ABS
15	Fan cover	Galvanised Fe P04	56	Terminal box cover gasket	NBR
16	Terminal Box	-	77	O-Ring	NBR
17	Terminal Box cover [1]	Aluminium	78	O-Ring	NBR
18	Spray protector washer	NBR	90	Cover gasket [5]	NBR
19	Bearing (pump side)	-	92	Sealing ring [3]	-
20	Bearing (motor side)	-	93	Sealing ring [3]	-
21	Adjustment ring	Steel C70	110	Motor protector [2]	-
22	Tie-rod	Galvanised Fe 42	200	Screw (pump body)	Stainless steel A2 UNI7323
23	Capacitor [2]	-			

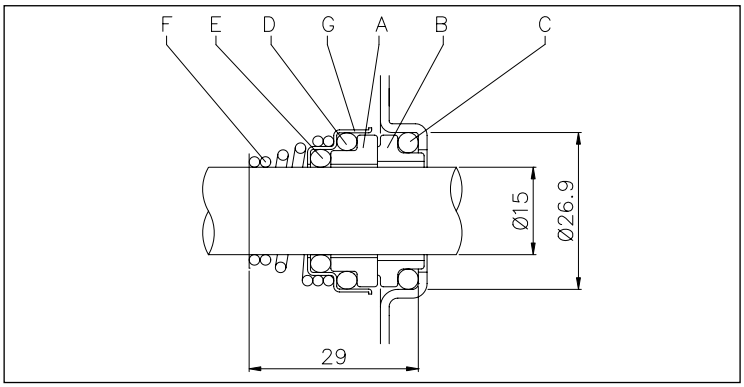
[1]= Three phase only
[2]= Single phase only
[3] = For IP 55 only
[4]= With gasket in NBR for JEX 80, JEX 100, JEX 120 single phase models
[5]= For JEXM 150 IP55 only

JESX - JEX

SELF-PRIMING ELECTRIC PUMPS

in AISI 304

JEX MECHANICAL SEAL



MATERIALS TABLE

Ref.	Name	Material
A	Rotating part	Ceramic
B	Fixed part	Carbon
C	O-Ring	NBR
D	O-Ring	NBR
E	O-Ring	NBR
F	Spring	AISI 316
G	Structure/frame	AISI 304

JEX ELECTRIC DATA TABLE

Model		P_2		Efficiency		Capacitor Single phase		Efficiency (%) Three phase η %			P_1		Absorbed Current [A]		
Single phase 230V	Three phase 230/400V	[HP]	[kW]	Single phase	Three phase	µF	V_c	50%	75%	100%	Single phase [kW]	Three phase [kW]	Single phase 230V	Three phase 230V	Three phase 400V
JEXM 80	JEX 80	0.8	0.6	-	-	16	450	-	-	-	1.05	0.97	4.7	3.3	1.9
JEXM 100	JEX 100	1	0.75	-	IE2	20	450	77.2	80.9	81.3	1.33	1.13	6.4	3.5	2.0
-		1	0.75	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
JEXM 120	JEX 120	1.2	0.88	-	IE2	20	450	77.2	80.9	81.3	1.39	1.15	6.7	3.6	2.1
-		1.2	0.88	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
JEXM 150	JEX 150	1.5	1.1	-	IE2	35	450	79.7	82.5	83.0	1.70	1.80	7.6	5.5	3.2
-		1.5	1.1	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3

JEX NOISE DATA TABLE

Model		P_2		L_{pA} - dB(A)*
Single phase 230V	Three phase 230/400V	[HP]	[kW]	
JEXM 80	JEX 80	0.8	0.6	71
JEXM 100	JEX 100	1	0.75	71
JEXM 120	JEX 120	1.2	0.88	71
JEXM 150	JEX 150	1.5	1.1	76

* Average noise level measured at 1 m from the motor pump.
Tolerance ± 2.5 dB.

AGA - AGC

SELF-PRIMING ELECTRIC PUMPS

in cast iron

Cast iron self-priming electric pumps.

APPLICATIONS

- Domestic pressure boosting
- Small-scale garden irrigation
- Washing of vehicles
- Pumping clean water in general

TECHNICAL DETAILS

- Available with brass impeller (AGA 0.60 M GO, AGA 0.75 M GO, AGA 1.00 M GO, AGA 1.00 T GO)

PUMP TECHNICAL DATA

- Maximum working pressure:
  - 6 bar for AGA 0.60-0.75-1.00
  - 10 bar for the rest of the range
- Maximum temperature of the liquid: 45°C
- Maximum suction depth: 8 m
- G1 suction connection for AGA 0.60-0.75-1.00, G1½ for the rest of the range
- G1 discharge connection

MOTOR TECHNICAL DATA

- IE2 and IE3 high energy-efficiency motors starting from 0.75kW
- Self-ventilated 2 pole asynchronous motor
- Class of insulation F
- IP44 Protection degree
- 230V ±10% 50Hz single phase voltage, 230/400V ±10% 50Hz three phase voltage
- Permanent capacitor inserted and thermo-amperometric protection with automatic rearm incorporated for the single phase motor
- Protection under user's responsibility for the three phase version

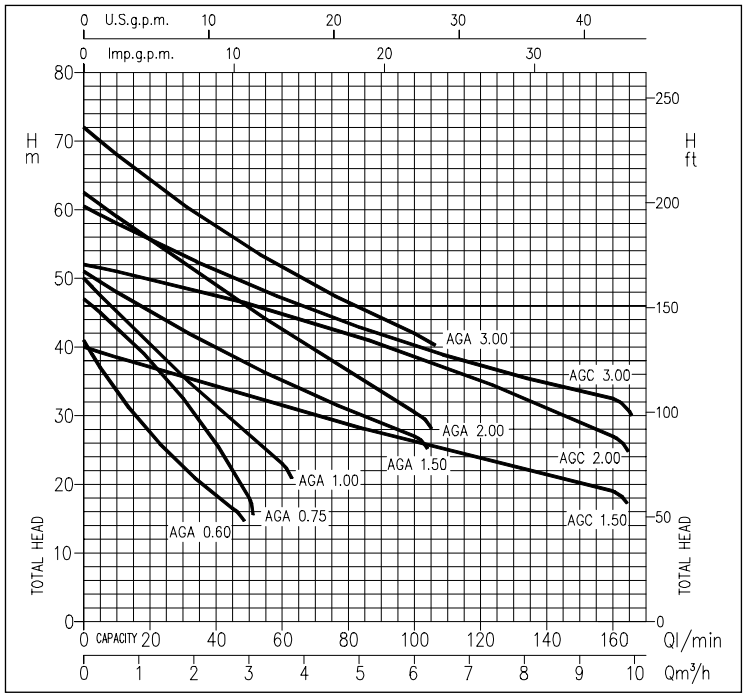
MATERIALS

- Cast iron pump casing
- Seal housing disc in AISI 304 for AGA 0.60-0.75-1.00, in cast iron integrated in motor bracket for the rest of the range
- Shaft in AISI 303 (part in contact with the liquid)
- Impeller in PPE+PS reinforced with fibreglass for AGA 0.60-0.75-1.00, in brass for the rest of the range
- Mechanical seal in Ceramic/Carbon/NBR
- Ejector and nozzle in PPE+PS reinforced with fibreglass

ACCESSORIES (On request)

- Electric panels
- Vessels
- Floats
- Pressure switches
- Presscomfort - Pressure regulator
- E-power - Variable speed control system
- E-*drive* - Frequency converter

PERFORMANCE CURVES (according to ISO 9906 Attachment A)



IDENTIFICATION CODE

AGA	1.00	M

Single phase	M
Three phase	T
Power [HP]	0.60 / 0.75 / 1.00 / 1.50 / 2.00 / 3.00
Model	AGA / AGC

AGA - AGC

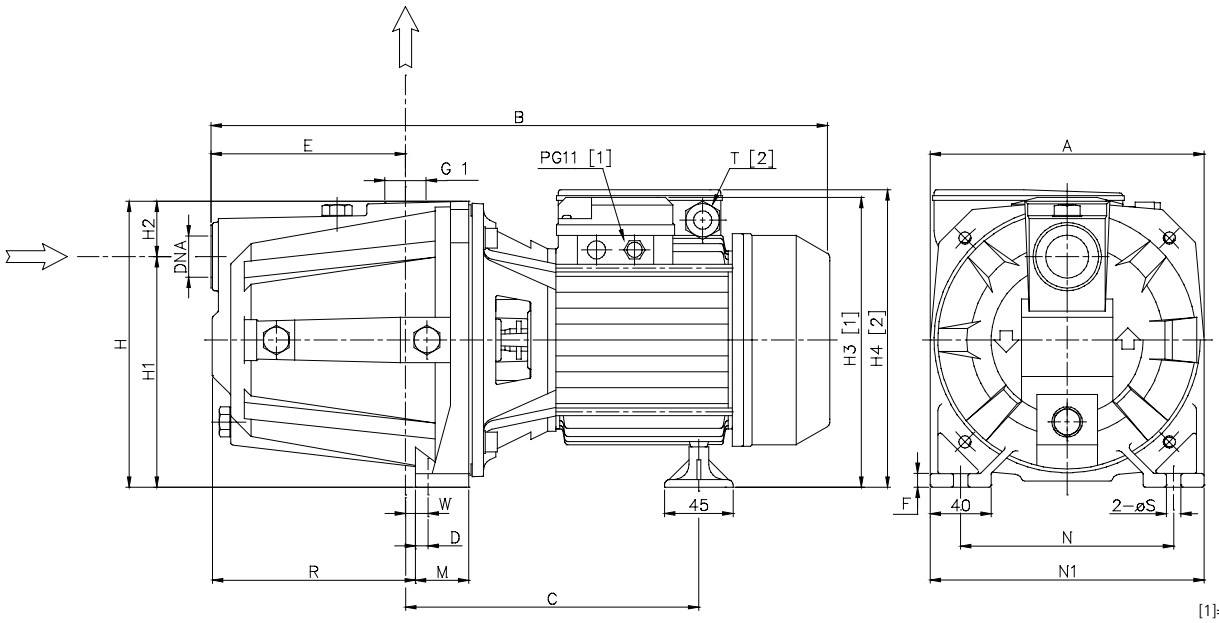
SELF-PRIMING ELECTRIC PUMPS

in cast iron

PERFORMANCE CHART

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	Q = Flow Rate l/min	5	10	20	30	45	50	60	80	100	130	160
				m^3/h	0.3	0.6	1.2	1.8	2.7	3	3.6	4.8	6	7.8	9.6
				H=Head [m]											
AGA 0.60 M	AGA 0.60 T	0.6	0.44		37.0	33.4	27.1	22.0	16.5	-	-	-	-	-	-
AGA 0.75 M	AGA 0.75 T	0.75	0.55		45.0	42.8	37.9	32.0	21.9	18.0	-	-	-	-	-
AGA 1.00 M	AGA 1.00 T	1	0.75		47,5	45.0	40.3	35.7	29.1	27.0	23.0	-	-	-	-
AGA 1.50 M	AGA 1.50 T	1.5	1.1		-	48.0	45.1	42.4	38.6	37.4	35.1	30.8	27.0	-	-
AGA 2.00 M	AGA 2.00 T	2	1.5		-	59.0	55.6	52.2	47.3	45.7	42.5	36.4	30.5	-	-
-	AGA 3.00 T	3	2.2		-	68.0	64.3	60.8	55.9	54.4	51.6	46.4	42.0	-	-
AGC 1.50 M	AGC 1.50 T	1.5	1.1		-	38.5	37.0	35.6	33.5	32.7	31.4	28.7	26.1	22.4	19.0
AGC 2.00 M	AGC 2.00 T	2	1.5		-	51.0	49.9	48.8	46.9	46.3	44.9	42.0	38.7	33.2	27.0
-	AGC 3.00 T	3	2.2		-	58.0	55.6	53.3	50.1	49.1	47.1	43.4	40.2	35.9	32.5

DIMENSIONS



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

DIMENSIONS TABLE

Model	Dimensions [mm] A	B	B *	C	D	E	F	H	H1	H2	H3 [1]	H4 [2]	M	N	N1	R	T [2]	V *	V [1]	W	S	DNA	Weight [kg]	Weight *
AGA 0.60 M	180	405	-	195	103	127	9	185	152	33	-	199	40	140	180	128.5	PG11	-	-	11.8	9.5	G1	12.0	-
AGA 0.60 T	180	405	-	195	103	127	9	185	152	33	1.975	-	40	140	180	128.5	-	-	PG11	11.8	9.5	G1	12.0	-
AGA 0.75 M	180	405	-	195	103	127	9	185	152	33	-	199	40	140	180	128.5	PG11	-	-	11.8	9.5	G1	12.5	-
AGA 0.75 T	180	405	-	195	103	127	9	185	152	33	1.975	-	40	140	180	128.5	-	-	PG11	11.8	9.5	G1	12.3	-
AGA 1.00 M	180	405	-	195	103	127	9	185	152	33	-	199	40	140	180	128.5	PG11	-	-	11.8	9.5	G1	13.8	-
AGA 1.00 T	180	405	405	195	103	127	9	185	152	33	1.975	-	40	140	180	128.5	-	M16x1.5	PG11	11.8	9.5	G1	14.8	14.8
AGA 1.50 M	220	508	-	244	10	157	10	223	170	53	-	247	48	180	220	167.5	PG13.5	-	-	15.5	9	G1½	25.5	-
AGA 1.50 T	220	495	520	244	10	157	10	223	170	53	229	-	48	180	220	167.5	-	M20x1.5	PG11	15.5	9	G1½	25.6	26.5
AGA 2.00 M	220	508	-	244	10	157	10	223	170	53	-	247	48	180	220	167.5	PG13.5	-	-	15.5	9	G1½	26.6	-
AGA 2.00 T	220	495	520	244	10	157	10	223	170	53	229	-	48	180	220	167.5	-	M20x1.5	PG11	15.5	9	G1½	27.7	28.6
AGA 3.00 T	220	508	521	244	10	157	10	223	170	53	229	-	48	180	220	167.5	-	M20x1.5	PG11	15.5	9	G1½	29.0	29.9
AGC 1.50 M	220	508	-	244	10	157	10	223	170	53	-	247	48	180	220	167.5	PG13.5	-	-	15.5	9	G1½	25.5	-
AGC 1.50 T	220	495	520	244	10	157	10	223	170	53	229	-	48	180	220	167.5	-	M20x1.5	PG11	15.5	9	G1½	27.4	28.3
AGC 2.00 M	220	508	-	244	10	157	10	223	170	53	-	247	48	180	220	167.5	PG13.5	-	-	15.5	9	G1½	26.6	-
AGC 2.00 T	220	508	521	244	10	157	10	223	170	53	229	-	48	180	220	167.5	-	M20x1.5	PG11	15.5	9	G1½	28.6	29.5
AGC 3.00 T	220	508	521	244	10	157	10	223	170	53	229	-	48	180	220	167.5	-	M20x1.5	PG11	15.5	9	G1½	29.0	29.9

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

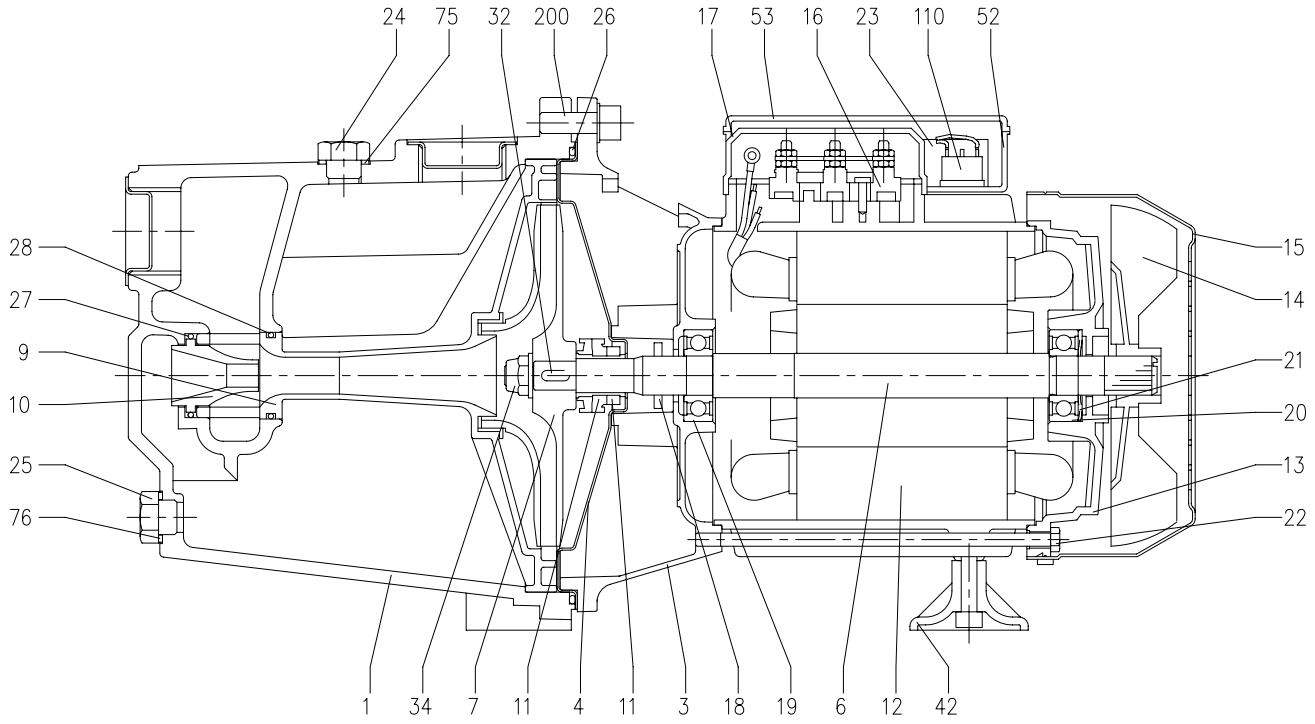
* Models with IE3 motor only

AGA - AGC

SELF-PRIMING ELECTRIC PUMPS

in cast iron

SECTIONAL VIEW



MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
1	Pump body	Cast iron	21	Adjustment ring	Steel C70
3	Motor support	[7]	22	Tie-rod	Galvanised Fe 42
4	Seal housing disc	[6]	23	Capacitor [1]	-
6	Rotor shaft	AISI 303 (part in contact with the liquid)	24	Filler cap	Brass
7	Impeller	[4]	25	Drain plug	Brass
9	Nozzle + Venturi pipe	PPE+PS reinforced with fibreglass	26	O-Ring	NBR
10	Venturi Nozzle	PPE+PS reinforced with fibreglass	27	O-Ring	NBR
11	Mechanical seal	Ceramic/Carbon/NBR	28	O-Ring	NBR
12	Motor casing with stator	-	32	Key	AISI 316
13	Motor cover	Aluminium	34	Impeller nut [3]	AISI 304
14	Fan	PA6	42	Foot	PP
15	Fan cover	Galvanised Fe P04	52	Box for terminal box [1]	ABS
16	Terminal Box	-	53	Terminal box cover [8]	ABS
17	Terminal Box cover [2]	Aluminium	75	Washer	Aluminium
18	Spray protector ring	NBR	76	Washer	Aluminium
19	Bearing (pump side)	-	110	Motor protector [5]	-
20	Bearing (motor side)	-	200	Screw (pump body)	Zn. stainless steel Cl. 8 .8 ISO 89 8-1

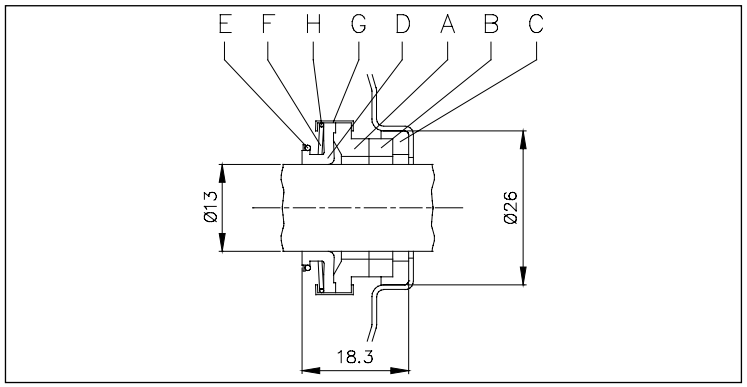
[1]= For single phase only
[2]= For three phase only
[3]= For the version with brass impeller only
[4]= PPE+PS reinforced with fibreglass for AGA 0.60 - 0.75 - 1.00, brass for the rest of the range
[5]= For single phase only AGA - AGC 1.50 - 2.00
[6]= AISI 304 per AGA 0.60 - 0.75 - 1.00, in cast iron integrated on motor support for the rest of the range
[7] = Cast iron for AGA - AGC 1.50 - 2.00 - 3.00, aluminium for AGA 0.60 - 0.75 - 1.00
[8]= With gasket in NBR for AGA 0.60 - 0.75 - 1.00 single phase models

AGA - AGC

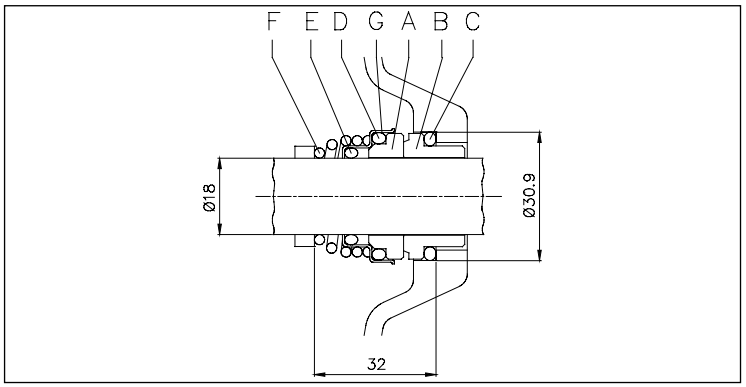
SELF-PRIMING ELECTRIC PUMPS

in cast iron

MECHANICAL SEAL for AGA 0.60 - 0.75 - 1.00



MECHANICAL SEAL for AGA - AGC 1.50 - 2.00 - 3.00



MATERIALS TABLE for AGA 0.60 - 0.75 - 1.00

Ref.	Name	Material
A	Rotating part	Carbon
B	Fixed part	Ceramic
C	Gasket	NBR
D	Diaphragm	NBR
E	Ring	AISI 304
F	Spring	AISI 304
G	Structure/frame	AISI 304
H	Retainer ring	AISI 304

MATERIALS TABLE for AGA - AGC 1.50 - 2.00 - 3.00

Ref.	Name	Material
A	Rotating part	Ceramic
B	Fixed part	Carbon
C	O-Ring	NBR
D	O-Ring	NBR
E	O-Ring	NBR
F	Spring	AISI 316
G	Structure/frame	AISI 304

ELECTRIC DATA TABLE

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	Efficiency Single phase	Efficiency Three phase	Capacitor Single phase µF	Capacitor Single phase V~	Efficiency (%) Three phase η % 50%	η % 75%	η % 100%	P_1 Single phase [kW]	P_1 Three phase [kW]	Absorbed Current [A] Single phase 230V	Absorbed Current [A] Three phase 230V	Absorbed Current [A] Three phase 400V
AGA 0.60 M	AGA 0.60 T	0.6	0.45	-	-	12.5	450	-	-	-	0.70	0.65	3.1	2.1	1.2
AGA 0.75 M	AGA 0.75 T	0.75	0.55	-	-	14	450	-	-	-	0.92	0.84	4.0	2.8	1.6
AGA 1.00 M	AGA 1.00 T	1	0.75	-	IE2	20	450	77.2	80.9	81.3	1.15	0.92	5.5	2.9	1.7
-		1	0.75	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
AGA 1.50 M	AGA 1.50 T	1.5	1.1	-	IE2	40	450	79.7	82.5	83.0	1.65	1.80	8.1	5.5	3.2
-		1.5	1.1	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
AGA 2.00 M	AGA 2.00 T	2	1.5	-	IE2	40	450	79.7	82.5	83.0	2.10	2.05	9.8	6.0	3.5
-		2	1.5	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
-	AGA 3.00 T	3	2.2	-	IE2	-	-	83.0	84.4	83.8	-	2.63	-	8.1	4.7
-		3	2.2	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7
AGC 1.50 M	AGC 1.50 T	1.5	1.1	-	IE2	40	450	79.7	82.5	83.0	1.80	1.80	8.6	5.5	3.2
-		1.5	1.1	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
AGC 2.00 M	AGC 2.00 T	2	1.5	-	IE2	40	450	80.3	83.4	83.8	2.30	2.23	10.5	7.4	4.3
-		2	1.5	-	IE3	-	-	84.2	86.8	86.9	-	2.01	-	7.1	4.1
-	AGC 3.00 T	3	2.2	-	IE2	-	-	83.0	84.4	83.8	-	2.63	-	8.1	4.7
-		3	2.2	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7

NOISE DATA TABLE

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	L_{pA} - dB(A)*
AGA 0.60 M	AGA 0.60 T	0.6	0.45	71
AGA 0.75 M	AGA 0.75 T	0.75	0.55	71
AGA 1.00 M	AGA 1.00 T	1	0.75	71
AGA 1.50 M	AGA 1.50 T	1.5	1.1	76
AGA 2.00 M	AGA 2.00 T	2	1.5	76
-	AGA 3.00 T	3	2.2	76
AGC 1.50 M	AGC 1.50 T	1.5	1.1	76
AGC 2.00 M	AGC 2.00 T	2	1.5	76
-	AGC 3.00 T	3	2.2	76

* Average noise level measured at 1 m from the motor pump.
Tolerance ± 2.5 dB.

CMA - B - C - D - CMR

SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

CMA-B-C-D

CMR

Cast iron single impeller centrifugal electric pump.

APPLICATIONS

- Pressure boosting domestic plants
- Small-scale irrigation
- Pumping non-aggressive liquids for civil and industrial use
- Washing plants
- Washing vehicles

TECHNICAL DETAILS

- Available with brass impeller (CMA 0.50 GO, CMA 0.75 GO, CMA 1.00 GO)
- The CMR version is equipped with an open impeller
- They can be inserted into machinery for industrial use

PUMP TECHNICAL DATA

- Maximum working pressure:
  - 6 bar for CMA 0.50 - 0.75 - 1.00, CMB 0.75 - 1.00 - 1.50 - 2.00 - 3.00, CMC, CMD, CMR
  - 8 bar for CMA 1.50 - 2.00 - 3.00, CMB 4.00 - 5.50
- Maximum temperature of the liquid:
  - 40°C for CMA 0.50 - 0.75 - 1.00
  - 90°C for the rest of the range
- G1 suction connection for CMA 0.50 - 0.75 - 1.00, G1¼ for CMA 1.50 - 2.00 - 3.00, G1½ per CMR, G2 for CMB - CMC, G2½ for CMD
- G1 discharge connection for CMA, G1¼ for CMB, G1½ for CMR, G2 for CMC, G2½ for CMD
- MEI > 0.4

For further information please see our Data Book on the web site www.ebaraeurope.com

MOTOR TECHNICAL DATA

- IE2 and IE3 high energy-efficiency motors starting from 0.75kW
- Self-ventilated 2 pole asynchronous motor
- Class of insulation F
- IP44 Protection degree
- 230V ±10% 50Hz single phase voltage, 230/400V ±10% 50Hz three phase voltage
- Permanent capacitor inserted and thermo-amperometric protection with automatic rearm incorporated for the single phase motor
- Protection under user's responsibility for the three phase version

MATERIALS

- Cast iron pump casing
- Mechanical seal in Carbon/Ceramic/NBR
- Impeller:
  - in PPE+PS reinforced with fibreglass for CMA 0.50 - 0.75 - 1.00
  - in brass for CMA 1.50 - 2.00 - 3.00, CMB 2.00 - 3.00 - 4.00 - 5.50, CMR 0.75 - 1.00
  - in cast iron for CMB 0.75 - 1.00 - 1.50, CMC, CMD
- Shaft:
  - in AISI 416 (integral) for CMA 0.50
  - in AISI 303 (part in contact with the liquid) for CMA 0.75 - 1.00 - 1.50 - 2.00 - 3.00, CMB 0.75 - 1.00 - 1.50 - 2.00 - 3.00, CMC 0.75 - 1.00, CMD 1.50 - 2.00 - 3.00, CMR 0.75 - 1.00
  - in AISI 304 (part in contact with the liquid) for CMB 4.00 - 5.50, CMD 4.00
- Bracket:
  - in aluminium for CMA 0.50 - 0.75 - 1.00, CMB 0.75 - 1.00, CMC 0.75 - 1.00, CMR 0.75 - 1.00
  - in cast iron for the rest of the range

CMA-B-C-D - CMR IDENTIFICATION CODE

CMB	1.50	M

Single phase	M
Three phase	T

Power [HP]
0.50
0.75
0.80
1.00
1.50
2.00
3.00
4.00
5.50

Model
CMA
CMB
CMC
CMD
CMR

ACCESSORIES (On request)

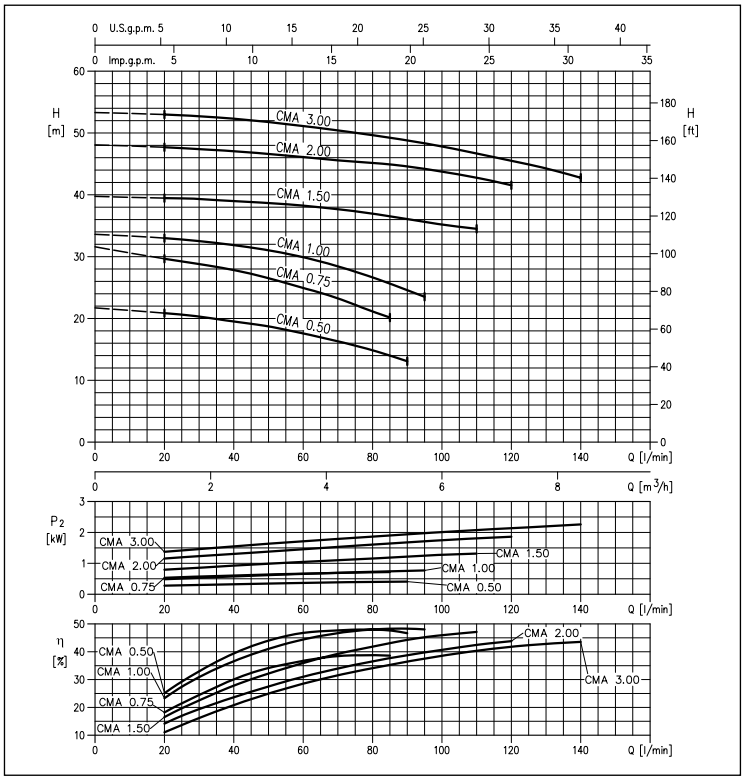
- Electric panels
- Vessels
- Floats
- Pressure switches
- Presscomfort - Pressure regulator
- E-power - Variable speed control system
- E-*drive* - Frequency converter

SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

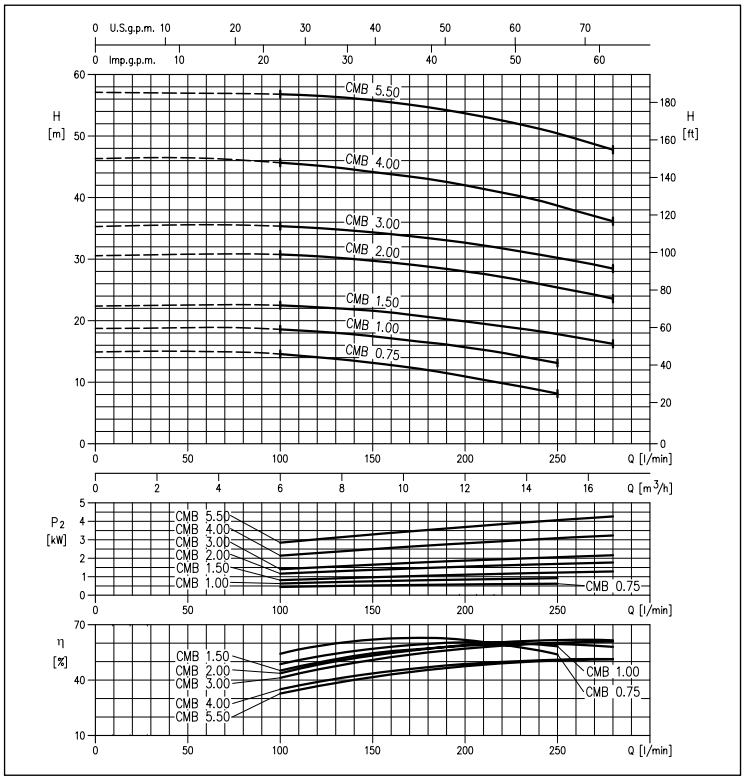
CMA range PERFORMANCE CURVES

(according to ISO 9906 Attachment A)



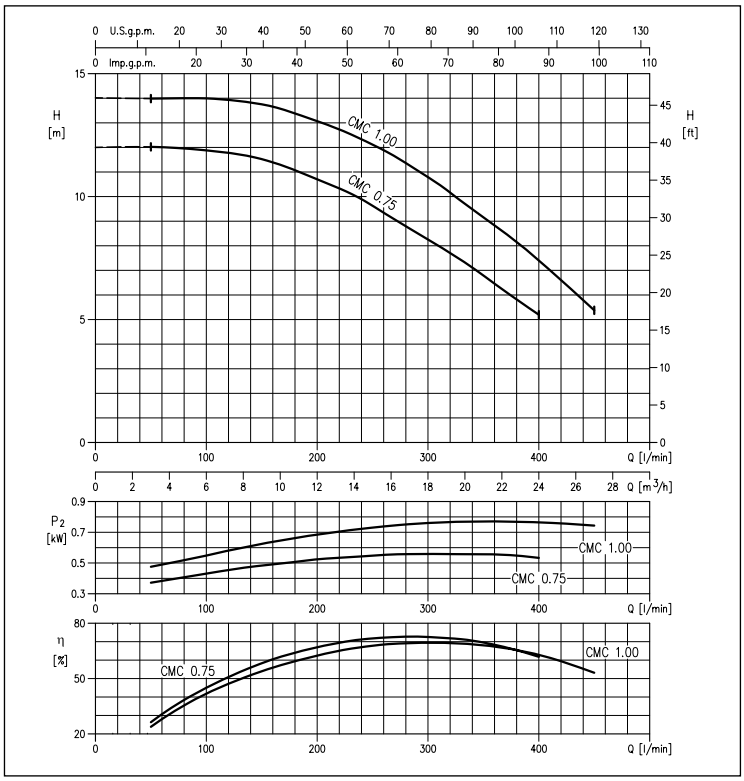
CMB range PERFORMANCE CURVES

(according to ISO 9906 Attachment A)



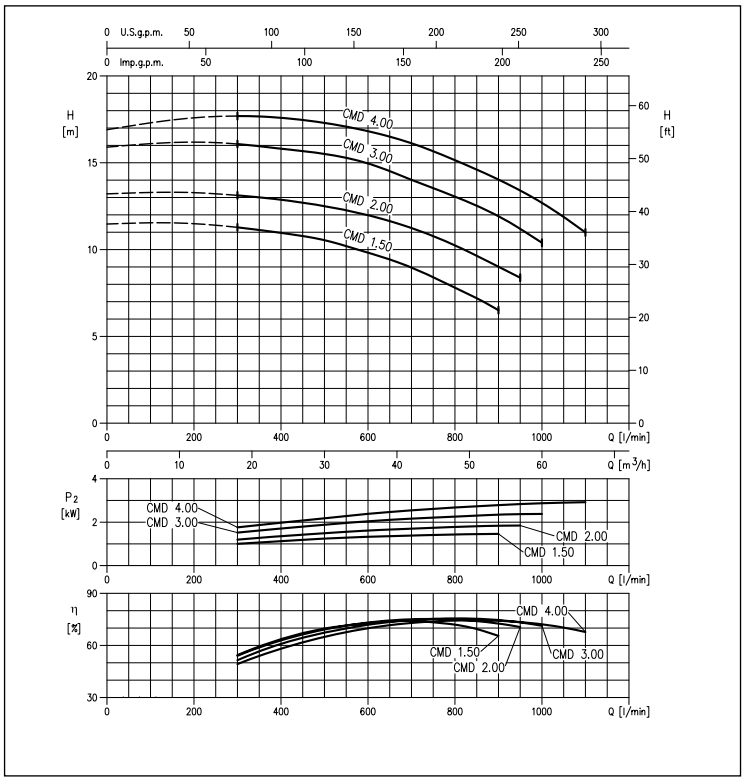
CMC range PERFORMANCE CURVES

(according to ISO 9906 Attachment A)



CMD range PERFORMANCE CURVES

(according to ISO 9906 Attachment A)

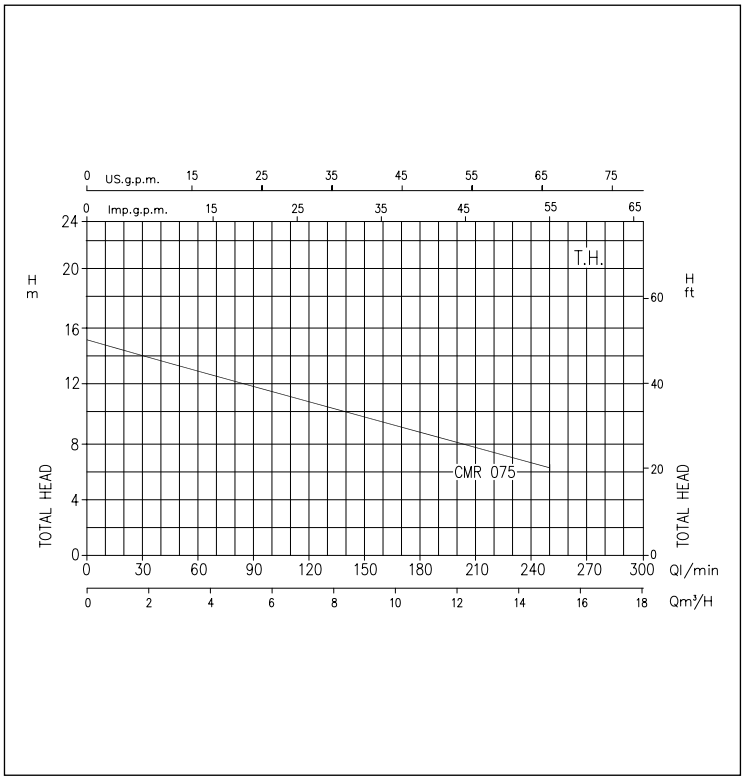


SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

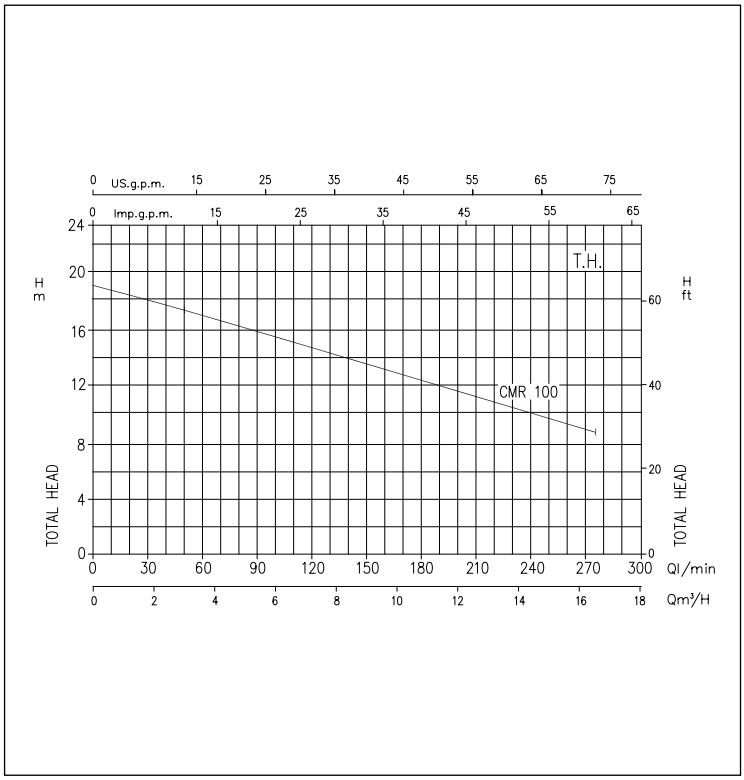
CMR 0.75 range PERFORMANCE CURVES

(according to ISO 9906 Attachment A)



CMR 1.00 range PERFORMANCE CURVES

(according to ISO 9906 Attachment A)



CMA - B - C - D - CMR

SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

CMA PERFORMANCE CHART

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	Q = Flow Rate l/min	20	40	60	80	85	90	95	110	120	140
				m^3/h	1.2	2.4	3.6	4.8	5.1	5.4	5.7	6.6	7.2	8.4
				H=Head [m]										
CMA 0.50 M	CMA 0.50 T	0.5	0.37		20.9	19.5	17.6	14.9	14.0	13.1	-	-	-	-
CMA 0.75 M	CMA 0.75 T	0.75	0.55		29.7	27.8	24.9	21.1	20.2	-	-	-	-	-
CMA 1.00 M	CMA 1.00 T	1	0.75		33.0	31.9	29.9	26.6	25.6	24.6	23.5	-	-	-
CMA 1.50 M	CMA 1.50 T	1.5	1.1		39.5	39.0	38.3	37.0	36.5	36.1	35.6	34.5	-	-
CMA 2.00 M	CMA 2.00 T	2	1.5		47.5	47.0	46.0	45.0	45.0	44.5	44.0	43.0	42.0	-
-	CMA 3.00 T	3	2.2		53.0	52.5	51.0	495	49.0	49.0	48.5	46.5	45.5	42.5

CMB PERFORMANCE CHART

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	Q = Flow Rate l/min	100	150	200	250	280
				m^3/h	6	9	12	15.1	16.9
				H=Head [m]					
CMB 0.75 M	CMB 0.75 T	0.75	0.55		14.6	13.2	10.9	81.0	-
CMB 1.00 M	CMB 1.00 T	1	0.75		18.6	17.5	15.7	13.1	-
CMB 1.50 M	CMB 1.50 T	1.5	1.1		22.5	21.6	20.0	17.8	16.2
CMB 2.00 M	CMB 2.00 T	2	1.5		30.8	29.7	28.0	25.4	23.6
-	CMB 3.00 T	3	2.2		35.4	34.4	32.7	30.2	28.5
-	CMB 4.00 T	4	3		45.5	44.0	42.0	37.8	36.2
-	CMB 5.50 T	5.5	4		57.0	56.0	53.5	50.5	48.0

CMC PERFORMANCE CHART

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	Q = Flow Rate l/min	50	100	200	300	400	450
				m^3/h	3	6	12	18.1	24.1	27.1
				H=Head [m]						
CMC 0.75 M	CMC 0.75 T	0.75	0.55		12.0	11.9	10.7	8,3	5,2	-
CMC 1.00 M	CMC 1.00 T	1	0.75		14.0	14.0	13.1	10,8	7,4	5,4

CMD PERFORMANCE CHART

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	Q = Flow Rate l/min	250	400	600	800	900	950	1000
				m^3/h	18	24	36	48	54	57	60
				H=Head [m]							
CMD 1.50 M	CMD 1.50 T	1.5	1.1		11.3	11.0	9.8	7.8	6.5	-	-
CMD 2.00 M	CMD 2.00 T	2	1.5		13.1	12.9	12.0	10.2	9.0	8.4	-
-	CMD 3.00 T	3	2.2		16.1	15.8	15.0	13.1	11.9	11.2	10.4
-	CMD 4.00 T	4	3		17.7	17.6	16.8	15.2	14.0	13.4	12.7

CMR PERFORMANCE CHART

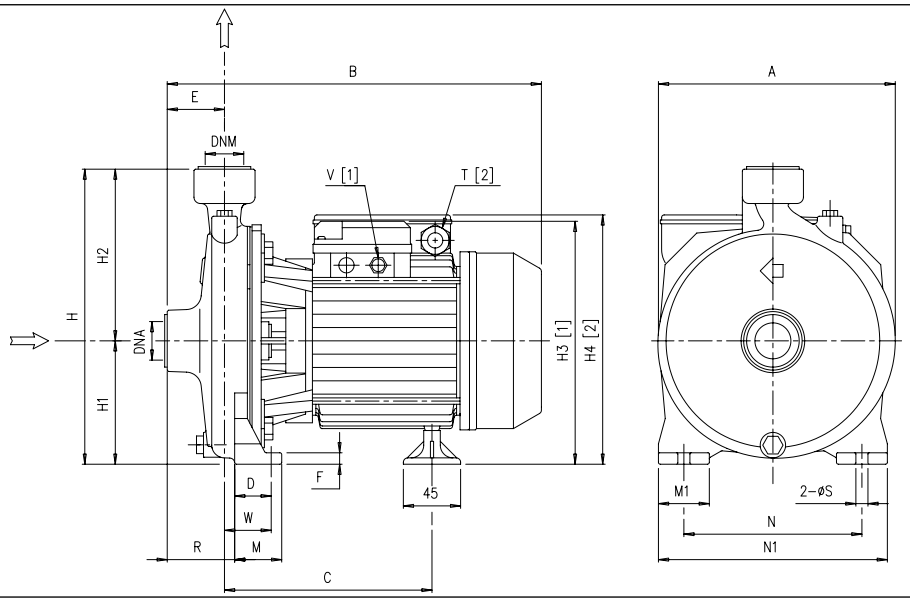
Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	Q = Flow Rate l/min	50	100	200	250	275
				m^3/h	3	6	12	15	17.5
				H=Head [m]					
CMR 0.75 M	CMR 0.75 T	0.75	0.55		13.6	11.4	8.1	6.3	-
CMR 1.00 M	CMR 1.00 T	1	0.75		17.3	15.4	11.5	9.6	8.7

CMA - B - C - D - CMR

SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

CMA-B-C-D - CMR DIMENSIONS



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

DIMENSIONS TABLE

Model	Dimensions [mm]																										Weight [kg]	
	A	B	*	C	*	D	E	F	H	H1	H2	H3 [1]	*	H4 [2]	M	M1	N	N1	R	T [2]	V [1]	*	W	S	DNA	DNM		*
CMA 0.50 M	160	261.8	-	158.8	-	30	44	8	202	82	120	-	-	173	40	40	110	150	44	PG11	-	-	30	9.5	G1	G1	7.2	-
CMA 0.50 T	160	261.8	-	158.8	-	30	44	8	202	82	120	172.5	-	-	40	40	110	150	44	-	PG11	-	30	9.5	G1	G1	7.1	-
CMA 0.75 M	185	300.3	-	171.8	-	36.8	45	9	232	97	135	-	-	198	45	40	140	180	45	PG11	-	-	36.8	9.5	G1	G1	10.3	-
CMA 0.75 T	185	300.3	-	171.8	-	36.8	45	9	232	97	135	197.5	-	-	45	40	140	180	45	-	PG11	-	36.8	9.5	G1	G1	10.2	-
CMA 1.00 M	185	300.3	-	171.8	-	36.8	45	9	232	97	135	-	-	198	45	40	140	180	45	PG11	-	-	36.8	9.5	G1	G1	11.5	-
CMA 1.00 T	185	300.3	300.3	171.8	171.8	36.8	45	9	232	97	135	197.5	197.5	-	45	40	140	180	45	-	PG11	M16x1.5	36.8	9.5	G1	G1	11.6	11.6
CMA 1.50 M	200	347.3	-	208.3	-	41.8	45.5	9	252	100	152	-	-	232	50	40	155	194	45.5	PG13.5	-	-	41.8	9.5	G1¼	G1	19.5	-
CMA 1.50 T	200	347.3	372.3	208.3	208.3	41.8	45.5	9	252	100	152	214	214	-	50	40	155	194	45.5	-	PG11	M20x1.5	41.8	9.5	G1¼	G1	19.9	20.8
CMA 2.00 M	225	360.3	-	208.3	-	41.8	45.5	9	285	115	170	-	-	247	50	40	180	220	45.5	PG13.5	-	-	41.8	9.5	G1¼	G1	22.8	-
CMA 2.00 T	225	361	373.5	208.3	208.3	41.8	45.5	9	285	115	170	229	229	-	50	40	180	220	45.5	-	PG11	M20x1.5	41.8	9.5	G1¼	G1	23.4	24.3
CMA 3.00 T	225	360.3	372.8	208.3	208.3	41.8	45.5	9	285	115	170	229	229	-	50	40	180	220	45.5	-	PG11	M20x1.5	41.8	9.5	G1¼	G1	23.4	24.3
CMB 0.75 M	188	315.3	-	182.3	-	36.8	49.5	9	251.5	101.5	150	-	-	127.5	45	40	140	180	65.5	PG11	-	-	52.8	9.5	G2	G1¼	11.6	-
CMB 0.75 T	188	315.3	-	182.3	-	36.8	49.5	9	251.5	101.5	150	127	-	-	45	40	140	180	65.5	-	PG11	-	52.8	9.5	G2	G1¼	11.6	-
CMB 1.00 M	188	315.3	-	182.3	-	36.8	49.5	9	251.5	101.5	150	-	-	127.5	45	40	140	180	65.5	PG11	-	-	52.8	9.5	G2	G1¼	13.7	-
CMB 1.00 T	188	315.3	315.3	182.3	182.3	36.8	49.5	9	251.5	101.5	150	127	127	-	45	40	140	180	65.5	-	PG11	M16x1.5	52.8	9.5	G2	G1¼	13.7	13.7
CMB 1.50 M	188	349.3	-	206.3	-	36.8	49.5	9	251.5	101.5	150	-	-	233.5	45	40	140	180	65.5	PG13.5	-	-	52.8	9.5	G2	G1¼	19.9	-
CMB 1.50 T	188	349.3	374.3	206.3	206.3	36.8	49.5	9	251.5	101.5	150	215.5	215.5	-	45	40	140	180	65.5	-	PG11	M20x1.5	52.8	9.5	G2	G1¼	19.5	20.4
CMB 2.00 M	200	373.3	-	209.3	-	36.8	57.5	9	271.5	111.5	160	-	-	243.5	45	40	160	200	76.5	PG13.5	-	-	55.8	9.5	G2	G1¼	21.0	-
CMB 2.00 T	200	374	386.5	209.3	209.3	36.8	57.5	9	271.5	111.5	160	225.5	225.5	-	45	40	160	200	76.5	-	PG11	M20x1.5	55.8	9.5	G2	G1¼	22.0	22.9
CMB 3.00 T	200	373.3	385.8	209.3	209.3	36.8	57.5	9	271.5	111.5	160	225.5	225.5	-	45	40	160	200	76.5	-	PG11	M20x1.5	55.8	9.5	G2	G1¼	21.3	22.2
CMB 4.00 T	247	426	459	222.3	262.5	48	60	12	323.5	133.5	190	264.5	259.5	-	60	50	190	240	77.5	-	PG16	M20x1.5	65.5	12	G2	G1¼	37.7	37.7
CMB 5.50 T	247	469	469	222.3	222.3	48	60	12	323.5	133.5	190	264.5	264.5	-	60	50	190	240	77.5	-	PG16	M20x1.5	65.5	12	G2	G1¼	43.4	43.4
CMC 0.75 M	186	313.3	-	186.8	-	36.8	43	9	247	97	150	-	-	198	45	40	140	180	63.5	PG11	-	-	57.3	9.5	G2	G2	11.6	-
CMC 0.75 T	186	313.3	-	186.8	-	36.8	43	9	247	97	150	197.5	-	-	45	40	140	180	63.5	-	PG11	-	57.3	9.5	G2	G2	11.6	-
CMC 1.00 M	186	313.3	-	186.8	-	36.8	43	9	247	97	150	-	-	198	45	40	140	180	63.5	PG11	-	-	57.3	9.5	G2	G2	13.0	-
CMC 1.00 T	186	313.3	313.3	186.8	186.8	36.8	43	9	247	97	150	197.5	197.5	-	45	40	140	180	63.5	-	PG11	M16x1.5	57.3	9.5	G2	G2	13.8	13.8
CMD 1.50 M	213	384.3	-	222.8	-	36.8	68	12	271.5	111.5	160	-	-	243.5	45	40	160	200	100.5	PG13.5	-	-	69.3	9.5	G2½	G2½	21.3	-
CMD 1.50 T	213	384.3	409.3	222.8	222.8	36.8	68	12	271.5	111.5	160	225.5	225.5	-	45	40	160	200	100.5	-	PG11	M20x1.5	69.3	9.5	G2½	G2½	22.2	23.1
CMD 2.00 M	213	397.3	-	222.8	-	36.8	68	12	271.5	111.5	160	-	-	243.5	45	40	160	200	100.5	PG13.5	69.3	-	9.5	G	G2½	G2½	23.0	-
CMD 2.00 T	213	398	410.5	222.8	222.8	36.8	68	12	271.5	111.5	160	225.5	225.5	-	45	40	160	200	100.5	-	PG11	M20x1.5	69.3	9.5	G2½	G2½	23.3	24.2
CMD 3.00 T	213	397.3	409.8	222.8	222.8	36.8	68	12	271.5	111.5	160	225.5	225.5	-	45	40	160	200	100.5	-	PG11	M20x1.5	69.3	9.5	G2½	G2½	23.0	23.9
CMD 4.00 T	213	449.3	-	234.8	-	36.8	68	12	271.5	111.5	160	354	-	-	45	50	160	200	100.5	-	PG16	-	69.3	9.5	G2½	G2½	34.3	-
CMR 0.75 M	180	310	-	182	-	37	45	9	229	97	132	198	198	198	45	45	140	180	61	PG11	PG11	-	52	10	G1½	G1½	10.7	-
CMR 0.75 T	180	310	-	182	-	37	45	9	229	97	132	198	198	198	45	45	140	180	61	PG11	PG11	-	52	10	G1½	G1½	10.7	-
CMR 1.00 M	180	310	310	182	-	37	45	9	229	97	132	198	198	198	45	45	140	180	61	PG11	PG11	M16x1.5	52	10	G1½	G1½	11.9	-
CMR 1.00 T	180	310	310	182	-	37	45	9	229	97	132	198	198	198	45	45	140	180	61	PG11	PG11	M16x1.5	52	10	G1½	G1½	12.7	12.7

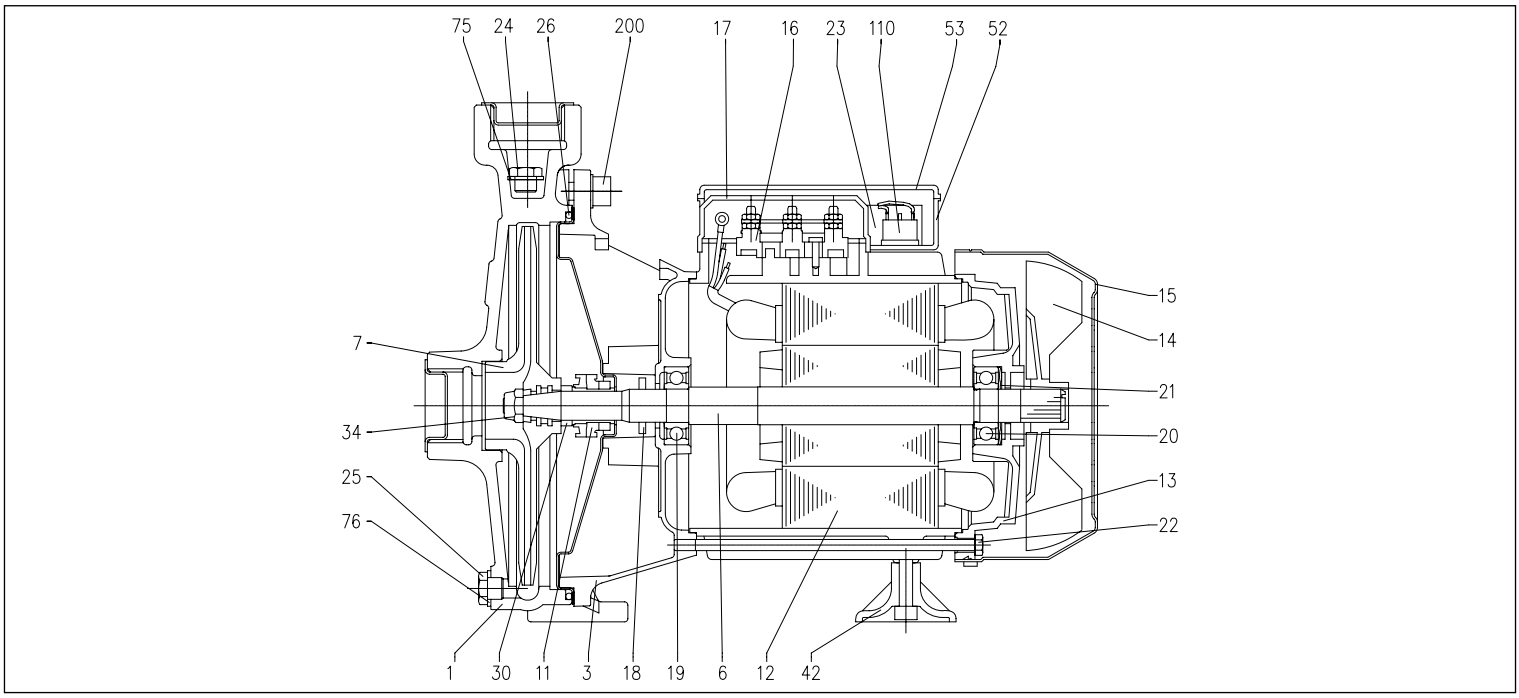
[1]= Three phase only
[2]= Single phase only

CMA - B - C - D - CMR

SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

SECTIONAL VIEW for CMA-B-C-D up to 1.00 HP

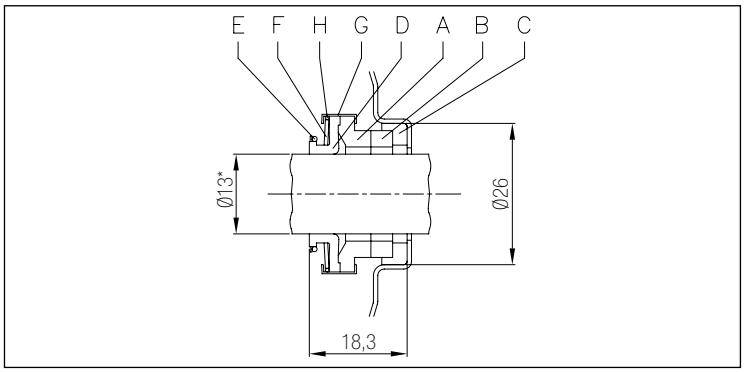


MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
1	Pump body	Cast iron	21	Adjustment ring	Steel C70
3	Motor support	Aluminium	22	Tie-rod	Galvanised Fe 42
4	Seal housing disc	AISI 304	23	Capacitor [2]	-
6	Shaft	[3]	24	Filler cap	Brass
7	Impeller	[4]	25	Drain plug	Brass
11	Mechanical seal	Carbon/Ceramic/NBR	26	O-Ring	NBR
12	Motor casing with stator	-	30	Seal spacer [5]	Brass
13	Motor cover	Aluminium	34	Impeller nut [6]	AISI 304
14	Fan	PA6	42	Foot	PP
15	Fan cover	Galvanised Fe P04	52	Capacitor-holder box [2]	ABS
16	Terminal Box	-	53	Capacitor-holder box cover [2]	ABS
17	Terminal Box cover [1]	Aluminium	75	Washer	Aluminium
18	Spray protector ring	NBR	76	Washer	Aluminium
19	Bearing (pump side)	-	110	Protector [2]	-
20	Bearing (motor side)	-	200	Screw (pump body)	Zn. stainless steel Cl. 8.8 ISO 898-1

[1]= Three phase only
[2]= Single phase only
[3] = AISI 416 (integral) for CMA 0.50, AISI 303 (part in contact with the liquid) for the rest of the models
[4]= PPE+PS reinforced in fibreglass for CMA, cast iron for CMB, CMC
[5]= CMA 0.50, CMB 0.75 - 1.00, CMC 0.75 - 1.00 only
[6] = Except for CMA 0.50

MECHANICAL SEAL for CMA-B-C-D up to 1.00 HP



MATERIALS TABLE

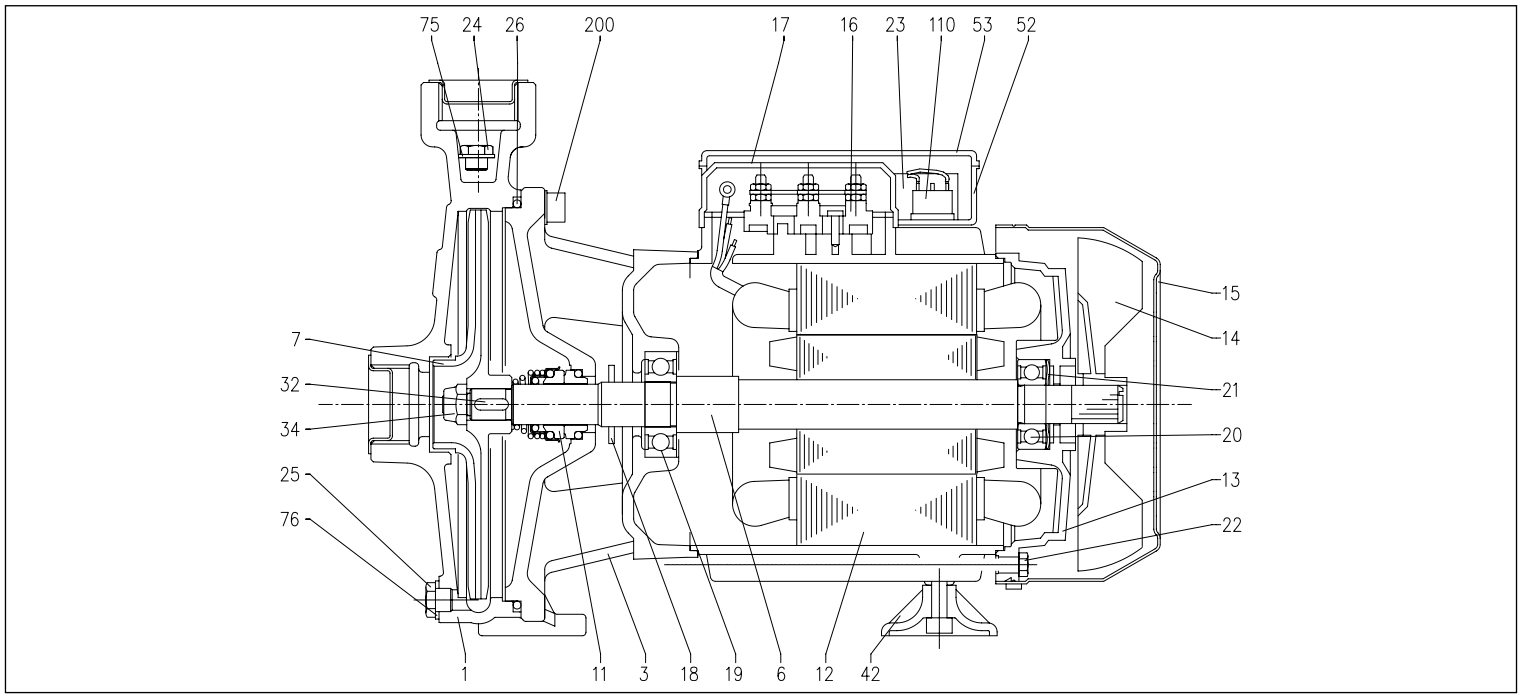
Ref.	Name	Material
A	Rotating part	Carbon
B	Fixed part	Ceramic
C	Gasket	NBR
D	Diaphragm	NBR
E	Ring	AISI 304
F	Spring	AISI 304
G	Structure/frame	AISI 304
H	Retainer ring	AISI 304

CMA - B - C - D - CMR

SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

SECTIONAL VIEW for CMA-B-C-D up to 1.50 HP and over

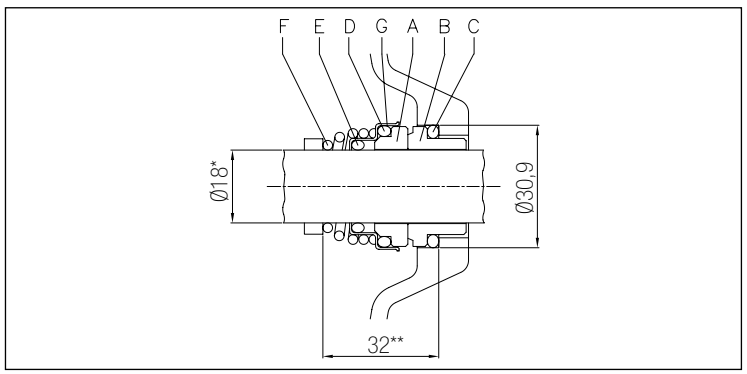


MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
1	Pump body	Cast iron	22	Tie-rod	Galvanised Fe 42
3	Motor support	Cast iron	23	Capacitor [2]	-
6	Rotor shaft	[3]	24	Filler cap	Brass
7	Impeller	[4]	25	Drain plug	Brass
11	Mechanical seal	Carbon/Ceramic/NBR	26	O-Ring	NBR
12	Motor case	-	32	Key	AISI 316
13	Motor cover [1]	Aluminium	34	Impeller nut	AISI 304
14	Fan	PA6	42	Foot	PP
15	Fan cover	Galvanised Fe P04	52	Capacitor-holder box [2]	ABS
16	Terminal Box	-	53	Capacitor-holder box cover [2]	ABS
17	Terminal Box cover [1]	Aluminium	75	Washer	Aluminium
18	Spray protector ring	NBR	76	Washer	Aluminium
19	Bearing (pump side)	-	110	Motor protector	-
20	Bearing (motor side)	-	200	Screw (pump body)	Zn. stainless steel Cl. 8.8 ISO 898-1
21	Adjustment ring	Steel C70			

[1]=For three phase only [2]= For single phase only
[3]= AISI 303 (part in contact with the liquid) for CMA, CMB 1.50 - 2.00 - 3.00, CMD 1.50 - 2.00 - 3.00, AISI 304 (part in contact with the liquid) for CMB 4.00 - 5.50, CMD 4.00
[4]= Brass for CMA, CMB 2.00 - 3.00 - 4.00 - 5.50, cast iron for CMB 1.50, CMD

MECHANICAL SEAL for CMA-B-C-D from 1.50 HP and over



MATERIALS TABLE

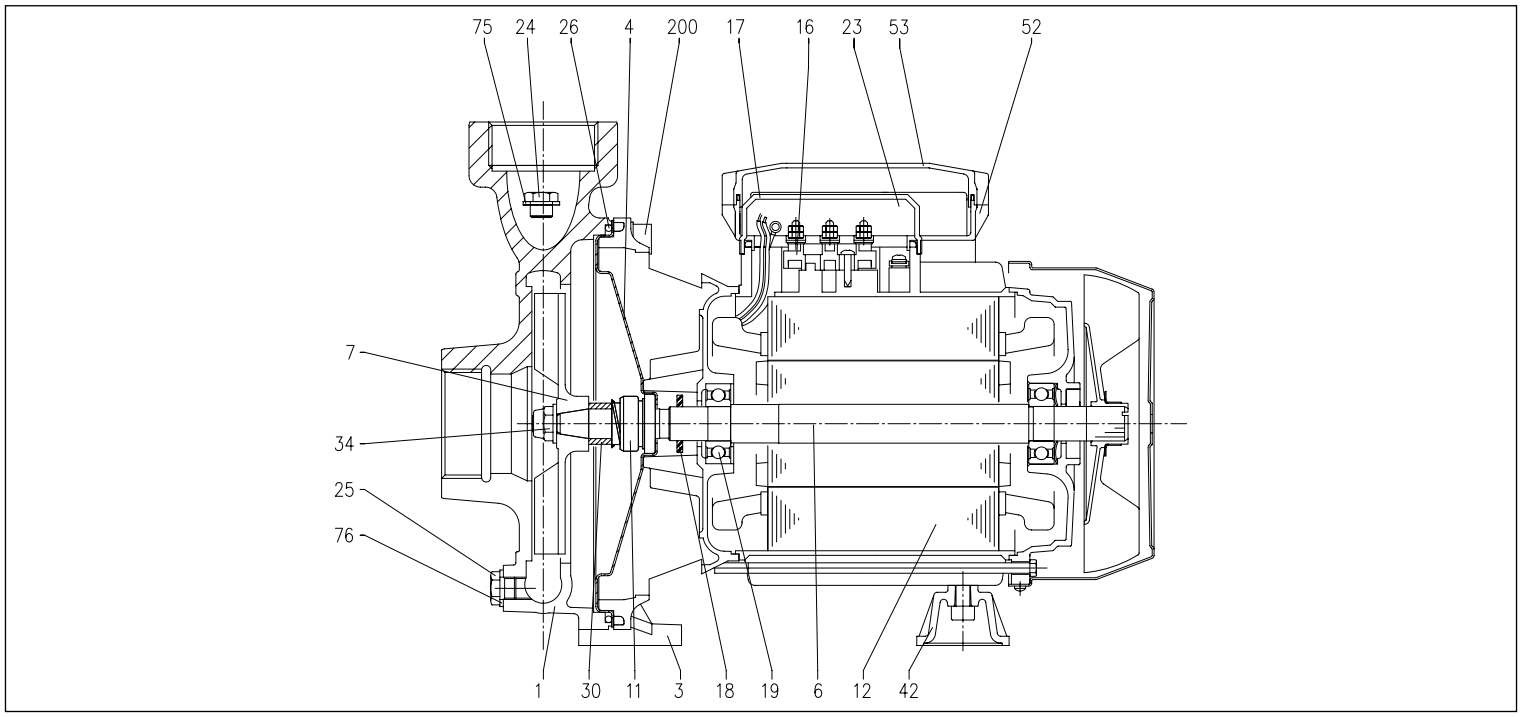
Ref.	Name	Material
A	Rotating part	Ceramic
B	Fixed part	Carbon
C	O-Ring	NBR
D	O-Ring	NBR
E	O-Ring	NBR
F	Spring	AISI 316
G	Structure/frame	AISI 304

CMA - B - C - D - CMR

SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

SECTIONAL VIEW for CMR

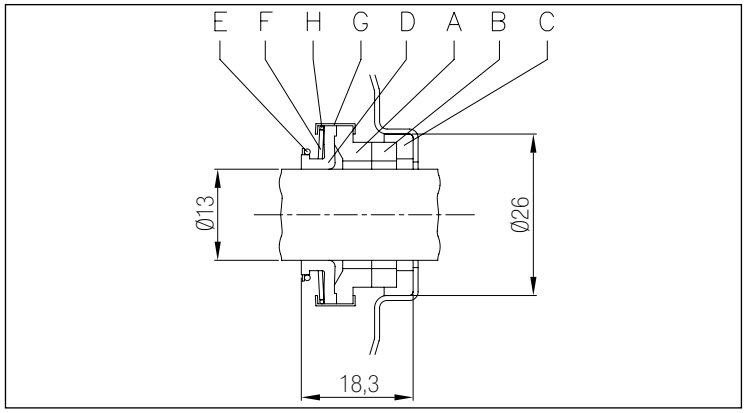


MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
1	Pump body	Cast iron	21	Adjustment ring	Steel C70
3	Motor support	Aluminium	22	Tie-rod	Galvanised Fe 42
4	Seal housing disc	AISI 304	23	Capacitor [2]	-
6	Rotor shaft	AISI 303 (part in contact with the liquid)	24	Filler cap	Brass
7	Impeller	Brass	25	Drain plug	Brass
11	Mechanical seal	Carbon/Ceramic/NBR	26	O-Ring	NBR
12	Motor case	-	30	Seal spacer	Brass
13	Motor cover [1]	Aluminium	34	Impeller nut	AISI 304
14	Fan	PP	42	Foot	PP
15	Fan cover	Galvanised Fe P04	52	Capacitor-holder box [2]	ABS
16	Terminal Box	-	53	Capacitor-holder box cover [2]	ABS + NBR
17	Terminal Box cover [1]	Aluminium	75	Washer	Aluminium
18	Spray protector ring	NBR	76	Washer	Aluminium
19	Bearing (pump side)	-	200	Screw (pump body)	Zn. stainless steel Cl. 8.8 ISO 898-1
20	Bearing (motor side)	-			

[1]= For three phase only [2]= For single phase only

MECHANICAL SEAL for CMR



MATERIALS TABLE

Ref.	Name	Material
A	Rotating part	Carbon
B	Fixed part	Ceramic
C	Gasket	NBR
D	Diaphragm	NBR
E	Ring	AISI 304
F	Spring	AISI 304
G	Structure/frame	AISI 304
H	Retainer ring	AISI 304

CMA - B - C - D - CMR

SINGLE IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

CMA-B-C-D - CMR ELECTRIC DATA TABLE

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	Efficiency Single phase	Efficiency Three phase	Capacitor Single phase µF	Capacitor Single phase V_c	Efficiency (%) Three phase η % 50%	η % 75%	η % 100%	P_1 Single phase [kW]	P_1 Three phase [kW]	Absorbed Current [A] Single phase 230V	Absorbed Current [A] Three phase 230V	Absorbed Current [A] Three phase 400V
CMA 0.50 M	CMA 0.50 T	0.5	0.37	-	-	10	450	-	-	-	0.66	0.63	3.2	2.4	1.4
CDA 0.75 M	CMA 0.75 T	0.75	0.55	-	-	16	450	-	-	-	1.02	0.97	4.7	3.2	1.8
CMA 1.00 M	CMA 1.00 T	1	0.75	-	IE2	20	450	77.2	80.9	81.3	1.35	1.11	6.2	3.4	2.0
-		1	0.75	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
CMA 1.50 M	CMA 1.50 T	1.5	1.1	-	IE2	40	450	79.7	82.5	83.0	1.73	1.80	8.0	5.6	3.2
-	CMA 1.50 T	1.5	1.1	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
CMA 2.00 M	CMA 2.00 T	2	1.5	-	IE2	40	450	80.3	83.4	83.8	2.4	2.33	10.3	7.6	4.4
-		2	1.5	-	IE3	-	-	84.2	86.8	86.9	-	2.01	-	7.1	4.1
-	CMA 3.00 T	3	2.2	-	IE2	-	-	83.0	84.4	83.8	-	2.77	-	8.5	4.9
-		3	2.2	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7
CMB 0.75 M	CMB 0.75 T	0.75	0.55	-	-	14	450	-	-	-	0.98	0.95	4.5	3.0	1.7
CMB 1.00 M	CMB 1.00 T	1	0.75	-	IE2	20	450	77.2	80.9	81.3	1.33	1.17	6.0	3.4	2.0
-		1	0.75	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
CMB 1.50 M	CMB 1.50 T	1.5	1.1	-	IE2	40	450	79.7	82.5	83.0	1.77	1.80	8.2	5.6	3.2
-		1.5	1.1	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
CMB 2.00 M	CMB 2.00 T	2	1.5	-	IE2	40	450	80.3	83.4	83.8	2.3	2.09	10.3	7.0	4.0
-		2	1.5	-	IE3	-	-	84.2	86.8	86.9	-	2.01	-	7.1	4.1
-	CMB 3.00 T	3	2.2	-	IE2	-	-	83.0	84.4	83.8	-	2.63	-	8.2	4.7
-		3	2.2	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7
-	CMB 4.00 T	4	3	-	IE2	-	-	83.1	86.3	86.8	-	3.76	-	11.8	6.8
-		4	3	-	IE3	-	-	85.9	87.5	87.1	-	3.44	-	11.1	6.4
CMC 0.75 M	CMB 5.50 T	5.5	4	-	IE2	-	-	84.3	87.2	87.8	-	4.56	-	15.1	8.7
CMC 1.00 M	CMB 5.50 T	5.5	4	-	IE3	-	-	85.8	88.3	88.4	-	4.52	-	15.1	8.7
-	CMC 0.75 T	0.75	0.55	-	-	14	450	-	-	-	0.92	0.9	4.2	2.8	1.6
CMD 1.50 M	CMC 1.00 T	1	0.75	-	IE2	20	450	77.2	80.9	81.3	1.15	0.92	5.3	3.0	1.7
-		1	0.75	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
CMD 2.00 M	CMD 1.50 T	1.5	1.1	-	IE2	40	450	79.7	82.5	83.0	1.86	1.80	8.5	5.6	3.2
-		1.5	1.1	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
-	CMD 2.00 T	2	1.5	-	IE2	40	450	80.3	83.4	83.8	2.3	2.09	10.3	7.0	4.0
-		2	1.5	-	IE3	-	-	84.2	86.8	86.9	-	2.01	-	7.1	4.1
-	CMD 3.00 T	3	2.2	-	IE2	-	-	83.0	84.4	83.8	-	2.63	-	8.2	4.7
-		3	2.2	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7
-	CMD 4.00 T	4	3	-	IE2	-	-	83.1	86.3	86.8	-	3.46	-	11.3	6.5
-		4	3	-	IE3	-	-	-	-	-	-	-	-	-	-
CMR 0.75 M	CMR 0.75 T	0.55	0.75	-	-	14	450	-	-	-	0.84	0.8	3.8	2.8	1.6
CDA 1.00M	CMR 1.00T	0.75	1	-	IE2	20	450	77.2	80.9	81.3	1.07	0.92	4.85	2.9	1.7
-		0.75	1	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7

NOISE DATA TABLE

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	L_{pA} - dB(A)*
CMA 0.50 M	CMA 0.50 T	0.5	0.37	<70
CMA 0.75 M	CMA 0.75 T	0.75	0.55	
CMA 1.00 M	CMA 1.00 T	1	0.75	
CMA 1.50 M	CMA 1.50 T	1.5	1.1	
CMA 2.00 M	CMA 2.00 T	2	1.5	
-	CMA 3.00 T	3	2.2	
CMB 0.75 M	CMB 0.75 T	0.75	0.55	<70
CMB 1.00 M	CMB 1.00 T	1	0.75	
CMB 1.50 M	CMB 1.50 T	1.5	1.1	
CMB 2.00 M	CMB 2.00 T	2	1.5	
-	CMB 3.00 T	3	2.2	
-	CMB 4.00 T	4	3	72
-	CMB 5.50 T	5.5	4	
CMC 0.75 M	CMC 0.75 T	0.75	0.55	<70
CMC 1.00 M	CMC 1.00 T	1	0.75	
CMD 1.50 M	CMD 1.50 T	1.5	1.1	<70
CMD 2.00 M	CDA 2.00T	2	1.5	
-	CMD 3.00 T	3	2.2	
-	CMD 4.00 T	4	3	72
CMR 0.75 M	CMR 0.75 T	0.75	0.55	<70
CMR 1.00 M	CMR 1.00 T	1	0.75	

* Average noise level measured at 1 m from the motor pump.
Tolerance ± 2.5 dB.

CDA

DUAL IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

Cast iron dual impeller centrifugal electric pumps.

APPLICATIONS

- Pressure boosting domestic plants
- Small-scale irrigation
- Pumping non-aggressive liquids for civil and industrial use
- Washing plants
- Washing vehicles

TECHNICAL DETAILS

- Available with brass impeller (CDA 0.75 M GO, CDA 1.00 M GO)
- They can be inserted into machinery for industrial use

PUMP TECHNICAL DATA

- Maximum working pressure 6 bar for CDA 0.75 - 1.00, 10 bar for the rest of the range
- Maximum temperature of the liquid 40°C for CDA 0.75 - 1.00, 90°C for the rest of the range
- G1 suction connection for CDA 0.75 - 1.00, G1¼ for CDA 1.50 - 2.00 - 3.00, G1½ per CDA 4.00 - 5.50
- G1 discharge connection for CDA 0.75 - 1.00 - 1.50 - 2.00 - 3.00, G1¼ for CDA 4.00 - 5.50

MOTOR TECHNICAL DATA

- IE2 and IE3 high energy-efficiency motors starting from 0.75kW
- Self-ventilated 2 pole asynchronous motor
- Class of insulation F
- IP44 Protection degree
- 230V ± 10% 50Hz single phase voltage, 230/400V ±10% 50Hz three phase voltage
- Permanent capacitor inserted and thermo-amperometric protection with automatic rearm incorporated for the single phase motor
- Protection under user's responsibility for the three phase version

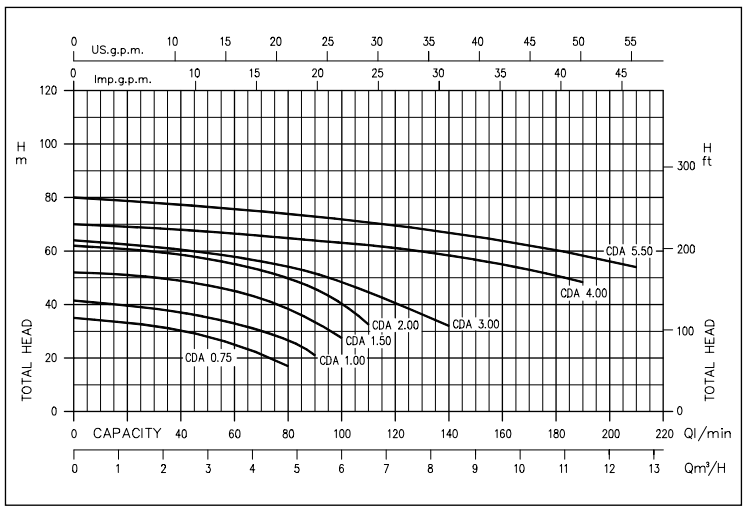
MATERIALS

- Cast iron pump casing
- Mechanical seal in Ceramic/Carbon/NBR
- Impeller in PPE + PS reinforced with glass fibres for CDA 0.75-1.00, in brass for the rest of the range
- Shaft in AISI 303 for CDA 0.75 - 1.00 - 1.50 - 2.00 - 3.00, in AISI 304 for CDA 4.00 - 5.50
- Bracket in aluminium for CDA 0.75-1.00, in cast iron for the rest of the range
- Seal housing disc in AISI 304 for CDA 0.75-1.00, in cast iron built-in the motor bracket for the rest of the range

ACCESSORIES (On request)

- Electric panels
- Vessels
- Floats
- Pressure switches
- Presscomfort - Pressure regulator
- E-power - Variable speed control system
- E-*drive* - Frequency converter

PERFORMANCE CURVES (according to ISO 9906 Attachment A)



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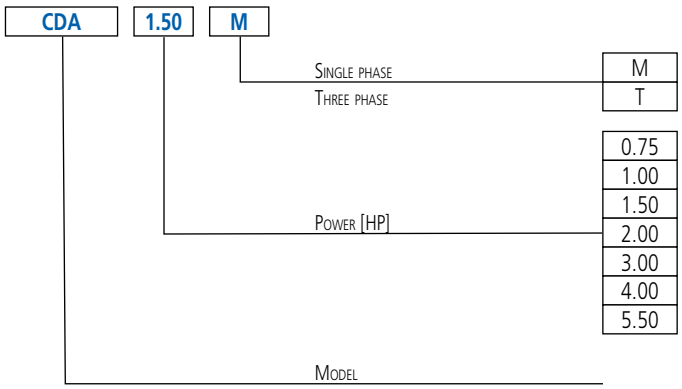


CDA

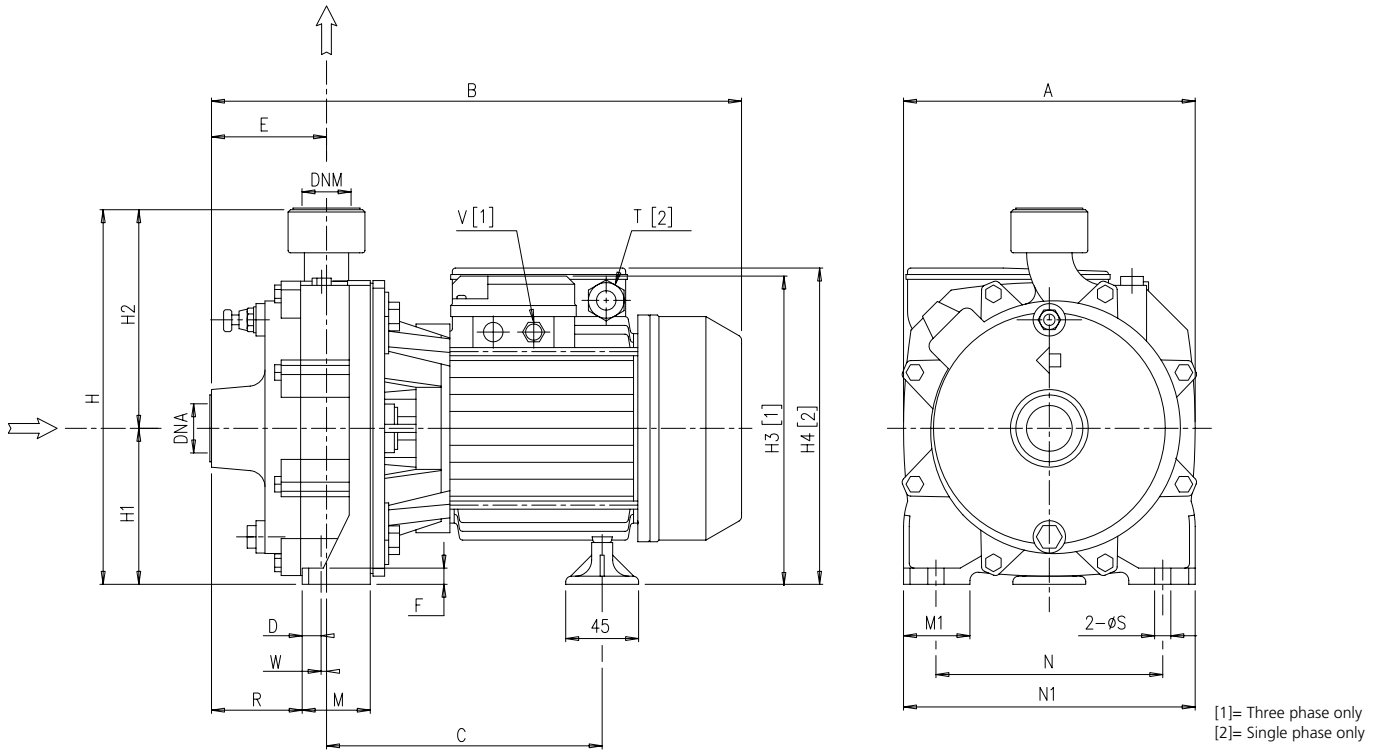
DUAL IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

PERFORMANCE CHART

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	Q = Flow Rate l/min	20	40	50	80	90	100	110	140	170	190	210
				m^3/h	1.2	2.4	3	4.8	5.4	6	6.6	8.4	10.2	11.4	12.6
				H=Head [m]											
CDA 0.75 M	CDA 0.75 T	0.75	0.55		33.0	30.2	27.9	17.0	-	-	-	-	-	-	-
CDA 1.00 M	CDA 1.00 T	1	0.75		39.5	37.0	35.2	27.0	21.0	-	-	-	-	-	-
CDA 1.50 M	CDA 1.50 T	1.5	1.1		50.8	48.8	47.1	38.4	33.4	27.5	-	-	-	-	-
CDA 2.00 M	CDA 2.00 T	2	1.5		60.5	58.6	56.9	49.8	46.5	40.3	32.5	-	-	-	-
-	CDA 3.00 T	3	2.2		-	60.5	59.3	54.1	51.6	48.4	44.6	32.0	-	-	-
-	CDA 4.00 T	4	3		-	-	67.0	64.8	63.9	62.5	62.0	58.0	53.5	48.0	-
-	CDA 5.50 T	5.5	4		-	-	76.5	73.9	72.9	71.8	70.5	66.8	62.0	58.3	54.0

DIMENSIONS



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

DIMENSIONS TABLE

Model	Dimensions [mm] A	B	B *	C	C *	D	E	F	H	H1	H2	H3	H3 *	H4	M	M1	N	N1	R	T [2]	V	V *	W	S	DNA	DNM	Weight [kg]	Weight [kg] *
CDA 0.75M	183	336.3	-	179.8	-	8.3	73	9	227	97	130	-	-	198.0	42	40	140	180	57.5	PG11	-	-	6.8	9.5	G1	G1	13.8	-
CDA 0.75T	183	336.3	-	179.8	-	8.3	73	9	227	97	130	197.5	-	-	42	40	140	180	57.5	-	PG11	-	6.8	9.5	G1	G1	13.8	-
CDA 1.00M	183	336.3	-	179.8	-	8.3	73	9	227	97	130	-	-	198.0	42	40	140	180	57.5	PG11	-	-	6.8	9.5	G1	G1	15	-
CDA 1.00T	183	336.3	336.3	179.8	179.8	8.3	73	9	227	97	130	197.5	197.5	-	42	40	140	180	57.5	-	PG11	M16x1.5	6.8	9.5	G1	G1	15	15
CDA 1.50M	209	407.8	-	218.3	-	8.3	86	9	265	110	155	-	-	242.0	48	40	155	195	65.5	PG13.5	-	-	12.3	9.5	G1¼	G1	24.2	-
CDA 1.50T	194	394.8	419.8	218.3	218.3	8.3	86	9	265	110	155	224.0	224.0	-	48	40	155	195	65.5	-	PG11	M20x1.5	12.3	9.5	G1¼	G1	24.9	25.8
CDA 2.00M	209	410.8	-	218.3	-	8.3	86	9	265	110	155	-	-	242.0	48	40	155	195	65.5	PG13.5	-	-	12.3	9.5	G1¼	G1	26	-
CDA 2.00T	194	408	420.5	218.3	218.3	8.3	86	9	265	110	155	224	224	-	48	40	155	195	65.5	-	PG11	M20x1.5	12.3	9.5	G1¼	G1	27.1	28
CDA 3.00T	194	410.8	423.3	218.3	218.3	8.3	86	9	265	110	155	224	224	-	48	40	155	195	65.5	-	PG11	M20x1.5	12.3	9.5	G1¼	G1	25.8	26.7
CDA 4.00T	228	461.5	494.5	225.3	262.5	12.0	95.5	12	308.5	133.5	175	264.5	259.5	-	57	50	180	230	71.5	-	G1½	M20x1.5	12	12	G1½	G1¼	46.8	46.8
CDA 5.50T	228	508	508	225.3	225.3	12.0	95.5	12	308.5	133.5	175	264.5	264.5	-	57	50	180	230	71.5	-	G1½	M20x1.5	12	12	G1½	G1¼	52	52

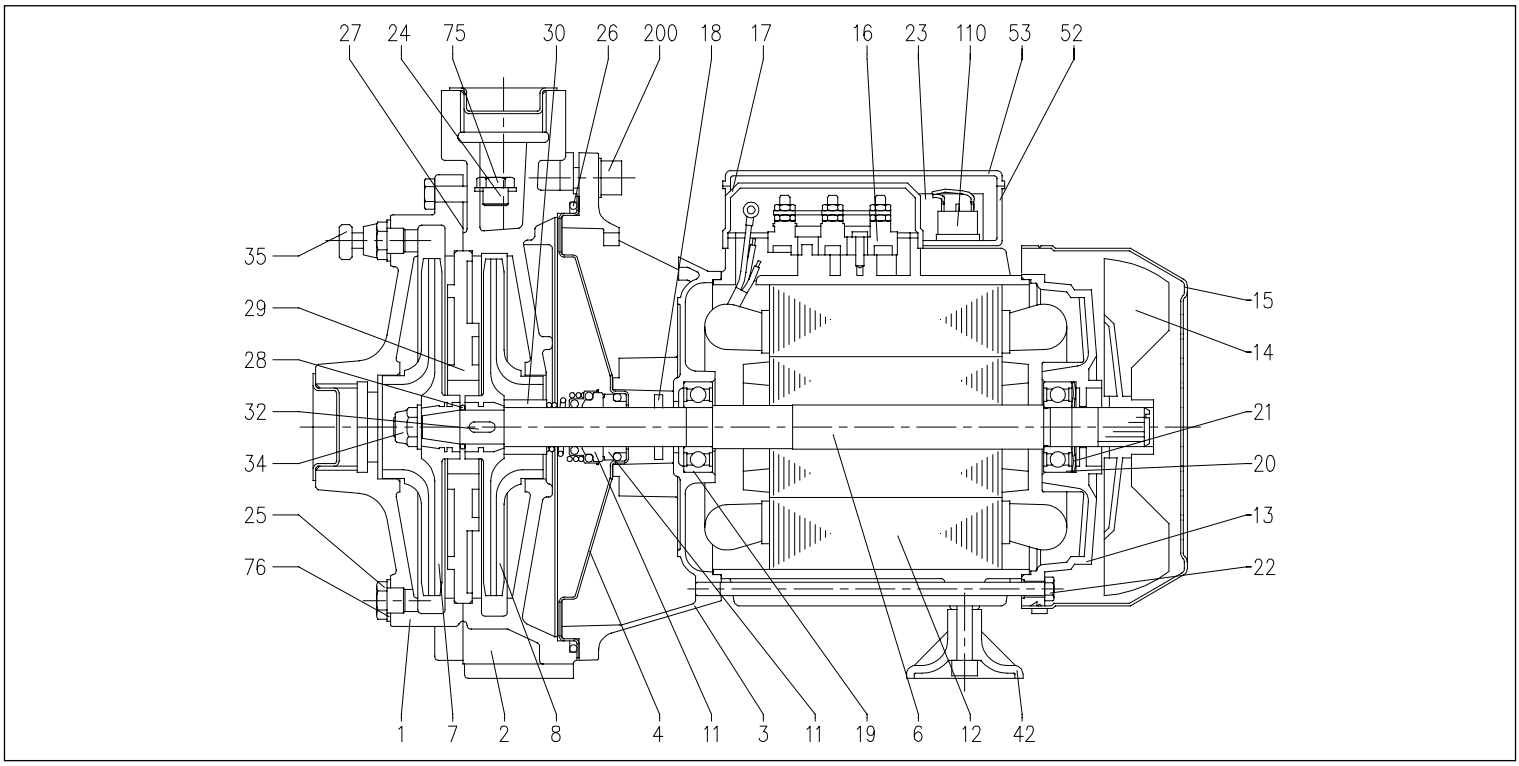
[1]= Three phase only
[2]= Single phase only
* Models with IE3 motor only

CDA

DUAL IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

SECTIONAL VIEW



MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
1	Pump body	Cast iron	23	Capacitor [2]	-
2	Pump body	Cast iron	24	Filler cap	Brass
3	Motor support	[3]	25	Drain plug	Brass
4	Seal housing disc	[4]	26	O-Ring	NBR
6	Shaft	[5]	27	Pump body gasket	Cellulose fibre
7	Impeller	[6]	28	O-Ring	NBR
8	Impeller	[6]	29	Intermediate disc	Cast iron
11	Mechanical seal	Ceramic/Carbon/NBR	30	Seal spacer	Brass
12	Motor case	-	32	Key	AISI 316
13	Motor cover	Aluminium	34	Impeller nut [7]	AISI 304
14	Fan	PP	35	Bleed valve	Brass
15	Fan cover	Galvanised Fe P04	42	Foot	PP
16	Terminal Box	-	52	Capacitor-holder box [2]	ABS
17	Terminal Box cover [1]	Aluminium	53	Capacitor-holder box cover [8]	ABS
18	Spray protector ring	NBR	75	Washer	Aluminium
19	Bearing (pump side)	-	76	Washer	Aluminium
20	Bearing (motor side)	-	110	Motor protector [9]	-
21	Adjustment ring	Steel C70	200	Screw (pump body)	Zn. stainless steel Cl. 8.8 ISO 898-1
22	Tie-rod	Galvanised Fe 42			

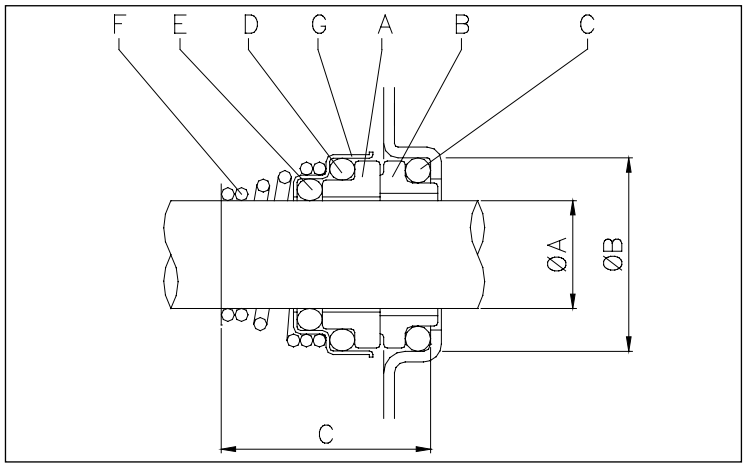
[1]= Three phase only
[2]= Single phase only
[3]= Aluminium for CDA 0.75 - 1.00, cast iron for the rest of the range
[4]= AISI 304 for CDA 0.75 - 1.00, cast iron integrated Motor support for the rest of the range
[5]= AISI 303 (part in contact with the liquid) for CDA 0.75 - 1.00 - 1.50 - 2.00 - 3.00, AISI 304 (part in contact with the liquid) for the rest of the range
[6]= PPE+PS reinforced with fibreglass for CDA 0.75 - 1.00, brass for the rest of the range
[7]= For the version with brass impeller only
[8]= With gasket in NBR only for CDA 0.75 - 1.00 single phase models
[9]= Version CDA 1.50 - 2.00 single phase only

CDA

DUAL IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in cast iron

MECHANICAL SEAL



MATERIALS TABLE

Ref.	Name	Material
A	Rotating part	Ceramic
B	Fixed part	Carbon
C	O-Ring	NBR
D	O-Ring	NBR
E	O-Ring	NBR
F	Spring	AISI 316
G	Structure/frame	AISI 304

DIMENSIONS

Single phase	Three phase	ØA	ØB	C
CDA 0.75 M	CDA 0.75 T	15	26	29
CDA 1.00 M	CDA 1.00 T	15	26	29
CDA 1.50 M	CDA 1.50 T	18	30.9	32
CDA 2.00 M	CDA 2.00 T	18	30.9	32
-	CDA 3.00 T	18	30.9	32
-	CDA 4.00 T	20	30.9	33
-	CDA 5.50 T	20	30.9	33

ELECTRIC DATA TABLE

Model		P_2		Efficiency		Capacitor Single phase		Efficiency (%) Three phase η %			P_1		Absorbed Current [A]		
Single phase 230V	Three phase 230/400V	[HP]	[kW]	Single phase	Three phase	μF	V_c	50%	75%	100%	Single phase [kW]	Three phase [kW]	Single phase 230V	Three phase 230V	Three phase 400V
CDA 0.75 M	CDA 0.75 T	0.55	0.75	-	-	16	450	-	-	-	1.1	1.05	5.0	3.4	2.0
CDA 1.00 M	CDA 1.00 T	0.75	1	-	IE2	20	450	77.2	80.9	81.3	1.38	1.13	6.1	3.4	2.0
-		0.75	1	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
CDA 1.50 M	CDA 1.50 T	1.1	1.5	-	IE2	40	450	79.7	82.5	83.0	1.85	1.80	8.6	5.5	3.2
-		1.1	1.5	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
CDA 2.00 M	CDA 2.00 T	1.5	2	-	IE2	40	450	80.3	83.4	83.8	2.35	2.25	10.8	7.8	4.5
-		1.5	2	-	IE3	-	-	84.2	86.8	86.9	-	2.01	-	7.1	4.1
-	CDA 3.00 T	2.2	3	-	IE2	-	-	83.0	84.4	83.8	-	2.74	-	8.5	4.9
-		2.2	3	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7
-	CDA 4.00 T	3	4	-	IE2	-	-	83.1	86.3	86.8	-	4.10	-	12.5	7.2
-		3	4	-	IE3	-	-	85.9	87.5	87.1	-	3.44	-	11.1	6.4
-	CDA 5.50 T	4	5.5	-	IE2	-	-	84.3	87.2	87.8	-	4.56	-	15.1	8.7
-		4	5.5	-	IE3	-	-	85.8	88.3	88.4	-	4.52	-	15.1	8.7

NOISE DATA TABLE

Model		P_2		L_{pA} - dB(A)*
Single phase 230V	Three phase 230/400V	[HP]	[kW]	
CDA 0.75 M	CDA 0.75 T	0.75	0.55	<70
CDA 1.00 M	CDA 1.00 T	1	0.75	
CDA 1.50 M	CDA 1.50 T	1.5	1.1	
CDA 2.00 M	CDA 2.00 T	2	1.5	
-	CDA 3.00 T	3	2.2	
-	CDA 4.00 T	4	3	
-	CDA 5.50 T	5.5	4	

* Average noise level measured at 1 m from the motor pump.
Tolerance ± 2.5 dB.

PRA

PERIPHERAL ELECTRIC PUMPS

in cast iron

Cast iron peripheral electric pumps

APPLICATIONS

- Suitable for domestic uses
- Boilers power supply and booster units
- Autoclave groups

TECHNICAL DETAILS

- They-re silent
- Practical
- Easy to transport
- Available also in the nickel-plated version (PRN 0.50 model)

PUMP TECHNICAL DATA

- Maximum working pressure:
  - 6 bar for PRA 0.50
  - 7.5 bar for PRA 0.80
  - 12 bar for the rest of the range
- Maximum temperature of the liquid: 80° C
- G1 discharge connection
- G1 suction connection

MOTOR TECHNICAL DATA

- IE2 and IE3 high energy-efficiency motors starting from 0.75kW
- Asynchronous motor, 2 poles
- Class of insulation F
- IP44 Protection degree
- 230V ± 10% 50Hz single phase voltage, 230/400V ±10% 50Hz three phase voltage
- Permanent capacitor inserted and thermo-amperometric protection with automatic rearm incorporated for the single phase motor
- Protection under user's responsibility for the three phase version

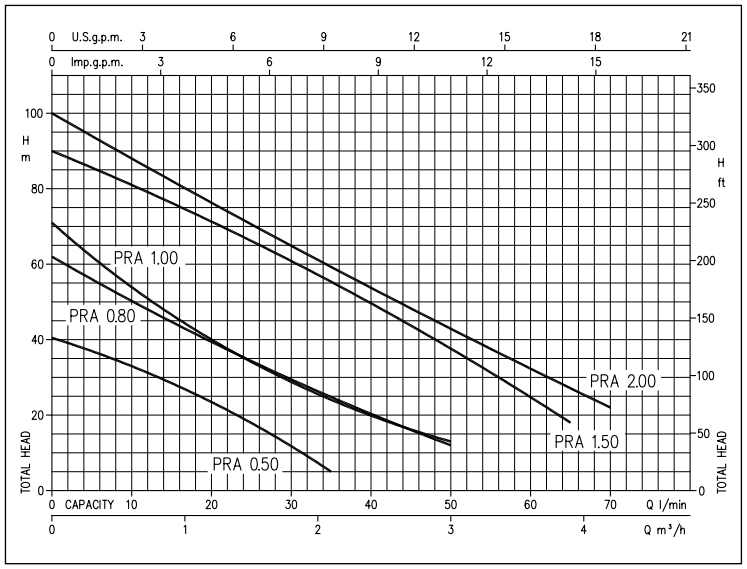
MATERIALS

- Cast iron pump body and support
- Shaft in AVZ steel for the PRA 0.50 model, in AISI 303 (portion in contact with the liquid) for the rest of the range
- Brass impeller
- Mechanical seal in Carbon/Ceramic/NBR

ACCESSORIES (On request)

- Electric panels
- Vessels
- Floats
- Pressure switches
- Presscomfort - Pressure regulator
- E-power - Variable speed control system
- E-*drive* - Frequency converter

PERFORMANCE CURVES (according to ISO 9906 Attachment A)



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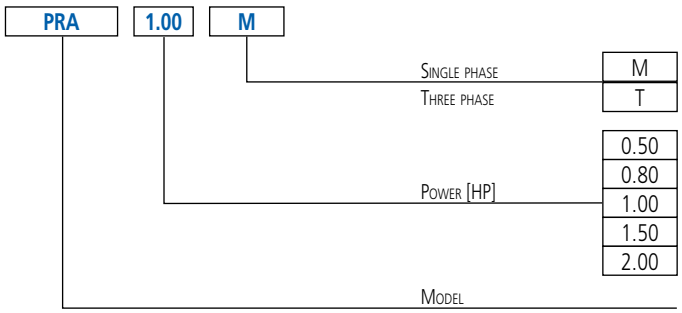


PRA

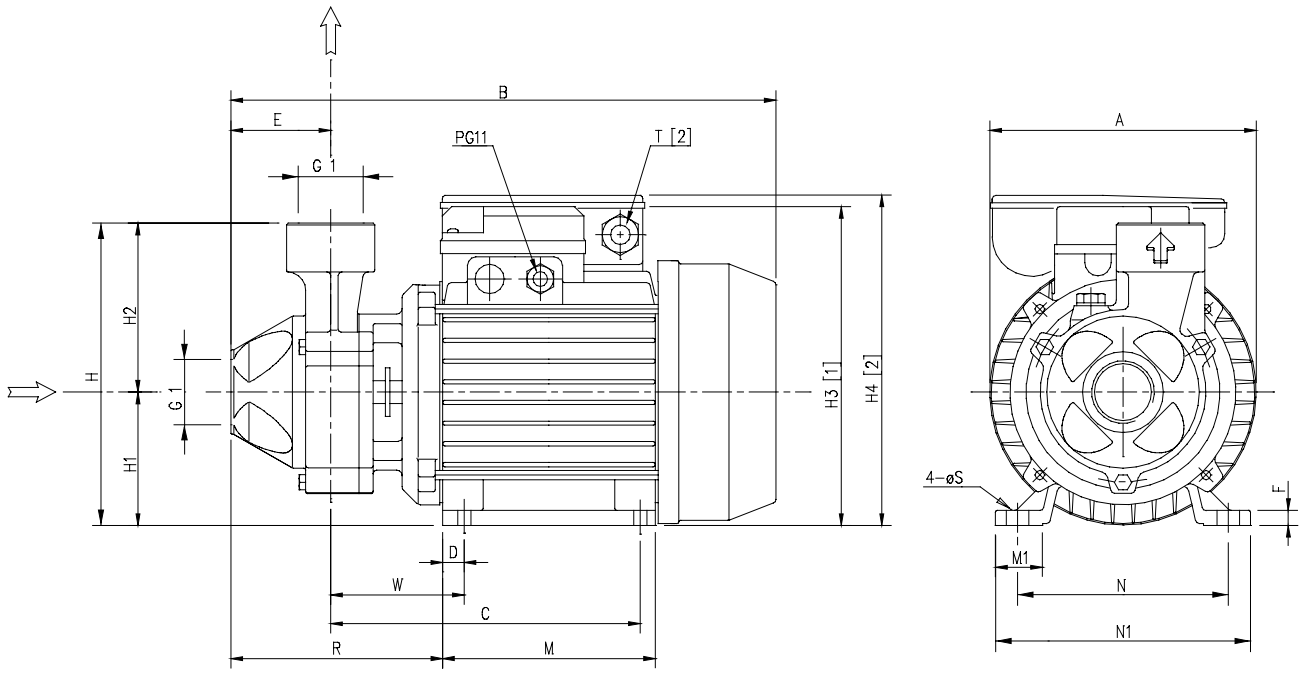
PERIPHERAL ELECTRIC PUMPS

in cast iron

PERFORMANCE CHART

Model		P_2		Q = Flow Rate							
Single phase 230V	Three phase 230/400V	[HP]	[kW]	l/min	5	10	15	20	35	50	65	70
				m^3/h	0.3	0.6	0.9	1.2	2.1	3	3.9	4.2
				H=Head [m]								
PRA 0.50 M	PRA 0.50 T	0.5	0.37		37.0	33.3	28.7	23.7	5.0	-	-	-
PRA 0.80 M	PRA 0.80 T	0.8	0.6		56.0	50.7	45.1	39.8	25.0	12.0	-	-
PRA 1.00 M	PRA 1.00 T	1	0.75		62.0	54.4	47.0	40.4	24.3	13.0	-	-
PRA 1.50 M	PRA 1.50 T	1.5	1.1		-	81.0	76.9	71.9	55.8	37.9	18.0	-
PRA 2.00 M	PRA 2.00 T	2	1.5		-	88.0	82.9	77.0	59.8	43.3	27.4	22.0

DIMENSIONS



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

DIMENSIONS TABLE

Model	Dimensions [mm]																						Weight [kg]	
	A	B	*	C	D	E	F	H	H1	H2	H3	H4	M	M1	N	N1	R	T [2]	V *	V [1]	W	S		
PRA 0.50 M	130	264	-	149	10	50	7	143	63	80	-	160	100	23	100	120	119	PG11	-	-	69	7	5.6	-
PRA 0.50 T	130	264	-	149	10	50	7	143	63	80	150	-	100	23	100	120	119	-	-	PG11	69	7	5.6	-
PRA 0.80M	130	291	-	159	11	54	9	161	71	90	-	178	112	25	112	135	122	PG11	-	-	69	7	9.2	-
PRA 0.80T	150	291	-	159	11	54	9	161	71	90	168	-	112	25	112	135	122	-	-	PG11	69	7	9.2	-
CDA 1.00M	150	291	-	159	11	54	9	161	71	90	-	178	112	25	112	135	122	PG11	-	-	69	7	9.7	-
CDA 1.00M	150	291	291	159	11	54	9	161	71	90	168	-	112	25	112	135	122	-	M16x1.5	PG11	69	7	10.5	10.5
PRA 1.50M	162	331	-	188	12	57	12	175	80	95	-	212	124	28	125	152	144	PG13.5	-	-	88	9	14.5	-
PRA 1.50T	162	331	356	188	12	57	12	175	80	95	187	-	124	28	125	152	144	-	M20x1.5	PG11	88	9	15.5	16.4
PRA 2.00M	162	331	-	188	12	57	12	175	80	95	-	212	124	28	125	152	144	PG13.5	-	-	88	9	15.8	-
PRA 2.00T	162	344	357	188	12	57	12	175	80	95	187	-	124	28	125	152	144	-	M20x1.5	PG11	88	9	16.4	17.3

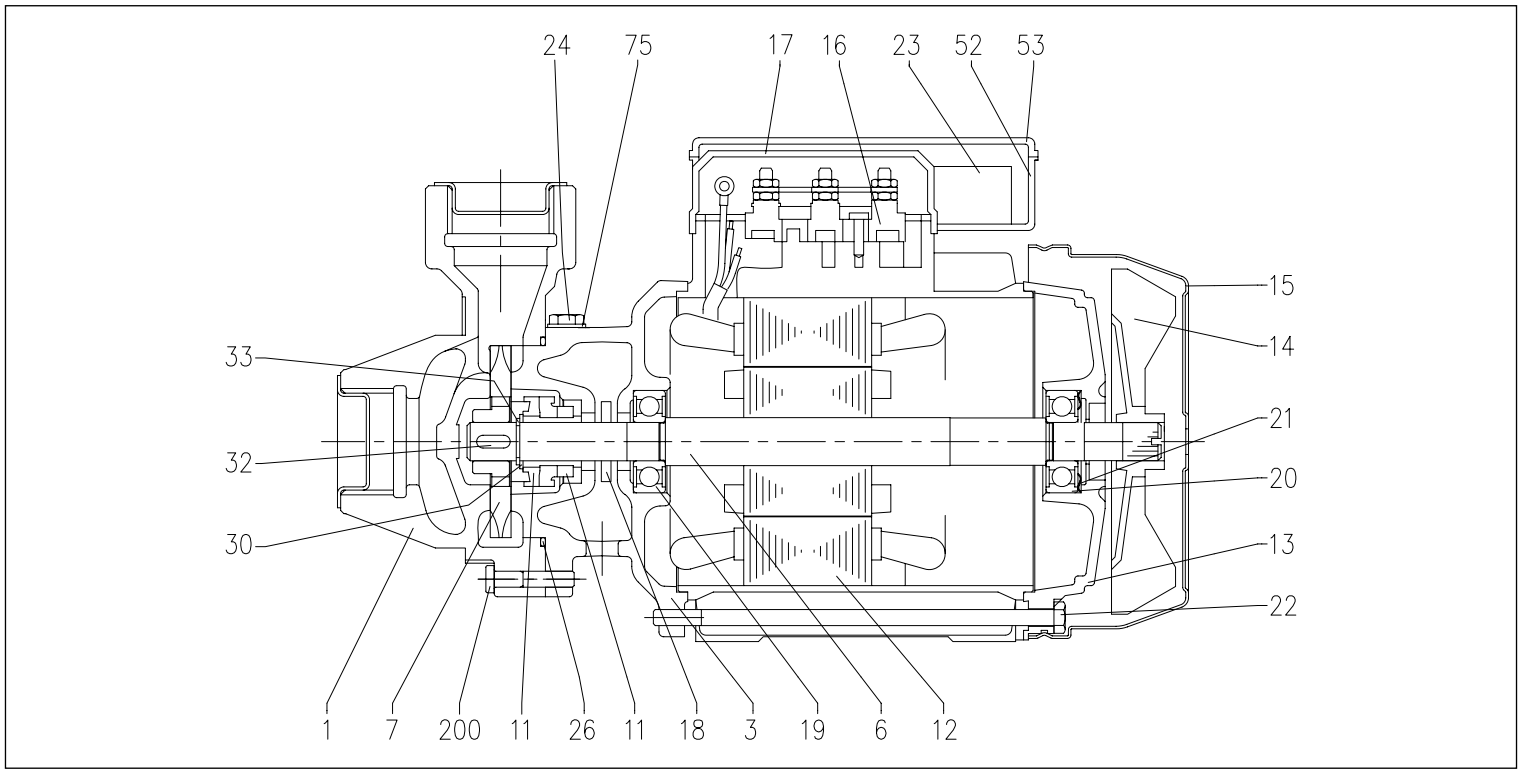
[1]= Three phase only
[2]= Single phase only

* Models with IE3 motor only

PERIPHERAL ELECTRIC PUMPS

in cast iron

SECTIONAL VIEW

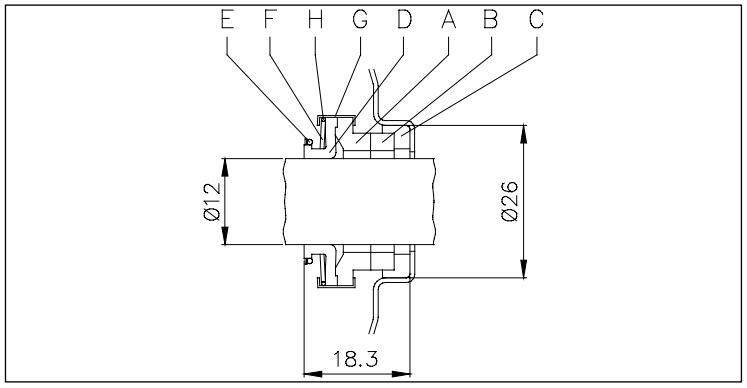


MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
1	Pump body	Cast iron	20	Bearing (motor side)	-
3	Motor support	Cast iron	21	Adjustment ring	Steel C70
6	Shaft with rotor	[3]	22	Tie-rod	Galvanised Fe 42
7	Impeller	Brass	23	Capacitor [2]	-
11	Mechanical seal	Carbon/Ceramic/NBR	24	Filler cap	Brass
12	Motor casing with stator	-	26	O-Ring	NBR
13	Motor cover	Aluminium	30	Washer	AISI 304
14	Fan	PP	32	Key	AISI 316
15	Fan cover	Galvanised Fe P04	33	Ring	AISI 304
16	Terminal Box	-	52	Capacitor-holder box [2]	ABS
17	Terminal Box cover [1]	Aluminium	53	Capacitor-holder box cover [2]	ABS
18	Spray protector ring	NBR	75	Washer	Aluminium
19	Bearing (pump side)	-	200	Screw	Zn. stainless steel Cl. 8.8

[1]= For three phase only [2]= For single phase only
[3]= Material: AVZ for PRA 0.50, AISI 303 (part in contact with the liquid) for the rest of the range

MECHANICAL SEAL for PRA 0.50 - 0.80 - 1.00



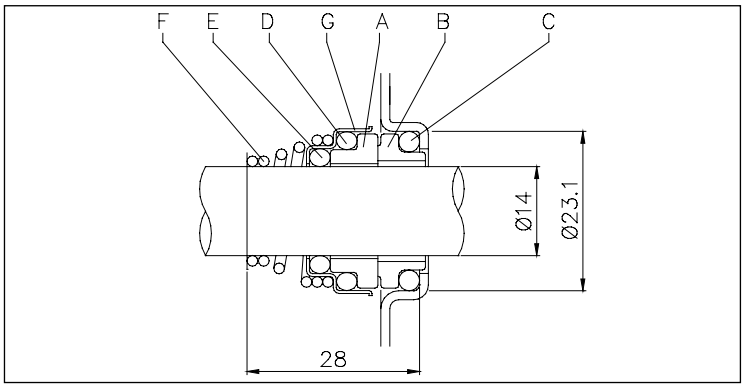
MATERIALS TABLE for PRA 0.50 - 0.80 - 1.00

Ref.	Name	Material
A	Rotating part	Carbon
B	Fixed part	Ceramic
C	Gasket	NBR
D	Diaphragm	NBR
E	Ring	AISI 304
F	Spring	AISI 304
G	Structure/frame	AISI 304
H	Retainer ring	AISI 304

PERIPHERAL ELECTRIC PUMPS

in cast iron

MECHANICAL SEAL for PRA 1.50 - 2.00



MATERIALS TABLE for PRA 1.50 - 2.00

Ref.	Name	Material
A	Rotating part	Ceramic
B	Fixed part	Carbon
C	O-Ring	NBR
D	O-Ring	NBR
E	O-Ring	NBR
F	Spring	AISI 316
G	Structure/frame	AISI 304

ELECTRIC DATA TABLE

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	Efficiency Single phase	Efficiency Three phase	Capacitor Single phase µF	Capacitor Single phase V_c	Efficiency (%) Three phase η % 50%	75%	100%	P_1 Single phase [kW]	P_1 Three phase [kW]	Absorbed Current [A] Single phase 230V	Three phase 230V	Three phase 400V
PRA 0.50 M	PRA 0.50 T	0.5	0.37	-	-	10	450	-	-	-	0.57	0.55	2.6	1.7	1.0
PRA 0.80 M	PRA 0.80 T	0.8	0.6	-	-	16	450	-	-	-	1.10	1.10	4.9	3.6	2.1
PRA 1.00 M	PRA 1.00 T	1	0.75	-	IE2	20	450	77.2	80.9	81.3	1.25	0.92	5.6	3.0	1.7
-		1	0.75	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
PRA 1.50 M	PRA 1.50 T	1.5	1.1	-	IE2	40	450	79.7	82.5	83.0	2.27	1.80	10.0	5.6	3.2
-		1.5	1.1	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
PRA 2.00 M	PRA 2.00 T	2	1.5	-	IE2	40	450	78.6	83.0	84.2	2.45	2.25	10.9	7.4	4.3
-		2	1.5	-	IE3	-	450	82.7	86.1	87.0	-	1.72	-	6.6	3.8

NOISE DATA TABLE

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	L_{pA} - dB(A)*
PRA 0.50 M	PRA 0.50 T	0.5	0.37	<70
PRA 0.80 M	PRA 0.80 T	0.8	0.6	
PRA 1.00 M	PRA 1.00 T	1	0.75	
PRA 1.50 M	PRA 1.50 T	1.5	1.1	73
PRA 2.00 M	PRA 2.00 T	2	1.5	

* Average noise level measured at 1 m from the motor pump.
Tolerance ± 2.5 dB.

SWS-SWT

CENTRIFUGAL SELF-PRIMING ELECTRIC PUMPS FOR POOLS

SWS

SWT

Centrifugal self-primming electric pumps for pools.

APPLICATIONS
- Filtration systems for private and public pools

TECHNICAL DETAILS
- Large-size incorporated prefilter
- Motor entirely isolated from the water
- Transparent pre-filter cover for easy inspection and maintenance
- Easy installation

PUMP TECHNICAL DATA
- Maximum temperature of the liquid: +40°C
- Maximum ambient temperature: +40°C
- Pumped liquid: clean or slightly dirty water, water containing chlorine or additives for pools
- Connections for SWS (2 alternatives):
  - Female thread 1"½
  - Connection for Ø50mm PVC pipe to be glued on
- Connections for SWT: female thread 2"

MOTOR TECHNICAL DATA
- Self-ventilated 2 pole asynchronous motor
- Class of insulation F
- 230V ±10% 50Hz single phase voltage, 230/400V ±10% 50Hz three phase voltage (only SWT)

MATERIALS
- Pump body, seal holding disc and diffuser made of polypropylene reinforced with fibreglass and resistant to chemical substances
- Noryl impeller
- Graphite/Ceramic mechanical seal
- Shaft in AISI 316
- Transparent polycarbonate pre-filter cover
- Aluminium base
- AISI 304 screws

ACCESSORIES (On request)
- Electric panels

SWS IDENTIFICATION CODE

SWS | 50 | M

- M: Single phase
- 50: Power [HP] x 100 — 50 / 75 / 100
- SWS: Model

SWT IDENTIFICATION CODE

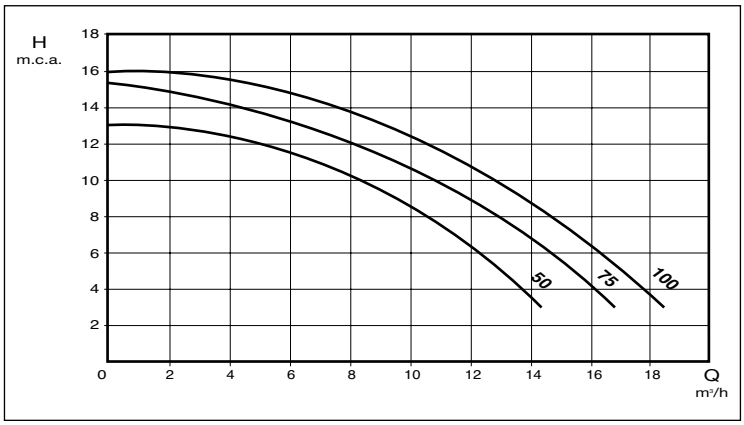
SWT | 50 | M

- M: Single phase
- 50: Power [HP] x 100 — 75 / 100 / 150 / 200 / 300
- SWT: Model

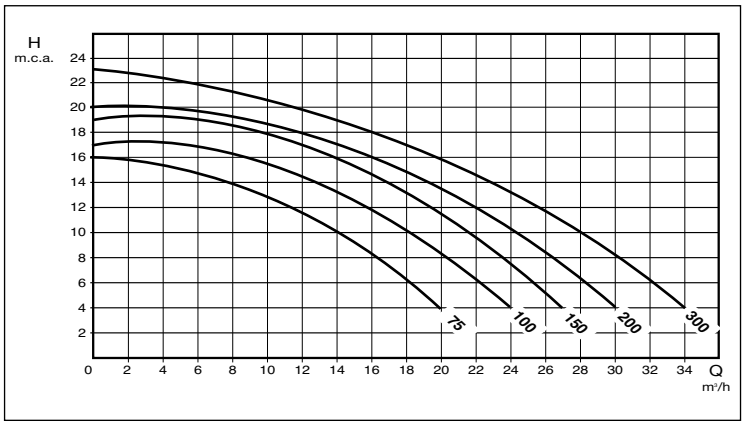
SWS-SWT

CENTRIFUGAL SELF-PRIMING ELECTRIC PUMPS FOR POOLS

SWS PERFORMANCE CURVES (according to ISO 9906 Attachment A)



SWT PERFORMANCE CURVES (according to ISO 9906 Attachment A)



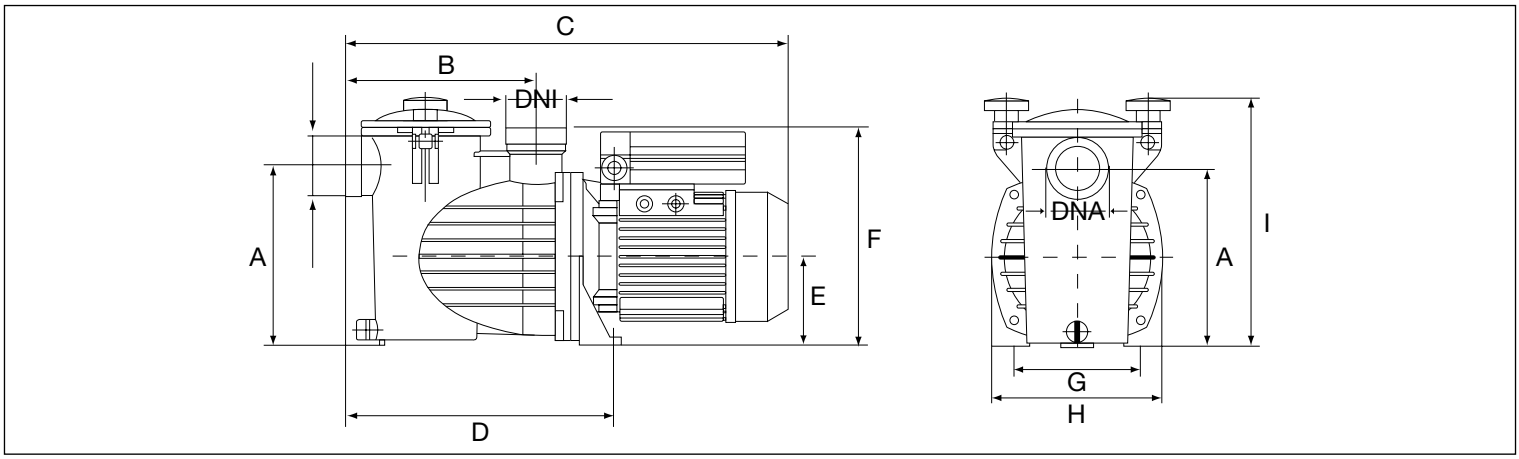
SWS PERFORMANCE CHART

Model Single phase 230V	P_2 [HP]	P_2 [kW]	H=Head [m] 4	6	8	10	11	12	13	14	15
			Q=Flow rate [m³/h]								
SWS 50 M	0.5	0.33	14.0	12.0	10.0	7.0	6.5	5.0	-	-	-
SWS 75 M	0.75	0.55	16.0	15.0	12.5	10.0	9.3	8.0	6.6	4.2	2.0
SWS 100 M	1	0.75	18.0	16.0	15.3	13.0	12.1	10.5	9.7	7.6	6.0

SWT PERFORMANCE CHART

Model Single phase 230V	Model Three phase 230/400V	P_2 [HP]	P_2 [kW]	H=Head [m] 4	6	8	10	12	14	16	18	20
				Q=Flow rate [m³/h]								
SWT 75 M	SWT 75	0.75	0.55	19.5	18.0	15.7	13.5	10.8	7.9	-	-	-
SWT 100 M	SWT 100	1	0.75	23.2	21.1	19.7	18.0	15.0	12.3	8.7	-	-
SWT 150 M	SWT 150	1.5	1.1	27.0	25.0	23.0	21.0	19.0	17.0	14.0	10.0	-
SWT 200 M	SWT 200	2	1.5	30.0	28.0	26.0	24.0	21.0	18.0	14.0	12.0	-
SWT 300 M	SWT 300	3	2.2	34.0	32.0	30.0	29.0	27.0	23.0	20.0	15.0	12.0

SWS DIMENSIONS



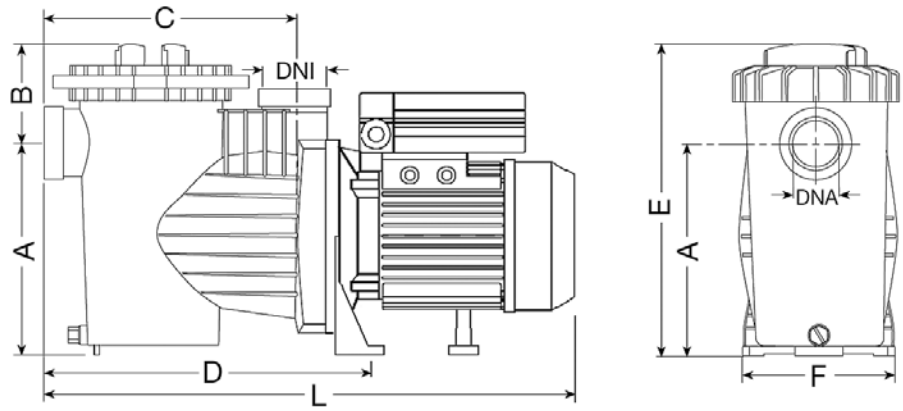
SWS DIMENSIONAL TABLE

Model	Dimensions [mm] A	B	C	D	E	F	G	H	I	DNA DNI	Weight [kg]
SWS 50 M	191	205	470	285	95	233	140	180	265	1"½	11.0
SWS 75 M	191	205	470	285	95	233	140	180	265	1"½	12.6
SWS 100 M	191	205	470	285	95	233	140	180	265	1"½	12.6

SWS-SWT

CENTRIFUGAL SELF-PRIMING ELECTRIC PUMPS FOR POOLS

SWT DIMENSIONS



SWT DIMENSIONAL TABLE

Model	Dimensions [mm]								Weight [kg]
	A	B	C	D	E	F	L	DNA DNI	
SWT 75 M	225	109	280	350	329	200	550	2''	13.0
SWT 75	225	109	280	350	329	200	550	2''	12.5
SWT 100 M	225	109	280	350	329	200	550	2''	14.0
SWT 100	225	109	280	350	329	200	550	2''	14.0
SWT 150 M	225	109	280	350	329	200	575	2''	17.0
SWT 150	225	109	280	350	329	200	575	2''	15.5
SWT 200 M	225	109	280	350	329	200	575	2''	18.5
SWT 200	225	109	280	350	329	200	575	2''	17.0
SWT 300 M	225	109	280	350	329	200	647	2''	22.0
SWT 300	225	109	280	350	329	200	575	2''	19.0

ELECTRIC DATA TABLE

Model		P_2		Efficiency		Capacitor Single phase		Absorbed Current [A]		
Single phase 230V	Three phase 230/400V	[HP]	[kW]	Single phase	Three phase	µF	V_c	Single phase 230V	Three phase 230V	Three phase 400V
SWS 50 M	-	0.5	0.33	-	-	20	450	3.5	-	-
SWS 75 M	-	0.75	0.55	-	-	20	450	4.3	-	-
SWS 100 M	-	1	0.75	-	IE2	20	450	5.5	-	-
SWT 75 M	SWT 75	0.75	0.55	-	-	20	450	4.75	3.1	1.8
SWT 100 M	SWT 100	1	0.75	-	IE2	25	450	5.5	3.8	2.2
SWT 150 M	SWT 150	1.5	1.1	-	IE2	30	450	7.3	5.0	2.9
SWT 200 M	SWT 200	2	1.5	-	IE2	40	450	9.2	6.0	3.5
SWT 300 M	SWT 300	3	2.2	-	IE2	40	450	12.2	8.6	5.0

COMPACT

HORIZONTAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in cast iron

Cast iron horizontal multistage centrifugal electric pumps.

APPLICATIONS

- Domestic pressure boosting
- General pressure increases
- Small-scale garden irrigation
- Washing of vehicles
- Pumping clean water

TECHNICAL DETAILS

- Particularly silent
- Light and easy to handle

PUMP TECHNICAL DATA

- Maximum working pressure: 10 bar
- Maximum temperature of the liquid: 40°C
- G1 suction connection for COMPACT A, G1¼ for COMPACT B
- G1 discharge connection

MOTOR TECHNICAL DATA

- IE2 and IE3 high energy-efficiency motors starting from 0.75kW
- Self-ventilated 2 pole asynchronous motor
- Class of insulation F
- IP44 Protection degree
- 230V ± 10% 50Hz single phase voltage, 230/400V ±10% 50Hz three phase voltage
- Permanent capacitor inserted and thermo-amperometric protection with automatic rearm incorporated for the single phase motor
- Protection under user's responsibility for the three phase version

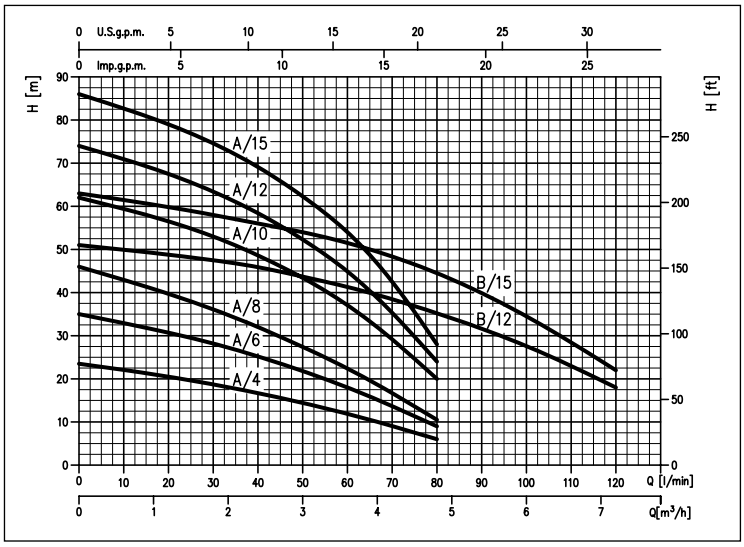
MATERIALS

- Cast iron pump body and support
- External casing in AISI 304
- Impeller and diffuser in PPE+PS reinforced with fibreglass
- Stages in PPE+PS reinforced with fibreglass/PTFE
- Shaft in AISI 416
- Mechanical seal in Ceramic/Carbon/NBR

ACCESSORIES (On request)

- Electric panels
- Vessels
- Floats
- Pressure switches
- Presscomfort - Pressure regulator
- E-power - Variable speed control system
- E-*drive* - Frequency converter

PERFORMANCE CURVES (according to ISO 9906 Attachment A)



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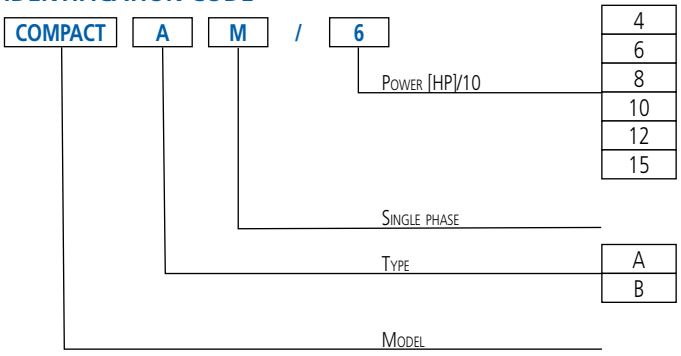


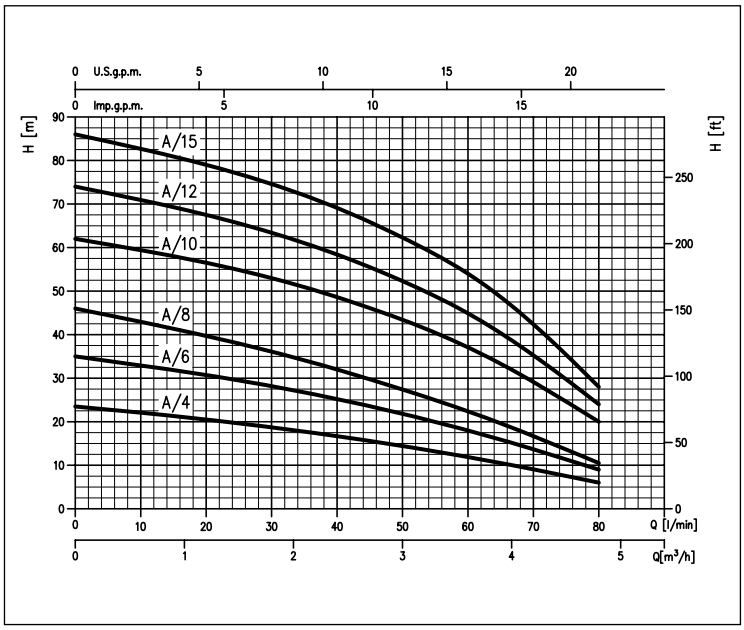
COMPACT

HORIZONTAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in cast iron

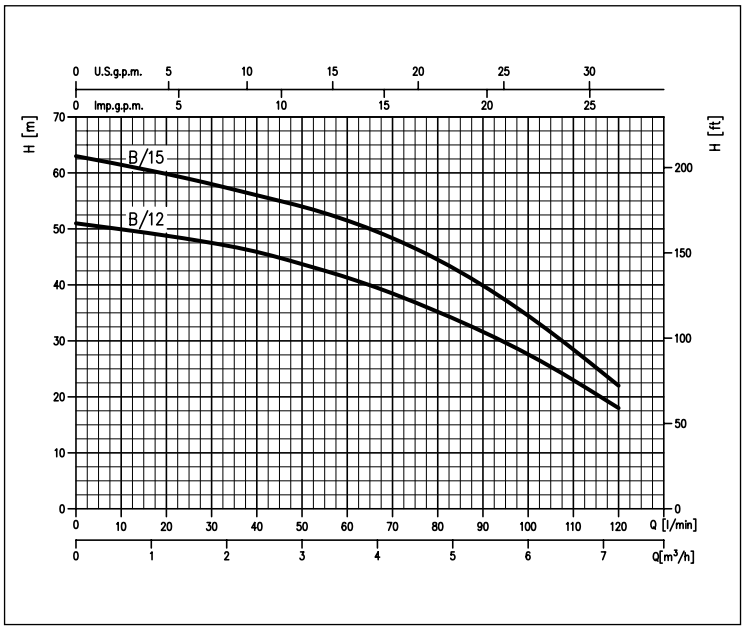
COMPACT A range PERFORMANCE CURVES

(according to ISO 9906 Attachment A)



COMPACT B range PERFORMANCE CURVES

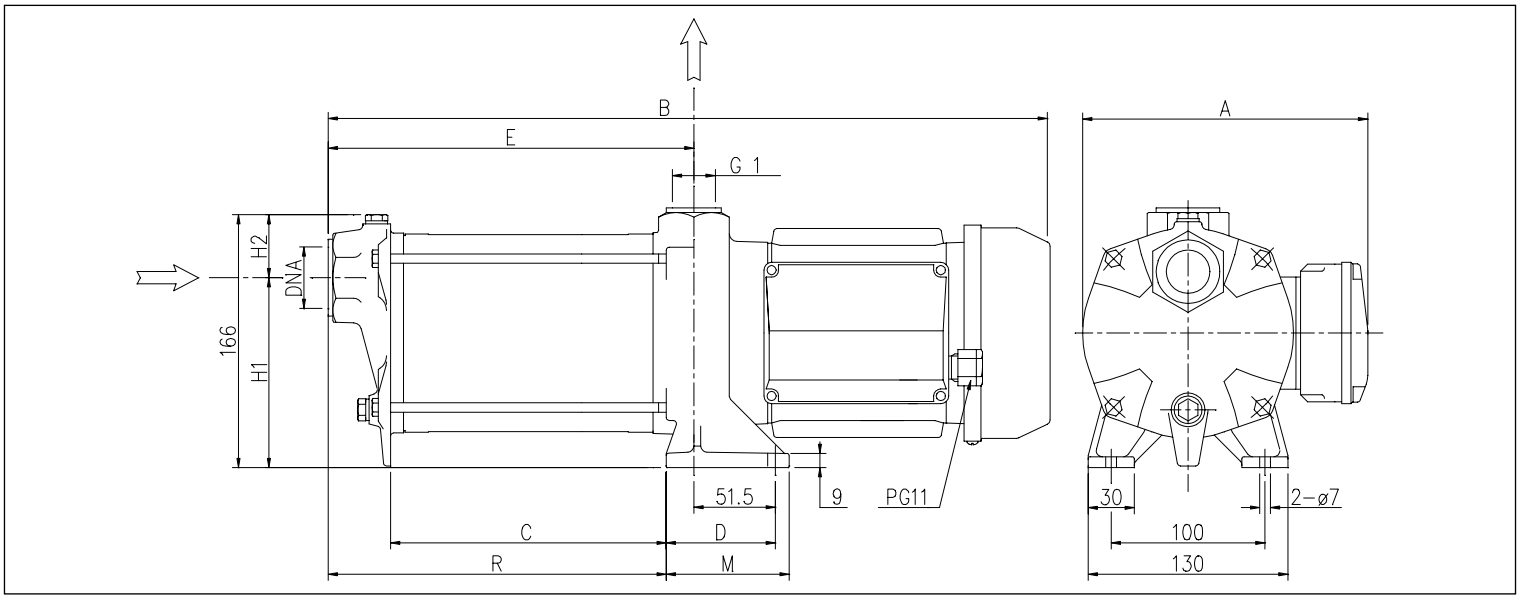
(according to ISO 9906 Attachment A)



PERFORMANCE CHART

Model		P_2		Q = Flow Rate							
Single phase 230V	Three phase 230/400V	[HP]	[kW]	l/min	20	30	40	50	60	80	100	120
				m³/h	1.2	1.8	2.4	3	3.6	4.8	6	7.2
				H=Head [m]								
COMPACT AM/4	COMPACT A/4	0.4	0.3		20.5	18.7	16.7	14.4	11.9	6.0	-	-
COMPACT AM/6	COMPACT A/6	0.6	0.44		30.7	28.2	25.2	21.8	18.0	9.0	-	-
COMPACT AM/8	COMPACT A/8	0.8	0.6		39.7	36.1	32.0	27.4	22.4	10.5	-	-
COMPACT AM/10	COMPACT A/10	1	0.75		56.5	53.0	48.5	43.5	37.1	20.0	-	-
COMPACT AM/12	COMPACT A/12	1.2	0.9		67.5	63.4	58.5	52.5	45.0	24.0	-	-
COMPACT AM/15	COMPACT A/15	1.5	1.1		79.0	74.6	69.0	62.5	54.0	28.0	-	-
COMPACT BM/12	COMPACT B/12	1.2	0.9		-	47,5	46.0	43.5	41.5	35.2	27.6	18.0
COMPACT BM/15	COMPACT B/15	1.5	1.1		-	58.0	56.0	54.0	51.5	44.5	34.5	22.0

DIMENSIONS



COMPACT

HORIZONTAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in cast iron

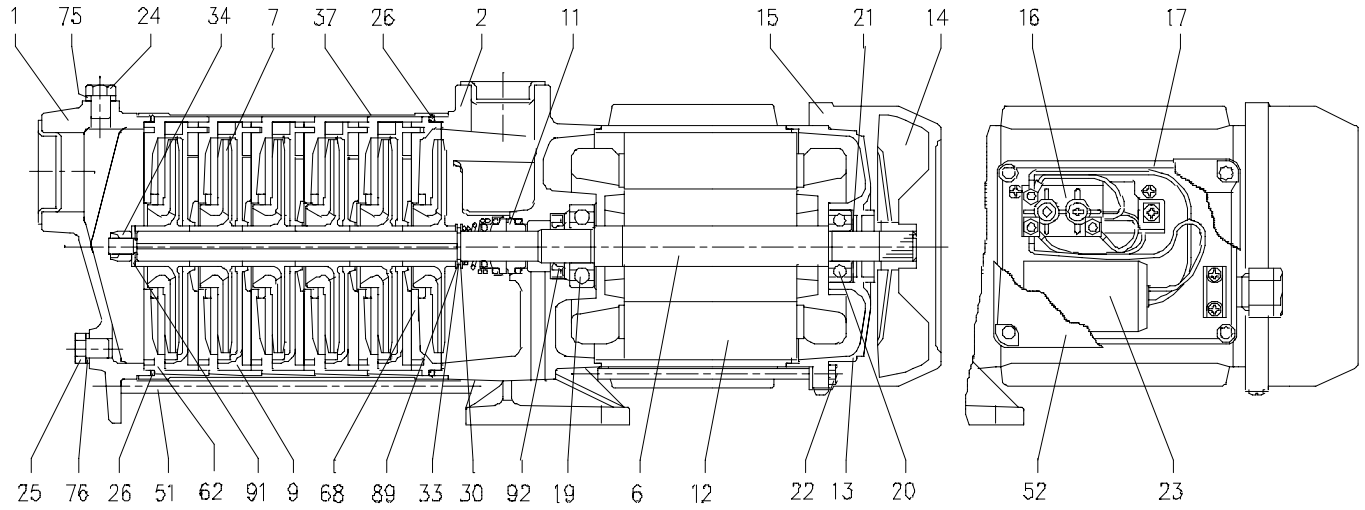
DIMENSIONS TABLE

Model		Dimensions [mm]														Weight [kg]	
Single phase	Three phase	A		B		C	D	E	H1	H2	M	R	T		DNA		
		[1]	[2]	[2]	[1]									*		[2]	[1]
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	-	G1	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	-	G1	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	-	G1	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	G1	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	G1	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	G1	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	G1¼	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	G1¼	15.9	15.9

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

* Models with IE3 motor only

SECTIONAL VIEW



MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
1	Pump body	G20	23	Capacitor [1]	-
2	Pump body support	G20	24	Filler cap	Brass
6	Rotor shaft	AISI 416	25	Drain plug	Brass
7	Impeller	PPE+PS reinforced with fibreglass	26	O-Ring	NBR
9	Diffuser	PPE+PS reinforced with fibreglass	30	Washer	AISI 304
11	Mechanical seal	Carbon/Ceramic/NBR	33	Seeger ring	AISI 304
12	Motor case	-	34	Impeller nut	AISI 304
13	Motor cover	Aluminium	37	Pump casing	AISI 304
14	Fan	PP	51	Pump tie-rod	Galvanised Fe P04
15	Fan cover	Galvanised Fe P04	52	Capacitor-holder box [1]	PP
16	Terminal Box	-	62	Stage box	PPE+PS reinforced with fibreglass
17	Terminal Box cover	Aluminium	68	Stage	PPE+PS reinforced with fibreglass/PTFE
		PP [1]	75	Washer	AISI 304
19	Bearing (pump side)	-	76	Washer	AISI 304
20	Bearing (motor side)	-	89	Washer	AISI 304
21	Adjustment ring	Steel C70	91	Washer	AISI 304
22	Motor tie-rod	Galvanised Fe 42	92	Sealing ring	-

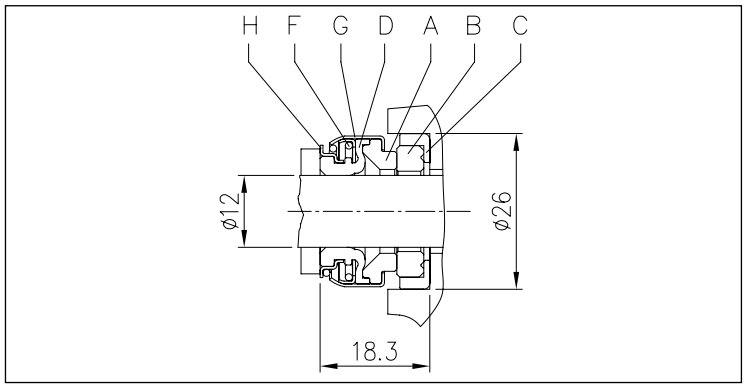
[1]= Single phase only

COMPACT

HORIZONTAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in cast iron

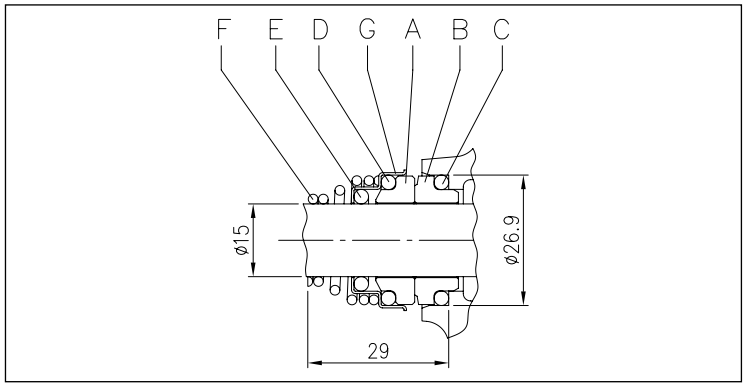
MECHANICAL SEAL for COMPACT A(M)/4, A(M)/6, A(M)/8



MATERIALS TABLE

Ref.	Name	Material
A	Rotating part	Carbon
B	Fixed part	Ceramic
C	Gasket	NBR
D	Diaphragm	NBR
F	Spring	AISI 304
G	Structure/frame	AISI 304
H	Retainer ring	AISI 304

MECHANICAL SEAL for COMPACT A(M)/10, A(M)/12, A(M)/15 - B(M)/12, B(M)/15



MATERIALS TABLE

Ref.	Name	Material
A	Rotating part	Ceramic
B	Fixed part	Carbon
C	O-Ring	NBR
D	O-Ring	NBR
E	O-Ring	NBR
F	Spring	AISI 316
G	Structure/frame	AISI 304

ELECTRIC DATA TABLE

Model		P_2		Efficiency		Capacitor Single phase		Efficiency (%) Three phase			P_1		Absorbed Current [A]		
Single phase 230V	Three phase 230/400V	[HP]	[kW]	Single phase	Three phase	µF	V_c	η % 50%	75%	100%	Single phase [kW]	Three phase [kW]	Single phase 230V	Three phase 230V	Three phase 400V
COMPACT AM/4	COMPACT A/4	0.4	0.3	-	-	10	450	-	-	-	0.53	0.50	2.5	1.9	1.1
COMPACT AM/6	COMPACT A/6	0.6	0.44	-	-	12.5	450	-	-	-	0.70	0.65	3.0	2.3	1.3
COMPACT AM/8	COMPACT A/8	0.8	0.6	-	-	14	450	-	-	-	0.90	0.82	4.0	2.6	1.5
COMPACT AM/10	COMPACT A/10	1	0.75	-	IE2	20	450	77.2	80.9	81.3	1.25	0.92	6.0	2.9	1.7
-		1	0.75	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
COMPACT AM/12	COMPACT A/12	1.2	0.9	-	IE2	31.5	450	79.0	81.7	81.6	1.38	1.35	6.2	4.3	2.5
-		1.2	0.9	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5
COMPACT AM/15	COMPACT A/15	1.5	1.1	-	IE2	31.5	450	79.0	81.7	81.6	1.60	1.35	7.3	4.3	2.5
-		1.5	1.1	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5
COMPACT BM/12	COMPACT B/12	1.2	0.9	-	IE2	31.5	450	79.0	81.7	81.6	1.30	1.35	5.8	4.3	2.5
-		1.2	0.9	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5
COMPACT BM/15	COMPACT B/15	1.5	1.1	-	IE2	31.5	450	79.0	81.7	81.6	1.60	1.35	7.3	4.3	2.5
-		1.5	1.1	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5

NOISE DATA TABLE

Model		P_2		L_{pA} - dB(A)*
Single phase 230V	Three phase 230/400V	[HP]	[kW]	
COMPACT AM/4	COMPACT A/4	0.4	0.3	<70
COMPACT AM/6	COMPACT A/6	0.6	0.44	
COMPACT AM/8	COMPACT A/8	0.8	0.6	
COMPACT AM/10	COMPACT A/10	1	0.75	
COMPACT AM/12	COMPACT A/12	1.2	0.9	
COMPACT AM/15	COMPACT A/15	1.5	1.1	
COMPACT BM/12	COMPACT B/12	1.2	0.9	<70
COMPACT BM/15	COMPACT B/15	1.5	1.1	

* Average noise level measured at 1 m from the motor pump.
Tolerance ± 2.5 dB.

MATRIX

HORIZONTAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

WRAS APPROVED PRODUCT

Horizontal multistage centrifugal electric pumps in AISI 304 stainless steel.

APPLICATIONS

- Industrial washing
- Pressure boosting units
- Industrial plants
- Distribution and treatment of water
- Heating and air conditioning
- Cooling and chiller
- Irrigation
- Recovery of rain water

TECHNICAL DETAILS

- Sturdy and compact construction
- Available in various versions and models

WRAS approval for the standard version (up to +85° C)

PUMP TECHNICAL DATA

- Temperature of the liquid:
  from -15° to +85° C (standard)
  from -15° to +110° C (for TE version for high temperature)
- Maximum working pressure: 10 bar
- Maximum chlorine content: 500 ppm
- Suction connection G1 for MATRIX 3, G1¼ for MATRIX 5, G1½ for MATRIX 10, G2 for MATRIX 18
- Discharge connection G1 for MATRIX 3-5, G1¼ for MATRIX 10, G1½ for MATRIX 18

MOTOR TECHNICAL DATA

- IE2 and IE3 high energy-efficiency motors starting from 0.75kW
- Self-ventilated 2 pole asynchronous motor
- Class of insulation F
- IP55 protection degree
- 230V ±10% 50Hz single phase voltage, 230/400V ±10% 50Hz three phase voltage
- Permanent capacitor inserted and thermo-amperometric protection with automatic rearm incorporated for the single phase motor
- Protection under user's responsibility for the three phase version

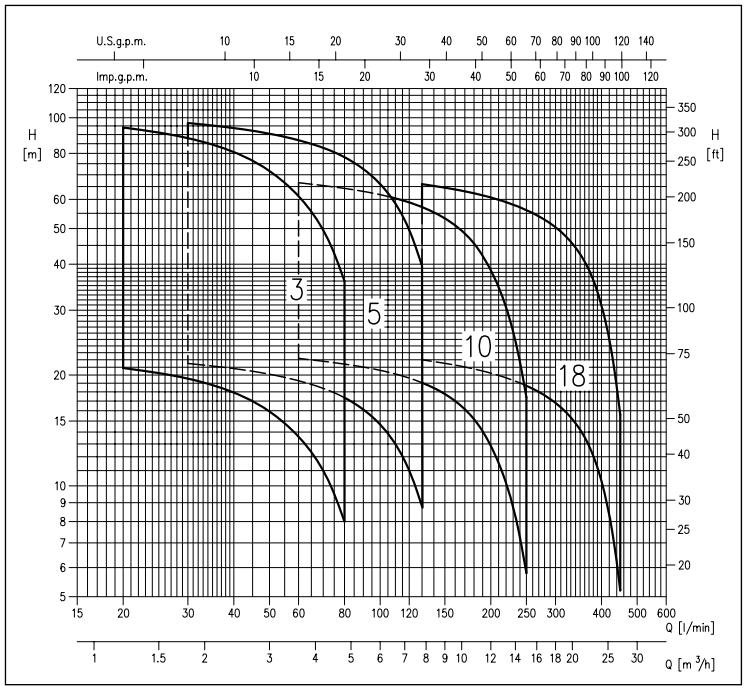
MATERIALS

- Pump casing, impellers, intermediate stages, seal housing disc and shaft (part in contact with the liquid) in EN 1.4301 (AISI 304)
- Mechanical seal in:
  - Ceramic/Carbon/EPDM (standard)
  - Special versions: see p. 48
- Bracket in EN AB-AlSi11Cu2(Fe) (microcasted aluminium)

ACCESSORIES (On request)

- Electric panels
- Vessels
- Floats
- Pressure switches
- Presscomfort - Pressure regulator
- E-power - Variable speed control system
- E-*drive* - Frequency converter

PERFORMANCE CURVES (according to ISO 9906 Attachment A)



IDENTIFICATION CODE

MATRIX | H | 3 | - | 9 | T | / | 1.5 | M

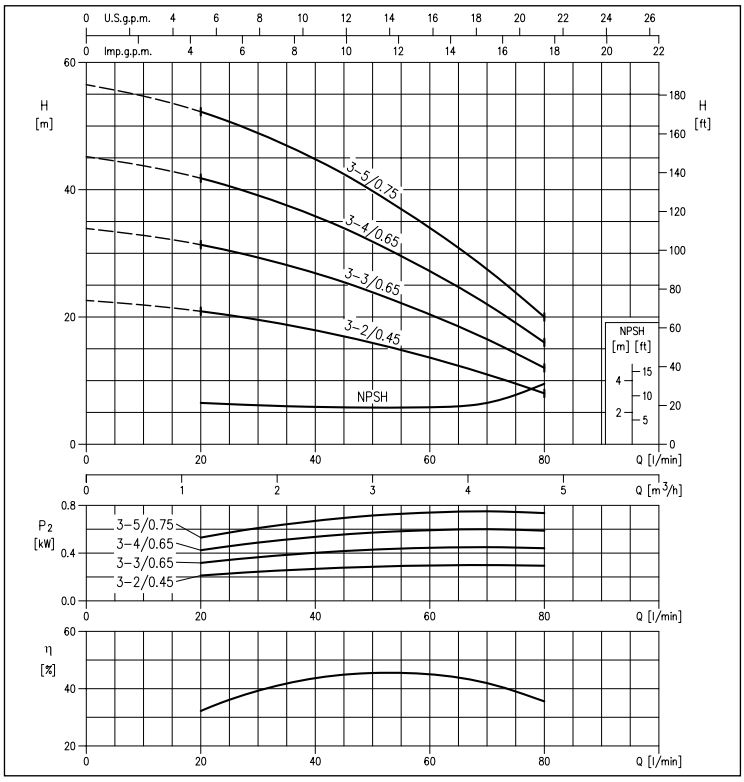
- MODEL
- OPTIONAL VERSION: 3 | 5 | 10 | 18
- m³/h AT MAX. EFFICIENCY
- N° OF IMPELLERS: 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9
- T : THREADED VERSION
- MOTOR POWER IN [kW]: 0.45 | 0.65 | 0.75 | 0.9 | 1.3 | 1.5 | 2.2 | 3.0 | 4.0
- SINGLE PHASE

HORIZONTAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

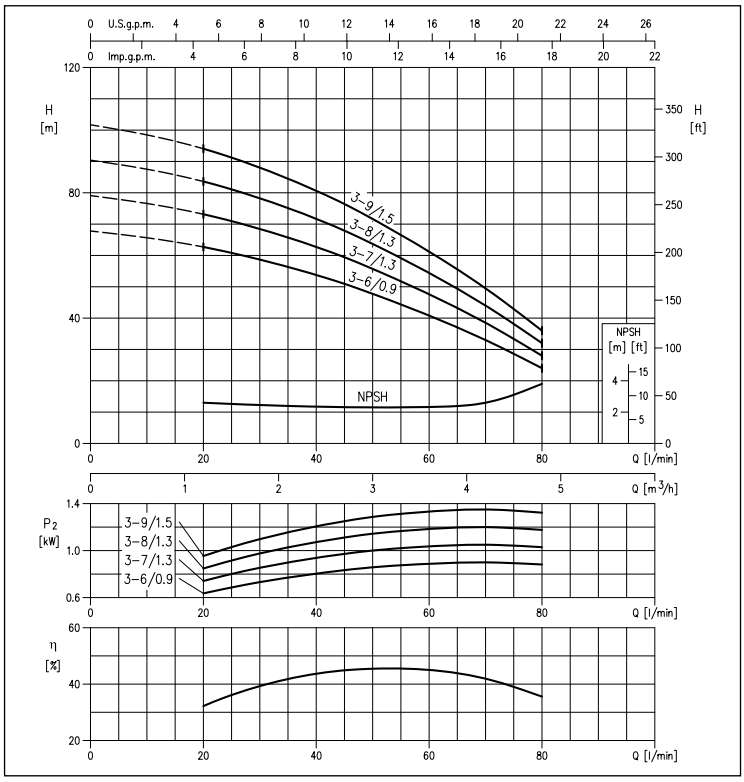
PERFORMANCE CURVES series MATRIX 3 (from 2 to 5 impellers)

(according to ISO 9906 Attachment A)



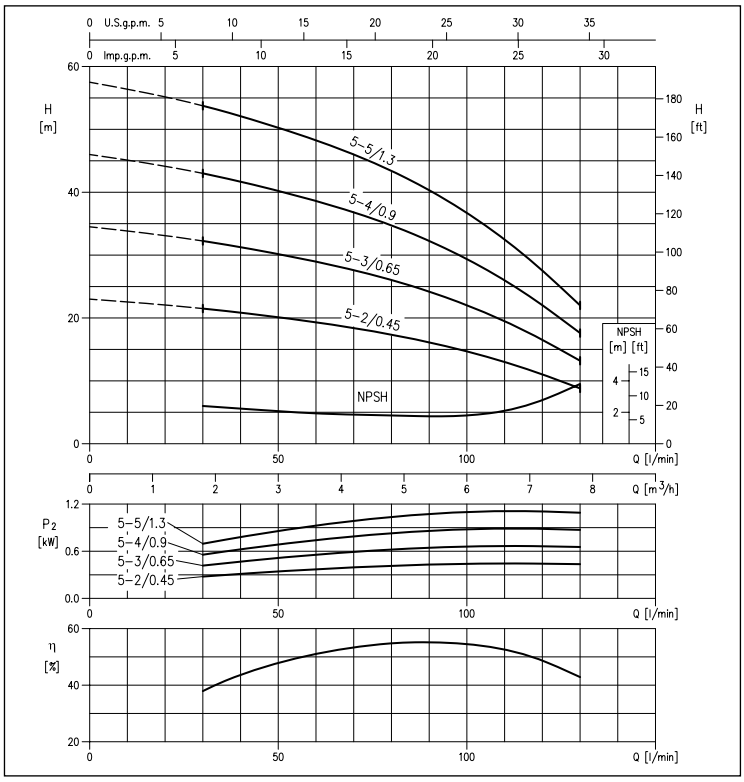
PERFORMANCE CURVES series MATRIX 3 (from 6 to 9 impellers)

(according to ISO 9906 Attachment A)



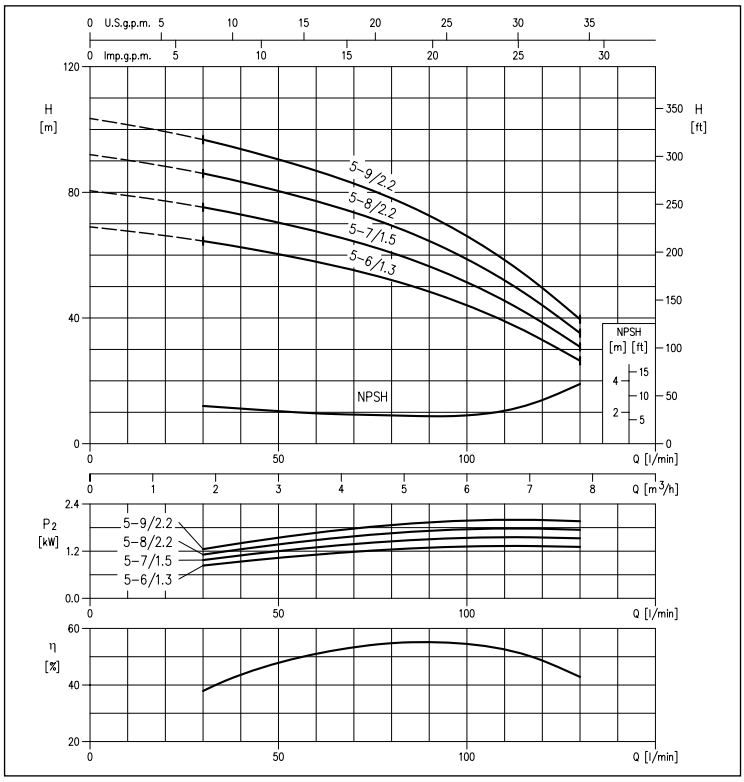
PERFORMANCE CURVES series MATRIX 5 (from 2 to 5 impellers)

(according to ISO 9906 Attachment A)



PERFORMANCE CURVES series MATRIX 5 (from 6 to 9 impellers)

(according to ISO 9906 Attachment A)

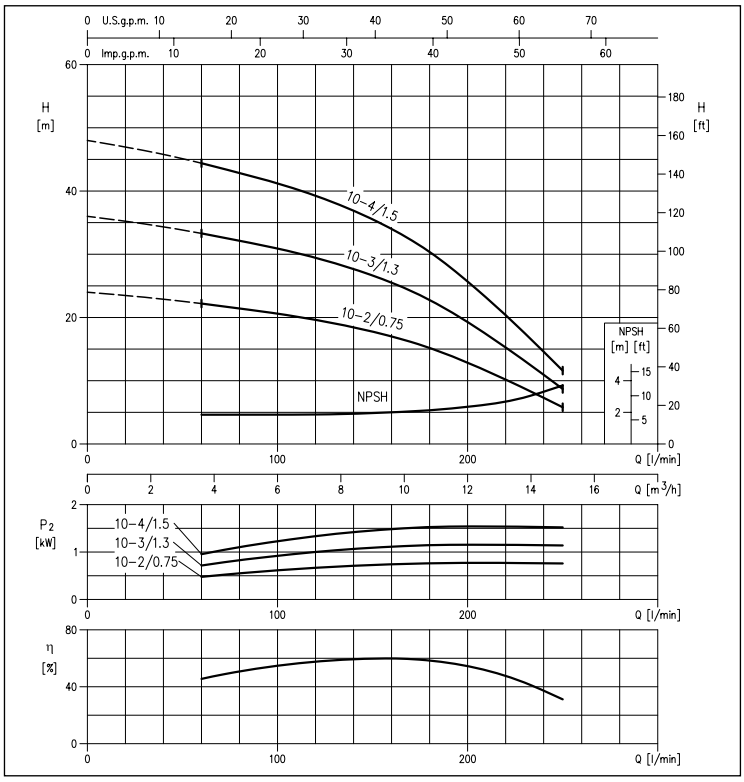


HORIZONTAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

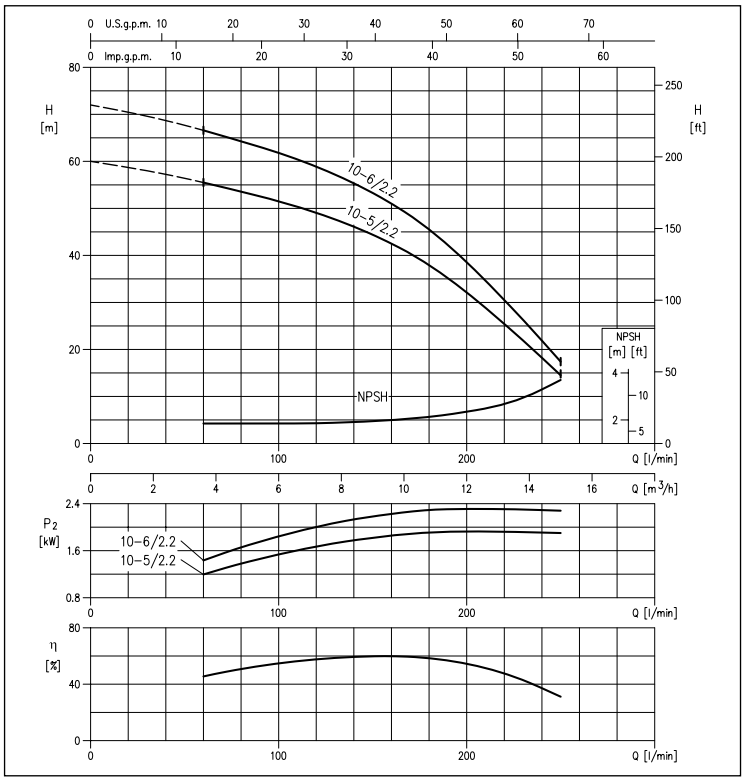
PERFORMANCE CURVES series MATRIX 10 (from 2 to 4 impellers)

(according to ISO 9906 Attachment A)



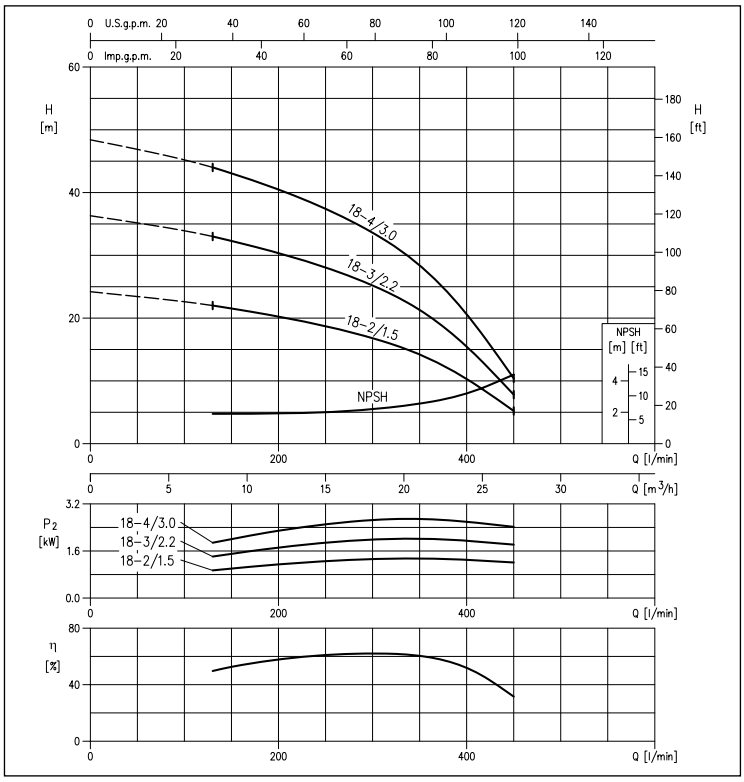
PERFORMANCE CURVES series MATRIX 10 (from 5 to 6 impellers)

(according to ISO 9906 Attachment A)



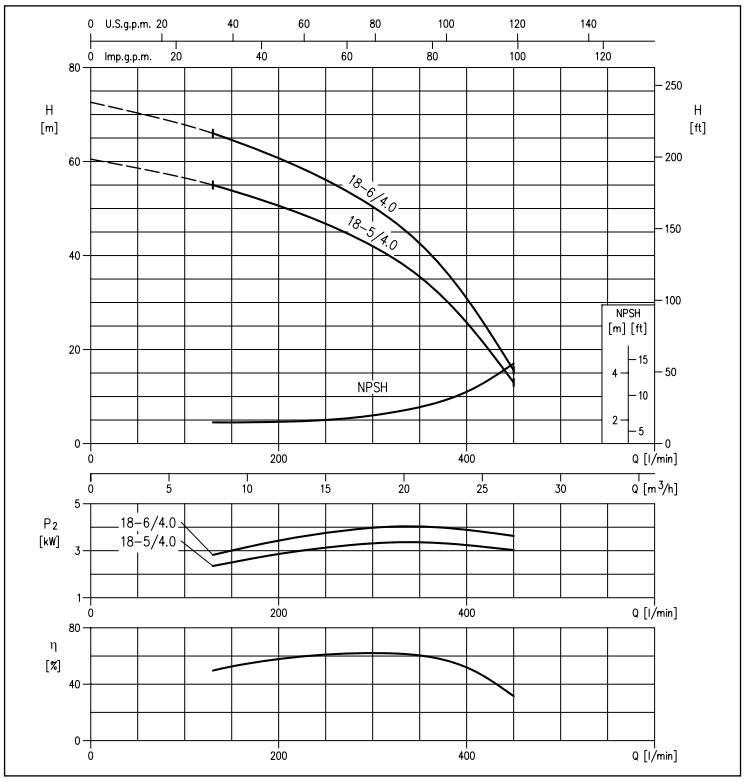
PERFORMANCE CURVES series MATRIX 18 (from 2 to 4 impellers)

(according to ISO 9906 Attachment A)



PERFORMANCE CURVES series MATRIX 18 (5 and 6 impellers)

(according to ISO 9906 Attachment A)



MATRIX

HORIZONTAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

PERFORMANCE CHART

Model		P_2		Q = Flow Rate													
Single phase 230V	Three phase 230/400V	[HP]	[kW]	l/min	20	30	45	60	80	100	130	160	200	250	300	350	400	450
				m^3/h	1.2	1.8	2.7	3.6	4.8	6	7.8	9.6	12	15	18	21	24	27
				H=Head [m]														
MATRIX 3-2T/0.45M	MATRIX 3-2T/0.45	0.6	0.45		20.9	19.6	17.0	13.6	8.0	-	-	-	-	-	-	-	-	-
MATRIX 3-3T/0.65M	MATRIX 3-3T/0.65	0.9	0.65		31.4	29.3	25.5	20.4	12.0	-	-	-	-	-	-	-	-	-
MATRIX 3-4T/0.65M	MATRIX 3-4T/0.65	0.9	0.65		42.0	39.1	34.0	27.2	16.0	-	-	-	-	-	-	-	-	-
MATRIX 3-5T/0.75M	MATRIX 3-5T/0.75	1	0.75		52.5	49.0	42.5	34.0	20.0	-	-	-	-	-	-	-	-	-
MATRIX 3-6T/0.9M	MATRIX 3-6T/0.9	1.2	0.9		62.5	58.5	51.0	41.0	24.0	-	-	-	-	-	-	-	-	-
MATRIX 3-7T/1.3M	MATRIX 3-7T/1.3	1.8	1.3		73.0	68.5	59.5	47,5	28.0	-	-	-	-	-	-	-	-	-
MATRIX 3-8T/1.3M	MATRIX 3-8T/1.3	1.8	1.3		83.5	78.0	68.0	54.5	32.0	-	-	-	-	-	-	-	-	-
MATRIX 3-9T/1.5M	MATRIX 3-9T/1.5	2	1.5		94.0	88.0	76.5	61.0	36.0	-	-	-	-	-	-	-	-	-
MATRIX 5-2T/0.45M	MATRIX 5-2T/0.45	0.6	0.45		-	21.5	20.5	19.3	17.4	14.7	8.8	-	-	-	-	-	-	-
MATRIX 5-3T/0.65M	MATRIX 5-3T/0.65	0.9	0.65		-	32.3	30.7	29.0	26.0	22.0	13.2	-	-	-	-	-	-	-
MATRIX 5-4T/0.9 M	MATRIX 5-4T/0.9	1.2	0.9		-	43.0	41.0	38.6	34.7	29.4	17.6	-	-	-	-	-	-	-
MATRIX 5-5T/1.3M	MATRIX 5-5T/1.3	1.8	1.3		-	54.0	51.0	48.5	43.5	36.7	22.0	-	-	-	-	-	-	-
MATRIX 5-6T/1.3M	MATRIX 5-6T/1.3	1.8	1.3		-	64.5	61.5	58.0	52.0	44.0	26.4	-	-	-	-	-	-	-
MATRIX 5-7T/1.5 M	MATRIX 5-7T/1.5	2	1.5		-	75.5	72.0	67.5	61.0	51.5	30.8	-	-	-	-	-	-	-
MATRIX 5-8T/2.2 M	MATRIX 5-8T/2.2	3	2.2		-	86.0	82.0	77.0	69.5	58.5	35.2	-	-	-	-	-	-	-
MATRIX 5-9T/2.2 M	MATRIX 5-9T/2.2	3	2.2		-	97.0	92.0	87.0	78.0	66.0	39.6	-	-	-	-	-	-	-
MATRIX 10-2T/0.75M	MATRIX 10-2T/0.75	1	0.75		-	-	-	22.2	21.4	20.6	19.1	17.0	12.8	5.8	-	-	-	-
MATRIX 10-3T/1.3M	MATRIX 10-3T/1.3	1.8	1.3		-	-	-	33.3	32.1	30.9	28.6	25.5	19.3	8.7	-	-	-	-
MATRIX 10-4T/1.5M	MATRIX 10-4T/1.5	2	1.5		-	-	-	44.5	43.0	41.0	38.1	34.0	25.7	11.6	-	-	-	-
MATRIX 10-5T/2.2M	MATRIX 10-5T/2.2	3	2.2		-	-	-	55.5	53.5	51.5	47,5	42.5	32.1	14.5	-	-	-	-
MATRIX 10-6T/2.2M	MATRIX 10-6T/2.2	3	2.2		-	-	-	66.5	64.5	62.0	57.0	51.0	38.5	17.4	-	-	-	-
MATRIX 18-2T/1.5M	MATRIX 18-2T/1.5	2	1.5		-	-	-	-	-	-	22.0	21.3	20.2	18.7	16.8	14.2	10.3	5.2
MATRIX 18-3T/2.2M	MATRIX 18-3T/2.2	3	2.2		-	-	-	-	-	-	33.0	31.9	30.4	28.1	25.2	21.3	15.5	7.8
	MATRIX 18-4T/3	4	3		-	-	-	-	-	-	44.0	42.5	40.5	37.4	33.6	28.4	20.6	10.4
	MATRIX 18-5T/4	5.5	4		-	-	-	-	-	-	55.0	53.0	50.5	47.0	42.0	35.5	25.8	13.0
	MATRIX 18-6T/4	5.5	4		-	-	-	-	-	-	66.0	64.0	60.5	56.0	50.5	42.5	30.9	15.6

DIMENSIONS

FIG. 1

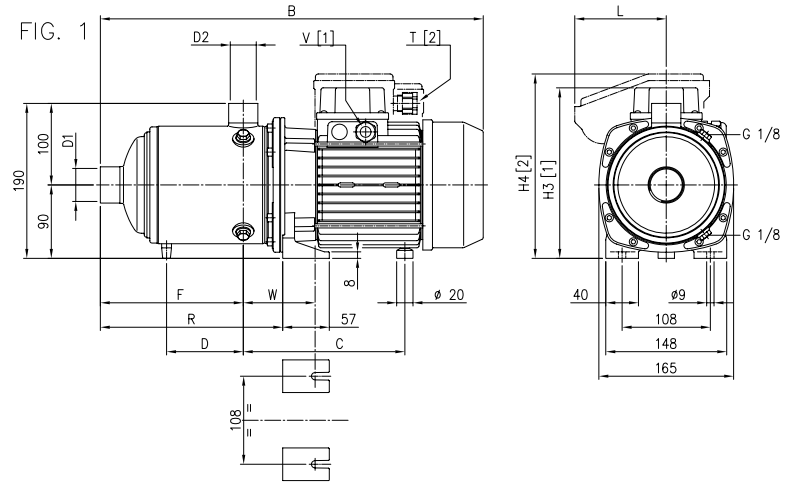
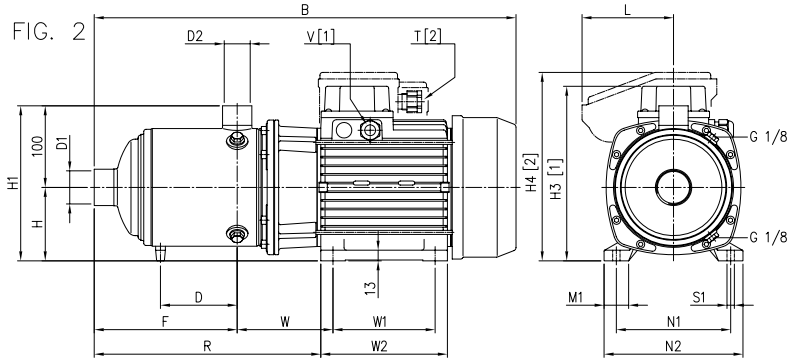


FIG. 2



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

MATRIX

HORIZONTAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

MATRIX 3 DIMENSIONS TABLE

Model	Dimensions [mm]																	Weight [kg]	
	D1	D2	B	*	C	D	F	H3 [1]	H4 [2]	L	R	T [2]	V [1]	*	W	D1	D2		*
MATRIX 3-2T/0.45M	1″	1″	360	-	171	-	103	-	200	86.5	151.5	PG11	-	-	88÷97	1″	1″	8.5	-
MATRIX 3-2T/0.45			360	-	171	-	103	192	-	-	151.5	-	PG11	-	88÷97	1″	1″	8.4	-
MATRIX 3-3T/0.65M			360	-	171	-	103	-	200	86.5	151.5	PG11	-	-	88÷97	1″	1″	9.9	-
MATRIX 3-3T/0.65			360	-	171	-	103	192	-	-	151.5	-	PG11	-	88÷97	1″	1″	9.8	-
MATRIX 3-4T/0.65M			384	-	171	-	127	-	200	86.5	175.5	PG11	-	-	88÷97	1″	1″	10.6	-
MATRIX 3-4T/0.65			384	-	171	-	127	192	-	-	175.5	-	PG11	-	88÷97	1″	1″	10.4	-
MATRIX 3-5T/0.75M			408	-	171	-	151	-	200	86.5	199.5	PG11	-	-	88÷97	1″	1″	12.5	-
MATRIX 3-5T/0.75			408	408	171	-	151	192	-	-	199.5	-	PG11	M16x1.5	88÷97	1″	1″	12.4	12.4
MATRIX 3-6T/0.9M			432	-	171	-	175	-	219	106	223.5	M20x1.5	-	-	88÷97	1″	1″	13.7	-
MATRIX 3-6T/0.9			444	444	171	-	175	192	-	-	223.5	-	PG11	M16x1.5	88÷97	1″	1″	13.6	13.6
MATRIX 3-7T/1.3M			493	-	198	110.5	199	-	226	112	247.5	M20x1.5	-	-	88÷97	1″	1″	16.3	-
MATRIX 3-7T/1.3			493	518	198	110.5	199	209	-	-	247.5	-	PG11	M20x1.5	88÷97	1″	1″	17.0	17.9
MATRIX 3-8T/1.3M			517	-	198	134.5	223	-	226	112	271.5	M20x1.5	-	-	88÷97	1″	1″	16.3	-
MATRIX 3-8T/1.3			517	542	198	134.5	223	209	-	-	271.5	-	PG11	M20x1.5	88÷97	1″	1″	17.8	18.7
MATRIX 3-9T/1.5M			541	-	198	158.5	247	-	226	112	295.5	M20x1.5	-	-	88÷97	1″	1″	18.3	-
MATRIX 3-9T/1.5			554	567	198	158.5	247	209	-	-	295.5	-	PG11	M20x1.5	88÷97	1″	1″	20.0	20.9

[1]= Three phase only
[2]= Single phase only
[*] = IE3 motors only

MATRIX 5-10-18 DIMENSIONS TABLE

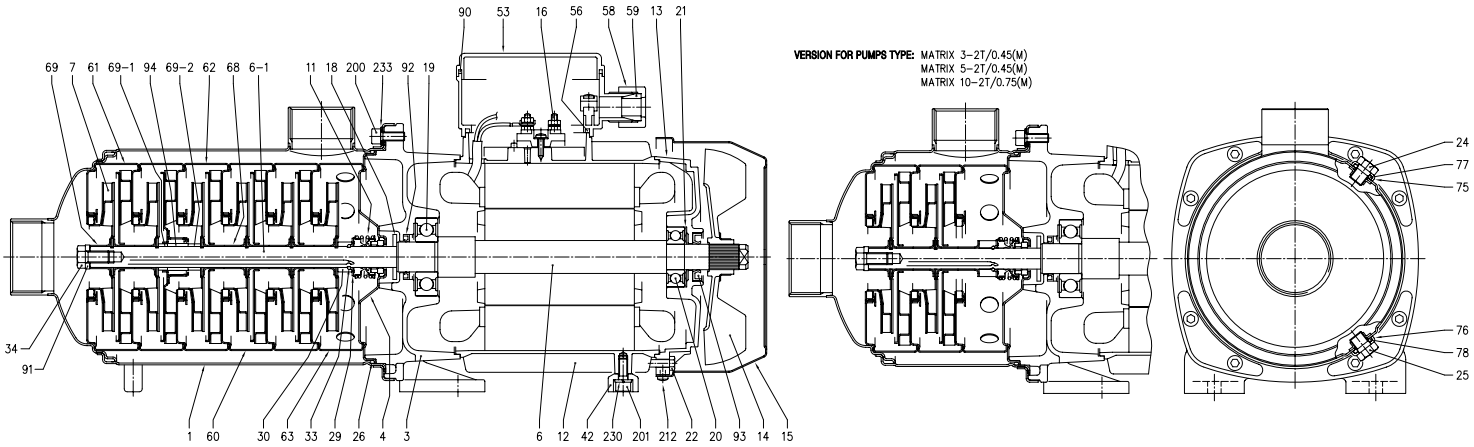
Model	Fig.	Dimensions [mm]																							Weight [kg]	
		D1	D2	H	H1	B	*	C	D	F	H3 [1]	H4 [2]	L	R	T	V		W	W1	W2	M1	N1	N2	S1		*
MATRIX 5-2T/0.45 M	1	1¼	1″	-	-	360	-	171	-	103	-	200	86.5	151.5	Pg11	-	-	88÷97	-	-	-	-	-	-	8.5	-
MATRIX 5-2T/0.45				-	-	360	-	171	-	103	192	-	-	151.5	-	Pg11	-	88÷97	-	-	-	-	-	-	8.4	-
MATRIX 5-3T/0.65 M				-	-	360	-	171	-	103	-	200	86.5	151.5	Pg11	-	-	88÷97	-	-	-	-	-	-	9.9	-
MATRIX 5-3T/0.65				-	-	360	-	171	-	103	192	-	-	151.5	-	Pg11	-	88÷97	-	-	-	-	-	-	9.8	-
MATRIX 5-4T/0.9 M				-	-	384	-	171	-	127	-	219	106	175.5	M20x1.5	-	-	88÷97	-	-	-	-	-	-	12.2	-
MATRIX 5-4T/0.9				-	-	396	396	171	-	127	192	-	-	175.5	-	Pg11	M16x1.5	88÷97	-	-	-	-	-	-	12.4	12.4
MATRIX 5-5T/1.3 M				-	-	445	-	198	-	151	-	226	112	199.5	M20x1.5	-	-	88÷97	-	-	-	-	-	-	15.8	-
MATRIX 5-5T/1.3				-	-	445	470	198	-	151	209	-	-	199.5	-	Pg11	M20x1.5	88÷97	-	-	-	-	-	-	15.8	16.7
MATRIX 5-6T/1.3 M				-	-	469	-	198	-	175	-	226	112	223.5	M20x1.5	-	-	88÷97	-	-	-	-	-	-	15.2	-
MATRIX 5-6T/1.3				-	-	469	494	198	-	175	209	-	-	223.5	-	Pg11	M20x1.5	88÷97	-	-	-	-	-	-	16.2	17.1
MATRIX 5-7T/1.5 M				-	-	493	-	198	110.5	199	-	226	112	247.5	M20x1.5	-	-	88÷97	-	-	-	-	-	-	18.3	-
MATRIX 5-7T/1.5				-	-	506	518.5	198	110.5	199	209	-	-	247.5	-	Pg11	M20x1.5	88÷97	-	-	-	-	-	-	18.7	19.6
MATRIX 5-8T/2.2 M	2			90	190	565	-	-	134.5	223	-	231	112	325.5	M20x1.5	-	-	117.5	125	155	30	140	170	9	22.3	-
MATRIX 5-8T/2.2	1			-	-	530	542.5	198	134.5	223	209	-	-	271.5	-	Pg11	M20x1.5	88÷97	-	-	-	-	-	-	18.7	19.6
MATRIX 5-9T/2.2 M	2			90	190	589	-	-	158.5	247	-	231	112	349.5	M20x1.5	-	-	117.5	125	155	30	140	170	9	23.3	-
MATRIX 5-9T/2.2	1			-	-	554	566.5	198	158.5	247	209	-	-	295.5	-	Pg11	M20x1.5	88÷97	-	-	-	-	-	-	18.8	19.7
MATRIX 10-2T/0.75 M	1	1½	1¼	-	-	379	-	175	-	118	-	200	86.5	170.5	Pg11	-	-	92÷101	-	-	-	-	-	-	11.3	-
MATRIX 10-2T/0.75				-	-	379	379	175	-	118	192	-	-	170.5	-	Pg11	M16x1.5	92÷101	-	-	-	-	-	-	11.2	11.2
MATRIX 10-3T/1.3 M				-	-	416	-	202	-	118	-	226	112	170.5	M20x1.5	-	-	92÷101	-	-	-	-	-	-	14.3	-
MATRIX 10-3T/1.3				-	-	416	441	202	-	118	209	-	-	170.5	-	Pg11	M20x1.5	92÷101	-	-	-	-	-	-	13.6	14.5
MATRIX 10-4T/1.5 M				-	-	446	-	202	-	148	-	226	112	200.5	M20x1.5	-	-	92÷101	-	-	-	-	-	-	15.6	-
MATRIX 10-4T/1.5				-	-	459	471.5	202	-	148	209	-	-	200.5	-	Pg11	M20x1.5	92÷101	-	-	-	-	-	-	17.3	18.2
MATRIX 10-5T/2.2 M	2			90	190	524	-	-	-	178	-	231	112	284.5	M20x1.5	-	-	121.5	125	155	30	140	170	9	21.8	-
MATRIX 10-5T/2.2	1			-	-	489	501.5	202	-	178	209	-	-	230.5	-	Pg11	M20x1.5	92÷101	-	-	-	-	-	-	17.9	18.8
MATRIX 10-6T/2.2 M	2			90	190	554	-	-	118.5	208	-	231	112	314.5	M20x1.5	-	-	121.5	125	155	30	140	170	9	22.1	-
MATRIX 10-6T/2.2	1			-	-	519	531.5	202	118.5	208	209	-	-	260.5	-	Pg11	M20x1.5	92÷101	-	-	-	-	-	-	18.3	19.2
MATRIX 18-2T/1.5M	1	2″	1½	-	-	442	-	205	-	141	-	226	112	196.5	M20x1.5	-	-	95 ÷ 104	-	-	-	-	-	-	14.5	-
MATRIX 18-2T/1.5M				-	-	455	467.5	205	-	141	209	-	-	196.5	-	Pg11	M20x1.5	95 ÷ 104	-	-	-	-	-	-	16.2	17.1
MATRIX 18-3T/2.2M	2			90	190	490	-	-	-	141	-	231	112	250.5	M20x1.5	-	-	124.5	125	155	30	140	170	9	20.7	-
MATRIX 18-3T/2.2	1			-	-	455	467.5	205	-	141	209	-	-	196.5	-	Pg11	M20x1.5	95 ÷ 104	-	-	30	-	-	-	17.2	18.1
MATRIX 18-4T/3	2			90	190	565	565	-	-	178.5	214	-	-	288	-	Pg13.5	M20x1.5	124.5	125	155	35	140	170	9	23.8	23.8
MATRIX 18-5T/4				100	200	615	615	-	123	216	241	-	-	315	-	Pg16	M20x1.5	114	140	170	35	160	192	11	33.2	33.2
MATRIX 18-6T/4				100	200	652	652	-	160.5	253.5	241	-	-	352.5	-	Pg16	M20x1.5	114	140	170		160	192	11	34.2	34.2

[1]= Three phase only
[2]= Single phase only
[*] = IE3 motors only

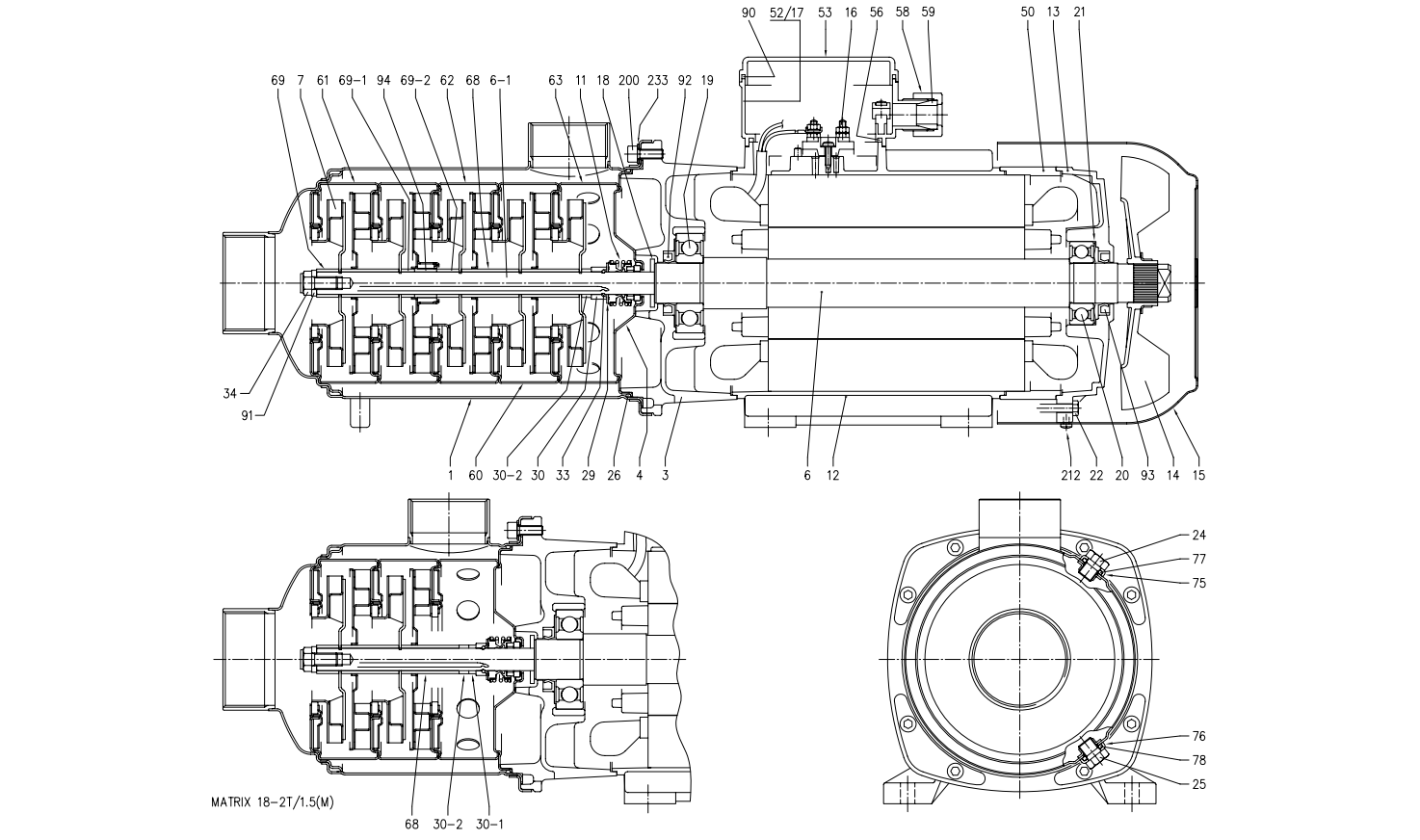
HORIZONTAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

MATRIX 3-5-10 SECTIONAL VIEW



MATRIX 18 SECTIONAL VIEW



MATRIX

HORIZONTAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

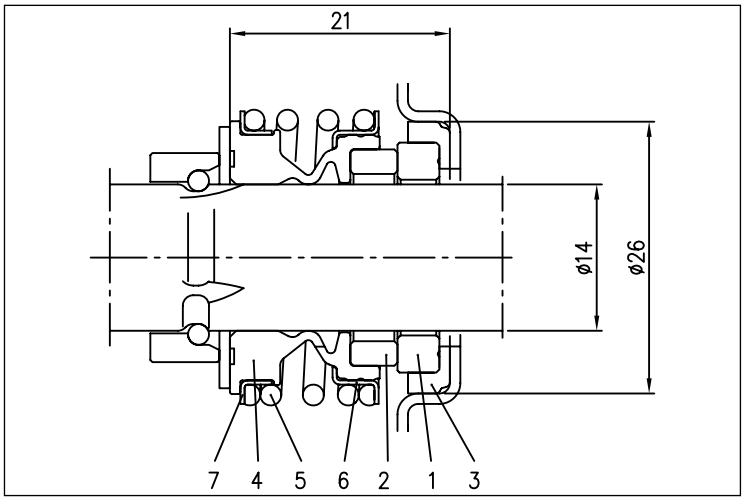
in AISI 304

MATERIALS TABLE

Ref.	Name	Materials	Ref.	Name	Materials
1	Pump casing	EN 1.4301 (AISI 304)	42	Motor support	Aluminium
3	Motor bracket	EN AB-AlSi11Cu2(Fe)	50	Motor spacer [2]	Aluminium
4	Casing cover	EN 1.4301 (AISI 304)	52	Capacitor-holder box [1]	ABS
6	Shaft	-	53	Capacitor-holder box cover [1]	ABS
6-1	Pump shaft	EN 1.4301 (AISI 304)	56	Box gasket	NBR
7	Impeller	EN 1.4301 (AISI 304)	58	Nut ring	-
11	Mechanical seal	Ceramic/Carbon/EPDM	59	Conic gasket	NBR
12	Motor frame	-	60	Intermediate stage	EN 1.4301 (AISI 304)+PTFE
13	Motor cover	Aluminium	61	Intermediate stage (suction)	EN 1.4301 (AISI 304)+PTFE
14	Fan	PA	62	Intermediate stage (bearing)	EN 1.4301 (AISI 304) + PTFE + Ceramic
15	Fan cover	Galvanised Fe P04	63	Intermediate stage (discharge)	EN 1.4301 (AISI 304) + PTFE
16	Terminal Box	-	68	Shaft casing (intermediate)	EN 1.4301 (AISI 304)
17	Terminal Box cover	Aluminium	69	Impeller spacer	EN 1.4301 (AISI 304)
18	Splash ring	NBR	69-1	Shaft casing (adapter)	EN 1.4301 (AISI 304)
19	Bearing (pump side)	-	69-2	Shaft casing (adapter)	EN 1.4301 (AISI 304)
20	Bearing (motor side)	-	75	Washer	EN 1.4301 (AISI 304)
21	Adjustment ring	Steel C70	76	Washer	EN 1.4301 (AISI 304)
22	Tie-rod	Galvanised Fe 42	77	O-Ring	EPDM
24	Plug	EN 1.4301 (AISI 304)	78	O-Ring	EPDM
25	Plug	EN 1.4301 (AISI 304)	90	Terminal box cover [1]	NBR
26	O-Ring	EPDM	91	Shaft washer	EN 1.4301 (AISI 304)
29	Washer	EN 1.4301 (AISI 304)	92	Seal ring	-
30	Holding ring	EN 1.4301 (AISI 304)	93	Seal ring	-
30-1-2	Shaft casing	EN 1.4301 (AISI 304)	94	Guide bush	WC - Tungsten carbide
33	Ring	EN 1.4301 (AISI 304)	200	Screw (pump body)	EN 1.4301 (AISI 304)
34	Screw	EN 1.4301 (AISI 304)	233	Plate	EN 1.4301 (AISI 304)

[1]= Single phase only
[2]= MATRIX 18-5T/4 and MATRIX 18-6T/4 only

MECHCANICAL SEAL standard



MATERIALS TABLE standard

Ref.	Name	Materials
1	Fixed part	Ceramic
2	Rotating part	Carbon
3	Gasket	EPDM
4	Diaphragm	EPDM
5	Spring	EN 1.4402 (AISI 316)
6	Structure/frame	EN 1.4402 (AISI 316)
7	Retainer ring	EN 1.4402 (AISI 316)

SPECIAL MECHANICAL SEALS (on request)

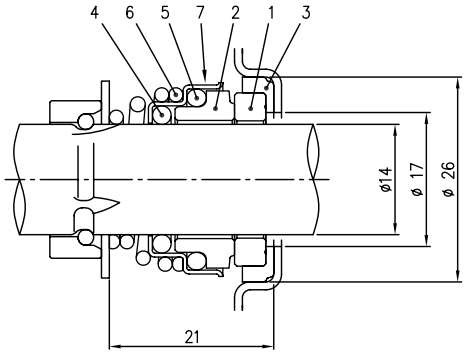
Ref.	Name	Materials			
		H Version	HS Version	U3Q1EGG Version	Q1AEGG Version
1	Fixed part	Carbon	Silicon Carbide	Tungsten Carbide	Silicon Carbide
2	Rotating part	Ceramic	Silicon Carbide	Silicon Carbide	Metallised carbon
3	Gasket	FKM	FKM	EPDM	EPDM
4	Diaphragm	FKM	FKM	EPDM	EPDM
5	Spring	EN 1.4402 (AISI 316)	EN 1.4402 (AISI 316)	EN 1.4402 (AISI 316)	EN 1.4402 (AISI 316)
6	Structure/frame	EN 1.4402 (AISI 316)	EN 1.4402 (AISI 316)	EN 1.4402 (AISI 316)	EN 1.4402 (AISI 316)
7	Retainer ring	EN 1.4402 (AISI 316)	EN 1.4402 (AISI 316)	EN 1.4402 (AISI 316)	EN 1.4402 (AISI 316)

MATRIX

HORIZONTAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

MECHCANICAL SEAL HIGH TEMPERATURE



MATERIALS TABLE HIGH TEMPERATURE

Ref.	Name	Material
1	Stationary seal ring	Ceramic
2	Rotary seal ring	Carbon
3	Gasket	EPDM
4	O-Ring	EPDM
5	O-Ring	EPDM
6	Spring	EN 1.4402 (AISI 316)
7	Retainer ring	EN 1.4301 (AISI 304)

ELECTRIC DATA TABLE

Model		P_2		Efficiency		Capacitor Single phase		Efficiency Three phase η %			P_1		Absorbed Current [A]		
Single phase 230V	Three phase 230/400V	[HP]	[kW]	Single phase	Three phase	µF	V_c	50%	75%	100%	Single phase [kW]	Three phase [kW]	Single phase 230V	Three phase 230V	Three phase 400V
MATRIX 3-2T/0.45M	MATRIX 3-2T/0.45	0.6	0.45	-	-	12.5	450	-	-	-	0.73	0.72	3.2	2.3	1.3
MATRIX 3-3T/0.65M	MATRIX 3-3T/0.65	0.9	0.65	-	-	16	450	-	-	-	0.97	0.85	4.5	2.8	1.6
MATRIX 3-4T/0.65M	MATRIX 3-4T/0.65	0.9	0.65	-	-	16	450	-	-	-	0.97	0.85	4.5	2.8	1.6
MATRIX 3-5T/0.75M	MATRIX 3-5T/0.75	1.0	0.75	-	IE2	25	450	77.2	80.9	81.3	1.14	0.92	5.4	3.0	1.7
-		1.0	0.75	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
MATRIX 3-6T/0.9M	MATRIX 3-6T/0.9	1.2	0.9	-	IE2	31.5	450	79.0	81.7	81.6	1.28	1.35	5.7	4.3	2.5
-		1.2	0.9	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5
MATRIX 3-7T/1.3M	MATRIX 3-7T/1.3	1.8	1.3	-	IE2	35	450	79.7	82.5	83.0	1.75	1.80	7.8	5.6	3.2
-		1.8	1.3	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
MATRIX 3-8T/1.3M	MATRIX 3-8T/1.3	1.8	1.3	-	IE2	35	450	79.7	82.5	83.0	1.75	1.80	7.8	5.6	3.2
-		1.8	1.3	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
MATRIX 3-9T/1.5M	MATRIX 3-9T/1.5	2.0	1.5	-	IE2	40	450	78.6	83.0	84.2	1.95	1.78	8.7	6.3	3.7
-		2.0	1.5	-	IE3	-	-	82.7	86.1	87.0	-	1.72	-	6.6	3.8
MATRIX 5-2T/0.45M	MATRIX 5-2T/0.45	0.6	0.45	-	-	12.5	450	-	-	-	0.73	0.72	3.2	2.3	1.3
MATRIX 5-3T/0.65M	MATRIX 5-3T/0.65	0.9	0.65	-	-	16	450	-	-	-	0.97	0.85	4.5	2.8	1.6
MATRIX 5-4T/0.9 M	MATRIX 5-4T/0.9	1.2	0.9	-	IE2	31.5	450	79.0	81.7	81.6	1.28	1.35	5.7	4.3	2.5
-		1.2	0.9	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5
MATRIX 5-5T/1.3M	MATRIX 5-5T/1.3	1.8	1.3	-	IE2	35	450	79.7	82.5	83.0	1.75	1.80	7.8	5.6	3.2
-		1.8	1.3	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
MATRIX 5-6T/1.3M	MATRIX 5-6T/1.3	1.8	1.3	-	IE2	35	450	79.7	82.5	83.0	1.75	1.80	7.8	5.6	3.2
-		1.8	1.3	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
MATRIX 5-7T/1.5 M	MATRIX 5-7T/1.5	2.0	1.5	-	IE2	40	450	78.6	83.0	84.2	1.95	1.78	8.7	6.3	3.7
-		2.0	1.5	-	IE3	-	-	82.7	86.1	87.0	-	1.72	-	6.6	3.8
MATRIX 5-8T/2.2 M	MATRIX 5-8T/2.2	3.0	2.2	-	IE2	50	450	83.0	84.4	83.8	2.92	2.63	13.0	8.2	4.7
-		3.0	2.2	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7
MATRIX 5-9T/2.2 M	MATRIX 5-9T/2.2	3.0	2.2	-	IE2	50	450	83.0	84.4	83.8	2.92	2.63	13.0	8.2	4.7
-		3.0	2.2	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7
MATRIX 10-2T/0.75M	MATRIX 10-2T/0.75	1.0	0.75	-	IE2	25	450	77.2	80.9	81.3	1.14	0.92	5.4	3.0	1.7
-		1.0	0.75	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
MATRIX 10-3T/1.3M	MATRIX 10-3T/1.3	1.8	1.3	-	IE2	35	450	79.7	82.5	83.0	1.75	1.80	7.8	5.6	3.2
-		1.8	1.3	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
MATRIX 10-4T/1.5M	MATRIX 10-4T/1.5	2.0	1.5	-	IE2	40	450	78.6	83.0	84.2	1.95	1.78	8.7	6.3	3.7
-		2.0	1.5	-	IE3	-	-	82.7	86.1	87.0	-	1.72	-	6.6	3.8
MATRIX 10-5T/2.2M	MATRIX 10-5T/2.2	3.0	2.2	-	IE2	50	450	83.0	84.4	83.8	2.92	2.63	13.0	8.2	4.7
-		3.0	2.2	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7
MATRIX 10-6T/2.2M	MATRIX 10-6T/2.2	3.0	2.2	-	IE2	50	450	83.0	84.4	83.8	2.92	2.63	13.0	8.2	4.7
-		3.0	2.2	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7
MATRIX 18-2T/1.5M	MATRIX 18-2T/1.5	2.0	1.5	-	IE2	40	450	78.6	83.0	84.2	1.95	1.78	8.7	6.3	3.7
-		2.0	1.5	-	IE3	-	-	82.7	86.1	87.0	-	1.72	-	6.6	3.8
MATRIX 18-3T/2.2M	MATRIX 18-3T/2.2	3.0	2.2	-	IE2	50	450	83.0	84.4	83.8	2.92	2.63	13.0	8.2	4.7
-		3.0	2.2	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7
-	MATRIX 18-4T/3	4.0	3	-	IE2	-	-	85.0	86.7	86.3	-	3.48	-	10.6	6.1
-		4.0	3	-	IE3	-	-	85.9	87.5	87.1	-	3.44	-	11.1	6.4
-	MATRIX 18-5T/4	5.5	4	-	IE2	-	-	84.3	87.2	87.8	-	4.56	-	15.1	8.7
-		5.5	4	-	IE3	-	-	85.8	88.3	88.4	-	4.52	-	15.1	8.7
-	MATRIX 18-6T/4	5.5	4	-	IE2	-	-	84.3	87.2	87.8	-	4.56	-	15.1	8.7
-		5.5	4	-	IE3	-	-	85.8	88.3	88.4	-	4.52	-	15.1	8.7

HORIZONTAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

NOISE DATA TABLE

Model		P_2		L_{pA} - dB(A)*
Single phase 230V	Three phase 230/400V	[HP]	[kW]	
MATRIX 3-2T/0.45M	MATRIX 3-2T/0.45	0.6	0.45	61
MATRIX 3-3T/0.65M	MATRIX 3-3T/0.65	0.9	0.65	62
MATRIX 3-4T/0.65M	MATRIX 3-4T/0.65	0.9	0.65	
MATRIX 3-5T/0.75M	MATRIX 3-5T/0.75	1.0	0.75	
MATRIX 3-6T/0.9M	MATRIX 3-6T/0.9	1.2	0.9	
MATRIX 3-7T/1.3M	MATRIX 3-7T/1.3	1.8	1.3	64
MATRIX 3-8T/1.3M	MATRIX 3-8T/1.3	1.8	1.3	
MATRIX 3-9T/1.5M	MATRIX 3-9T/1.5	2.0	1.5	
MATRIX 5-2T/0.45M	MATRIX 5-2T/0.45	0.6	0.45	61
MATRIX 5-3T/0.65M	MATRIX 5-3T/0.65	0.9	0.65	62
MATRIX 5-4T/0.9 M	MATRIX 5-4T/0.9	1.2	0.9	
MATRIX 5-5T/1.3M	MATRIX 5-5T/1.3	1.8	1.3	64
MATRIX 5-6T/1.3M	MATRIX 5-6T/1.3	1.8	1.3	
MATRIX 5-7T/1.5 M	MATRIX 5-7T/1.5	2.0	1.5	
MATRIX 5-8T/2.2 M	MATRIX 5-8T/2.2	3.0	2.2	65
MATRIX 5-9T/2.2 M	MATRIX 5-9T/2.2	3.0	2.2	
MATRIX 10-2T/0.75M	MATRIX 10-2T/0.75	1.0	0.75	62
MATRIX 10-3T/1.3M	MATRIX 10-3T/1.3	1.8	1.3	64
MATRIX 10-4T/1.5M	MATRIX 10-4T/1.5	2.0	1.5	
MATRIX 10-5T/2.2M	MATRIX 10-5T/2.2	3.0	2.2	65
MATRIX 10-6T/2.2M	MATRIX 10-6T/2.2	3.0	2.2	
MATRIX 18-2T/1.5M	MATRIX 18-2T/1.5	2.0	1.5	64
MATRIX 18-3T/2.2M	MATRIX 18-3T/2.2	3.0	2.2	65
-	MATRIX 18-4T/3	4.0	3	68
-	MATRIX 18-5T/4	5.5	4	69
-	MATRIX 18-6T/4	5.5	4	

* Average noise level measured at 1 m from the motor pump.
Tolerance ± 2.5 dB.

CVM

VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in cast iron

Cast iron vertical multistage centrifugal electric pumps.

APPLICATIONS

- Pressure boosting plants
- General pressure increases
- Irrigation
- Washing plants
- Pumping clean water

TECHNICAL DETAILS

- Reliable
- Silent
- Easy maintenance
- Electric pumps supplied with counter-flanges

PUMP TECHNICAL DATA

- Maximum working pressure: 11 bar
- Maximum temperature of the liquid: 40°C
- G1¼ suction and discharge connection
- MEI > 0.4
  For further information please see our Data Book on the web site www.ebaraeurope.com

MOTOR TECHNICAL DATA

- IE2 and IE3 high energy-efficiency motors starting from 0.75kW
- Self-ventilated 2 pole asynchronous motor
- Class of insulation F
- IP44 Protection degree
- 230V ±10% 50Hz single phase voltage, 230/400V ±10% 50Hz three phase voltage
- Permanent capacitor inserted and thermo-amperometric protection with automatic rearm incorporated for the single phase motor
- Protection under user's responsibility for the three phase version

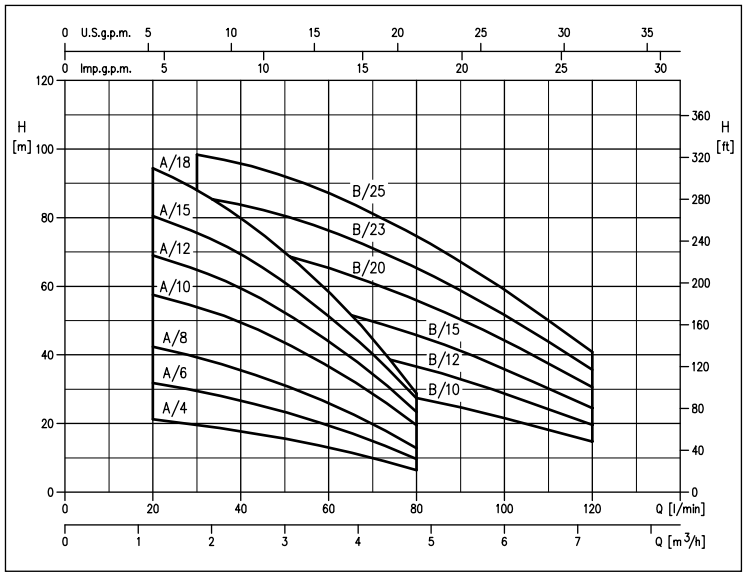
MATERIALS

- Cast iron pump casing and motor bracket
- External casing in AISI 304
- Impeller and diffuser in PPE+PS reinforced with fibreglass
- Stages in PPE+PS reinforced with fibreglass/PTFE
- Shaft in AISI 416
- Mechanical seal in Ceramic/Carbon/NBR

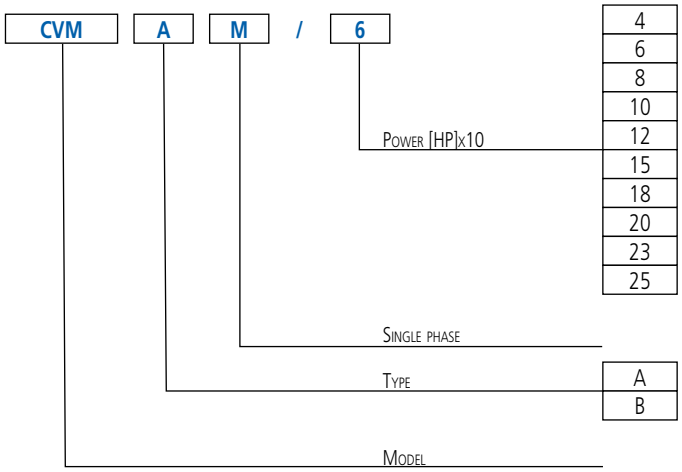
ACCESSORIES (On request)

- Electric panels
- Vessels
- Floats
- Pressure switches
- Presscomfort - Pressure regulator
- E-power - Variable speed control system
- E-*drive* - Frequency converter

PERFORMANCE CURVES (according to ISO 9906 Attachment A)



IDENTIFICATION CODE

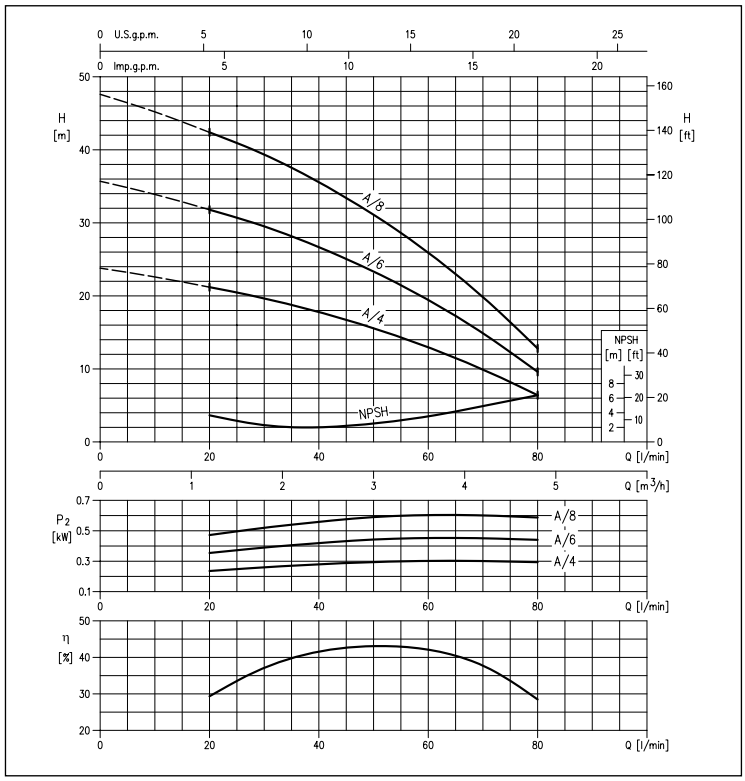


VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in cast iron

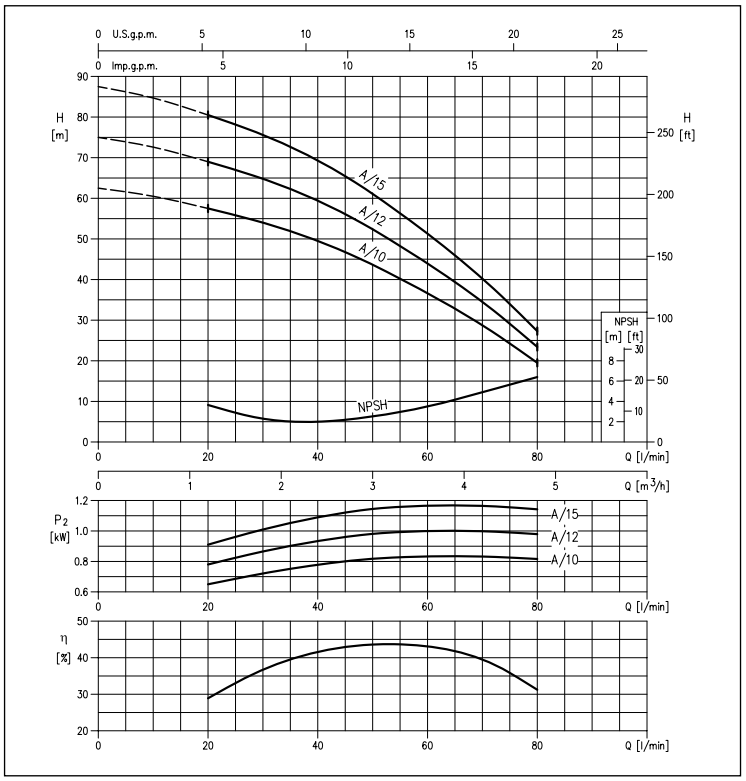
CVM A range PERFORMANCE CURVES (from 0.3 to 0.6 kW)

(according to ISO 9906 Attachment A)



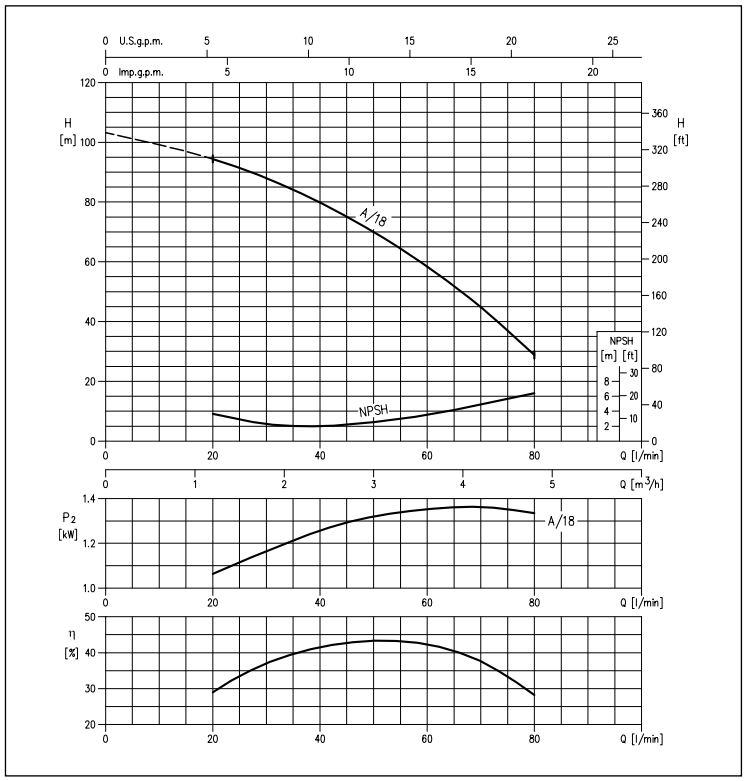
CVM A range PERFORMANCE CURVES (from 0.75 to 1.1 kW)

(according to ISO 9906 Attachment A)



CVM A range PERFORMANCE CURVES (1.3 kW)

(according to ISO 9906 Attachment A)

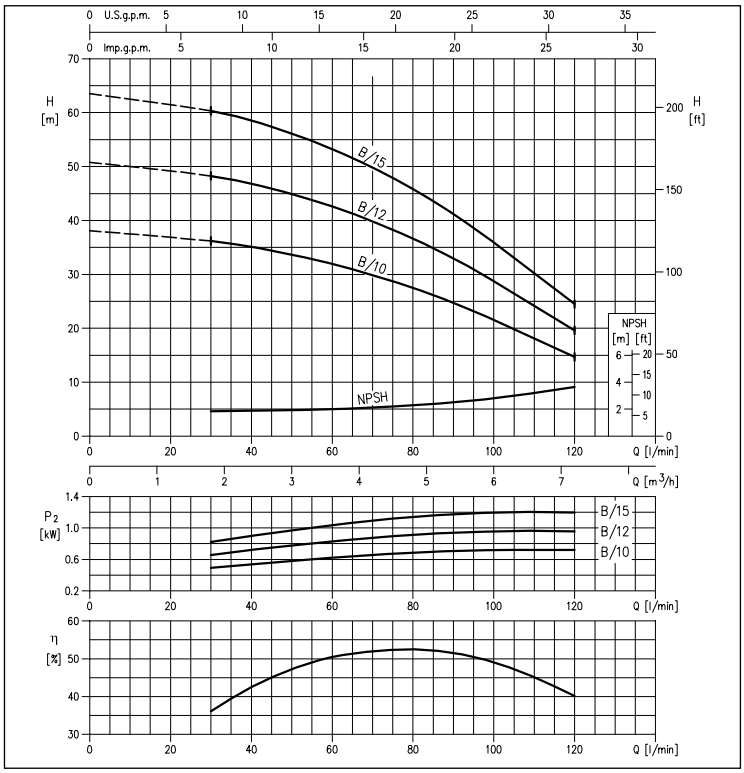


VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in cast iron

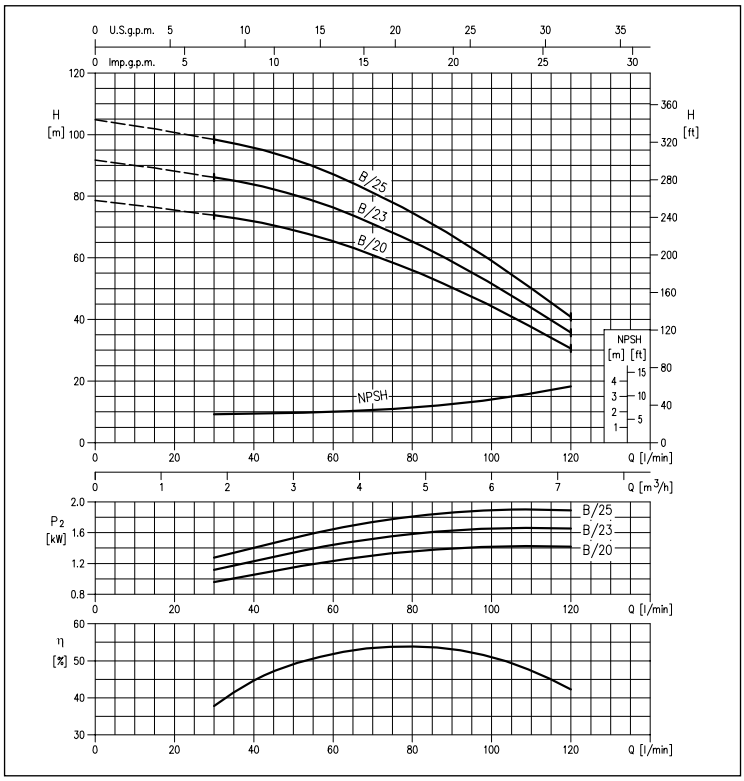
CVM B range PERFORMANCE CURVES (from 0.75 to 1.1 kW)

(according to ISO 9906 Attachment A)



CVM B range PERFORMANCE CURVES (from 1.5 to 1.85 kW)

(according to ISO 9906 Attachment A)



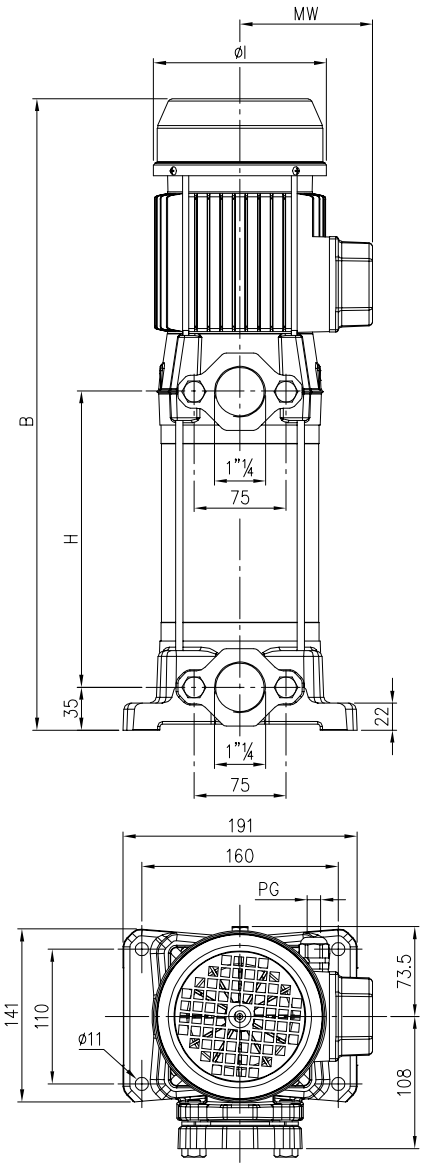
PERFORMANCE CHART

Model		P2		Q = Flow Rate							
Single phase 230V	Three phase 230/400V	[HP]	[kW]	l/min	20	30	40	50	60	80	100	120
				m³/h	1.2	1.8	2.4	3	3.6	4.8	6	7.2
				H=Head [m]								
CVM AM/4	CVM A/4	0.4	0.3		21.2	19.7	17.8	15.6	13.0	6.4	-	-
CVM AM/6	CVM A/6	0.6	0.44		31.8	29.5	26.7	23.3	19.4	9.6	-	-
CVM AM/8	CVM A/8	0.8	0.6		42.5	39.4	35.6	31.1	25.9	12.8	-	-
CVM AM/10	CVM A/10	1	0.75		57.5	54.0	49.5	43.5	36.6	19.5	-	-
CVM AM/12	CVM A/12	1.2	0.9		69.0	65.0	59.5	52.5	44.0	23.4	-	-
CVM AM/15	CVM A/15	1.5	1.1		80.5	75.5	69.5	61.0	51.0	27.3	-	-
CVM AM/18	CVM A/18	1.8	1.3		94.5	88.0	80.0	70.0	58.5	28.8	-	-
CVM BM/10	CVM B/10	1	0.75		-	36.2	35.1	33.7	32.0	27.5	21.6	14.7
CVM BM/12	CVM B/12	1.2	0.9		-	48.0	46.8	45.0	42.6	36.6	28.8	19.6
CVM BM/15	CVM B/15	1.5	1.1		-	60.5	58.5	56.2	53.3	45.8	36.0	24.5
CVM BM/20	CVM B/20	2	1.5		-	74.0	72.0	69.0	65.5	56.0	44.5	30.6
CVM BM/23	CVM B/23	2.3	1.7		-	86.0	84.0	80.5	76.5	65.5	51.5	35.7
-	CVM B/25	2.5	1.85		-	98.5	96.0	92.0	87.0	74.5	59.0	41.0

VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in cast iron

DIMENSIONS



[1]= Three phase only
[2]= Single phase only
* Models with IE3 motor only

DIMENSIONS TABLE

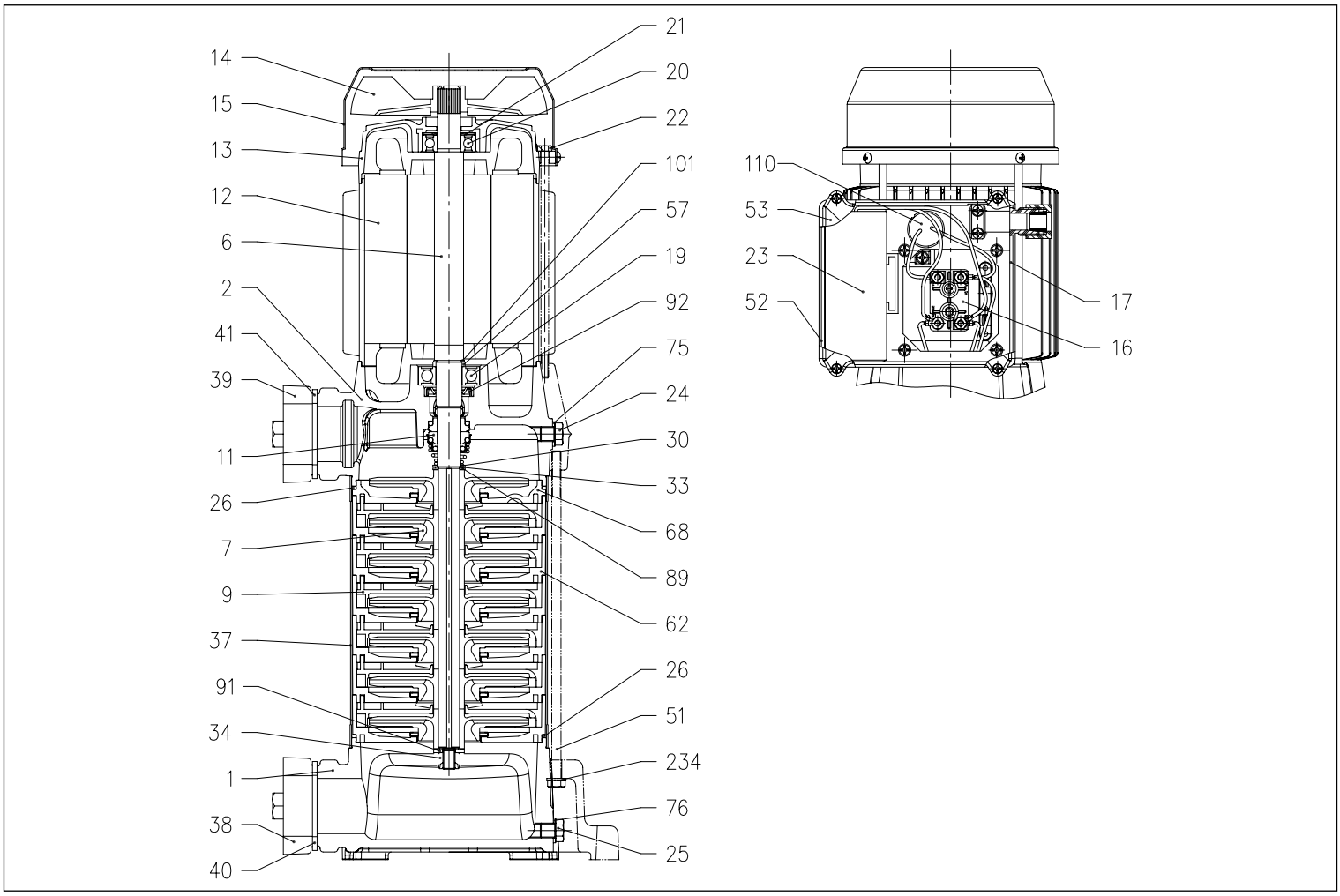
Model		Dimensions [mm]											Weight [kg]		
Single phase 230V	Three phase 230/400V	Motor Mec	B [2]	B [1]	B *	H	ØI	MW [2]	MW [1]	M *	PG [2]	PG [1]	[2]	[1]	*
CVM AM/4	CVM A/4	63	336	336	-	112	124	101	91.5	-	11	11	11.0	11.0	-
CVM AM/6	CVM A/6	63	362	362	-	138	124	101	91.5	-	11	11	11.7	11.6	-
CVM AM/8	CVM A/8	63	388	388	-	164	124	101	91.5	-	11	11	12.7	12.6	-
CVM AM/10	CVM A/10	71	452	452	452	190	141	110.5	101	M16x1.5	11	11	16.5	16.6	16.6
CVM AM/12	CVM A/12	71	478	490	490	216	141	110.5	101	M16x1.5	11	11	17.5	18.4	18.4
CVM AM/15	CVM A/15	71	516	516	516	242	141	110.5	101	M16x1.5	11	11	18.5	18.6	18.6
CVM AM/18	CVM A/18	80	565	565	565	268	159	136	120.5	M20x1.5	13.5	11	21.2	21.8	22.7
CVM BM/10	CVM B/10	71	400	400	400	138	141	110.5	101	M16x1.5	11	11	15.9	15.9	15.9
CVM BM/12	CVM B/12	71	426	438	438	164	141	110.5	101	M16x1.5	11	11	16.8	17.5	17.5
CVM BM/15	CVM B/15	71	464	464	464	190	141	110.5	101	M16x1.5	11	11	18.0	17.9	17.9
CVM BM/20	CVM B/20	80	513	526	526	216	159	134.5	120.5	M20x1.5	13.5	11	21.3	22.8	23.7
CVM BM/23	CVM B/23	80	552	552	552	242	159	134.5	120.5	M20x1.5	13.5	11	22.6	23.4	24.3
-	CVM B/25	80	-	578	578	268	159	-	120.5	M20x1.5	-	11	-	23.7	24.6

CVM

VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in cast iron

SECTIONAL VIEW



MATERIALS TABLE

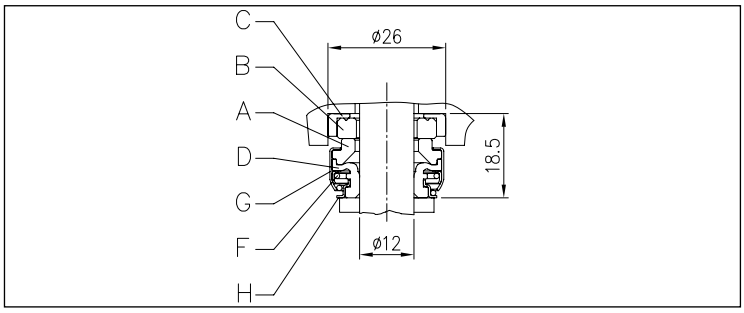
Ref.	Name	Material	Ref.	Name	Material
1	Pump body	Cast iron EN-GJL-200-EN 1561	33	Seeger ring	EN 1.4021 (AISI 420) (Dim. 12)
2	Pump body support	Cast iron EN-GJL-200-EN 1561			EN 1.4301 (AISI 304) (Dim. 14)
6	Shaft	EN 1.4005 (AISI 416)	34	Impeller nut	EN 1.4301 (AISI 304)
7	Impeller	PPE+PS reinforced with fibreglass	37	Casing	EN 1.4301 (AISI 304)
9	Diffuser	PPE+PS reinforced with fibreglass	38	Counter-flange	Cast iron EN-GJL-200-EN 1561
11	Mechanical seal	Ceramic/Carbon/NBR	39	Counter-flange	Cast iron EN-GJL-200-EN 1561
12	Motor case	-	40	Counter-flange gasket	NBR
13	Motor cover	Aluminium	41	Counter-flange gasket	NBR
14	Fan	PA	51	Pump tie-rod	Galvanised Fe P04
15	Fan cover	Galvanised Fe P04	52	Capacitor-holder box [2]	ABS
16	Terminal Box	-	53	Capacitor-holder box cover [2]	ABS
17	Terminal Box cover [1]	Aluminium	57	Spacer [3]	Steel C40
19	Bearing (pump side)	-	62	Stage box	PPE+PS reinforced with fibreglass/PTFE
20	Bearing (motor side)	-	68	Stage	PPE+PS reinforced with fibreglass/PTFE
21	Adjustment ring	Steel C70	75	Washer	Aluminium
22	Motor tie-rod	Galvanised Fe 42	76	Washer	Aluminium
23	Capacitor [2]	-	89	Washer	EN 1.4301 (AISI 304)
24	Filler cap	OT 58 UNI 5705	91	Washer	EN 1.4301 (AISI 304)
25	Drain plug	OT 58 UNI 5705	92	Sealing ring	NBR
26	O-Ring	NBR	101	Seeger ring [3]	EN 1.4301 (AISI 304)
30	Washer	EN 1.4301 (AISI 304)	110	Motor protector [4]	-
			234	Washer	Galvanised steel

CVM

VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in cast iron

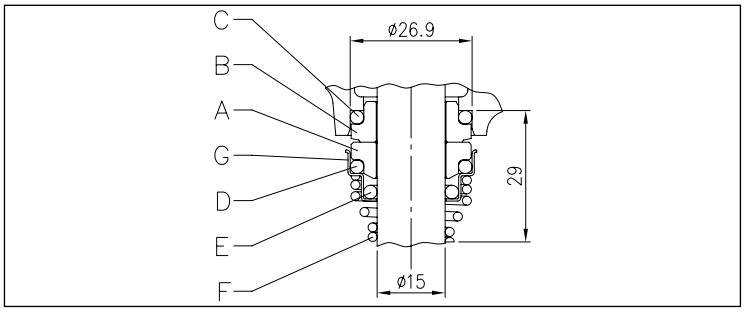
MECHANICAL SEAL for CVM up to 0.6 kW



MATERIALS TABLE

Ref.	Name	Material
A	Rotating part	Carbon
B	Fixed part	Ceramic
C	Gasket	NBR
D	Diaphragm	NBR
F	Spring	AISI 304
G	Structure/frame	AISI 304
H	Retainer ring	AISI 304

MECHANICAL SEAL for CVM from 0.75 kW and over



MATERIALS TABLE

Ref.	Name	Material
A	Rotating part	Ceramic
B	Fixed part	Carbon
C	O-Ring	NBR
D	O-Ring	NBR
E	O-Ring	NBR
F	Spring	AISI 316
G	Structure/frame	AISI 304

ELECTRIC DATA TABLE

Model		P_2		Efficiency		Capacitor Single phase		Efficiency (%) Three phase η %			P_1		Absorbed Current [A]		
Single phase 230V	Three phase 230/400V	[HP]	[kW]	Single phase	Three phase	µF	V_c	50%	75%	100%	Single phase [kW]	Three phase [kW]	Single phase 230V	Three phase 230V	Three phase 400V
CVM AM/4	CVM A/4	0.4	0.3	-	-	10	450	-	-	-	0.54	0.49	2.6	1.9	1.1
CVM AM/6	CVM A/6	0.6	0.44	-	-	12.5	450	-	-	-	0.69	0.69	3.2	2.3	1.3
CVM AM/8	CVM A/8	0.8	0.6	-	-	14	450	-	-	-	0.89	0.83	4.0	2.8	1.6
CVM AM/10	CVM A/10	1	0.75	-	IE2	20	450	77.2	80.9	81.3	1.27	0.92	6.0	2.9	1.7
-		1	0.75	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
CVM AM/12	CVM A/12	1.2	0.9	-	IE2	31.5	450	79.0	81.7	81.6	1.45	1.35	6.5	4.3	2.5
-		1.2	0.9	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5
CVM AM/15	CVM A/15	1.5	1.1	-	IE2	31.5	450	79.0	81.7	81.6	1.60	1.35	7.2	4.3	2.5
-		1.5	1.1	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5
CVM AM/18	CVM A/18	1.8	1.3	-	IE2	35	450	79.7	82.5	83.0	1.76	1.80	7.8	5.6	3.2
-		1.8	1.3	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3
CVM BM/10	CVM B/10	1	0.75	-	IE2	20	450	77.2	80.9	81.3	1.14	0.92	5.6	2.9	1.7
-		1	0.75	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7
CVM BM/12	CVM B/12	1.2	0.9	-	IE2	31.5	450	79.0	81.7	81.6	1.38	1.35	6.2	4.3	2.5
-		1.2	0.9	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5
CVM BM/15	CVM B/15	1.5	1.1	-	IE2	31.5	450	79.0	81.7	81.6	1.63	1.35	7.4	4.3	2.5
-		1.5	1.1	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5
CVM BM/20	CVM B/20	2	1.5	-	IE2	40	450	78.6	83.0	84.2	1.91	1.78	8.3	6.3	3.7
-		2	1.5	-	IE3	-	-	82.7	86.1	87.0	-	1.72	-	6.6	3.8
CVM BM/23	CVM B/23	2.3	1.7	-	IE2	40	450	80.3	83.4	83.8	2.14	2.09	9.6	6.9	4.0
-		2.3	1.7	-	IE3	-	-	84.2	86.8	86.9	-	2.01	-	7.1	4.1
-	CVM B/25	2.5	1.85	-	IE2	-	-	83.0	84.4	83.8	-	2.63	-	8.1	4.7
-		2.5	1.85	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7

VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in cast iron

NOISE DATA TABLE

Model		P_2		L_{pA} - dB(A)*
Single phase 230V	Three phase 230/400V	[HP]	[kW]	
CVM AM/4	CVM A/4	0.4	0.3	53
CVM AM/6	CVM A/6	0.6	0.44	
CVM AM/8	CVM A/8	0.8	0.6	
CVM AM/10	CVM A/10	1	0.75	62
CVM AM/12	CVM A/12	1.2	0.9	
CVM AM/15	CVM A/15	1.5	1.1	
CVM AM/18	CVM A/18	1.8	1.3	67
CVM BM/10	CVM B/10	1	0.75	62
CVM BM/12	CVM B/12	1.2	0.9	
CVM BM/15	CVM B/15	1.5	1.1	
CVM BM/20	CVM B/20	2	1.5	67
CVM BM/23	CVM B/23	2.3	1.7	
-	CVM B/25	2.5	1.85	

* Average noise level measured at 1 m from the motor pump.
Tolerance ± 2.5 dB.

CVM WITH E-drive

VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in cast iron

Cast iron vertical multistage centrifugal electric pumps connected to inverter system installed on motor.

APPLICATIONS

- Pressure boosting plants
- General pressure increases
- Irrigation
- Washing plants
- Pumping clean water

TECHNICAL DETAILS

- Reliable
- Silent
- Easy maintenance
- Electric pumps supplied with counter-flanges

PUMP TECHNICAL DATA

- Maximum working pressure: 11 bar
- Maximum temperature of the liquid: 40°C
- G1¼ suction and discharge connection
- MEI > 0.4

  For further information please see our Data Book on the web site www.ebaraeurope.com

MOTOR TECHNICAL DATA

- IE3 high energy-efficiency motors starting from 0.75kW
- Self-ventilated 2 pole asynchronous motor
- Class of insulation F
- IP44 Protection degree
- 230V ±10% 50Hz single phase voltage, 230/400V ±10% 50Hz three phase voltage
- Permanent capacitor inserted and thermo-amperometric protection with automatic rearm incorporated for the single phase motor
- Protection under user's responsibility for the three phase version

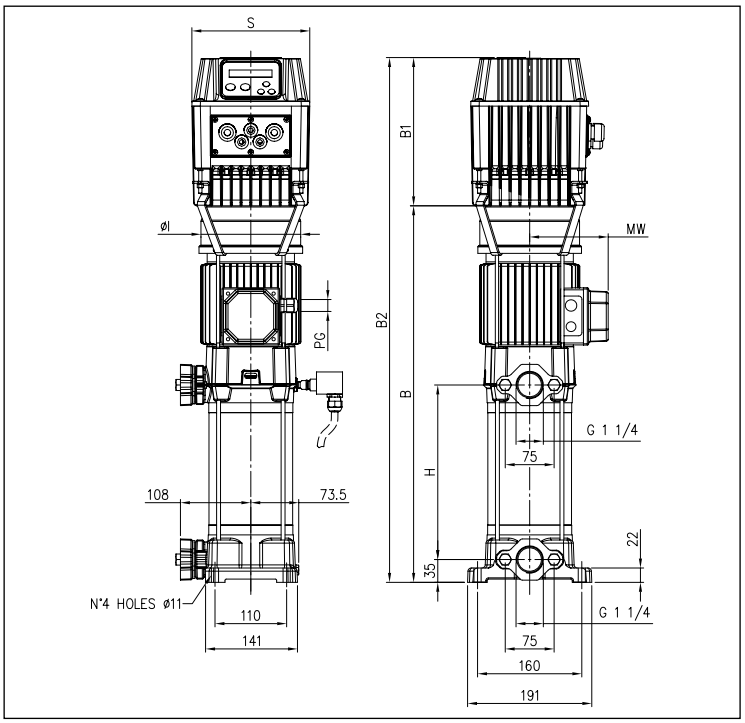
E-drive

Technical data see p. 76

MATERIALS

- Cast iron pump casing and motor bracket
- External casing in AISI 304
- Impeller and diffuser in PPE+PS reinforced with fibreglass
- Stages in PPE+PS reinforced with fibreglass/PTFE
- Shaft in AISI 416
- Mechanical seal in Ceramic/Carbon/NBR

DIMENSIONS



DIMENSIONS TABLE

Model	Dimensions [mm] B	B1	B2	S	H	ØI	MW	Weight [Kg] [1]	*
CVM/I A/10 EDT (EDM)	452	228	680	181	190	141	101	20.6	20.6
CVM/I A/12 EDT (EDM)	490	228	718	181	216	141	101	22.4	22.4
CVM/I A/15 EDT (EDM)	516	228	744	181	242	141	101	22.6	22.6
CVM/I B/15 EDT (EDM)	464	228	692	181	190	141	101	22.2	22.2
CVM/I B/20 EDT (EDM)	526	228	754	181	216	159	120.5	27.5	27.7
CVM/I B/23 EDT	552	228	780	181	242	159	120.5	27.7	28.3
CVM/I B/25 EDT	578	228	806	181	268	159	120.5	28.0	28.6

[1]= Three phase only
[2]= Single phase only
* Models with IE3 motor only

MULTIGO

VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

MULTIGO

IN-LINE MULTIGO

AISI 304 vertical multistage centrifugal electric pumps.

APPLICATIONS

- Boosting of domestic and community hydraulic plants
- Pumping liquids in places subject to flooding
- Supplying fountains
- Water games
- Sprinkling irrigation of small vegetable patches and gardens

TECHNICAL DETAILS

- Reliable
- Silent
- Equipped with motor cooled by the flow of pumping water
- Twin mechanical seal with interposed oil chamber containing the lubrication liquid that ensures long duration
- Equipped with 5 m of H07 RN-F power supply cable
- Also available in the in-line version (only for single phase version)

PUMP TECHNICAL DATA

- Maximum working pressure: 10 bar
- Maximum temperature of the liquid: 40°C
- Maximum suction depth: 6 m
- G1¼ suction and discharge connection
- MEI > 0.4

  For further information please see our Data Book on the web site www.ebaraeurope.com

MOTOR TECHNICAL DATA

- Asynchronous motor cooled via the pumped liquid
- Class of insulation F
- IP 68 protection degree
- 230V ±10% 50Hz single phase voltage,
  230V ± 10% 50 Hz three phase voltage (except MULTIGO 40/15)
  400V ±10% 50Hz three phase voltage
- Permanent capacitor inserted and thermo-amperometric protection with automatic rearm incorporated for the single phase motor
- Protection under user's responsibility for the three phase version

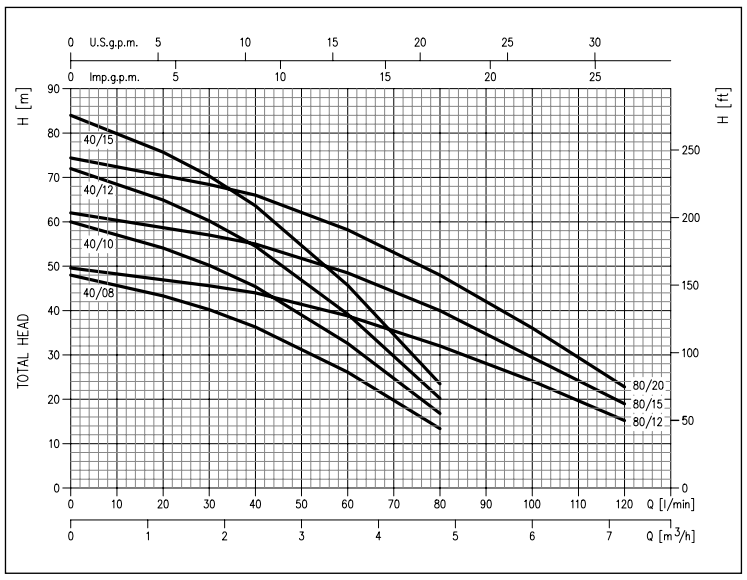
MATERIALS

- Pump casing, seal housing disc, external casing and motor cover in AISI 304
- Impeller and diffuser in PPE+PS reinforced with fibreglass
- Shaft in AISI 416
- Mechanical seal in Carbon/Ceramic/NBR

ACCESSORIES (On request)

- Electric panels
- Vessels
- Floats
- Pressure switches
- Presscomfort - Pressure regulator
- E-power - Variable speed control system
- E-*drive* - Frequency converter

PERFORMANCE CURVES (according to ISO 9906 Attachment A)



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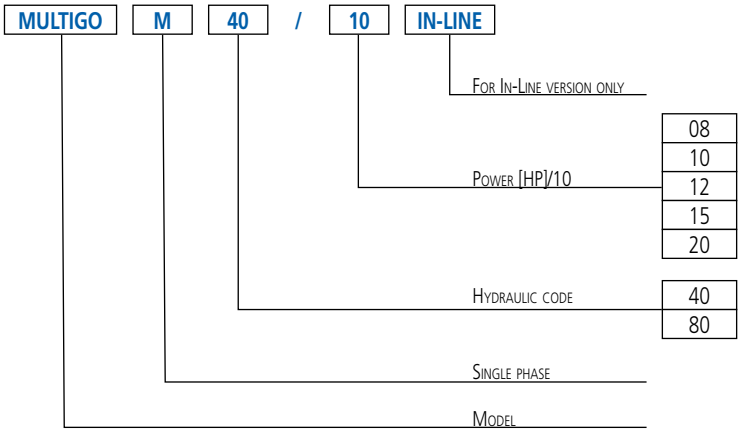


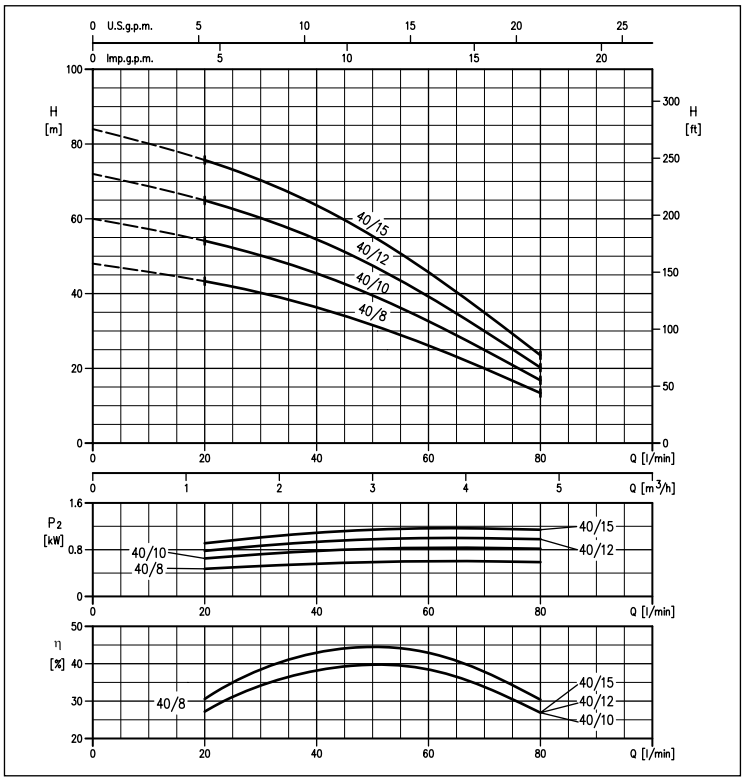
MULTIGO

VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

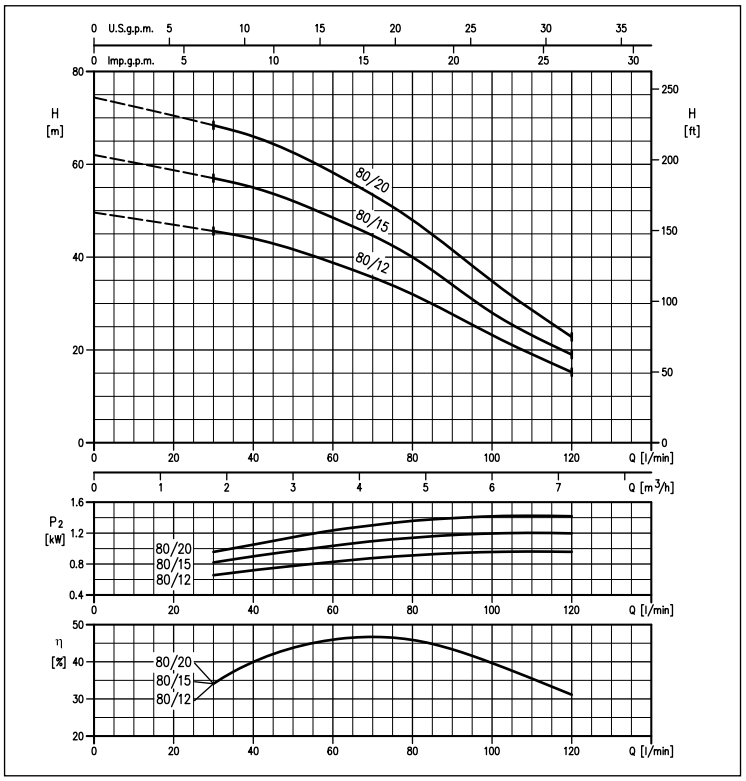
PERFORMANCE CURVES MULTIGO 40 series

(according to ISO 9906 Attachment A)



PERFORMANCE CURVES MULTIGO 80 series

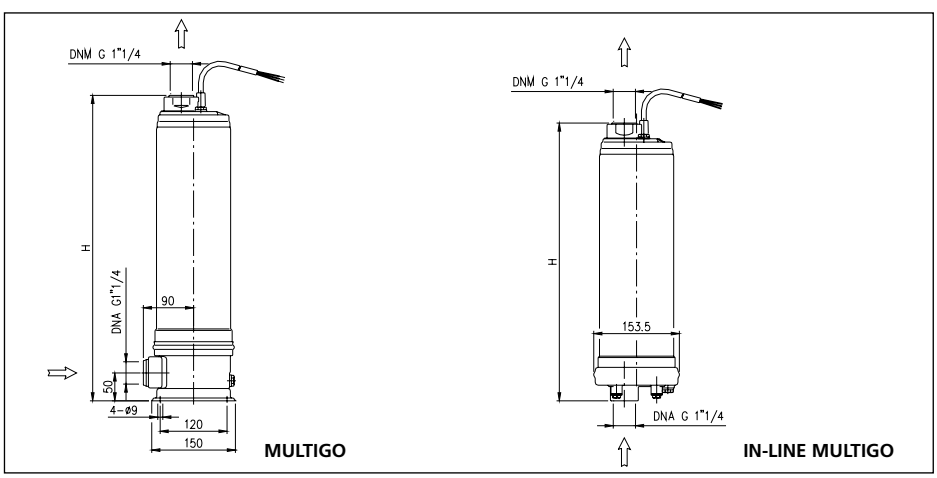
(according to ISO 9906 Attachment A)



PERFORMANCE CHART

Model		P2		Q = Flow Rate						
MULTIGO	MULTIGO IN-LINE	[HP]	[kW]	l/min	20	30	40	60	80	100	120
				m³/h	1.2	1.8	2.4	3.6	4.8	6	7.2
				H=Head [m]							
MULTIGO M40/08	MULTIGO 40/08	0.8	0.6		43.3	40.2	36.3	26.1	13.4	-	-
MULTIGO M40/10	MULTIGO 40/10	1	0.75		54.1	50.2	45.4	32.6	16.8	-	-
MULTIGO M40/12	MULTIGO 40/12	1.2	0.9		64.9	60.2	54.5	39.2	20.2	-	-
MULTIGO M40/15	MULTIGO 40/15	1.5	1.1		75.7	70.3	63.6	45.7	23.5	-	-
MULTIGO M80/12	MULTIGO 80/12	1.2	0.9		-	45.6	44.0	38.8	32.0	23.2	15.2
MULTIGO M80/15	MULTIGO 80/15	1.5	1.1		-	57.0	55.0	48.5	40.0	28.0	19.0
MULTIGO M80/20	-	2	1.5		-	68.4	66.0	58.2	48.0	34.8	22.8

DIMENSIONS TABLE



DIMENSIONS TABLE

Model	H [mm]		Weight [kg]	
	STANDARD VERSION	IN-LINE VERSION	[2]	[1]
MULTIGO 40/08	547	501	15.3	16.0
MULTIGO 40/10	573	527	16.5	17.0
MULTIGO 40/12	624	578	17.7	18.0
MULTIGO 40/15	650	604	18.8	18.7
MULTIGO 80/12	573	527	17.0	17.4
MULTIGO 80/15	598	552	18.2	18.2
MULTIGO 80/20	624	-	-	19.2

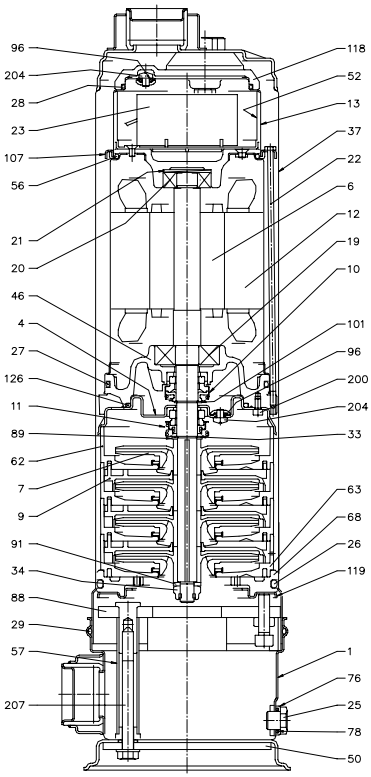
[1]= Three phase only
[2]= Single phase only

MULTIGO

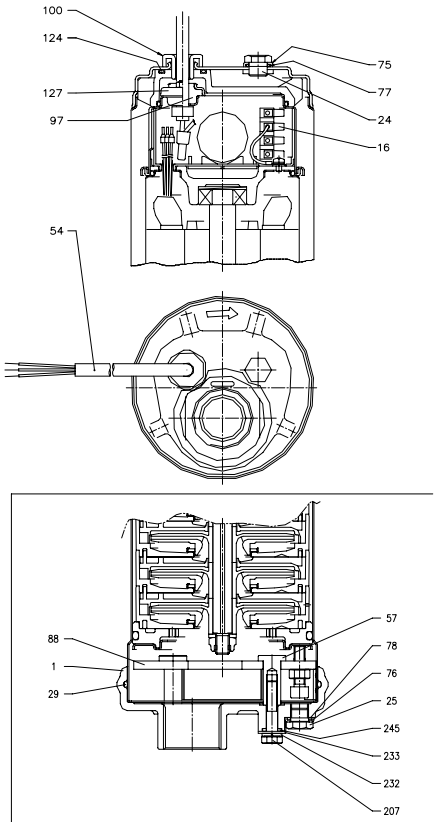
VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

SECTIONAL VIEW



STANDARD VERSION



IN-LINE VERSION

MATERIALS TABLE

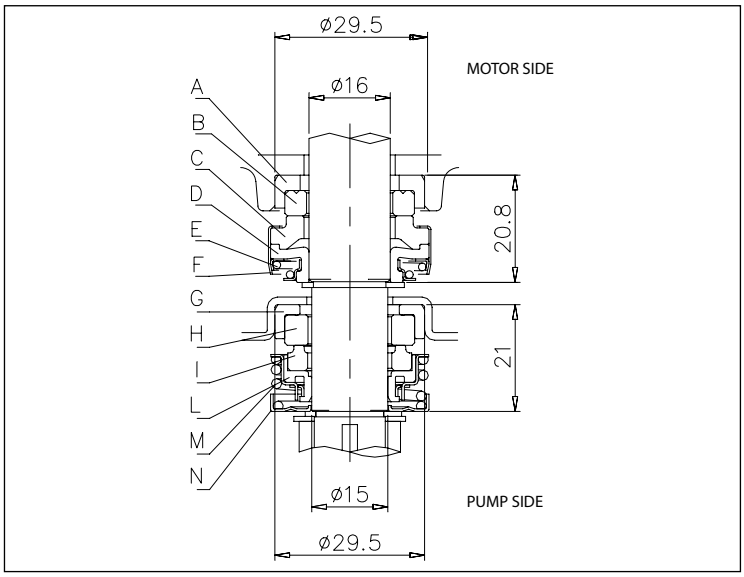
Ref.	Name	Material	Ref.	Name	Material
1	Pump body	EN 1.4301 (AISI 304)	56	O-Ring	NBR
4	Seal housing disc	EN 1.4301 (AISI 304)	57	Filter spacer	EN 1.4305 (AISI 303)
6	Shaft	EN 1.4057 (AISI 431)	62	Stage box	PPE+PS reinforced with fibreglass
7	Impeller	PPE+PS reinforced with fibreglass	63	Stage box with hole	PPE+PS reinforced with fibreglass
9	Diffuser	PPE+PS reinforced with fibreglass	68	Lower spacer	PPE+PS reinforced with fibreglass
10	Motor side mechanical seal	Carbon/Ceramic/NBR	75	Washer	EN 1.4301 (AISI 304)
11	Pump side mechanical seal	Carbon/Ceramic/NBR	76	Washer	EN 1.4301 (AISI 304)
12	Motor casing with stator	-	77	O-Ring	NBR
13	Motor cover	EN 1.4301 (AISI 304)	78	O-Ring	NBR
16	Terminal Box	-	88	Closing ring	EN 1.4301 (AISI 304)
19	Bearing (pump side)	-	89	Washer	EN 1.4301 (AISI 304)
20	Bearing (motor side)	-	91	Washer	EN 1.4301 (AISI 304)
21	Adjustment ring	Steel C70	96	O-Ring	NBR
22	Tie-rod	EN 1.4305 (AISI 303)	97	Cable gland	NBR
23	Capacitor (For single phase only)	-	100	Lock screw	EN 1.4305 (AISI 303)
24	Filler cap	EN 1.4305 (AISI 303)	101	Seeger ring	EN 1.4021 (AISI 420)
25	Drain plug	EN 1.4305 (AISI 303)	107	Closing ring	EN 1.4301 (AISI 304)
26	O-Ring	NBR	118	Upper spacer with hole	Brass
27	O-Ring	NBR	119	Flange for spacer	EN 1.4301 (AISI 304)
28	O-Ring	NBR	124	O-Ring	NBR
29	O-Ring	NBR	126	O-Ring	NBR
33	Seeger ring	EN 1.4301 (AISI 304)	127	Cable gland connector (power supply)	EN 1.4301 (AISI 304)
34	Impeller nut	EN 1.4301 (AISI 304)	200	Screw	Stainless steel A2 UNI 7323
37	Casing	EN 1.4301 (AISI 304)	204	Screw	Stainless steel A2 UNI 7323
46	Bearing holder support	Brass	207	Screw	Stainless steel A2 UNI 7323
50	Pump body support	EN 1.4301 (AISI 304)	232	Washer	Stainless steel A2 UNI 7323
52	Capacitor-holder box	PA66 reinforced with fibreglass	233	Washer	Stainless steel A2 UNI 7323
54	Power supply cable	-	245	O-Ring	NBR

MULTIGO

VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

MECHANICAL SEAL



MATERIALS TABLE

Ref.	Name	Material
A	Fixed gasket	NBR
B	Fixed sealing ring	Ceramic
C	Rotating sealing ring	Carbon
D	Rotating gasket	NBR
E	Spring	AISI 304
F	Structure/frame	AISI 304
G	Fixed gasket	NBR
H	Fixed sealing ring	Ceramic
I	Rotating sealing ring	Carbon
L	Rotating gasket	NBR
M	Spring	AISI 304
N	Structure/frame	AISI 304

ELECTRIC DATA TABLE

Model		P_2		Capacitor Single phase		P_1		Absorbed Current [A]		
Single phase 230V	Three phase 230V - 400V	[HP]	[kW]	µF	V_c	Single phase [kW]	Three phase [kW]	Single phase 230V	Three phase 230V	Three phase 400V
MULTIGO M40/08	MULTIGO 40/08	0.8	0.6	16	450	1	0.95	4.3		1.9
MULTIGO M40/10	MULTIGO 40/10	1	0.75	20	450	1.25	1.18	5.7		2.2
MULTIGO M40/12	MULTIGO 40/12	1.2	0.9	20	450	1.42	1.33	6.8		2.4
MULTIGO M40/15	MULTIGO 40/15	1.5	1.1	31.5	450	1.6	1.55	7.3	-	3.0
MULTIGO M80/12	MULTIGO 80/12	1.2	0.9	20	450	1.33	1.22	6.4		2.3
MULTIGO M80/15	MULTIGO 80/15	1.5	1.1	31.5	450	1.62	1.52	7.5		3.1
-	MULTIGO M80/20	2	1.5	-	-	-	1.9	-		3.5

NOISE DATA TABLE

Model		P_2		L_{pA} - dB(A)*
Single phase 230V	Three phase 230V - 400V	[HP]	[kW]	
MULTIGO M40/08	MULTIGO 40/08	0.8	0.6	58
MULTIGO M40/10	MULTIGO 40/10	1	0.75	
MULTIGO M40/12	MULTIGO 40/12	1.2	0.9	
MULTIGO M40/15	MULTIGO 40/15	1.5	1.1	
MULTIGO M80/12	MULTIGO 80/12	1.2	0.9	59
MULTIGO M80/15	MULTIGO 80/15	1.5	1.1	
-	MULTIGO M80/20	2	1.5	

* Average noise level measured at 1 m from the motor pump.
Tolerance ± 2.5 dB.

IDROGO

5" SUBMERSIBLE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

AISI 304 5" submersible multistage centrifugal electric pumps.

APPLICATIONS

- Pumping clean water from wells, cisterns and primary collection reservoirs
- Pressure boosting domestic plants
- Small-scale irrigation
- Washing vehicles
- General pressure increases

TECHNICAL DETAILS

- Equipped with twin mechanical seal with interposed oil chamber
- Supplied with 20 m of H07RN-F power supply cable (5 m for IDROGO 40/06 M model)
- Single-phase Version with float on request (version "A")
- Available in the 230V ±10% 50Hz three phase version
- Installation: in horizontal and vertical position

PUMP TECHNICAL DATA

- Maximum working pressure: 10 bar
- Maximum temperature of the liquid: 40°C
- Maximum immersion:20 m
- Maximum solid size passage: 2.5 mm
- G1¼ discharge connection

MOTOR TECHNICAL DATA

- 2 poles self-ventilated asynchronous motor cooled via the pumping liquid
- Class of insulation F
- IP 68 protection degree
- 230V ±10% 50Hz single phase voltage,
  230V ±10% 50Hz three phase voltage
  400V ±10% 50Hz three phase voltage
- Permanent capacitor inserted and thermal-amperometric protection with automatic rearm incorporated for the single phase motor
- Protection under user's responsibility for the three phase version

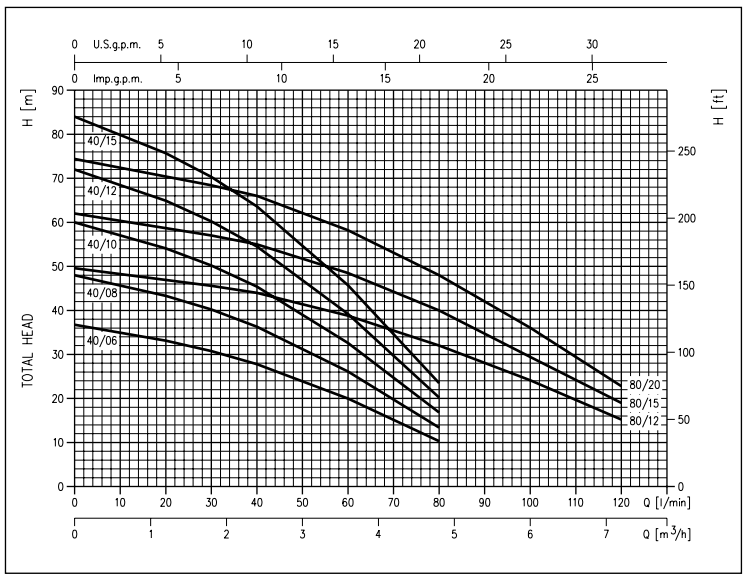
MATERIALS

- External casing, motor cover, seal housing disc, filter and closing ring in AISI 304
- Impeller, diffuser and spacer in PPE+PS reinforced with fibreglass
- Shaft in AISI 431
- Upper mechanical seal (motor side) in Carbon/Ceramic/NBR (pump side) and lower in SiC/Carbon/NBR

ACCESSORIES (On request)

- Electric panels

PERFORMANCE CURVES (according to ISO 9906 Attachment A)



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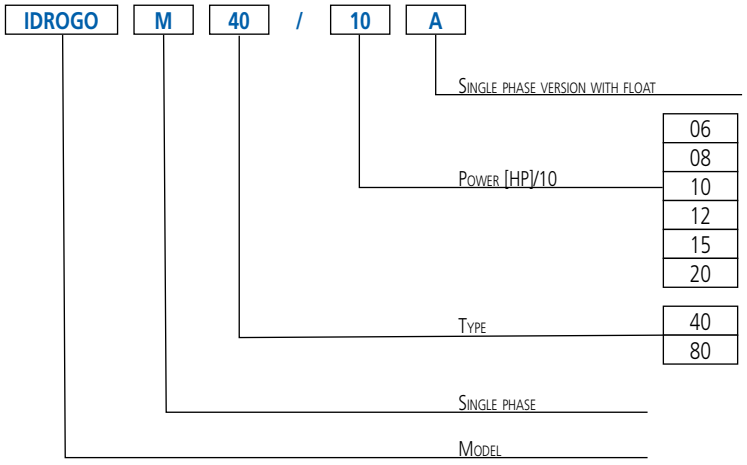


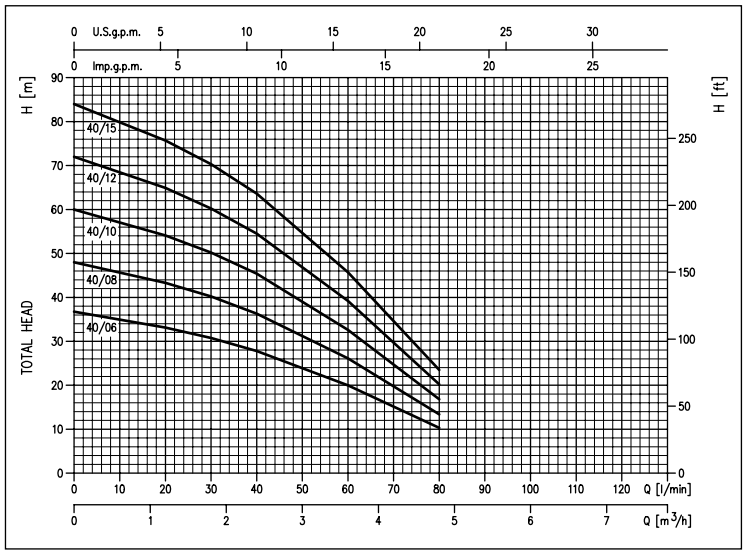
IDROGO

5" SUBMERSIBLE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

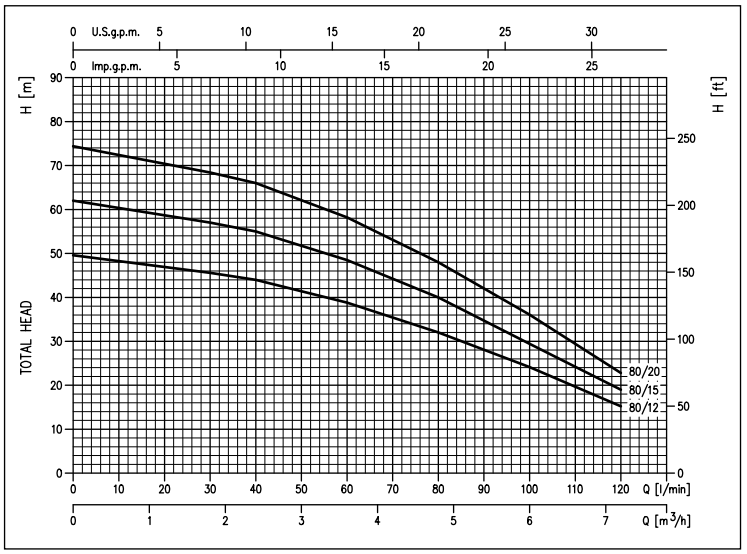
PERFORMANCE CURVES IDROGO 40 series

(according to ISO 9906 Annex A)-impeller diameter: 104 mm



PERFORMANCE CURVES IDROGO 80 series

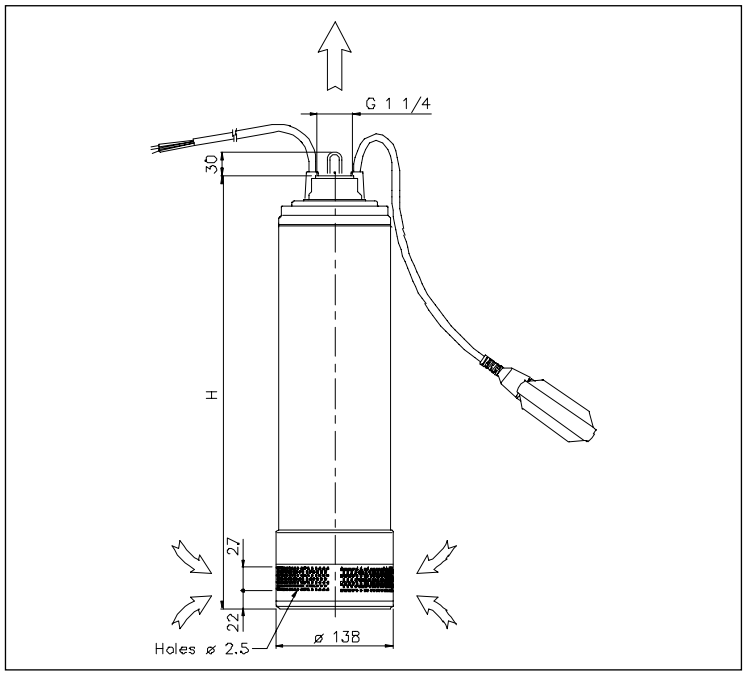
(according to ISO 9906 Annex A)-impeller diameter: 102 mm



PERFORMANCE CHART

Model		P2		Q = Flow Rate						
Single phase 230V	Three phase 230V - 400V	[HP]	[kW]	l/min	20	30	40	60	80	100	120
				m³/h	1.2	1.8	2.4	3.6	4.8	6	7.2
				H=Head [m]							
IDROGO M 40/06	-	0.6	0.44		33.1	30.8	27.8	20.0	10.3	-	-
IDROGO M 40/08	IDROGO 40/08	0.8	0.6		43.3	40.2	36.3	26.1	13.4	-	-
IDROGO M 40/10	IDROGO 40/10	1	0.75		54.1	50.2	45.4	32.6	16.8	-	-
IDROGO M 40/12	IDROGO 40/12	1.2	0.9		64.9	60.2	54.5	39.2	20.2	-	-
IDROGO M 40/15	IDROGO 40/15	1.5	1.1		75.7	70.3	63.6	45.7	23.5	-	-
IDROGO M 80/12	IDROGO 80/12	1.2	0.9		-	45.6	44.0	38.8	32.0	23.2	15.2
IDROGO M 80/15	IDROGO 80/15	1.5	1.1		-	57.0	55.0	48.5	40.0	28.0	19.0
-	IDROGO 80/20	2	1.5		-	68.4	66.0	58.2	48.0	34.8	22.8

DIMENSIONS



DIMENSIONS TABLE

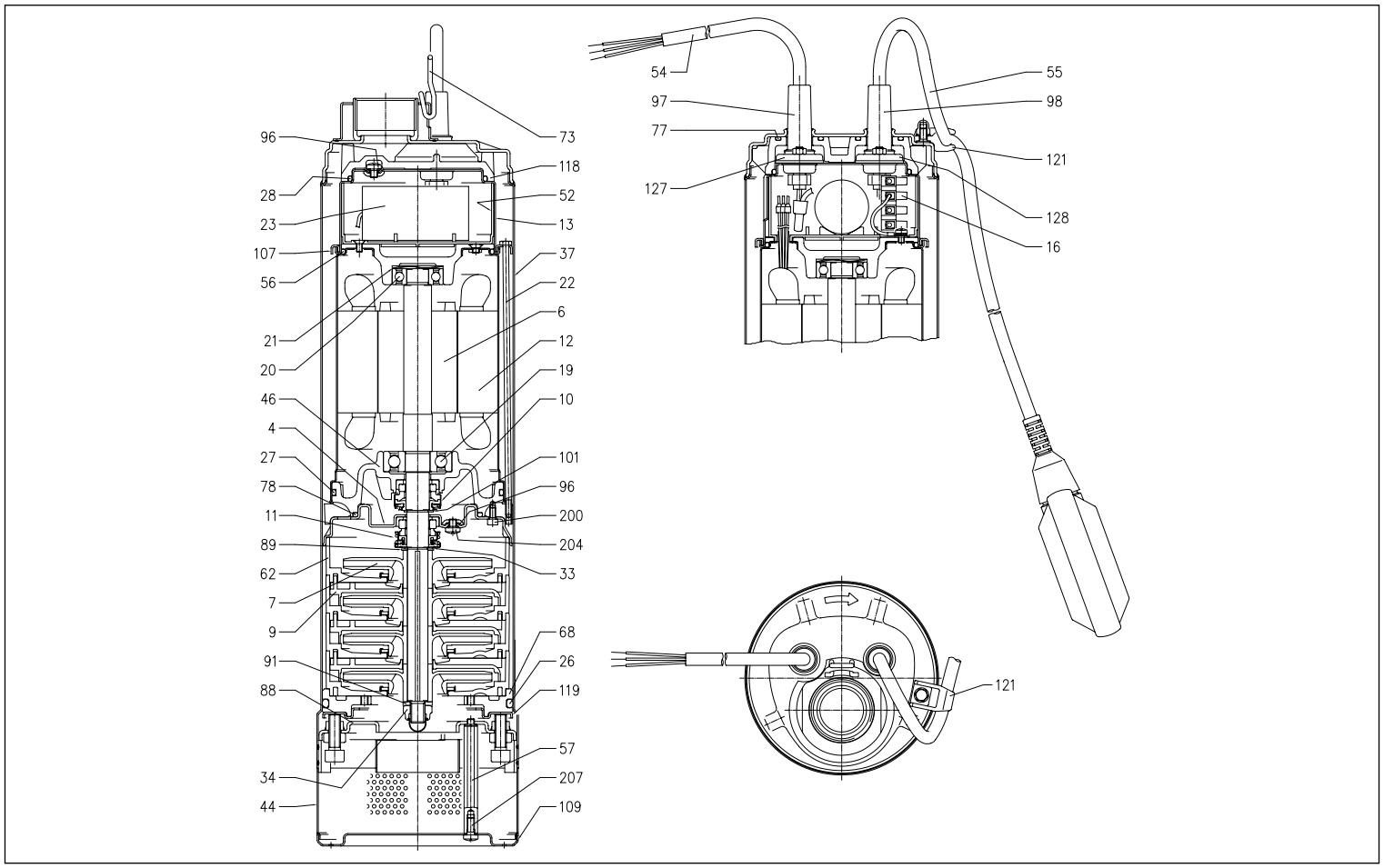
Model	H [mm]	Weight [kg]	
		Single phase	Three phase
IDROGO 40/06	513	13.0	-
IDROGO 40/08	513	14.6	14.8
IDROGO 40/10	539	16.0	16.1
IDROGO 40/12	590	17.2	17.4
IDROGO 40/15	616	18.3	18.3
IDROGO 80/12	540	16.5	16.4
IDROGO 80/15	564	17.7	17.4
IDROGO 80/20	590	-	18.0

IDROGO

5" SUBMERSIBLE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

SECTIONAL VIEW



MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
4	Seal housing disc	EN 1.4301 (AISI 304)	55	Float switch [2]	-
6	Shaft	EN 1.4057 (AISI 431)	56	O-Ring	NBR
7	Impeller	PPE+PS reinforced with fibreglass	57	Filter spacer	EN 1.4305 (AISI 303)
9	Diffuser	PPE+PS reinforced with fibreglass	62	Stage box	PPE+PS reinforced with fibreglass
10	Motor side mechanical seal	Carbon/Ceramic/NBR	68	Lower spacer	PPE+PS reinforced with fibreglass
11	Pump side mechanical seal	SiC/Carbon/NBR	73	Submersible hook	EN 1.4301 (AISI 304)
12	Motor case	-	77	O-Ring	NBR
13	Motor cover	EN 1.4301 (AISI 304)	78	O-Ring	NBR
16	Terminal Box	-	88	Fixing flange	EN 1.4301 (AISI 304)
19	Bearing (pump side)	-	89	Washer	EN 1.4301 (AISI 304)
20	Bearing (motor side)	-	91	Washer	EN 1.4301 (AISI 304)
21	Adjustment ring	Steel C70	96	O-Ring	NBR
22	Tie-rod	EN 1.4305 (AISI 303)	97	Cable gland (power supply)	NBR
23	Capacitor [1]	-	98	Cable gland (float switch) [2]	NBR
26	O-Ring	NBR	101	Seeger ring	EN 1.4021 (AISI 420)
27	O-Ring	NBR	107	Lock ring	EN 1.4301 (AISI 304)
28	O-Ring	NBR	109	Filter base	EN 1.4301 (AISI 304)
33	Seeger ring	EN 1.4301 (AISI 304)	118	Upper spacer	PPE+PS reinforced with fibreglass
34	Impeller nut	EN 1.4301 (AISI 304)	119	Flange for lower spacer	EN 1.4301 (AISI 304)
37	Casing	EN 1.4301 (AISI 304)	121	Support for float switch [2]	PPE+PS reinforced with fibreglass
44	Filter	EN 1.4301 (AISI 304)	127	Cable gland connector (power supply)	EN 1.4301 (AISI 304)
46	Bearing holder support	Brass	128	Cable gland connector (float)	EN 1.4301 (AISI 304)
52	Capacitor-holder box	PA66 reinforced with fibreglass	200	Screw	Stainless steel A2 UNI 7323
54	Power supply cable	-	204-207	Screw	Stainless steel A2 UNI 7323

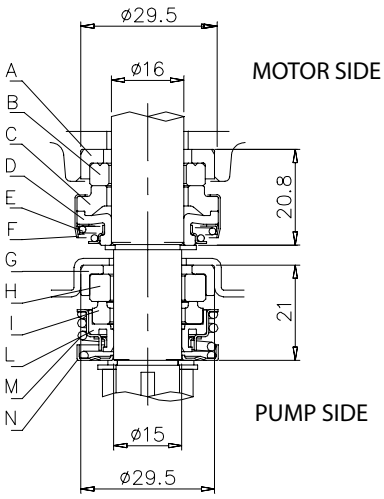
[1]= For single phase only
[2]= Single phase with float switch only

IDROGO

5" SUBMERSIBLE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

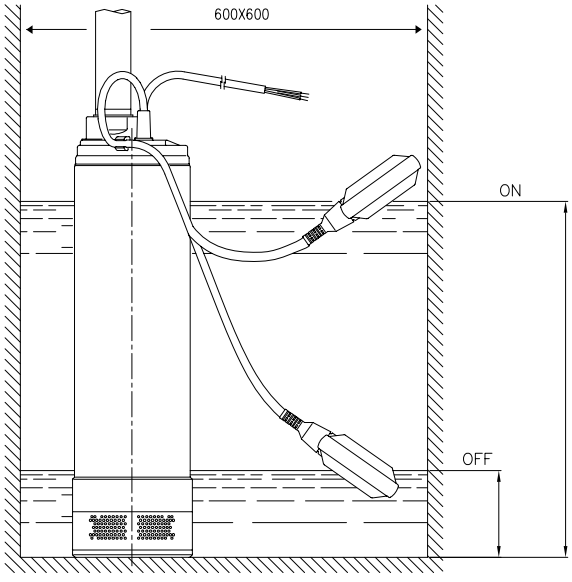
MECHANICAL SEAL



MATERIALS TABLE

Ref.	Name	Material
A	Fixed gasket	NBR
B	Fixed sealing ring	Ceramic
C	Rotating sealing ring	Carbon
D	Rotating gasket	NBR
E	Spring	AISI 304
F	Structure/frame	AISI 304
G	Fixed gasket	NBR
H	Fixed sealing ring	Silicon Carbide
I	Rotating sealing ring	Carbon
L	Rotating gasket	NBR
M	Spring	AISI 304
N	Structure/frame	AISI 304

INSTALLATION



INSTALLATION TABLE

Model	Dimensions [mm]	
	ON	OFF
IDROGO 40/06	560	180
IDROGO 40/08	560	180
IDROGO 40/10	590	190
IDROGO 40/12	660	220
IDROGO 40/15	730	240
IDROGO 80/12	590	190
IDROGO 80/15	640	210

ELECTRIC DATA TABLE

Model		P_2		Capacitor Single phase		P_1		Absorbed Current [A]		
Single phase 230V	Three phase 230V - 400V	[HP]	[kW]	µF	V_c	Single phase [kW]	Three phase [kW]	Single phase 230V	Three phase 230V	Three phase 400V
IDROGO M 40/06	-	0.6	0.44	16	450	0.82	-	3.8	-	-
IDROGO M 40/08	IDROGO 40/08	0.8	0.6	16	450	1	0.95	4.3	3.3	1.9
IDROGO M 40/10	IDROGO 40/10	1	0.75	20	450	1.25	1.18	5.7	3.8	2.2
IDROGO M 40/12	IDROGO 40/12	1.2	0.9	20	450	1.42	1.33	6.8	4.2	2.4
IDROGO M 40/15	IDROGO 40/15	1.5	1.1	31.5	450	1.6	1.55	7.3	5.2	3.0
IDROGO M 80/12	IDROGO 80/12	1.2	0.9	20	450	1.33	1.22	6.4	4.0	2.3
IDROGO M 80/15	IDROGO 80/15	1.5	1.1	31.5	450	1.62	1.52	7.5	5.4	3.1
-	IDROGO 80/20	2	1.5	-	-	-	1.9	-	6.1	3.5

1GP P

1GP P_DOMESTIC PRESSURE BOOSTING

Single phase centrifugal electric pumps assembled as a booster unit with vessel, pressure gauge, pressure switch, brass fitting and power supply cable.

APPLICATIONS

- Domestic pressure boosting
- Small-scale garden irrigation
- Washing vehicles
- Pumping clean water in general

TECHNICAL DETAILS

- Available in the following versions:
  - with cast iron self-primming electric pumps (AGA)
  - with AISI 304 stainless steel self-primming electric pumps (JEX)
  - with cast iron dual impeller centrifugal electric pumps (CDA)
  - with horizontal multistage electric pumps (COMPACT)

PERFORMANCE CHART

Model	P_2		Performance	
	[HP]	[kW]	Q [m³/h]	H [m]
1GP AGA 0.75 M - P	0.75	0.55	0.3÷1.2÷3.0	45.0 ÷ 37.9 ÷ 18.0
1GP AGA 1.00 M - P	1	0.75	0.3÷1.2÷3.0	47.5÷35.7÷23.0
1GP AGA/A 1.50 M - P	1.5	1.1	0.6 ÷ 2.7 ÷ 6.0	48.0 ÷ 38.6 ÷ 27.0
1GP CDA 1.00 M - P	1	0.75	1.2÷3.0÷5.4	39.5÷35.2÷21.0
1GP CDA/A 1.50 M - P	1.5	1.1	1.2 ÷ 3.0 ÷ 6.0	50.8 ÷ 47.1 ÷ 27.5
1GP JEXM/A 80 - P	0.8	0.6	1.2÷3.0÷4.5	33.0÷23.5÷18.0
1GP JEXM/A 100 - P	1	0.75	1.2÷3.0÷4.5	37.0 ÷ 27.0 ÷ 21.0
1GP JEXM/A 120 - P	1.2	0.9	1.2÷3.0÷4.5	41.0÷30.5÷24.5
1GP COMPACT/A AM/6 - P	0.6	0.44	1.2÷3.0÷4.8	31.0÷21.8÷9.0
1GP COMPACT/A AM/8 - P	0.8	0.6	1.2÷3.0÷4.8	40.0÷27.4÷10.5
1GP COMPACT AM/10 - P	1	0.75	1.2÷3.0÷4.8	57.0÷43.4÷20.0

TECHNICAL DATA TABLE

Model	P_2		Absorbed current [A] Single phase 230V	Connection suction	Connection discharge
	[HP]	[kW]			
1GP AGA 0.75 M - P	0.75	0.55	4	G1	G1
1GP AGA 1.00 M - P	1	0.75	5.5	G1	G1
1GP AGA/A 1.50 M - P	1.5	1.1	8.1	G1½	G1
1GP CDA 1.00 M - P	1	0.75	6.1	G1	G1
1GP CDA/A 1.50 M - P	1.5	1.1	8.6	G1¼	G1
1GP JEXM/A 80 - P	0.8	0.6	4.7	G1¼	G1
1GP JEXM/A 100 - P	1	0.75	6.4	G1¼	G1
1GP JEXM/A 120 - P	1.2	0.9	6.7	G1¼	G1
1GP COMPACT/A AM/6 - P	0.6	0.44	3	G1	G1
1GP COMPACT/A AM/8 - P	0.8	0.6	4	G1	G1
1GP COMPACT AM/10 - P	1	0.75	6	G1	G1

For more information, consult this catalogue (pages relative to the electric pumps indicated in the table)

1GP PRESSCOMFORT

1GP PRESSCOMFORT_DOMESTIC PRESSURE BOOSTING

Units with one electric pump with control unit.

PRESSCOMFORT is an automatic electronic appliance, destined to regulate functioning of the electric pumps, without using booster reservoirs. This unit manages the automatic start and stop of the pump when opening or closing any tap or valve of the installation. When the pump starts, it keeps running while it exits any tap opened in the system, giving the network the required flow rate.
In there is no suction air, the pump stop automatically.
PRESSCOMFORT allows:
- manual restore (RESET key)
- automatic restore after 1, 6, 12 or 24 hours.

If on suction the water returns to a pressure exceeding the fixed value for pump start-up, PRESSCOMFORT is restored automatically.

APPLICATIONS

- Domestic pressure boosting
- Small-scale garden irrigation
- Washing vehicles
- Pumping clean water in general

TECHNICAL DETAILS

- Available in the following versions:
  - with cast iron self-priming electric pump (AGA 1.00 M)
  - with horizontal multistage electric pumps (COMPACT)

PERFORMANCE CHART

Model	P_2		Performance	
	[HP]	[kW]	Q [m³/h]	H [m]
1GP AGA 1.00M+PRESSCOMFORT	1	0.75	0.3÷1.2÷3.0	47.5÷35.7÷23.0
1GP COMPACT/A AM/6+PRESSCOMFORT	0.6	0.44	1.2÷3.0÷4.8	31.0÷21.8÷9.0
1GP COMPACT/A AM/8+PRESSCOMFORT	0.8	0.6	1.2÷3.0÷4.8	40.0÷27.4÷10.5
1GP COMPACT/A AM/10+PRESSCOMFORT	1	0.75	1.2÷3.0÷4.8	57.0÷43.4÷20.0

TECHNICAL DATA TABLE

Model	P_2		Absorbed current [A] Single phase 230V	Connection suction	Connection discharge
	[HP]	[kW]			
1GP AGA 1.00M+PRESSCOMFORT	1	0.75	5.5	G1	G1
1GP COMPACT/A AM/6+PRESSCOMFORT	0.6	0.44	3	G1	G1
1GP COMPACT/A AM/8+PRESSCOMFORT	0.8	0.6	4	G1	G1
1GP COMPACT/A AM/10+PRESSCOMFORT	1	0.75	6	G1	G1

For further information, consult this catalogue (pages relative to the electric pumps indicated in the table)

1GP H

1GP H_DOMESTIC PRESSURE BOOSTING

Booster units with single phase electric pumps complete with pressure switch, pressure gauge, brass fitting, flexible pipe, expansion vessel and power supply cable.

APPLICATIONS

- Domestic pressure boosting
- Small-scale garden irrigation
- Washing vehicles
- Pumping clean water in general

TECHNICAL DETAILS

- Available in the following versions:
  - with cast iron self-primming electric pumps (AGA)
  - with steel self-primming electric pumps (JEX)

PERFORMANCE CHART

Model	P_2		Performance	
	[HP]	[kW]	Q [m³/h]	H [m]
1GP AGA 0.75 M - 24H	0.75	0.55	0.3÷1.2÷3.0	45.0 ÷ 37.9 ÷ 18.0
1GP AGA 1.00 M - 24H	1	0.75	0.3÷1.2÷3.0	47.5÷35.7÷23.0
1GP AGA/A 1.50 M - 24H	1.5	1.1	0.6 ÷ 2.7 ÷ 6.0	48.0 ÷ 38.6 ÷ 27.0
1GP JEXM/A 80 - 24H	0.8	0.6	1.2÷3.0÷4.5	33.0÷23.5÷18.0
1GP JEXM/A 100 - 24H	1	0.75	1.2÷3.0÷4.5	37.0 ÷ 27.0 ÷ 21.0
1GP JEXM/A 120 - 24H	1.2	0.9	1.2÷3.0÷4.5	41.0÷30.5÷24.5
1GP JEXM/A 150 - 24H	1.5	1.1	1.2÷3.0÷4.7	49.0÷37.0÷29.5

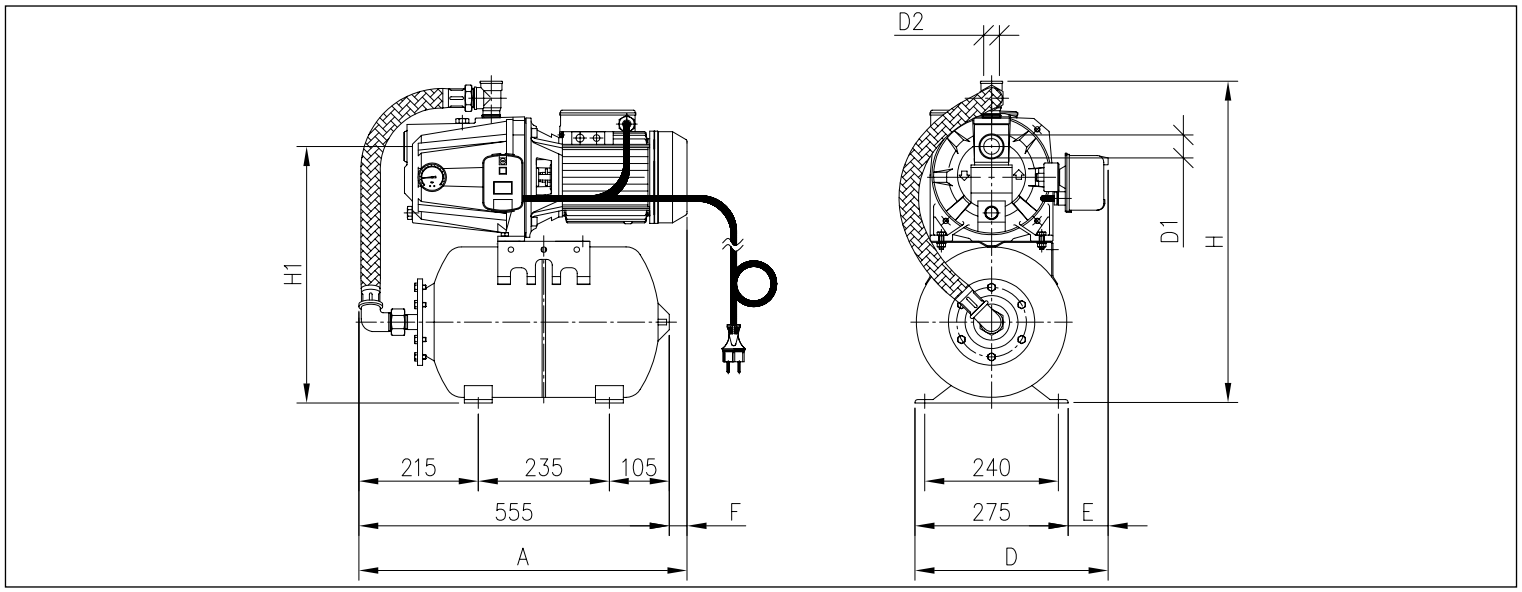
TECHNICAL DATA TABLE

Model	P_2		Absorbed current [A] Single phase 230V	Connection suction	Connection discharge
	[HP]	[kW]			
1GP AGA 0.75 M - 24H	0.75	0.55	4	G1	G1
1GP AGA 1.00 M - 24H	1	0.75	5.5	G1	G1
1GP AGA/A 1.50 M - 24H	1.5	1.1	8.1	G1½	G1
1GP JEXM/A 80 - 24H	0.8	0.6	4.7	G1¼	G1
1GP JEXM/A 100 - 24H	1	0.75	6.4	G1¼	G1
1GP JEXM/A 120 - 24H	1.2	0.9	6.7	G1¼	G1
1GP JEXM/A 150 - 24H	1.5	1.1	7.6	G1¼	G1

For more information, consult this catalogue (pages relative to the electric pumps indicated in the table)

1GP H_DOMESTIC PRESSURE BOOSTING

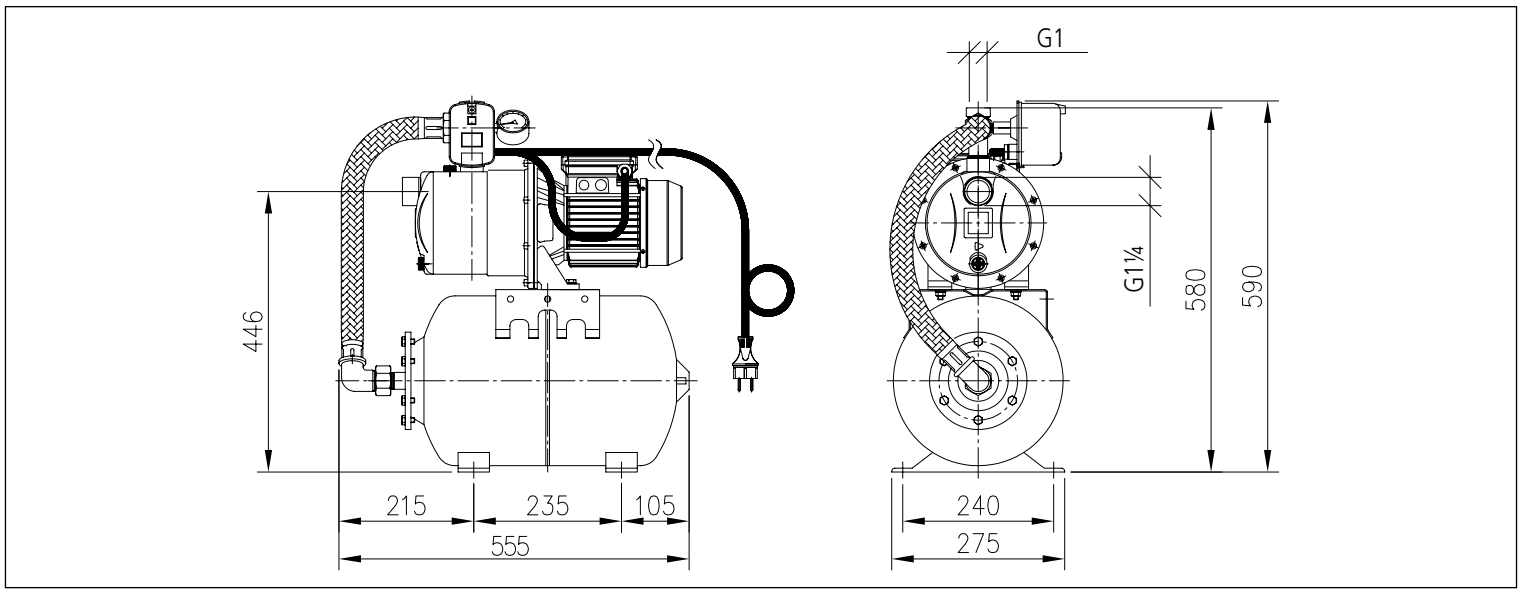
1GP H AGAM DIMENSIONS



DIMENSIONS TABLE

Model	Dimensions [mm]								Weight [kg]
	A	D	E	F	H	H1	D_1	D_2	
1GP AGA 0.75 M - 24H	555	330	55	-	540	442	G1	G1	20.0
1GP AGA 1.00 M - 24H	555	330	55	-	540	442	G1	G1	21.0
1GP AGA/A 1.50 M - 24H	575	350	75	20	575	460	G1½	G1	33.0

1GP H JEXM DIMENSIONS



WEIGHT TABLE

Model	Weight [kg]
1GP JEXM/A 80 - 24H	17.5
1GP JEXM/A 100 - 24H	17.5
1GP JEXM/A 120 - 24H	18.5
1GP JEXM/A 150 - 24H	21.0

1GPE E-power

1GPE E-POWER_DOMESTIC PRESSURE BOOSTING

Units with one electric pump with inverter and water passage control unit. The E-power electronic device for the control of the electric pumps is based on inverter technology, it controls the start-up and stop of the electric pump and modulates motor rev. depending on the water withdrawal from the plant.

APPLICATIONS

- Domestic pressure boosting
- General pressure increases
- Small-scale garden irrigation
- Washing vehicles
- Pumping clean water in general

TECHNICAL DETAILS

- Available in the following versions:
  - with horizontal multistage electric pumps equipped with body and support in cast iron, impellers and nozzle in PPE+PS reinforced with fibreglass (COMPACT, see p. 38)
  - with horizontal multistage electric pumps equipped with body, impellers and stages in AISI 304 stainless steel (MATRIX, see p. 42)

PERFORMANCE CHART

Model	P_2		Performance	
	[HP]	[kW]	Q [m³/h]	H [m]
1GPE COMPACT/IA/10I EPW OT	1	0.75	1.2÷3.0÷4.8	56.5÷43.5÷20.0
1GPE COMPACT/I A/12I EPW OT	1.2	0.9	1.2÷3.0÷4.8	67.5÷52.5÷24.0
1GPE COMPACT/I A/15I EPW OT	1.5	1.1	1.2÷3.0÷4.8	79.0÷62.5÷28.0
1GPE COMPACT/I B/12I EPW OT	1.2	0.9	1.8÷3.6÷7.2	47.5÷41.5÷18.0
1GPE COMPACT/I B/15I EPW OT	1.5	1.1	1.8÷3.6÷7.2	58.0÷51.5÷22.0
1GPE MATRIX 3-5T/0.75I EPW OT	1	0.75	1.2÷2.7÷4.8	52.5÷42.5÷20.0
1GPE MATRIX 3-6T/0.9I EPW OT	1.2	0.9	1.2÷2.7÷4.8	62.5÷51.0÷24.0
1GPE MATRIX 3-6T/1.3I EPW OT	1.8	1.3	1.2÷2.7÷4.8	73.0÷59.5÷28.0
1GPE MATRIX 5-4T/0.9I EPW OT	1.2	0.9	1.8÷4.8÷7.8	43.0÷34.7÷17.6
1GPE MATRIX 5-5T/1.3I EPW OT	1.8	1.3	1.8÷4.8÷7.8	54.0÷43.5÷22.0
1GPE MATRIX 5-6T/1.3I EPW OT	1.8	1.3	1.8÷4.8÷7.8	64.5÷52.0÷26.4

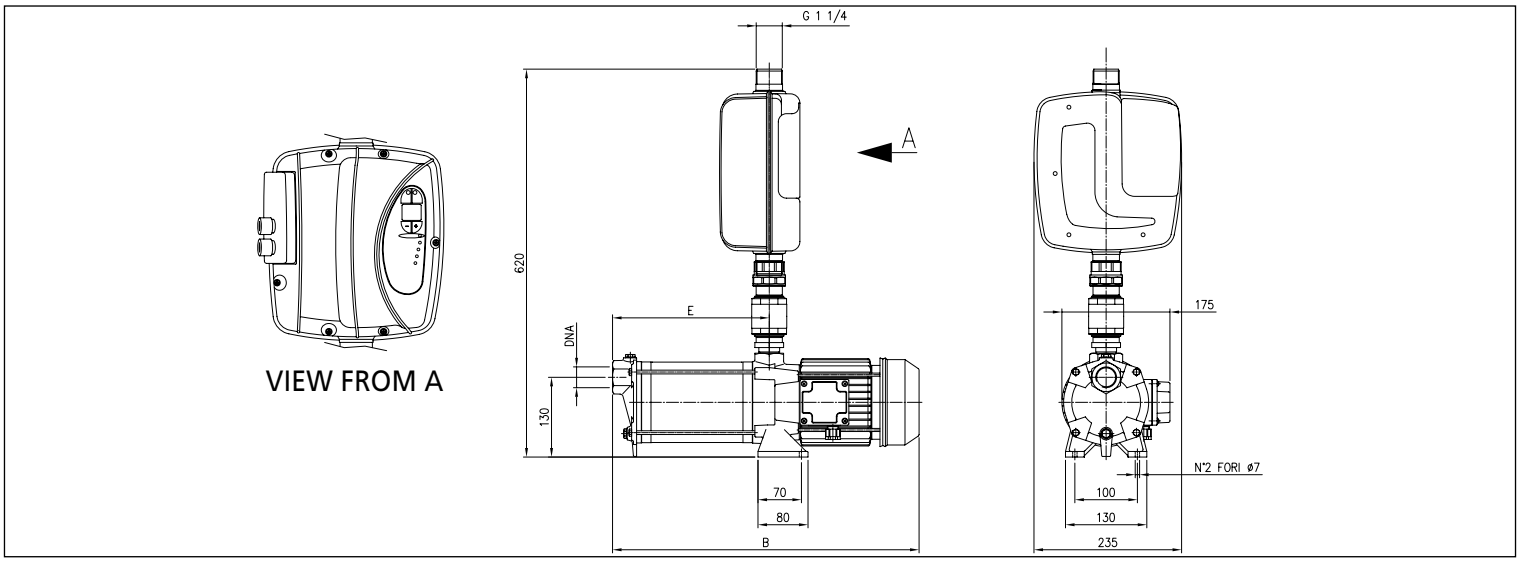
TECHNICAL DATA TABLE

Model	P_2		Absorbed current [A] Single phase 230V	Connection suction	Connection discharge
	[HP]	[kW]			
1GPE COMPACT/IA/10I EPW OT	1	0.75	6	G1	G1¼
1GPE COMPACT/I A/12I EPW OT	1.2	0.9	6.2	G1	G1¼
1GPE COMPACT/I A/15I EPW OT	1.5	1.1	7.3	G1	G1¼
1GPE COMPACT/I B/12I EPW OT	1.2	0.9	5.8	G1¼	G1¼
1GPE COMPACT/I B/15I EPW OT	1.5	1.1	7.3	G1¼	G1¼
1GPE MATRIX 3-5T/0.75I EPW OT	1	0.75	5.4	G1	G1¼
1GPE MATRIX 3-6T/0.9I EPW OT	1.2	0.9	5.7	G1	G1¼
1GPE MATRIX 3-6T/1.3I EPW OT	1.8	1.3	7.8	G1	G1¼
1GPE MATRIX 5-4T/0.9I EPW OT	1.2	0.9	5.7	G1¼	G1¼
1GPE MATRIX 5-5T/1.3I EPW OT	1.8	1.3	7.8	G1¼	G1¼
1GPE MATRIX 5-6T/1.3I EPW OT	1.8	1.3	7.8	G1¼	G1¼

For more information, consult this catalogue (pages relative to the electric pumps indicated in the table)

1GPE E-POWER_DOMESTIC PRESSURE BOOSTING

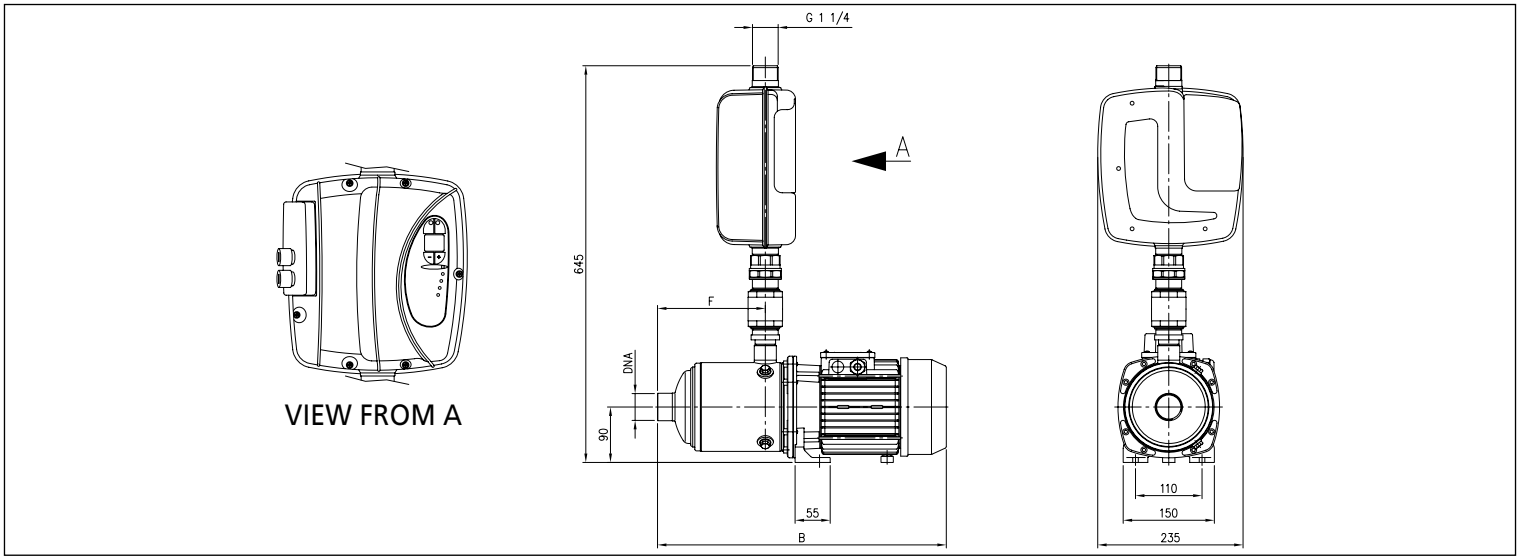
1GPE COMPACT E-POWER DIMENSIONS



DIMENSIONS TABLE

Model	Dimensions [mm] A	D	E	Weight [Kg]
1GPE COMPACT/IA/10I EPW OT	426	198.5	G 1	18.2
1GPE COMPACT/I A/12I EPW OT	464	224.5	G 1	20.0
1GPE COMPACT/I A/15I EPW OT	490	250.5	G 1	20.4
1GPE COMPACT/I B/12I EPW OT	412	172.5	G 1 1/4	19.4
1GPE COMPACT/I B/15I EPW OT	438	198.5	G 1 1/4	19.6

1GPE MATRIX E-POWER DIMENSIONS



DIMENSIONS TABLE

Model	Dimensions [mm] A	D	E	Weight [Kg]
1GPE MATRIX 3-5T/0.75I EPW OT	408	151	G 1	16.1
1GPE MATRIX 3-6T/0.9I EPW OT	444	175	G 1	17.3
1GPE MATRIX 3-6T/1.3I EPW OT	493	199	G 1	21.6
1GPE MATRIX 5-4T/0.9I EPW OT	396	127	G 1 1/4	16.1
1GPE MATRIX 5-5T/1.3I EPW OT	470	151	G 1 1/4	20.4
1GPE MATRIX 5-6T/1.3I EPW OT	494	175	G 1 1/4	20.8

1EP

ELECTRICAL PANELS FOR SUBMERSIBLE AND SURFACE ELECTRIC PUMPS

Electrical protection and control panel for one electric pump. Manual or automatic operation through pressure switches or floats. The device is fitted with two clamps. The dry running protection is ensured by the pressure switch P MIN. or by the float switch (the intervention stops the electric pump and signals the event through remote contacts and lights). The panel protects the motor against overload and phase failure. Any protection devices that intervene are signalled on the panel itself and remotely through clean contacts. The protection device against overload and phase failure resets automatically three times, and manually after the fouth intervention (any interventions, from 1 to 3, are cancelled one hour after the last intervention).

TECHNICAL DETAILS

- P.MIN = Operation against dry running (controlled through a minimum level float or pressure switch) with automatic reset once the water returns
- PR1 = Electropump n° 1 start ans stop control
- Motor protection against overload with automatic reset for three times and manual reset for the fourth time
- Motor line protection against short-circuits with fuses for motor start-up
- Transformer and auxiliary circuit protection with fuses
- Remote signalling, through NC-NA clean contact, of the protection devices that intervene

TECHNICAL DATA

- Power supply 230V + 10-15% 50/60 Hz (single phase)
  230V + 10-15% 50/60 Hz (three phase)
- Temperature: from -10°C to +40°C
- Protection degree: IP55
- Reference standards: EN 60204-1, EN 60439-1, EN 61000-6-3, EN 61000-6-1 (for civil environments)

ELECTRIC DATA TABLE

Model Single phase 230V +10-15% - 50Hz	[HP]	[kW]	Nominal curr. [A]	Protection range [A]
1EP 0.37-2.2 M UA	0.55 ÷ 3	0.37 ÷ 2.2	16	3.2 ÷ 16

Electric panels without capacitor. For connection with submersible pump please contact our sales network.

Model Three phase 400V +10-15% - 50Hz	[HP]	[kW]	Nominal curr. [A]	Protection range [A]
1EP 2.2 T	0.55 ÷ 3	0.37 ÷ 2.2	6	3.2 ÷ 16
1EP 7.5 T	4 ÷ 10	3 ÷ 7.5	16	3.2 ÷ 16
1EP 11 SD UA	15	10	25	9 ÷ 15
1EP 15 SD UA	20	15	31	12 ÷ 18
1EP 18.5 SD UA	25	18.5	36	16 ÷ 24
1EP 22 SD UA	30	22	50	23 ÷ 32
1EP 30 SD UA	40	30	62	30 ÷ 40
1EP 37 SD UA	50	37	77	37 ÷ 50

1EPBH

ELECTRIC PANELS FOR SUBMERSIBLE AND SURFACE ELECTRIC PUMPS

Protection and control panels for a submersible or surface electric pump with direct start-up. The control panel can manually and automatically control an electric pump. In the automatic function, the electric pump is controlled by pressure switch, the float or signals that come from the electric probes or from the floats.

TECHNICAL DETAILS

- Protection against dry running (control using an electric probe) with automatic reset and water return
- Reservoir filling level control with two electric probes or floats
- Reservoir emtying level control with two electric probes or floats
- Cosφ module, optional for controlling against dry running without the use of the electric probes
- Motor protection against overloads and an automatic reset phase for three interventions, manual at the fourth
- Pump protection against excessive start-ups
- Overload and board protection, against short circuits, with fuses
- Remote signalling, through NC-NA clean contact, of the protection devices that intervene
- Clamps for connecting any single phase motor starter capacitor
- Clamps for connecting a pressure switch
- Clamps for connecting an alarm float

TECHNICAL DATA

- Power supply 230V + 10-15% 50/60 Hz (single phase)
  400V +10-15% 50/60 Hz (three phase + N)
- Temperature: from -10°C to +40°C
- IP55 protection degree
- Reference standards: EN 60204-1, EN 60439-1, EN 61000-6-2, EN 61000-6-4 (for domestic and light industry application)

ELECTRIC DATA TABLE THREE PHASE 4" SINGLE PHASE SUBMERSIBLE MOTORS

Model Single phase 230V +10-15% - 50Hz	[HP]	[kW]	[A] max [OY]	[A] max [WY]	Recommended capacitor µF [OY]	Recommended capacitor µF [WY]	[V]
1EPBH 0.37 M	0.5	0.37	3.6	4	20	16	450
1EPBH 0.55 M	0.75	0.55	4.5	5.9	25	20	450
1EPBH 0.75 M	1	0.75	6	7.3	35	35	450
1EPBH 1.1 M	1.5	1.1	8.2	8.6	40	40	450
1EPBH 1.5 M	2	1.5	11	10.4	60	50	450
1EPBH 2.2 M	3	2.2	14.8	15.3	80	70	450

Electrical panels without capacitor

ELECTRIC DATA TABLE THREE PHASE 4" SUBMERSIBLE MOTORS

Model Three phase 400V +10-15% - 50Hz	[HP]	[kW]	[A] max [OY]	[A] max [WY]
1EPBH 0.37÷1.1 T	0.5÷1.5	0.37÷1.1	1.6÷3.4	1.03÷2.8
1EPBH 1.5 T	2	1.5	4.6	3.9
1EPBH 2.2 T	3	2.2	6.2	5.5
1EPBH 3 T	4	3	8	7.5
1EPBH 4 T	5.5	4	10.2	9.9
1EPBH 5.5 T	7.5	5.5	14.4	12.6
1EPBH 7.5 T	10	7.5	19.5	17.1

1EPBH

ELECTRIC PANELS FOR SUBMERSIBLE AND SURFACE ELECTRIC PUMPS

ELECTRIC DATA TABLE THREE PHASE 6" SUBMERSIBLE MOTORS

Model Three phase 400V +10-15% - 50Hz	[HP]	[kW]	[A] max [OY]	[A] max [WY]
1EPBH 4 T	5.5	4	8.9	9.3
1EPBH 5.5 T	7.5	5.5	12.4	12.5
1EPBH 7.5 T	10	7.5	17.2	16
1EPBH 9.2÷11 T AVSE 2E*	12.5÷15	9.2÷11	22÷23.9	20.7÷23.3
1EPBH 15 T AVSE 2E*	20	15	31.4	31.3
1EPBH 18.5 T AVSE 2E*	25	18.5	41.5	38.5
1EPBH 22 T AVSE 2E*	30	22	46.5	45.3
1EPBH 30 T AVSE 2E*	40	30	63	63.5
1EPBH 37 T AVSE 2E*	50	37	79.2	73
1EPBH 45 T AVSE 2E*	60	45	-	89.5

*= Start with -2 isolators

ELECTRIC DATA TABLE THREE PHASE 8" SUBMERSIBLE MOTORS

Model Three phase 400V +10-15% - 50Hz	[HP]	[kW]	[A] max [WY]
1EPBH 30 T AVSE 2E*	40	30	61
1EPBH 37 T AVSE 2E*	50	37	74
1EPBH 45 T AVSE 2E*	60	45	89
1EPBH 55 T AVSE 2E*	75	55	108
1EPBH 75 T AVSE 2E*	100	75	145
1EPBH 93 T AVSE 2E*	125	93	190
1EPBH 110 T AVSE 2E*	150	110	222

*= Start with -2 isolators

E-*drive*

FREQUENCY INVERTER FOR THE CONTROL OF ELECTRIC PUMPS

E-*drive* is a device for the control and protection of pumping systems based on frequency variations in the power supply of the pump.
E-*drive* can be connected to any pump on the market, it manages operation to maintain set physical quantities constant (pressure, flow or temperature of fluid or more) depending on the conditions of use. In this way the pump is operated only as and when needed without wasting energy and as such extending its life.

APPLICATIONS

- Domestic and industrial water supply
- Irrigation
- Heating and air conditioning
- Filtering and pressure washing

TECHNICAL DETAILS

- Energy and financial savings
- Easy system installation and at a lower cost
- Longer system life
- Increased reliability

TECHNICAL DATA

- Power supply frequency: 50-60 Hz (+/-2%)
- Max working ambient temperature under a nominal load: 40°C (104 °F)
- Max altitude under a nominal load: 1000 m
- Protection degree: IP55 (NEMA 4)
- Configurable digital outputs NO or NC:
  1. running motor signal
  2. alarm
  3. pump control DOL 1
  4. pump control DOL 2
- Analogue inputs, (10 or 15 Vdc):
  1. 4-20 mA
  2. 4-20 mA
  3. 4-20 mA/0-10 Vdc (can be set)
  4. 4-20 mA/0-10 Vdc (can be set)
- 4 Digital inputs, can be set to NO or NC, to start and stop the motor
- Serial RS485

ELECTRIC DATA TABLE

Model	V_{in} +/- 15% [V]	Max. V_{out} [V]	I_{out} [A]	P_2 typical motor [kW]	Dimensions [mm]
E-*drive* 1500	1 x 230	1 x 230	9	1.1	181x181x228
		3 x 230	7	1.5	
E-*drive* 3000	1 x 230	1 x 230	9	1.1	
		3 x 230	11	3	
E-*drive* 2200	3 x 400	3 x 400	6	2.2	
E-*drive* 4000	3 x 400	3 x 400	9	4	
E-*drive* 5500	3 x 400	3 x 400	14	5.5	260x260x180
E-*drive* 7500	3 x 400	3 x 400	18	7.5	
E-*drive* 11000	3 x 400	3 x 400	25	11	
E-*drive* 15000	3 x 400	3 x 400	30	15	
E-*drive* 18500*	3 x 400	3 x 400	38	18.5	680x410x260
E-*drive* 22000*	3 x 400	3 x 400	48	22	
E-*drive* 30000*	3 x 400	3 x 400	65	30	
E-*drive* 37000*	3 x 400	3 x 400	75	37	
E-*drive* 45000*	3 x 400	3 x 400	85	45	

* Supplied with the standard wall mounting kit

PRESSCOMFORT

PRESSURE REGULATOR

PRESSCOMFORT is an automatic electronic appliance, destined to regulate functioning of the electric pumps, without using booster reservoirs. This unit manages the automatic start and stop of the pump when opening or closing any tap or valve of the installation. When the pump starts, it keeps running while it exits any tap opened in the system, giving the network the required flow rate. In there is no suction air, the pump stop automatically.
PRESSCOMFORT allows:
- manual restore (RESET key)
- automatic restore after 1, 6, 12 or 24 hours.
If on suction the water returns to a pressure exceeding the fixed value for pump start-up, PRESSCOMFORT is restored automatically.

TECHNICAL DETAILS

- Replaces the traditional expansion vessel, probe, float
- Available with or without cable
- Automatic regulation
- Adjustable start-up pressure
- Incorporated non-return valve
- Functioning indicator
- Connection cable on the pump terminal box (for wired version only)
- Power supply cable (1.5 m) with standard socket (for wired version only)

TECHNICAL DATA

- Maximum temperature of the water: 60° C
- Maximum flow rate: 10,000 l/h
- Start-up pressure: 1.5-2.5 bar
- Maximum use pressure: 10 bar ±10%
- Power supply voltage: 220V - 50/60 Hz
- Maximum current intensity: 10A
- IP 65 protection degree
- G1 connections (pump and outlet side)
- Weight: 0.6 kg

E-POWER

VARIABLE SPEED CONTROL SYSTEM

Electronic device based on inverter technology for electric pumps control. It controls the start-up and stop of the electric pump and modulates the motor rotations based on the water intake, maintaining a constant preset working pressure. It ensures high comfort for the end user, significant energy savings and longer life of the plant, typical advantages of inverter autoclave systems, including dry running protection for the electric pump

TECHNICAL DETAILS

- Installation on metallic piping without valve:
  - optimum cooling
  - no pressure drops
- Master/slave operation for the realisation of units of up to 2 pumps
- Very few parameters for commissioning (desired pressure, pump current)
- ON/OFF input for minimum level float or remote switch
- Output relays for alarm signal or second pump control
- Simple and intuitive display interface
- Gradual start and stop (water hammering reduced)
- Several guards with programmable automatic reset

TECHNICAL DATA

- Installation: on pipe
- Installation position: any
- Connections: 1"¼ male
- Power supply voltage: single phase 230V
- Output voltage (pump): three phase 230V
- Phase current: max 10 A
- Maximum pump power: 2.2 kW
- Output Frequency: 5÷60Hz
- Display: 2 digit alphanumeric
- Protection degree: IP 65
- Working temperature: 5÷40 °C
- Pressure set point: 0.3÷8 bar
- Maximum overpressure: 12 bar
- Electric safety: EN60730
- Electromagnetic compatibility: EN61000 (specific standards in the CE certificate)
- Protections:
  - Dry running
  - Over/under voltage
  - Short circuit
  - Over-current
  - Over temperature
  - Insufficient pressure
  - Sensor failure
- Pressure boosting units: up to two pumps
- Weight: 2 kg

SPECIFIC PERFORMANCE

The specifications below qualify the curves shown in our catalogues and Data Sheet (see www.ebaraeurope.com).
All the performance curves are calculated according to ISO 9906 Attachment A.

Tolerance according to ISO 9906 Attachment A.
The curves refer to an effective speed of the 50 asynchronous motors.
The measurements are made with water temperature of 20°C and cinematic viscosity of ν= 1 mm^2/s (1 cSt).
The NPSH curve is a mean curve obtained under the same conditions as the performance curves.
The continuous curves indicate the recommended working range. The dotted curve is only a guide.
In order to prevent the risk of overheating, the pumps must not be used at a flow rate below 10% of the maximum efficiency flow rate.

During selection of the pumps, there is a safety margin of at least 1 m.

Symbols: Q = Volume flow rate [m^3/h]
H = Total head [m]
P_1 = Power absorbed by the electric line
P_2 = Power at motor axis (power absorbed by the pump)
η = Pump efficiency
NPSH = Net positive suction head required by the pump
MEI = Minimum Efficiency Index

The minimum efficiency index (MEI) is a measure of the quality of a pump size in respect to its mean efficiency.
The minimum efficiency index is based on the hydraulic efficiency and on the head at the best efficiency point.

The efficiency of a pump with trimmed impeller is usually lower than that of a pump with the full impeller diameter.
The trimming of the impeller will adapt the pump to a fixed duty point, leading to reduced energy consumption.
The minimum efficiency index (MEI) is based on the full impeller diameter.

The operation of the water pump with variable duty points may be more efficient and economic when controlled, for example, by the use of a variable speed drive that matches the pump duty to the system.

DNV·GL

MANAGEMENT SYSTEM CERTIFICATE

Certificato No./Certificate No.: CERT-17819-2006-AQ-VEN-SINCERT
Data prima emissione/Initial date: 13 ottobre 2006
Validità/Valid: 10 ottobre 2015 - 10 ottobre 2018

Si certifica che il sistema di gestione di/This is to certify that the management system of

EBARA PUMPS EUROPE S.p.A.

Via Pacinotti, 32 - 36040 Brendola (VI) - Italy

È conforme ai requisiti della norma per il Sistema di Gestione Qualità/
has been found to conform to the Quality Management System standard:

UNI EN ISO 9001:2008 (ISO 9001:2008)

Questa certificazione è valida per il seguente campo applicativo:
Progettazione, produzione, vendita e commercializzazione di pompe e sistemi di pompaggio
(Settore EA: 18 - 17 - 14)

This certificate is valid for the following scope:
Design, manufacture, sales and trade of pumps and pumping systems
(EA Sector: 18 - 17 - 14)

Luogo e Data/Place and date:
Vimercate, 06 agosto 2015

ACCREDIA

Per l'Organismo di Certificazione/
For the Certification Body

Vittore Marangon
Management Representative

La validità del presente Certificato è subordinata al rispetto delle condizioni contenute nel Contratto di Certificazione/
Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

NOTES