

## VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304



Vertical multistage centrifugal electric pumps in AISI 304 stainless steel.

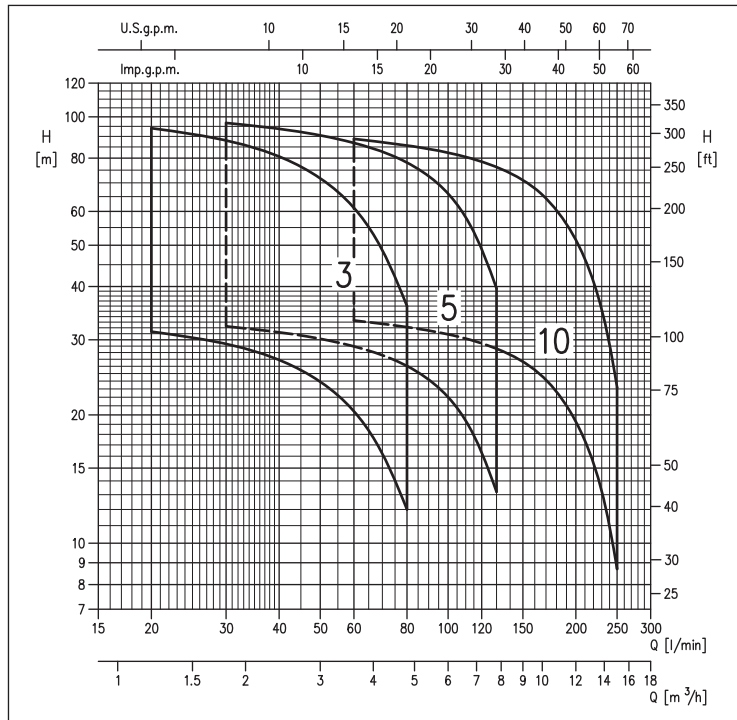
### APPLICATIONS

- 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)

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



### TECHNICAL DATA

- Maximum working pressure: 10 bar
- Maximum temperature of the liquid: 90°C
- T.E.F.C. 2 pole motor
- Class of insulation F
- IP55 Protection rating
- 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
- 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

### MATERIALS

- Cast iron pump body (painted in cataphoresis)
- External casing, impellers, intermediate stage, seal housing disc and shaft in AISI 304
- Mechanical seal in Carbon/Ceramic/NBR

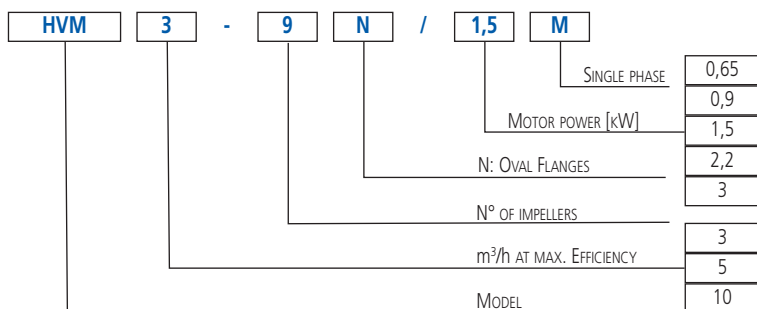
### CONTROL PANELS

- 1EPBH (see page 68)

### 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 (see page 70)
- 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 - see page 71)

### IDENTIFICATION CODE

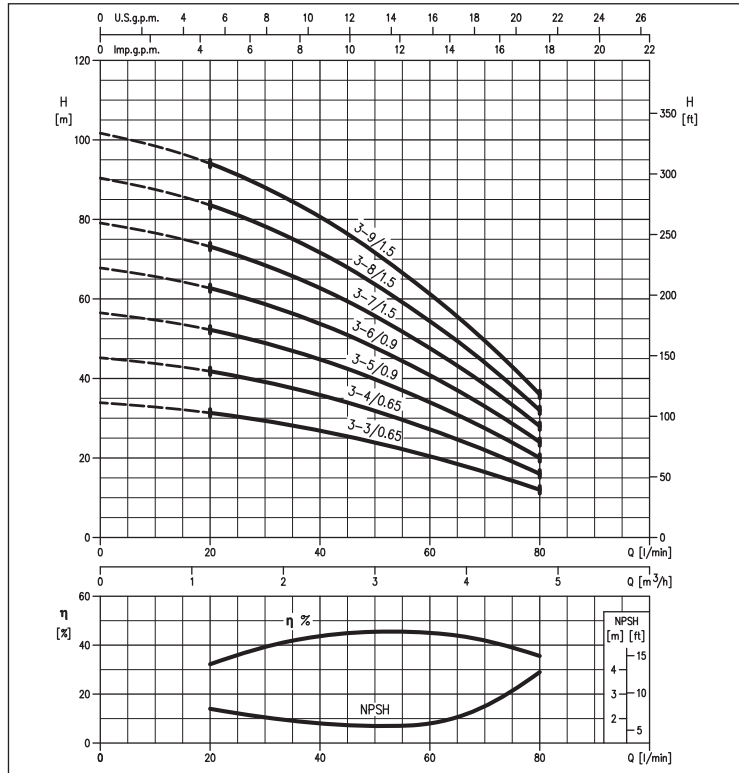


## VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

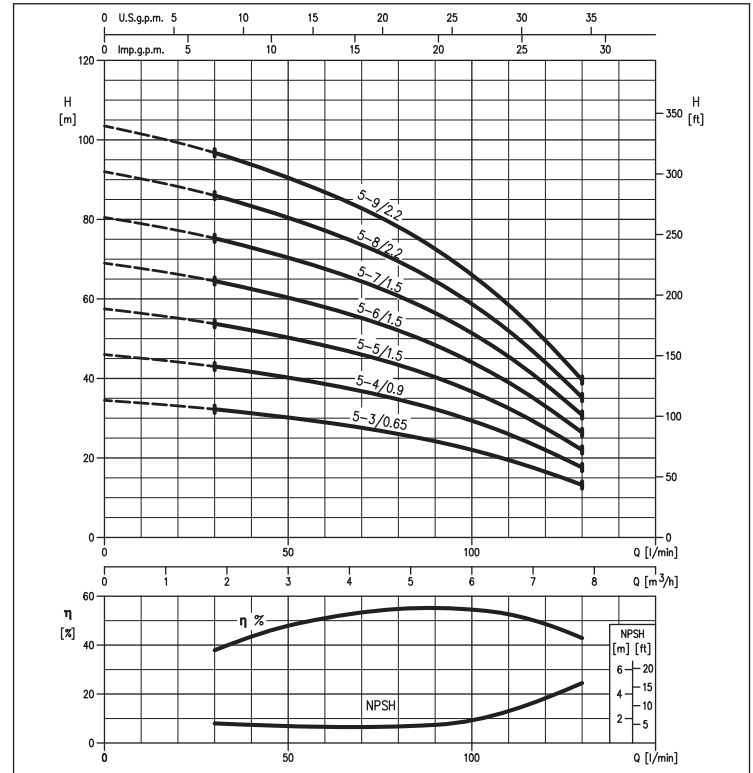
### HVM 3 range PERFORMANCE CURVES (from 0.65 kW a 1.5 kW)

(according to ISO 9906 Attachment A)



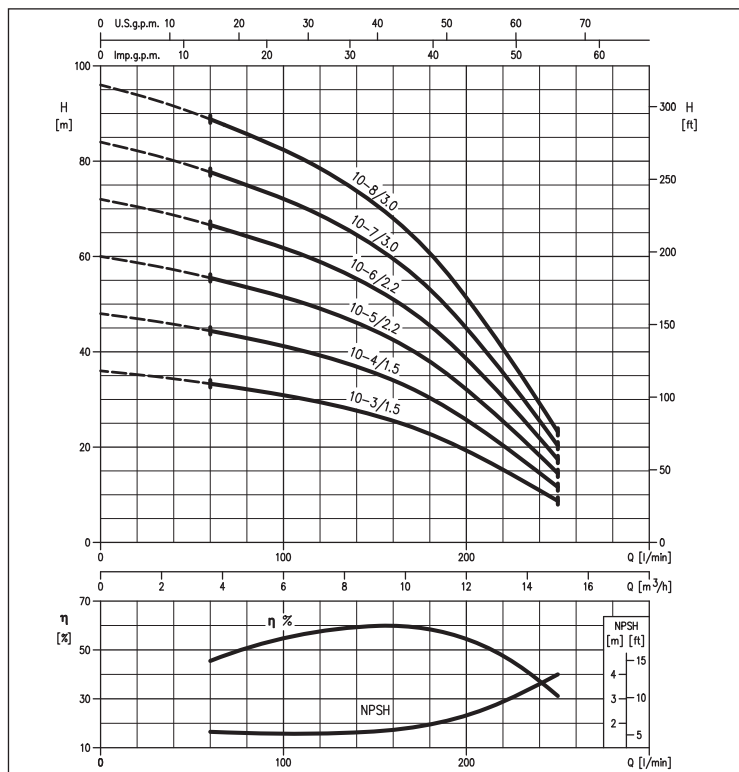
### HVM 5 range PERFORMANCE CURVES (from 0.65 kW a 2.2 kW)

(according to ISO 9906 Attachment A)



### HVM 10 range PERFORMANCE CURVES (from 1.5 kW to 3 kW)

(according to ISO 9906 Attachment A)



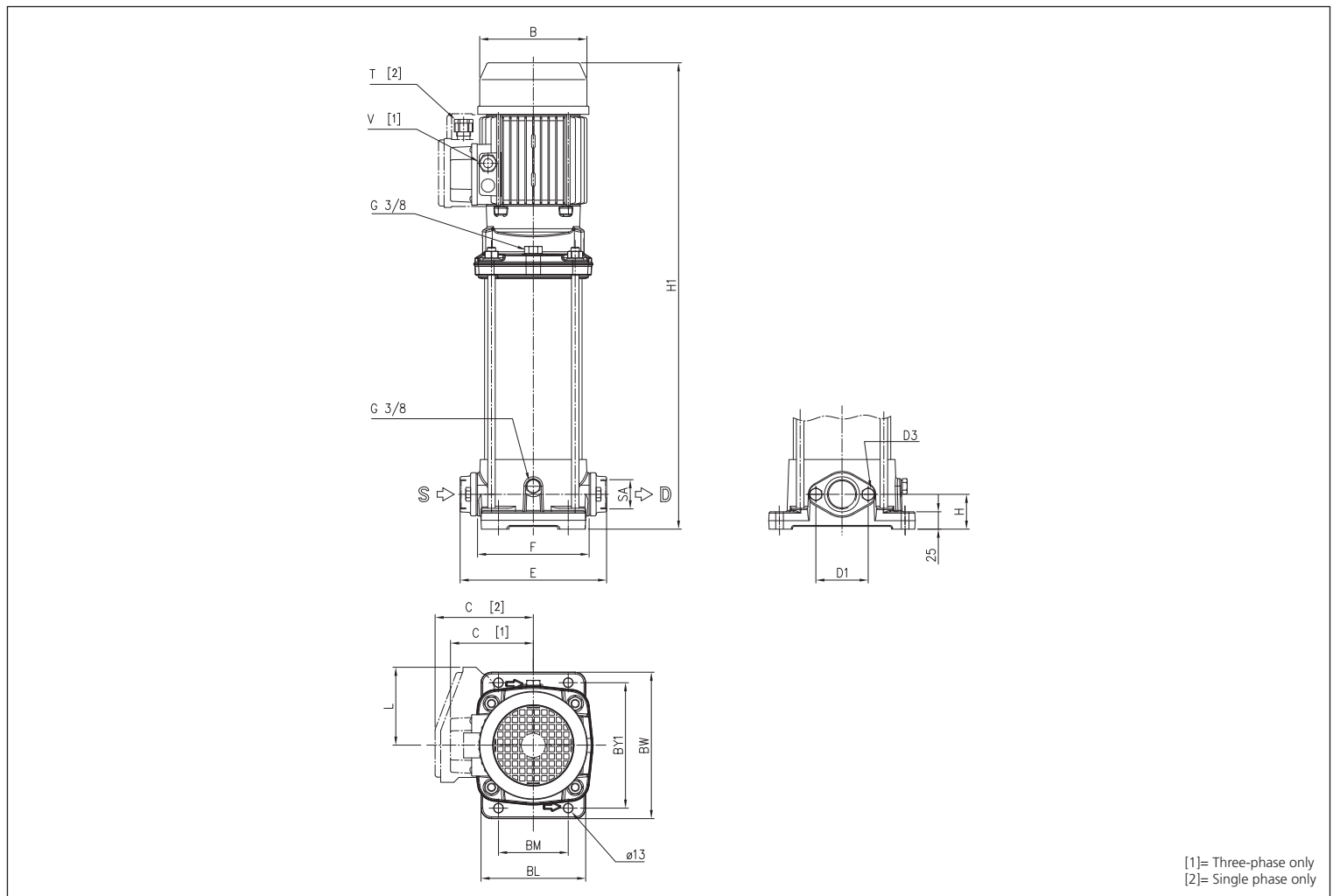
## VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

### PERFORMANCE TABLE

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

### DIMENSIONS HVM



## VERTICAL MULTISTAGE CENTRIFUGAL ELECTRIC PUMPS

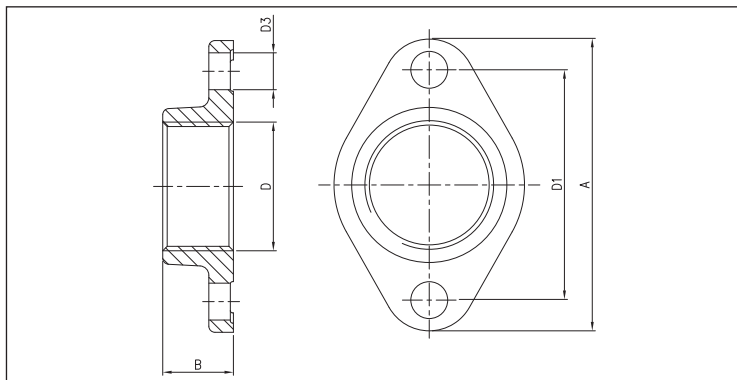
in AISI 304

**DIMENSIONS TABLE HVM**

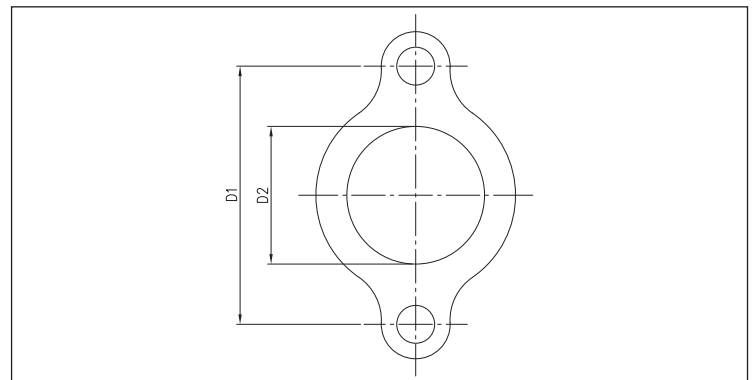
Model	H	H1	E	F	B	C		Dimensions [mm]							T	V	Weight [kg]	
						[2]	[1]	L	BM	BL	BW	BY1	SA	D1				D3
HVM 3-3N/0.65 M	50	464	209	160	137	110	-	86,5	100	150	210	180	G1	75	M10	Pg 11	-	18,6
HVM 3-3N/0.65	50	464	209	160	137	-	102	-	100	150	210	180	G1	75	M10	-	Pg 11	18,5
HVM 3-4N/0.65 M	50	488	209	160	137	110	-	86,5	100	150	210	180	G1	75	M10	Pg 11	-	19,3
HVM 3-4N/0.65	50	488	209	160	137	-	102	-	100	150	210	180	G1	75	M10	-	Pg 11	19,1
HVM 3-5N/0.9 M	50	512	209	160	137	110	-	86,5	100	150	210	180	G1	75	M10	M20x1,5	-	21,2
HVM 3-5N/0.9	50	512	209	160	137	-	102	-	100	150	210	180	G1	75	M10	-	Pg 11	21,1
HVM 3-6N/0.9 M	50	536	209	160	137	129	-	106	100	150	210	180	G1	75	M10	M20x1,5	-	22,4
HVM 3-6N/0.9	50	536	209	160	137	-	102	-	100	150	210	180	G1	75	M10	-	Pg 11	22,2
HVM 3-7N/1.5 M	50	595	209	160	155	136	-	112	100	150	210	180	G1	75	M10	M20x1,5	-	25,4
HVM 3-7N/1.5	50	595	209	160	155	-	119	-	100	150	210	180	G1	75	M10	-	Pg 11	25,2
HVM 3-8N/1.5 M	50	619	209	160	155	136	-	112	100	150	210	180	G1	75	M10	M20x1,5	-	25,4
HVM 3-8N/1.5	50	619	209	160	155	-	119	-	100	150	210	180	G1	75	M10	-	Pg 11	25,9
HVM 3-9N/1.5 M	50	643	209	160	155	136	-	112	100	150	210	180	G1	75	M10	M20x1,5	-	27,4
HVM 3-9N/1.5	50	643	209	160	155	-	119	-	100	150	210	180	G1	75	M10	-	Pg 11	26,8
HVM 5-3N/0.65 M	50	464	209	160	137	110	-	86,5	100	150	210	180	G1¼	75	M10	Pg 11	-	18,6
HVM 5-3N/0.65	50	464	209	160	137	-	102	-	100	150	210	180	G1¼	75	M10	-	Pg 11	18,5
HVM 5-4N/0.9 M	50	488	209	160	137	129	-	106	100	150	210	180	G1¼	75	M10	M20x1,5	-	20,9
HVM 5-4N/0.9	50	488	209	160	137	-	102	-	100	150	210	180	G1¼	75	M10	-	Pg 11	20,8
HVM 5-5N/1.5 M	50	547	209	160	155	136	-	112	100	150	210	180	G1¼	75	M10	M20x1,5	-	24,1
HVM 5-5N/1.5	50	547	209	160	155	-	119	-	100	150	210	180	G1¼	75	M10	-	Pg 11	23,6
HVM 5-6N/1.5 M	50	571	209	160	155	136	-	112	100	150	210	180	G1¼	75	M10	M20x1,5	-	24,3
HVM 5-6N/1.5	50	571	209	160	155	-	119	-	100	150	210	180	G1¼	75	M10	-	Pg 11	24,7
HVM 5-7N/1.5 M	50	595	209	160	155	136	-	112	100	150	210	180	G1¼	75	M10	M20x1,5	-	26,3
HVM 5-7N/1.5	50	595	209	160	155	-	119	-	100	150	210	180	G1¼	75	M10	-	Pg 11	25,7
HVM 5-8N/2.2 M	50	675	209	160	172	141	-	112	100	150	210	180	G1¼	75	M10	M20x1,5	-	31,5
HVM 5-8N/2.2	50	632	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	172	141	-	112	100	150	210	180	G1¼	75	M10	M20x1,5	-	32,0
HVM 5-9N/2.2	50	656	209	160	155	-	119	-	100	150	210	180	G1¼	75	M10	-	Pg 11	27,9
HVM 10-3N/1.5 M	80	547	255	200	155	136	-	112	130	185	250	215	G1½	100	M12	M20x1,5	-	26,9
HVM 10-3N/1.5	80	547	255	200	155	-	119	-	130	185	250	215	G1½	100	M12	-	Pg 11	26,1
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	577	255	200	155	-	119	-	130	185	250	215	G1½	100	M12	-	Pg 11	27,6
HVM 10-5N/2.2 M	80	663	255	200	172	141	-	112	130	185	250	215	G1½	100	M12	M20x1,5	-	33,6
HVM 10-5N/2.2	80	620	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	172	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	723	255	200	172	-	124	-	130	185	250	215	G1½	100	M12	-	Pg 13,5	34,9
HVM 10-8N/3	80	753	255	200	172	-	124	-	130	185	250	215	G1½	100	M12	-	Pg 13,5	35,8

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

**COUNTER-FLANGE**



**GASKET**



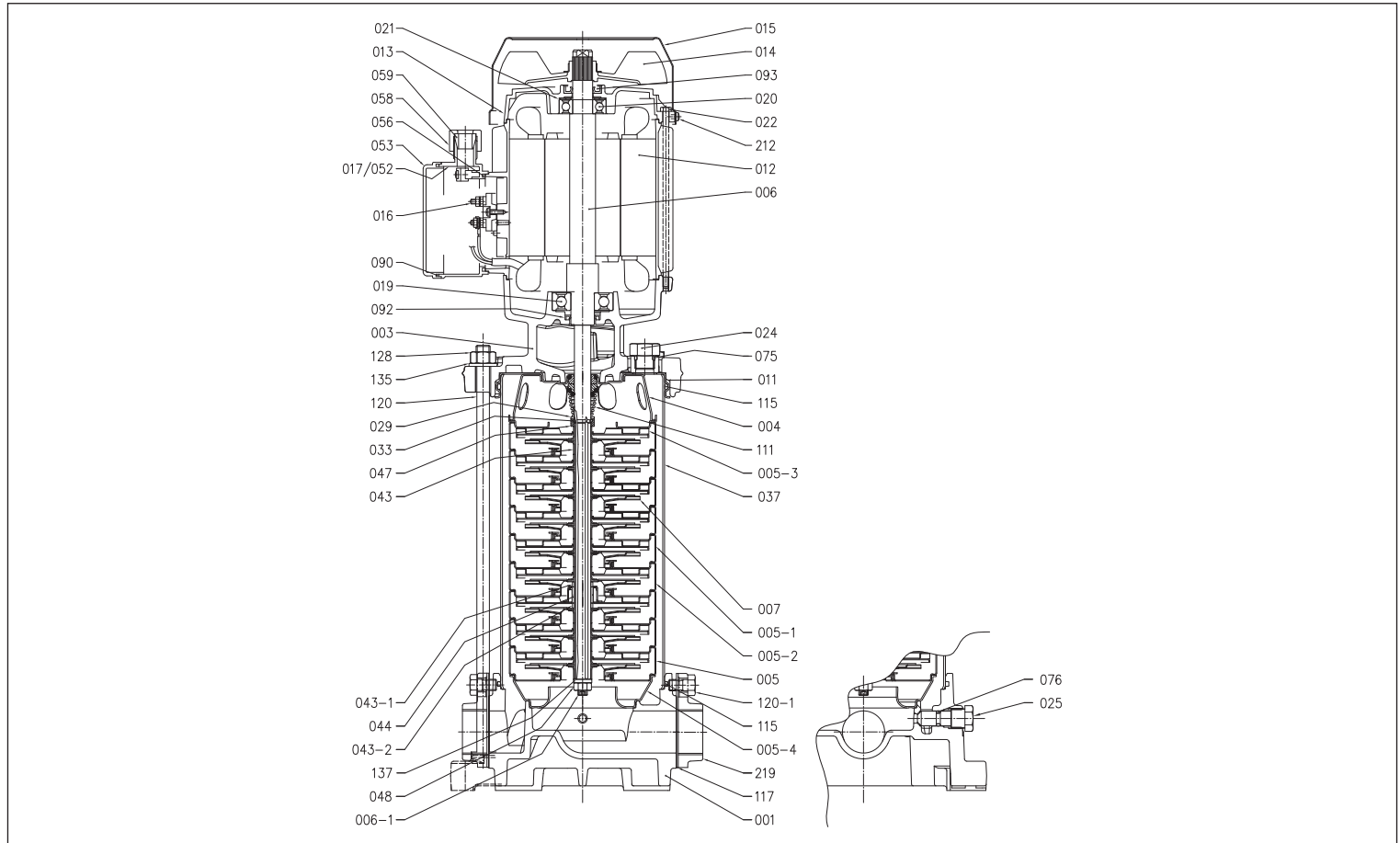
**DIMENSIONS TABLE E MATERIALS**

DN	D	D1	D3	Counter-flange		Material	D2	Gasket	
				A	B			Material	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



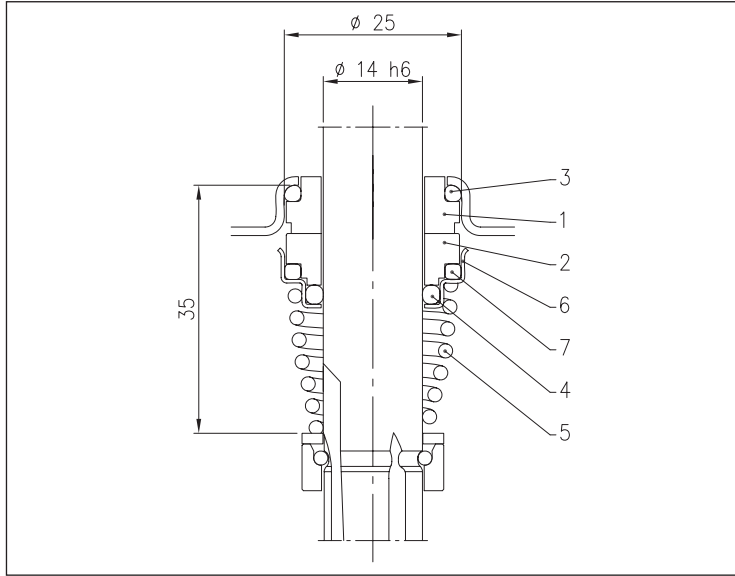
### MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
001	Pump body	EN-GJL 250 EN1561 cast iron	043	Impeller spacer	EN 1.4301 (AISI 304)
003	Motor support	EN-GJL 250 EN1561 cast iron	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	Shaft casing bearing	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	Polypropylene
005-4	First stage flange	EN 1.4301 (AISI 304)	053	Capacitor-holder box cover	Polypropylene
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	Polyamide	092	Sealing ring (pump side)	-
015	Fan cover	Galvanised Fe P04	093	Sealing ring (motor side)	-
016	Terminal box	-	111	Mechanical seal	Ceramic/Carbon/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)			

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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>		Motor Mec	Single phase Capacitor		P <sub>1</sub> [kW]	Absorbed Current [A]	
	[HP]	[kW]		μF	V <sub>c</sub>		230V	400V
HVM 3-3N/0.65M	0,9	0,65	71	16	450	0,97	4,5	-
HVM 3-3N/0.65	0,9	0,65	71	-	-	0,85	2,8	1,6
HVM 3-4N/0.65M	0,9	0,65	71	16	450	0,97	4,5	-
HVM 3-4N/0.65	0,9	0,65	71	-	-	0,85	2,8	1,6
HVM 3-5N/0.9M	1,2	0,9	71	31,5	450	1,28	5,7	-
HVM 3-5N/0.9	1,2	0,9	71	-	-	1,24	4,5	2,6
HVM 3-6N/0.9M	1,2	0,9	71	31,5	450	1,28	5,7	-
HVM 3-6N/0.9	1,2	0,9	71	-	-	1,24	4,5	2,6
HVM 3-7N/1.5M	2,0	1,5	80	35	450	1,95	8,7	-
HVM 3-7N/1.5	2,0	1,5	80	-	-	1,85	5,9	3,4
HVM 3-8N/1.5M	2,0	1,5	80	35	450	1,95	8,7	-
HVM 3-8N/1.5	2,0	1,5	80	-	-	1,85	5,9	3,4
HVM 3-9N/1.5M	2,0	1,5	80	35	450	1,95	8,7	-
HVM 3-9N/1.5	2,0	1,5	80	-	-	1,85	5,9	3,4
HVM 5-3N/0.65M	0,9	0,65	71	16	450	0,97	4,5	-
HVM 5-3N/0.65	0,9	0,65	71	-	-	0,85	2,8	1,6
HVM 5-4N/0.9M	1,2	0,9	71	31,5	450	1,28	5,7	-
HVM 5-4N/0.9	1,2	0,9	71	-	-	1,24	4,5	2,6
HVM 5-5N/1.5M	2,0	1,5	80	35	450	1,95	8,7	-
HVM 5-5N/1.5	2,0	1,5	80	-	-	1,85	5,9	3,4
HVM 5-6N/1.5M	2,0	1,5	80	35	450	1,95	8,7	-
HVM 5-6N/1.5	2,0	1,5	80	-	-	1,85	5,9	3,4
HVM 5-7N/1.5M	2,0	1,5	80	35	450	1,95	8,7	-
HVM 5-7N/1.5	2,0	1,5	80	-	-	1,85	5,9	3,4
HVM 5-8N/2.2M	3,0	2,2	90	50	450	2,92	13	-
HVM 5-8N/2.2	3,0	2,2	80	-	-	2,65	8	4,6
HVM 5-9N/2.2M	3,0	2,2	90	50	450	2,92	13	-
HVM 5-9N/2.2	3,0	2,2	80	-	-	2,65	8	4,6
HVM 10-3N/1.5M	2,0	1,5	80	35	450	1,95	8,7	-
HVM 10-3N/1.5	2,0	1,5	80	-	-	1,85	5,9	3,4
HVM 10-4N/1.5M	2,0	1,5	80	35	450	1,95	8,7	-
HVM 10-4N/1.5	2,0	1,5	80	-	-	1,85	5,9	3,4
HVM 10-5N/2.2M	3,0	2,2	90	50	450	2,92	13	-
HVM 10-5N/2.2	3,0	2,2	80	-	-	2,65	8	4,6
HVM 10-6N/2.2M	3,0	2,2	90	50	450	2,92	13	-
HVM 10-6N/2.2	3,0	2,2	80	-	-	2,65	8	4,6
HVM 10-7N/3	4,0	3,0	90	-	-	3,70	10,9	6,3
HVM 10-8N/3	4,0	3,0	90	-	-	3,70	10,9	6,3