

## VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304



Vertical multistage centrifugal electric pumps in AISI 304 stainless steel.

### APPLICATIONS

- Treating water
- Industrial washing systems
- Heating and air conditioning
- Water supply and boosting
- Agriculture
- Irrigation

### TECHNICAL DETAILS

- Openings in-line
- Strong and compact construction
- Wide range of models available in different numbers of stages to guarantee requested flow rate and head
- Supplied complete with standard counter-flanges (in compliance with ISO 228)

### PUMP TECHNICAL DATA

- Maximum working pressure: 10 bar
  - Maximum temperature of the liquid: 90°C
  - Suction and discharge connection
    - HVM 3 Ø 32 / Ø 32
    - HVM 5 Ø 32 / Ø 32
    - HVM 10 Ø 40 / Ø 40
  - Counter-flanges: HVM 3 G1-G1, HVM 5 G1¼-G1¼, HVM 10 G1½ - G1½
  - MEI > 0,4
- For further information please see our Data Book

### MOTOR TECHNICAL DATA

- High efficiency motors IE2 starting from 0,75kW
- T.E.F.C. 2 poles 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
- Circuit breaker protection under user's responsibility for the three phase version

### MATERIALS

- Cast iron pump casing EN-GJL 250 EN1561 (painted in cataphoresis)
- External casing, impellers, intermediate stage, seal housing disc and shaft (part in contact with the liquid) in EN 1.4301 (AISI 304)
- Mechanical seal in Carbon/Ceramic/NBR

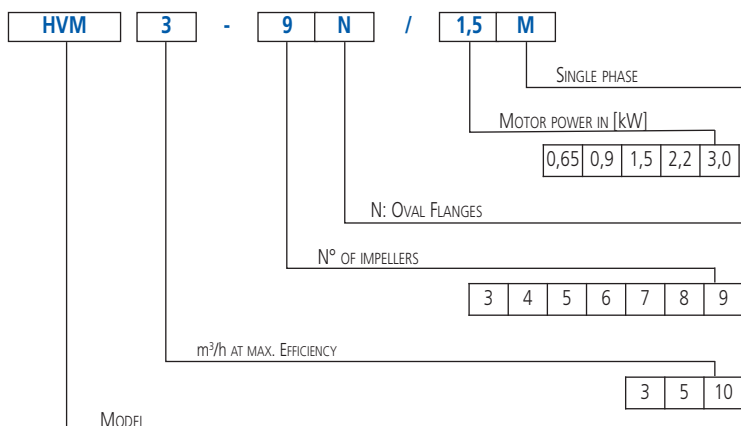
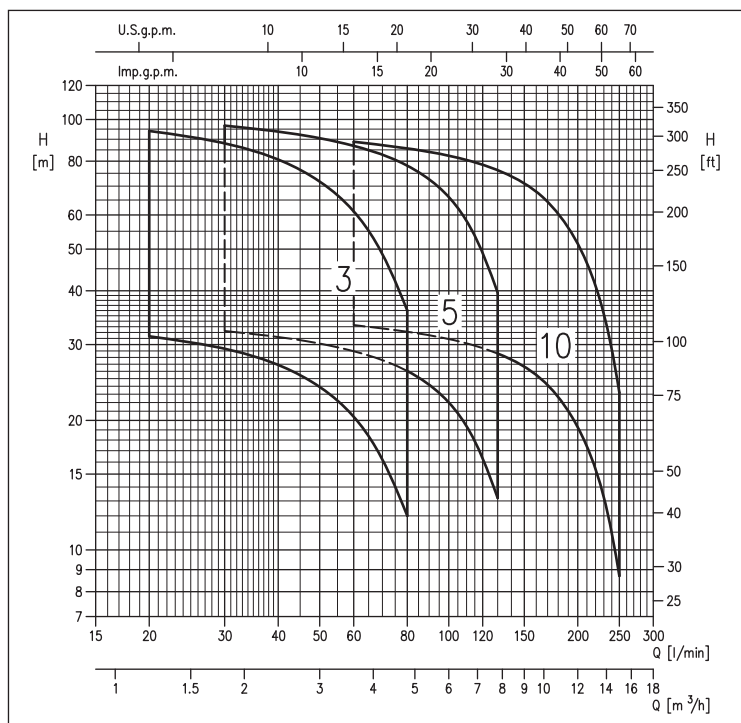
### CONTROL PANELS

- 1EPBH

### ACCESSORIES (on request)

- 5 litre 10 bar ¾ EPDM vessel
- 24 litre 8 bar 1" EPDM vessel
- 24 litre 10 bar 1" EPDM vessel
- 24 litre 16 bar 1" EPDM vessel
- PVC 5m key float with counter-weight
- PVC 10m key float with counter-weight
- SQUARE-D FSG-2 1.4÷4.6 bar G¼ F pressure switch
- FYG-22 2.8÷7 bar G¼ F pressure switch
- FYG-32 5.6÷10.5 bar G¼ F pressure switch
- Presscomfort - Pressure regulator
- Press•o•Matic - Variable speed control system (230V±10% single phase - power supply three phase 220V output – maximum motor power 2.2 kW - 3 HP)
- E-drive - Frequency converter

### PERFORMANCE RANGE (according to ISO 9906 Attachment A)



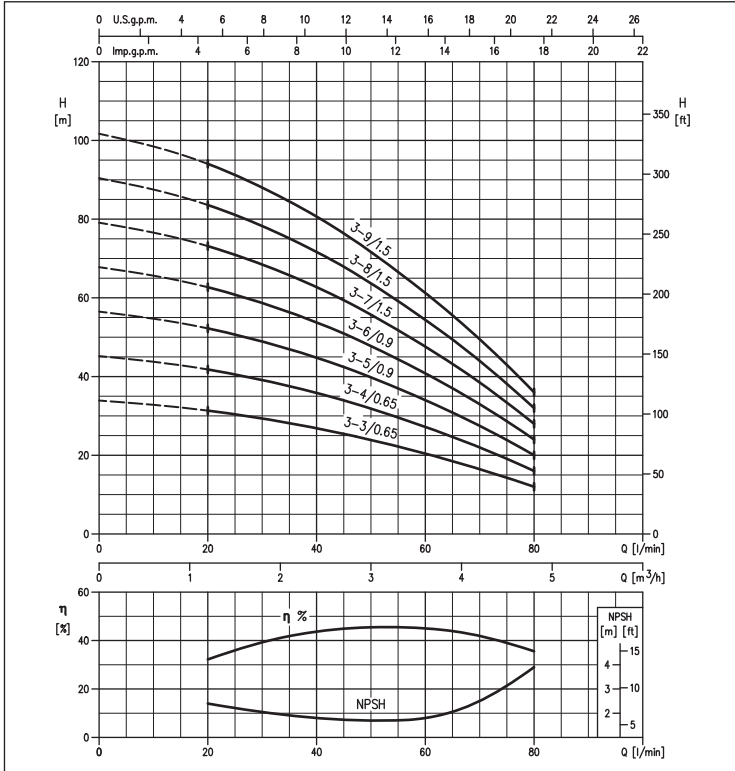


# HVM

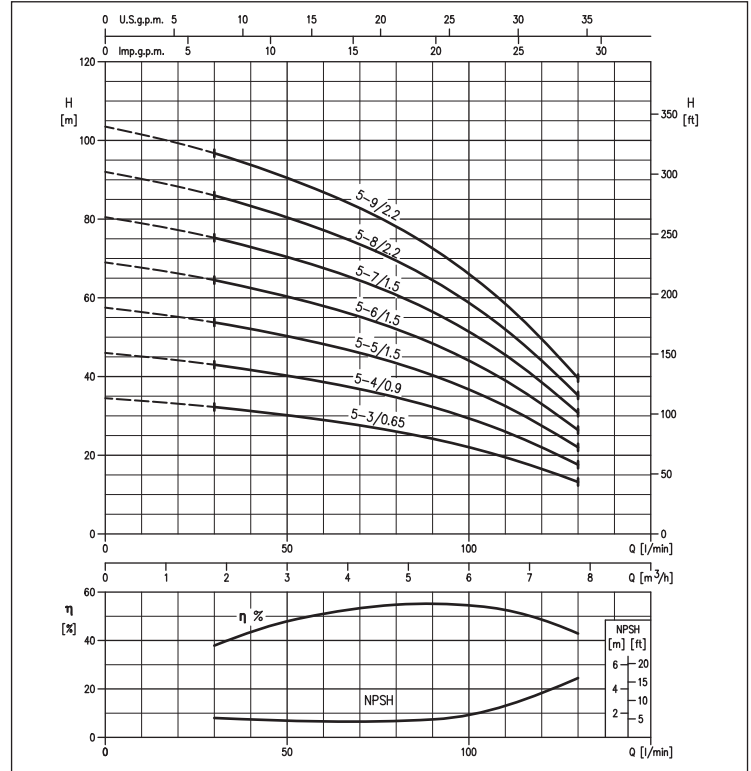
## VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

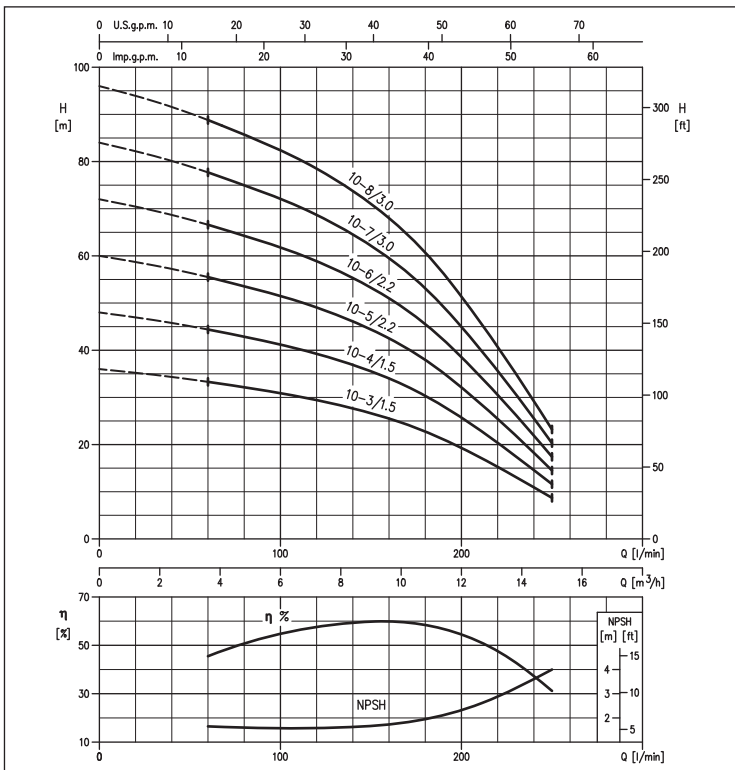
**PERFORMANCE CURVES serie HVM 3** (from 0,65 kW to 1,5 kW)  
(according to ISO 9906 Attachment A)



**PERFORMANCE CURVES serie HVM 5** (from 0,65 kW to 2,2 kW)  
(according to ISO 9906 Attachment A)



**PERFORMANCE CURVES serie HVM 10** (from 1,5 kW to 3 kW)  
(according to ISO 9906 Attachment A)



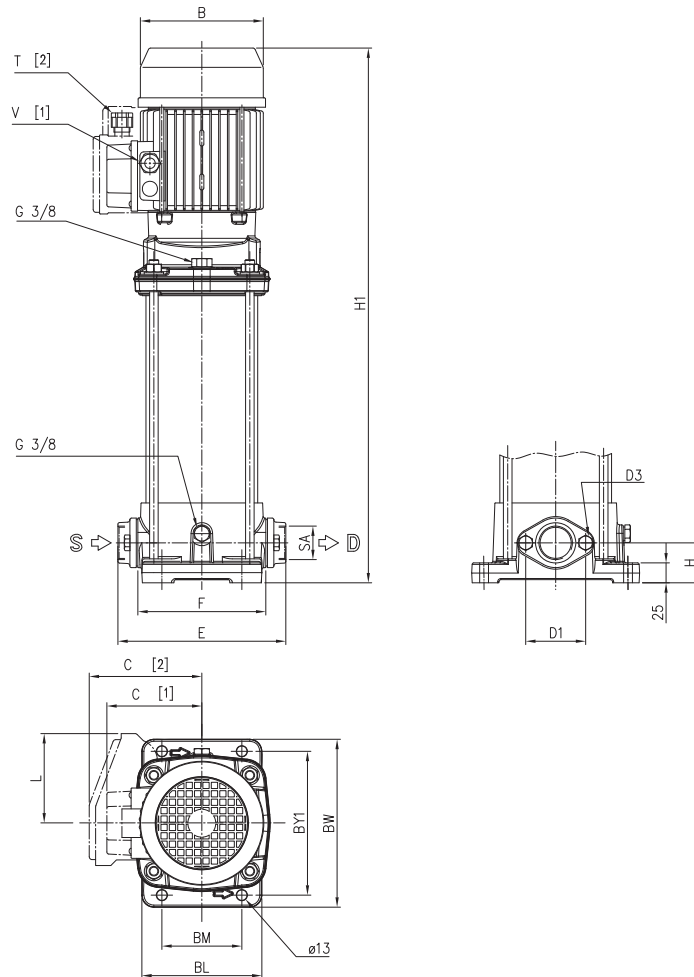
## VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

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### PERFORMANCE TABLE

Model		P <sub>2</sub>		Q=Flow rate																			
Single phase 230V	Three phase 230/400V	[HP]	[kW]	l/min		30		45		60		80		100		130		160		200		250	
				20	m <sup>3</sup> /h	1,2	1,8	2,7	3,6	4,8	6	7,8	9,6	12	15								
				H=Head [m]																			
HVM 3-3N/0,65M	HVM 3-3N/0,65	0,9	0,65	31,4	29,3	25,5	20,4	12,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HVM 3-4N/0,65M	HVM 3-4N/0,65	0,9	0,65	42,0	39,1	34,0	27,2	16,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HVM 3-5N/0,9M	HVM 3-5N/0,9	1,2	0,9	52,5	49,0	42,5	34,0	20,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HVM 3-6N/0,9M	HVM 3-6N/0,9	1,2	0,9	62,5	58,5	51,0	41,0	24,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HVM 3-7N/1,5M	HVM 3-7N/1,5	2	1,5	73,0	68,5	59,5	47,5	28,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HVM 3-8N/1,5M	HVM 3-8N/1,5	2	1,5	83,5	78,0	68,0	54,5	32,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HVM 3-9N/1,5M	HVM 3-9N/1,5	2	1,5	94,0	88,0	76,5	61,0	36,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HVM 5-3N/0,65M	HVM 5-3N/0,65	0,9	0,65	-	32,3	30,7	29,0	26,0	22,0	13,2	-	-	-	-	-	-	-	-	-	-	-	-	-
HVM 5-4N/0,9M	HVM 5-4N/0,9	1,2	0,9	-	43,0	41,0	38,6	34,7	29,4	17,6	-	-	-	-	-	-	-	-	-	-	-	-	-
HVM 5-5N/1,5M	HVM 5-5N/1,5	2	1,5	-	54,0	51,0	48,5	43,5	36,7	22,0	-	-	-	-	-	-	-	-	-	-	-	-	-
HVM 5-6N/1,5M	HVM 5-6N/1,5	2	1,5	-	64,5	61,5	58,0	52,0	44,0	26,4	-	-	-	-	-	-	-	-	-	-	-	-	-
HVM 5-7N/1,5M	HVM 5-7N/1,5	2	1,5	-	75,5	71,5	67,5	61,0	51,5	30,8	-	-	-	-	-	-	-	-	-	-	-	-	-
HVM 5-8N/2,2M	HVM 5-8N/2,2	3	2,2	-	86,0	82,0	77,0	69,5	58,5	35,2	-	-	-	-	-	-	-	-	-	-	-	-	-
HVM 5-9N/2,2M	HVM 5-9N/2,2	3	2,2	-	97,0	92,0	87,0	78,0	66,0	39,6	-	-	-	-	-	-	-	-	-	-	-	-	-
HVM 10-3N/1,5M	HVM 10-3N/1,5	2	1,5	-	-	-	33,3	32,1	30,9	28,6	25,5	19,3	8,7	-	-	-	-	-	-	-	-	-	-
HVM 10-4N/1,5M	HVM 10-4N/1,5	2	1,5	-	-	-	44,5	43,0	41,0	38,1	34,0	25,7	11,6	-	-	-	-	-	-	-	-	-	-
HVM 10-5N/2,2M	HVM 10-5N/2,2	3	2,2	-	-	-	55,5	53,5	51,5	47,5	42,5	32,1	14,5	-	-	-	-	-	-	-	-	-	-
HVM 10-6N/2,2M	HVM 10-6N/2,2	3	2,2	-	-	-	66,5	64,5	62,0	57,0	51,0	38,5	17,4	-	-	-	-	-	-	-	-	-	-
-	HVM 10-7N/3	4	3	-	-	-	77,5	75,0	72,0	66,5	59,5	45,0	20,3	-	-	-	-	-	-	-	-	-	-
-	HVM 10-8N/3	4	3	-	-	-	89,0	85,5	82,5	76,0	68,0	51,5	23,2	-	-	-	-	-	-	-	-	-	-

### DIMENSIONS



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

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## VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

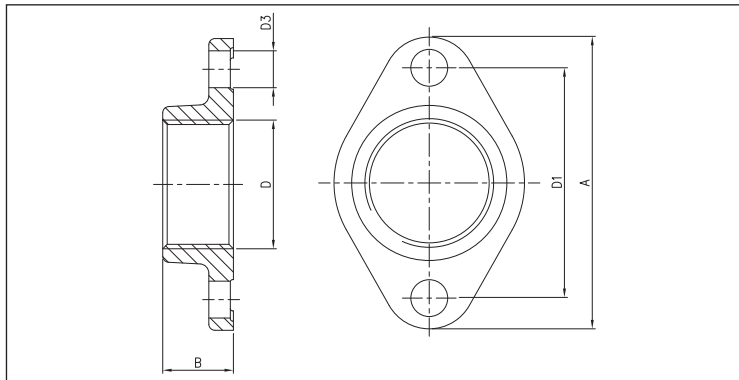
in AISI 304

### HVM DIMENSIONS TABLE

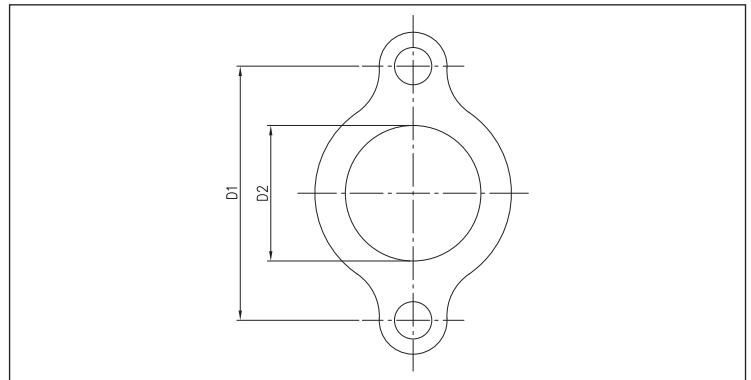
Model	Dimensions [mm]																		Weight [kg]
	H	H1	E	F	B	C [2]	C [1]	L	BM	BL	BW	BY1	SA	D1	D3	T [2]	V [1]		
HVM 3-3N/0.65 M	50	464	209	160	135	110	-	86.5	100	150	210	180	G1	75	M10	Pg 11	-	18,6	
HVM 3-3N/0.65	50	464	209	160	135	-	102	-	100	150	210	180	G1	75	M10	-	Pg 11	18,5	
HVM 3-4N/0.65 M	50	488	209	160	135	110	-	86.5	100	150	210	180	G1	75	M10	Pg 11	-	19,3	
HVM 3-4N/0.65	50	488	209	160	135	-	102	-	100	150	210	180	G1	75	M10	-	Pg 11	19,1	
HVM 3-5N/0.9 M	50	512	209	160	135	129	-	106	100	150	210	180	G1	75	M10	M20x1,5	-	21,2	
HVM 3-5N/0.9	50	524	209	160	135	-	102	-	100	150	210	180	G1	75	M10	-	Pg 11	21,9	
HVM 3-6N/0.9 M	50	536	209	160	135	129	-	106	100	150	210	180	G1	75	M10	M20x1,5	-	22,4	
HVM 3-6N/0.9	50	548	209	160	135	-	102	-	100	150	210	180	G1	75	M10	-	Pg 11	23,0	
HVM 3-7N/1.5 M	50	597	209	160	155	136	-	112	100	150	210	180	G1	75	M10	M20x1,5	-	25,4	
HVM 3-7N/1.5	50	608	209	160	155	-	119	-	100	150	210	180	G1	75	M10	-	Pg 11	27,1	
HVM 3-8N/1.5 M	50	621	209	160	155	136	-	112	100	150	210	180	G1	75	M10	M20x1,5	-	25,4	
HVM 3-8N/1.5	50	632	209	160	155	-	119	-	100	150	210	180	G1	75	M10	-	Pg 11	27,8	
HVM 3-9N/1.5 M	50	645	209	160	155	136	-	112	100	150	210	180	G1	75	M10	M20x1,5	-	27,4	
HVM 3-9N/1.5	50	656	209	160	155	-	119	-	100	150	210	180	G1	75	M10	-	Pg 11	28,7	
HVM 5-3N/0.65 M	50	464	209	160	135	110	-	86.5	100	150	210	180	G1¼	75	M10	Pg 11	-	18,6	
HVM 5-3N/0.65	50	464	209	160	135	-	102	-	100	150	210	180	G1¼	75	M10	-	Pg 11	18,5	
HVM 5-4N/0.9 M	50	488	209	160	135	129	-	106	100	150	210	180	G1¼	75	M10	M20x1,5	-	20,9	
HVM 5-4N/0.9	50	500	209	160	135	-	102	-	100	150	210	180	G1¼	75	M10	-	Pg 11	21,6	
HVM 5-5N/1.5 M	50	549	209	160	155	136	-	112	100	150	210	180	G1¼	75	M10	M20x1,5	-	24,1	
HVM 5-5N/1.5	50	560	209	160	155	-	119	-	100	150	210	180	G1¼	75	M10	-	Pg 11	25,5	
HVM 5-6N/1.5 M	50	573	209	160	155	136	-	112	100	150	210	180	G1¼	75	M10	M20x1,5	-	24,3	
HVM 5-6N/1.5	50	584	209	160	155	-	119	-	100	150	210	180	G1¼	75	M10	-	Pg 11	26,6	
HVM 5-7N/1.5 M	50	597	209	160	155	136	-	112	100	150	210	180	G1¼	75	M10	M20x1,5	-	26,3	
HVM 5-7N/1.5	50	608	209	160	155	-	119	-	100	150	210	180	G1¼	75	M10	-	Pg 11	27,6	
HVM 5-8N/2.2 M	50	675	209	160	171	141	-	112	100	150	210	180	G1¼	75	M10	M20x1,5	-	31,5	
HVM 5-8N/2.2	50	634	209	160	155	-	119	-	100	150	210	180	G1¼	75	M10	-	Pg 11	27,8	
HVM 5-9N/2.2 M	50	699	209	160	171	141	-	112	100	150	210	180	G1¼	75	M10	M20x1,5	-	32,0	
HVM 5-9N/2.2	50	658	209	160	155	-	119	-	100	150	210	180	G1¼	75	M10	-	Pg 11	27,9	
HVM 10-3N/1.5 M	80	549	255	200	155	136	-	112	130	185	250	215	G1½	100	M12	M20x1,5	-	26,9	
HVM 10-3N/1.5	80	560	255	200	155	-	119	-	130	185	250	215	G1½	100	M12	-	Pg 11	28,0	
HVM 10-4N/1.5 M	80	577	255	200	155	136	-	112	130	185	250	215	G1½	100	M12	M20x1,5	-	27,8	
HVM 10-4N/1.5	80	590	255	200	155	-	119	-	130	185	250	215	G1½	100	M12	-	Pg 11	29,5	
HVM 10-5N/2.2 M	80	663	255	200	171	141	-	112	130	185	250	215	G1½	100	M12	M20x1,5	-	33,6	
HVM 10-5N/2.2	80	622	255	200	155	-	119	-	130	185	250	215	G1½	100	M12	-	Pg 11	30,1	
HVM 10-6N/2.2 M	80	693	255	200	171	141	-	112	130	185	250	215	G1½	100	M12	M20x1,5	-	34,7	
HVM 10-6N/2.2	80	650	255	200	155	-	119	-	130	185	250	215	G1½	100	M12	-	Pg 11	30,5	
HVM 10-7N/3	80	761	255	200	171	-	124	-	130	185	250	215	G1½	100	M12	-	Pg 13,5	37,2	
HVM 10-8N/3	80	791	255	200	171	-	124	-	130	185	250	215	G1½	100	M12	-	Pg 13,5	38,1	

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

### COUNTER-FLANGE



### GASKET



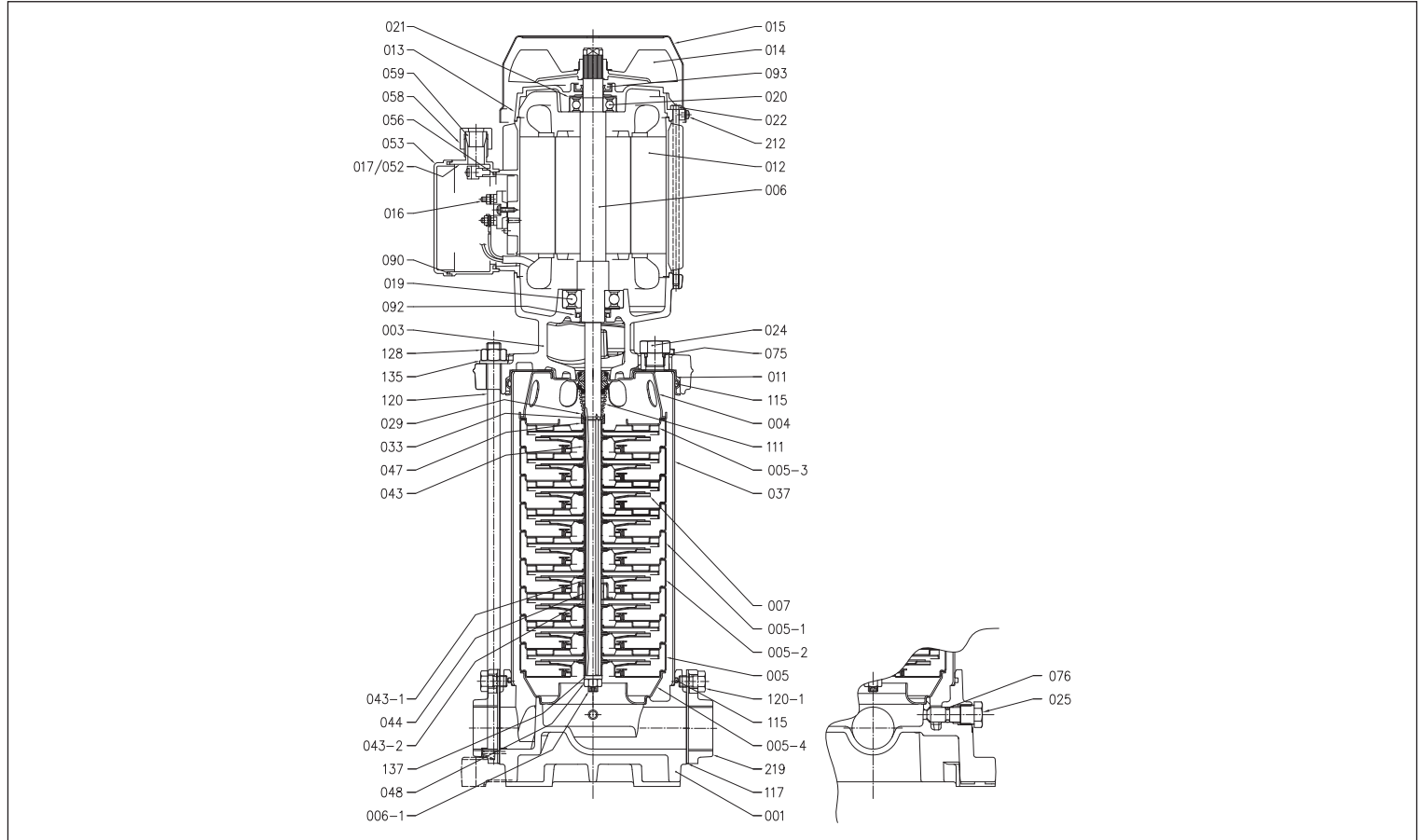
### DIMENSIONS TABLE AND MATERIALS

DN	Counter-flange						Gasket	
	D	D1	D3	A	B	Material	D2	Material
25	G1	75	12	95	23	Galvanised steel	40	EPDM
32	G1¼	75	12	95	23	Galvanised steel	40	EPDM
40	G1½	100	15	125	26	Galvanised steel	45	EPDM

## VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

### SECTIONAL VIEW



### MATERIALS TABLE

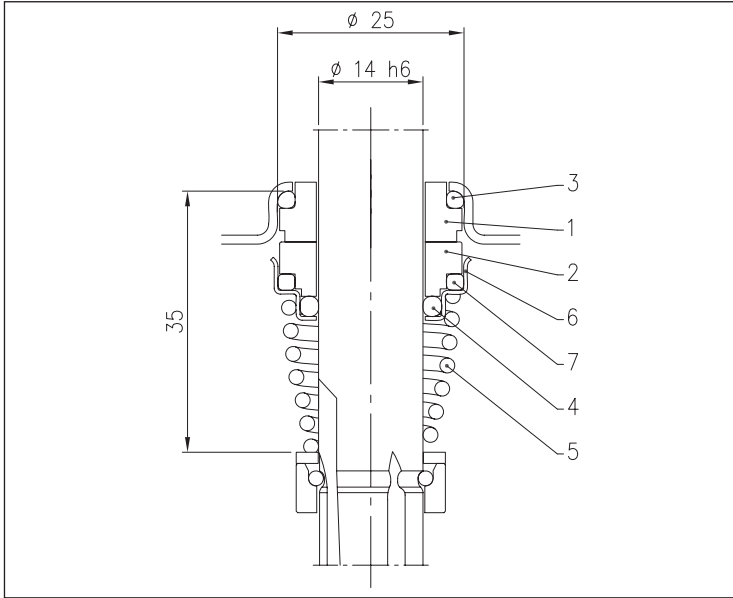
Ref.	Name	Material	Ref.	Name	Material
001	Pump body	Cast iron EN-GJL 250 EN1561	043	Impeller spacer	EN 1.4301 (AISI 304)
003	Motor support	Cast iron EN-GJL 250 EN1561	043-1	Shaft casing	EN 1.4301 (AISI 304)
004	Pressure pump body	EN 1.4301 (AISI 304)	043-2	Shaft casing	EN 1.4301 (AISI 304)
005	Intermediate stage (suction)	EN 1.4301 (AISI 304)+PTFE	044	Bearing shaft casing	EN 1.4460 (AISI 329)
005-1	Intermediate stage	EN 1.4301 (AISI 304)+PTFE	047	Holding ring	EN 1.4301 (AISI 304)
005-2	Intermediate stage (bearing)	EN 1.4301 (AISI 304)+PTFE+Ceramic	048	Nut	EN 1.4301 (AISI 304)
005-3	Discharge stage	EN 1.4301 (AISI 304)+PTFE	052	Capacitor-holder box [1]	ABS
005-4	First stage flange	EN 1.4301 (AISI 304)	053	Capacitor-holder box cover [1]	ABS
006	Motor shaft	-	056	Capacitor-holder box cover gasket	NBR
006-1	Hydraulic shaft	EN 1.4301 (AISI 304)	058	Cable gland nut	-
007	Impeller	EN 1.4301 (AISI 304)	059	Cable gland gasket	NBR
011	Seal housing disc	EN 1.4301 (AISI 304)	075	O-Ring	NBR
012	Motor case	-	076	O-Ring	NBR
013	Motor cover	Aluminium	090	Gasket	NBR
014	Fan	PA	092	Sealing ring (pump side)	-
015	Fan cover	Galvanised Fe P04	093	Sealing ring (motor side)	-
016	Terminal box	-	111	Mechanical seal	Carbon/Ceramic/NBR
017	Terminal box cover	Aluminium	115	O-Ring	NBR
019	Bearing (pump side)	-	117	Flange gasket	EPDM
020	Bearing (motor side)	-	120	Tie-rod	Galvanised Fe 42
021	Adjusting ring	Steel C70	120-1	Counter-flange screw	Galvanised steel
022	Tie-rod	Galvanised Fe 42	128	Tie-rod nut	Galvanised steel
024	Filler cap	EN 1.4301 (AISI 304)	135	Washer	Galvanised steel
025	Drain plug	EN 1.4301 (AISI 304)	137	Shaft washer	EN 1.4301 (AISI 304)
029	Washer for mechanical seal	EN 1.4301 (AISI 304)	212	Fan cover screw	Galvanised steel
033	Semi-ring	EN 1.4301 (AISI 304)	219	Counter-flange	Galvanised steel
037	External casing	EN 1.4301 (AISI 304)			

[1]= For single phase only

## VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

### MECHANICAL SEAL



### MATERIALS TABLE

Ref.	Name	Material
1	Fixed part	Ceramic
2	Rotating part	Carbon
3	O-Ring	NBR
4	O-Ring	NBR
5	Spring	EN 1.4402 (AISI 316)
6	Structure/frame	EN 1.4301 (AISI 304)
7	O-Ring	NBR

### ELECTRIC DATA TABLE

Model		P <sub>2</sub>		Efficiency		Capacitor		Efficiency (%)			P <sub>1</sub>		Absorbed Current [A]		
Single phase 230V	Three phase 230/400V	[HP]	[kW]	Single phase	Three phase	Single phase μF	V <sub>c</sub>	Three phase			Single phase [kW]	Three phase [kW]	Single phase 230V	Three phase 230V	400V
								50%	75%	100%					
HVM 3-3N/0.65M	HVM 3-3N/0.65	0,9	0,65	-	-	16	450	-	-	-	0,97	0,85	4,5	2,8	1,6
HVM 3-4N/0.65M	HVM 3-4N/0.65	0,9	0,65	-	-	16	450	-	-	-	0,97	0,85	4,5	2,8	1,6
HVM 3-5N/0.9M	HVM 3-5N/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
HVM 3-6N/0.9M	HVM 3-6N/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
HVM 3-7N/1.5M	HVM 3-7N/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
HVM 3-8N/1.5M	HVM 3-8N/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
HVM 3-9N/1.5M	HVM 3-9N/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
HVM 5-3N/0.65M	HVM 5-3N/0.65	0,9	0,65	-	-	16	450	-	-	-	0,97	0,85	4,5	2,8	1,6
HVM 5-4N/0.9M	HVM 5-4N/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
HVM 5-5N/1.5M	HVM 5-5N/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
HVM 5-6N/1.5M	HVM 5-6N/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
HVM 5-7N/1.5M	HVM 5-7N/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
HVM 5-8N/2.2M	HVM 5-8N/2.2	3,0	2,2	-	IE2	50	450	83,0	84,4	83,8	2,92	2,63	13,0	8,1	4,7
HVM 5-9N/2.2M	HVM 5-9N/2.2	3,0	2,2	-	IE2	50	450	83,0	84,4	83,8	2,92	2,63	13,0	8,1	4,7
HVM 10-3N/1.5M	HVM 10-3N/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
HVM 10-4N/1.5M	HVM 10-4N/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
HVM 10-5N/2.2M	HVM 10-5N/2.2	3,0	2,2	-	IE2	50	450	83,0	84,4	83,8	2,92	2,63	13,0	8,1	4,7
HVM 10-6N/2.2M	HVM 10-6N/2.2	3,0	2,2	-	IE2	50	450	83,0	84,4	83,8	2,92	2,63	13,0	8,1	4,7
-	HVM 10-7N/3	4,0	3	-	IE2	-	-	85,0	86,7	86,3	-	3,48	-	10,6	6,1
-	HVM 10-8N/3	4,0	3	-	IE2	-	-	85,0	86,7	86,3	-	3,48	-	10,6	6,1

The contents of this publication must not be regarded as binding. EBARA Pumps Europe S.p.A. reserves the right to effect any modification it deems necessary, without prior notice.

## VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

### NOISE DATA TABLE

Single phase 230V	Model Three phase 230/400V	P <sub>2</sub>		L <sub>pA</sub> - dB(A)*
		[HP]	[kW]	
HVM 3-3N/0.65M	HVM 3-3N/0.65	0,9	0,65	61
HVM 3-4N/0.65M	HVM 3-4N/0.65	0,9	0,65	
HVM 3-5N/0.9M	HVM 3-5N/0.9	1,2	0,9	62
HVM 3-6N/0.9M	HVM 3-6N/0.9	1,2	0,9	
HVM 3-7N/1.5M	HVM 3-7N/1.5	2,0	1,5	68
HVM 3-8N/1.5M	HVM 3-8N/1.5	2,0	1,5	
HVM 3-9N/1.5M	HVM 3-9N/1.5	2,0	1,5	
HVM 5-3N/0.65M	HVM 5-3N/0.65	0,9	0,65	61
HVM 5-4N/0.9M	HVM 5-4N/0.9	1,2	0,9	62
HVM 5-5N/1.5M	HVM 5-5N/1.5	2,0	1,5	68
HVM 5-6N/1.5M	HVM 5-6N/1.5	2,0	1,5	
HVM 5-7N/1.5M	HVM 5-7N/1.5	2,0	1,5	
HVM 5-8N/2.2M	-	3,0	2,2	70
-	HVM 5-8N/2.2	3,0	2,2	67
HVM 5-9N/2.2M	-	3,0	2,2	70
-	HVM 5-9N/2.2	3,0	2,2	67
HVM 10-3N/1.5M	HVM 10-3N/1.5	2,0	1,5	68
HVM 10-4N/1.5M	HVM 10-4N/1.5	2,0	1,5	
HVM 10-5N/2.2M	-	3,0	2,2	70
-	HVM 10-5N/2.2	3,0	2,2	67
HVM 10-6N/2.2M	-	3,0	2,2	70
-	HVM 10-6N/2.2	3,0	2,2	67
-	HVM 10-7N/3	4,0	3	71
-	HVM 10-8N/3	4,0	3	

\* Mean value of several measures at 1m distance around the pump.  
Tolerance ± 2,5 dB.