
EBARA

CONTENTS

50Hz

Rev. B

	Page
- SPECIFICATIONS	**200**
SELECTION CHART	201
SELECTION CHART TABLE	202
TYPE KEY AND CURVE SPECIFICATIONS	203
PERFORMANCE CURVE HVM 3 (3-4-5-6 IMPELLERS)	205
PERFORMANCE CURVE HVM 3 (7-8-9 IMPELLERS)	206
PERFORMANCE CURVE HVM 5 (3-4 IMPELLERS)	207
PERFORMANCE CURVE HVM 5 (5-6-7 IMPELLERS)	208
PERFORMANCE CURVE HVM 5 (8-9 IMPELLERS)	209
PERFORMANCE CURVE HVM 10 (3-4 IMPELLERS)	210
PERFORMANCE CURVE HVM 10 (5-6 IMPELLERS)	211
PERFORMANCE CURVE HVM 10 (7-8 IMPELLERS)	212
- CONSTRUCTIONS	**300**
SECTIONAL VIEW DRAWING	300
SECTIONAL VIEW TABLE	301
QUANTITY FOR MODEL	302
MECHANICAL SEAL	303
BEARINGS	304
FITTINGS	305
- DIMENSIONS AND WEIGHT	**400**
PUMP DRAWING	400
DIMENSION TABLE	401
PACKING	402
- TECNICAL DATA	**500**
MOTOR DATA	500
NOISE DATA	501

SPECIFICATION 50Hz

Rev. B

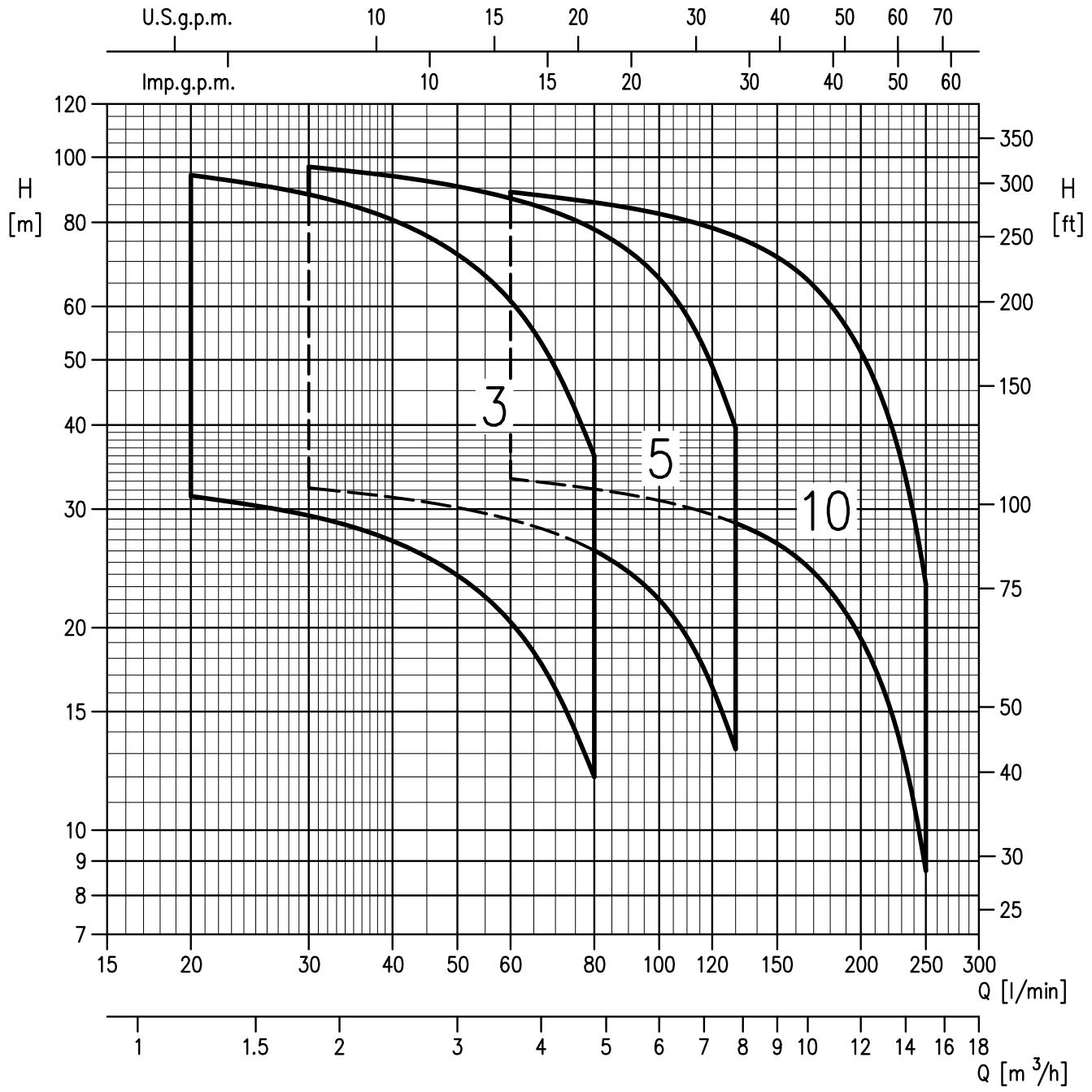
PUMP				
Liquid Handled	Type of liquid	Water, moderate aggressive solutions		
	Temperature [°C]	min. -10 max. +90		
	Max chlorine content	500 ppm		
Maximum working pressure [MPa]		1		
Construction	Impeller	Closed centrifugal		
	Motor bearings	Bearing with contact seal		
	Pump bearing	HVM 3-5	n°7-8-9 impellers	Type: Sleeve Shaft sleeve: EN 1.4460 (AISI 329) Bearing: Ceramic
		HVM 10	n°6-7-8 impellers	
Pipe Connection	Suction / Discharge	HVM 3 HVM 5 HVM 10	Ø 32 / Ø 32 Ø 32 / Ø 32 Ø 40 / Ø 40	
	Counterflange – supplied as standard	HVM 3 HVM 5 HVM 10	G1 – G1 G1 ¼ – G1 ¼ G1 ½ - G1 ½	ISO 228 ISO 228 ISO 228
Material	Bottom casing	Cast iron EN-GJL 250 EN1561 (cataphoresis painting)		
	Outer casing	EN 1.4301 (AISI 304)		
	Impeller	EN 1.4301 (AISI 304)		
	Intermediate casing	EN 1.4301 (AISI 304)		
	O-Rings	NBR		
	Casing cover	EN 1.4301 (AISI 304)		
	Shaft seal	Ceramic/Carbon/NBR		
	Liner ring	EN 1.4301 (AISI 304)+PTFE		
	Shaft	EN 1.4301 (AISI 304) (wet extension)		
	Bracket	Cast iron EN-GJL 250 EN1561		
Applicable standard of test		ISO 9906 – Annex A		

MOTOR			
Type		Electric - TEFC	
		Single Phase	Three Phase
Efficiency level (Reg. 640/2009)		-	- only for 0.65 kW IE2 from 0.9 kW up to 3.0 kW
No. of Poles		2	
Rotation speed	[min^{-1}]	≈ 2850	
Insulation Class		F	
Max ambient temperature	[°C]	40	
Protection degree (CEI EN 60034-5)		IP 55	
Power rating	[kW]	0.65 ÷ 2.2	0.65 ÷ 3.0
	[HP]	0.9 ÷ 3.0	0.9 ÷ 4.0
Frequency	[Hz]	50	
Voltage	[V]	230 ±10%	230/400 ±10%
Capacitor		Built in	-
Over load protection		Built in	Provided by the user
Casing material		Aluminium	
Dimensions of cable entry		PG11 – M20x1.5	PG11 – PG13.5

SELECTION CHART

50Hz

Rev. B



SELECTION CHART

50Hz

Rev. B

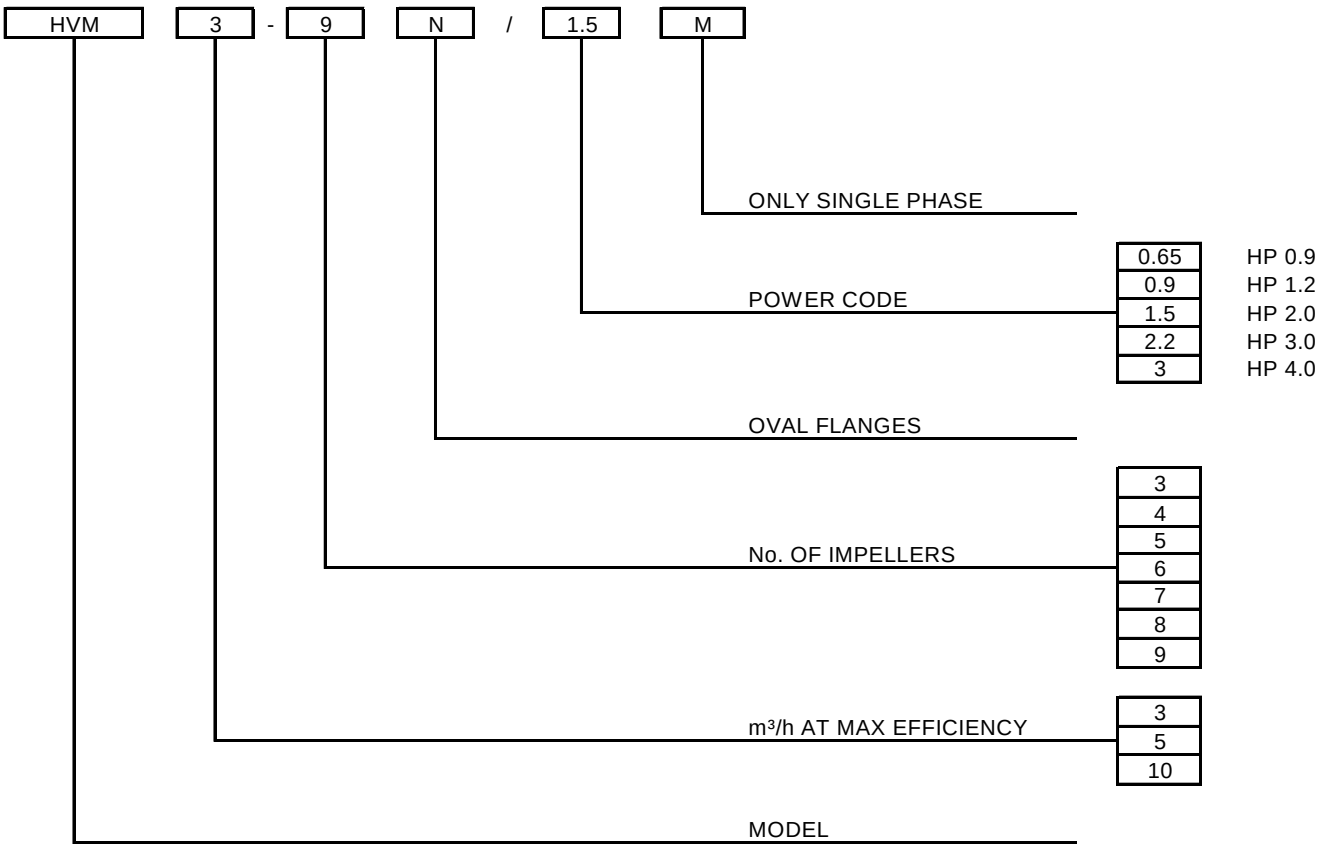
Pump type		Power		Q=Capacity										
				l/min	0	20	30	45	60	80	100	130	160	200	250
Single phase	Three phase	[kW]	[HP]	m^3/h	0	1.2	1.8	2.7	3.6	4.8	6.0	7.8	9.6	12	15
				H=Total manometric head in meters											
3-3N/0.65M	3-3N/0.65	0.65	0.9		33.9	31.4	29.3	25.5	20.4	12					
3-4N/0.65M	3-4N/0.65	0.65	0.9		45	42	39.1	34	27.2	16					
3-5N/0.9M	3-5N/0.9	0.9	1.2		56.5	52.5	49	42.5	34	20					
3-6N/0.9M	3-6N/0.9	0.9	1.2		68	62.5	58.5	51	41	24					
3-7N/1.5M	3-7N/1.5	1.5	2		79	73	68.5	59.5	47.5	28					
3-8N/1.5M	3-8N/1.5	1.5	2		90.5	83.5	78	68	54.5	32					
3-9N/1.5M	3-9N/1.5	1.5	2		102	94	88	76.5	61	36					
5-3N/0.65M	5-3N/0.65	0.65	0.9		34.5		32.3	30.7	29	26	22	13.2			
5-4N/0.9M	5-4N/0.9	0.9	1.2		46		43	41	38.6	34.7	29.4	17.6			
5-5N/1.5M	5-5N/1.5	1.5	2		57.5		54	51	48.5	43.5	36.7	22			
5-6N/1.5M	5-6N/1.5	1.5	2		69		64.5	61.5	58	52	44	26.4			
5-7N/1.5M	5-7N/1.5	1.5	2		80.5		75.5	71.5	67.5	61	51.5	30.8			
5-8N/2.2M	5-8N/2.2	2.2	3		92		86	82	77	69.5	58.5	35.2			
5-9N/2.2M	5-9N/2.2	2.2	3		104		97	92	87	78	66	39.6			
10-3N/1.5M	10-3N/1.5	1.5	2		36				33.3	32.1	30.9	28.6	25.5	19.3	8.7
10-4N/1.5M	10-4N/1.5	1.5	2		48				44.5	43	41	38.1	34	25.7	11.6
10-5N/2.2M	10-5N/2.2	2.2	3		60				55.5	53.5	51.5	47.5	42.5	32.1	14.5
10-6N/2.2M	10-6N/2.2	2.2	3		72				66.5	64.5	62	57	51	38.5	17.4
-	10-7N/3	3	4		84				77.5	75	72	66.5	59.5	45	20.3
-	10-8N/3	3	4		96				89	85.5	82.5	76	68	51.5	23.2

TYPE KEY AND CURVE SPECIFICATIONS

50Hz

Rev. B

TYPE KEY



TYPE KEY AND CURVE SPECIFICATIONS 50Hz

Rev. B

PERFORMANCE CURVE SPECIFICATIONS

The specifications below qualify the curves shown on the following pages.

Tolerances according to ISO 9906 Annex A
The curves refer to effective speed of asynchronous motors at 50 Hz
Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of ν = 1 mm^2/s (1 cSt)
The NPSH curve is an average curve obtained in the same conditions of performance curves.
The continuous curves indicate the recommended working range. The dotted curve is only a guide.
In order to avoid the risk of over-heating, the pumps should not be used at a flow rate below 10% of best efficiency point.

Symbols explanation:

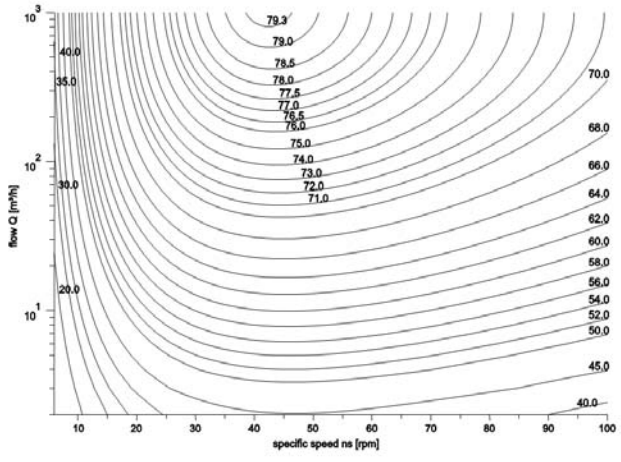
Q	=	volume flow rate
H	=	total head
P_2	=	pump power input (shaft power)
η	=	pump efficiency
NPSH	=	net positive suction head required by the pump
MEI	=	minimum efficiency index

The minimun 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.

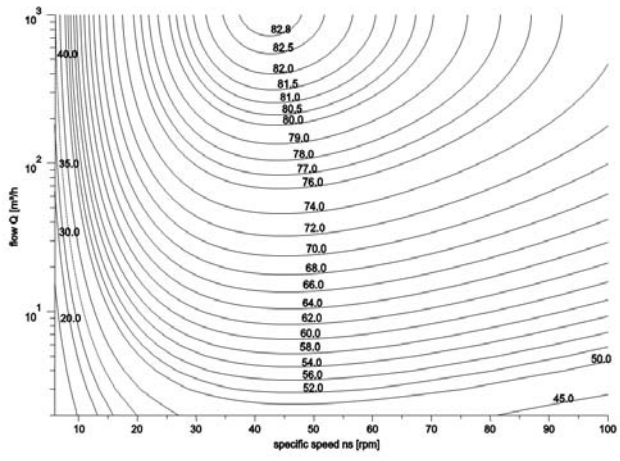
The efficiency of a pump with trimmed impeller is usually lower than that of a pump with the full impeller diameter. The trimming of the impeller will adapt the pump to a fixed duty point, leading to reduced energy consumption. The minimum efficiency index (MEI) is based on the full impeller diameter.

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

MEI = 0.4 for Multistage Vertical 2900rpm



MEI=0.7 for Mutistage Vertical 2900 rpm



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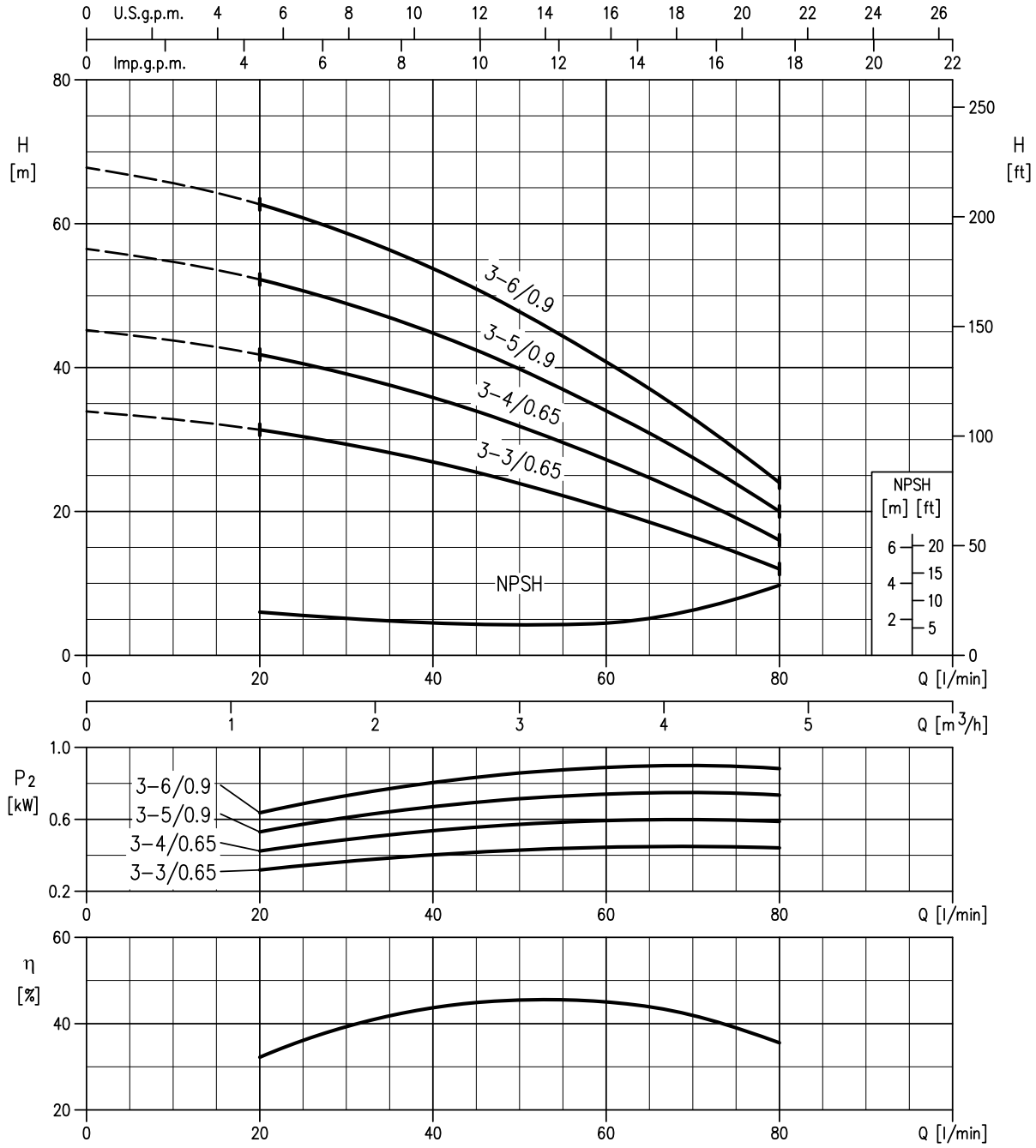
PERFORMANCE CURVE

50Hz

Rev. B

HVM 3-6/0.9 (0.90 kW) MEI > 0.70 - Impeller diameter = 98.5 mm
HVM 3-5/0.9 (0.90 kW) MEI > 0.70 - Impeller diameter = 98.5 mm
HVM 3-4/0.65 (0.65 kW) MEI > 0.70 - Impeller diameter = 98.5 mm
HVM 3-3/0.65 (0.65 kW) MEI > 0.70 - Impeller diameter = 98.5 mm



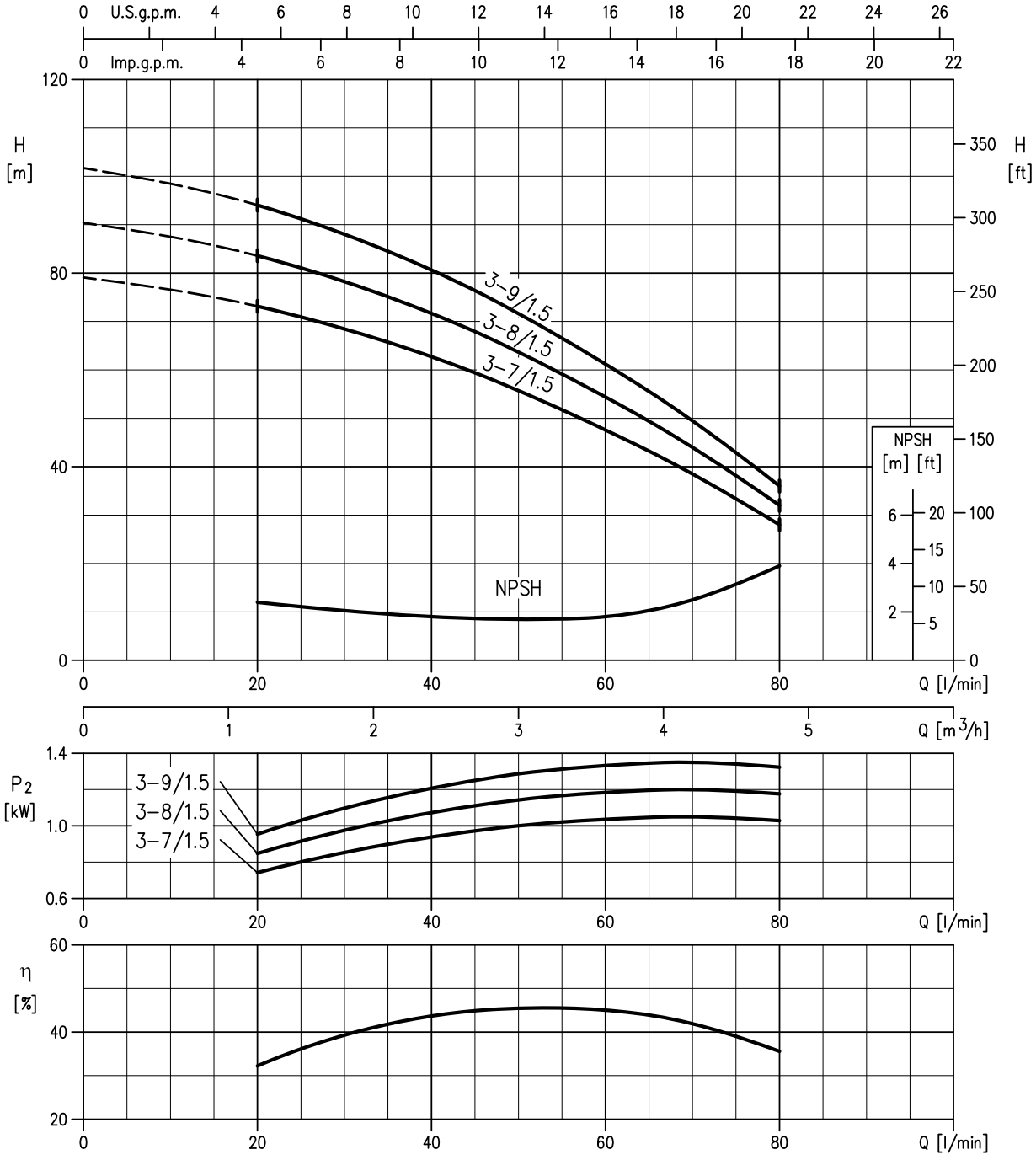
Rotation speed ≈ 2850 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

50Hz

Rev. B

HVM 3-9/1.5 (1.5 kW) MEI > 0.70 - Impeller diameter = 98.5 mm
HVM 3-8/1.5 (1.5 kW) MEI > 0.70 - Impeller diameter = 98.5 mm
HVM 3-7/1.5 (1.5 kW) MEI > 0.70 - Impeller diameter = 98.5 mm



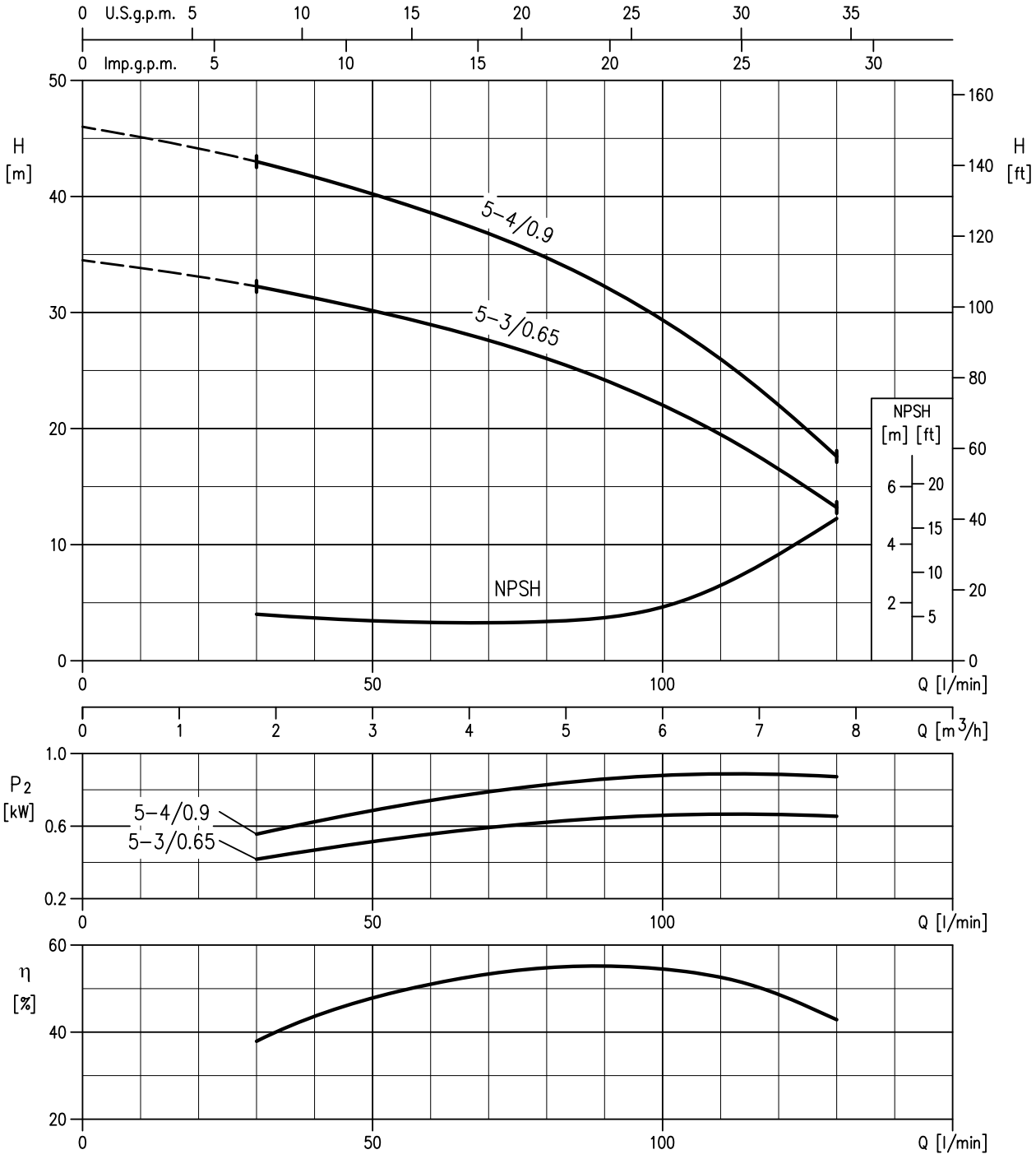
Rotation speed ≈ 2850 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

50Hz

Rev. B

HVM 5-4/0.9 (0.90 KW) MEI > 0.70 - Impeller diameter = 97 mm
HVM 5-3/0.65 (0.65 kW) MEI > 0.70- Impeller diameter = 97 mm



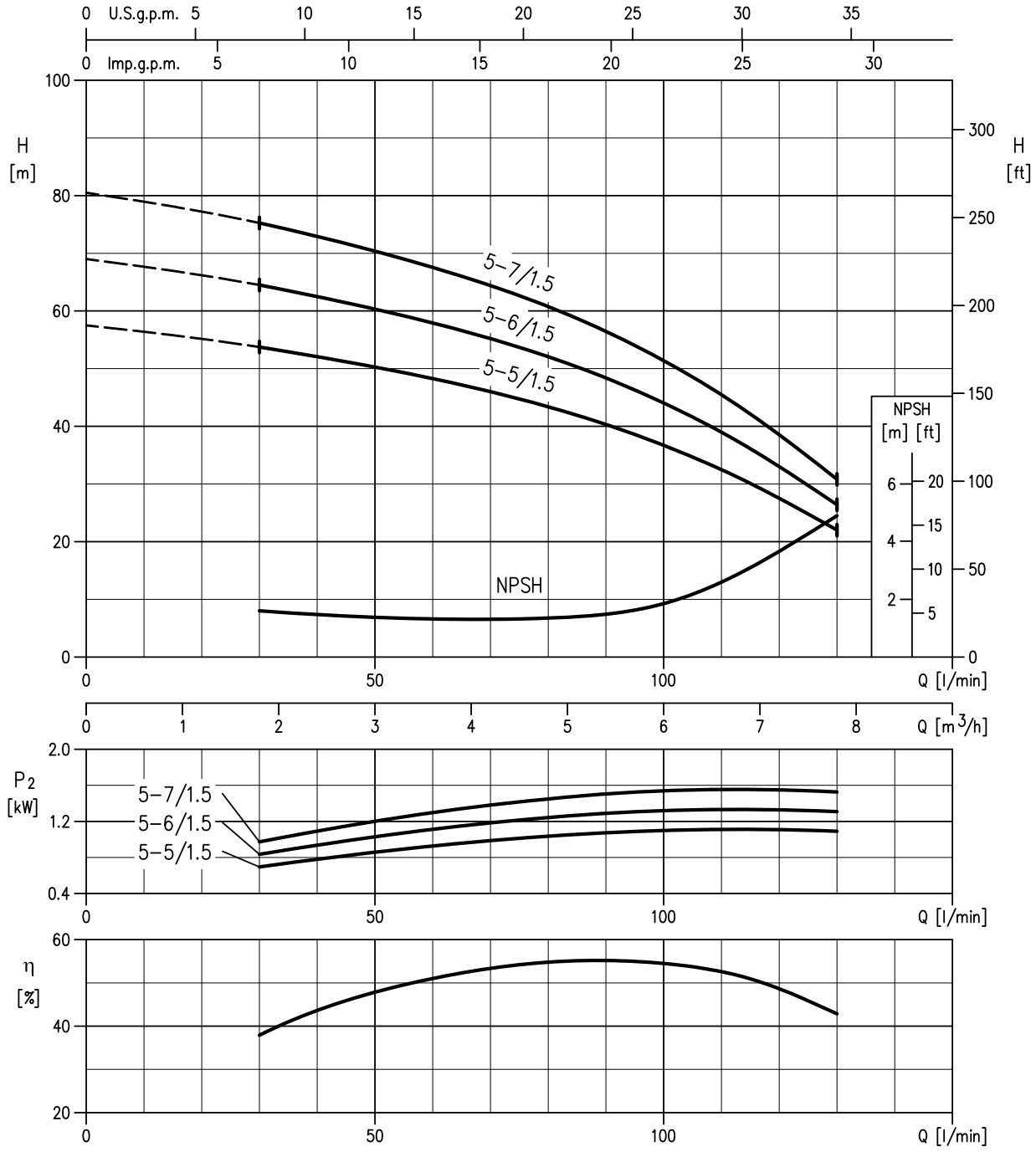
Rotation speed ≈ 2850 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

50Hz

Rev. B

HVM 5-7/1.5 (1.5 kW) MEI > 0.70 - Impeller diameter: 97 mm
HVM 5-6/1.5 (1.5 kW) MEI > 0.70 - Impeller diameter: 97 mm
HVM 5-5/1.5 (1.5 kW) MEI > 0.70 - Impeller diameter: 97 mm



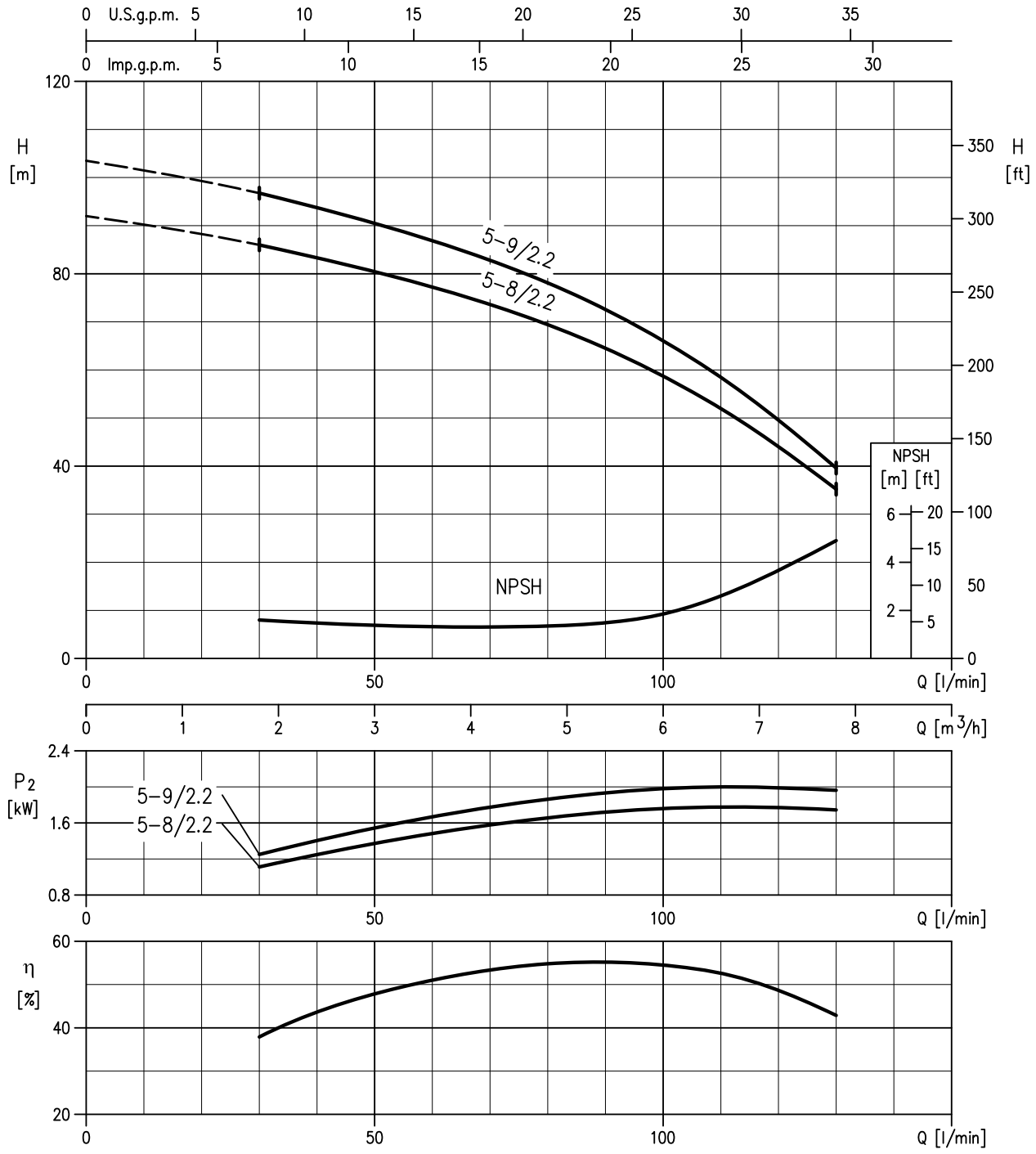
Rotation speed ≈ 2850 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

50Hz

Rev. B

HVM 5-9/2.2 (2.2 kW) MEI > 0.70 - Impeller diameter: 97 mm
HVM 5-8/2.2 (2.2 kW) MEI > 0.70 - Impeller diameter: 97 mm



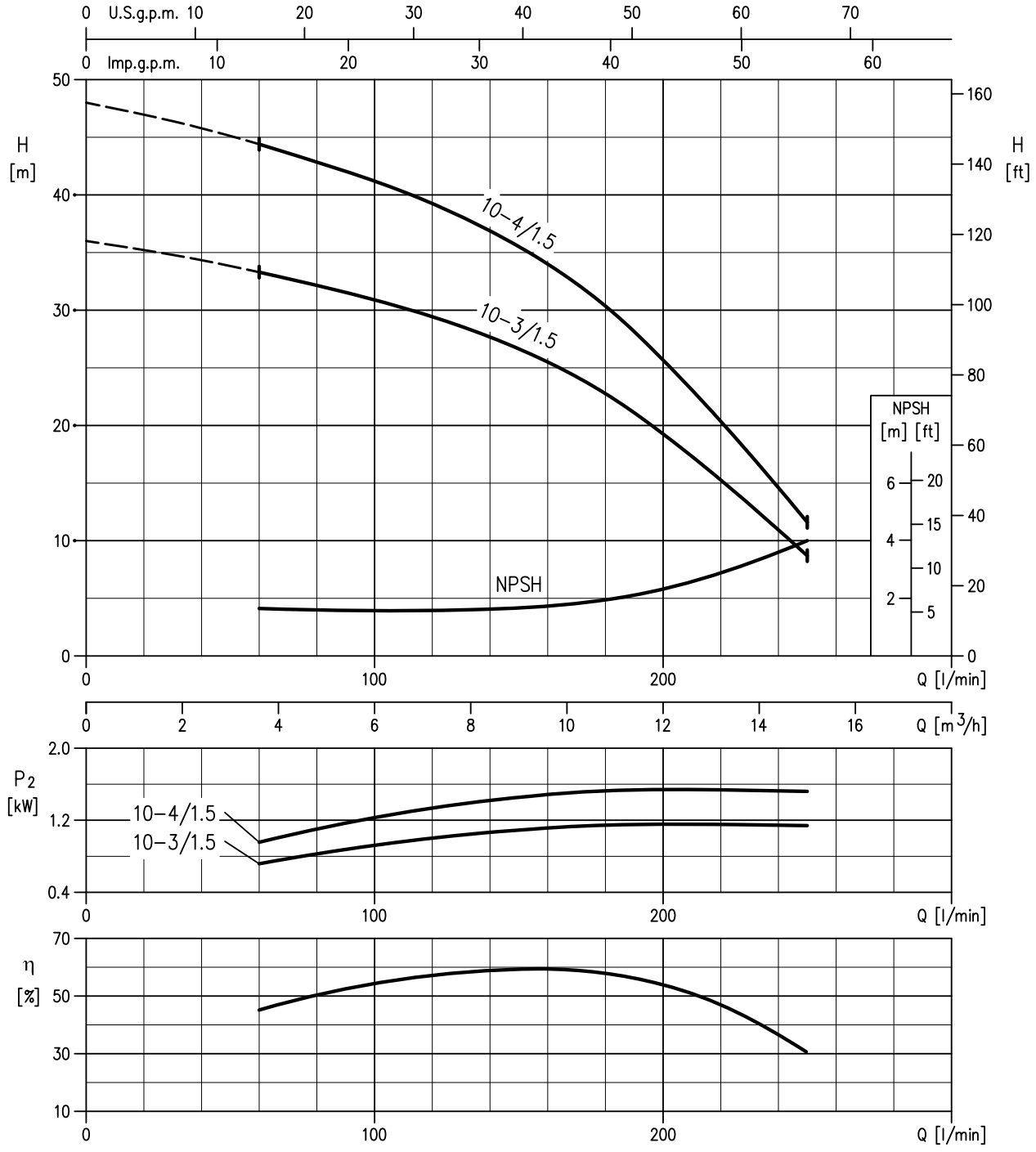
Rotation speed ≈ 2850 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

50Hz

Rev. B

HVM 10-4/1.5 (1.5 kW) MEI > 0.60 - Impeller diameter: 100.5 mm
HVM 10-3/1.5 (1.5 kW) MEI > 0.60 - Impeller diameter: 100.5 mm



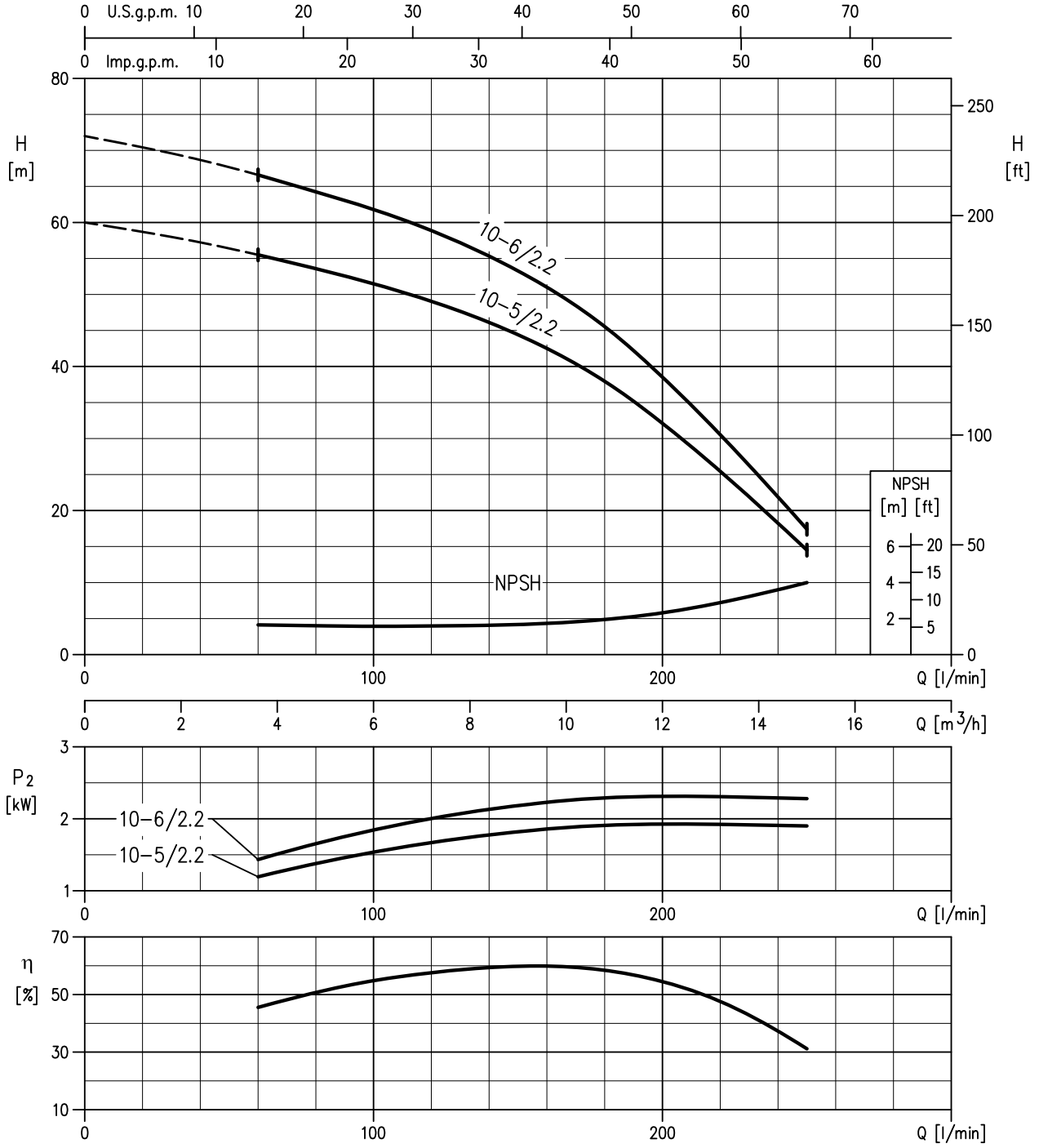
Rotation speed ≈ 2850 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

50Hz

Rev. B

HVM 10-6/2.2 (2.2 kW) MEI > 0.60 - Impeller diameter: 100.5 mm
HVM 10-5/2.2 (2.2 kW) MEI > 0.60 - Impeller diameter: 100.5 mm



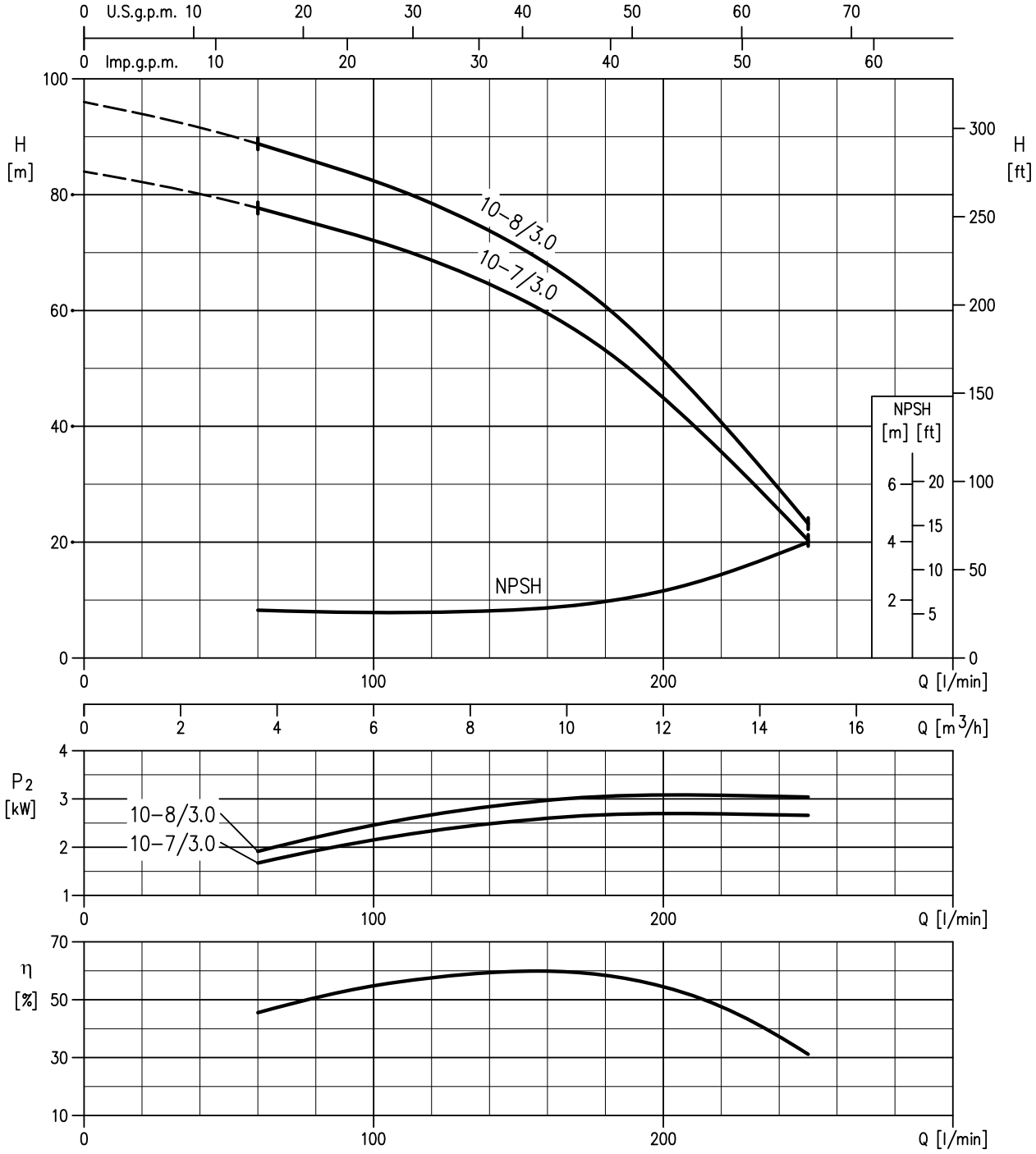
Rotation speed ≈ 2850 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

50Hz

Rev. B

HVM 10-8/3 (3.0 kW) MEI > 0.60 - Impeller diameter: 100.5 mm
HVM 10-7/3 (3.0 kW) MEI > 0.60 - Impeller diameter: 100.5 mm



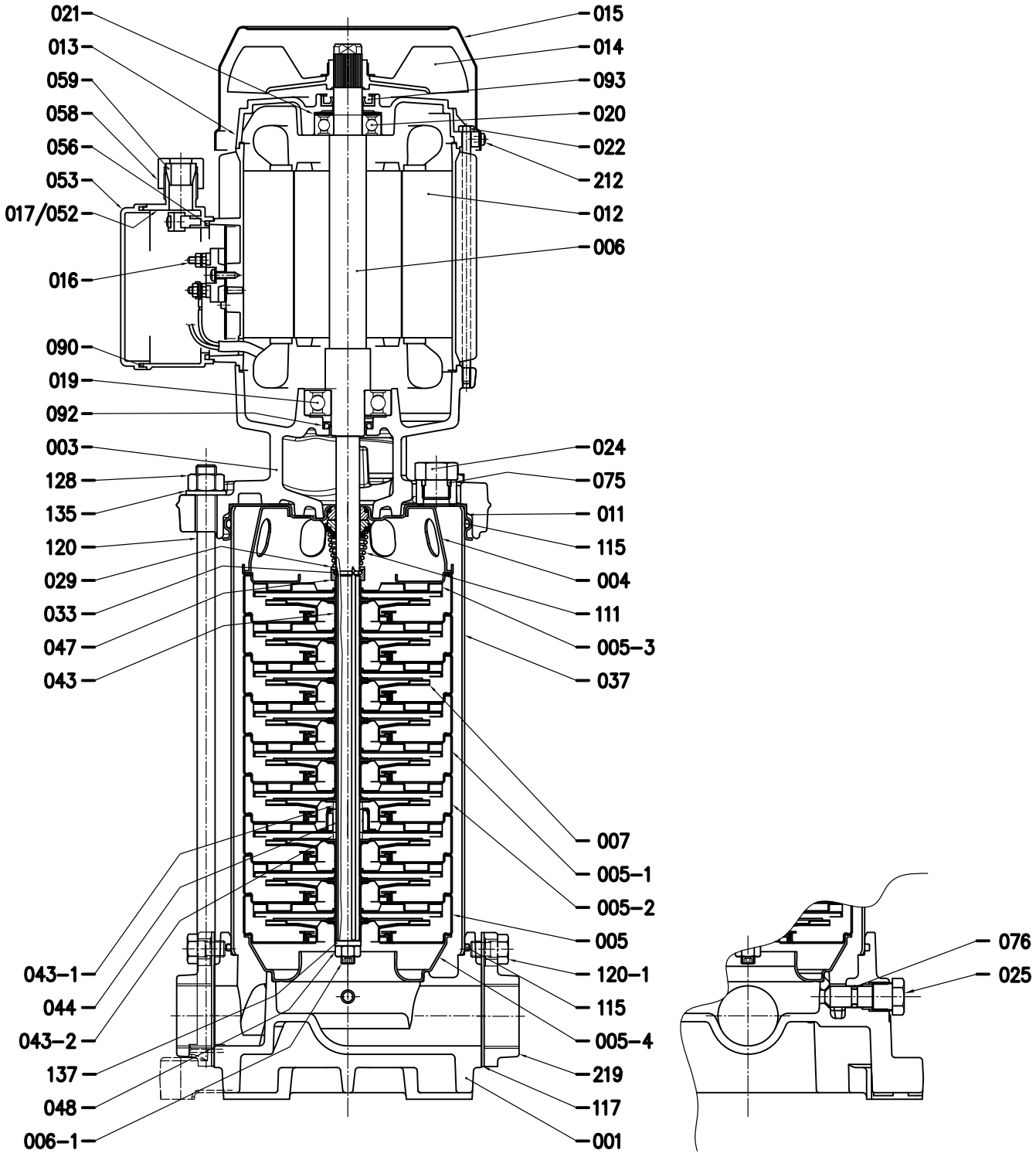
Rotation speed ≈ 2850 min^{-1}
Test standard: ISO 9906 – Annex A

CONSTRUCTION

50Hz

Rev. B

SECTIONAL VIEW DRAWING



CONSTRUCTION 50Hz

Rev. B

SECTIONAL VIEW TABLE

N°	PART NAME		MATERIAL	DIMENSION	STANDARD	Q.TY
001	Casing		Cast Iron EN-GJL 250 EN1561			1
003	Bracket		Cast Iron EN-GJL 250 EN1561			1
004	Discharge cover		EN 1.4301 (AISI 304)			1
005	Intermediate casing (suction)		EN 1.4301 (AISI 304)+PTFE			1
005-1	Intermediate casing		EN 1.4301 (AISI 304)+PTFE			[1]
005-2	Intermediate casing (bearing)		EN 1.4301 (AISI 304)+PTFE+Ceramic			[1]
005-3	Discharge casing		EN 1.4301 (AISI 304)+PTFE			1
005-4	Suction baffle		EN 1.4301 (AISI 304)			1
006	Shaft with rotor		-			1
006-1	Pump Shaft		EN 1.4301 (AISI 304)			1
007	Impeller		EN 1.4301 (AISI 304)			[1]
011	Casing cover		EN 1.4301 (AISI 304)			1
012	Motor frame with stator		-			1
013	Motor cover		Aluminium			1
014	Fan		PA			1
015	Fan cover		Fe P04 Galvanized			1
016	Terminal board		-			1
017	Terminal box cover		Aluminium			[1]
019	Bearing		-			1
020	Bearing		-			1
021	Adjusting ring		Steel C70			1
022	Tie rod		Fe 42 Galvanized			4
024	Plug		EN 1.4301 (AISI 304)			1
025	Plug		EN 1.4301 (AISI 304)			1
029	Washer for mechanical seal		EN 1.4301 (AISI 304)			1
033	Ring		EN 1.4301 (AISI 304)			2
037	Outer casing		EN 1.4301 (AISI 304)			1
043	Impeller spacer		EN 1.4301 (AISI 304)			[1]
043-1	Shaft sleeve (adjustment) [1]		EN 1.4301 (AISI 304)			[1]
043-2	Shaft sleeve (adjustment) [1]		EN 1.4301 (AISI 304)			[1]
044	Shaft sleeve (bearing)		EN 1.4460 (AISI 329)			[1]
047	Ring holder		EN 1.4301 (AISI 304)			1
048	Nut		EN 1.4301 (AISI 304)	M8	UNI 5588	1
052	Capacitor box [2]		ABS			[1]
053	Capacitor box cover [2]		ABS			[1]
056	Box gasket		NBR			1
058	Ring nut		-			[1]
059	Conic gasket		NBR			[1]
075	O-ring		NBR	13.2x2.62	OR 117	1
076	O-ring		NBR	7.59x2.62	OR 3030	1
090	Cover box gasket		NBR			[1]
092	Lip seal	0.65-0.9 kW	-	17x32x6		1
		1.5-2.2 kW	-	20x30x4		1
		2.2M-3 kW	-	25x40x7		1
093	Lip seal	0.65-0.9 kW	-	15x30x5		1
		1.5-2.2 kW	-	17x32x7		1
		2.2M-3 kW	-	25x40x7		1
111	Mechanical seal		Ceramic/Carbon/NBR	see pag. 303		1
115	O-ring		NBR	139.3x3.53	OR 4550	2
117	Flange gasket		EPDM			2
120	Tie rod		Fe 42 Galvanized			4
120-1	Screw for counterflange		Galvanized steel			4
128	Nut for tie rod		Galvanized steel	M12	UNI 5588	4
135	Washer		Galvanized steel	13x24x2.5	UNI 6592	4
137	Shaft washer		EN 1.4301 (AISI 304)			1
212	Screw for fan cover		Galvanized steel			4
219	Counter flange		Galvanized steel			2

Counterflange kit on request, see p.304

[1] See table pag. 302

[2] Only for single phase

CONSTRUCTION

50Hz

Rev. B

QUANTITY FOR MODEL

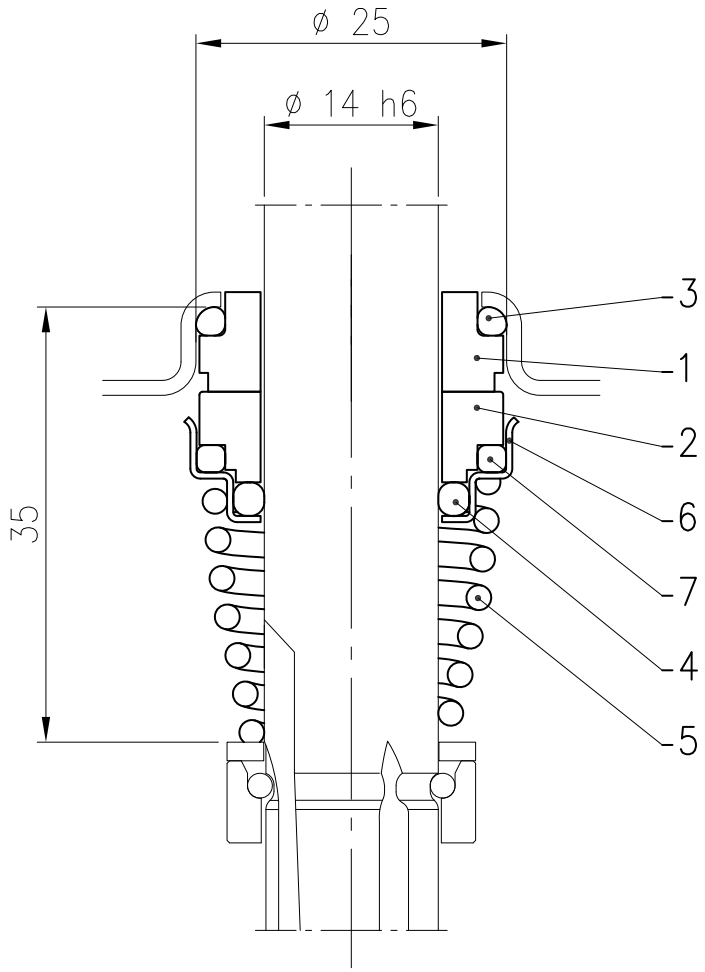
Model	005-1	005-2	007	017	043	043-1	043-2	044	052	053	058	059	090
HVH 3-3N/0.65 M	1	-	3	-	4	-	-	-	1	1	1	1	1
HVH 3-3N/0.65	1	-		1	4	-	-	-	-	-	-	-	-
HVH 3-4N/0.65 M	2	-	4	-	6	-	-	-	1	1	1	1	1
HVH 3-4N/0.65	2	-		1	6	-	-	-	-	-	-	-	-
HVH 3-5N/0.9 M	3	-	5	-	8	-	-	-	1	1	1	1	1
HVH 3-5N/0.9	3	-		1	8	-	-	-	-	-	-	-	-
HVH 3-6N/0.9 M	4	-	6	-	10	-	-	-	1	1	1	1	1
HVH 3-6N/0.9	4	-		1	10	-	-	-	-	-	-	-	-
HVH 3-7N/1.5 M	4	1	7	-	10	1	1	1	1	1	1	1	1
HVH 3-7N/1.5	4	1		1	10	1	1	1	-	-	-	-	-
HVH 3-8N/1.5 M	5	1	8	-	12	1	1	1	1	1	1	1	1
HVH 3-8N/1.5	5	1		1	12	1	1	1	-	-	-	-	-
HVH 3-9N/1.5 M	6	1	9	-	14	1	1	1	1	1	1	1	1
HVH 3-9N/1.5	6	1		1	14	1	1	1	-	-	-	-	-
HVH 5-3N/0.65 M	1	-	3	-	4	-	-	-	1	1	1	1	1
HVH 5-3N/0.65	1	-		1	4	-	-	-	-	-	-	-	-
HVH 5-4N/0.9 M	2	-	4	-	6	-	-	-	1	1	1	1	1
HVH 5-4N/0.9	2	-		1	6	-	-	-	-	-	-	-	-
HVH 5-5N/1.5 M	3	-	5	-	8	-	-	-	1	1	1	1	1
HVH 5-5N/1.5	3	-		1	8	-	-	-	-	-	-	-	-
HVH 5-6N/1.5 M	4	-	6	-	10	-	-	-	1	1	1	1	1
HVH 5-6N/1.5	4	-		1	10	-	-	-	-	-	-	-	-
HVH 5-7N/1.5 M	4	1	7	-	10	1	1	1	1	1	1	1	1
HVH 5-7N/1.5	4	1		1	10	1	1	1	-	-	-	-	-
HVH 5-8N/2.2 M	5	1	8	-	12	1	1	1	1	1	1	1	1
HVH 5-8N/2.2	5	1		1	12	1	1	1	-	-	-	-	-
HVH 5-9N/2.2 M	6	1	9	-	14	1	1	1	1	1	1	1	1
HVH 5-9N/2.2	6	1		1	14	1	1	1	-	-	-	-	-
HVH 10-3N/1.5 M	1	-	3	-	4	-	-	-	1	1	1	1	1
HVH 10-3N/1.5	1	-		1	4	-	-	-	-	-	-	-	-
HVH 10-4N/1.5 M	2	-	4	-	6	-	-	-	1	1	1	1	1
HVH 10-4N/1.5	2	-		1	6	-	-	-	-	-	-	-	-
HVH 10-5N/2.2 M	3	-	5	-	8	-	-	-	1	1	1	1	1
HVH 10-5N/2.2	3	-		1	8	-	-	-	-	-	-	-	-
HVH 10-6N/2.2 M	3	1	6	-	8	1	1	1	1	1	1	1	1
HVH 10-6N/2.2	3	1		1	8	1	1	1	-	-	-	-	-
HVH 10-7N/3	4	1	7	1	10	1	1	1	-	-	-	-	-
HVH 10-8N/3	5	1	8	1	12	1	1	1	-	-	-	-	-

CONSTRUCTION

50Hz

Rev. B

MECHANICAL SEAL



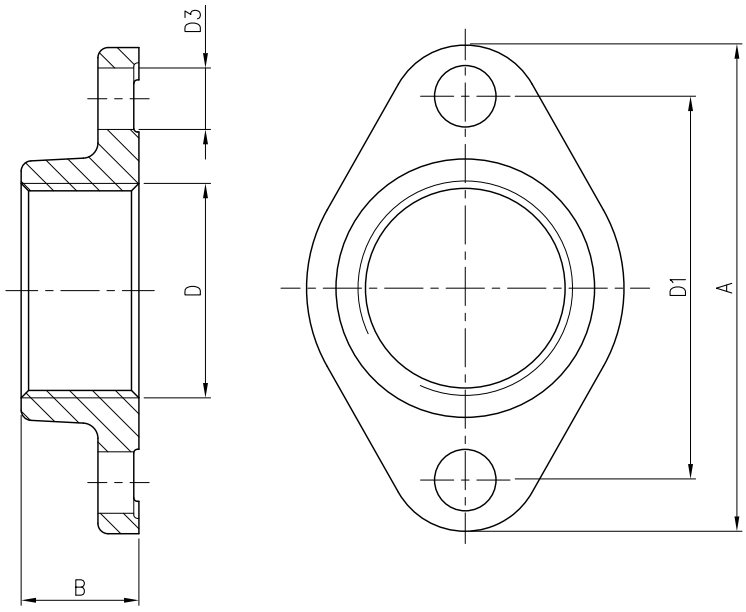
Version	Material						
	1 Stationary seal ring	2 Rotary seal ring	3 O-Ring	4 O-Ring	5 Spring	6 Frame	7 O-Ring
Standard	Ceramic	Carbon	NBR	NBR	EN 1.4402 (AISI 316)	EN 1.4301 (AISI 304)	NBR

BEARINGS

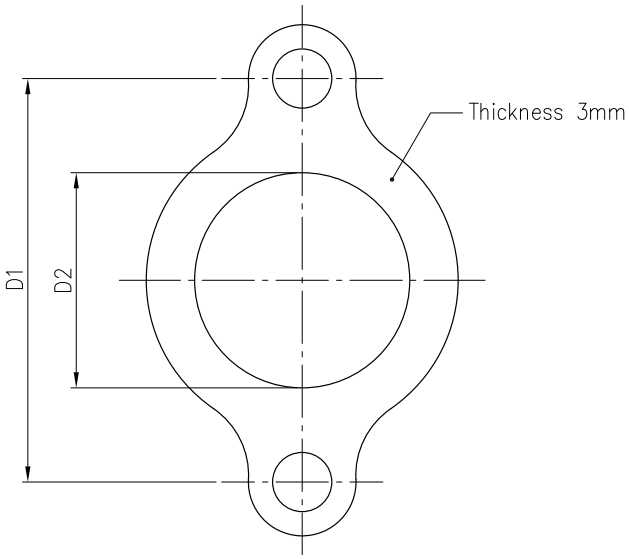
Pump Type	Power		Bearing	
	[kW]	[HP]	pump side	fan side
HVM 3-3N/0.65M	0.65	0.9	6203-2RSH-C3	6202-2RSH
HVM 3-3N/0.65	0.65	0.9		
HVM 3-4N/0.65M	0.65	0.9		
HVM 3-4N/0.65	0.65	0.9		
HVM 3-5N/0.9M	0.9	1.2		
HVM 3-5N/0.9	0.9	1.2		
HVM 3-6N/0.9M	0.9	1.2		
HVM 3-6N/0.9	0.9	1.2		
HVM 3-7N/1.5M	1.5	2.0	6304-2RSH-C3	6203-2RSH
HVM 3-7N/1.5	1.5	2.0		
HVM 3-8N/1.5M	1.5	2.0		
HVM 3-8N/1.5	1.5	2.0		
HVM 3-9N/1.5M	1.5	2.0		
HVM 3-9N/1.5	1.5	2.0		
HVM 5-3N/0.65M	0.65	0.9	6203-2RSH-C3	6202-2RSH
HVM 5-3N/0.65	0.65	0.9		
HVM 5-4N/0.9M	0.9	1.2		
HVM 5-4N/0.9	0.9	1.2		
HVM 5-5N/1.5M	1.5	2.0	6304-2RSH-C3	6203-2RSH
HVM 5-5N/1.5	1.5	2.0		
HVM 5-6N/1.5M	1.5	2.0		
HVM 5-6N/1.5	1.5	2.0		
HVM 5-7N/1.5M	1.5	2.0		
HVM 5-7N/1.5	1.5	2.0		
HVM 5-8N/2.2M	2.2	3.0	6305-2RS1-C3	6205-2RSH-C3
HVM 5-8N/2.2	2.2	3.0	6304-2RSH-C3	6203-2RSH
HVM 5-9N/2.2M	2.2	3.0	6305-2RS1-C3	6205-2RSH-C3
HVM 5-9N/2.2	2.2	3.0	6304-2RSH-C3	6203-2RSH
HVM 10-3N/1.5M	1.5	2.0	6304-2RSH-C3	6203-2RSH
HVM 10-3N/1.5	1.5	2.0		
HVM 10-4N/1.5M	1.5	2.0		
HVM 10-4N/1.5	1.5	2.0		
HVM 10-5N/2.2M	2.2	3.0	6305-2RS1-C3	6205-2RSH-C3
HVM 10-5N/2.2	2.2	3.0	6304-2RSH-C3	6203-2RSH
HVM 10-6N/2.2M	2.2	3.0	6305-2RS1-C3	6205-2RSH-C3
HVM 10-6N/2.2	2.2	3.0	6304-2RSH-C3	6203-2RSH
HVM 10-7N/3	3.0	4.0	6305-2RS1-C3	6205-2RSH-C3
HVM 10-8N/3	3.0	4.0		

FITTINGS

COUNTER FLANGE



GASKET



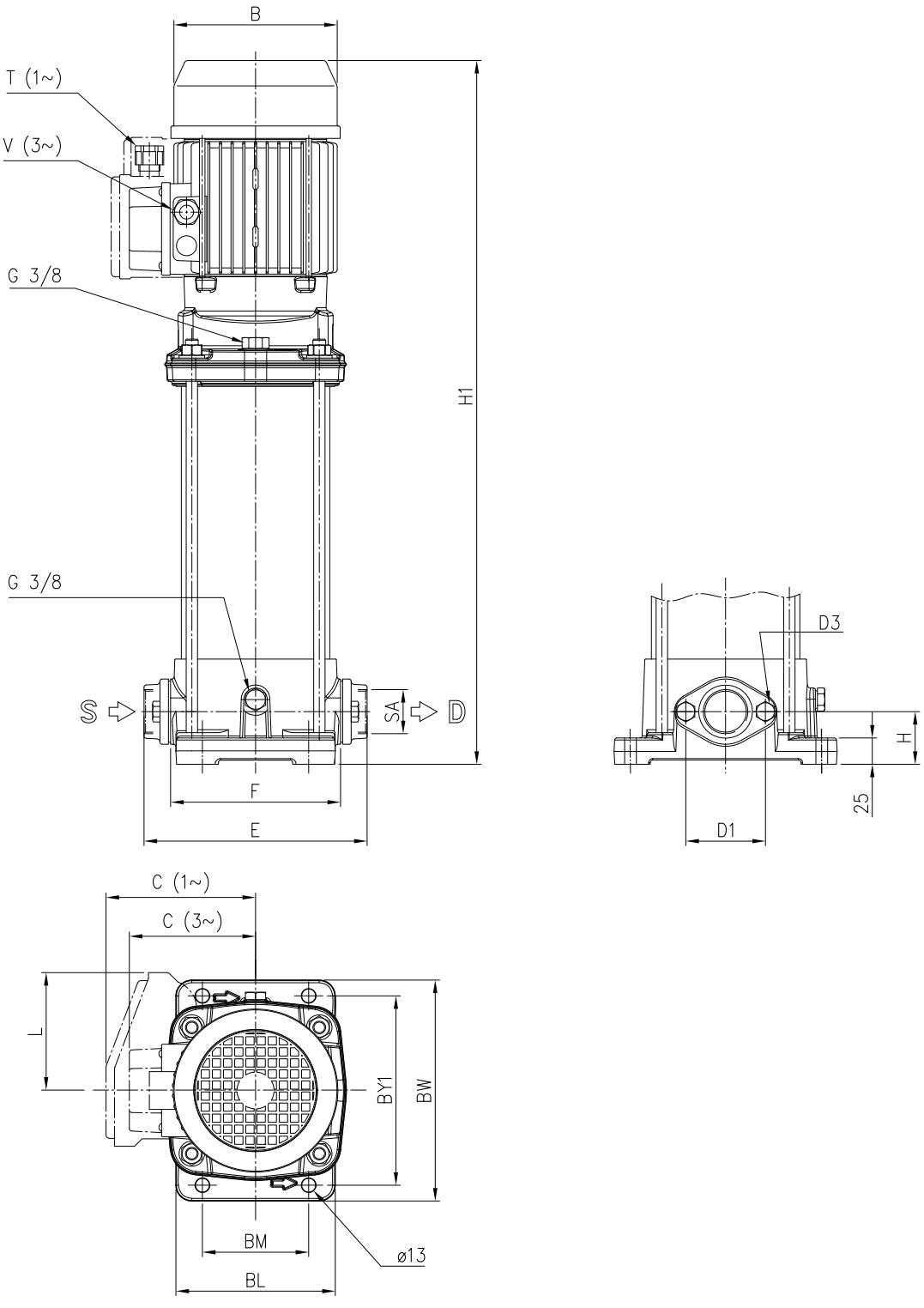
DN	COUNTERFLANGE						GASKET		SCREW	
	D	D1	D3	A	B	MATERIAL	D2	MATERIAL	DIMENSIONS	MATERIAL
25	G1	75	12	95	23	ZINCKED STEEL	40	EPDM	M10x20	EN 1.4301 (AISI 304)
32	G1 1/4	75	12	95	23		40		M10x20	
40	G1 1/2	100	15	125	26		45		M12x20	

DIMENSIONS AND WEIGHT

50Hz

Rev. B

PUMP DRAWING



DIMENSIONS AND WEIGHT

50Hz

Rev. B

DIMENSION TABLE

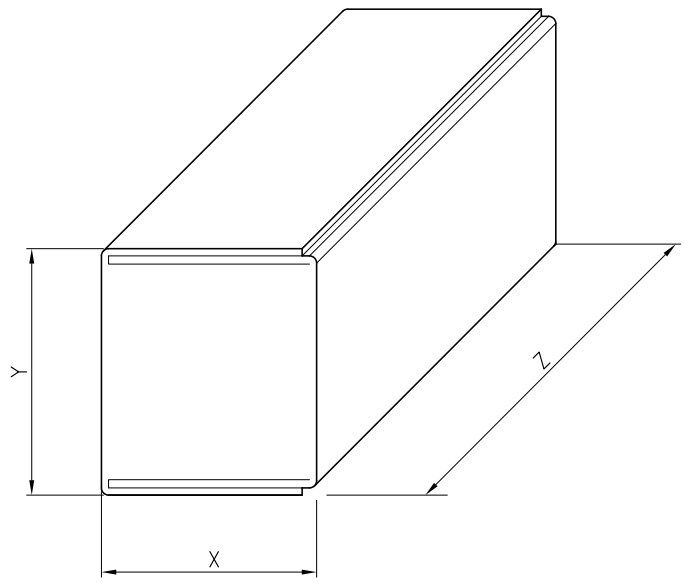
Pump Type	Dimensions [mm]																	Weight [kgf]
	H	H1	E	F	B	C [1~]	C [3~]	L	BM	BL	BW	BY1	SA	D1	D3	T [1~]	V [3~]	
HVM 3-3N/0.65 M	50	464	209	160	135	110	-	86.5	100	150	210	180	G 1	75	M10	Pg 11	-	18.6
HVM 3-3N/0.65	50	464	209	160	135	-	102	-	100	150	210	180	G 1	75	M10	-	Pg 11	18.5
HVM 3-4N/0.65 M	50	488	209	160	135	110	-	86.5	100	150	210	180	G 1	75	M10	Pg 11	-	19.3
HVM 3-4N/0.65	50	488	209	160	135	-	102	-	100	150	210	180	G 1	75	M10	-	Pg 11	19.1
HVM 3-5N/0.9 M	50	512	209	160	135	129	-	106	100	150	210	180	G 1	75	M10	M20x1.5	-	21.2
HVM 3-5N/0.9	50	524	209	160	135	-	102	-	100	150	210	180	G 1	75	M10	-	Pg 11	21.9
HVM 3-6N/0.9 M	50	536	209	160	135	129	-	106	100	150	210	180	G 1	75	M10	M20x1.5	-	22.4
HVM 3-6N/0.9	50	548	209	160	135	-	102	-	100	150	210	180	G 1	75	M10	-	Pg 11	23
HVM 3-7N/1.5 M	50	597	209	160	155	136	-	112	100	150	210	180	G 1	75	M10	M20x1.5	-	25.4
HVM 3-7N/1.5	50	608	209	160	155	-	119	-	100	150	210	180	G 1	75	M10	-	Pg 11	27.1
HVM 3-8N/1.5 M	50	621	209	160	155	136	-	112	100	150	210	180	G 1	75	M10	M20x1.5	-	25.4
HVM 3-8N/1.5	50	632	209	160	155	-	119	-	100	150	210	180	G 1	75	M10	-	Pg 11	27.8
HVM 3-9N/1.5 M	50	645	209	160	155	136	-	112	100	150	210	180	G 1	75	M10	M20x1.5	-	27.4
HVM 3-9N/1.5	50	656	209	160	155	-	119	-	100	150	210	180	G 1	75	M10	-	Pg 11	28.7
HVM 5-3N/0.65 M	50	464	209	160	135	110	-	86.5	100	150	210	180	G 1 1/4	75	M10	Pg 11	-	18.6
HVM 5-3N/0.65	50	464	209	160	135	-	102	-	100	150	210	180	G 1 1/4	75	M10	-	Pg 11	18.5
HVM 5-4N/0.9 M	50	488	209	160	135	129	-	106	100	150	210	180	G 1 1/4	75	M10	M20x1.5	-	20.9
HVM 5-4N/0.9	50	500	209	160	135	-	102	-	100	150	210	180	G 1 1/4	75	M10	-	Pg 11	21.6
HVM 5-5N/1.5 M	50	549	209	160	155	136	-	112	100	150	210	180	G 1 1/4	75	M10	M20x1.5	-	24.1
HVM 5-5N/1.5	50	560	209	160	155	-	119	-	100	150	210	180	G 1 1/4	75	M10	-	Pg 11	25.5
HVM 5-6N/1.5 M	50	573	209	160	155	136	-	112	100	150	210	180	G 1 1/4	75	M10	M20x1.5	-	24.3
HVM 5-6N/1.5	50	584	209	160	155	-	119	-	100	150	210	180	G 1 1/4	75	M10	-	Pg 11	26.6
HVM 5-7N/1.5 M	50	597	209	160	155	136	-	112	100	150	210	180	G 1 1/4	75	M10	M20x1.5	-	26.3
HVM 5-7N/1.5	50	608	209	160	155	-	119	-	100	150	210	180	G 1 1/4	75	M10	-	Pg 11	27.6
HVM 5-8N/2.2 M	50	675	209	160	171	141	-	112	100	150	210	180	G 1 1/4	75	M10	M20x1.5	-	31.5
HVM 5-8N/2.2	50	634	209	160	155	-	119	-	100	150	210	180	G 1 1/4	75	M10	-	Pg 11	27.8
HVM 5-9N/2.2 M	50	699	209	160	171	141	-	112	100	150	210	180	G 1 1/4	75	M10	M20x1.5	-	32
HVM 5-9N/2.2	50	658	209	160	155	-	119	-	100	150	210	180	G 1 1/4	75	M10	-	Pg 11	27.9
HVM 10-3N/1.5 M	80	549	255	200	155	136	-	112	130	185	250	215	G 1 1/2	100	M12	M20x1.5	-	26.9
HVM 10-3N/1.5	80	560	255	200	155	-	119	-	130	185	250	215	G 1 1/2	100	M12	-	Pg 11	28
HVM 10-4N/1.5 M	80	577	255	200	155	136	-	112	130	185	250	215	G 1 1/2	100	M12	M20x1.5	-	27.8
HVM 10-4N/1.5	80	590	255	200	155	-	119	-	130	185	250	215	G 1 1/2	100	M12	-	Pg 11	29.5
HVM 10-5N/2.2 M	80	663	255	200	171	141	-	112	130	185	250	215	G 1 1/2	100	M12	M20x1.5	-	33.6
HVM 10-5N/2.2	80	622	255	200	155	-	119	-	130	185	250	215	G 1 1/2	100	M12	-	Pg 11	30.1
HVM 10-6N/2.2 M	80	693	255	200	171	141	-	112	130	185	250	215	G 1 1/2	100	M12	M20x1.5	-	34.7
HVM 10-6N/2.2	80	650	255	200	155	-	119	-	130	185	250	215	G 1 1/2	100	M12	-	Pg 11	30.5
HVM 10-7N/3	80	761	255	200	171	-	124	-	130	185	250	215	G 1 1/2	100	M12	-	Pg 13.5	37.2
HVM 10-8N/3	80	791	255	200	171	-	124	-	130	185	250	215	G 1 1/2	100	M12	-	Pg 13.5	38.1

DIMENSIONS AND WEIGHT

50Hz

Rev. B

PACKING



Pump Type	Packing [mm]			Weight [kgf]
	X	Y	Z	
HVM 3-3N/0.65M	290	290	690	19.7
HVM 3-3N/0.65				19.6
HVM 3-4N/0.65M				20.4
HVM 3-4N/0.65				20.2
HVM 3-5N/0.9M				22.3
HVM 3-5N/0.9				23
HVM 3-6N/0.9M				23.5
HVM 3-6N/0.9				24.1
HVM 3-7N/1.5M				26.5
HVM 3-7N/1.5				28.2
HVM 3-8N/1.5M				26.5
HVM 3-8N/1.5				28.9
HVM 3-9N/1.5M				28.5
HVM 3-9N/1.5				29.8
HVM 5-3N/0.65M	290	290	690	19.7
HVM 5-3N/0.65				19.6
HVM 5-4N/0.9M				22
HVM 5-4N/0.9				22.7
HVM 5-5N/1.5M				25.2
HVM 5-5N/1.5				26.6
HVM 5-6N/1.5M				25.4
HVM 5-6N/1.5				27.7
HVM 5-7N/1.5M				27.4
HVM 5-7N/1.5				28.7
HVM 5-8N/2.2M	290	290	940	32.8
HVM 5-8N/2.2	290	290	690	28.9
HVM 5-9N/2.2M	290	290	940	33.3
HVM 5-9N/2.2				29.2
HVM 10-5N/1.5M	290	290	690	28
HVM 10-3N/1.5				29.1
HVM 10-4N/1.5M				28.9
HVM 10-4N/1.5				30.6
HVM 10-5N/2.2M	290	290	940	34.9
HVM 10-5N/2.2	290	290	690	31.2
HVM 10-6N/2.2M	290	290	940	36
HVM 10-6N/2.2				31.8
HVM 10-7N/3				38.5
HVM 10-8N/3				39.4

TECHNICAL DATA

50Hz

Rev. B

MOTOR DATA

Pump type		Power		Efficiency		Capacitor		Efficiency (% load) Three phase η %			Input [kW]		Full load current [A]			Locked rotor current [A]		
Single Phase	Three Phase	[kW]	[HP]	Single Phase	Three Phase	Single Phase [μF]	[V]	50%	75%	100%	Single Phase	Three Phase	Single Phase 230 V	Three Phase 230 V	Three Phase 400 V	Single Phase 230 V	Three Phase 230 V	Three Phase 400 V
HVM 3-3N/0.65M	HVM 3-3N/0.65	0.65	0.9	-	-	16	450	-	-	-	0.97	0.85	4.5	2.8	1.6	16.2	16.0	9.1
HVM 3-4N/0.65M	HVM 3-4N/0.65	0.65	0.9	-	-	16	450	-	-	-	0.97	0.85	4.5	2.8	1.6	16.2	16.0	9.1
HVM 3-5N/0.9M	HVM 3-5N/0.9	0.9	1.2	-	IE2	31.5	450	79.0	81.7	81.6	1.28	1.35	5.7	4.3	2.5	21.7	31.0	17.8
HVM 3-6N/0.9M	HVM 3-6N/0.9	0.9	1.2	-	IE2	31.5	450	79.0	81.7	81.6	1.28	1.35	5.7	4.3	2.5	21.7	31.0	17.8
HVM 3-7N/1.5M	HVM 3-7N/1.5	1.5	2.0	-	IE2	40	450	78.6	83.0	84.2	1.95	1.78	8.7	6.3	3.7	43.0	34.3	20.0
HVM 3-8N/1.5M	HVM 3-8N/1.5	1.5	2.0	-	IE2	40	450	78.6	83.0	84.2	1.95	1.78	8.7	6.3	3.7	43.0	34.3	20.0
HVM 3-9N/1.5M	HVM 3-9N/1.5	1.5	2.0	-	IE2	40	450	78.6	83.0	84.2	1.95	1.78	8.7	6.3	3.7	43.0	34.3	20.0
HVM 5-3N/0.65M	HVM 5-3N/0.65	0.65	0.9	-	-	16	450	-	-	-	0.97	0.85	4.5	2.8	1.6	16.2	16.0	9.1
HVM 5-4N/0.9M	HVM 5-4N/0.9	0.9	1.2	-	IE2	31.5	450	79.0	81.7	81.6	1.28	1.35	5.7	4.3	2.5	21.7	31.0	17.8
HVM 5-5N/1.5M	HVM 5-5N/1.5	1.5	2.0	-	IE2	40	450	78.6	83.0	84.2	1.95	1.78	8.7	6.3	3.7	43.0	34.3	20.0
HVM 5-6N/1.5M	HVM 5-6N/1.5	1.5	2.0	-	IE2	40	450	78.6	83.0	84.2	1.95	1.78	8.7	6.3	3.7	43.0	34.3	20.0
HVM 5-7N/1.5M	HVM 5-7N/1.5	1.5	2.0	-	IE2	40	450	78.6	83.0	84.2	1.95	1.78	8.7	6.3	3.7	43.0	34.3	20.0
HVM 5-8N/2.2M	HVM 5-8N/2.2	2.2	3.0	-	IE2	50	450	83.0	84.4	83.8	2.92	2.63	13.0	8.1	4.7	62.4	59.0	34.3
HVM 5-9N/2.2M	HVM 5-9N/2.2	2.2	3.0	-	IE2	50	450	83.0	84.4	83.8	2.92	2.63	13.0	8.1	4.7	62.4	59.0	34.3
HVM 10-3N/1.5M	HVM 10-3N/1.5	1.5	2.0	-	IE2	40	450	78.6	83.0	84.2	1.95	1.78	8.7	6.3	3.7	43.0	34.3	20.0
HVM 10-4N/1.5M	HVM 10-4N/1.5	1.5	2.0	-	IE2	40	450	78.6	83.0	84.2	1.95	1.78	8.7	6.3	3.7	43.0	34.3	20.0
HVM 10-5N/2.2M	HVM 10-5N/2.2	2.2	3.0	-	IE2	50	450	83.0	84.4	83.8	2.92	2.63	13.0	8.1	4.7	62.4	59.0	34.3
HVM 10-6N/2.2M	HVM 10-6N/2.2	2.2	3.0	-	IE2	50	450	83.0	84.4	83.8	2.92	2.63	13.0	8.1	4.7	62.4	59.0	34.3
-	HVM 10-7N/3	3	4.0	-	IE2	-	-	85.0	86.7	86.3	-	3.48	-	10.6	6.1	-	100.0	57.7
-	HVM 10-8N/3	3	4.0	-	IE2	-	-	85.0	86.7	86.3	-	3.48	-	10.6	6.1	-	100.0	57.7

NOISE DATA

Pump Type		Motor			LpA-dB(A)*
Single phase	Three phase	[kW]	[HP]	size	
HVM 3-3N/0.65M	HVM 3-3N/0.65	0.65	0.9	71	61
HVM 3-4N/0.65M	HVM 3-4N/0.65				
HVM 5-3N/0.65M	HVM 5-3N/0.65				
HVM 3-5N/0.9M	HVM 3-5N/0.9	0.9	1.2	71	62
HVM 3-6N/0.9M	HVM 3-6N/0.9				
HVM 5-4N/0.9M	HVM 5-4N/0.9				
HVM 3-7N/1.5M	HVM 3-7N/1.5	1.5	2.0	80	68
HVM 3-8N/1.5M	HVM 3-8N/1.5				
HVM 3-9N/1.5M	HVM 3-9N/1.5				
HVM 5-5N/1.5M	HVM 5-5N/1.5				
HVM 5-6N/1.5M	HVM 5-6N/1.5				
HVM 5-7N/1.5M	HVM 5-7N/1.5				
HVM 10-3N/1.5M	HVM 10-3N/1.5				
HVM 10-4N/1.5M	HVM 10-4N/1.5				
-	HVM 5-8N/2.2	2.2	3.0	80	67
-	HVM 5-9N/2.2				
-	HVM 10-5N/2.2				
-	HVM 10-6N/2.2				
HVM 5-8N/2.2M	-			90	70
HVM 5-9N/2.2M	-				
HVM 10-5N/2.2M	-				
HVM 10-6N/2.2M	-				
-	HVM 10-7N/3	3.0	4.0		71
-	HVM 10-8N/3				

*Mean value of several measures at 1 m distance around the pump.
Tollerance ± 2.5 dB.