



3M4

4 Pole Models
1450 RPM

Stainless Steel End Suction Pumps

(DIN 24255)



**Monobloc Design
304 Stainless Steel**



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4 POLE 50 Hz

V20

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E.&O.E. All care has been taken to ensure the accuracy of the information and is correct to the best of our knowledge and is given without guarantee. Specifications subject to change without notice.

Instructions →



SPECIFICATIONS - FEATURES & APPLICATIONS

V20



These series of stainless steel pumps feature a unique one piece volute casing that are produced using an advanced computer controlled plasma stamping system that ensures total quality control during manufacture. With the smooth surfaces of stamped stainless steel, this results in consistent high standard products, of superior quality and high efficiency.

Features

- Stainless steel liquid end components
 - High quality; corrosion resistance.
 - Manufactured in Stamped 304 Stainless Steel.
- Economical extended motor shaft design.
- High quality mechanical shaft seals and o-rings
 - Fitted standard with Carbon/Carbon/NBR mechanical seal.
- Close coupled design
 - Saves space; simplifies maintenance and installation.
- Back pullout construction
 - Assembly and overhaul of the impeller and seal without disturbing suction and discharge connections.
- High operating efficiency
 - Lowers operating costs.
- Top centerline discharge and foot support under casing
 - Ensures self-venting and reduces misalignment from pipe loads.

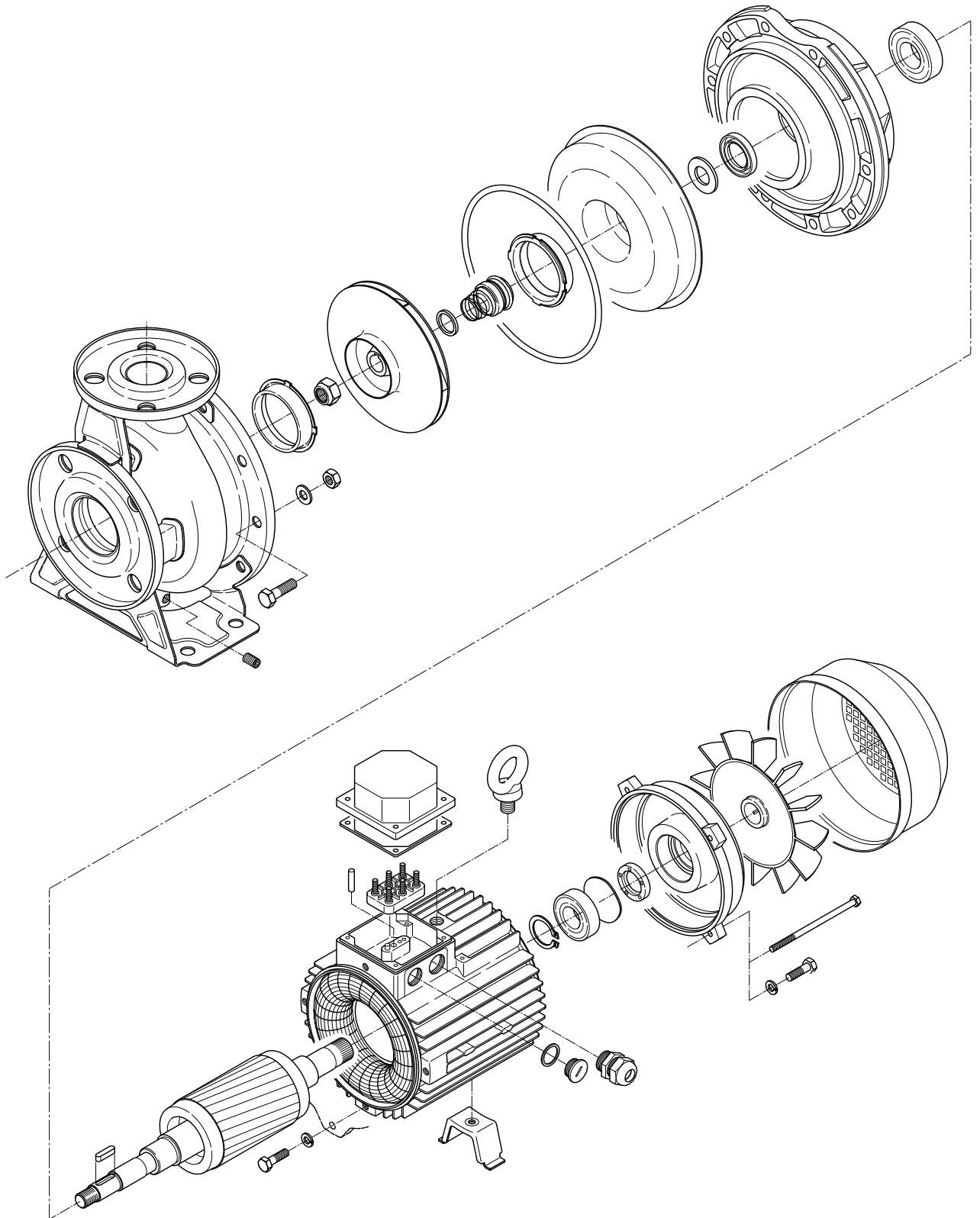
Applications

- Plant services
- Water supply systems
- Washing plants
- Cooling water
- Air conditioning
- Sprinkler/flow irrigation
- OEM equipment application
- Pressure boosting
- Liquid transfer
- Heat exchanger
- Spray systems
- Heating
- Water reclamation and treatment



SPECIFICATIONS - TYPICAL CROSS SECTIONAL VIEW

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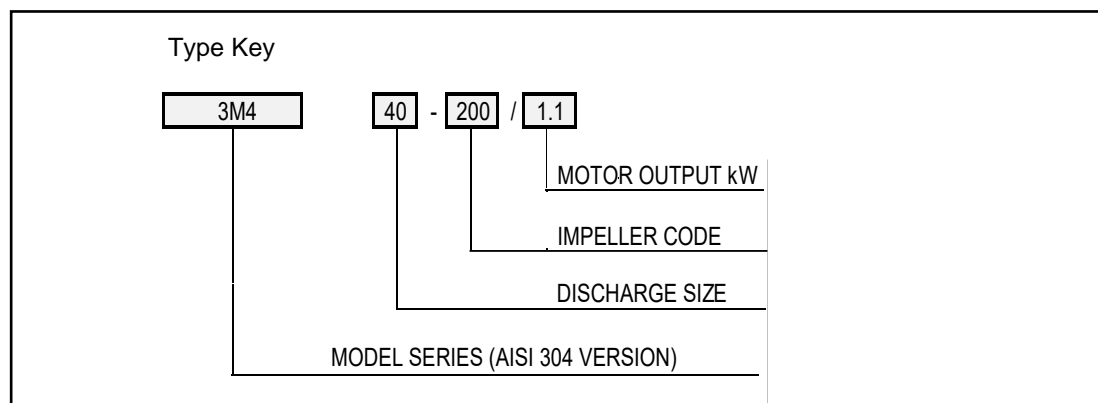


PUMP SPECIFICATIONS

4 POLE 50 Hz

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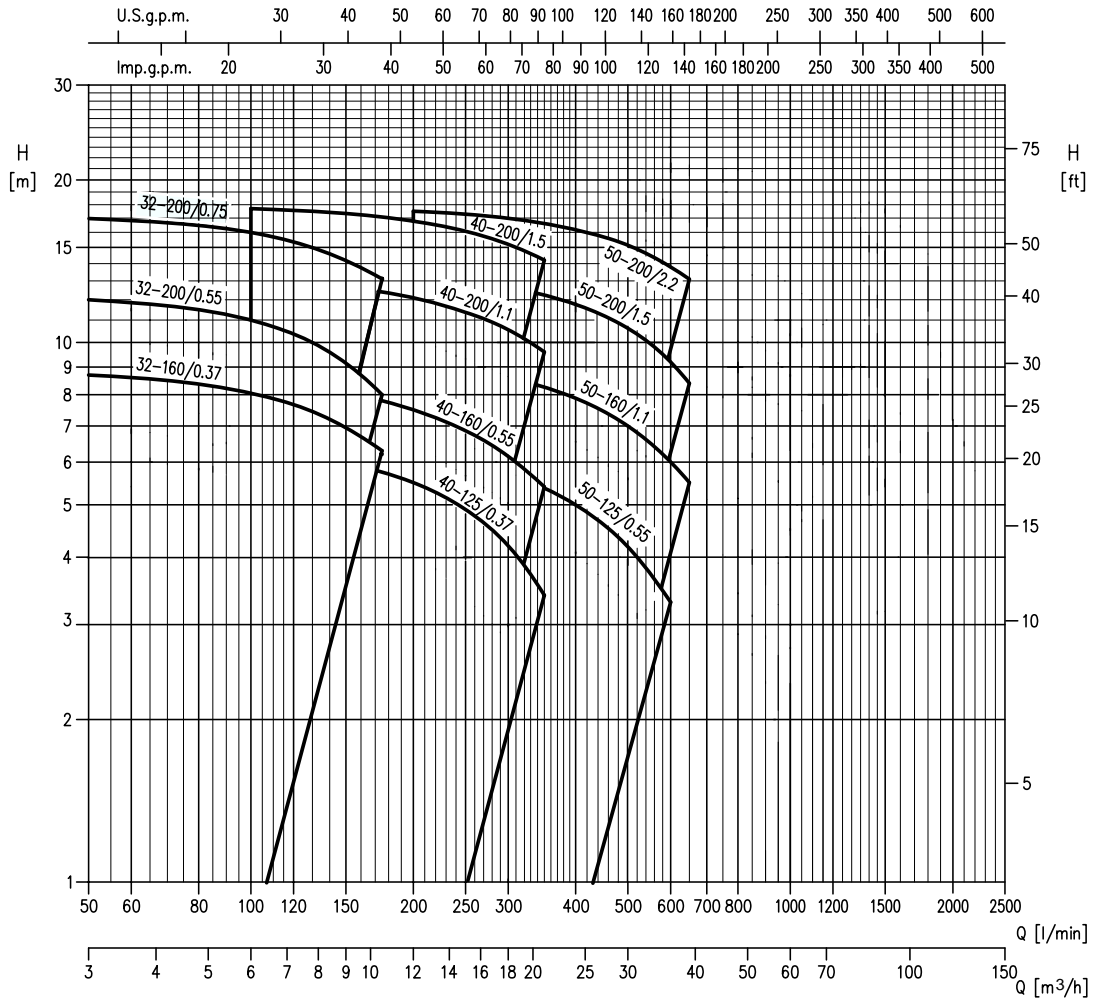
PUMP				
Version		3M		
Liquid Handled	Type of Liquid	Clean Water		
	Temperature [°C]	min. -10 max. +90 max. +110 (H-HS-version)		
Maximum working pressure [MPa]		1		
Construction	Impeller	Closed centrifugal type for 32, 40, 50 version Reinforced laser welding for 40-200/11, 50-200/15		
	Shaft seal type	Mechanical seal		
	Bearing	Sealed ball bearing		
Pipe Connection	Suction	32-160/200	Flange DN50 according to DIN 2532 standard	
		40-125/160/200	Flange DN65 according to DIN 2532 standard	
		50-125/160/200	Flange DN65 according to DIN 2532 standard	
	Discharge	32-160/200	Flange DN32 according to DIN 2532 standard	
		40-125/160/200	Flange DN40 according to DIN 2532 standard	
		50-125/160/200	Flange DN50 according to DIN 2532 standard	
Material	Casing		EN 1.4301 (AISI 304)	
	Impeller		EN 1.4301 (AISI 304)	
	Casing Cover		EN 1.4301 (AISI 304)	
	Mechanical Seal		Ceramic/Carbon/NBR (Standard)	
	O-ring		NBR (FPM for H, HS Version)	
	Shaft	32, 40, 50	D=19	EN 1.4301 (AISI 304)
		50-200/2.2	D=22	
Bracket		Cast Iron – Aluminium		
Applicable Standard of test			ISO 9906:2012 – Grade 3B	
MOTOR – Three Phase				
Type	Electric – TEFC Three Phase			
Efficiency level (Reg. 640/2009)	- from 0.37 kW up to 0.55kW IE2 from 0.75 kW up to 2.2 kW			
No. of Poles	4			
Rotation speed [min ¹]	≈ 1400			
Insulation Class	F (class B for temperature rise)			
Protection degree (CEI EN 60034-5)	IP55			
Power Rating [kW]	0.37 – 2.2			
	[HP]	0.5 – 3.0		
Frequency [Hz]	50			
Voltage [V]	230/400 ± 10%			
Over load protection	Provided by user			
Casing material	Aluminium			
Motor support	Cast iron – Aluminium			
Dimensions of cable entry	PG11 - PG13.5 - PG16			



SELECTION CHART

4 POLE 50 Hz

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Pump type	Power		Capacity													
	[kW]	[HP]	l/min	0	50	100	150	175	200	250	300	350	400	500	600	650
			3	6	9	10.5	12	15	18	21	24	30	36	39		
Total head in meters																
32-160/0.37	0.37	0.5	9	8.7	8.1	7	6.3	-	-	-	-	-	-	-	-	-
32-200/0.55	0.55	0.75	12.5	12	11	9.2	8	-	-	-	-	-	-	-	-	-
32-200/0.75	0.75	1	17.5	17.1	16.1	14.3	13.2	-	-	-	-	-	-	-	-	-
40-125/0.37	0.37	0.5	6.5	-	6.3	6	5.8	5.5	4.9	4.2	3.4	-	-	-	-	-
40-160/0.55	0.55	0.75	9.1	-	8.6	8.1	7.8	7.5	6.9	6.2	5.4	-	-	-	-	-
40-200/1.1	1.1	1.5	13.6	-	13.2	12.7	12.4	12.1	11.4	10.6	9.6	-	-	-	-	-
40-200/1.5	1.5	2	18	-	17.7	17.3	17.1	16.8	16.1	15.2	14.2	-	-	-	-	-
50-125/0.55	0.55	0.75	6.4	-	-	-	-	6.2	6	5.7	5.4	5	4.2	3.3	-	-
50-160/1.1	1.1	1.5	9.5	-	-	-	-	9.1	8.9	8.6	8.3	7.9	7	6	5.5	-
50-200/1.5	1.5	2	14	-	-	-	-	13.3	13	12.7	12.2	11.8	10.6	9.2	8.4	-
50-200/2.2	2.2	3	17.8	-	-	-	-	17.5	17.3	17	16.6	16.2	15.1	13.8	13.1	-

SELECTION CHART MEI INDEX

4 POLE 50 Hz

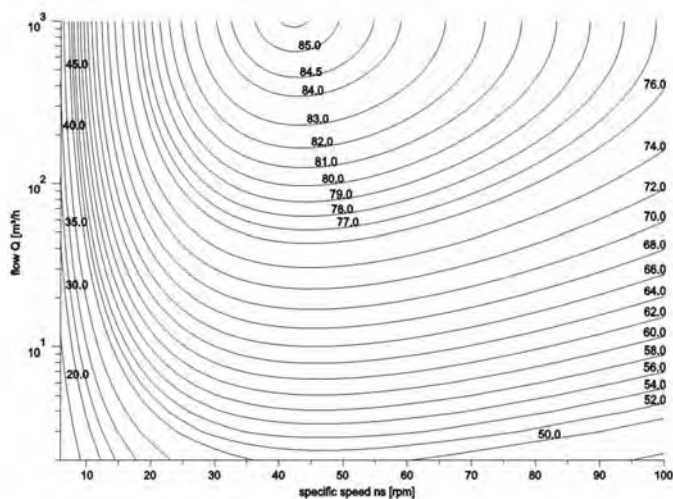
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The minimum efficiency index (MEI) is a measure of the quality of a pump size in respect to its mean efficiency. The minimum efficiency index is based on the hydraulic efficiency and on the head at the best efficiency point.

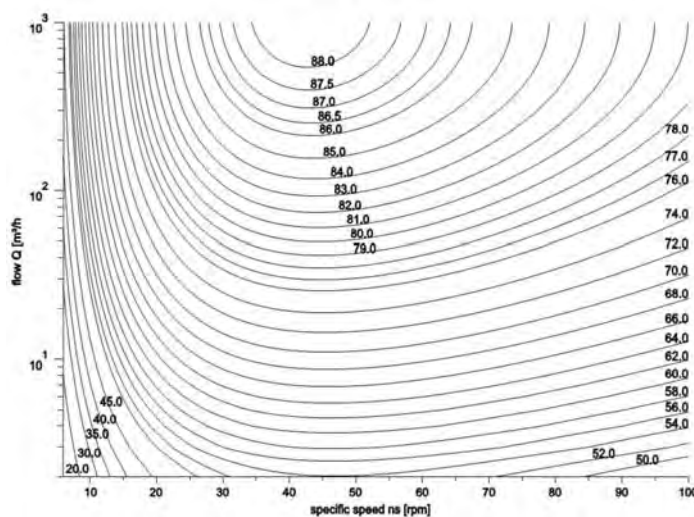
The efficiency of a pump with trimmed impeller is usually lower than that of a pump with the full impeller diameter. The trimming of the impeller will adapt the pump to a fixed duty point, leading to a reduced energy consumption. The minimum efficiency index (MEI) is based on the full impeller diameter.

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

MEI = 0.4 for ESOB 1450



MEI = 0.7 for ESOB 1450 rpm

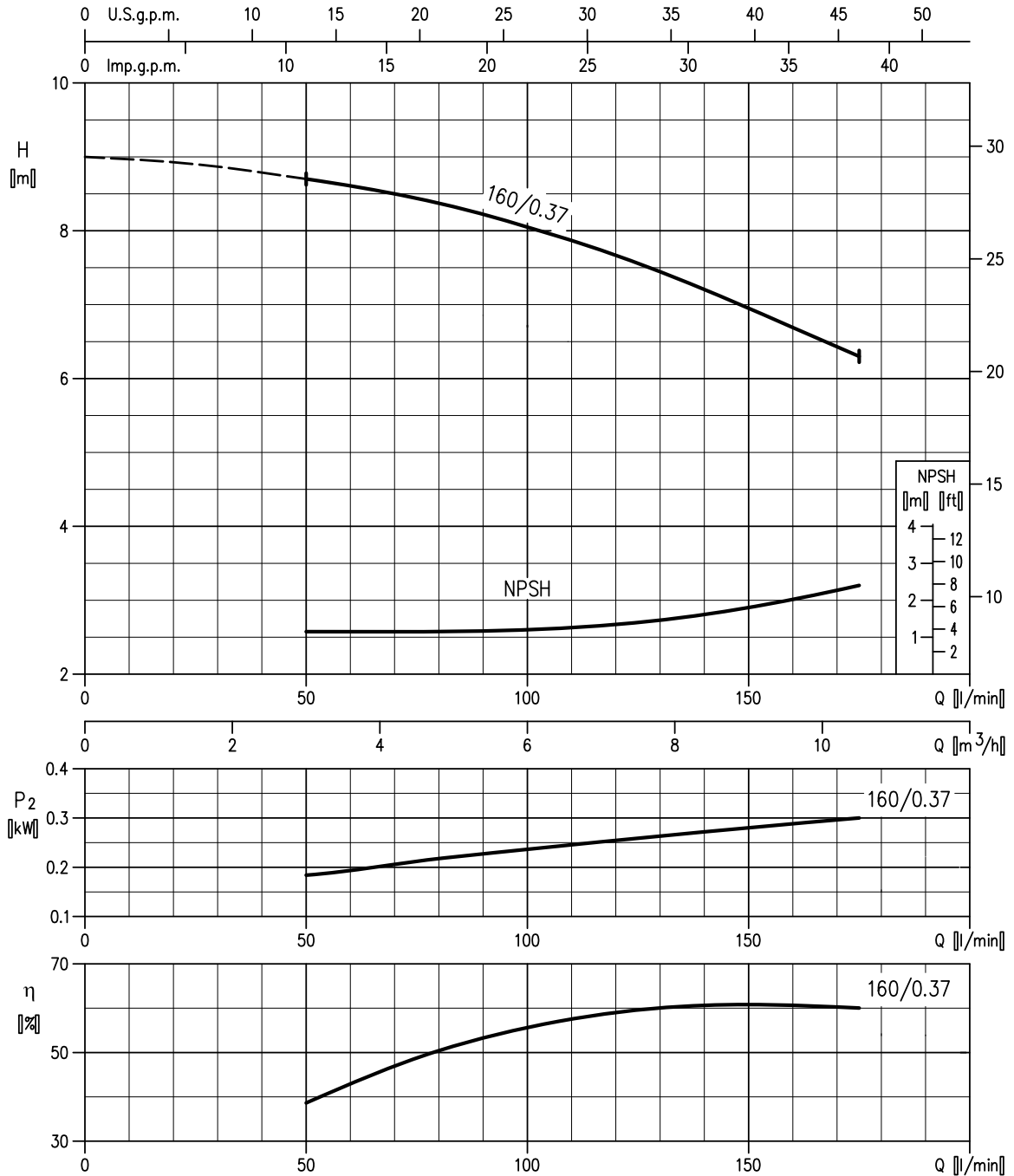


PERFORMANCE CURVE

4 POLE 50 Hz

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32-160/0.37 (0.37kW) MEI > 0.70 – impeller diameter = 166 mm



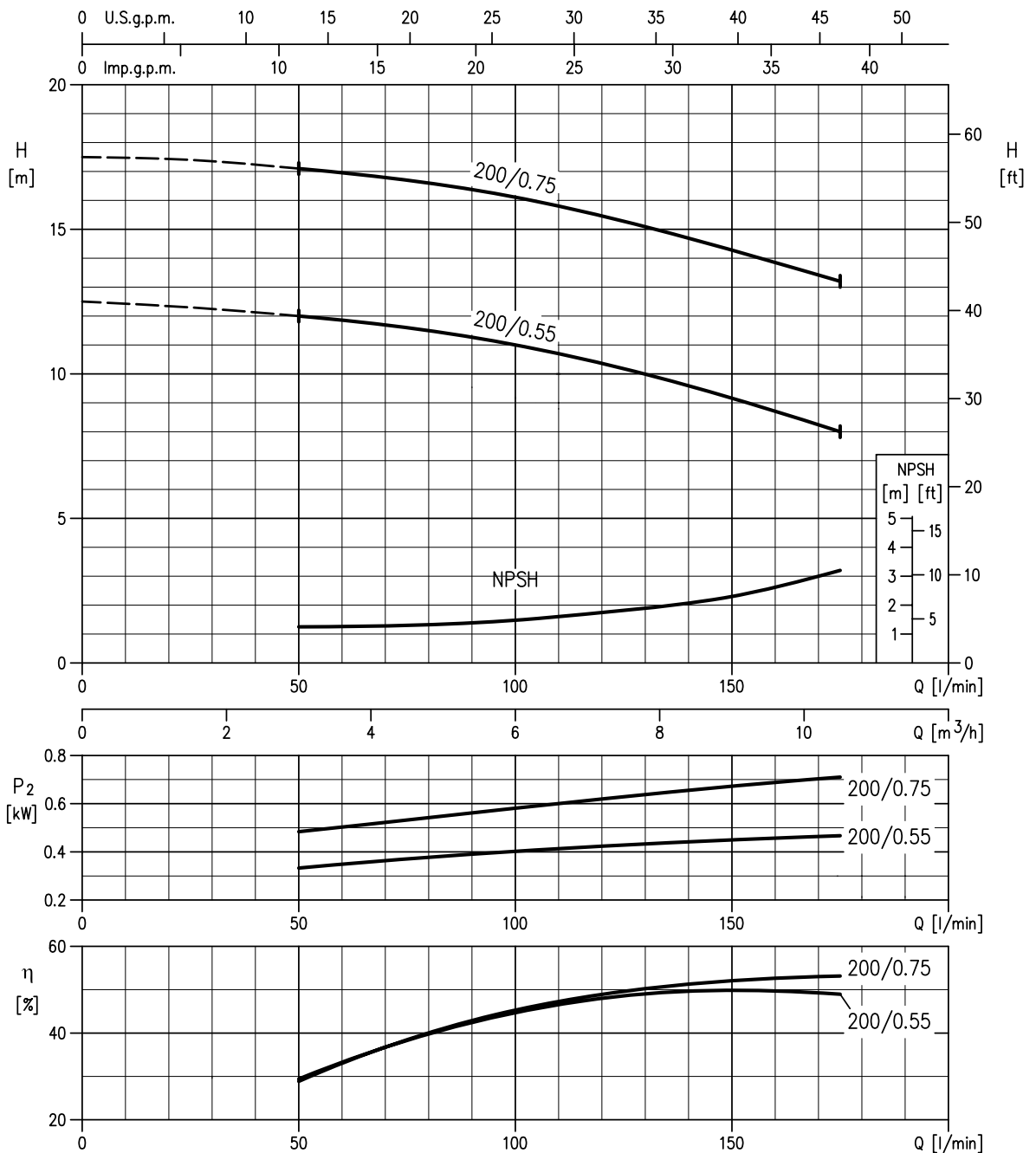
Rotation speed ≈ 1400 min⁻¹
 Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

4 POLE 50 Hz

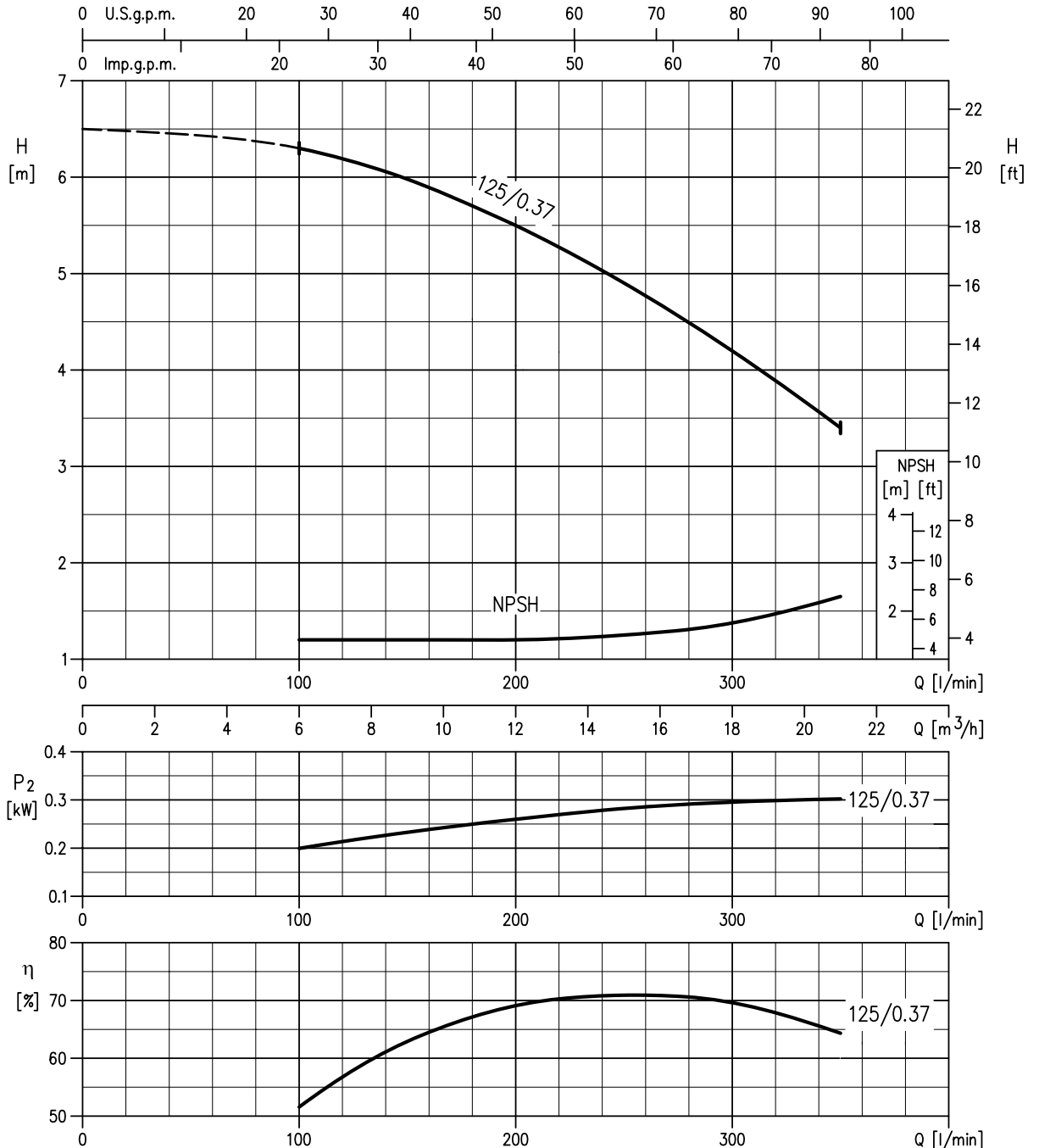
V20

32-200/0.55 (0.55kW) MEI > 0.70 – impeller diameter = 200 mm
 32-200/0.75 (0.55kW) MEI > 0.70 – impeller diameter = 224 mm



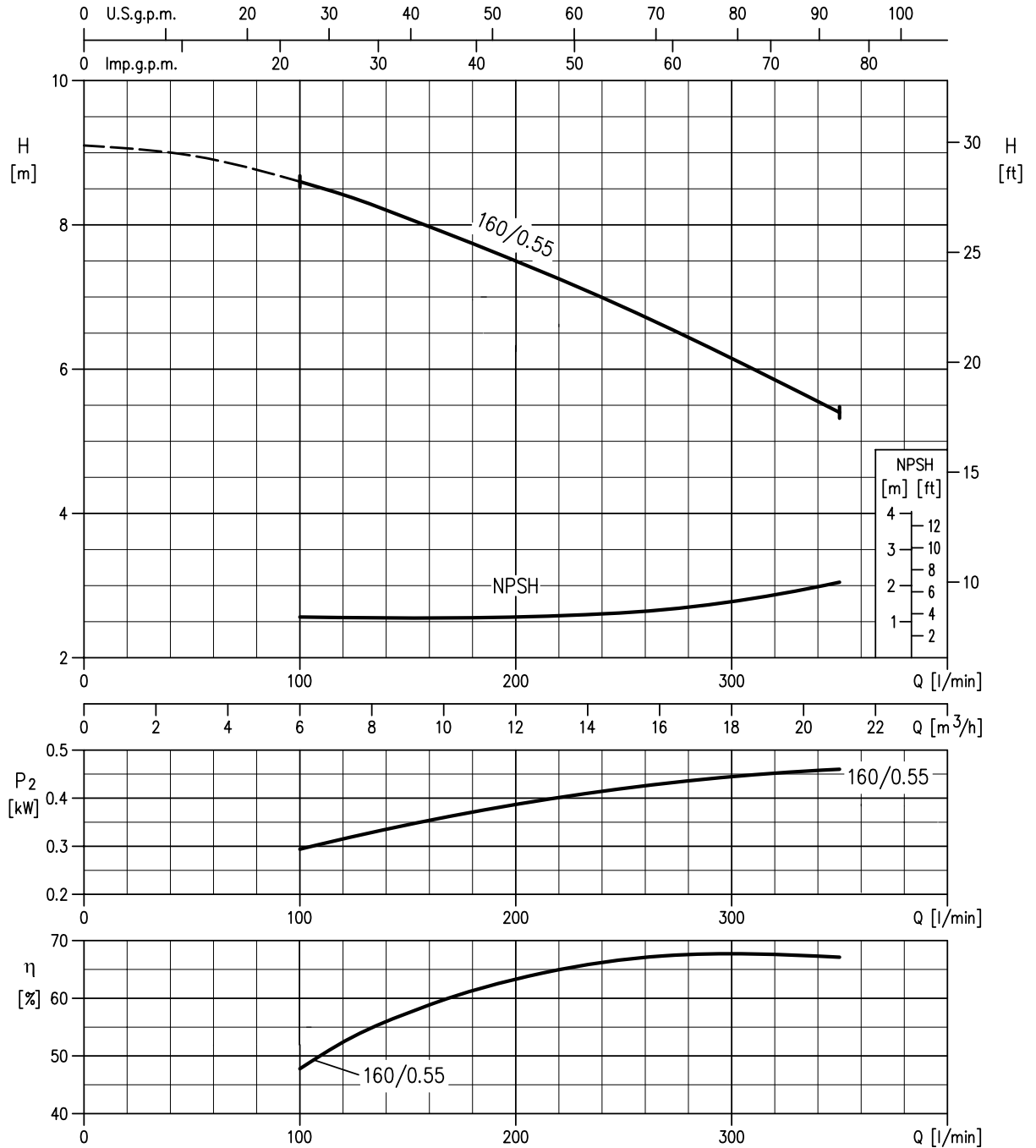
Rotation speed ≈ 1400 min⁻¹
 Test standard : ISO 9906 Annex A

40-125/0.37 (0.37 kW) MEI > 0.70 – impeller diameter = 140 mm



Rotation speed ≈ 1400 min⁻¹
 Test standard : ISO 9906 Annex A

40-160/0.55 (0.55 kW) MEI > 0.40 – impeller diameter = 166 mm



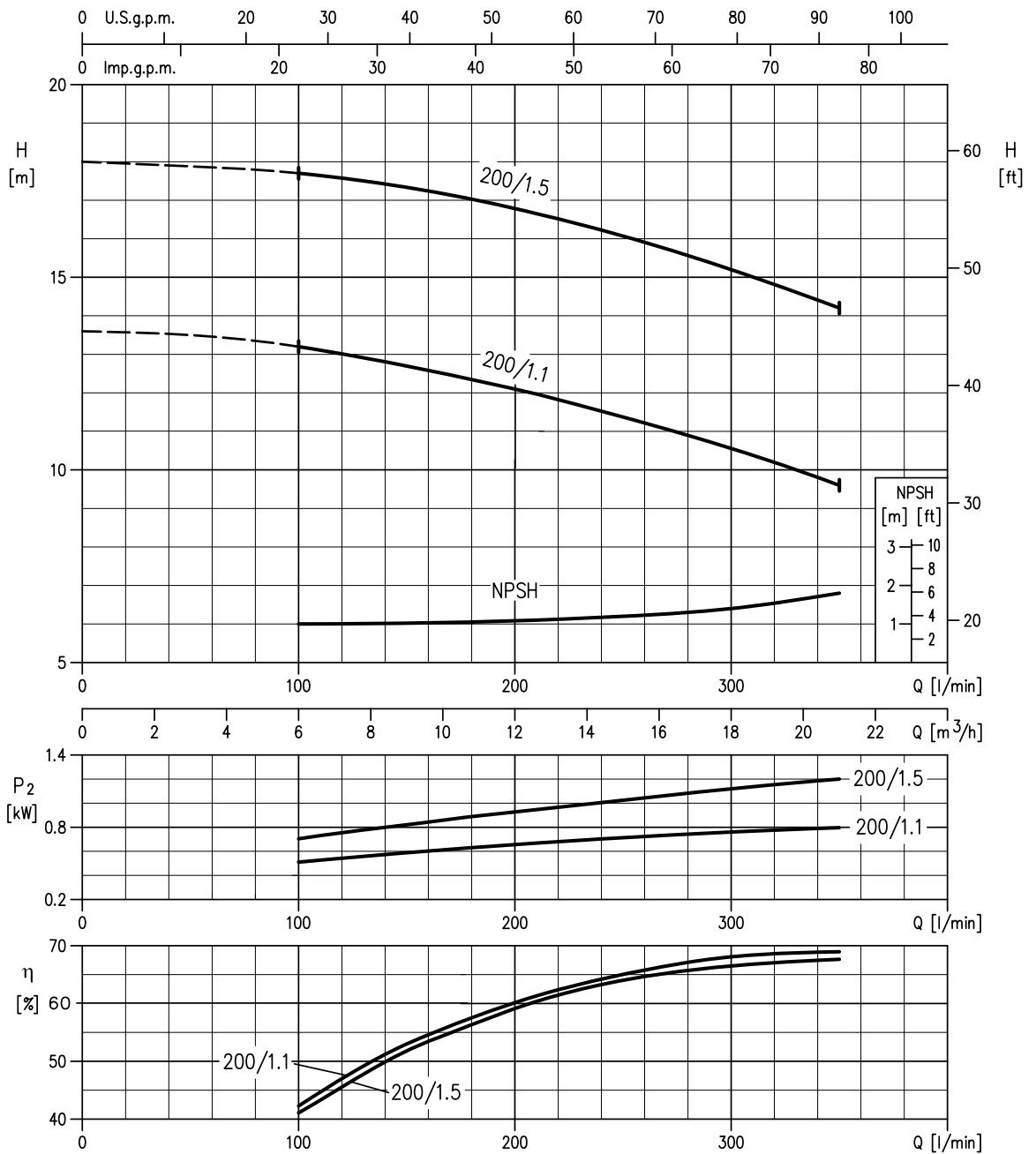
Rotation speed ≈ 1400 min⁻¹
 Test standard : ISO 9906 Annex A

PERFORMANCE CURVE

4 POLE 50 Hz

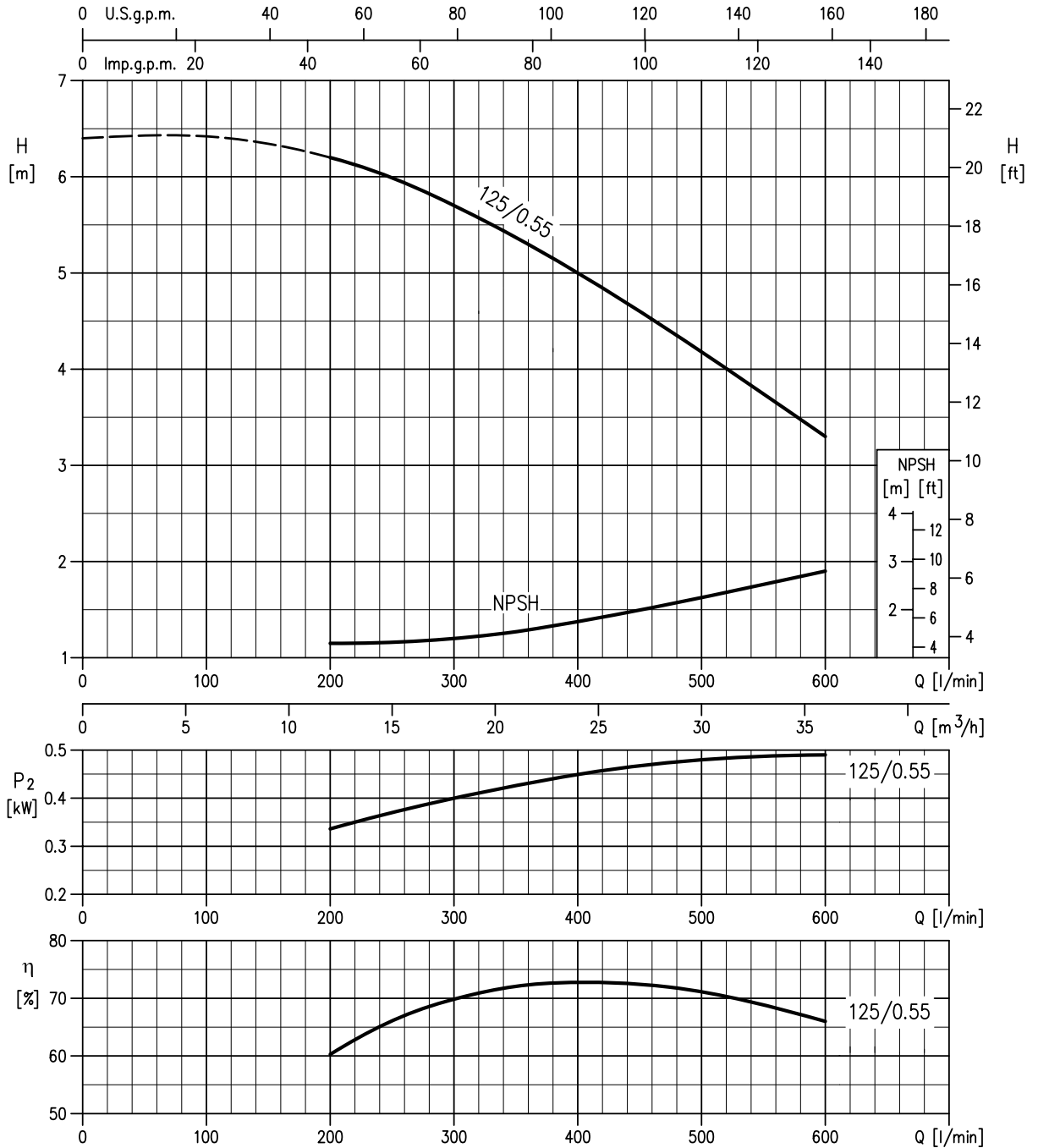
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40-200/1.1 (1.1 kW) MEI > 0.70 – impeller diameter = 200 mm
 40-200/1.5 (1.5 kW) MEI > 0.70 – impeller diameter = 224 mm



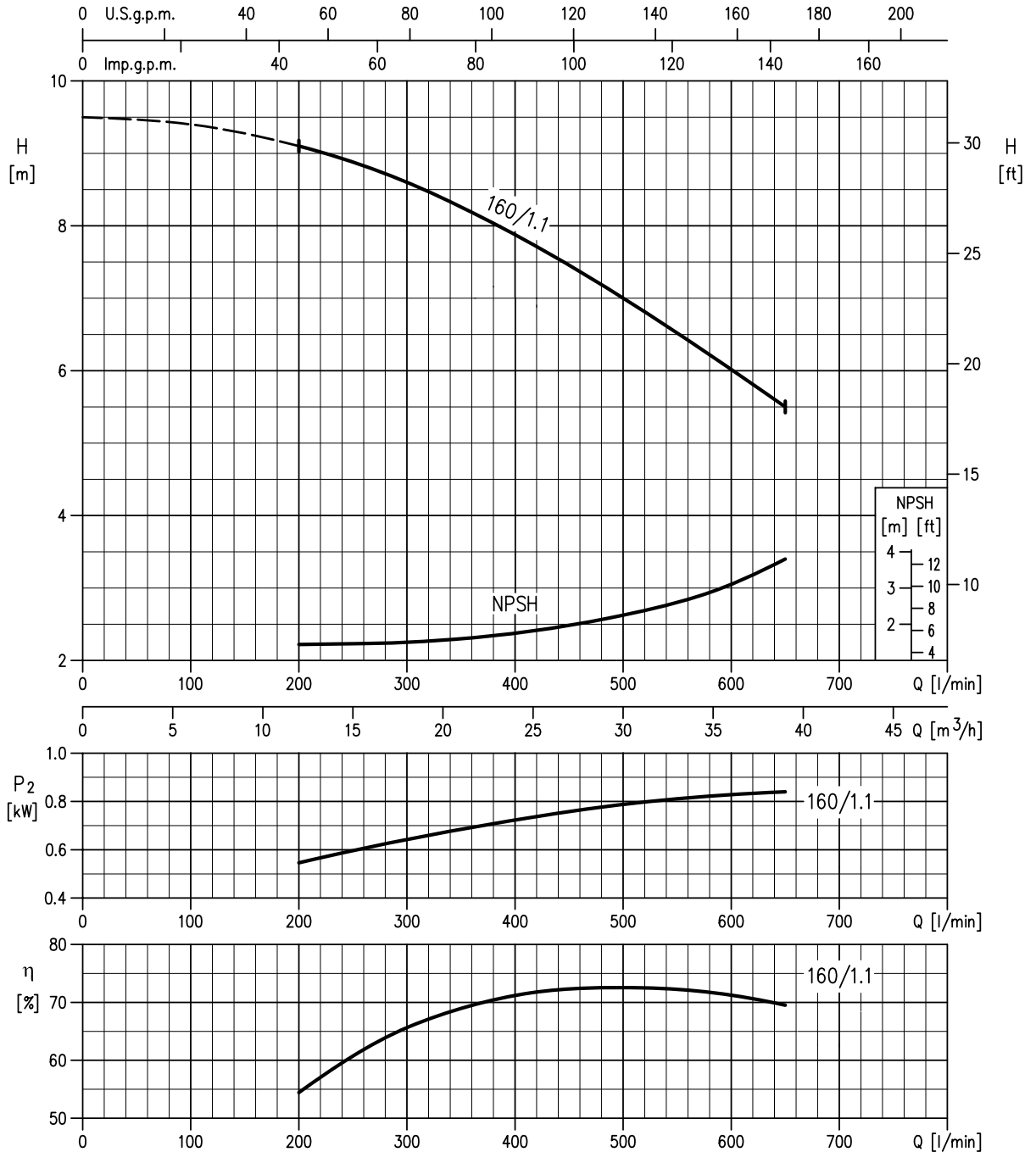
Rotation speed ≈ 1400 min⁻¹
 Test standard : ISO 9906 Annex A

50-125/0.55 (0.55 kW) MEI > 0.40 – impeller diameter = 140 mm



Rotation speed ≈ 1400 min⁻¹
 Test standard : ISO 9906 Annex A

50-160/1.1 (1.1 kW) MEI > 0.30 – impeller diameter = 166 mm



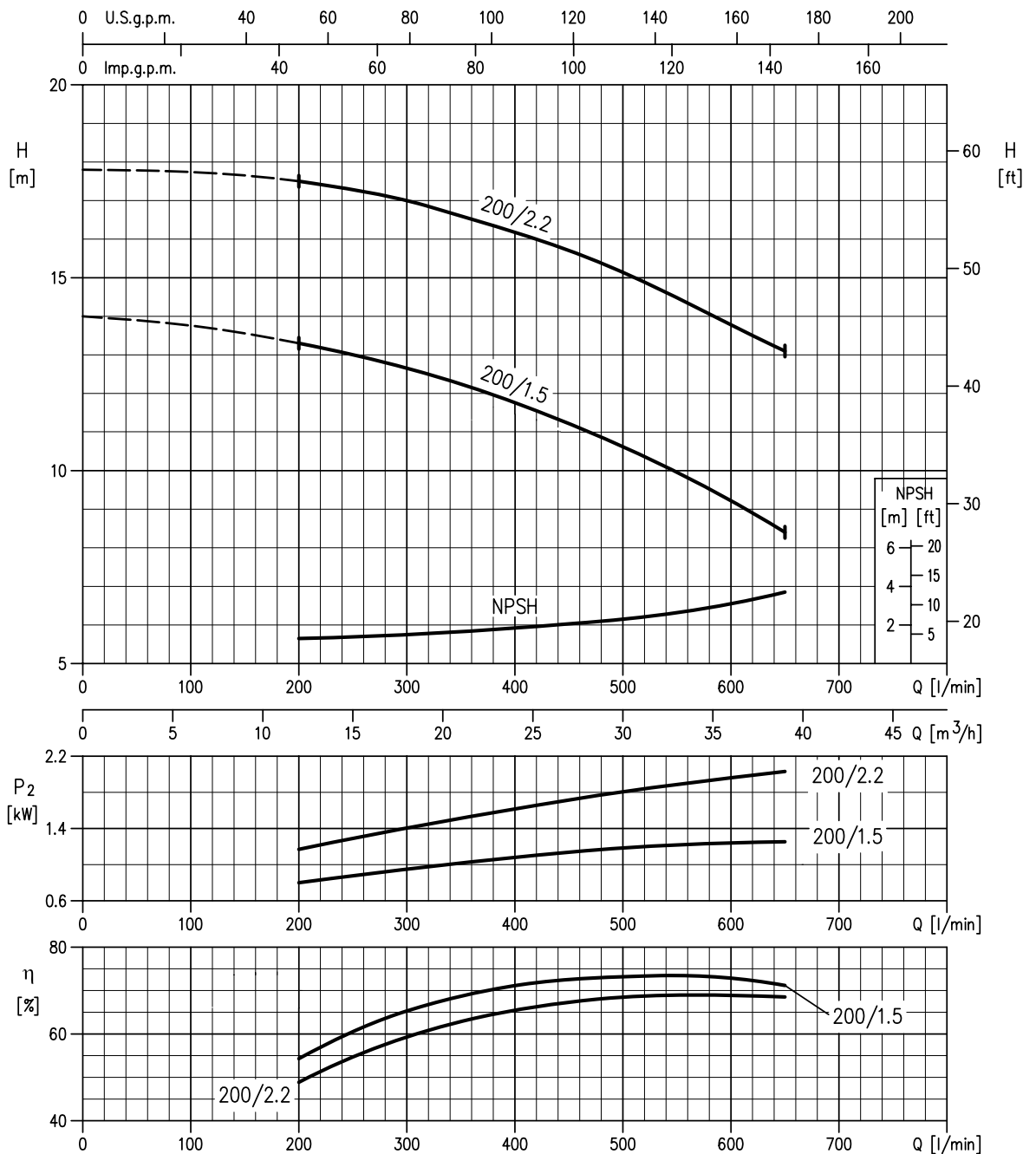
Rotation speed ≈ 1400 min⁻¹
 Test standard : ISO 9906 Annex A

PERFORMANCE CURVE

4 POLE 50 Hz

V20

50-200/1.5 (1.5 kW) MEI > 0.60 – impeller diameter = 200 mm
 50-200/2.2 (2.2 kW) MEI > 0.60 – impeller diameter = 224 mm

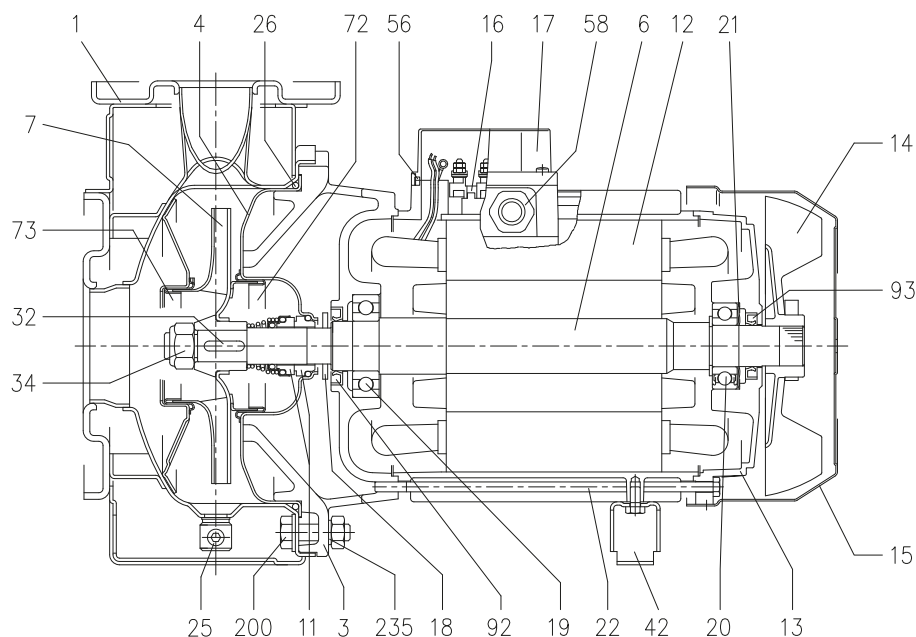


Rotation speed ≈ 1400 min⁻¹
 Test standard : ISO 9906 Annex A

CONSTRUCTIONS - SECTIONAL VIEW

4 POLE 50 Hz

V20



N°	PART NAME	MATERIAL	DIMENSIONS	STANDARD	QTY	
1	Casing	EN 1.4301 (AISI 304)			1	
3	Motor Bracket	Cast iron EN-GJL-200-EN 1561			1	
4	Casing Cover	EN 1.4301 (AISI 304)			1	
6	Shaft with rotor-part in contact with liquid	EN 1.4301 (AISI 304)			1	
7	Impeller	EN 1.4301 (AISI 304)			1	
11	Mechanical Seal	Carbon/Ceramic/NBR (standard)	See Page 302		1	
12	Motor Frame with Stator	-			1	
13	Motor cover	Aluminium			1	
14	Fan	PA			1	
15	Fan Cover	Fe P04 Galvanised			1	
16	Terminal	-			1	
17	Terminal box cover	Aluminium			1	
18	Splash ring	NBR	40x21.5x3		1	
19	Bearing	-			1	
20	Bearing	-			1	
21	Adjusting ring	Steel C70			1	
22	Tie rod	Fe 42 Galvanised	M5		4	
25	Drain plug	EN 1.4401 (AISI 316) / PTFE	R1/8" L=9	DIN 906	1	
26	"O" ring	NBR (Standard)	32-125, 40-125	158.11x5.34	OR 6625	1
			32-160, 40-160, 50-125, 32-200, 40-200, 50-160, 50-200	183.52x5.34	OR 6720	
				227.96x5.34	OR 6895	
32	Key	EN 1.4401 (AISI 316)	6x6x25	UNI 6604	1	
34	Impeller nut	EN 1.4301 (AISI 304)	Other models	M16x1.5	UNI7474	1
			50-200/2.2	M18x1.5		
42	Foot	Aluminium / Galvanised			1	
56	Box Basket	NBR			1	
58	Fastening nut	-			1	
72	Casing ring	EN 1.4301 (AISI 304)			1	
73	Casing ring	EN 1.4301 (AISI 304)			1	
92	Lip seal	-	Up to 1.5kW	24x40x7	DIN 3760 Without spring	1
			2.2kW	30x47x7		
93	Lip seal	-	0.37 kW to 0.55kW	17x32x7	DIN 3760 Without spring	1
			0.75 kW to 2.2kW	25x40x7		
200	Screw	Stainless steel A2 70 Class ISO 3506/1	32-125, 40-125	M8x30	UNI 5739	8
			40-160, 40-200, 50-125, 50-160, 50-200	M10x35		*
235	Washer	EN 1.4301 (AISI 304)	32-125, 40-125	8.4x17	UNI 6592	8
			40-160, 40-200, 50-125, 50-160, 50-200	10.5x21		*

* Quantity = 10 for 32-160, 40-160, 50-125
Quantity = 12 for 32-200, 40-200, 50-160, 50-200

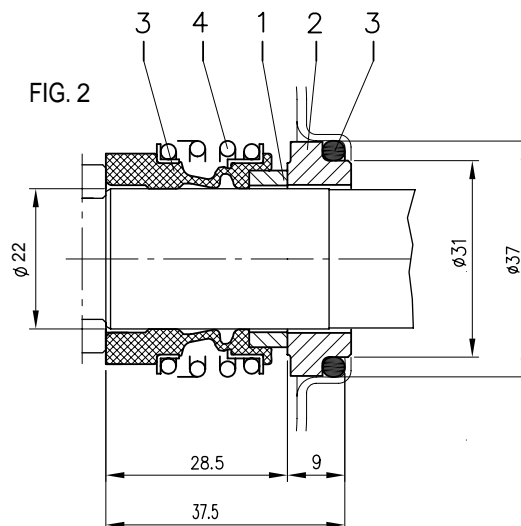
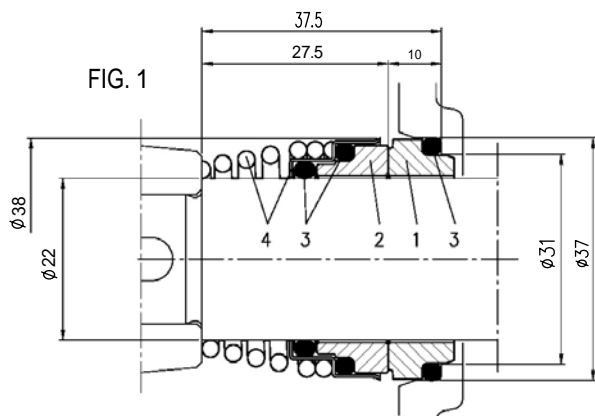
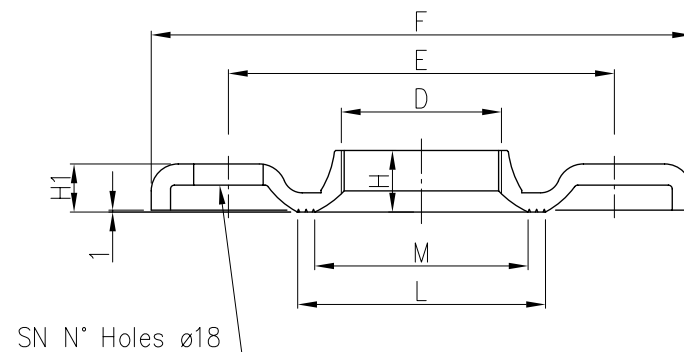


Figure	Ebara Reference (Version)	Manufacturer Reference			Material			
		Manuf.	Description	Material Description	1 Stationary seal ring	2 Rotary seal ring	3 rubber	4 Frame + Spring
Fig. 1	Standard	Roten	UNITEN 3K	X6X62V6	Carbon	Ceramic	NBR	EN 1.4401 (AISI 316)
Fig. 1	High Temp*			XYXY2VY	Carbon	Ceramic	FPM	EN 1.4401 (AISI 316)
Fig. 2	Hard Face*	Burgmann	MG1S6/22-G3	Q1Q1VGG	SiC	SiC	FPM	EN 1.4571 (AISI 316Ti)

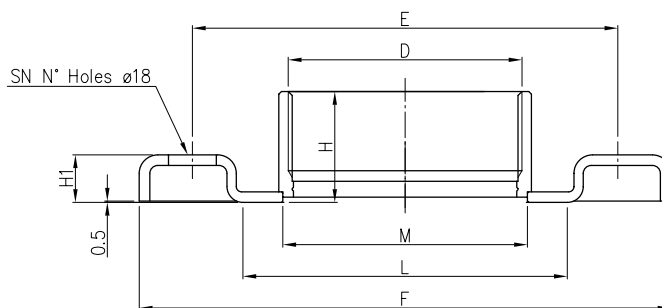
* High temp and Hard face seal options can be fitted to pump or available as a spare part.

ZINCED STEEL



DN	Counterflange								Screw	
	D	E	F	H	H1	L	M	SN	Dimensions	Material
32	G 1 ¼	100	100	15	11.5	67	50	4	M 16x55	Zn. Steel 8.8 Strength class ISO 898-1
40	G 1 ½	110	110	17.5	11.5	72	58	4		
50	G2	125	125	19	15	89	70	4		
65	G 2 ½	145	185	23	14	104	88	4		

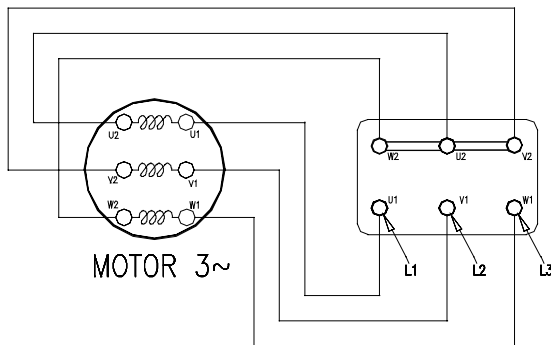
EN 1.4301 (AISI 304)



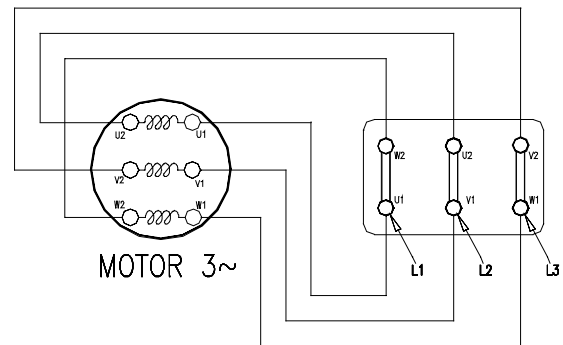
DN	Counterflange								Screw	
	D	E	F	H	H1	L	M	SN	Dimensions	Material
32	G 1 ¼	100	100	15	11.5	67	50	4	M 16x55	A2-70 class ISO 3506-1
40	G 1 ½	110	110	17.5	11.5	72	58	4		
50	G2	125	125	19	15	89	70	4		
65	G 2 ½	145	185	23	14	104	88	4		

THREE PHASE

STAR CONNECTION

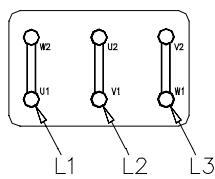


DELTA CONNECTION

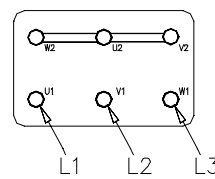


FOR MOTOR 4 kW AND BELOW

DELTA CONNECTION 230 V



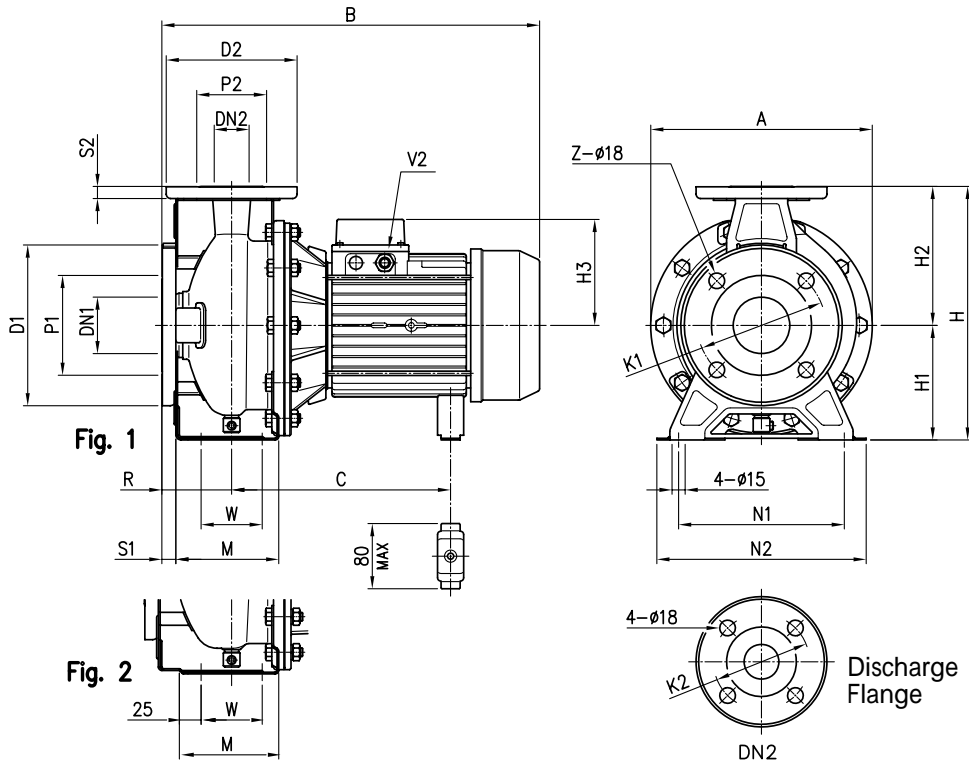
STAR CONNECTION 400 V



DIMENSIONS

4 POLE 50 Hz

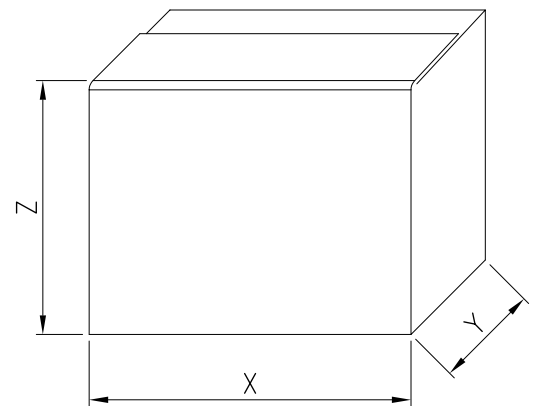
V20



Model	Dimensions (mm)																									
	Ø DN1	Ø P1	Ø K1	Ø D1	S1	Z	Ø DN2	Ø P2	Ø K2	Ø D2	S2	Fig.	H	H1	H2	H3	R	W	M	N1	N2	A	B	C	V2	Weight (Kg)
32-160/0.37	50	95	125	165	16	4	32	75	100	140	14	1	292	132	160	119	80	70	118	190	240	254	395	219	PG 11	20
32-200/0.55	50	95	125	165	16	4	32	75	100	140	14	1	340	160	180	119	80	70	119	190	240	296	395	219	PG 11	24.5
32-200/0.75	50	95	125	165	16	4	32	75	100	140	14	1	340	160	180	124	80	70	119	190	240	296	408	219+230	PG 13.5	28
40-125/0.37	65	115	145	185	16	4	40	80	110	150	14	1	252	112	140	102	80	70	114	160	210	213	371	205	PG 11	15.5
40-160/0.55	65	115	145	185	16	4	40	80	110	150	14	1	292	132	160	119	80	70	118	190	240	254	395	219	PG 11	20.5
40-200/1.1	65	115	145	185	16	4	40	80	110	150	14	2	340	160	180	124	100	70	115	212	265	296	428	219+230	PG 13.5	28.5
40-200/1.5	65	115	145	185	16	4	40	80	110	150	14	2	340	160	180	124	100	70	115	212	265	296	428	219+230	PG 13.5	30.5
50-125/0.55	65	115	145	185	16	4	50	95	125	165	16	2	292	132	160	119	100	70	114	190	240	254	415	219	PG 11	20.5
50-160/1.1	65	115	145	185	16	4	50	95	125	165	16	2	340	160	180	124	100	70	115	212	265	296	428	219+230	PG 13.5	25.5
50-200/1.5	65	115	145	185	16	4	50	95	125	165	16	2	360	160	200	124	100	70	115	212	265	296	428	219+230	PG 13.5	31.5
50-200/2.2	65	115	145	185	16	4	50	95	125	165	16	2	360	160	200	141	100	70	115	212	265	296	474	253	PG 16	36

PACKING AND WEIGHT

Pump Type	Packing [mm]			Weight [Kg]
	X	Y	Z	
32-160/0.37	430	280	330	21.5
32-200/0.55	490	330	390	26.5
32-200/0.75				31
40-125/0.37	440	250	300	17
40-160/0.55	430	280	330	23
40-200/1.1	490	330	390	31.5
40-200/1.5				33
50-125/0.55	430	280	330	22.5
50-160/1.1	490	330	390	31.5
50-200/1.5				32.5
50-200/2.2				38.5



MOTOR & BEARING DATA

4 POLE 50 Hz

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Pump Type	Power		Efficiency	Input [kW]	Efficiency (% load) and power-factor η %				Full load current [A]			Locked rotor current [A]		
	[kW]	[HP]			50%	75%	100%	Cos- ϕ	230 V	400 V	690 V	230 V	400 V	690 V
3M4 32-160/0.37	0.37	0.5	-	0.80	-	-	-	-	2.6	1.5	-	9.9	5.7	-
3M4 32-200/0.55	0.55	0.75	-	0.80	-	-	-	-	2.6	1.5	-	9.9	5.7	-
3M4 32-200/0.75	0.75	1	IE2	1.41	78.4	81.6	81.9	0.76	4.6	2.7	-	32.0	18.5	-
3M4 40-125/0.37	0.37	0.5	-	0.55	-	-	-	-	1.9	1.1	-	7.3	4.2	-
3M4 40-160/0.55	0.55	0.75	-	0.80	-	-	-	-	2.6	1.5	-	9.9	5.7	-
3M4 40-200/1.1	1.1	1.5	IE2	1.41	78.4	81.6	81.9	0.76	4.6	2.7	-	32.0	18.5	-
3M4 40-200/1.5	1.5	2	IE2	1.88	80.3	83.4	83.8	0.75	6.2	3.6	-	45.0	26.0	-
3M4 50-125/0.55	0.55	0.75	-	0.80	-	-	-	-	2.6	1.5	-	9.9	5.7	-
3M4 50-160/1.1	1.1	1.5	IE2	1.41	78.4	81.6	81.9	0.76	4.6	2.7	-	32.0	18.5	-
3M4 50-200/1.5	1.5	2	IE2	1.88	80.3	83.4	83.8	0.75	6.2	3.6	-	45.0	26.0	-
3M4 50-200/2.2	2.2	3	IE2	2.7	84.6	86.0	85.6	0.83	8.1	4.7	-	52.0	30.0	-

Pump type	Bearing size	
	Pump side	Fan side
3M4 32-160/0.37	6205-2RSH C3	6203-2RSH
3M4 32-200/0.55		6205-2RSH C3
3M4 32-200/0.75		6202-2RSH
3M4 40-125/0.37	6205-2RSH C3	6203-2RSH
3M4 40-160/0.55		6205-2RSH C3
3M4 40-200/1.1		6205-2RSH C3
3M4 40-200/1.5	6205-2RSH C3	6203-2RSH
3M4 50-125/0.55		6203-2RSH
3M4 50-160/1.1		6205-2RSH C3
3M4 50-200/1.5		6205-2RSH C3
3M4 50-200/2.2		6205-2RSH C3