



EBARA

CVM

VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

60 Hz



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
- Moving clean water

TECHNICAL DETAILS

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

TECHNICAL DATA

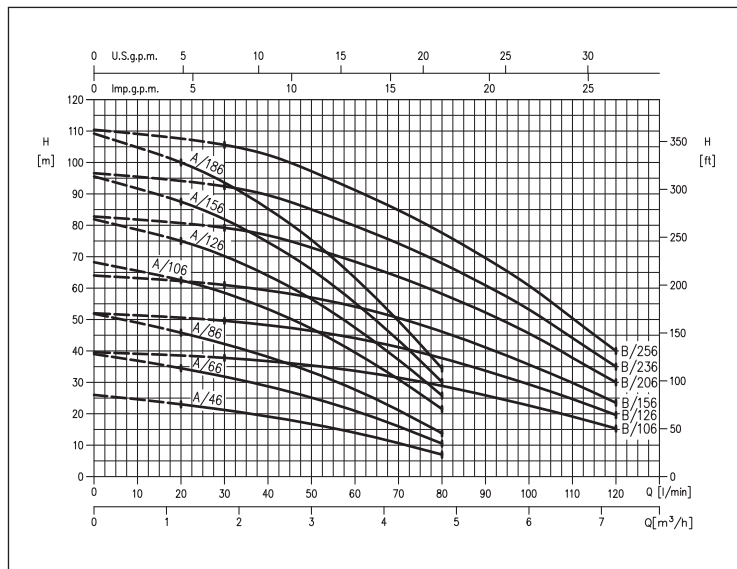
- Maximum working pressure: 11 bar
- Maximum temperature of the liquid: 40°C
- Self-ventilated 2 pole asynchronous motor
- Class of insulation F
- IP44 Protection rating
- 220-230V $\pm 6\%$, 60Hz single phase voltage, 220/380V $-6\%+10\%$, 60Hz three phase voltage
- Permanent capacitor inserted and thermo-amperometric protection with automatic rearm incorporated for the single phase motor
- Protection under user's responsibility for the three phase version
- G1½ suction and discharge connection

MATERIALS

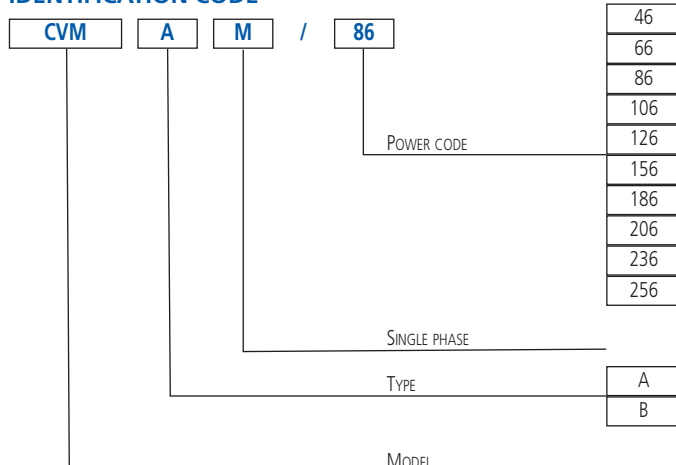
- Cast iron pump body and bracket
- External casing in AISI 304
- Impeller and diffuser in PPE+PS reinforced with fibreglass
- Stages in PPE+PS reinforced with fibreglass/PTFE
- Shaft in AISI 416
- Mechanical seal in Carbon/Ceramic/NBR



PERFORMANCE CURVES (according to ISO 9906 Attachment A)

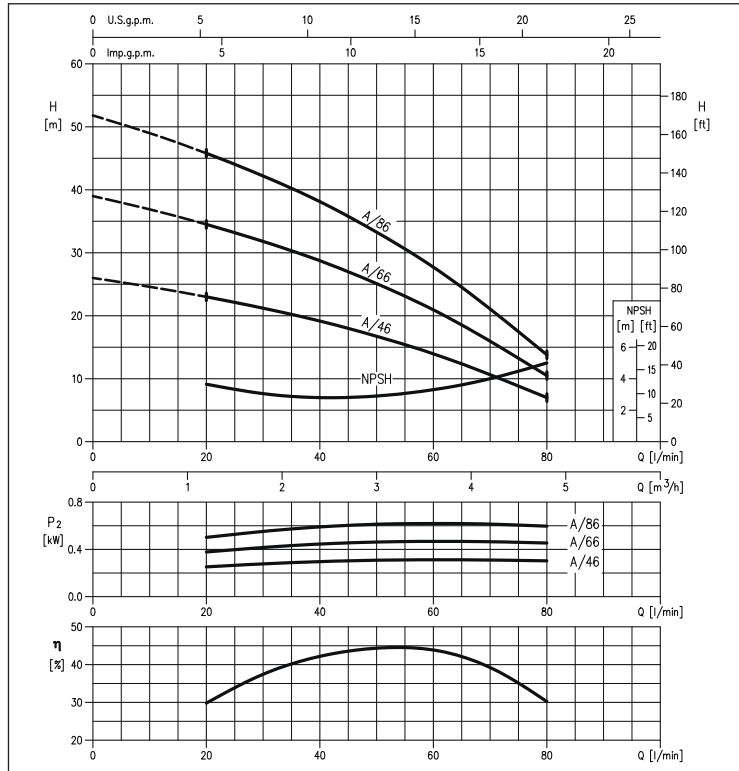


IDENTIFICATION CODE

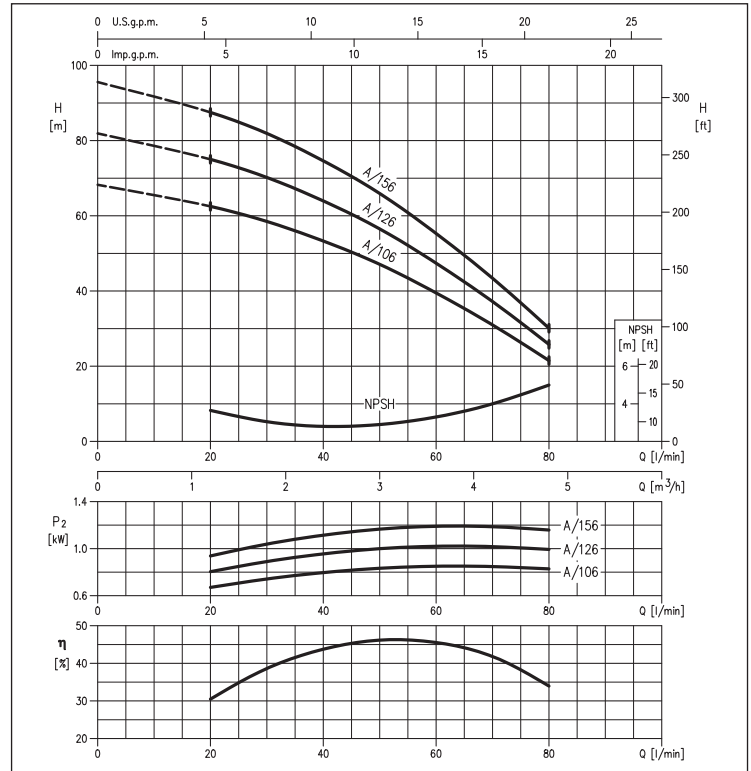


VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS in cast iron

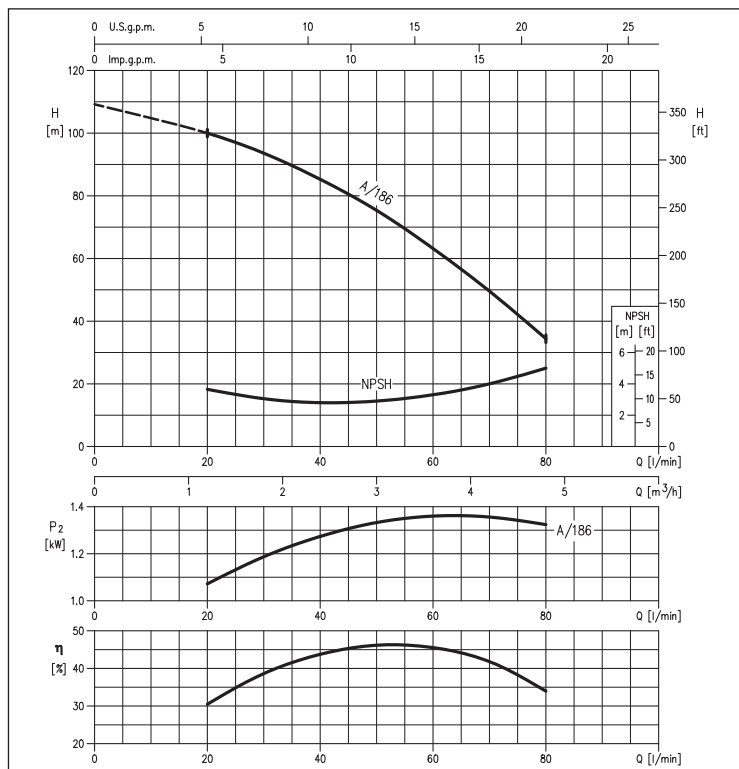
CVM A range PERFORMANCE CURVES (from 0.3 to 0.6 kW)
(according to ISO 9906 Attachment A)



CVM A range PERFORMANCE CURVES (from 0.75 to 1.1 kW)
(according to ISO 9906 Attachment A)



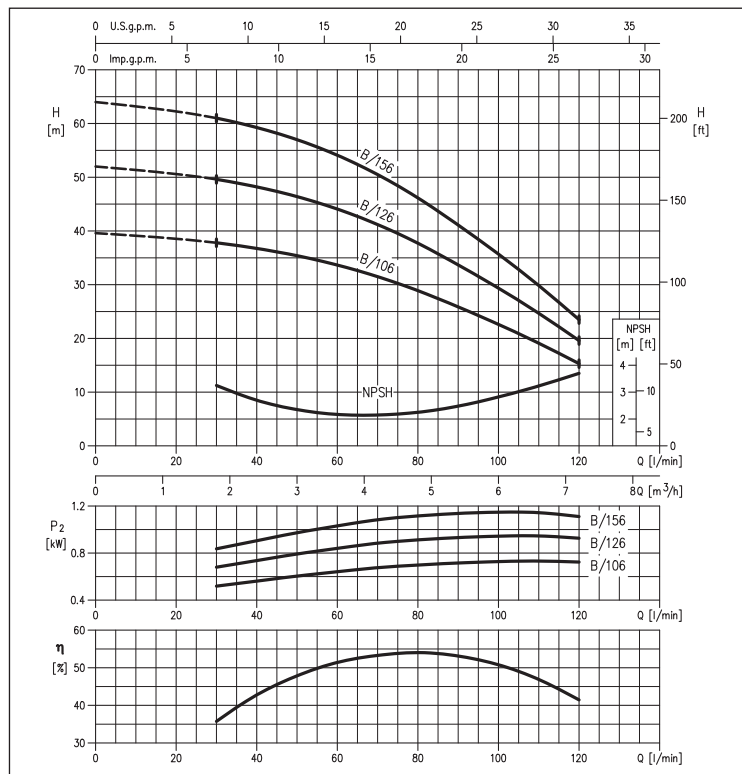
CVM A range PERFORMANCE CURVES (1.3 kW)
(according to ISO 9906 Attachment A)



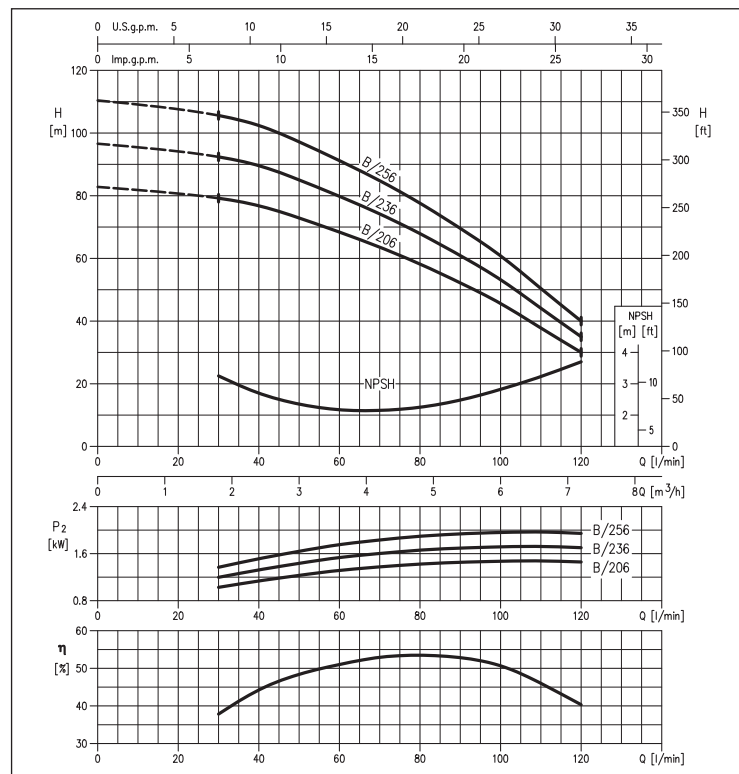
VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

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 1.9 kW)
(according to ISO 9906 Attachment A)



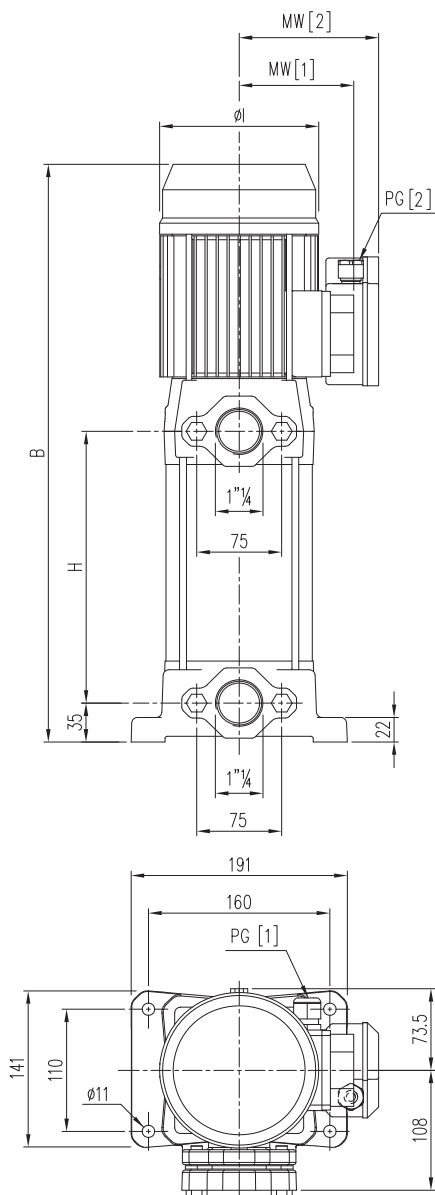
PERFORMANCE TABLE

Model		P ₂		Q=Flow rate								
Single phase 220-230V	Three phase 220/380V	[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/46	CVM A/46	0,4	0,3	23,0	21,2	19,2	16,7	14,0	7,0	-	-	
CVM AM/66	CVM A/66	0,6	0,44	34,5	31,8	28,7	25,1	20,9	10,5	-	-	
CVM AM/86	CVM A/86	0,8	0,6	45,5	42,0	38,1	33,3	27,7	13,8	-	-	
CVM AM/106	CVM A/106	1	0,75	62,5	58,5	53,0	47,0	39,5	21,5	-	-	
CVM AM/126	CVM A/126	1,2	0,9	75,0	70,0	64,0	56,5	47,5	25,8	-	-	
CVM AM/156	CVM A/156	1,5	1,1	87,5	82,0	74,5	66,0	55,5	30,1	-	-	
CVM AM/186	CVM A/186	1,8	1,3	100,0	93,5	85,5	75,5	63,0	34,4	-	-	
CVM BM/106	CVM B/106	1	0,75	-	37,8	36,8	35,4	33,7	28,9	22,6	15,3	
CVM BM/126	CVM B/126	1,2	0,9	-	49,5	48,0	46,5	44,0	37,7	29,4	19,6	
CVM BM/156	CVM B/156	1,5	1,1	-	61,0	59,5	57,0	54,0	46,0	35,7	23,5	
CVM BM/206	CVM B/206	2	1,5	-	79,0	77,0	73,0	68,5	58,0	45,5	30,0	
CVM BM/236	CVM B/236	2,3	1,7	-	92,5	89,5	85,0	80,0	68,0	53,0	35,0	
-	CVM B/256	2,5	1,9	-	106,0	102,0	97,0	91,0	77,5	61,0	40,0	

VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in cast iron

DIMENSIONS



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

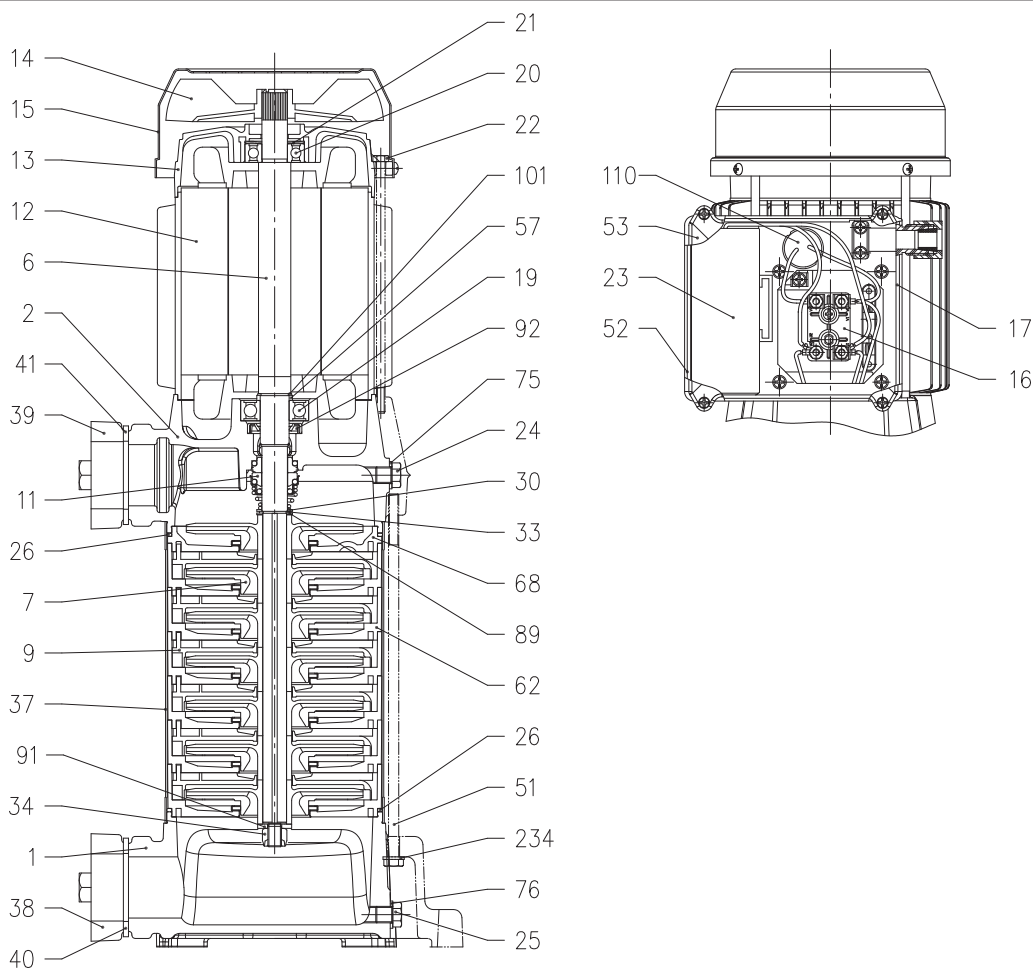
DIMENSIONAL TABLE

Model		Motor Size	Dimensions [mm]								Weight [kg]	
Single phase 220-230V	Three phase 220/380V		[2]	B	[1]	H	ØI	[2]	MW	[1]	[2]	[1]
CVM AM/46	CVM A/46	63	336	336	336	112	124	101	92	11	11,0	11,0
CVM AM/66	CVM A/66	63	362	362	362	138	124	101	92	11	11,7	11,6
CVM AM/86	CVM A/86	63	388	388	388	164	124	101	92	11	12,7	12,6
CVM AM/106	CVM A/106	71	452	454	454	190	140	110,5	101	11	16,5	16,6
CVM AM/126	CVM A/126	71	478	492	492	216	140	110,5	101	11	17,5	17,6
CVM AM/156	CVM A/156	71	516	518	518	242	140	110,5	101	11	18,5	18,6
CVM AM/186	CVM A/186	80	565	565	565	268	159	136	119	13,5	20,5	20,6
CVM BM/106	CVM B/106	71	400	402	402	138	140	110,5	101	11	15,9	15,9
CVM BM/126	CVM B/126	71	426	440	440	164	140	110,5	101	11	16,8	16,7
CVM BM/156	CVM B/156	71	464	466	466	190	140	110,5	101	11	18,0	17,9
CVM BM/206	CVM B/206	80	526	526	526	216	159	134,5	119	13,5	21,2	21,3
CVM BM/236	CVM B/236	80	552	552	552	242	159	134,5	119	13,5	22,2	22,3
-	CVM B/256	80	578	578	578	268	159	-	119	-	-	24,0

VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in cast iron

SECTIONAL VIEW



MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
1	Suction casing	Cast iron EN-GJL-200-EN 1561	33	Seeger ring	EN 1.4021 (AISI 420) (Dim. 12)
2	Delivery casing	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	External pump casing	EN 1.4301 (AISI 304)
9	Diffuser	PPE+PS reinforced with fibreglass	38	Counterflange	Cast iron EN-GJL-200-EN 1561
11	Mechanical seal	Carbon/Ceramic/ NBR	39	Counterflange	Cast iron EN-GJL-200-EN 1561
12	Motor frame with stator	-	40	Counterflange gasket	NBR
13	Motor cover	Aluminium	41	Counterflange gasket	NBR
14	Fan	PA6	51	Tie-rod	Galvanised Fe P04
15	Fan cover	Galvanised Fe P04	52	Capacitor box [2]	ABS
16	Terminal board	-	53	Capacitor box cover [2] [5]	ABS
17	Terminal box cover [1]	Aluminium	57	Pump side ball bearing spacer [3]	Steel C40
19	Bearing (pump side)	-	62	Stage housing	PPE+PS reinforced with fibreglass/PTFE
20	Bearing (motor side)	-	68	Stage	PPE+PS reinforced with fibreglass/PTFE
21	Adjusting 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	Priming plug	OT 58 UNI 5705	91	Washer	EN 1.4301 (AISI 304)
25	Drain plug	OT 58 UNI 5705	92	Lip seal	NBR
26	O-Ring	NBR	101	Seeger ring [3]	EN 1.4301 (AISI 304)
30	Washer	EN 1.4301 (AISI 304)	110	Motorprotector [4]	-
			234	Washer	Galvanised steel

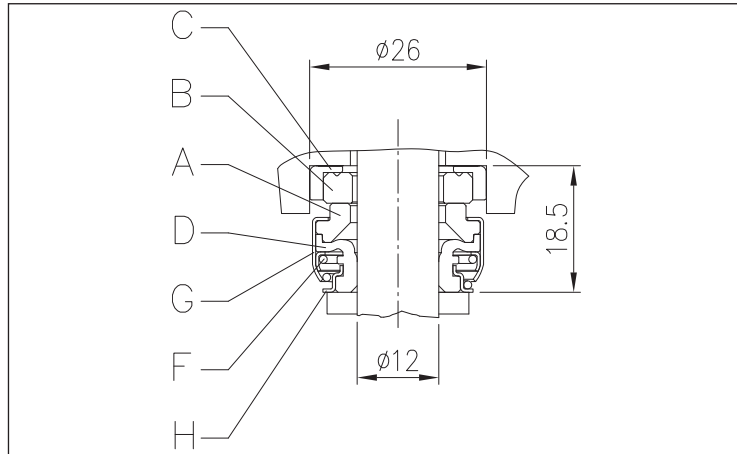
[1]= For three phase only [2]= For single phase only [3]= For motor size 80 only

[4]= For motor size 71 and 80 single phase only [5]= With gasket in NBR only for single phase version: CVM A from 0,3 kW up to 1,1 kW, CVM B from 0,75 kW up to 1,1 kW

VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in cast iron

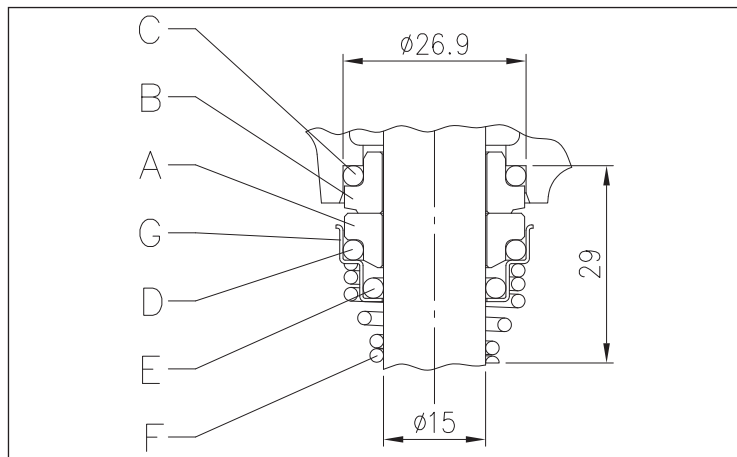
MECHANICAL SEAL for CVM up to 0.6 kW



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 0.75 kW and over

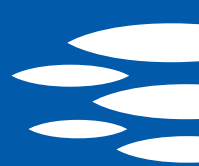


MATERIALS TABLE

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		Capacitor		P ₁		Absorbed Current [A]		
Single phase 220-230V	Three phase 220/380V	[HP]	[kW]	Single phase μF	V _c	Single phase [kW]	Three phase [kW]	Single phase 220-230V	Three phase 220V	Three phase 380V
CVM AM/46	CVM A/46	0,4	0,3	10	450	0,54	0,45	2,9	1,6	0,9
CVM AM/66	CVM A/66	0,6	0,44	12,5	450	0,73	0,63	3,5	2,1	1,2
CVM AM/86	CVM A/86	0,8	0,6	14	450	0,91	0,75	4,3	2,4	1,4
CVM AM/106	CVM A/106	1	0,75	20	450	1,33	1,0	6,7	2,9	1,7
CVM AM/126	CVM A/126	1,2	0,9	31,5	450	1,53	1,5	7,0	3,8	2,2
CVM AM/156	CVM A/156	1,5	1,1	31,5	450	1,60	1,5	7,5	3,8	2,2
CVM AM/186	CVM A/186	1,8	1,3	35	450	1,87	2,0	8,2	5,7	3,3
CVM BM/106	CVM B/106	1	0,75	20	450	1,19	1,0	6,4	2,9	1,7
CVM BM/126	CVM B/126	1,2	0,9	31,5	450	1,46	1,5	6,8	3,8	2,2
CVM BM/156	CVM B/156	1,5	1,1	31,5	450	1,58	1,5	7,4	3,8	2,2
CVM BM/206	CVM B/206	2	1,5	40	450	1,97	2,9	8,9	8,1	4,7
CVM BM/236	CVM B/236	2,3	1,7	40	450	2,29	2,9	10,7	8,1	4,7
-	CVM B/256	2,5	1,9	-	-	-	2,9	-	8,1	4,7



SPECIFIC PERFORMANCE

The specifications given refer to the curves illustrated in our catalogues and Data Book (see www.ebara-europe.com).

All of the performance curves are calculated according to ISO 9906 Attachment A.

Tolerance according to ISO 9906 Annex A.

The curves refer to an effective speed of the 60 Hz asynchronous motors.

The measurements are made with water temperature of 20°C and cinematic viscosity of $\nu = 1 \text{ mm}^2/\text{s}$ (1 cSt).

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 = Flow rate [m^3/h]

H = Head [m]

P_1 = Power absorbed by the electric line

P_2 = Power yielded to the motor axis (power absorbed by the pump)



QUALITY MANAGEMENT SYSTEM CERTIFICATE

Supplemento "A"

Le sedi e
The units

Sede e S

S

Filiale

Filiale

Filiale

(PA) - Italy

Italy

- Italy

Data di scadenza

Expiry Date

2012-10-10

Organismo di Certificazione
for the Accredited Unit

DET NORSKE VERITAS ITALIA S.R.L.

DET NORSKE VERITAS QUALITY MANAGEMENT SYSTEM CERTIFICATE

Certificato No. / Certificate No. **CERT-17819-2006-AQ-VEN-SINCERT**
Si attesta che / This certifies that
Il sistema di gestione per la qualità di / the quality management system of

EBARA PUMPS EUROPE S.p.A.
(Riferimento al Supplemento "A" / Refer to Supplement "A")

È conforme ai requisiti della norma per i sistemi di gestione per la qualità
Conforms to the quality management systems standard
UNI EN ISO 9001:2008 (ISO 9001:2008)

Questa certificazione è valida per il seguente campo applicativo:
This certificate is valid for the following products or services:
(Ulteriori chiarimenti riguardanti lo scopo e l'applicabilità dei requisiti della norma sono da ottenere consultando l'organizzazione certificata)
(Further clarifications regarding the scope and the applicability of the requirements of the standard may be obtained by consulting the certified organization)

Progettazione, produzione, vendita e commercializzazione di pompe e sistemi di pompaggio
Design, manufacture, sales and trade of pumps and pumping systems

Data Prima Emissione
First Issue Date
2006-10-13

Luogo e data
Place and date
Agrate Brianza, (MI) 2009-10-08

Settore EA : 18 - 17

Benedetto Ciampa
Lead Auditor

SINCERT
AUTORIZZATO/ACCREDITED FOR DESIGN

ISO 9001:2008
ISO 14001:2004
PRD - Registrazione N. 2009
Membro degli Accordi di Mutuo Riconoscimento SINCERT
Signatory of EA and IAF Mutual Recognition Agreements

Data di scadenza
Expiry Date
2012-10-10

per l'Organismo di Certificazione
for the Accredited Unit
DET NORSKE VERITAS ITALIA S.R.L.

Vittore Marangon
Management Representative

Agrate Brianza, (MI)

Settore EA : 18 - 17

Benedetto Ciampa
Lead Auditor

Vittore Marangon
Management Representative

La validità del presente certificato è subordinata a sorveglianza periodica (ogni 6, 9 o 12 mesi) e al riesame completo del sistema con periodicità triennale
The validity of this certificate is subject to periodical audits (every 6, 9 or 12 months) and the complete re-assessment of the system every three years
Le aziende in possesso di un certificato valido sono presenti nella banca dati sul sito www.dnv.it e sul sito www.sincert.it - All the companies with a valid certificate are online at the following addresses: www.dnv.it and www.sincert.it

EBARA Pumps Europe network

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