

POMPE CENTRIFUGALE MULTIETAJATE

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SPECIFICATII

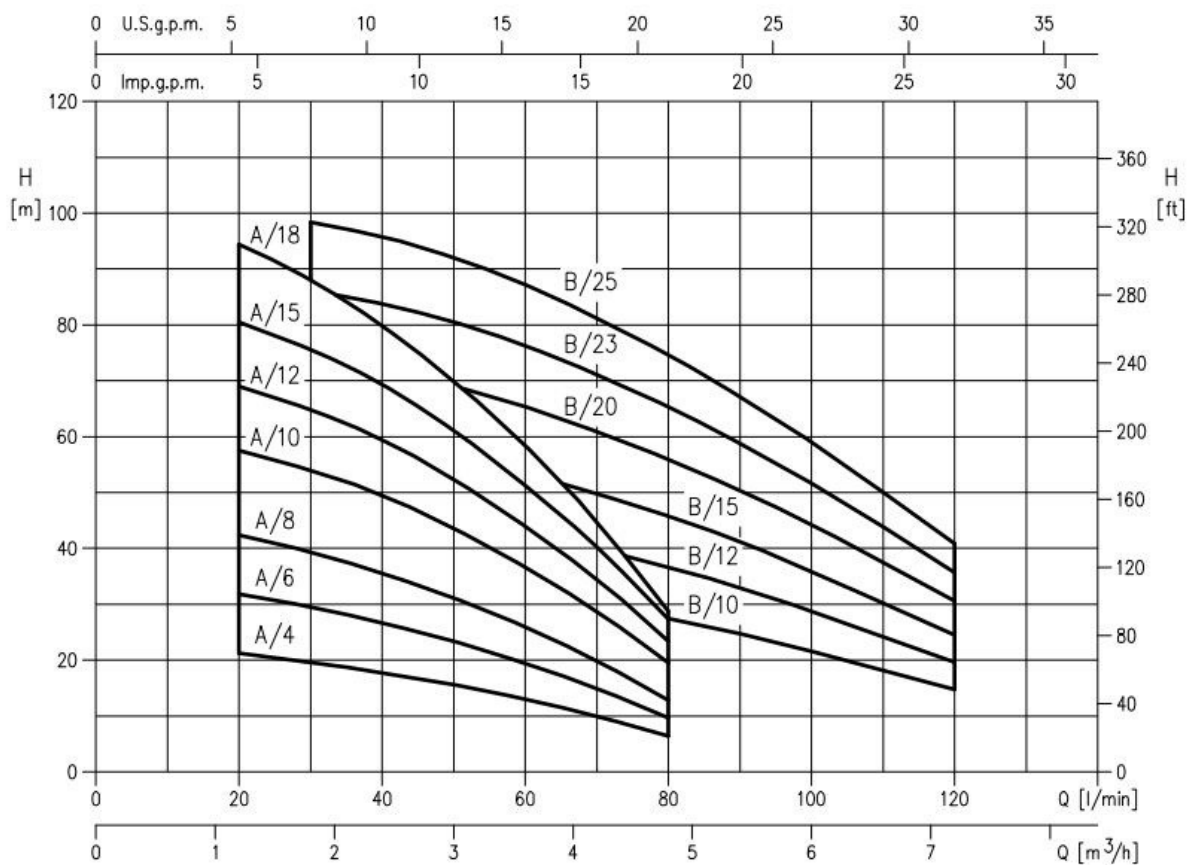
POMPA		
Lichidul pompat	Tipul lichidului	Apa curata
	Temperatura [°C]	min. +5 max. +40
Presiunea maxima de operare [MPa]		1.1
Constructie	Rotor	Centrifugal inchis
	Tipul etansarii axului	Etansare mecanica
	Rulment	Rulmenti cu bile etansati
Conexiunea la tevi	Aspiratie	G 1"¼ UNI ISO 228
	Refulare	G 1"¼ UNI ISO 228
Material	Carcasa	Fonta cenusie
	Rotor	PPE+PS ranforsat cu fibra de sticla
	Etansare ax	Ceramica/ Carbon/ NBR
	Invelisul exterior al pompei	AISI 304
	Ax	AISI 316
	Etaje	PPE+PS ranforsat cu fibra de sticla/PTFE
	Difuzor	PPE+PS ranforsat cu fibra de sticla
	Gheara de fixare	Fonta cenusie
Standardul testului aplicat		ISO 9906:2012 – Grad 3B

MOTOR		
Tip	Electric asincron - TEFC	
	Monofazat	Trifazat
Nivelul de eficienta (Reg. 640/ 2009)	-	- de la 0.3 kW pana la 0.6 kW IE2 de la 0.75 kW pana la 1.85 kW IE3 de la 0.75 kW pana la 1.85 kW
Numar de poli	2	
Turatia [min ⁻¹]	≈ 2850	
Clasa de izolare	F	
Gradul de protectie (CEI EN 60034-5)	IP44	
Putare	[kW]	0.3 ÷ 1.7
	[HP]	0.4 ÷ 2.3
		0.3 ÷ 1.85
		0.4 ÷ 2.5

Frecventa	[Hz]	50	
Voltaj	[V]	230 ± 10 %	230/400 ± 10 %
Condensator		Incorporat	-
Protectie la suprasarcina		Incorporat	Pus la dispozitie de catre utilizator
Material carcasa		Aluminiu	
Dimensiunile de intrare a cablului		PG 11 – PG 13.5 – M16x1.5 – M20x1.5 (consultati pagina 400)	

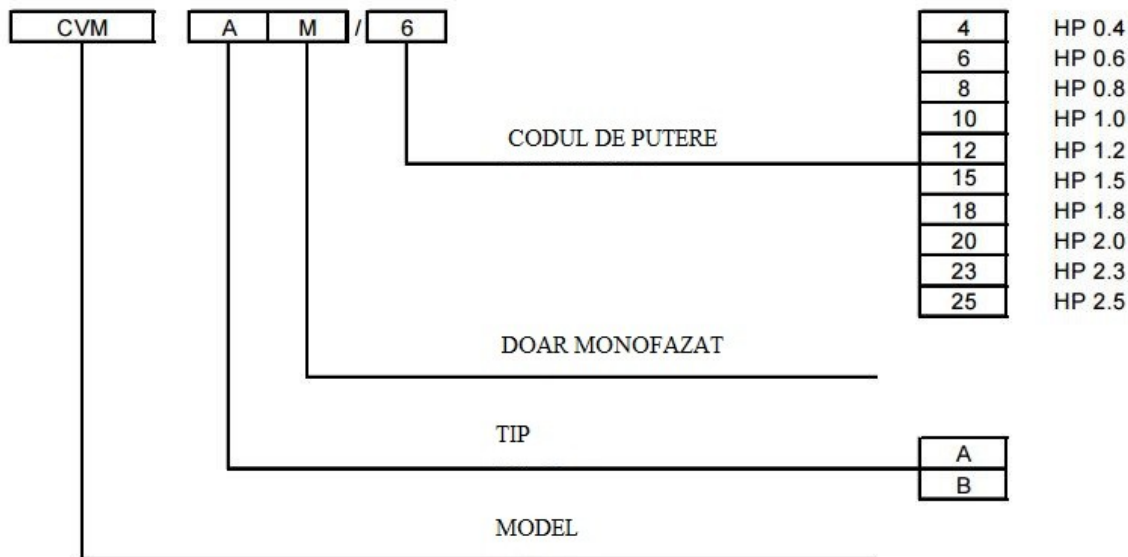
DIAGrame DE SELECTIE

GAMA DE PERFORMANTA



Tipul pompei		Putere		Q= Capacitate									
				l/min	0	20	30	40	50	60	80	100	120
Monofazat	Trifazat	[kW]	[HP]	m ³ /h	0	1.2	1.8	2.4	3	3.6	4.8	6	7.2
				H= Inaltimea manometrica totala, in metri									
CVM AM/4	CVM AM/4	0.3	0.4	23.8	21.2	19.7	17.8	15.6	13.0	6.4	-	-	
CVM AM/6	CVM AM/6	0.44	0.6	35.7	31.8	29.5	26.7	23.3	19.4	9.6	-	-	
CVM AM/8	CVM AM/8	0.6	0.8	47.5	42.5	39.4	35.6	31.1	25.9	12.8	-	-	
CVM AM/10	CVM AM/10	0.75	1	62.5	57.5	54.0	49.5	43.5	36.6	19.5	-	-	
CVM AM/12	CVM AM/12	0.9	1.2	75.0	69.0	65.0	59.5	52.5	44.0	23.4	-	-	
CVM AM/15	CVM AM/15	1.1	1.5	87.5	80.5	75.5	69.5	61.0	51.0	27.3	-	-	
CVM AM/18	CVM AM/18	1.3	1.8	103.0	94.5	88.0	80.0	70.0	58.5	28.8	-	-	
CVM BM/10	CVM BM/10	0.75	1	38.1	-	36.2	35.1	33.7	32.0	27.5	21.6	14.7	
CVM BM/12	CVM BM/12	0.9	1.2	51.0	-	48.0	46.8	45.0	42.6	36.6	28.8	19.6	
CVM BM/15	CVM BM/15	1.1	1.5	63.5	-	60.5	58.5	56.2	53.3	45.8	36.0	24.5	
CVM BM/20	CVM BM/20	1.5	2	78.5	-	74.0	72.0	69.0	65.5	56.0	44.5	30.6	
CVM BM/23	CVM BM/23	1.7	2.3	91.5	-	86.0	84.0	80.5	76.5	65.5	51.5	35.7	
-	CVM BM/25	1.85	2.5	105.0	-	98.5	96.0	92.0	87.0	74.5	59.0	41.0	

TIPUL POMPEI SI SPECIFICATIILE CURBE



SPECIFICATIILE CURBEI DE PERFORMANTA

Specificatiile de mai jos se refera la curbele de performanta aflate in paginile urmatoare.

Toleranta conform cu ISO 9906:2012 – Grad 3B

Curbele se refera la turatia efectiva a motoarelor asincrone la o frecventa de 50 Hz si cu 2 poli.

Masuratorile au fost facute cu apa curata la o temperatura de 20 °C si cu o vascrozitate cinematica $\nu = \text{mm}^2/\text{s}$ (1 cSt).

Curba NPSH este o curba obisnuita, obtinuta in aceleasi conditii ca si curbele de performanta.

Curbele continue indica domeniul recomandat de functionare. Curba notata cu linie punctata reprezinta doar un ghid pentru evitarea supraincalzirii. Pompele nu trebuie sa fie folosite la un debit sub 10 % din punctul optic de functionare.

Explicarea simbolurilor:

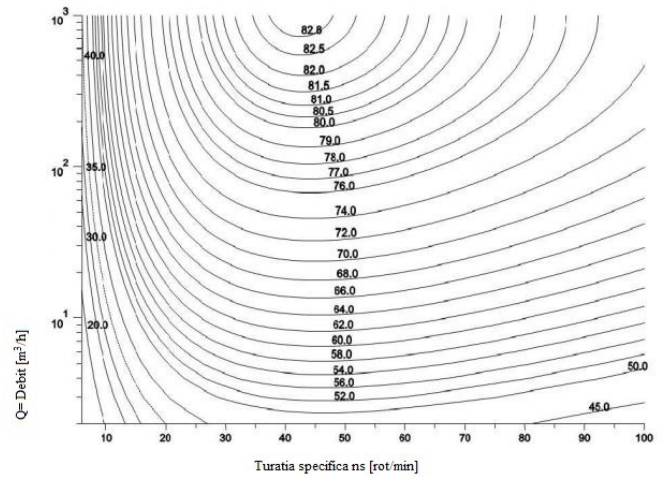
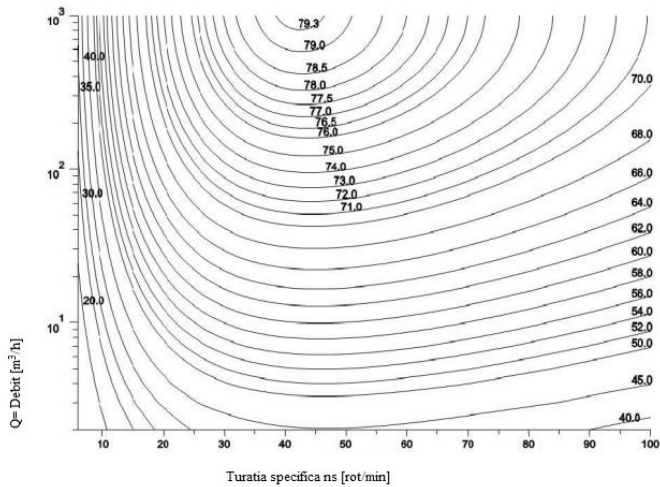
- Q= debitul;
- H= inaltimea totala;
- P_2 = puterea de alimentare a pompei (puterea la ax);
- η = eficienta pompei;
- NPSH= inaltimea neta pozitiva de aspiratie, necesara pompei;
- MEI= indexul de eficienta minim.

Indexul de eficienta minim (MEI) reprezinta o masura a calitatii marimii pompei in ceea ce priveste

eficienta. Indexul de eficienta minim este bazat pe eficienta hidraulica si pe inaltimea de pompare in punctul optim de functionare.

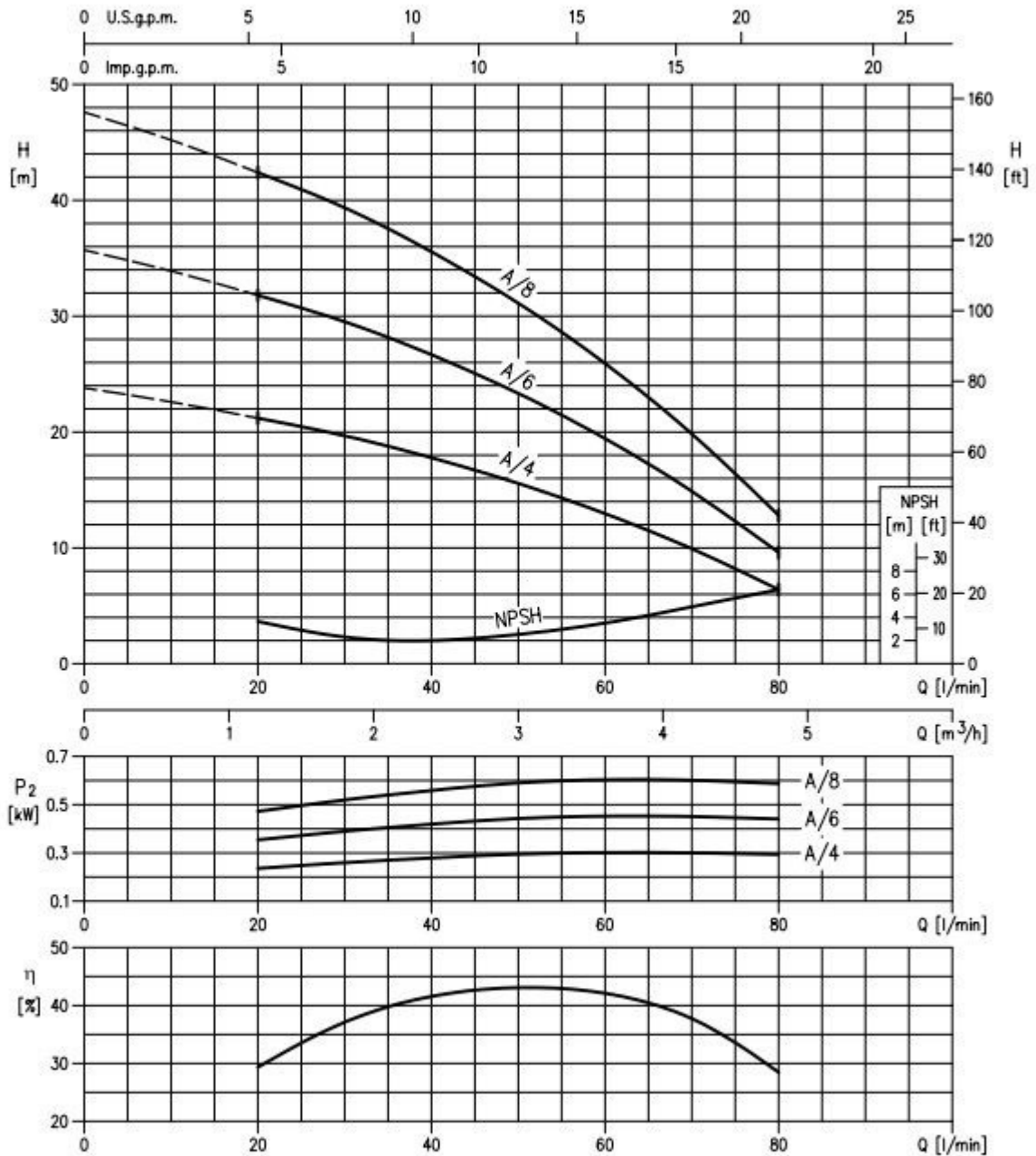
Eficienta unei pompe cu rotor taiat este de obicei mai joasa decat eficienta unei pompe cu diametrul intreg al rotorului. Taierea rotorului va adapta pompa la un punct fix de functionare, ducand la reducerea consumului de energie. Indexul de eficienta minim (MEI) este bazat pe un rotor cu diametrul intreg.

Functionarile acestor pompe cu puncte variabile de functionare pot fi mai eficiente si mai economice cand sunt controlate de catre un variator de viteza care se pliaza pe functionarea pompei.



CURBELE DE PERFORMANTA

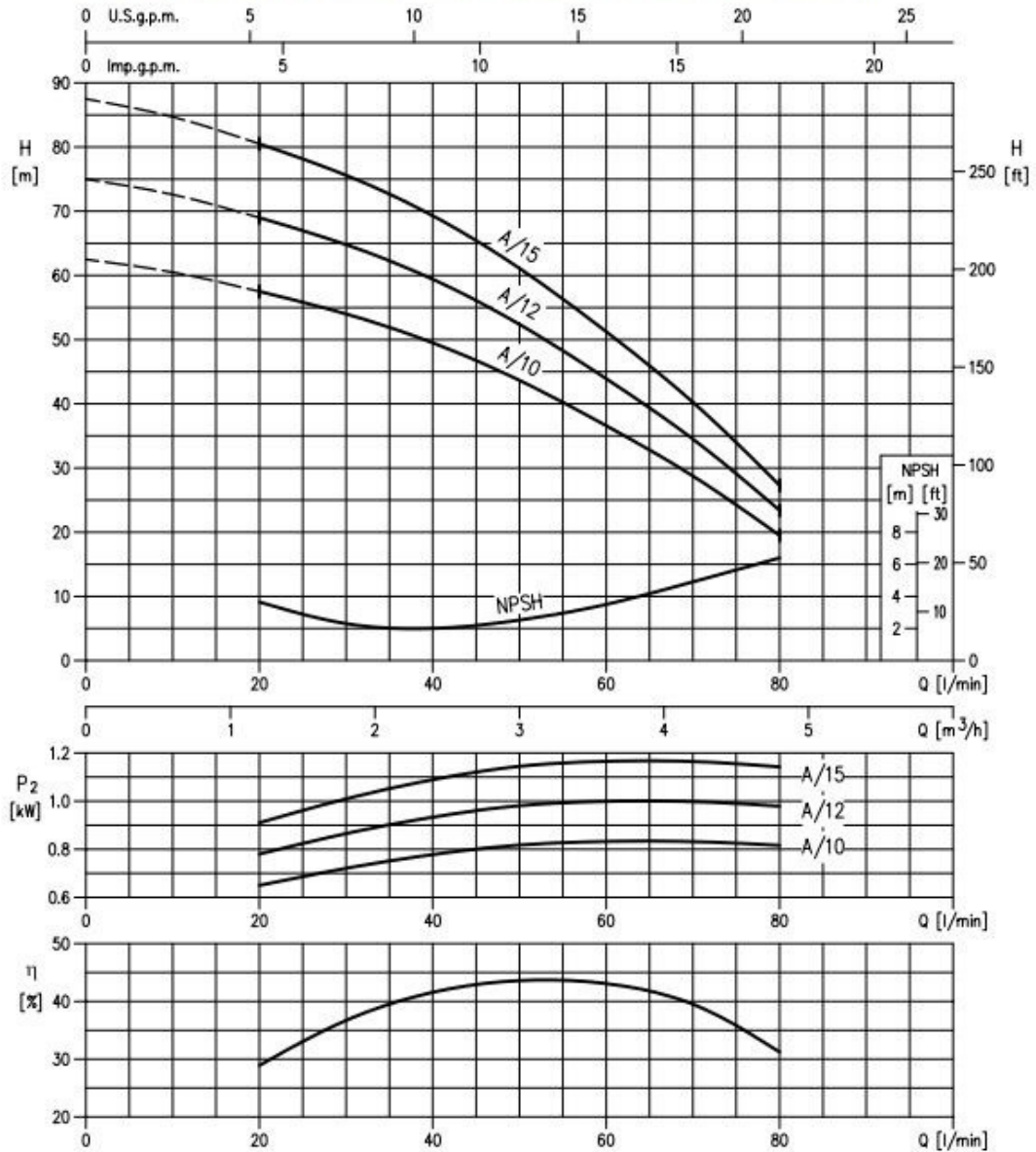
CVM A/4 (0.3 kW) MEI > 0.6 - Diametrul rotorului = 102 mm
CVM A/6 (0.44 kW) MEI > 0.6 - Diametrul rotorului = 102 mm
CVM A/8 (0.6 kW) MEI > 0.6 - Diametrul rotorului = 102 mm



Turatia = $\approx 2800 \text{ min}^{-1}$

Standard test: ISO 9906:2012 - Grad 3B

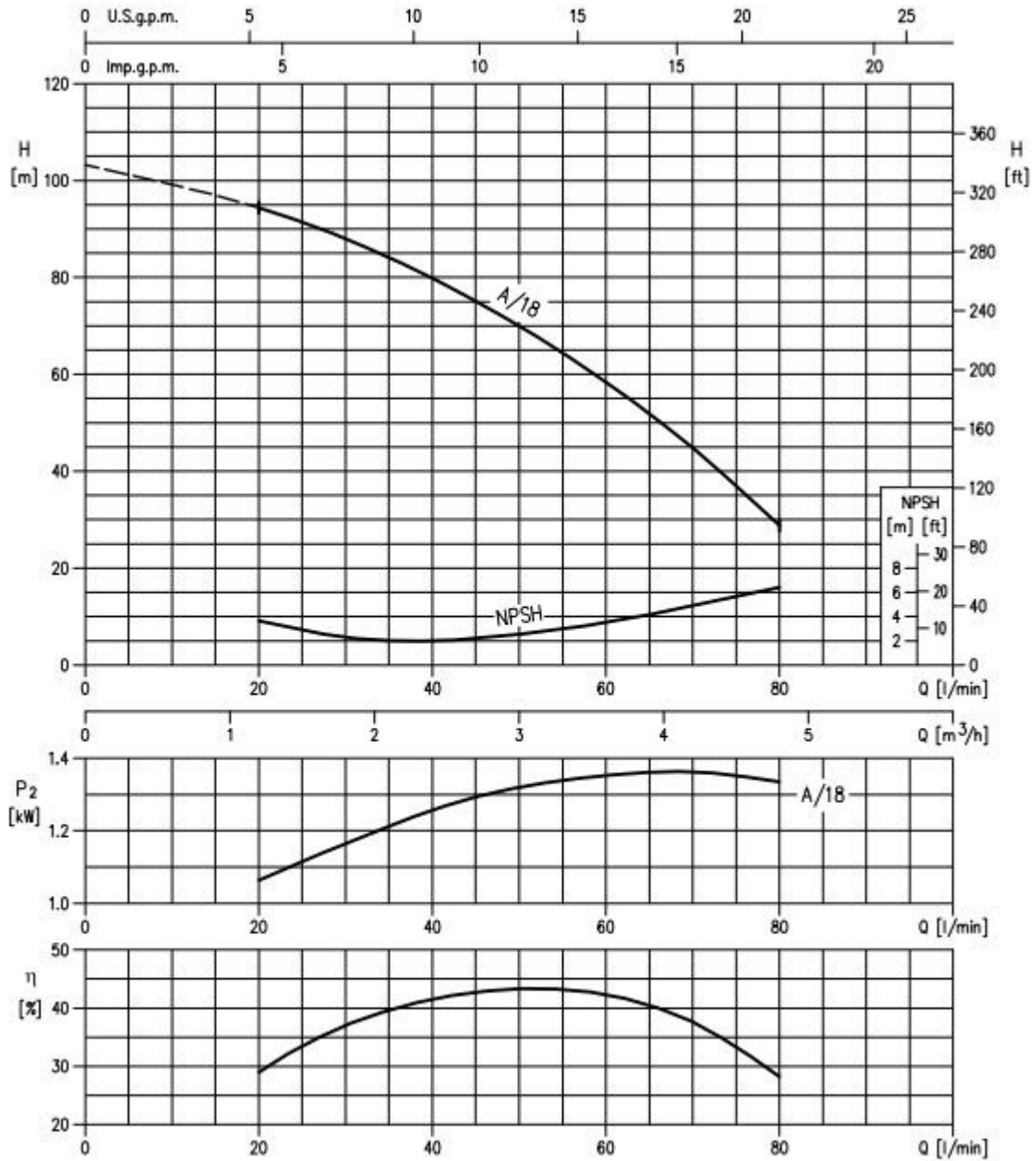
CVM A/10 (0.75 kW) MEI > 0.60 - Diametrul rotorului = 102 mm
CVM A/12 (0.9 kW) MEI > 0.60 - Diametrul rotorului = 102 mm
CVM A/15 (1.1 kW) MEI > 0.60 - Diametrul rotorului = 102 mm



Turatie $\approx 2800 \text{ min}^{-1}$

Standard test: ISO 9906:2012 - Grad 3B

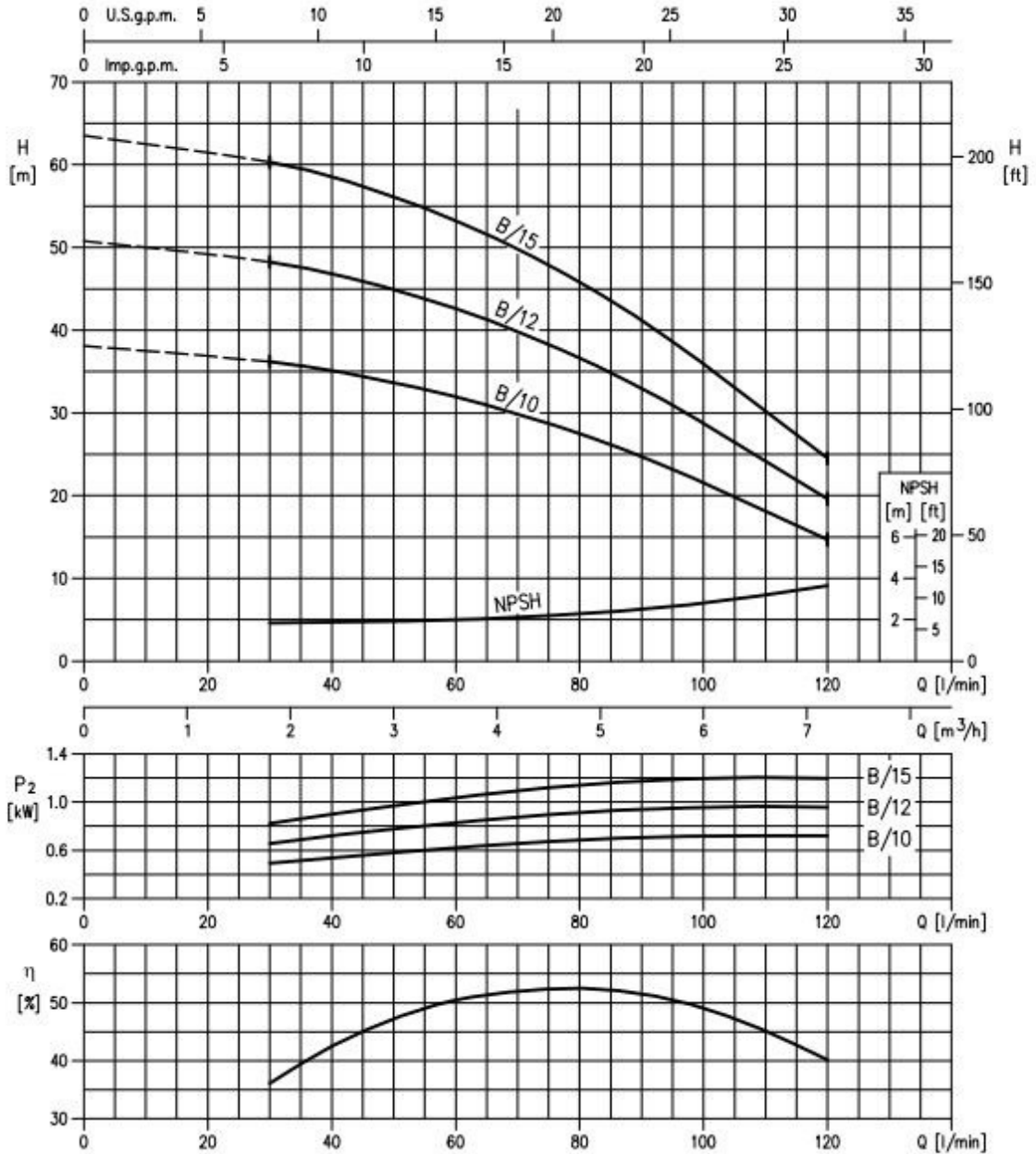
CVM A/18 (1.3 kW) MEI > 0.60 - Diametrul rotorului = 102 mm



Turatie ≈ 2800 min⁻¹

Standard test: ISO 9906: 2012 - Grad 3B

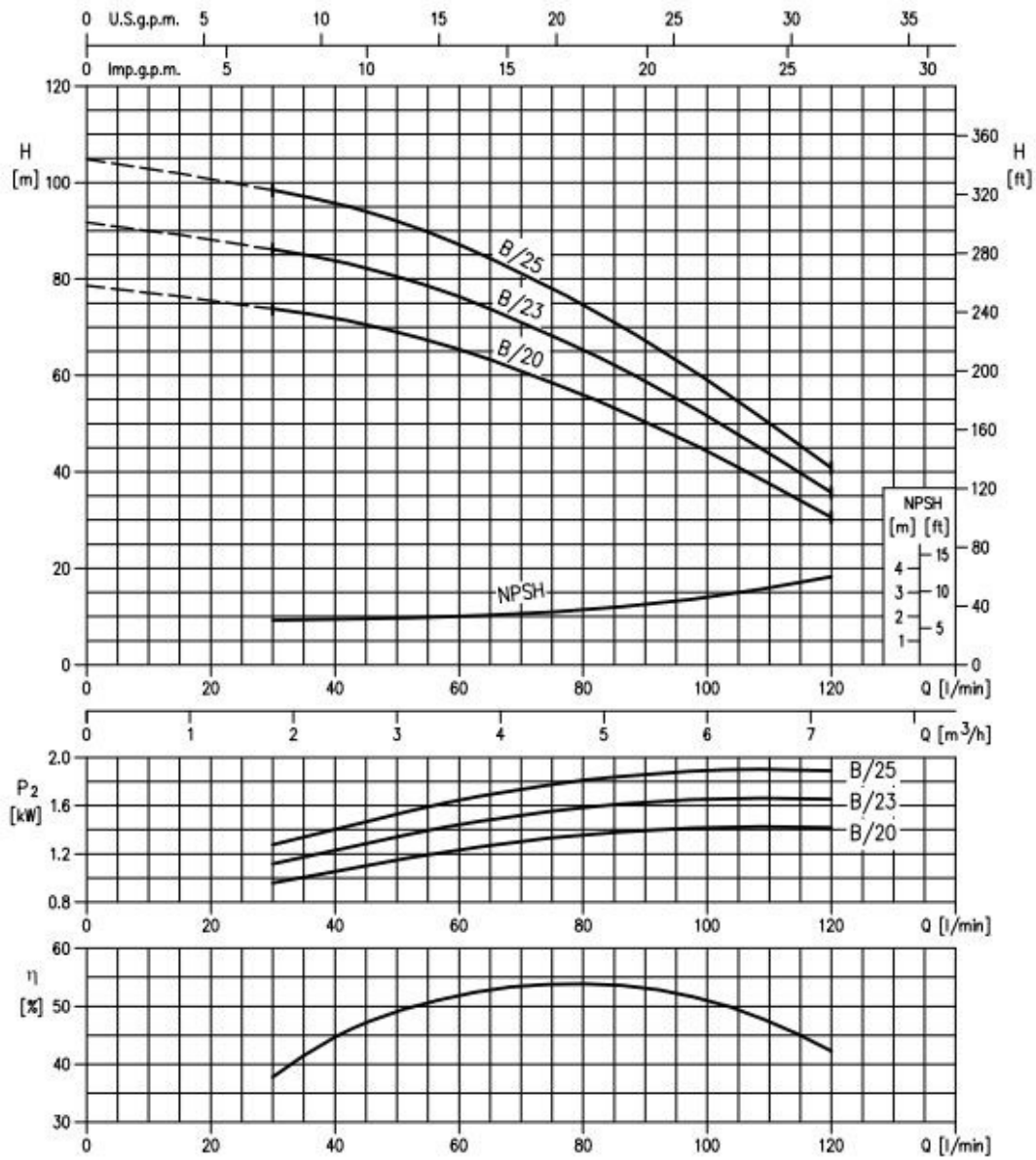
CVM B/10 (0.75 kW) MEI > 0.70 - Diametrul rotorului = 102 mm
CVM B/12 (0.9 kW) MEI > 0.70 - Diametrul rotorului = 102 mm
CVM B/15 (1.1 kW) MEI > 0.70 - Diametrul rotorului = 102 mm



Turatie $\approx 2800 \text{ min}^{-1}$

Standard test: ISO 9906:2012 - Grad 3B

CVM B/20 (1.5 kW) MEI > 70 - Diametrul rotorului = 102 mm
CVM B/23 (1.7 kW) MEI > 70 - Diametrul rotorului = 102 mm
CVM B/25 (1.85 kW) MEI > 70 - Diametrul rotorului = 102 mm

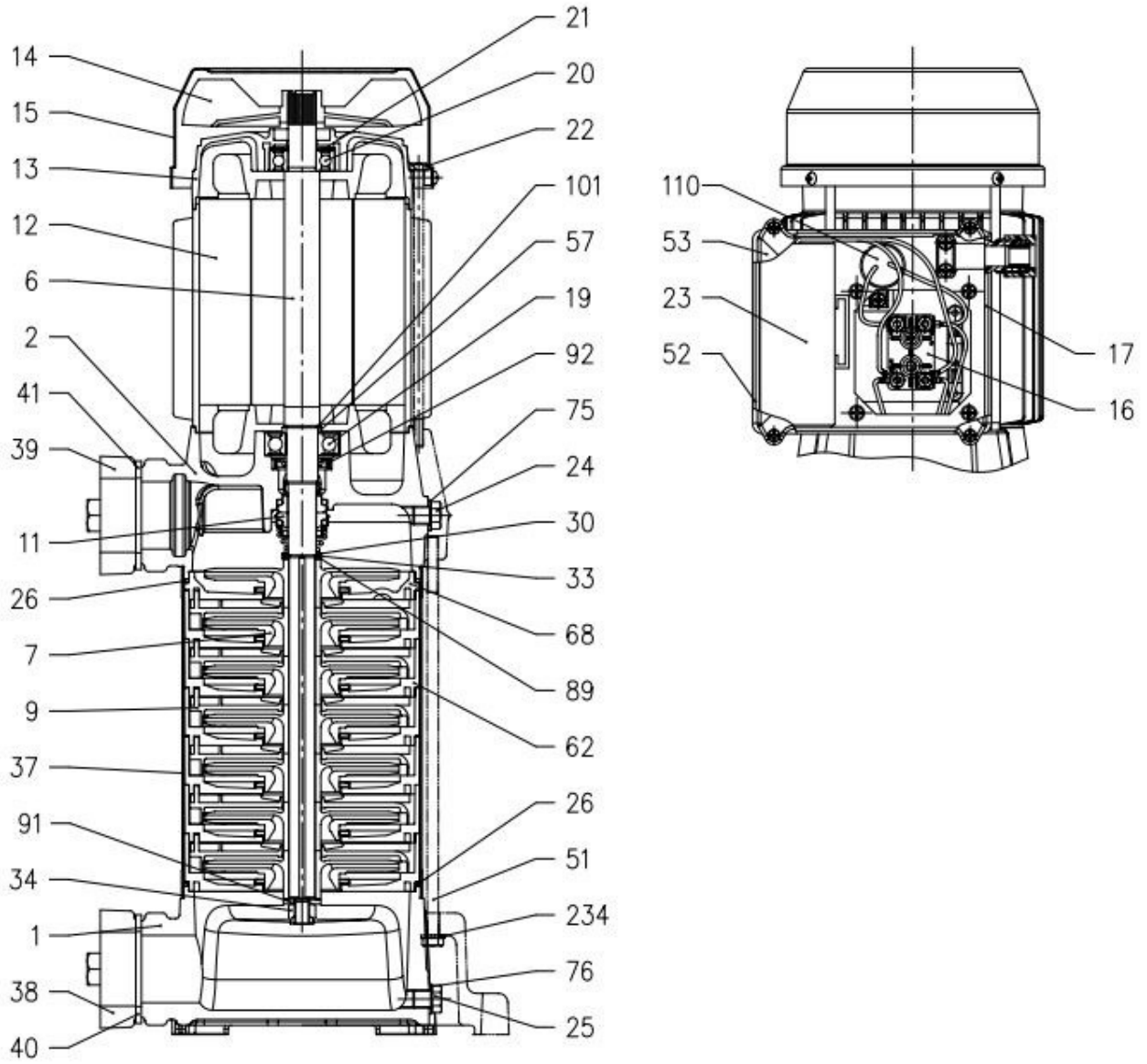


Turatia $\approx 2800 \text{ min}^{-1}$

Standard test: ISO 9906:2012 - Grad 3B

CONSTRUCTIE

DESEN VEDERE IN SECTIUNE



TABEL VEDERE IN SECTIUNE

NR.	NUME PIESA	MATERIAL	DIMENSIUNI	STANDARD	CANT.
1	Invelis al aspiratiei	Fonta cenusie EN-GJL-200-EN 1561	-	-	1
2	Invelis al refularii	Fonta cenusie EN-GJL-200-EN 1561	-	-	1
6	Ax cu rotor	EN 1.4005 (AISI 416)	-	-	1
7	Rotor	PPE+PS ranforsat cu firba de sticla	-	-	[1]
9	Difuzor	PPE+PS ranforsat cu firba de sticla	-	-	[1]
11	Etansare mecanica [2]	Carbon/ Ceramica/ NBR	-	-	1
12	Cadru motor cu stator	-	-	-	1
13	Invelis motor	Aluminiu	-	-	1
14	Ventilator	PA	-	-	1
15	Invelis ventilator	Fier P04 galvanizat	-	-	1
16	Tablou cu borne	-	-	-	1
17	Invelis cutie cu borde [3]	Aluminiu	-	-	1
19	Rulment cu bile la partea pompei	-	[4]	-	1
20	Rulment cu bile la partea ventilatorului	-	[4]	-	1
21	Inel de ajustare	Otel C70	-	-	1
22	Bulon de ancorare motor	Fier 42 galvanizat	M5xL	DESEN EBARA	4
23	Condensator [5]	-	-	-	1
24	Dop de amorsare a pompei	OT 58 UNI 5705	G 1/8"	UNI ISO 228	1
25	Dop de scurgere	OT 58 UNI 5705	G 1/8"	UNI ISO 228	1
26	O-ring	NBR	120x3	-	2
30	Saiba	EN 1.4301 (AISI 304)	12x22x1 – [pana la 0.6 kW]	DESEN EBARA	1

			15x22x1 – [peste 0.75 kW]		
33	Inel Seeger	EN 1.4021 (AISI 420)	12	UNI 7435	1
		EN 1.4301 (AISI 304)	14	JIS B2804-1978	1
34	Piulita rotor	EN 1.4301 (AISI 304)	M8x1 – [pana la 0.6 kW]	UNI 7474	1
			M10x1.25 {peste 0.75 kW}		
37	Invelisul exterior al pompei	EN 1.4301 (AISI 304)	-	-	1
38	Contra flansa	Fonta cenusie EN-GJL-200-EN 1561	1"¼	DESEN EBARA	1
39	Contra flansa	Fonta cenusie EN-GJL-200-EN 1561	1"¼	DESEN EBARA	1
40	Garnitura contra flansa	NBR	-	DESEN EBARA	1
41	Garnitura contra flansa	NBR	-	DESEN EBARA	1
51	Bulon de ancorare	Fe P04 galvanizat	M6	DESEN EBARA	4
52	Cutie de borne[4]	ABS Clasa V-0	-	-	1
53	Invelisul cutiei de borne[5]	ABS Clasa V-0	-	-	1
57	Despertitor rulment cu bile – partea pompei [6]	Otel C40	22x27x3	DESEN EBARA	1
62	Carcasa etaj	PPE+PS ranforsat cu firba de sticla/ PFTE	-	-	[1]
68	Etaj	PPE+PS ranforsat cu firba de sticla/ PFTE	-	-	1
75	Saiba	Aluminiu	10x16x1.5	DESEN EBARA	1
76	Saiba	Aluminiu	10x16x1.5	DESEN EBARA	1
89	Saiba	EN 1.4301 (AISI 304)	12x21x1 – [pana la 0.6 kW]	DESEN EBARA	1
			14.1x22x1 – [peste 0.75 kW]		
91	Saiba	EN 1.4301 (AISI 304)	8.4x17x1.6 – [pana la 0.6 kW]	UNI EN ISO 7089	1

			10.2x20x2.5 – [peste 0.75 kW]	DESEN EBARA	1
92	Etansare tip buza	NBR	12x24x4	DESEN EBARA	1
101	Inel Seeger	EN 1.4301 (AISI 304)	17x32x6 20	UNI 7435	1
110	Protectie motor	-	-	-	1
234	Saiba	Otel galvanizat	6.4x12.5x1.6	UNI EN ISO 7089	4

[1] Vedeti tabelul de la pagina 302

[2] Vedeti pagina 303

[3] Doar pentru trifazat

[4] Vedeti pagina 302

[5] Doar pentru trifazat

[6] Doar pentru marimea 80 a motorului (vedeti pagina 400)

[7] Doar pentru marimea 71 a motorului si doar pentru versiunile monofazat (vedeti pagina 400)

CONSTRUCTIE

CANTITATEA PENTRU MODEL

POMPA		POZ. 7	POZ. 9	POZ. 62
Tipul A	Tipul B			
CVM A/4	-	2	1	1
CVM A/6	CVM B/10	3	2	2
CVM A/8	CVM B/12	4	3	3
CVM A/10	CVM B/15	5	4	4
CVM A/12	CVM B/20	6	5	5
CVM A/15	CVM B/23	7	6	6
CVM A/18	CVM B/25	8	7	7

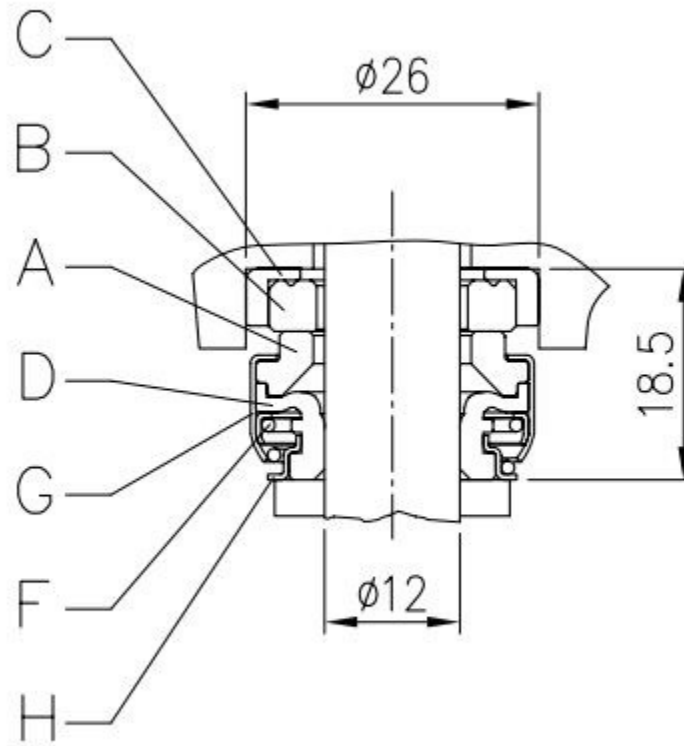
RULMENTI

Tipul pompei		Rulmenti cu bile			
Monofazat	Trifazat	La partea pompei	La partea pompei (*)	La partea ventilatorului	La partea ventilatorului (*)
CVM AM/4	CVM AM/4	6201 2RSH	-	6201 2RSH	-
CVM AM/6	CVM AM/6				
CVM AM/8	CVM AM/8				
CVM AM/10	CVM AM/10	6203 2RSH C3	6203-ZZ C3	6202 2RSH	6202-ZZ C3
CVM AM/12	CVM AM/12				
CVM AM/15	CVM AM/15				
CVM AM/18	CVM AM/18	6304 2RSH C3	6304-ZZ C3	6203 2RSH	6203-ZZ C3
CVM BM/10	CVM BM/10	6203 2RSH C3	6203-ZZ C3	6202 2RSH	6202-ZZ C3
CVM BM/12	CVM BM/12				
CVM BM/15	CVM BM/15				
CVM BM/20	CVM BM/20	6304 2RSH C3	6304-ZZ C3	6203 2RSH	6203-ZZ C3
CVM BM/23	CVM BM/23				
-	CVM BM/25				

(*) Doar pentru mototarele IE3

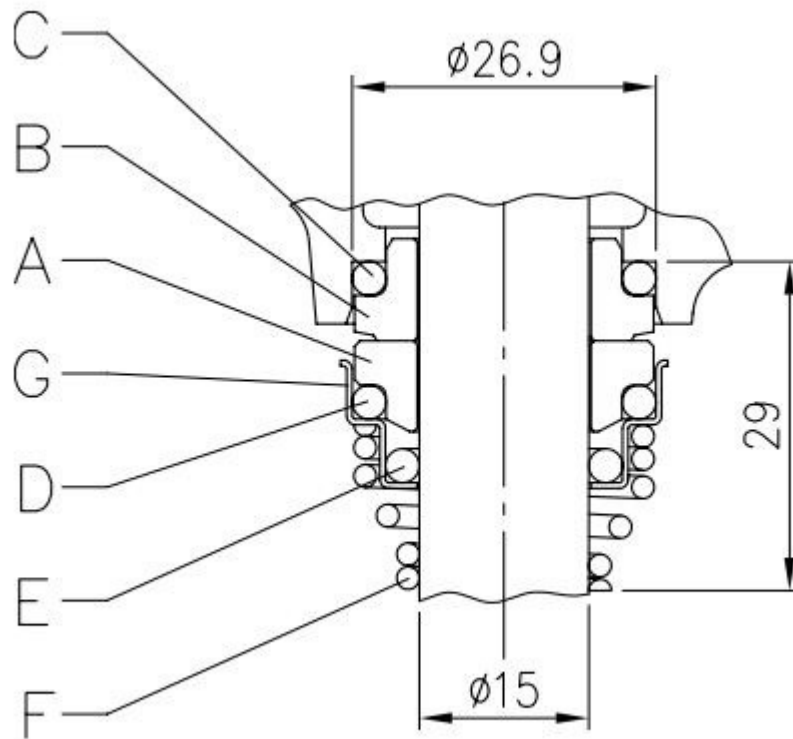
ETANSARE MECANICA

PANA LA 0.6 kW



REF	NUME PIESA	MATERIAL
A	Inel de etansare, rotativ	Carbon Grafit
B	Inel de etansare, stationar	Ceramica
C	Gheara de prindere	NBR
D	Membrana armonica	NBR
F	Arc automat	AISI 304
G	Cadru	AISI 304
H	Inel de retinere	AISI 304

PESTE 0.75 kW



REF	NUME PIESA	MATERIAL
A	Inel de etansare, rotativ	Ceramica
B	Inel de etansare, stationar	Carbon Grafite
C	O Ring	NBR
D	O Ring	NBR
E	O Ring	NBR
F	Arc automat	AISI 316
G	Cadru	Aisi 304

	Dimensiuni [mm]										Greutate [KgF]						
	Mare motor	B			H	ØI	MW		M	PG/M				(*)			
		[1~]	[3~]	(*) [3~]			[1~]	[3~]	(*)	[1~]	[3~]	[1~]	[3~]	[3~]			
CVM A/4	63	336	336	-	112	124	101	91.5	-	11	11	11	-				
CVM A/6		362	362	-	138				-								
CVM A/8		388	388	-	164				-								
CVM A/10	71	452	452	452	190	141	110.5	101	M16 x1.5	11	11	16.5	16.6	16.6			
CVM A/12		478	490	490	216				M16 x1.5						17.5	18.4	18.4
CVM A/15		516	516	516	242				M16 x1.5								
CVM A/18	80	565	565	565	268	159	136	120.5	M20 x1.5	13.5	11	21.2	21.8	22.7			
CVM B/10	71	400	400	400	138	141	110.5	101	M16 x1.5	11	11	15.9	15.9	15.9			
CVM B/12		426	438	438	164				M16 x1.5						16.8	17.5	17.5
CVM B/15		464	454	464	190				M16 x1.5								
CVM B/20	80	513	526	526	216	159	134.5	120.5	M20 x1.5	13.5	11	21.3	22.8	23.7			
CVM B/23		552	552	552	242				M20 x1.5						22.6	23.4	24.3
CVM B/25		-	578	578	268				-								

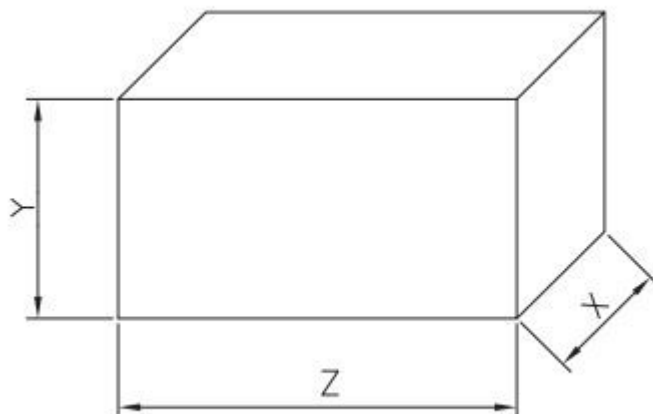
[1~] Monofazat

[3~] Trifazat

(*) Doar pentru motoare IE3

DIMENSIUNI SI GREUTATE

IMPACHETARE



Tipul pompei	Impachetare [mm]				Greutate [KgF]				
	X	Y	Z		[1~]	[3~]	(*)		
				(*)			[3~]		
CVM A/4	212	208	427	-	11.8	11.9	-		
CVM A/6					12.6	12.5	-		
CVM A/8					13.6	13.5	-		
CVM A/10			537	537	17.6	17.7	17.7		
CVM A/12					18.6	19.5	19.5		
CVM A/15					19.6	19.7	19.7		
CVM A/18	252	208	590	617	22.3	23.6	24.5		
CVM B/10	212				427	427	16.8	16.8	16.8
CVM B/12							537	537	17.9
CVM B/15			19.1	19.0					19.0
CVM B/20	252		590	617	22.4	23.6	24.5		
CVM B/23					23.7	24.5	25.4		
CVM B/25		-			24.8	25.7			

[1~] Monofazat

[3~] Trifazat

(*) Doar pentru motoare IE3

DATE MOTOR

Tipul pompei		Putere		Eficienta		Condensator		Eficienta (%)			Iesire [kW]		Incarcarea maxima de curent [A]			Curent folosint la pornire [A]		
Monofazat	Trifazat	[kW]	[HP]	Monofazat	Trifazat	Monofazat		50%	75%	100%	Monofazat	Trifazat	Incarcarea maxima de curent [A]			Curent folosint la pornire [A]		
						[μF]	[V]						230V	230V	400V	230V	230V	400V
CV M AM /4	CV M A/4	6.3	0.4	-	-	10	450	-	-	-	0.54	0.49	2.6	1.9	1.1	8.5	7.0	3.9
CV M AM /6	CV M A/6	0.44	0.6	-	-	12.5	450	-	-	-	0.69	0.69	3.2	2.3	1.3	9.7	10.0	5.6
CV M AM /8	CV M A/8	0.6	0.8	-	-	14	450	-	-	-	0.89	0.83	4.0	2.8	1.6	11.9	10.0	6.0
CV M AM /10	CV M A/10	0.75	1	-	IE2	20	450	77.2	80.9	81.3	1.27	0.92	6.0	2.9	1.7	25.1	22.0	12.9
-	CV M A/10	0.75	1	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7	-	19.7	11.4
CV M AM /12	CV M A/12	0.9	1.2	-	IE2	31.5	450	79.0	81.7	81.6	1.45	1.35	6.5	4.3	2.5	24.8	31.0	17.8
-	CV M A/12	0.9	1.2	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5	-	28.8	16.6
CV M AM /15	CV M A/15	1.1	1.5	-	IE2	31.5	450	79.0	81.7	81.6	1.60	1.35	7.2	4.3	2.5	29.3	31.0	17.8

-	CV M A/1 5	1.1	1.5	-	IE3	-	-	81. 7	83. 1	82. 4	-	1.3 4	-	4.3	2.5	-	28. 8	16. 6
CV M AM /18	CV M A/1 8	1.3	1.8	-	IE2	35	450	79. 7	82. 5	83. 0	1.7 6	1.8 0	7.8	5.6	3.2	41. 0	45. 0	25. 7
-	CV M A/1 8	1.3	1.8	-	IE3	-	-	83. 5	84. 3	84. 6	-	1.7 7	-	5.8	3.3	-	47. 4	27. 4
CV M BM /10	CV M B/1 0	0.7 5	1	-	IE2	20	450	77. 2	80. 9	81. 3	1.1 4	0.9 2	5.6	2.9	1.7	23. 5	22. 0	12. 9
-	CV M B/1 0	0.7 5	1	-	IE3	-	-	80. 9	82. 3	82. 1	-	0.9 1	-	3.0	1.7	-	19. 7	11.4
CV M BM /12	CV M B/1 2	0.9	1.2	-	IE2	31. 5	450	79. 0	81. 7	81. 6	1.3 8	1.3 5	6.2	4.3	2.5	23. 6	31. 0	17. 8
-	CV M B/1 2	0.9	1.2	-	IE3	-	-	81. 7	83. 1	82. 4	-	1.3 4	-	4.3	2.5	-	28. 8	16. 6
CV M BM /15	CV M B/1 5	1.1	1.5	-	IE2	31. 5	450	79. 0	81. 7	81. 6	1.6 3	1.3 5	7.4	4.3	2.5	30. 1	31. 0	17. 8
-	CV M B/1 5	1.1	1.5	-	IE3	-	-	81. 7	83. 1	82. 4	-	1.3 4	-	4.3	2.5	-	28. 8	16. 6
CV M BM /20	CV M B/2 0	1.5	2	-	IE2	40	450	78. 6	83. 0	84. 2	1.9 1	1.7 8	8.3	6.3	3.7	43. 0	34. 3	20. 0
-	CV M B/2 0	1.5	2	-	IE3	-	-	82. 7	86. 1	87. 0	-	1.7 2	-	6.6	3.8	-	66. 6	38. 4

CV M BM /23	CV M B/2 3	1.7	2.3	-	IE2	40	450	80. 3	83. 4	83. 8	2.1 4	2.0 9	9.6	6.9	4.0	43. 0	34. 3	20. 0
-	CV M B/2 3	1.7	2.3	-	IE3	-	-	84. 2	86. 8	86. 9	-	2.0 1	-	7.1	4.1	-	66. 6	38. 4
-	CV M B/2 5	1.8 5	2.5	-	IE2	-	-	83. 0	84. 4	83. 8	-	2.6 3	-	8.1	4.7	-	59. 0	34. 3
-	CV M B/2 5	1.8 5	2.5	-	IE3	-	-	86. 2	87. 0	86. 0	-	2.5 5	-	8.2	4.7	-	66. 6	38. 4

DATE ZGOMOT

Tipul pompei		Putere		LpA - dB(A)*
Monofazat	Trifazat	[kW]	[HP]	
CVM AM/4	CVM AM/4	0.3	0.4	53
CVM AM/6	CVM AM/6	0.44	0.6	
CVM AM/8	CVM AM/8	0.6	0.8	
CVM AM/10	CVM AM/10	0.75	1	62
CVM AM/12	CVM AM/12	0.9	1.2	
CVM AM/15	CVM AM/15	1.1	1.5	
CVM AM/18	CVM AM/18	1.3	1.8	67
CVM BM/10	CVM BM/10	0.75	1	62
CVM BM/12	CVM BM/12	0.9	1.2	
CVM BM/15	CVM BM/15	1.1	1.5	
CVM BM/20	CVM BM/20	1.5	2	67
CVM BM/23	CVM BM/23	1.7	2.3	
-	CVM BM/25	1.85	2.5	

* Valoarea medie a catorva masuratori executate in jurul pompei, la 1 m distanta.

Toleranta: ± 2.5 dB