

EBARA



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SPECIFICATION

50Hz

Rev. D

PUMP		
Liquid Handled	Type of liquid	Water, moderate aggressive solutions , glycol solutions , moderate viscous fluids
	Temperature [°C]	min.-15 max.+85 (Standard) *WRAS - DM174 max.+110 (High temperature) *DM174
Max chlorine content		500 ppm
Maximum working pressure [MPa]		1
Construction	Impeller	Closed centrifugal type
	Motor bearings	Screened ball bearing – greased for life
	Pump bearings	n° 7-8-9 impellers (Matrix 3-5) n° 6 impellers (Matrix 10) n° 5-6 impellers (Matrix 18) Type: Sleeve Shaft sleeve: Tungsten Carbide Bearing: Ceramic
Pipe Connection	Suction	G 1 (Matrix 3) UNI ISO 228
		G 1¼ (Matrix 5) UNI ISO 228
	Discharge	G 1½ (Matrix 10) UNI ISO 228
		G 2 (Matrix 18) UNI ISO 228
Material	Casing	EN 1.4301 (AISI 304)
	Impeller	EN 1.4301 (AISI 304)
	Intermediate casing	EN 1.4301 (AISI 304)
	O-Rings	EPDM
	Shaft seal	Ceramic/Carbon/EPDM
	Liner ring	EN 1.4301 (AISI 304) + PTFE
	Casing cover	EN 1.4301 (AISI 304)
	Shaft	EN 1.4301 (AISI 304) wet extension
Bracket	EN AB-AISI11Cu2(Fe) (Die cast Aluminium)	
Applicable standard of test		ISO 9906 – Annex A

* Approval for drinking water application
WRAS Approved product
DM174/2004



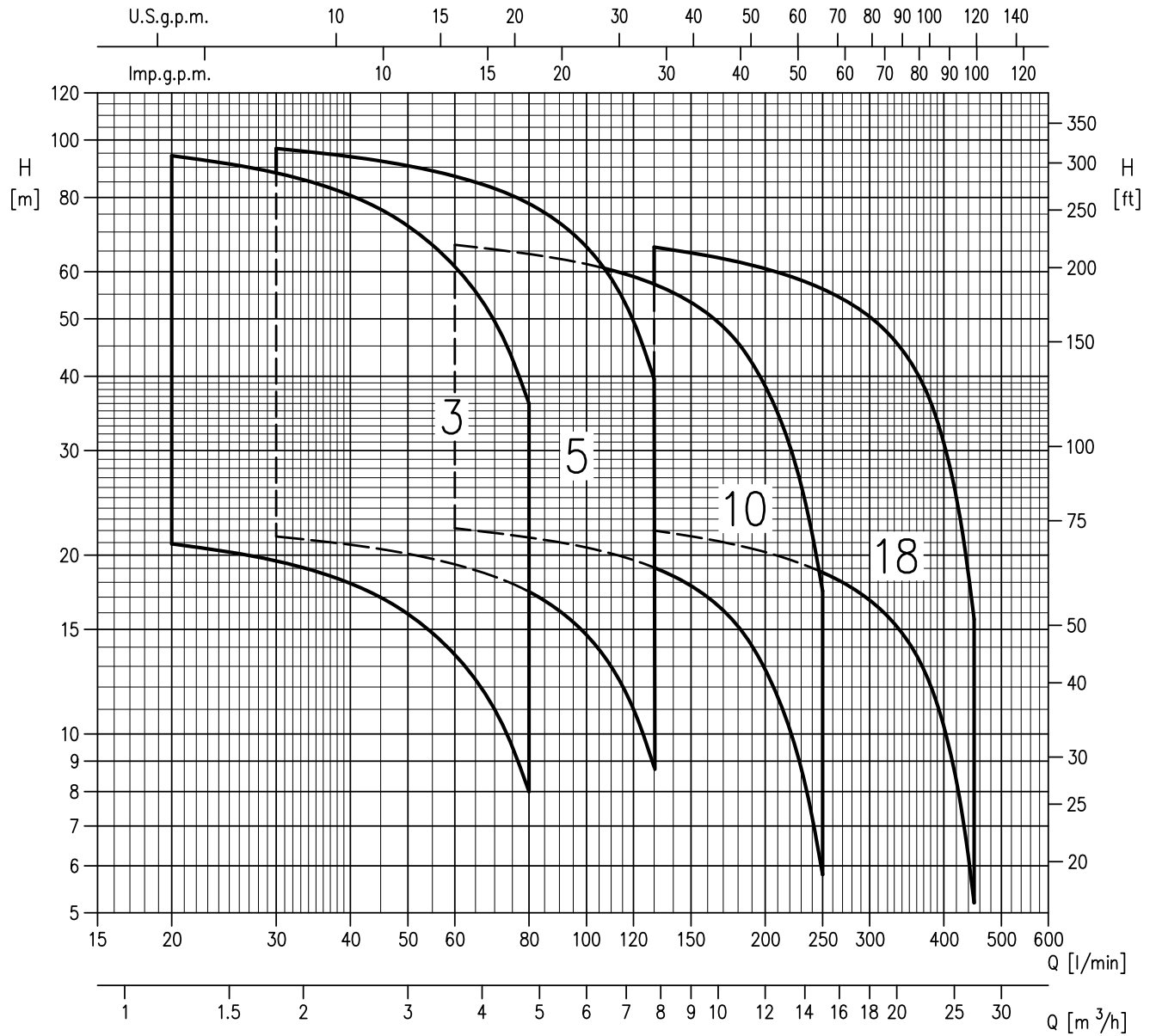
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D.M.174/2004

MOTOR		
Type	Electric - TEFC	
	Single Phase	Three Phase
Efficiency level (Reg. 640/2009)	-	- from 0.45 kW up to 0.65 kW IE2 from 0.75 kW up to 4.0 Kw IE3 from 0.75 kW up to 4.0 kW
No. of Poles	2	
Rotation speed [min ⁻¹]	≈ 2850	
Insulation Class	F	
Max temperature environment [°C]	40	
Protection degree (CEI EN 60034-5)	IP 55	
Power rating	[kW]	0.45 ÷ 2.2
	[HP]	0.6 ÷ 3.0
Frequency [Hz]	50	
Voltage [V]	230 ±10%	230/400 ±10%
Capacitor	Built in	-
Overload protection	Built in	Provided by the user
Casing material	Aluminium	
Base material / Motor support	Aluminium	
Dimensions of cable entry	PG11 – M20x1.5	PG11 – PG13.5 M16x1.5 – M20x1.5

SELECTION CHART

50Hz

Rev. D



SELECTION CHART

50Hz

Rev. D

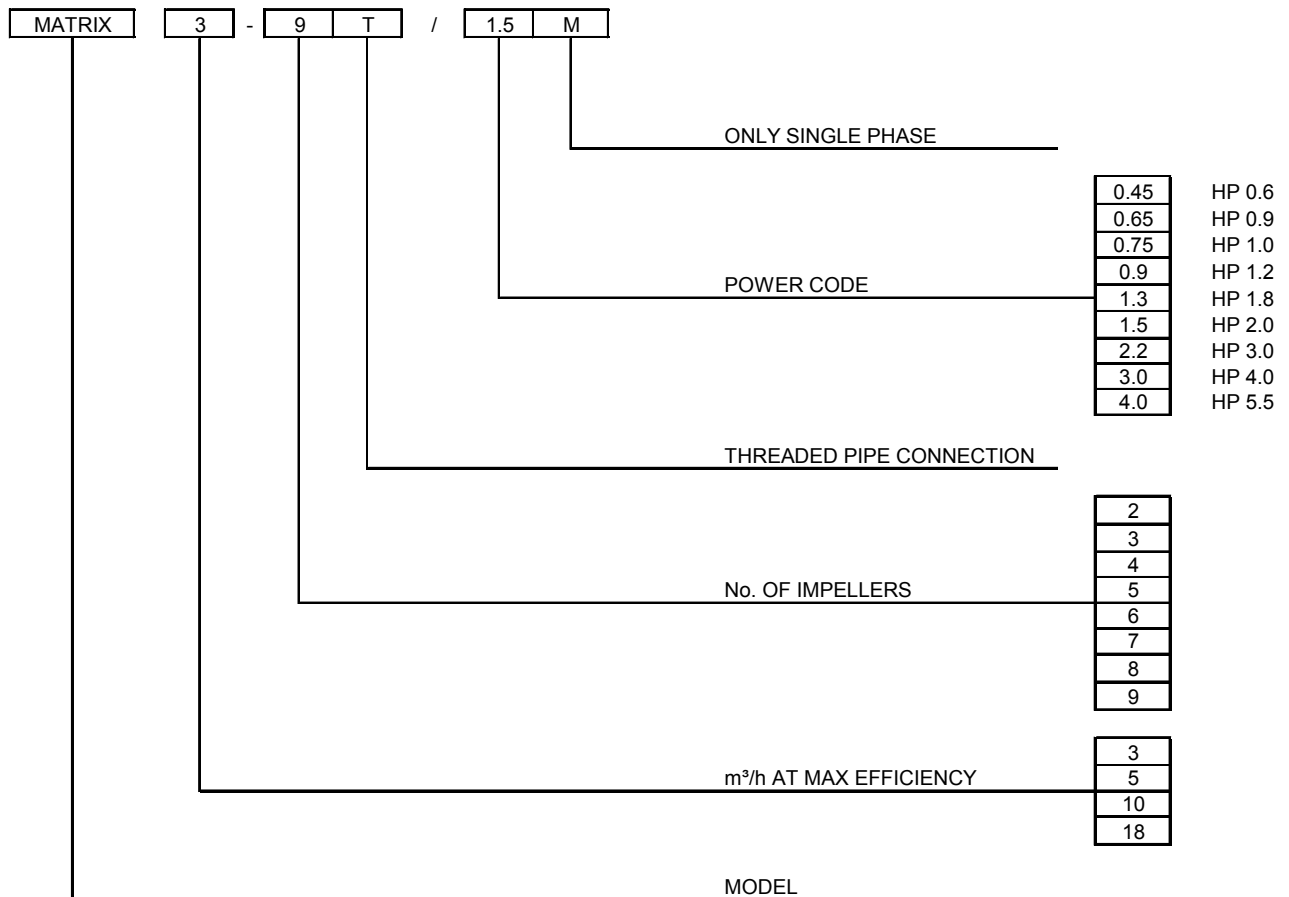
Pump type		Power		Q=Capacity																
Single phase	Three phase	[kW]	[HP]	l/min	0	20	30	45	60	80	100	130	160	200	250	300	350	400	450	
				m ³ /h	0	1.2	1.8	2.7	3.6	4.8	6	7.8	9.6	12	15	18	21	24	27	
				H=Total manometric head in meters																
3-2(.)0.45M	3-2(.)0.45	0.45	0.6	22.6	20.9	19.6	17.0	13.6	8.0											
3-3(.)0.65M	3-3(.)0.65	0.65	0.9	33.9	31.4	29.3	25.5	20.4	12.0											
3-4(.)0.65M	3-4(.)0.65	0.65	0.9	45.0	42.0	39.1	34.0	27.2	16.0											
3-5(.)0.75M	3-5(.)0.75	0.75	1.0	56.5	52.5	49.0	42.5	34.0	20.0											
3-6(.)0.9M	3-6(.)0.9	0.9	1.2	68.0	62.5	58.5	51.0	41.0	24.0											
3-7(.)1.3M	3-7(.)1.3	1.3	1.8	79.0	73.0	68.5	59.5	47.5	28.0											
3-8(.)1.3M	3-8(.)1.3	1.3	1.8	90.5	83.5	78.0	68.0	54.5	32.0											
3-9(.)1.5M	3-9(.)1.5	1.5	2.0	102.0	94.0	88.0	76.5	61.0	36.0											
5-2(.)0.45M	5-2(.)0.45	0.45	0.6	23.0	-	21.5	20.5	19.3	17.4	14.7	8.8									
5-3(.)0.65M	5-3(.)0.65	0.65	0.9	34.5	-	32.3	30.7	29.0	26.0	22.0	13.2									
5-4(.)0.9M	5-4(.)0.9	0.9	1.2	46.0	-	43.0	41.0	38.6	34.7	29.4	17.6									
5-5(.)1.3M	5-5(.)1.3	1.3	1.8	57.5	-	54.0	51.0	48.5	43.5	36.7	22.0									
5-6(.)1.3M	5-6(.)1.3	1.3	1.8	69.0	-	64.5	61.5	58.0	52.0	44.0	26.4									
5-7(.)1.5M	5-7(.)1.5	1.5	2.0	80.5	-	75.5	72.0	67.5	61.0	51.5	30.8									
5-8(.)2.2M	5-8(.)2.2	2.2	3.0	92.0	-	86.0	82.0	77.0	69.5	58.5	35.2									
5-9(.)2.2M	5-9(.)2.2	2.2	3.0	104.0	-	97.0	92.0	87.0	78.0	66.0	39.6									
10-2(.)0.75M	10-2(.)0.75	0.75	1.0	24.0	-	-	-	22.2	21.4	20.6	19.1	17.0	12.8	5.8						
10-3(.)1.3M	10-3(.)1.3	1.3	1.8	36.0	-	-	-	33.3	32.1	30.9	28.6	25.5	19.3	8.7						
10-4(.)1.5M	10-4(.)1.5	1.5	2.0	48.0	-	-	-	44.5	43.0	41.0	38.1	34.0	25.7	11.6						
10-5(.)2.2M	10-5(.)2.2	2.2	3.0	60.0	-	-	-	55.5	53.5	51.5	47.5	42.5	32.1	14.5						
10-6(.)2.2M	10-6(.)2.2	2.2	3.0	72.0	-	-	-	66.5	64.5	62.0	57.0	51.0	38.5	17.4						
18-2(.)1.5M	18-2(.)1.5	1.5	2.0	24.2	-	-	-	-	-	-	22.0	21.3	20.2	18.7	16.8	14.2	10.3	5.2		
18-3(.)2.2M	18-3(.)2.2	2.2	3.0	36.3	-	-	-	-	-	-	33.0	31.9	30.4	28.1	25.2	21.3	15.5	7.8		
-	18-4(.)3	3.0	4.0	48.5	-	-	-	-	-	-	44.0	42.5	40.5	37.4	33.6	28.4	20.6	10.4		
-	18-5(.)4	4	5.5	60.5	-	-	-	-	-	-	55.0	53.0	50.5	47.0	42.0	35.5	25.8	13.0		
-	18-6(.)4	4	5.5	72.5	-	-	-	-	-	-	66.0	64.0	60.5	56.0	50.5	42.5	30.9	15.6		

PERFORMANCE CURVE

50Hz

Rev. D

TYPE KEY



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 $\nu = 1 \text{ mm}^2/\text{s}$ (1 cSt)

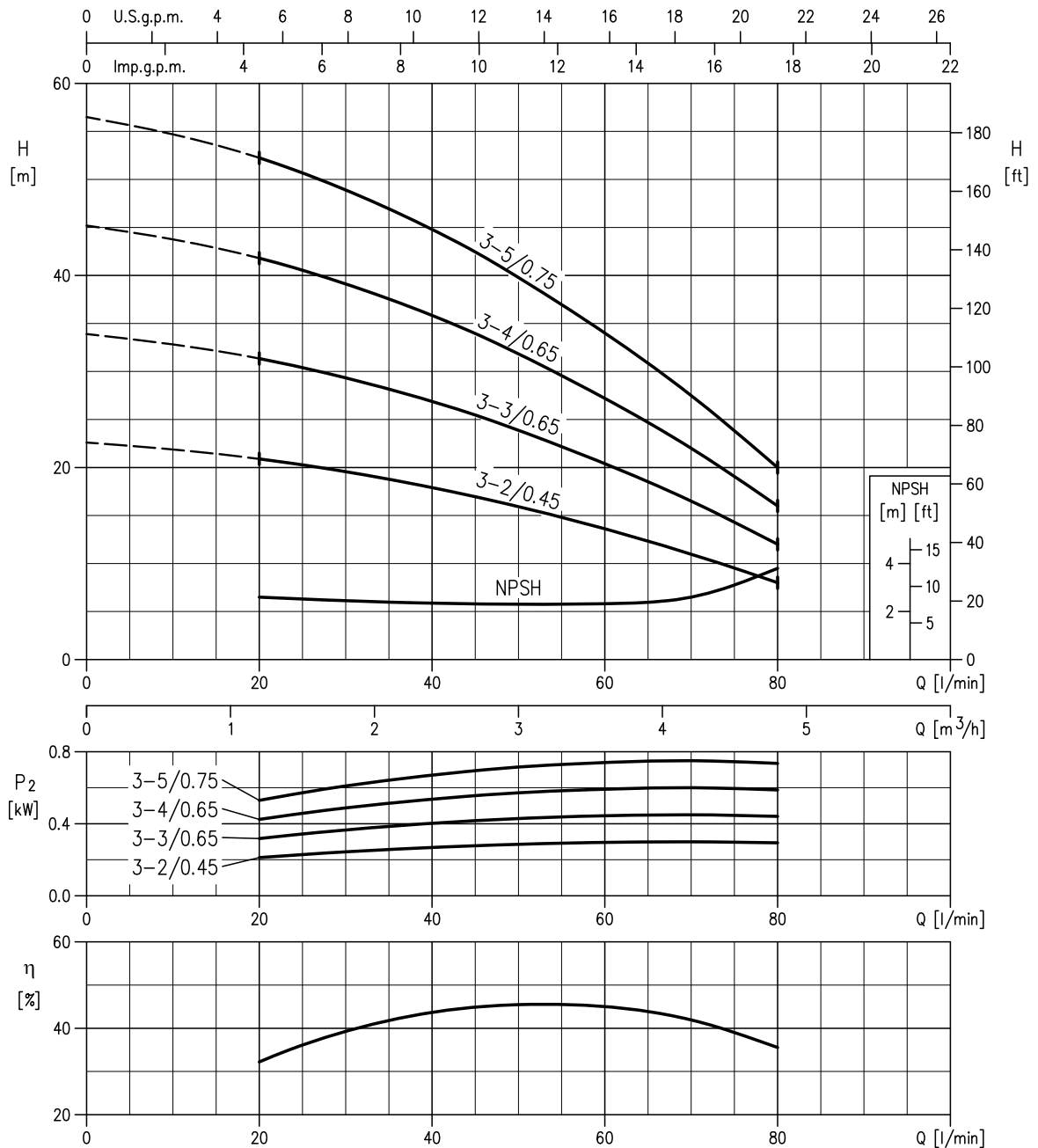
The continuous curves indicate the recommended working range. The dotted curve is only a guide.

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:

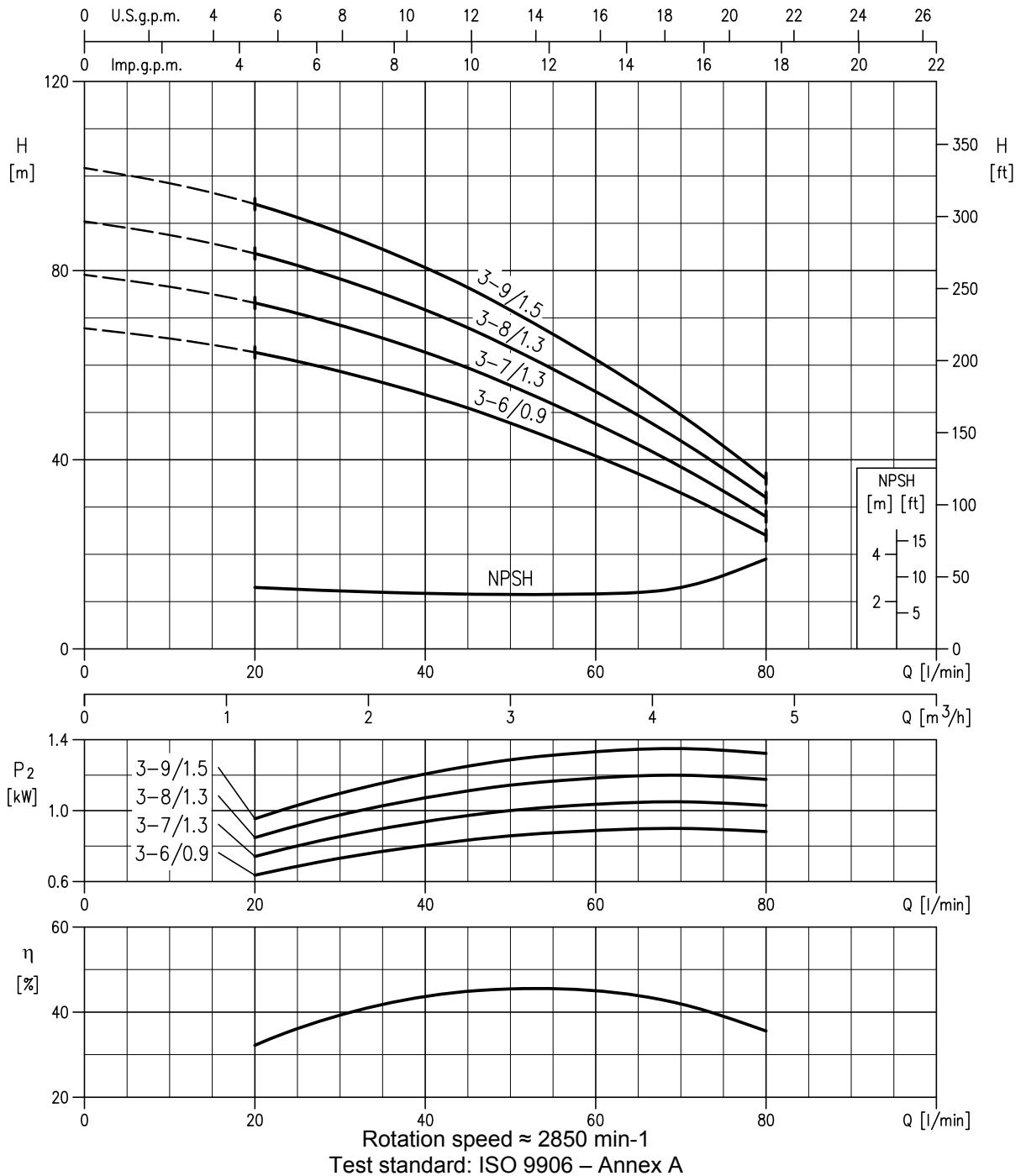
- Q = volume flow rate
- H = total head
- P_2 = pump power input (shaft power)
- η = pump efficiency
- NPSH = net positive suction head required by the pump

MATRIX 3-5/0.75 (0.75 kW) - Impeller diameter = 98.5 mm
MATRIX 3-4/0.65 (0.65 kW) - Impeller diameter = 98.5 mm
MATRIX 3-3/0.65 (0.65 kW) - Impeller diameter = 98.5 mm
MATRIX 3-2/0.45 (0.45 kW) - Impeller diameter = 98.5 mm

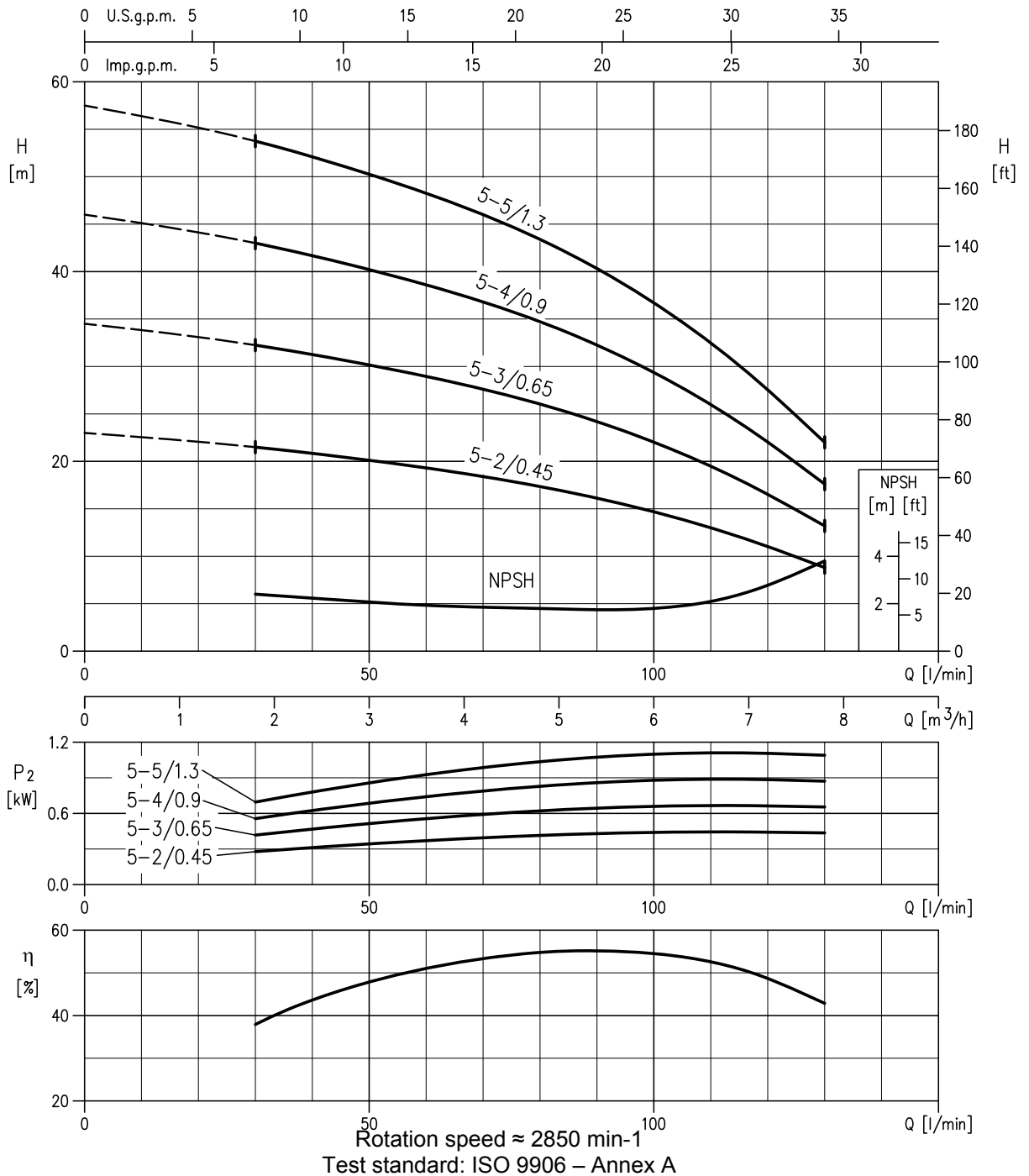


Rotation speed ≈ 2850 min⁻¹
 Test standard: ISO 9906 – Annex A

MATRIX 3-9/1.5 (1.5 kW) - Impeller diameter = 98.5 mm
MATRIX 3-8/1.3 (1.3 kW) - Impeller diameter = 98.5 mm
MATRIX 3-7/1.3 (1.3 kW) - Impeller diameter = 98.5 mm
MATRIX 3-6/0.9 (0.90 kW) - Impeller diameter = 98.5 mm



MATRIX 5-5/1.3 (1.3 kW) - Impeller diameter = 97 mm
MATRIX 5-4/0.9 (0.90 kW) - Impeller diameter = 97 mm
MATRIX 5-3/0.65 (0.65 kW) - Impeller diameter = 97 mm
MATRIX 5-2/0.45 (0.45 kW) - Impeller diameter = 97 mm

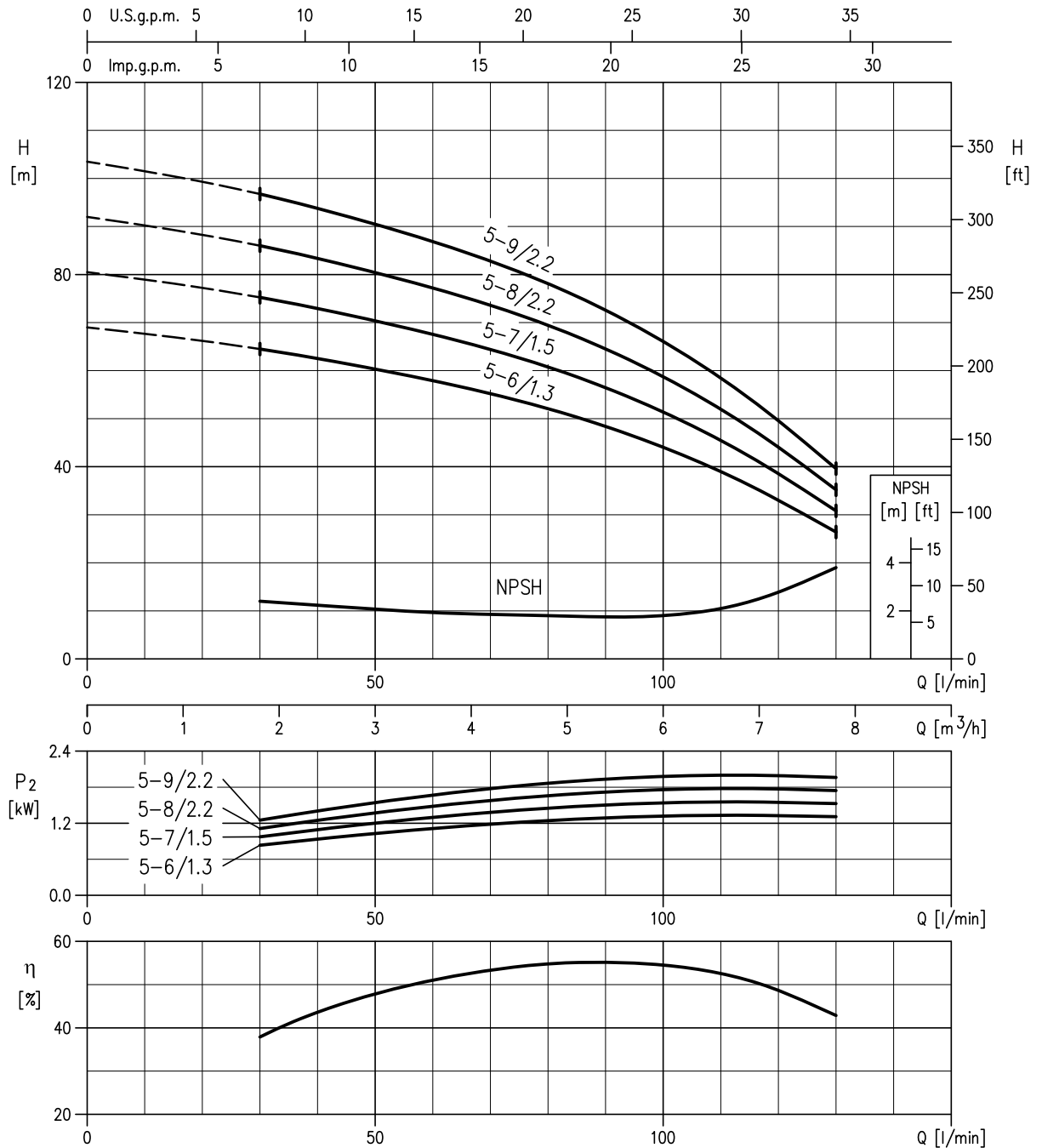


PERFORMANCE CURVE

50Hz

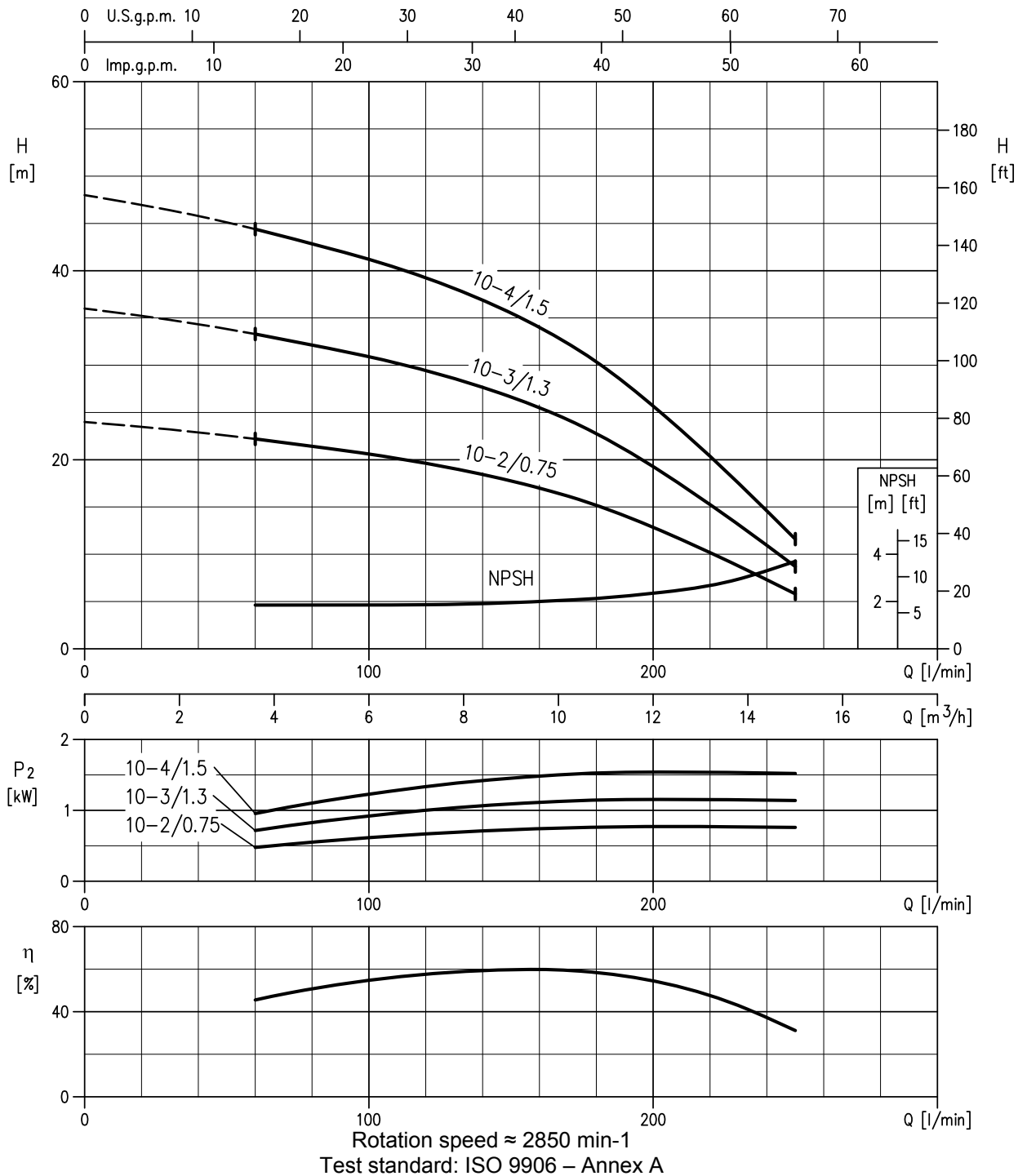
Rev. D

MATRIX 5-9/2.2 (2.2 kW) - Impeller diameter = 97 mm
 MATRIX 5-8/2.2 (2.2 kW) - Impeller diameter = 97 mm
 MATRIX 5-7/1.5 (1.5 kW) - Impeller diameter = 97 mm
 MATRIX 5-6/1.3 (1.3 kW) - Impeller diameter = 97 mm

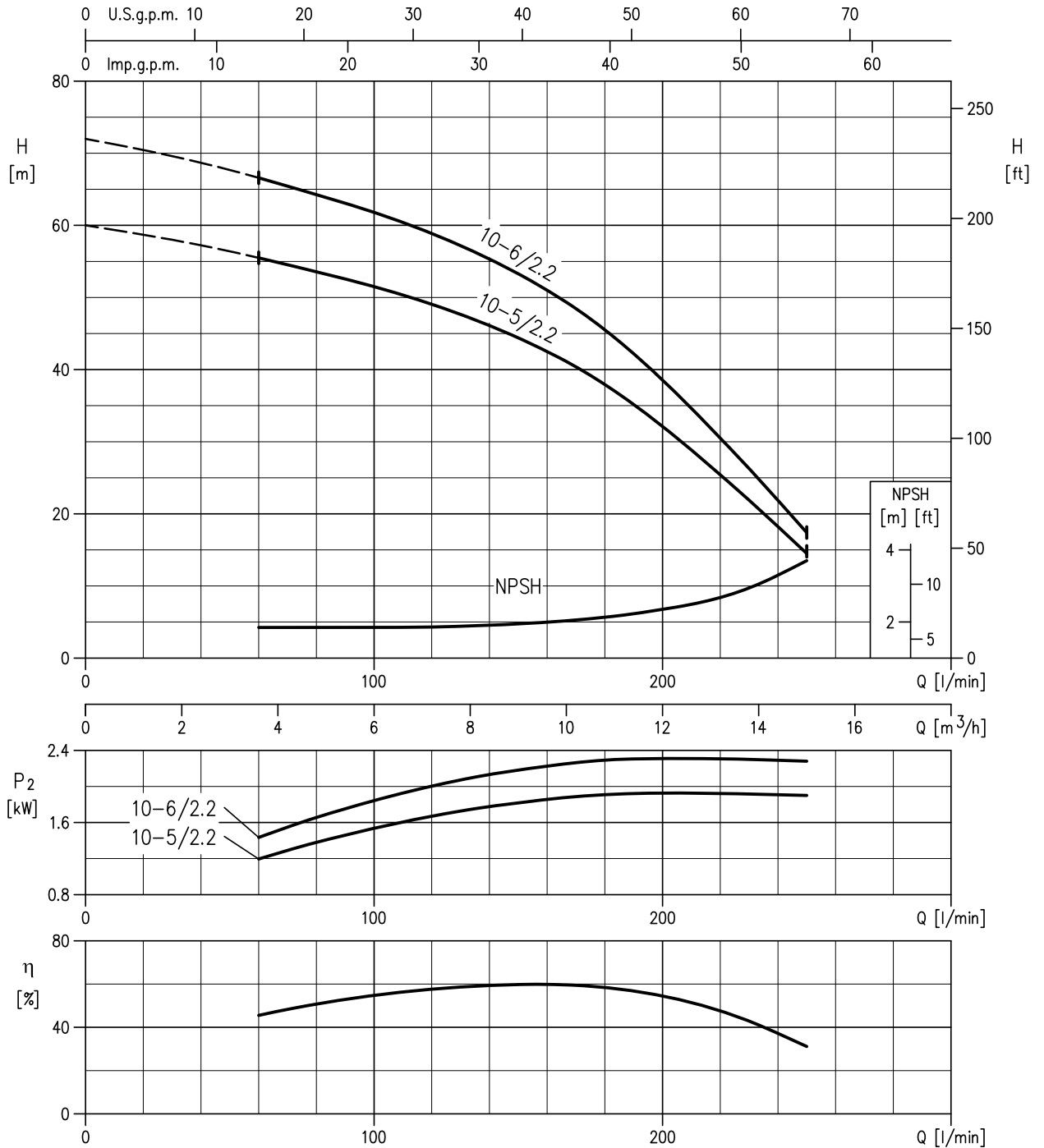


Rotation speed ≈ 2850 min⁻¹
 Test standard: ISO 9906 – Annex A

MATRIX 10-4/1.5 (1.5 kW) - Impeller diameter = 100.5 mm
 MATRIX 10-3/1.3 (1.3 kW) - Impeller diameter = 100.5 mm
 MATRIX 10-2/0.75 (0.75 kW) - Impeller diameter = 100.5 mm

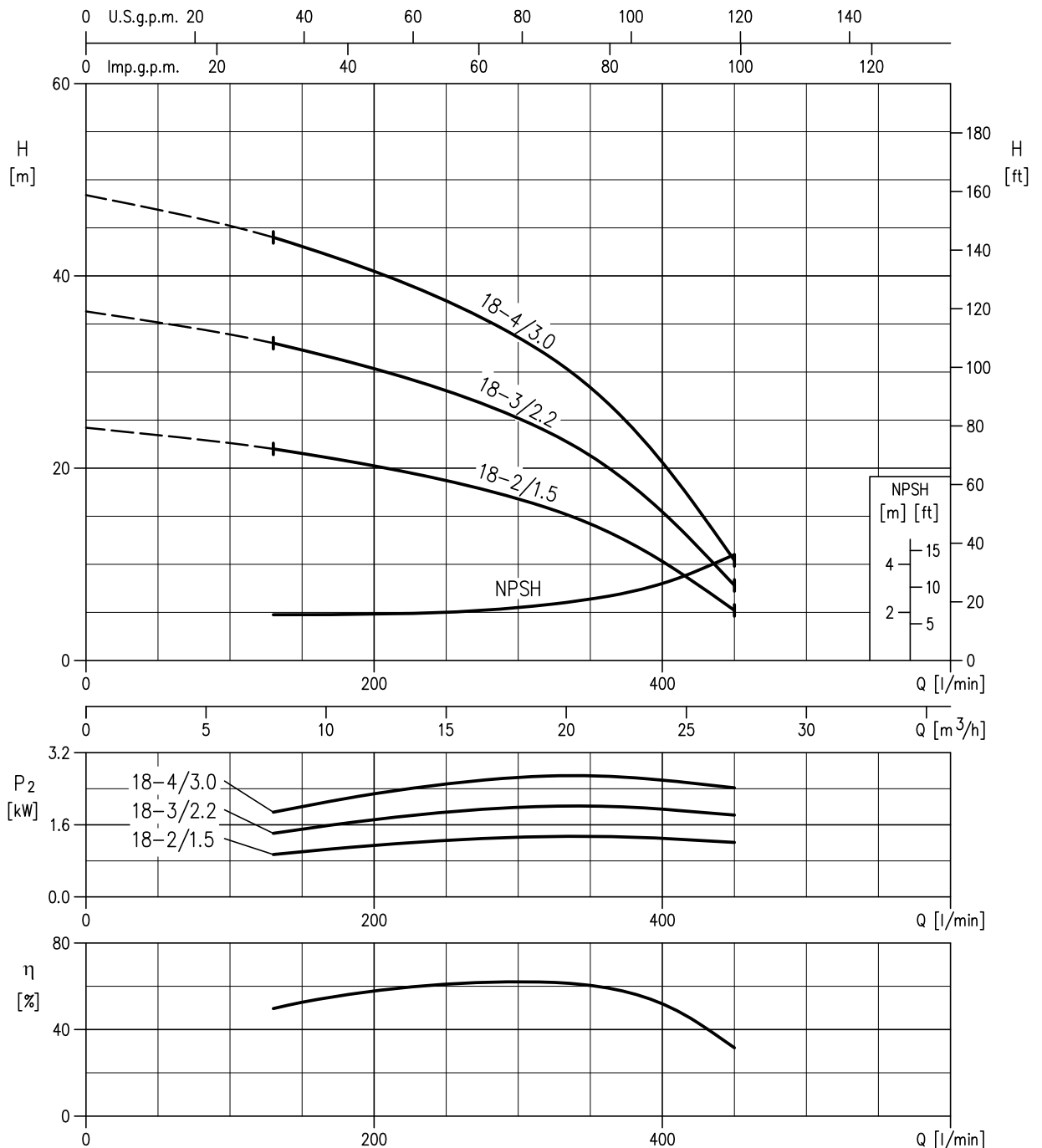


MATRIX 10-6/2.2 (2.2 kW) - Impeller diameter = 100.5 mm
 MATRIX 10-5/2.2 (2.2 kW) - Impeller diameter = 100.5 mm



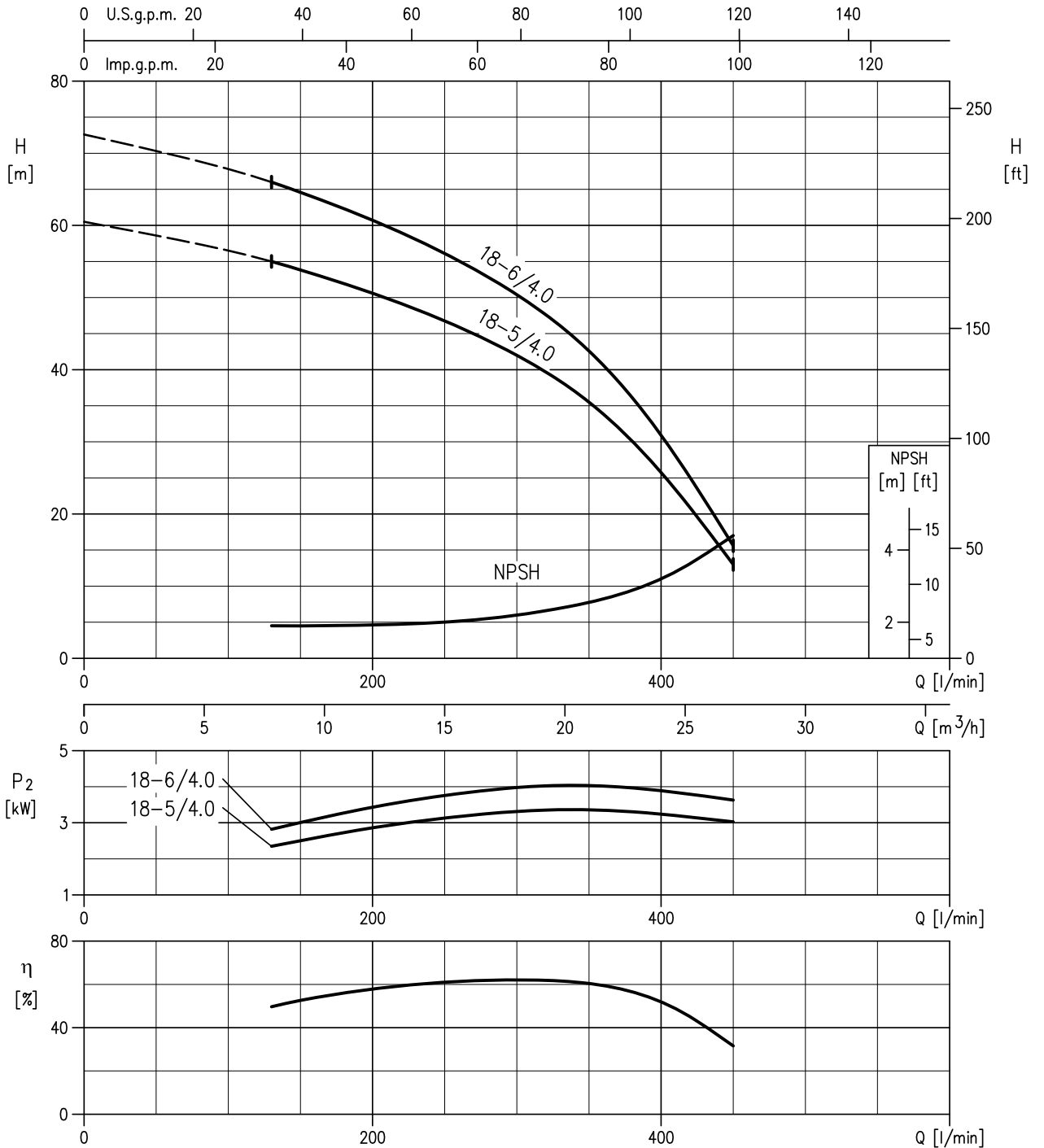
Rotation speed ≈ 2850 min⁻¹
 Test standard: ISO 9906 – Annex A

MATRIX 18-4/3.0 (3.0 kW) - Impeller diameter = 106.7 mm
MATRIX 18-3/2.2 (2.2 kW) - Impeller diameter = 106.7 mm
MATRIX 18-2/1.5 (1.5 kW) - Impeller diameter = 106.7 mm



Rotation speed ≈ 2875 min⁻¹
 Test standard: ISO 9906 – Annex A

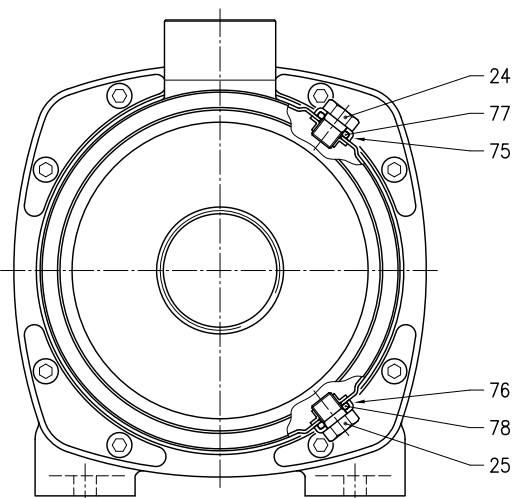
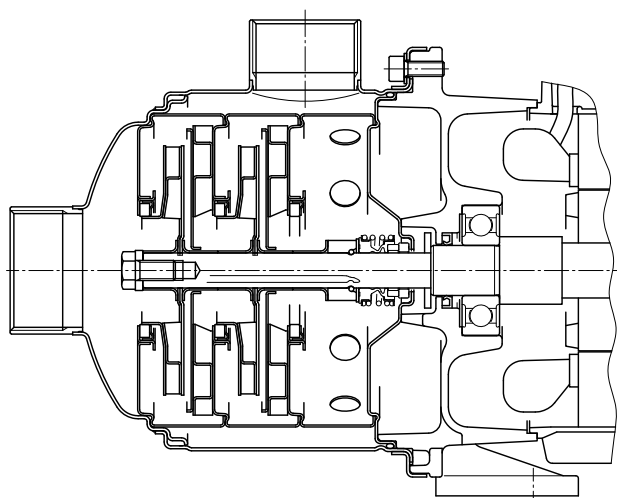
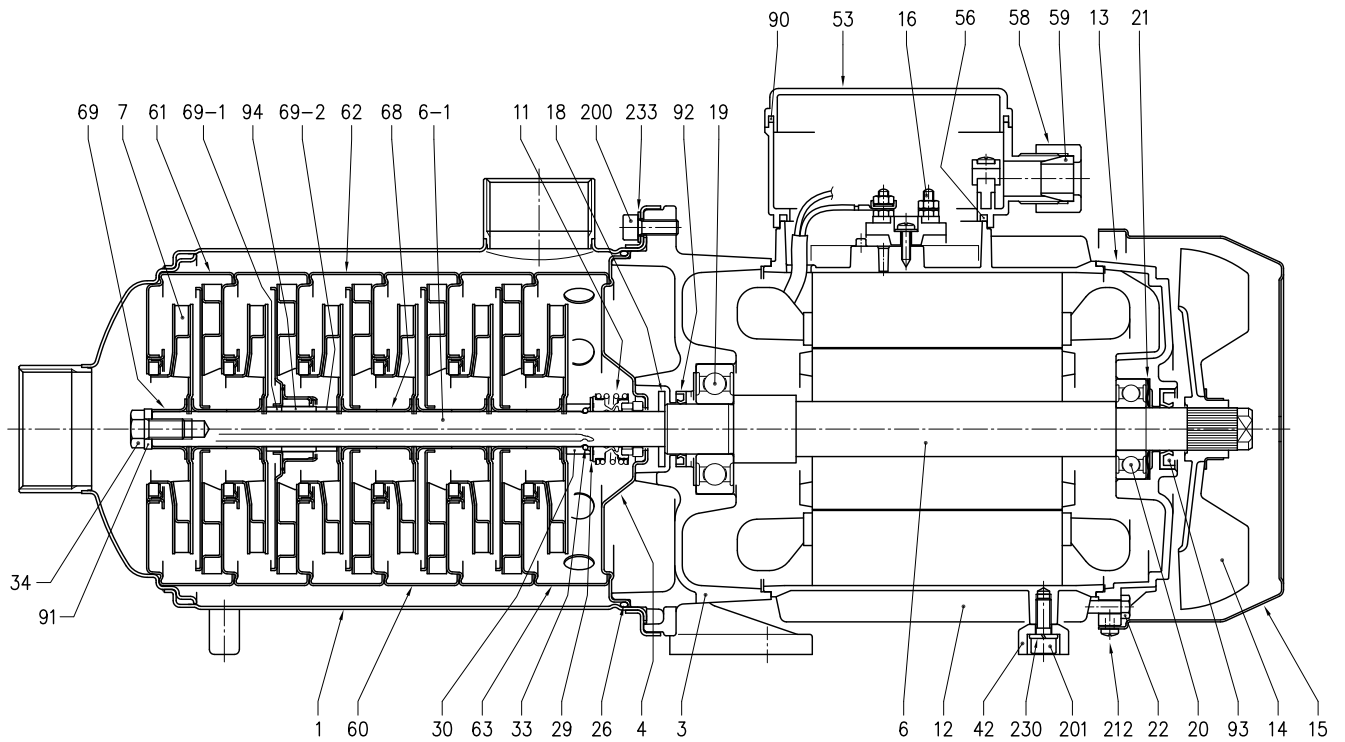
MATRIX 18-6/4.0 (4.0 kW) - Impeller diameter = 106.7 mm
MATRIX 18-5/4.0 (4.0 kW) - Impeller diameter = 106.7 mm



Rotation speed ≈ 2850 min⁻¹
 Test standard: ISO 9906 – Annex A

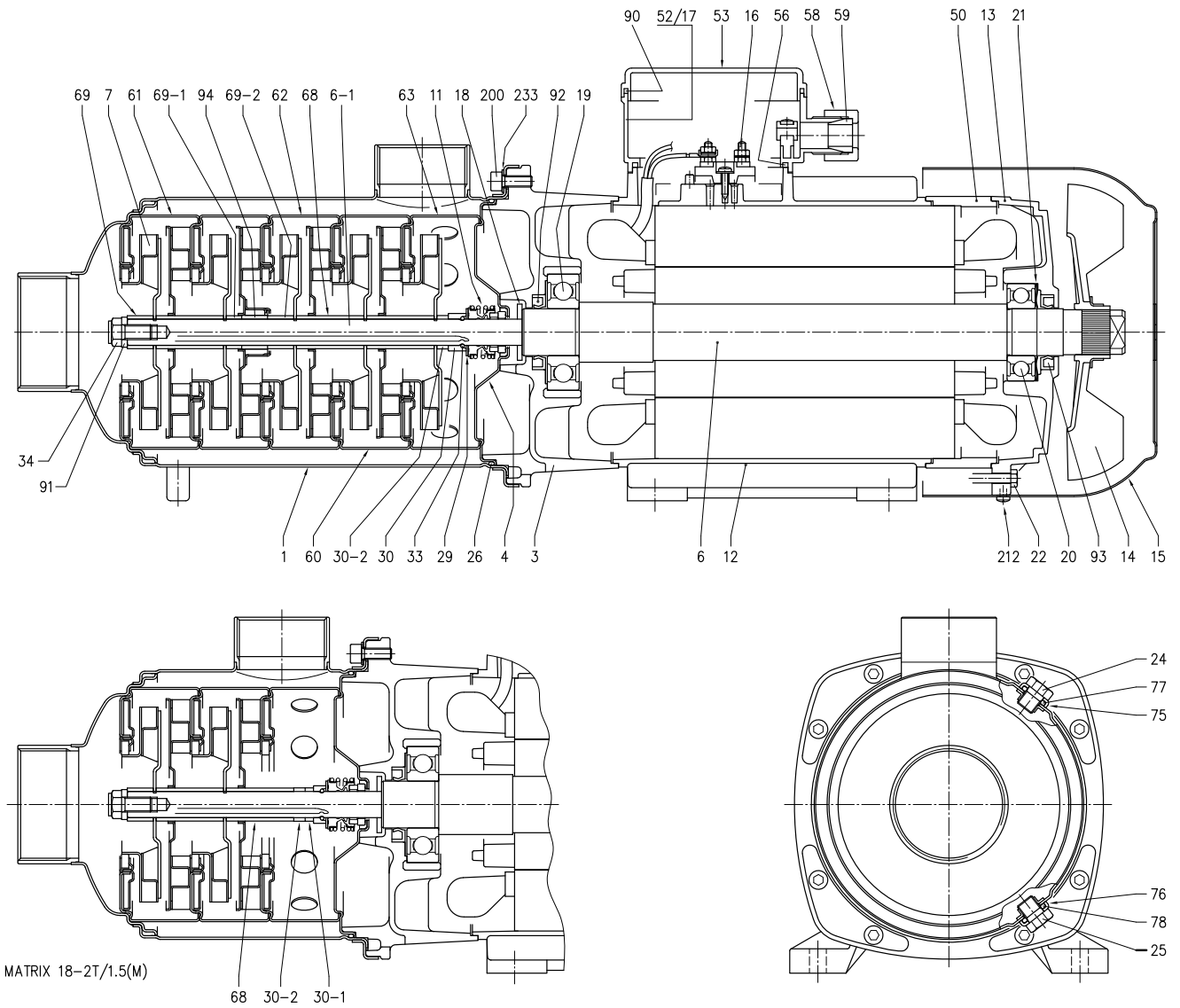
SECTIONAL VIEW DRAWING

MATRIX 3/5/10



VERSION FOR PUMP TYPE: MATRIX 3-2T/0.45(M)
 MATRIX 5-2T/0.45(M)
 MATRIX 10-2T/0.75(M)

MATRIX 18



MATRIX 18-2T/1.5(M)

SECTIONAL VIEW TABLE

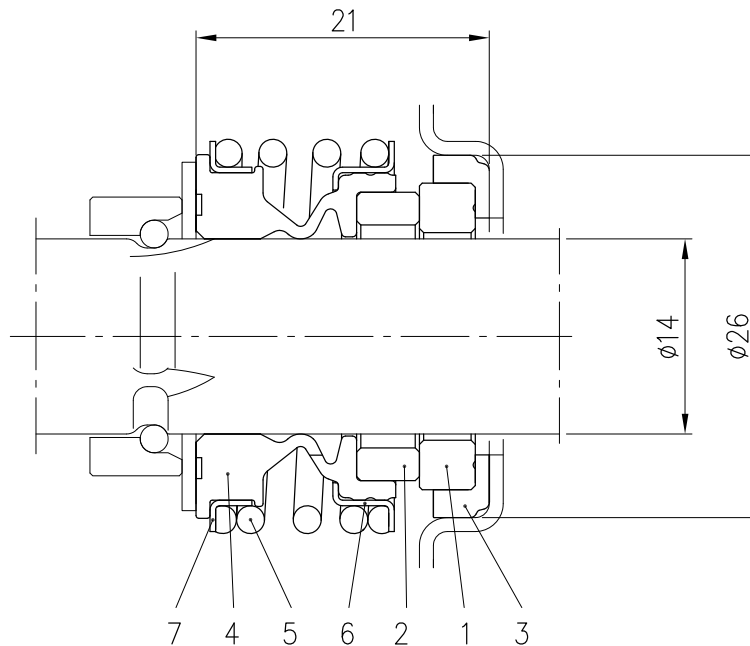
N°	PART NAME	MATERIAL	DIMENSION	STANDARD	Q.TY
1	Casing	EN 1.4301 (AISI 304)			1
3	Bracket	EN AB-AISI11Cu2(Fe)			1
4	Casing cover	EN 1.4301 (AISI 304)			1
6	Shaft with rotor	-			1
6-1	Pump Shaft	EN 1.4301 (AISI 304)			1
7	Impeller	EN 1.4301 (AISI 304)			[1]
11	Standard mechanical seal	Ceramic/Carbon/EPDM	see table pag 304		1
	High temperature mechanical seal	Ceramic/Carbon/EPDM	see table pag 305		
12	Motor frame with stator	-			1
13	Motor cover	Aluminium			1
14	Fan	PA			1
15	Fan cover	Fe P04 Zincate			1
16	Terminal board	-			1
17	Terminal box cover	Aluminium			[1]
18	Splash ring	NBR	30x13.5x2.5		1
19	Bearing	-			1
20	Bearing	-			1
21	Adjusting ring	Steel C70			1
22	Tie rod	Fe 42 Zinc-coated			4
24	Plug	EN 1.4301 (AISI 304)			1
25	Plug	EN 1.4301 (AISI 304)			1
26	O-ring	EPDM			1
29	Washer	EN 1.4301 (AISI 304)	25.1x14x1		1
30	Ring holder	EN 1.4301 (AISI 304)			1
30-1	Shaft sleeve (adjustment)	EN 1.4301 (AISI 304)			[1]
30-2	Shaft sleeve (adjustment)	EN 1.4301 (AISI 304)			[1]
33	Ring	EN 1.4301 (AISI 304)			2
34	Screw	EN 1.4301 (AISI 304)	M 8x16	UNI 5739	1
42	Foot	Aluminium			[1]
50	Motor spacer [3]	Aluminium			1
52	Capacitor box [2]	ABS class V-0			1
53	Capacitor box cover [2]	ABS class V-0			1
56	Box gasket	NBR			1
58	Ring nut	-			[1]
59	Conic gasket	NBR			[1]
60	Intermediate casing	EN 1.4301 (AISI 304)+PTFE			[1]
61	Intermediate casing (suction)	EN 1.4301 (AISI 304)+PTFE			1
62	Intermediate casing (bearing)	EN 1.4301 (AISI 304)+PTFE + Ceramic			[1]
63	Intermediate casing (discharge)	EN 1.4301 (AISI 304)+PTFE			1
68	Shaft sleeve (intermediate)	EN 1.4301 (AISI 304)			[1]
69	Impeller spacer	EN 1.4301 (AISI 304)			1
69-1	Shaft sleeve (adjustment) [1]	EN 1.4301 (AISI 304)			[1]
69-2	Shaft sleeve (adjustment) [1]	EN 1.4301 (AISI 304)			[1]
75	Washer (plug)	EN 1.4301 (AISI 304)			1
76	Washer (plug)	EN 1.4301 (AISI 304)			1
77	O-ring	EPDM	9.19x2.62		1
78	O-ring	EPDM	9.19x2.62		1
90	Terminal box cover gasket [2]	NBR	-		[1]
91	Shaft washer	EN 1.4301 (AISI 304)			1
92	Lip seal	0.45-0.65-0.75-0.9 kW 1.3-1.5-2.2 kW 2.2M-3-4 kW	- 17x32x6 20x30x4 25x40x7		1 1 1
93	Lip seal	0.45-0.65-0.75-0.9 kW 1.3-1.5-2.2 kW 2.2M-3-4 kW	- 15x30x5 17x32x7 25x40x7		1 1 1
94	Shaft sleeve (bearing)	WC - Tungsten carbide			[1]
200	Screw	EN 1.4301 (AISI 304)	M6x16	UNI 5931	8
233	Plate	EN 1.4301 (AISI 304)			4

- [1] See table pag. 303
 [2] Only for single phase
 [3] Only for 18-5T/4 and 18-6T/4

QUANTITY FOR MODEL

Pump type	7	17	30-1	30-2	42	58	59	60	62	68	69-1	69-2	90	94
MATRIX 3-2T/0,45M	2	-	-	-	1	1	1	1	-	4	-	-	1	-
MATRIX 3-2T/0,45		1	-	-	1	-	-	1	-	4	-	-	-	-
MATRIX 3-3T/0,65M	3	-	-	-	1	1	1	1	-	4	-	-	1	-
MATRIX 3-3T/0,65		1	-	-	1	-	-	1	-	4	-	-	-	-
MATRIX 3-4T/0,65M	4	-	-	-	1	1	1	2	-	6	-	-	1	-
MATRIX 3-4T/0,65		1	-	-	1	-	-	2	-	6	-	-	-	-
MATRIX 3-5T/0,75M	5	-	-	-	1	1	1	3	-	8	-	-	1	-
MATRIX 3-5T/0,75		1	-	-	1	-	-	3	-	8	-	-	-	-
MATRIX 3-6T/0,9M	6	-	-	-	1	1	1	4	-	10	-	-	1	-
MATRIX 3-6T/0,9		1	-	-	1	-	-	4	-	10	-	-	-	-
MATRIX 3-7T/1,3M	7	-	-	-	1	1	1	4	1	10	1	1	1	1
MATRIX 3-7T/1,3		1	-	-	1	-	-	4	1	10	1	1	-	1
MATRIX 3-8T/1,3M	8	-	-	-	1	1	1	5	1	12	1	1	1	1
MATRIX 3-8T/1,3		1	-	-	1	-	-	5	1	12	1	1	-	1
MATRIX 3-9T/1,5M	9	-	-	-	1	1	1	6	1	14	1	1	1	1
MATRIX 3-9T/1,5		1	-	-	1	-	-	6	1	14	1	1	-	1
MATRIX 5-2T/0,45M	2	-	-	-	1	1	1	1	-	4	-	-	1	-
MATRIX 5-2T/0,45		1	-	-	1	-	-	1	-	4	-	-	-	-
MATRIX 5-3T/0,65M	3	-	-	-	1	1	1	1	-	4	-	-	1	-
MATRIX 5-3T/0,65		1	-	-	1	-	-	1	-	4	-	-	-	-
MATRIX 5-4T/0,9M	4	-	-	-	1	1	1	2	-	6	-	-	1	-
MATRIX 5-4T/0,9		1	-	-	1	-	-	2	-	6	-	-	-	-
MATRIX 5-5T/1,3M	5	-	-	-	1	1	1	3	-	8	-	-	1	-
MATRIX 5-5T/1,3		1	-	-	1	-	-	3	-	8	-	-	-	-
MATRIX 5-6T/1,3M	6	-	-	-	1	1	1	4	-	10	-	-	1	-
MATRIX 5-6T/1,3		1	-	-	1	-	-	4	-	10	-	-	-	-
MATRIX 5-7T/1,5M	7	-	-	-	1	1	1	4	1	10	1	1	1	1
MATRIX 5-7T/1,5		1	-	-	1	-	-	4	1	10	1	1	-	1
MATRIX 5-8T/2,2M	8	-	-	-	-	1	1	5	1	12	1	1	1	1
MATRIX 5-8T/2,2		1	-	-	1	-	-	5	1	12	1	1	-	1
MATRIX 5-9T/2,2M	9	-	-	-	-	1	1	6	1	14	1	1	1	1
MATRIX 5-9T/2,2		1	-	-	1	-	-	6	1	14	1	1	-	1
MATRIX 10-2T/0,75M	2	-	-	-	1	1	1	1	-	4	-	-	1	-
MATRIX 10-2T/0,75		1	-	-	1	-	-	1	-	4	-	-	-	-
MATRIX 10-3T/1,3M	3	-	-	-	1	1	1	1	-	4	-	-	1	-
MATRIX 10-3T/1,3		1	-	-	1	-	-	1	-	4	-	-	-	-
MATRIX 10-4T/1,5M	4	-	-	-	1	1	1	2	-	6	-	-	1	-
MATRIX 10-4T/1,5		1	-	-	1	-	-	2	-	6	-	-	-	-
MATRIX 10-5T/2,2M	5	-	-	-	-	1	1	3	-	8	-	-	1	-
MATRIX 10-5T/2,2		1	-	-	1	-	-	3	-	8	-	-	-	-
MATRIX 10-6T/2,2M	6	-	-	-	-	1	1	3	1	8	1	1	1	1
MATRIX 10-6T/2,2		1	-	-	1	-	-	3	1	8	1	1	-	1
MATRIX 18-2T/1,5M	2	-	1	1	1	1	1	1	-	2	-	-	1	-
MATRIX 18-2T/1,5		1	1	1	1	1	-	1	-	2	-	-	-	-
MATRIX 18-3T/2,2M	3	-	-	1	-	1	1	1	-	2	-	-	1	-
MATRIX 18-3T/2,2		1	-	1	1	-	-	1	-	2	-	-	-	-
MATRIX 18-4T/3	4	1	-	1	-	-	-	2	-	3	-	-	-	-
MATRIX 18-5T/4	5	1	-	1	-	-	-	2	1	3	1	1	-	1
MATRIX 18-6T/4	6	1	-	1	-	-	-	3	1	4	1	1	-	1

**MECHANICAL SEAL
STANDARD**



Version	Material						
	1 Stationary seal ring	2 Rotary seal ring	3 Gasket	4 Bellows	5 Spring	6 Frame	7 Retainer ring
Standard	Ceramic	Carbon	EPDM	EPDM	EN 1.4402 (AISI 316)	EN 1.4402 (AISI 316)	EN 1.4402 (AISI 316)

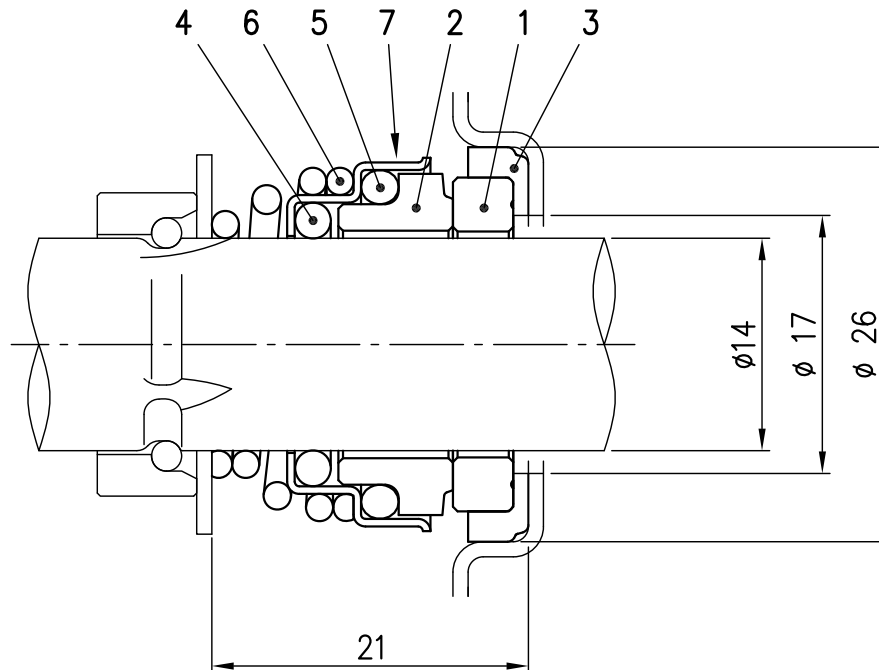
*Approval for drinking water application

WRAS Approval product
DM174/2004



TIFO
prodotto conforme
D.M.174/2004

HIGH TEMPERATURE



Version	Material						
	1 Stationary seal ring	2 Rotary seal ring	3 Gasket	4 O-Ring	5 O-Ring	6 Spring	7 Retainer ring
High temperature	Ceramic	Carbon	EPDM	EPDM	EPDM	EN 1.4402 (AISI 316)	EN 1.4301 (AISI 304)

*Approval for drinking water application

DM174/2004

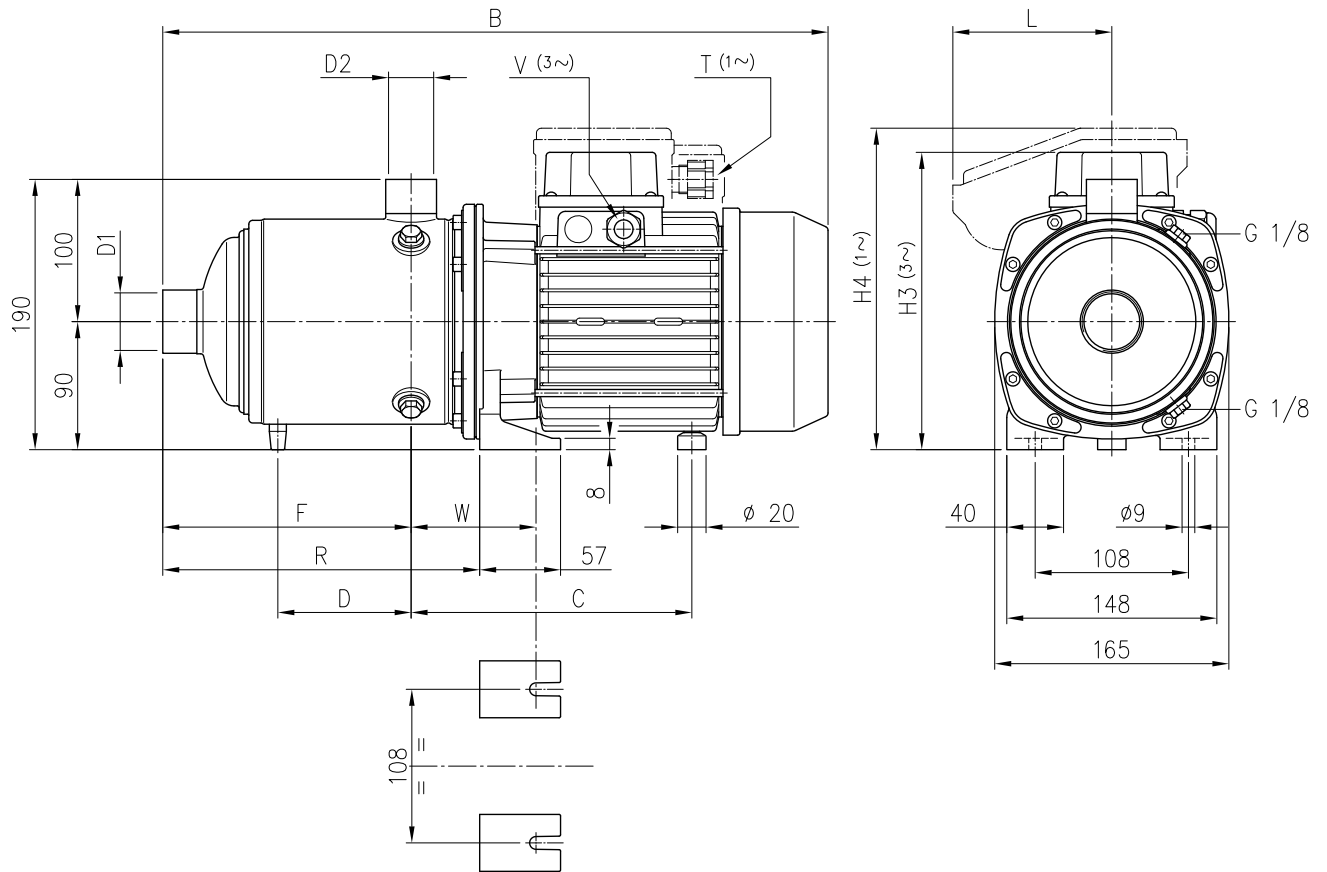


BEARINGS

Pump Type	Bearings			
	Pump side	(*) Pump side	Fan side	(*) Fan side
MATRIX 3-2T/0.45M	6203-2RSH	-	6202-2RSH	-
MATRIX 3-2T/0.45				
MATRIX 3-3T/0.65M				
MATRIX 3-3T/0.65				
MATRIX 3-4T/0.65M				
MATRIX 3-4T/0.65				
MATRIX 3-5T/0.75M				
MATRIX 3-5T/0.75				
MATRIX 3-6T/0.9M	6304-2RSH	6203-ZZ C3	6203-2RSH	6202-ZZ C3
MATRIX 3-6T/0.9				
MATRIX 3-7T/1.3M				
MATRIX 3-7T/1.3				
MATRIX 3-8T/1.3M				
MATRIX 3-8T/1.3				
MATRIX 3-9T/1.5M				
MATRIX 3-9T/1.5				
MATRIX 5-2T/0.45M	6203-2RSH	-	6202-2RSH	-
MATRIX 5-2T/0.45				
MATRIX 5-3T/0.65M				
MATRIX 5-3T/0.65				
MATRIX 5-4T/0.9M				
MATRIX 5-4T/0.9				
MATRIX 5-5T/1.3M				
MATRIX 5-5T/1.3				
MATRIX 5-6T/1.3M	6304-2RSH	6304-ZZ C3	6203-2RSH	6203-ZZ C3
MATRIX 5-6T/1.3				
MATRIX 5-7T/1.5M				
MATRIX 5-7T/1.5				
MATRIX 5-8T/2.2M				
MATRIX 5-8T/2.2				
MATRIX 5-9T/2.2M				
MATRIX 5-9T/2.2				
MATRIX 10-2T/0.75M	6203-2RSH	-	6202-2RSH	-
MATRIX 10-2T/0.75				
MATRIX 10-3T/1.3M				
MATRIX 10-3T/1.3				
MATRIX 10-4T/1.5M				
MATRIX 10-4T/1.5				
MATRIX 10-5T/2.2M				
MATRIX 10-5T/2.2				
MATRIX 10-6T/2.2M	6304-2RSH	6305-ZZ C3	6205-2RSH	6205-ZZ C3
MATRIX 10-6T/2.2				
MATRIX 10-6T/2.2				
MATRIX 10-6T/2.2				
MATRIX 18-2T/1.5M				
MATRIX 18-2T/1.5				
MATRIX 18-3T/2.2M				
MATRIX 18-3T/2.2				
MATRIX 18-4T/3	6305-2RSH1	6305-ZZ C3	6205-2RSH	6205-ZZ C3
MATRIX 18-5T/4				
MATRIX 18-6T/4				

(*) Only for IE3 Motors

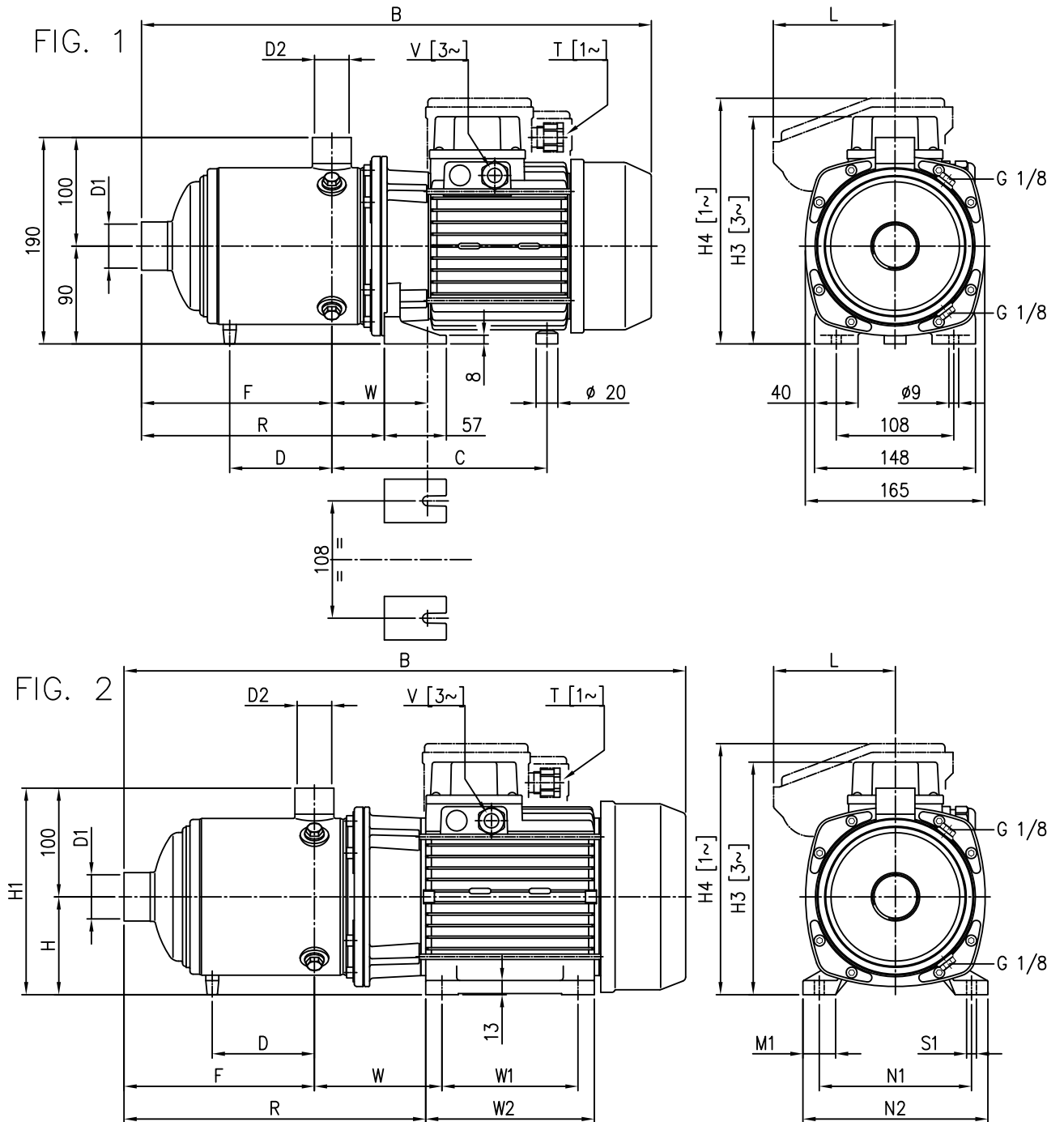
PUMP MATRIX 3



Pump Type	Dimensions [mm]															Weight [kg]		
	D1	D2	B	(*)	C	D	F	H3 (3~)	H4 (1~)	L	R	T (1~)	V (3~)	(*) (3~)	W		(*)	
MATRIX 3-2T/0,45M	1"	1"	360	-	171	-	103	-	200	86.5	151.5	Pg11	-	-	88 + 97	8.5	-	
MATRIX 3-2T/0,45			360	-	171	-	103	-	192	-	-	151.5	-	Pg11	-	88 + 97	8.4	-
MATRIX 3-3T/0,65M			360	-	171	-	103	-	-	200	86.5	151.5	Pg11	-	-	88 + 97	9.9	-
MATRIX 3-3T/0,65			360	-	171	-	103	-	192	-	-	151.5	-	Pg11	-	88 + 97	9.8	-
MATRIX 3-4T/0,65M			384	-	171	-	127	-	-	200	86.5	175.5	Pg11	-	-	88 + 97	10.6	-
MATRIX 3-4T/0,65			384	-	171	-	127	-	192	-	-	175.5	-	Pg11	-	88 + 97	10.4	-
MATRIX 3-5T/0,75M			408	-	171	-	151	-	-	200	86.5	199.5	Pg11	-	-	88 + 97	12.5	-
MATRIX 3-5T/0,75			408	408	171	-	151	-	192	-	-	199.5	-	Pg11	M16x1.5	88 + 97	12.4	12.4
MATRIX 3-6T/0,9M			432	-	171	-	175	-	-	219	106	223.5	M20x1.5	-	-	88 + 97	13.7	-
MATRIX 3-6T/0,9			444	444	171	-	175	-	192	-	-	223.5	-	Pg11	M16x1.5	88 + 97	13.6	13.6
MATRIX 3-7T/1,3M			493	-	198	110.5	199	-	-	226	112	247.5	M20x1.5	-	-	88 + 97	16.3	-
MATRIX 3-7T/1,3			493	518	198	110.5	199	209	-	-	-	247.5	-	Pg11	M20x1.5	88 + 97	17	17.9
MATRIX 3-8T/1,3M			517	-	198	134.5	223	-	-	226	112	271.5	M20x1.5	-	-	88 + 97	16.3	-
MATRIX 3-8T/1,3			517	542	198	134.5	223	209	-	-	-	271.5	-	Pg11	M20x1.5	88 + 97	17.8	18.7
MATRIX 3-9T/1,5M			541	-	198	158.5	247	-	-	226	112	295.5	M20x1.5	-	-	88 + 97	18.3	-
MATRIX 3-9T/1,5			554	567	198	158.5	247	209	-	-	-	295.5	-	Pg11	M20x1.5	88 + 97	20	20.9

(*) Only for IE3 Motors

PUMP DRAWING MATRIX 5/10/18

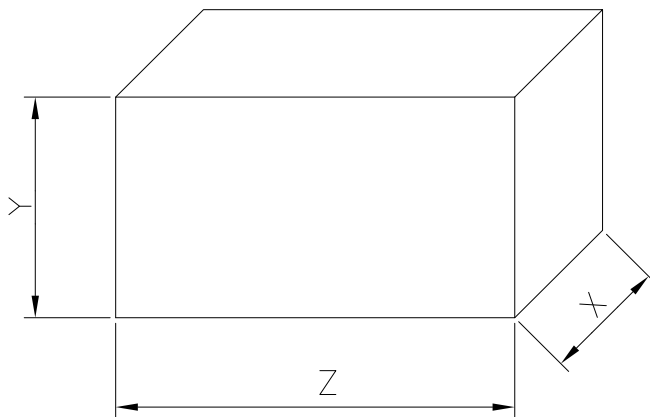


DIMENSION TABLE MATRIX 5/10/18

Pump Type	Fig.	D1	D2	Dimensions [mm]																			Weight [kgf]					
				H	H1	B		C	D	F	H3 (3~)	H4 (1~)	L	R	T (1~)	V		W	W1	W2	M1	N1	N2	S1		(*)		
MATRIX 5-2T/0.45 M	1	1 1/4"	1"	-	-	360	-	171	-	103	-	200	86,5	151,5	Pg11	-	-	88+97	-	-	-	-	-	-	8.5	-		
MATRIX 5-2T/0.45				-	-	360	-	171	-	103	192	-	-	151,5	-	Pg11	-	-	88+97	-	-	-	-	-	-	8.4	-	
MATRIX 5-3T/0.65 M				-	-	360	-	171	-	103	-	200	86,5	151,5	Pg11	-	-	-	88+97	-	-	-	-	-	-	9.9	-	
MATRIX 5-3T/0.65				-	-	360	-	171	-	103	192	-	-	151,5	-	Pg11	-	-	88+97	-	-	-	-	-	-	9.8	-	
MATRIX 5-4T/0.9 M				-	-	384	-	171	-	127	-	219	106	175,5	M20x1.5	-	-	-	88+97	-	-	-	-	-	-	12.2	-	
MATRIX 5-4T/0.9				-	-	396	396	171	-	127	192	-	-	175,5	-	Pg11	M16x1.5	-	88+97	-	-	-	-	-	-	12.4	12.4	
MATRIX 5-5T/1.3 M				-	-	445	-	198	-	151	-	226	112	199,5	M20x1.5	-	-	-	88+97	-	-	-	-	-	-	15.8	-	
MATRIX 5-5T/1.3				-	-	445	470	198	-	151	209	-	-	199,5	-	Pg11	M20x1.5	-	88+97	-	-	-	-	-	-	15.8	16.7	
MATRIX 5-6T/1.3 M				-	-	469	-	198	-	175	-	226	112	223,5	M20x1.5	-	-	-	88+97	-	-	-	-	-	-	15.2	-	
MATRIX 5-6T/1.3				-	-	469	494	198	-	175	209	-	-	223,5	-	Pg11	M20x1.5	-	88+97	-	-	-	-	-	-	16.2	17.1	
MATRIX 5-7T/1.5 M				-	-	493	-	198	110,5	199	-	226	112	247,5	M20x1.5	-	-	-	88+97	-	-	-	-	-	-	18.3	-	
MATRIX 5-7T/1.5				-	-	506	518,5	198	110,5	199	209	-	-	247,5	-	Pg11	M20x1.5	-	88+97	-	-	-	-	-	-	18.7	19.6	
MATRIX 5-8T/2.2 M				2		90	190	565	-	-	134,5	223	-	231	112	325,5	M20x1.5	-	-	117,5	125	155	30	140	170	9	22,3	-
MATRIX 5-8T/2.2				1		-	-	530	542,5	198	134,5	223	209	-	-	271,5	-	Pg11	M20x1.5	88+97	-	-	-	-	-	-	18,7	19,6
MATRIX 5-9T/2.2 M	2		90	190	589	-	-	158,5	247	-	231	112	349,5	M20x1.5	-	-	117,5	125	155	30	140	170	9	23,3	-			
MATRIX 5-9T/2.2	1		-	-	554	566,5	198	158,5	247	209	-	-	295,5	-	Pg11	M20x1.5	88+97	-	-	-	-	-	-	18,8	19,7			
MATRIX 10-2T/0.75 M	1	1 1/2"	1 1/4"	-	-	379	-	175	-	118	-	200	86,5	170,5	Pg11	-	-	92+101	-	-	-	-	-	11,3	-			
MATRIX 10-2T/0.75				-	-	379	379	175	-	118	192	-	-	170,5	-	Pg11	M16x1.5	92+101	-	-	-	-	-	-	11,2	11,2		
MATRIX 10-3T/1.3 M				-	-	416	-	202	-	118	-	226	112	170,5	M20x1.5	-	-	-	92+101	-	-	-	-	-	-	14,3	-	
MATRIX 10-3T/1.3				-	-	416	441	202	-	118	209	-	-	170,5	-	Pg11	M20x1.5	92+101	-	-	-	-	-	-	-	13,6	14,5	
MATRIX 10-4T/1.5 M				-	-	446	-	202	-	148	-	226	112	200,5	M20x1.5	-	-	-	92+101	-	-	-	-	-	-	15,6	-	
MATRIX 10-4T/1.5				-	-	459	471,5	202	-	148	209	-	-	200,5	-	Pg11	M20x1.5	92+101	-	-	-	-	-	-	-	17,3	18,2	
MATRIX 10-5T/2.2 M				2		90	190	524	-	-	178	-	231	112	284,5	M20x1.5	-	-	121,5	125	155	30	140	170	9	21,8	-	
MATRIX 10-5T/2.2				1		-	-	489	501,5	202	-	178	209	-	-	230,5	-	Pg11	M20x1.5	92+101	-	-	-	-	-	-	17,9	18,8
MATRIX 10-6T/2.2 M				2		90	190	554	-	-	118,5	208	-	231	112	314,5	M20x1.5	-	-	121,5	125	155	30	140	170	9	22,1	-
MATRIX 10-6T/2.2				1		-	-	519	531,5	202	118,5	208	209	-	-	260,5	-	Pg11	M20x1.5	92+101	-	-	-	-	-	-	18,3	19,2
MATRIX 18-2T/1.5M	1	2"	1 1/2"	-	-	442	-	205	-	141	-	226	112	196,5	M20x1.5	-	-	95 + 104	-	-	-	-	-	14,5	-			
MATRIX 18-2T/1.5				-	-	455	467,5	205	-	141	209	-	-	196,5	-	Pg11	M20x1.5	95 + 104	-	-	-	-	-	-	16,2	17,1		
MATRIX 18-3T/2.2M				2		90	190	490	-	-	141	-	231	112	250,5	M20x1.5	-	-	124,5	125	155	30	140	170	9	20,7	-	
MATRIX 18-3T/2.2				1		-	-	455	467,5	205	-	141	209	-	-	196,5	-	Pg11	M20x1.5	95 + 104	-	-	-	-	-	-	17,2	18,1
MATRIX 18-4T/3				2		90	190	565	565	-	-	178,5	214	-	-	288	-	Pg13.5	M20x1.5	124,5	125	155	30	140	170	9	23,8	23,8
MATRIX 18-5T/4					100	200	615	615	-	-	123	216	241	-	-	315	-	Pg16	M20x1.5	114	140	170	35	160	192	11	33,2	33,2
MATRIX 18-6T/4	100	200	652	652	-	-	160,5	253,5	241	-	-	352,5	-	Pg16	M20x1.5	114	140	170	35	160	192	11	34,2	34,2				

(*) Only for IE3 Motors

PACKING



Pump Type	Packing [mm]					Weight [kgf]			
	X	Y (*)	Z (*)						
MATRIX 3-2T/0.45M	192	228	-	432	-	9.1	-		
MATRIX 3-2T/0.45						9	-		
MATRIX 3-3T/0.65M						10.5	-		
MATRIX 3-3T/0.65						10.4	-		
MATRIX 3-4T/0.65M						11.2	-		
MATRIX 3-4T/0.65						11	-		
MATRIX 3-5T/0.75M						13.1	-		
MATRIX 3-5T/0.75			228		432	13	13		
MATRIX 3-6T/0.9M	222	258	-	562	-	-	14.5	-	
MATRIX 3-6T/0.9						258	562	14.6	14.6
MATRIX 3-7T/1.3M						-	-	17.1	-
MATRIX 3-7T/1.3						258	562	18	18
MATRIX 3-8T/1.3M						-	-	17.1	-
MATRIX 3-8T/1.3						258	562	18.8	18.8
MATRIX 3-9T/1.5M	222	258	258	672	672	-	19.1	-	
MATRIX 3-9T/1.5						258	672	21	21
MATRIX 5-2T/0.45M	192	228	-	432	-	-	9.1	-	
MATRIX 5-2T/0.45						228	432	9	9
MATRIX 5-3T/0.65M						-	-	10.5	-
MATRIX 5-3T/0.65			228		432	10.4	10.4		
MATRIX 5-4T/0.9M	192	228	-	432	-	-	13	-	
MATRIX 5-4T/0.9						228	432	13.2	13.2
MATRIX 5-5T/1.3M	222	258	-	562	-	-	16.8	-	
MATRIX 5-5T/1.3						258	562	16.8	17.7
MATRIX 5-6T/1.3M						-	-	16	-
MATRIX 5-6T/1.3						258	562	17.2	18.1
MATRIX 5-7T/1.5M						-	-	19.3	-
MATRIX 5-7T/1.5						258	562	19.6	20.5
MATRIX 5-8T/2.2M	222	258	-	672	-	-	23.3	-	
MATRIX 5-8T/2.2	222	258	258	562	562	19.5	20.4		
MATRIX 5-9T/2.2M	222	258	-	672	-	-	24.4	-	
MATRIX 5-9T/2.2						258	672	19.8	20.7
MATRIX 10-2T/0.75M	192	228	-	432	-	-	11.9	-	
MATRIX 10-2T/0.75						228	432	11.8	11.8
MATRIX 10-3T/1.3M	222	258	-	562	-	-	15.3	-	
MATRIX 10-3T/1.3	192	228	238	432	472	14.2	15.1		
MATRIX 10-4T/1.5M	222	258	-	562	-	-	16.4	-	
MATRIX 10-4T/1.5						258	562	18.2	19.1
MATRIX 10-5T/2.2M						-	-	22.3	-
MATRIX 10-5T/2.2						258	562	18.7	19.6
MATRIX 10-6T/2.2M						222	258	-	672
MATRIX 10-6T/2.2			258		562	19.1	20		
MATRIX 18-2T/1.5M	222	258	-	562	-	-	15.3	-	
MATRIX 18-2T/1.5						258	562	17	17.9
MATRIX 18-3T/2.2M						-	-	21.6	-
MATRIX 18-3T/2.2						258	562	18.2	19.1
MATRIX 18-4T/3								24.8	24.8
MATRIX 18-5T/4	222	258	258	672	672	-	34.4	34.4	
MATRIX 18-6T/4						35.2	35.2		

(*) Only for IE3 Motors

MOTOR DATA

Pump type		Power		Efficiency		Capacitor		Efficiency (% load)			Input		Full load current			Locked rotor current		
Single Phase	Three Phase	[kW]	[HP]	Single Phase	Three Phase	Single Phase [μF]	Three Phase [V]	Three phase η %			Single Phase [kW]	Three Phase [kW]	[A]			[A]		
								50%	75%	100%			Single Phase	Three Phase	230 V	230 V	400 V	Single Phase
MATRIX 3-2T/0.45M	MATRIX 3-2T/0.45	0.45	0.6	-	-	12.5	450	-	-	-	0.73	0.72	3.2	2.3	1.3	8.0	11.0	6.5
MATRIX 3-3T/0.65M	MATRIX 3-3T/0.65	0.65	0.9	-	-	16	450	-	-	-	0.97	0.85	4.5	2.8	1.6	16.2	16.0	9.1
MATRIX 3-4T/0.65M	MATRIX 3-4T/0.65	0.65	0.9	-	-	16	450	-	-	-	0.97	0.85	4.5	2.8	1.6	16.2	16.0	9.1
MATRIX 3-5T/0.75M	MATRIX 3-5T/0.75	0.75	1.0	-	IE2	25	450	77.2	80.9	81.3	1.14	0.92	5.4	3.0	1.7	26.5	22.0	12.9
-	MATRIX 3-5T/0.75	0.75	1.0	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7	-	19.7	11.4
MATRIX 3-6T/0.9M	MATRIX 3-6T/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
-	MATRIX 3-6T/0.9	0.9	1.2	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5	-	28.8	16.6
MATRIX 3-7T/1.3M	MATRIX 3-7T/1.3	1.3	1.8	-	IE2	35	450	79.7	82.5	83.0	1.75	1.80	7.8	5.6	3.2	41.0	45.0	25.7
-	MATRIX 3-7T/1.3	1.3	1.8	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3	-	47.4	27.4
MATRIX 3-8T/1.3M	MATRIX 3-8T/1.3	1.3	1.8	-	IE2	35	450	79.7	82.5	83.0	1.75	1.80	7.8	5.6	3.2	41.0	45.0	25.7
-	MATRIX 3-8T/1.3	1.3	1.8	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3	-	47.4	27.4
MATRIX 3-9T/1.5M	MATRIX 3-9T/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
-	MATRIX 3-9T/1.5	1.5	2.0	-	IE3	-	-	82.7	86.1	87.0	-	1.72	-	6.6	3.8	-	66.6	38.4
MATRIX 5-2T/0.45M	MATRIX 5-2T/0.45	0.45	0.6	-	-	12.5	450	-	-	-	0.73	0.72	3.2	2.3	1.3	8.0	11.0	6.5
MATRIX 5-3T/0.65M	MATRIX 5-3T/0.65	0.65	0.9	-	-	16	450	-	-	-	0.97	0.85	4.5	2.8	1.6	16.2	16.0	9.1
MATRIX 5-4T/0.9M	MATRIX 5-4T/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
-	MATRIX 5-4T/0.9	0.9	1.2	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5	-	28.8	16.6
MATRIX 5-5T/1.3M	MATRIX 5-5T/1.3	1.3	1.8	-	IE2	35	450	79.7	82.5	83.0	1.75	1.80	7.8	5.6	3.2	41.0	45.0	25.7
-	MATRIX 5-5T/1.3	1.3	1.8	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3	-	47.4	27.4
MATRIX 5-6T/1.3M	MATRIX 5-6T/1.3	1.3	1.8	-	IE2	35	450	79.7	82.5	83.0	1.75	1.80	7.8	5.6	3.2	41.0	45.0	25.7
-	MATRIX 5-6T/1.3	1.3	1.8	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3	-	47.4	27.4
MATRIX 5-7T/1.5M	MATRIX 5-7T/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
-	MATRIX 5-7T/1.5	1.5	2.0	-	IE3	-	-	82.7	86.1	87.0	-	1.72	-	6.6	3.8	-	66.6	38.4
MATRIX 5-8T/2.2M	MATRIX 5-8T/2.2	2.2	3.0	-	IE2	50	450	83.0	84.4	83.8	2.92	2.63	13.0	8.2	4.7	62.4	59.0	34.3
-	MATRIX 5-8T/2.2	2.2	3.0	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7	-	66.6	38.4
MATRIX 5-9T/2.2M	MATRIX 5-9T/2.2	2.2	3.0	-	IE2	50	450	83.0	84.4	83.8	2.92	2.63	13.0	8.2	4.7	62.4	59.0	34.3
-	MATRIX 5-9T/2.2	2.2	3.0	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7	-	66.6	38.4
MATRIX 10-2T/0.75M	MATRIX 10-2T/0.75	0.75	1.0	-	IE2	25	450	77.2	80.9	81.3	1.14	0.92	5.4	3.0	1.7	26.5	22.0	12.9
-	MATRIX 10-2T/0.75	0.75	1.0	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7	-	19.7	11.4
MATRIX 10-3T/1.3M	MATRIX 10-3T/1.3	1.3	1.8	-	IE2	35	450	79.7	82.5	83.0	1.75	1.80	7.8	5.6	3.2	41.0	45.0	25.7
-	MATRIX 10-3T/1.3	1.3	1.8	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3	-	47.4	27.4
MATRIX 10-4T/1.5M	MATRIX 10-4T/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
-	MATRIX 10-4T/1.5	1.5	2.0	-	IE3	-	-	82.7	86.1	87.0	-	1.72	-	6.6	3.8	-	66.6	38.4
MATRIX 10-5T/2.2M	MATRIX 10-5T/2.2	2.2	3.0	-	IE2	50	450	83.0	84.4	83.8	2.92	2.63	13.0	8.2	4.7	62.4	59.0	34.3
-	MATRIX 10-5T/2.2	2.2	3.0	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7	-	66.6	38.4
MATRIX 10-6T/2.2M	MATRIX 10-6T/2.2	2.2	3.0	-	IE2	50	450	83.0	84.4	83.8	2.92	2.63	13.0	8.2	4.7	62.4	59.0	34.3
-	MATRIX 10-6T/2.2	2.2	3.0	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7	-	66.6	38.4
MATRIX 18-2T/1.5M	MATRIX 18-2T/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
-	MATRIX 18-2T/1.5	1.5	2.0	-	IE3	-	-	82.7	86.1	87.0	-	1.72	-	6.6	3.8	-	66.6	38.4
MATRIX 18-3T/2.2M	MATRIX 18-3T/2.2	2.2	3.0	-	IE2	50	450	83.0	84.4	83.8	2.92	2.63	13.0	8.2	4.7	62.4	59.0	34.3
-	MATRIX 18-3T/2.2	2.2	3.0	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7	-	66.6	38.4
-	MATRIX 18-4T/3	3	4.0	-	IE2	-	-	85.0	86.7	86.3	-	3.48	-	10.6	6.1	-	100.0	57.7
-	MATRIX 18-4T/3	3	4.0	-	IE3	-	-	85.9	87.5	87.1	-	3.44	-	11.1	6.4	-	90.0	52.0
-	MATRIX 18-5T/4	4	5.5	-	IE2	-	-	84.3	87.2	87.8	-	4.56	-	15.1	8.7	-	151.0	87.0
-	MATRIX 18-5T/4	4	5.5	-	IE3	-	-	85.8	88.3	88.4	-	4.52	-	15.1	8.7	-	131.8	76.1
-	MATRIX 18-6T/4	4	5.5	-	IE2	-	-	84.3	87.2	87.8	-	4.56	-	15.1	8.7	-	151.0	87.0
-	MATRIX 18-6T/4	4	5.5	-	IE3	-	-	85.8	88.3	88.4	-	4.52	-	15.1	8.7	-	131.8	76.1

NOISE DATA

Pump Type		Power		LpA-dB(A)*
Single phase	Three phase	[kW]	[HP]	
MATRIX 3-2T/0.45M	MATRIX 3-2T/0.45	0.45	0.6	61
MATRIX 5-2T/0.45M	MATRIX 5-2T/0.45			
MATRIX 3-3T/0.65M	MATRIX 3-3T/0.65	0.65	0.9	62
MATRIX 3-4T/0.65M	MATRIX 3-4T/0.65			
MATRIX 5-3T/0.65M	MATRIX 5-3T/0.65			
MATRIX 3-5T/0.75M	MATRIX 3-5T/0.75	0.75	1.0	62
MATRIX 10-2T/0.75M	MATRIX 10-2T/0.75			
MATRIX 3-6T/0.9M	MATRIX 3-6T/0.9	0.9	1.2	62
MATRIX 5-4T/0.9M	MATRIX 5-4T/0.9			
MATRIX 3-7T/1.3M	MATRIX 3-7T/1.3	1.3	1.8	64
MATRIX 3-8T/1.3M	MATRIX 3-8T/1.3			
MATRIX 5-5T/1.3M	MATRIX 5-5T/1.3			
MATRIX 5-6T/1.3M	MATRIX 5-6T/1.3			
MATRIX 10-3T/1.3M	MATRIX 10-3T/1.3			
MATRIX 3-9T/1.5M	MATRIX 3-9T/1.5	1.5	2.0	64
MATRIX 5-7T/1.5M	MATRIX 5-7T/1.5			
MATRIX 10-4T/1.5M	MATRIX 10-4T/1.5			
MATRIX 18-2T/1.5M	MATRIX 18-2T/1.5			
-	MATRIX 5-8T/2.2	2.2	3.0	65
-	MATRIX 5-9T/2.2			
-	MATRIX 10-5T/2.2			
-	MATRIX 10-6T/2.2			
-	MATRIX 18-3T/2.2			
MATRIX 5-8T/2.2M	-			
MATRIX 5-9T/2.2M	-			
MATRIX 10-5T/2.2M	-			
MATRIX 10-6T/2.2M	-			
MATRIX 18-3T/2.2M	-			
-	MATRIX 18-4T/3	3.0	4.0	68
-	MATRIX 18-5T/4	4.0	5.5	69
-	MATRIX 18-6T/4			

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

