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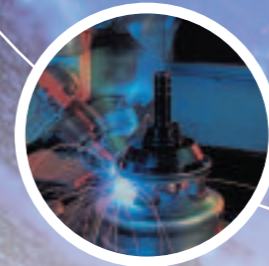


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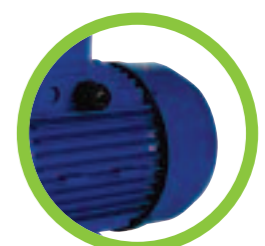


**MATRIX**

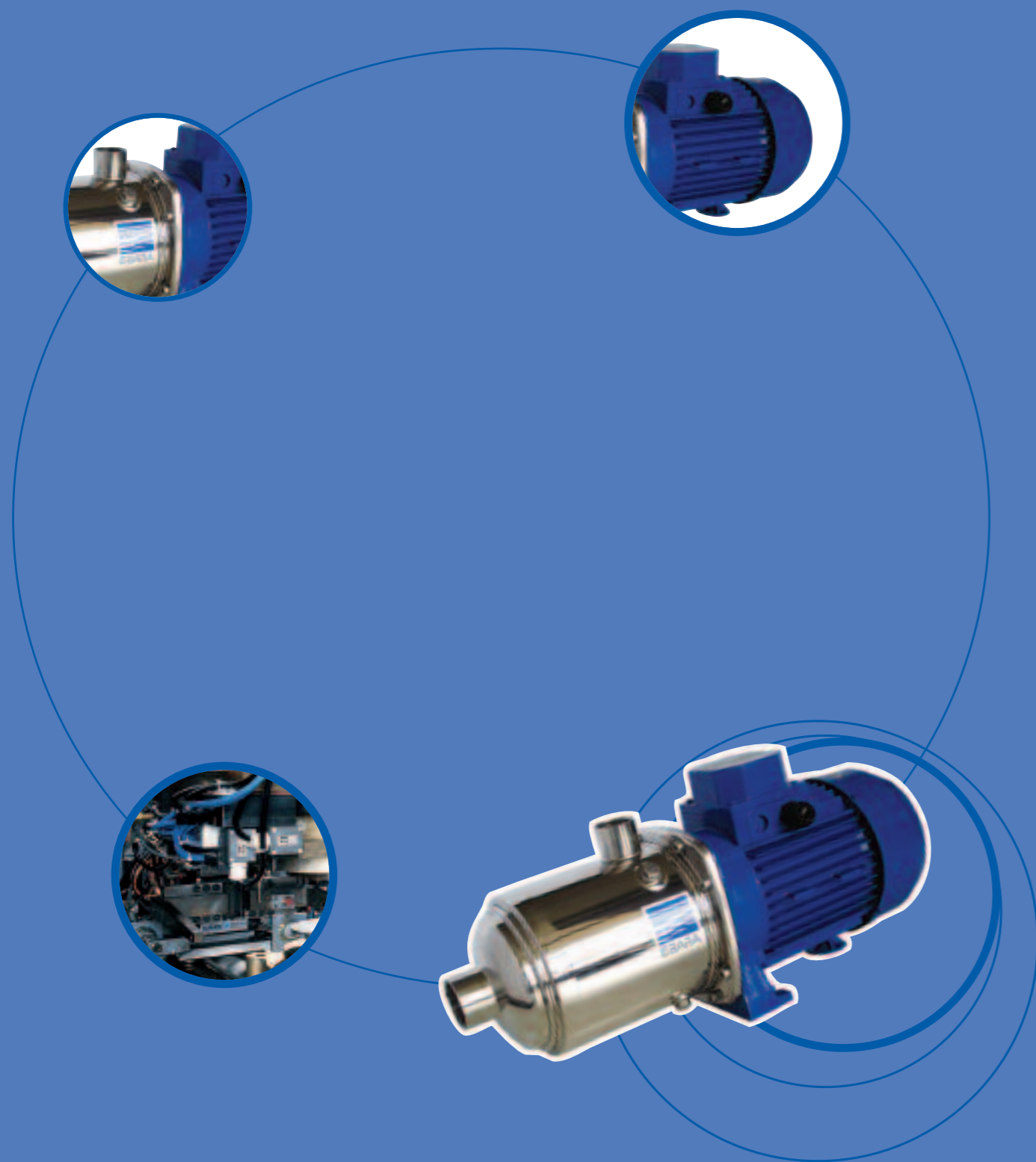


**Centrifugal Pumps**

**60 Hz**



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Horizontal multi-stage pumps with robust and compact construction. Available in various versions and models and suitable for a wide range of applications in the industrial and domestic sector.

#### APPLICATIONS

- Industrial washing equipment
- Pressure boosting
- Industrial plants
- Water distribution and treatment
- Heating and conditioning
- Cooling and chiller
- Irrigation
- Rain water collection

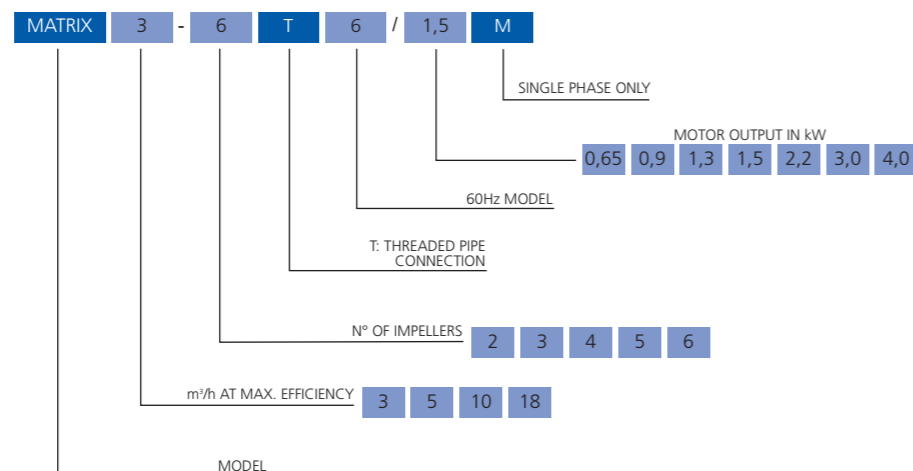
#### TECHNICAL FEATURES

- The new MATRIX pumps stand out for their sturdy construction, grant a 1 MPa max working pressure combined with high stress resistance and offer advanced technical solutions
- Extensive range of models available with different numbers of stages to meet individual capacity and head requirements
- Available in AISI 304 stainless steel
- All MATRIX versions' metallic components in contact with the liquid are in stainless steel
- Tungsten carbide and ceramic are used for sleeve type bearings in contact with the liquid
- Floating liner ring in AISI 304 and PTFE

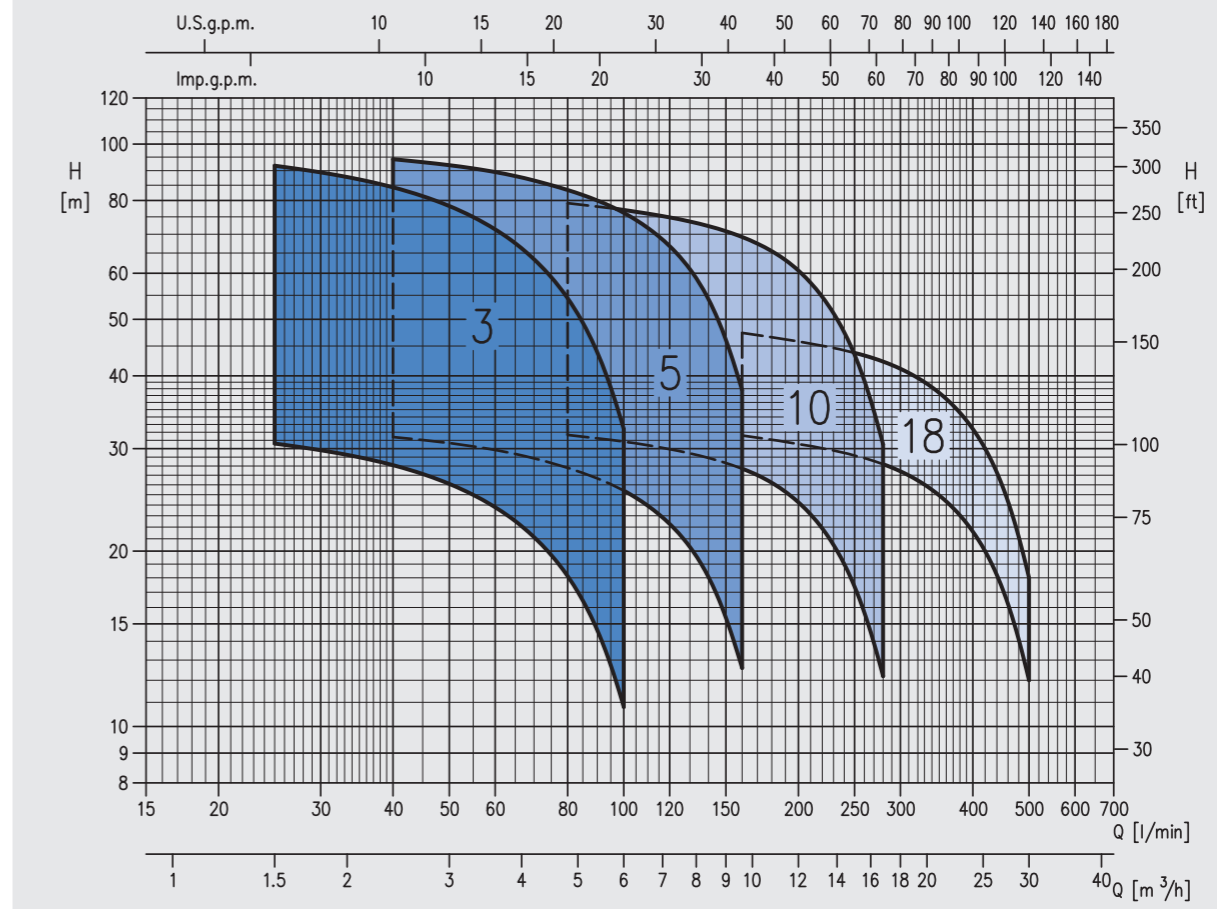
#### TECHNICAL DATA

- Capacity up to 30 m<sup>3</sup>/h
- Total head up to 100 m
- Max liquid temperature: 110°C
- T.E.F.C. 2 poles motor
- Insulation class F
- Protection degree IP55
- 1~220÷230V ±6% 60Hz, 3~220/380V -6% +10% 60Hz
- Permanent split capacitor and automatic thermal overload protection for single-phase version
- Thermal overload protection to be provided by the user for three-phase version
- Suction 1" (MATRIX 3), 1"¼ (MATRIX 5), 1"½ (MATRIX 10), 2" (MATRIX 18)
- Discharge 1" (MATRIX 3-5), 1"¼ (MATRIX 10), 1"½ (MATRIX 18)

#### TYPE KEY



#### PERFORMANCE CHART (according to ISO 9906 Annex A)



#### PERFORMANCE TABLE

Pump type	Power		Q=Capacity																
	Single phase	Three phase	kW	HP	l/min 0	25	40	60	80	100	130	160	220	280	340	400	460	500	
				m <sup>3</sup> /h 0	1,5	2,4	3,6	4,8	6	7,8	9,6	13,2	16,8	20,4	24	27,6	30	H=Total head	
3-2T6/0.65M	3-2T6/0.65	0,65	0,9	33,4	30,6	28,1	23,8	18,1	10,8	-	-	-	-	-	-	-	-	-	-
3-3T6/0.9M	3-3T6/0.9	0,9	1,2	50	46	42	35,7	27,2	16,2	-	-	-	-	-	-	-	-	-	-
3-4T6/1.3M	3-4T6/1.3	1,3	1,8	67	61	56	47,5	36,2	21,6	-	-	-	-	-	-	-	-	-	-
3-5T6/1.5M	3-5T6/1.5	1,5	2	83,5	76,5	70,5	59,5	45,5	27	-	-	-	-	-	-	-	-	-	-
-	3-6T6/2.2	2,2	3	100	92	84,5	71,5	54,5	32,4	-	-	-	-	-	-	-	-	-	-
5-2T6/0.9M	5-2T6/0.9	0,9	1,2	33,5	-	31,4	29,8	27,8	25,4	20,3	12,6	-	-	-	-	-	-	-	-
5-3T6/1.3M	5-3T6/1.3	1,3	1,8	50	-	47	45	41,5	38,1	30,5	18,9	-	-	-	-	-	-	-	-
-	5-4T6/2.2	2,2	3	67	-	63	59,5	55,5	51,0	40,5	25,2	-	-	-	-	-	-	-	-
-	5-5T6/2.2	2,2	3	83,5	-	78,5	74,5	69,5	63,5	51	31,5	-	-	-	-	-	-	-	-
-	5-6T6/3	3	4	100	-	94	89,5	83,5	76,0	61	37,8	-	-	-	-	-	-	-	-
10-2T6/1.5M	10-2T6/1.5	1,5	2	34,4	-	-	-	31,7	30,8	29,4	27,7	21,9	12,2	-	-	-	-	-	-
-	10-3T6/2.2	2,2	3	51,5	-	-	-	47,5	46,5	44	41,5	32,8	18,3	-	-	-	-	-	-
-	10-4T6/3	3	4	69	-	-	-	63,5	61,5	59	55,5	43,5	24,4	-	-	-	-	-	-
-	10-5T6/4	4	5,5	86	-	-	-	79	77	73,5	69,5	54,5	30,5	-	-	-	-	-	-
-	18-2T6/3	3	4	34,6	-	-	-	-	-	-	31,6	30	28,2	25,5	21,6	16,2	12	-	-
-	18-3T6/4	4	5,5	52	-	-	-	-	-	-	47,5	45	42,5	38,3	32,4	24,3	18	-	-

PUMP		
Liquid handled	Type of liquid	Water, moderate aggressive solutions, glycol solutions, moderate viscous fluids
	Max temperature [°C]	110
	Min temperature [°C]	-15
	Max chlorine content	500 ppm
Max pressure [MPa]		1
Construction	Impeller	Closed centrifugal type
	Motor bearings	Screened ball bearing - greased for life
Pipe connection	Suction / Discharge (threads according ISO 228)	<b>MATRIX 3</b> <b>MATRIX 5</b> <b>MATRIX 10</b> <b>MATRIX 18</b>
		G 1" - G 1"
		G 1"¼ - G 1"
		G 1"½ - G 1"¼ G 2" - G 1"½
Material	Casing	EN 1.4301 (AISI 304)
	Impeller	EN 1.4301 (AISI 304)
	Intermediate casing	EN 1.4301 (AISI 304)
	O-Rings	EPDM
	Casing cover	EN 1.4301 (AISI 304)
	Shaft seal	Ceramic/Carbon/EPDM
	Liner ring	EN 1.4301 (AISI 304) + PTFE
	Shaft (wet extension)	EN 1.4301 (AISI 304)
Bracket	EN AB-AISI11Cu2(Fe) (Die cast aluminium)	
Applicable standard of test	ISO 9906 - Annex A	

MOTOR		
Type	Electric asynchronous TEFC	
	Single phase	Three phase
No. of poles	2	
Rotation speed [min <sup>-1</sup> ]	~3500	
Insulation class	F	
Max ambient temperature [°C]	40	
Protection degree	IP 55	
Power rating [kW]	0,65 ÷ 1,5	0,65 ÷ 4
	[HP]	0,9 ÷ 2
Frequency [Hz]	60	
Voltage [V]	220 ÷ 230 ±6%	220/380 -6% +10%
Capacitor	Built in	-
Overload protection	Built in	Provided by the user
Casing material	Aluminium	
Base material - Motor bracket	Aluminium	
Dimensions of cable entry	M20x1,5	PG11 / PG13,5

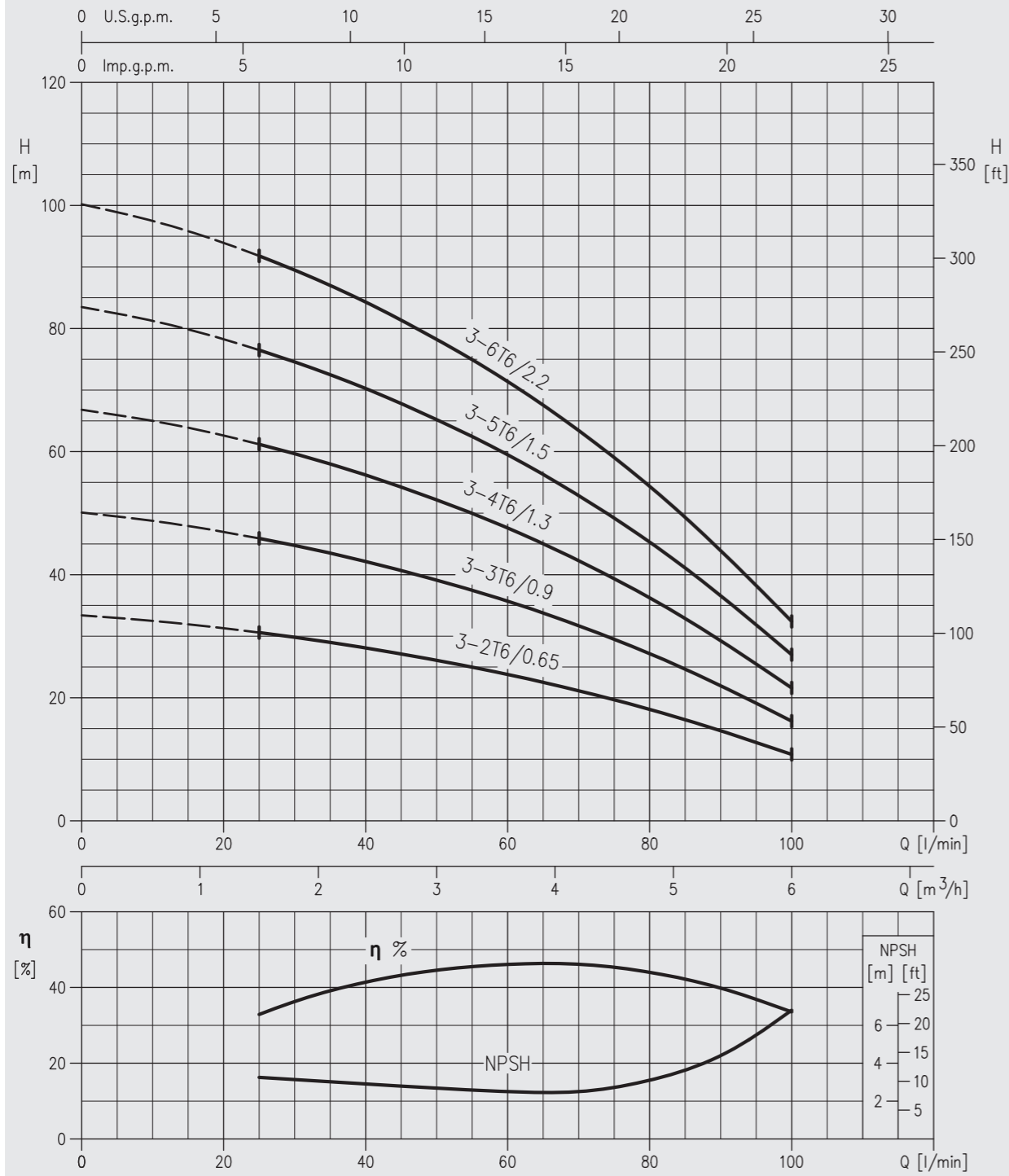
Pump type	Power		Size	Motor Bearing		Capacitor		Input power kW	Absorbed current [A]		Locked rotor current [A]	
	kW	HP		Pump side	Fan side	mF	Vc		230V	400V	230V	400V
MATRIX 3-2T6/0.65M	0,65	0,9	71	6203-2RSH-C3	6202-2RSH	14	450	0,97	4,7	-	21,2	-
MATRIX 3-2T6/0.65	0,65	0,9	71	6203-2RSH-C3	6202-2RSH	-	-	0,9	2,8	1,6	13	7,5
MATRIX 3-3T6/0.9M	0,9	1,2	71	6203-2RSH-C3	6202-2RSH	25	450	1,34	6,3	-	30,9	-
MATRIX 3-3T6/0.9	0,9	1,2	71	6203-2RSH-C3	6202-2RSH	-	-	1,2	4	2,3	25,5	14,7
MATRIX 3-4T6/1.3M	1,3	1,8	80	6304-2RSH-C3	6203-2RSH	31.5	450	1,7	7,7	-	40,8	-
MATRIX 3-4T6/1.3	1,3	1,8	80	6304-2RSH-C3	6203-2RSH	-	-	1,6	4,8	2,8	29,1	16,8
MATRIX 3-5T6/1.5M	1,5	2	80	6304-2RSH-C3	6203-2RSH	31.5	450	1,88	8,7	-	41,2	-
MATRIX 3-5T6/1.5	1,5	2	80	6304-2RSH-C3	6203-2RSH	-	-	1,8	5,4	3,1	42,4	24,5
MATRIX 3-6T6/2.2	2,2	3	80	6304-2RSH-C3	6203-2RSH	-	-	2,73	7,8	4,5	43,6	25,2
MATRIX 5-2T6/0.9M	0,9	1,2	71	6203-2RSH-C3	6202-2RSH	25	450	1,34	6,3	-	30,9	-
MATRIX 5-2T6/0.9	0,9	1,2	71	6203-2RSH-C3	6202-2RSH	-	-	1,2	4	2,3	25,5	14,7
MATRIX 5-3T6/1.3M	1,3	1,8	80	6304-2RSH-C3	6203-2RSH	31.5	450	1,7	7,7	-	40,8	-
MATRIX 5-3T6/1.3	1,3	1,8	80	6304-2RSH-C3	6203-2RSH	-	-	1,6	4,8	2,8	29,1	16,8
MATRIX 5-4T6/2.2	2,2	3	80	6304-2RSH-C3	6203-2RSH	-	-	2,73	7,8	4,5	43,6	25,2
MATRIX 5-5T6/2.2	2,2	3	80	6304-2RSH-C3	6203-2RSH	-	-	2,73	7,8	4,5	43,6	25,2
MATRIX 5-6T6/3	3	4	90	6305-2RSH1-C3	6205-2RSH-C3	-	-	3,66	10	5,8	64,3	37,1
MATRIX 10-2T6/1.5M	1,5	2	80	6304-2RSH-C3	6203-2RSH	31.5	450	1,88	8,7	-	41,2	-
MATRIX 10-2T6/1.5	1,5	2	80	6304-2RSH-C3	6203-2RSH	-	-	1,8	5,4	3,1	42,4	24,5
MATRIX 10-3T6/2.2	2,2	3	80	6304-2RSH-C3	6203-2RSH	-	-	2,73	7,8	4,5	43,6	25,2
MATRIX 10-4T6/3	3	4	90	6305-2RSH1-C3	6205-2RSH-C3	-	-	3,66	10	5,8	64,3	37,1
MATRIX 10-5T6/4	4	5,5	90	6305-2RSH1-C3	6205-2RSH-C3	-	-	4,59	12,8	7,4	96,1	55,5
MATRIX 18-2T6/3	3	4	90	6305-2RSH1-C3	6205-2RSH-C3	-	-	3,66	10	5,8	64,3	37,1
MATRIX 18-6T6/4	4	5,5	90	6305-2RSH1-C3	6205-2RSH-C3	-	-	4,59	12,8	7,4	96,1	55,5

NOISE DATA						
Pump type	Pump type		Motor		LpA-dB(A)*	
	Single phase	Three phase	kW	HP		
MATRIX 3-2T6/0.65M	MATRIX 3-2T6/0.65		0,65	0,9	71	65
MATRIX 5-2T6/0.9M	MATRIX 5-2T6/0.9		0,65	0,9	71	65
MATRIX 3-3T6/0.9M	MATRIX 3-3T6/0.9		0,65	0,9	71	65
MATRIX 3-4T6/1.3M	MATRIX 3-4T6/1,3		1,3	1,8	80	68
MATRIX 5-3T6/1.3M	MATRIX 5-3T6/1.3		1,3	1,8	80	68
MATRIX 3-5T6/1.5M	MATRIX 3-5T6/1.5		1,5	2	80	68
MATRIX 10-2T6/1.5M	MATRIX 10-2T6/1.5		1,5	2	80	68
	MATRIX 3-6T6/2.2		2,2	3	80	69
	MATRIX 5-4T6/2.2		2,2	3	80	69
	MATRIX 5-5T6/2.2		2,2	3	80	69
	MATRIX 10-3T6/2.2		2,2	3	80	69
	MATRIX 10-4T6/2.2		2,2	3	80	69
	MATRIX 5-6T6/3		3	4	90	72
	MATRIX 18-2T6/3		3	4	90	72
	MATRIX 10-5T6/4		4	5,5	90	73
	MATRIX 18-3T6/4		4	5,5	90	73

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

#### MATRIX 3

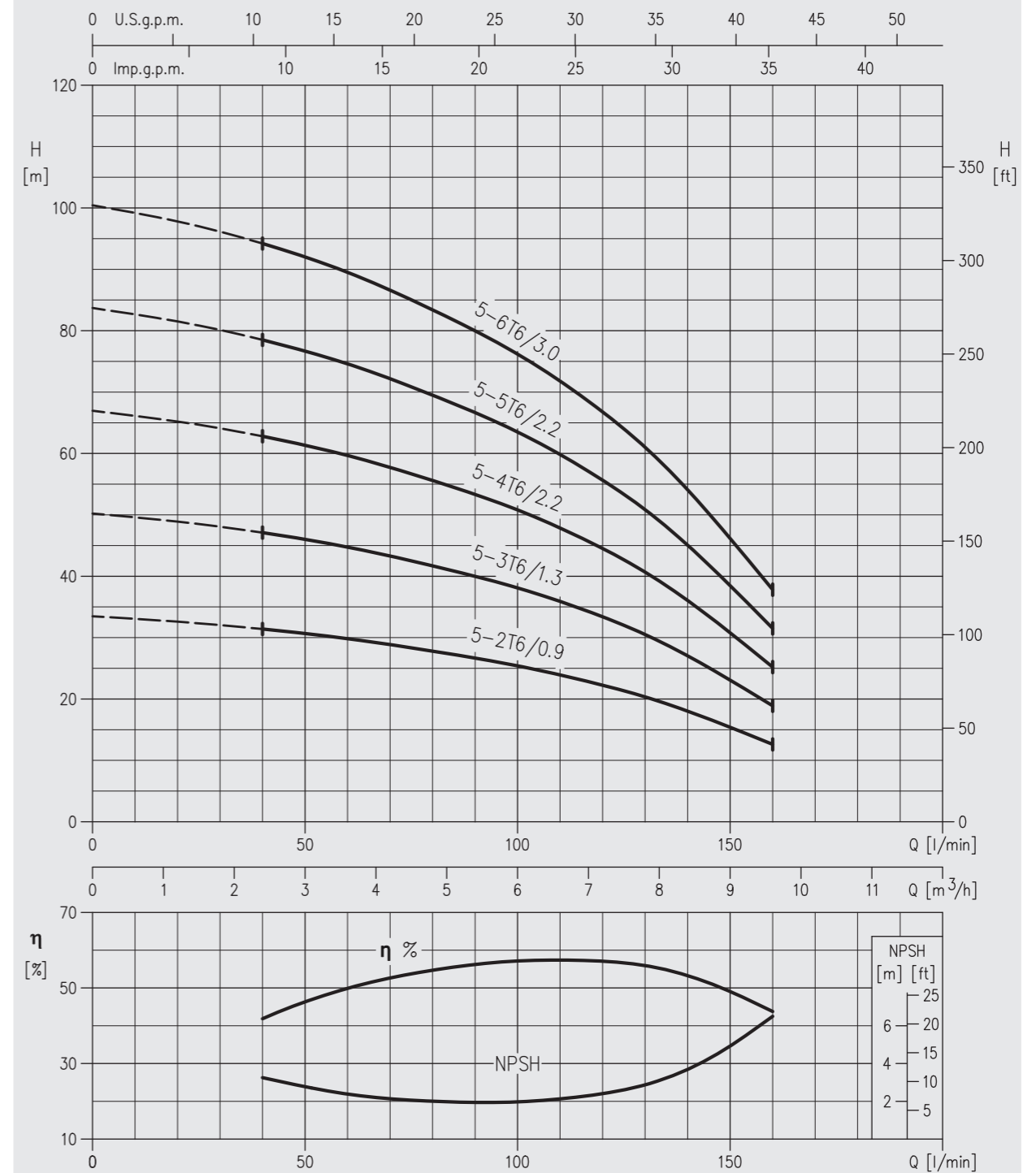
Impeller diameter = 98,5 mm



Rotation speed ~3500 min<sup>-1</sup>  
According to standard ISO 9906 annex A

#### MATRIX 5

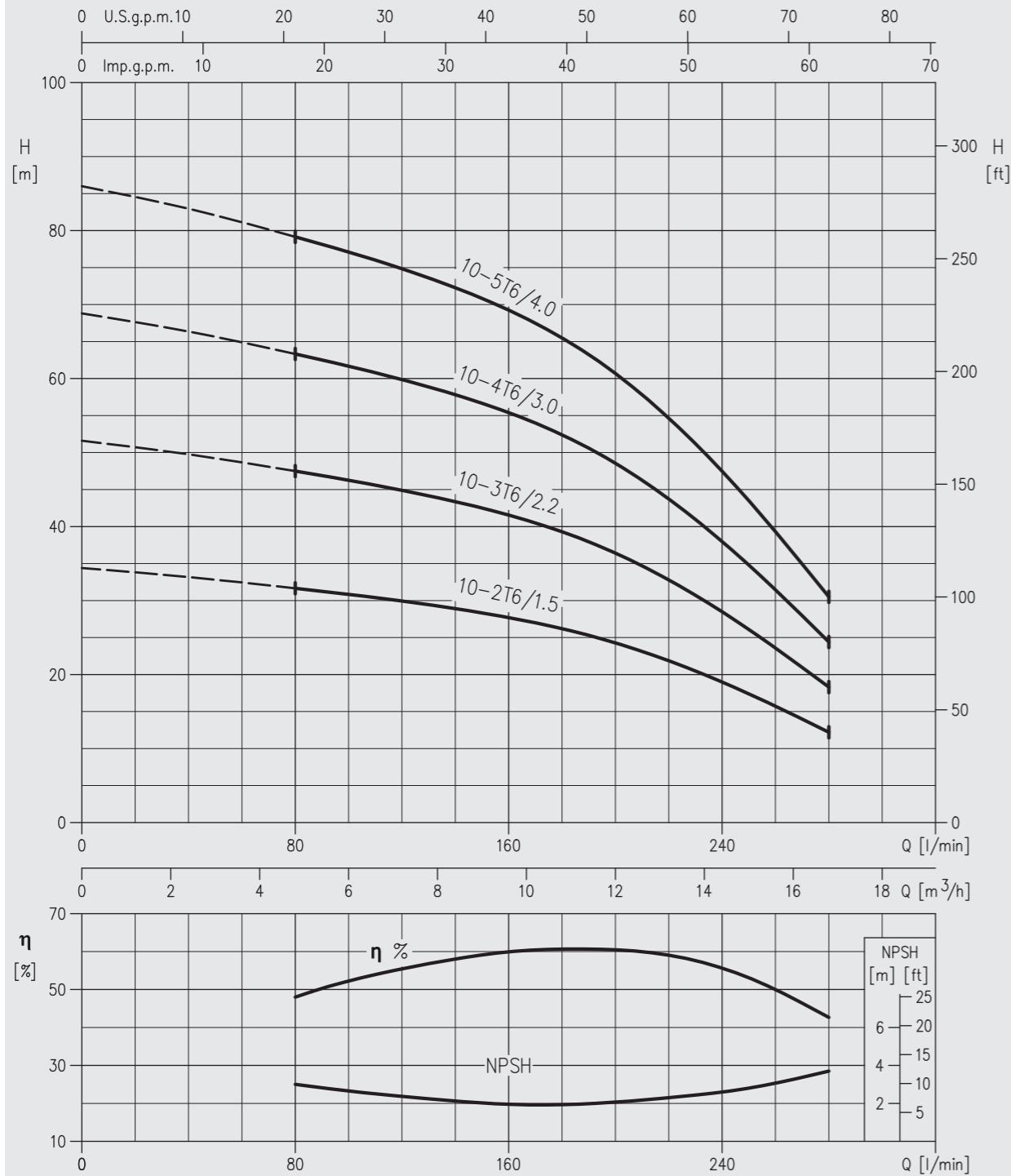
Impeller diameter = 97 mm



Rotation speed ~3500 min<sup>-1</sup>  
According to standard ISO 9906 annex A

#### MATRIX 10

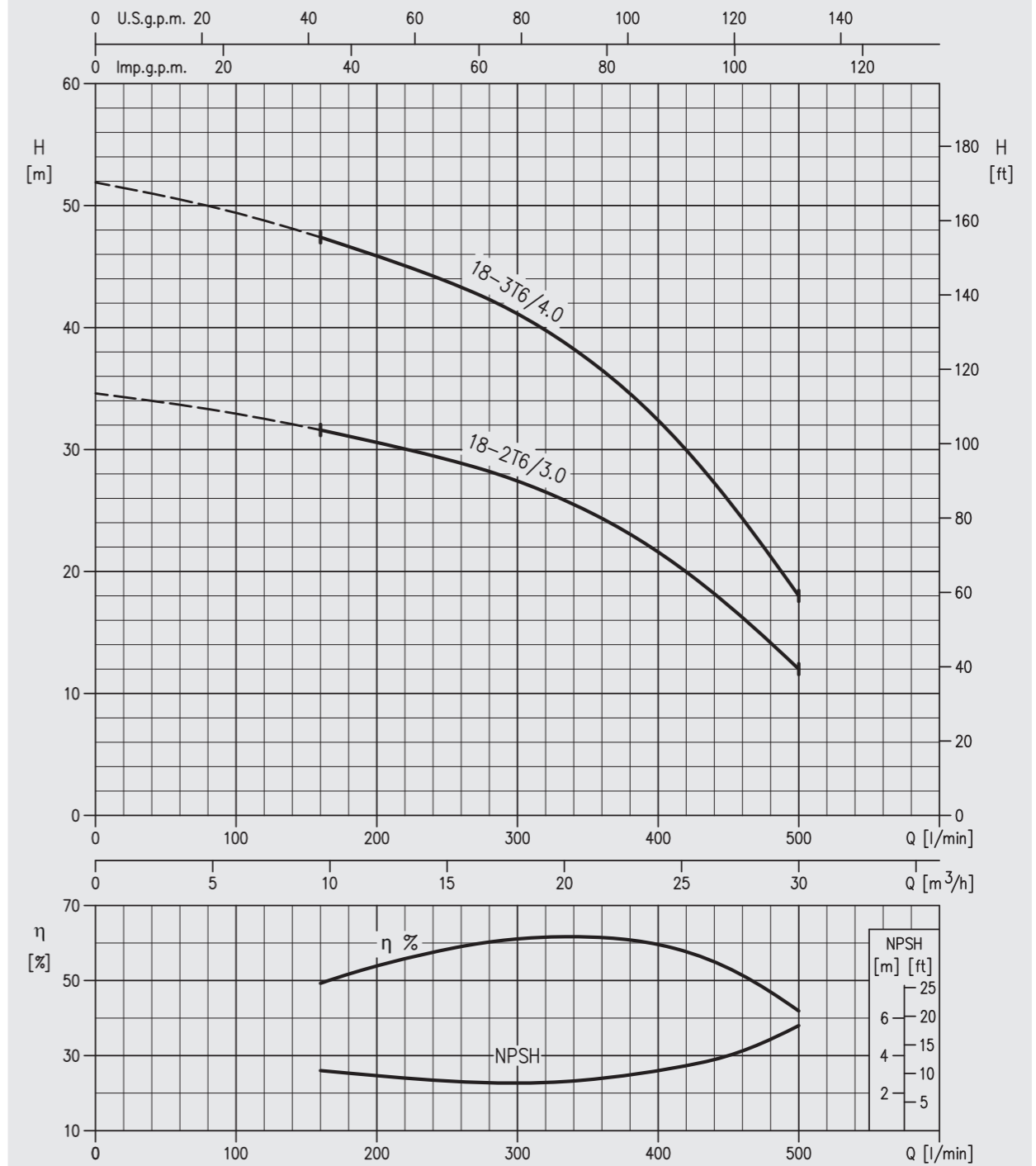
Impeller diameter = 100,5 mm



Rotation speed ~3500 min<sup>-1</sup>  
According to standard ISO 9906 annex A

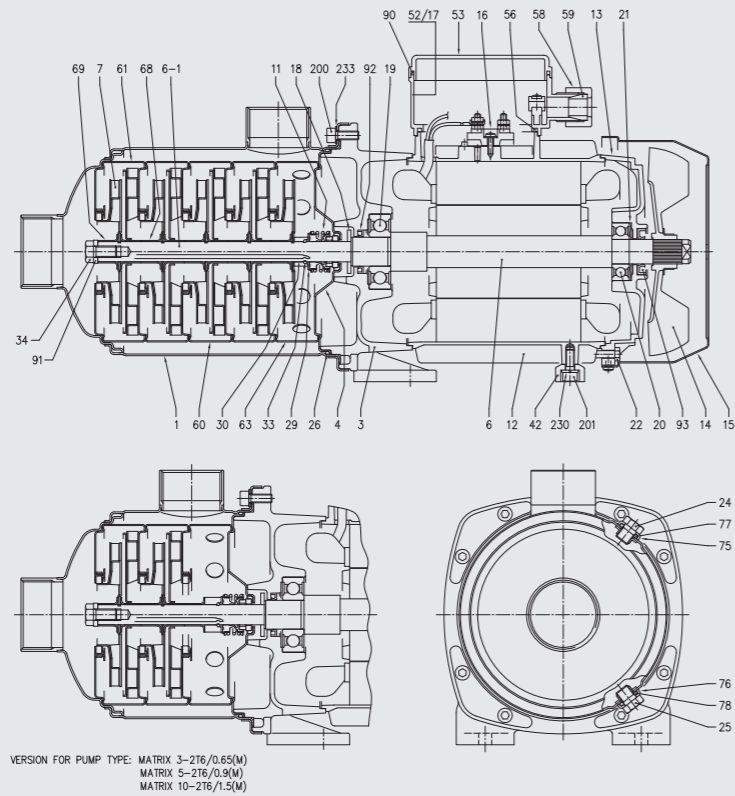
#### MATRIX 18

Impeller diameter = 106,7 mm

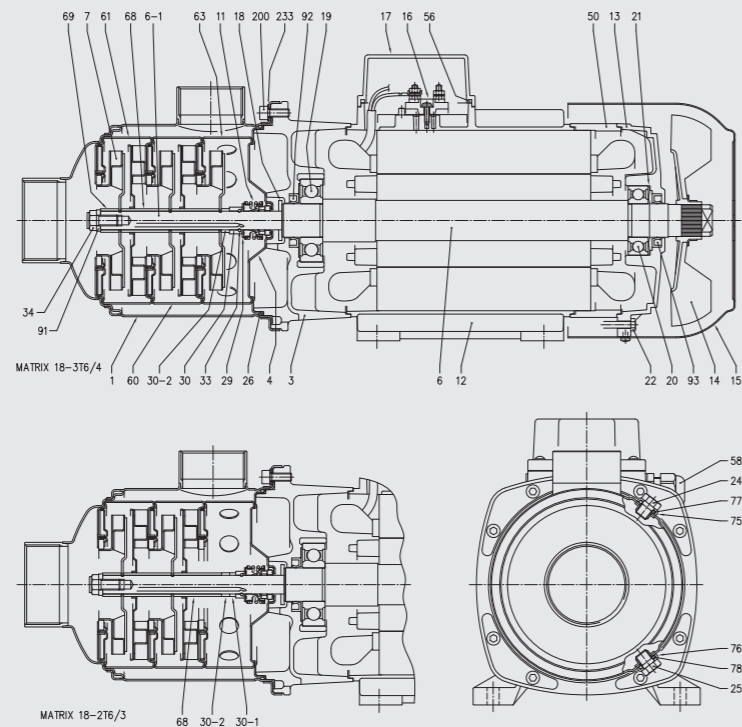


Rotation speed ~3500 min<sup>-1</sup>  
According to standard ISO 9906 annex A

#### MATRIX 3-5-10



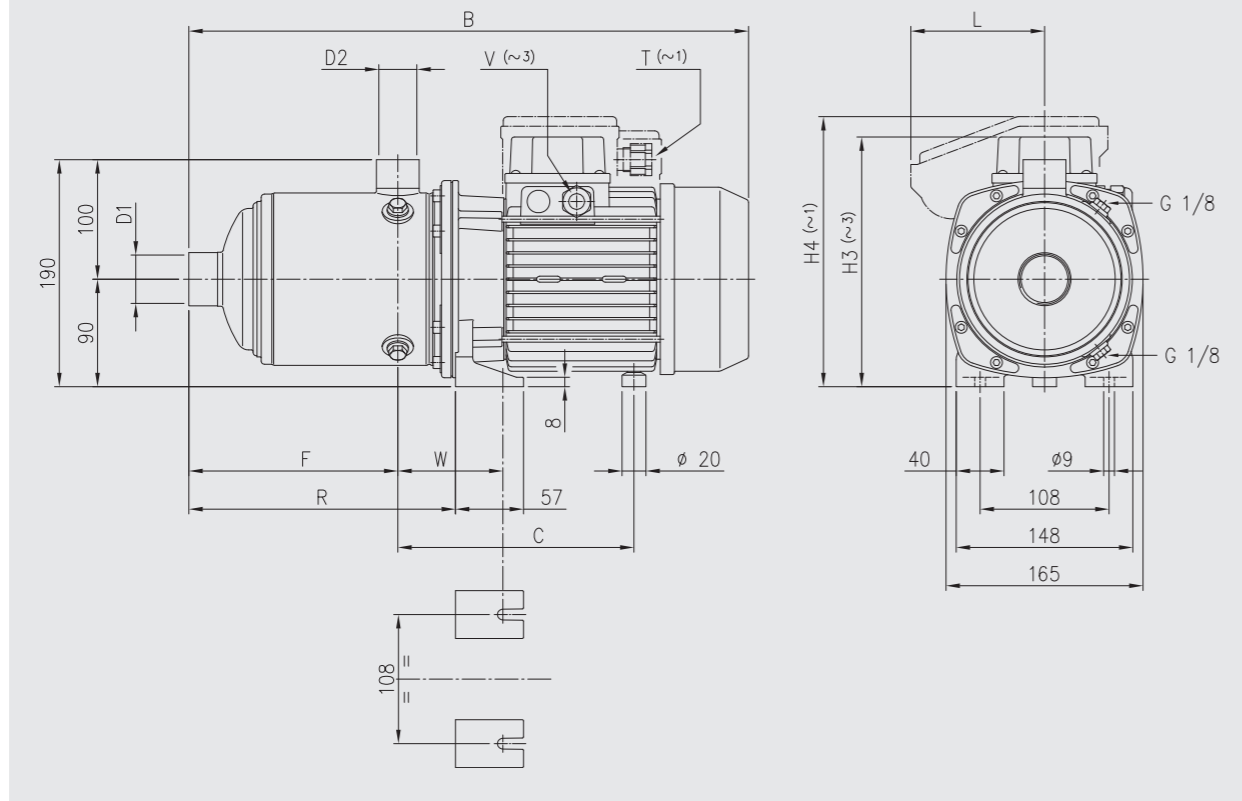
#### MATRIX 18



N°	PART NAME	MATERIAL	N°	PART NAME	MATERIAL
1	Casing	EN 1.4301 (AISI 304)	52	Capacitor box [4]	Polypropylene
3	Bracket	EN AB-AISI11Cu2(Fe)	53	Cover box [4]	Polypropylene
4	Casing cover	EN 1.4301 (AISI 304)	56	Box gasket	NBR
6	Shaft with rotor	-	58	Ring nut	-
6-1	Pump Shaft	EN 1.4301 (AISI 304)	59	Conic gasket [4]	NBR
7	Impeller	EN 1.4301 (AISI 304)	60	Intermediate casing	EN 1.4301 (AISI 304)+PTFE
11	Mechanical seal	Ceramic/Carbon/EPDM	61	Intermediate casing (suction)	EN 1.4301 (AISI 304)+PTFE
12	Motor frame with stator	-	63	Intermediate casing (discharge)	EN 1.4301 (AISI 304)+PTFE
13	Motor cover	Aluminium	68	Shaft sleeve (intermediate)	EN 1.4301 (AISI 304)
14	Fan	Polyamide	69	Impeller spacer	EN 1.4301 (AISI 304)
15	Fan cover	Fe P04 Zinc-coated	75	Washer (plug)	EN 1.4301 (AISI 304)
16	Terminal board	-	76	Washer (plug)	EN 1.4301 (AISI 304)
17	Terminal box cover [2]	Aluminium	77	O-ring	EPDM
18	Splash ring	NBR	78	O-ring	EPDM
19	Bearing	-	90	Cover box gasket [4]	NBR
20	Bearing	-	91	Shaft washer	EN 1.4301 (AISI 304)
21	Adjusting ring	Steel C70	92	Leap seal	0.65-0.75-0.9 kW 1.3-1.5-2.2 kW 3-4 kW
22	Tie rod	Fe 42 Zinc-coated	93	Leap seal	0.65-0.75-0.9 kW 1.3-1.5-2.2 kW 3-4 kW
24	Plug	EN 1.4301 (AISI 304)	200	Screw	EN 1.4301 (AISI 304)
25	Plug	EN 1.4301 (AISI 304)	201	Screw	Steel 8.8 strenght class ISO 898/1
26	O-ring	EPDM	230	Washer	Steel C70
29	Washer	EN 1.4301 (AISI 304)	233	Plate	EN 1.4301 (AISI 304)
30	Ring holder	EN 1.4301 (AISI 304)			
30-1	Shaft sleeve (adjustment)	EN 1.4301 (AISI 304)			
30-2	Shaft sleeve (adjustment)	EN 1.4301 (AISI 304)			
33	Ring	EN 1.4301 (AISI 304)			
34	Screw	EN 1.4301 (AISI 304)			
42	Foot	Aluminium			
50	Motor spacer [3]	Aluminium			

[2] Only for three-phase  
 [3] Only for 10-5T6/4 and 18-3T6/4  
 [4] Only for single-phase

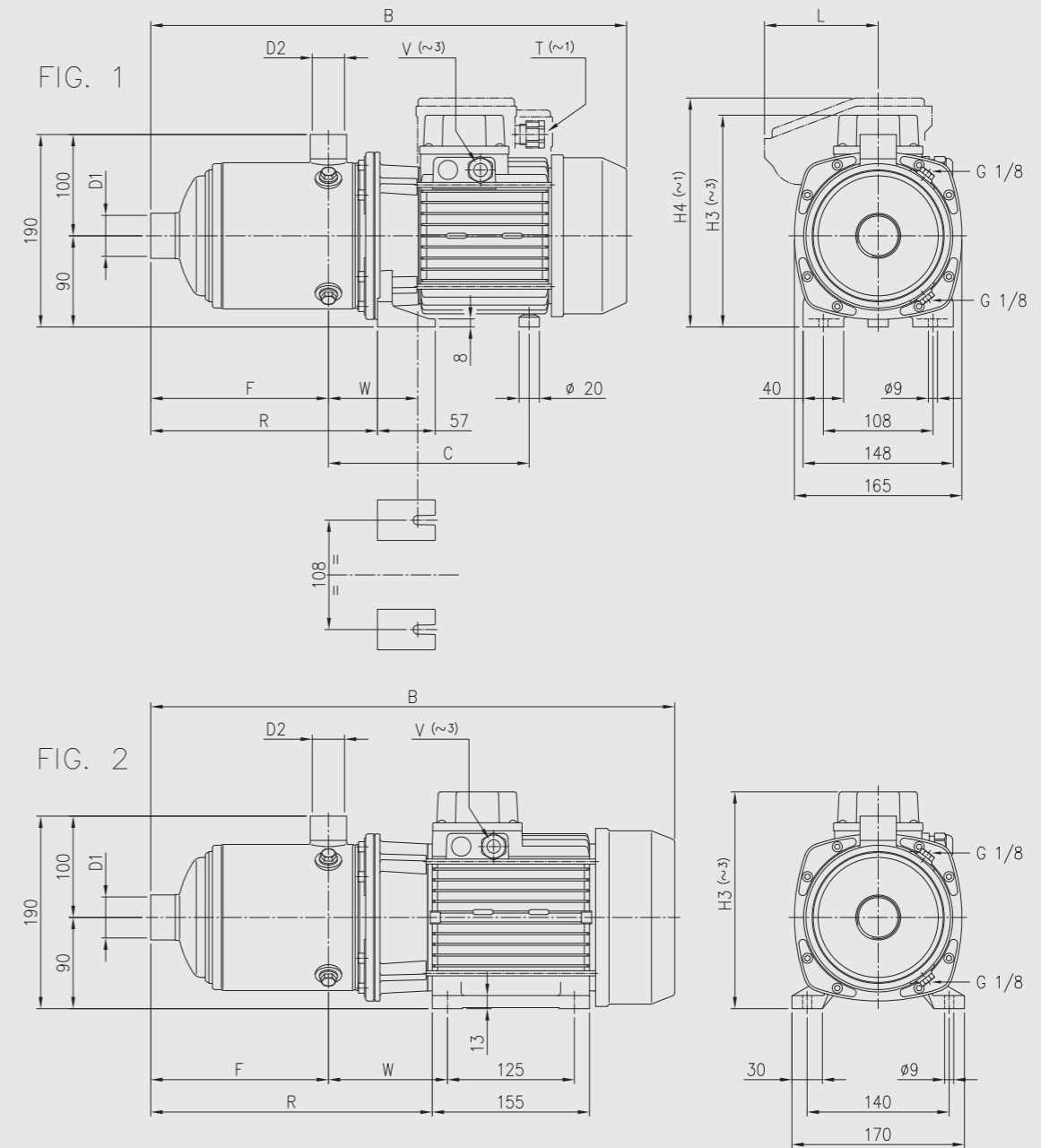
#### MATRIX 3



#### DIMENSIONAL TABLE

Pump type	Dimensions (mm)												Weight (kg)
	D1	D2	B	C	F	H3 (~3)	H4 (~1)	L	R	T (~1)	V (~3)	W	
MATRIX 3-2T6/0.65M	1"	1"	360	171	103	-	200	86,5	151,5	Pg11	-	88÷97	9,8
MATRIX 3-2T6/0.65	1"	1"	360	171	103	192	-	-	151,5	-	Pg11	88÷97	9,7
MATRIX 3-3T6/0.9M	1"	1"	360	171	103	-	219	106	151,5	M20x1,5	-	88÷97	11,7
MATRIX 3-3T6/0.9	1"	1"	360	171	103	192	-	-	151,5	-	Pg11	88÷97	11,6
MATRIX 3-4T6/1.3M	1"	1"	421	198	127	-	226	112	175,5	M20x1,5	-	88÷97	14,7
MATRIX 3-4T6/1.3	1"	1"	421	198	127	209	-	-	175,5	-	Pg11	88÷97	14,4
MATRIX 3-5T6/1.5M	1"	1"	445	198	151	-	226	112	199,5	M20x1,5	-	88÷97	16
MATRIX 3-5T6/1.5	1"	1"	445	198	151	209	-	-	199,5	-	Pg11	88÷97	15,8
MATRIX 3-6T6/2.2	1"	1"	482	198	175	209	-	-	223,5	-	Pg11	88÷97	18,3

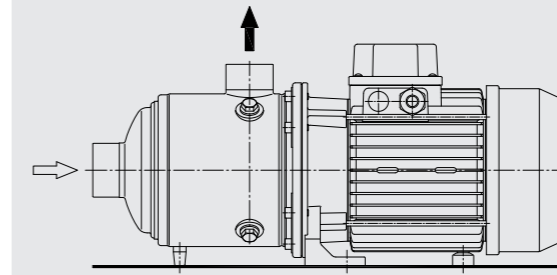
#### MATRIX 5 - 10 - 18



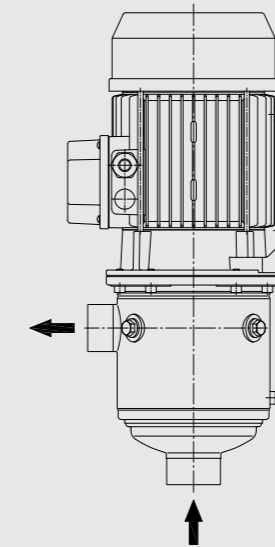
**DIMENSIONAL TABLE**

Pump type	FIG.	Dimensions (mm)												Weight (kg)
		D1	D2	B	C	F	H3 (~3)	H4 (~1)	L	R	T (~1)	V (~3)	W	
MATRIX 5-2T6/0.9M	1	1"¼	1"	360	171	103	-	219	106	151,5	M20x1,5	-	88÷97	11,6
MATRIX 5-2T6/0.9	1	1"¼	1"	360	171	103	192	-	-	151,5	-	Pg11	88÷97	11,5
MATRIX 5-3T6/1.3M	1	1"¼	1"	397	198	103	-	226	112	151,5	M20x1,5	-	88÷97	14
MATRIX 5-3T6/1.3	1	1"¼	1"	397	198	103	209	-	-	151,5	-	Pg11	88÷97	13,8
MATRIX 5-4T6/2.2	1	1"¼	1"	434	198	127	209	-	-	175,5	-	Pg11	88÷97	16,7
MATRIX 5-5T6/2.2	1	1"¼	1"	458	198	151	209	-	-	199,5	-	Pg11	88÷97	16,9
MATRIX 5-6T6/3	2	1"¼	1"	517	-	175	214	-	-	277,5	-	Pg13,5	117,5	20,1
MATRIX 10-2T6/1.5M	1	1"½	1"¼	416	202	118	-	226	112	170,5	M20x1,5	-	92÷101	14,8
MATRIX 10-2T6/1.5	1	1"½	1"¼	416	202	118	209	-	-	170,5	-	Pg11	92÷101	14,6
MATRIX 10-3T6/2.2	1	1"½	1"¼	429	202	118	209	-	-	170,5	-	Pg11	92÷101	16,3
MATRIX 10-4T6/3	2	1"½	1"¼	494	-	148	214	-	-	254,5	-	Pg13,5	121,5	20,4
MATRIX 10-5T6/4	2	1"½	1"¼	568	-	178	214	-	-	284,5	-	Pg13,5	121,5	26,2
MATRIX 18-2T6/3	2	2"	1"½	490	-	141	214	-	-	250,5	-	Pg13,5	124,5	19,3
MATRIX 18-3T6/4	2	2"	1"½	534	-	141	214	-	-	250,5	-	Pg13,5	124,5	25,4

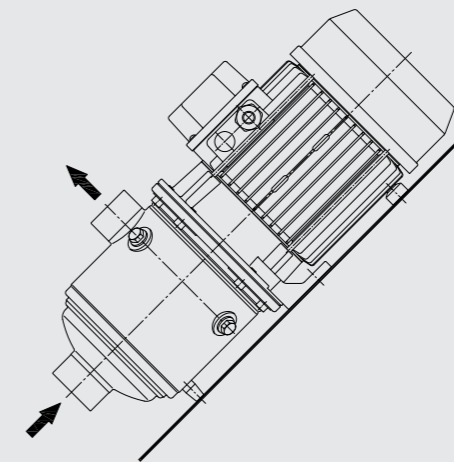
**ROTATION POSSIBILITIES**



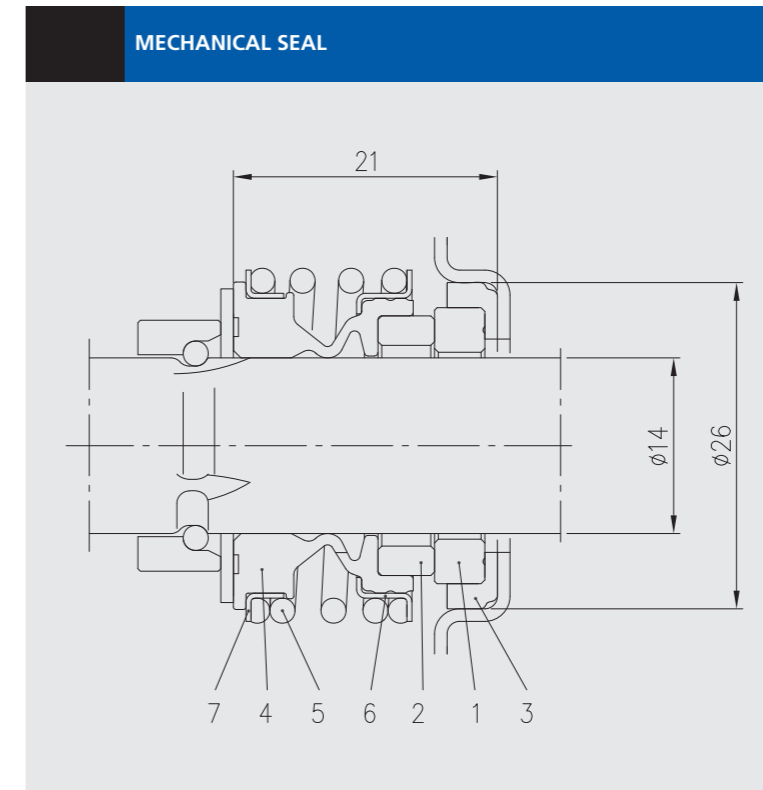
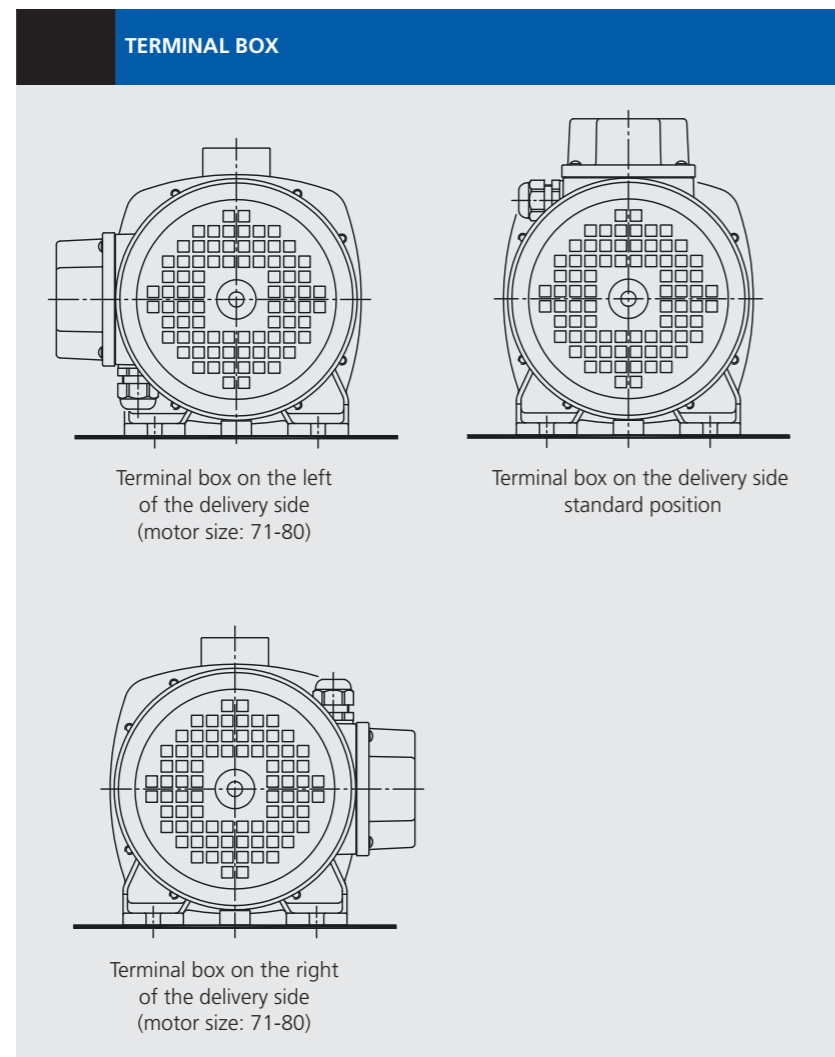
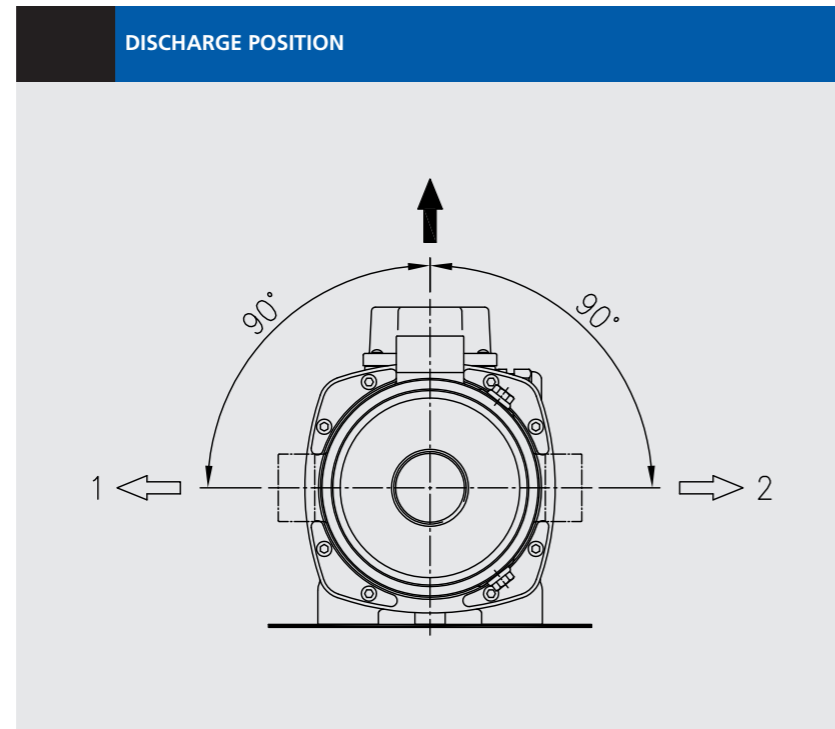
1 Horizontal position



2 Vertical position (please contact our sales network)



3 Inclined position (please contact our sales network)



**MECHANICAL SEAL**

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)