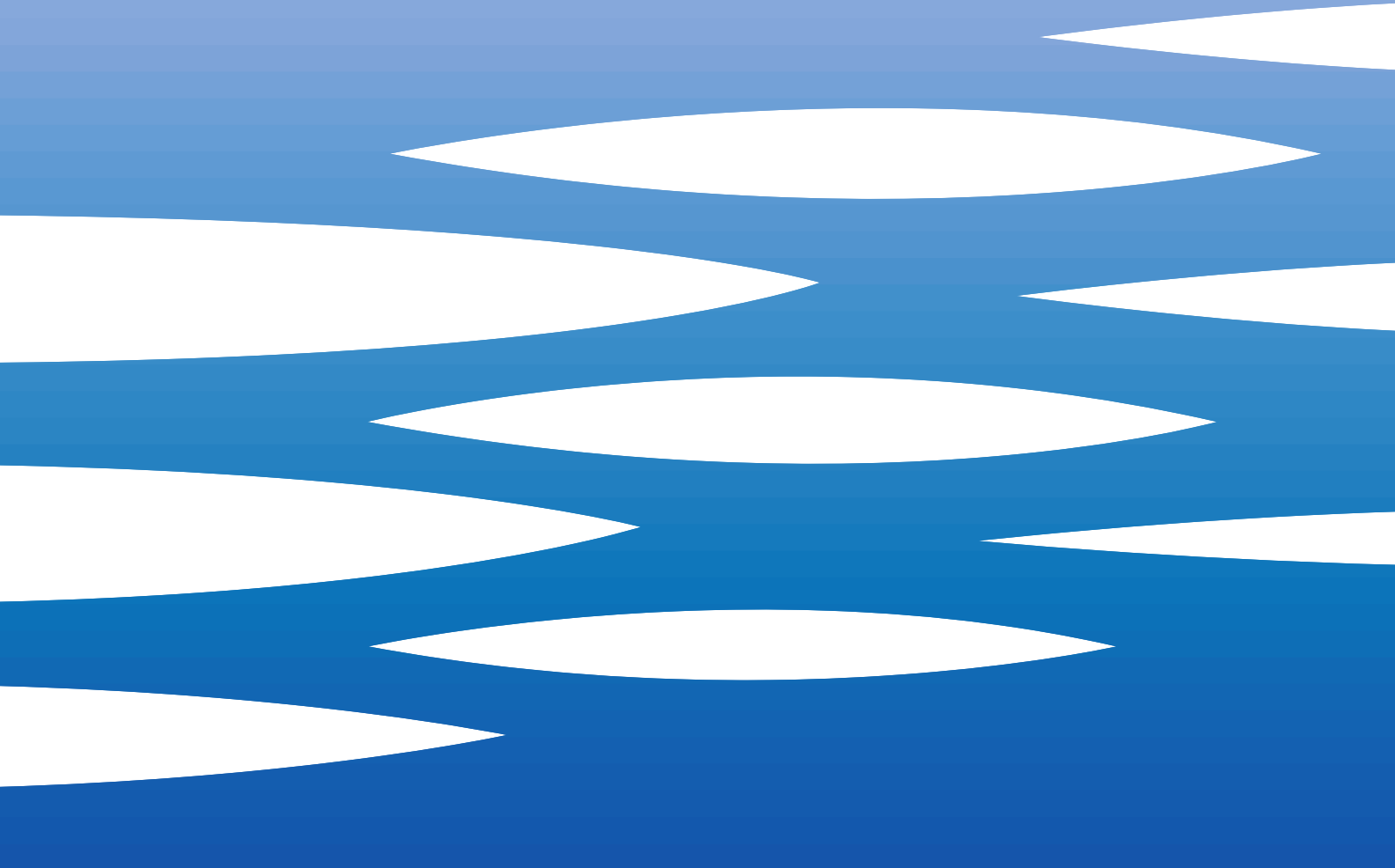


EBARA



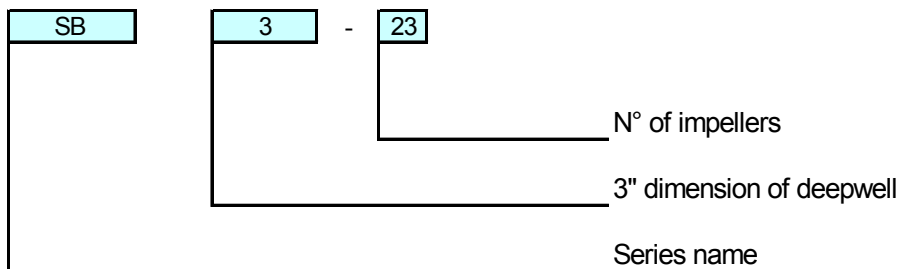
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OIL FILLED MOTOR – CABLE SELECTION	500

PUMP		
Liquid Handled	Type of liquid	Clean water
	Temperature [°C]	Maximum 30
	Sand content	Maximum : 50 parts per million
	Chlorine ion density	Maximum : 500 parts per million
Construction	Impeller	Closed centrifugal type
	Bearing	Sleeve type - stainless steel / rubber
Pipe connection	Suction	N/A
	Discharge	G 1" UNI ISO 228
Material	Impeller	PPO mod.glass + fibre reinforced
	Intermediate casing	PPO mod.glass + fibre reinforced
	Diffuser plate	PPO mod.glass + fibre reinforced
	Suction casing	EN 1.4301 (Aisi 304)
	Discharge casing	EN 1.4301 (Aisi 304)
	Shaft	EN 1.4105 (AISI 430 F)
	Valve	PPO mod.glass + fibre reinforced
Strain	EN 1.4016 (AISI 430 2B)	
Applicable standard of test		ISO 9906 Annex A

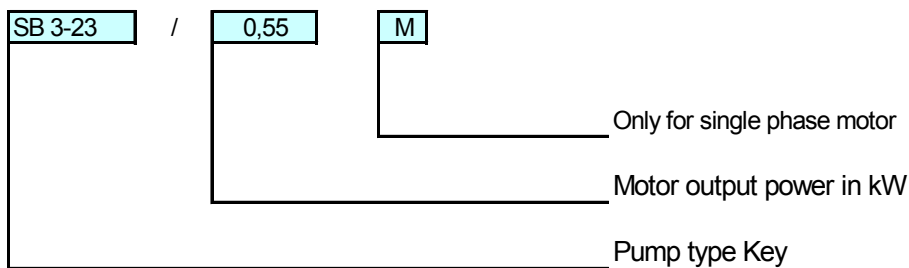
MOTOR			
Type	Submersible oil filled (type O) 3"		
		Single phase	Three phase
Power rating	[kW]	0.37÷,075	0.37÷1,1
	[HP]	0.50÷1,0	0.50÷1,5
No. of Poles	2		
Rated speed	Refer to each characteristic performance rotation speed as rated speed		
Insulation class	F		
Protection degree	IP 58		
Maximum immersion	[m]	60	
Starts / hours	30		
Start type	Direct on line		
Frequency	[Hz]	50 Hz	
Voltage	[V]	230(+6-10%)	400(+6-10%)
Capacitor for start and run	Fitted in starter box		-
Over load protection	Fitted in starter box		Provided by the user
Sealing liquid	Oil type: Marcol 82 (Esso)		
Motor bracket	Cast iron with nickel plate		
Casing material	EN 1.4301 (AISI 304)		
Power cable	material	EPDM/Cross Seald Polyethylene	
	size	[mm ²]	4x1.5
	lenght	[m]	L=1.75
Flange mount	NEMA standard		

SELECTION CHART TYPE KEY-TYPE PUMP

50Hz



TYPE KEY - Pump with motor



Pump Type	Motor size	kW	HP	Q = Capacity									
				l/min	0	10	15	20	25	30	35	40	45
				m ³ /h	0	0,6	0,9	1,2	1,5	1,8	2,1	2,4	2,7
				H = Total manometric head meters									
SB 3-15	3"	0,37	0,50	46	41,5	39	36,2	32,7	28,2	22,7	16,5	9,8	
SB 3-23		0,55	0,75	70,5	63,5	60	55,5	50	43,5	34,7	25,1	15	
SB 3-30		0,75	1,0	91,5	82,5	78	72,5	65,5	56,5	45,5	32,7	19,5	
SB 3-45		1,1	1,5	135,5	122	115	107	96,5	83,5	67	48,5	28,8	

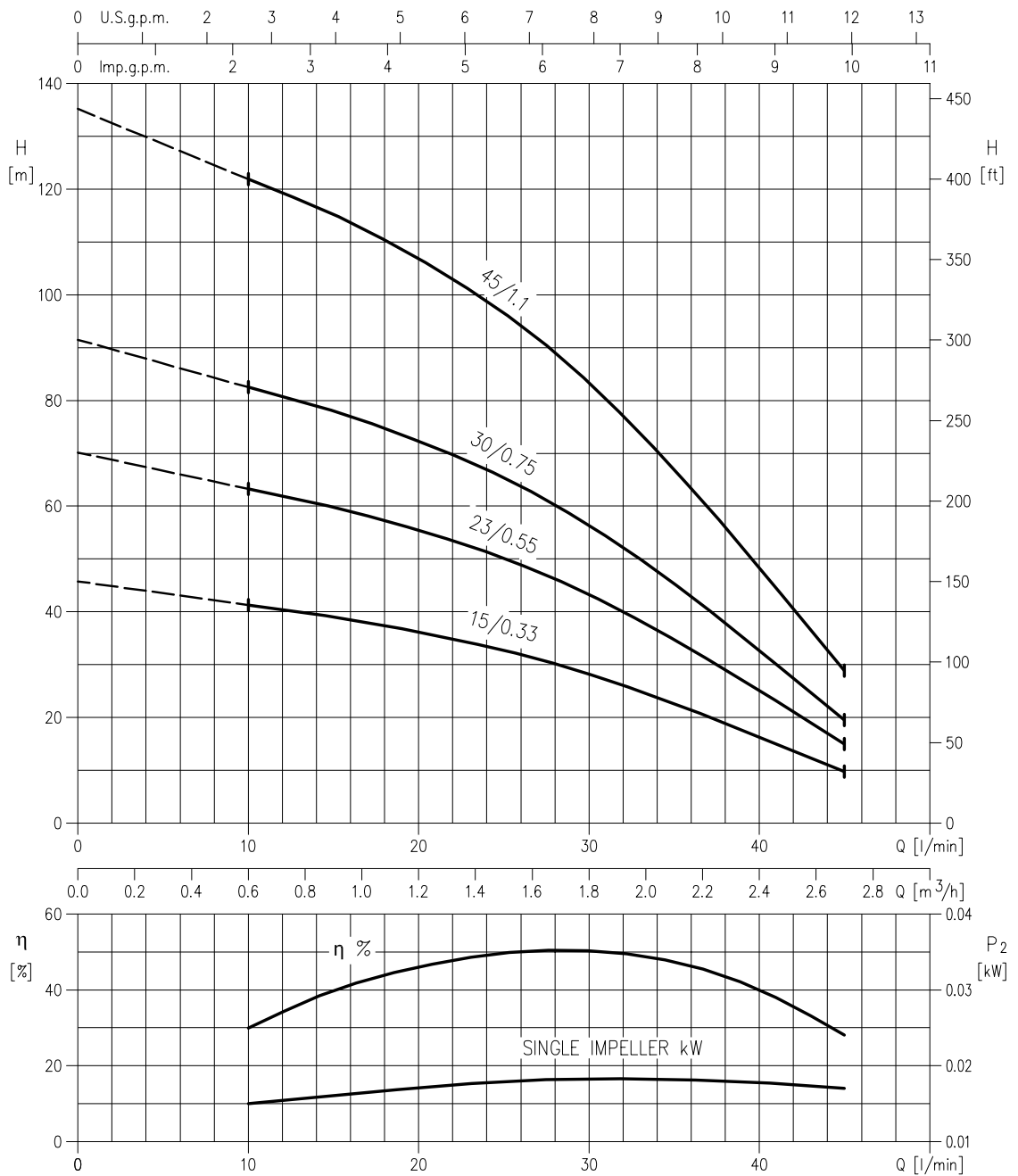
PERFORMANCE CURVES

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

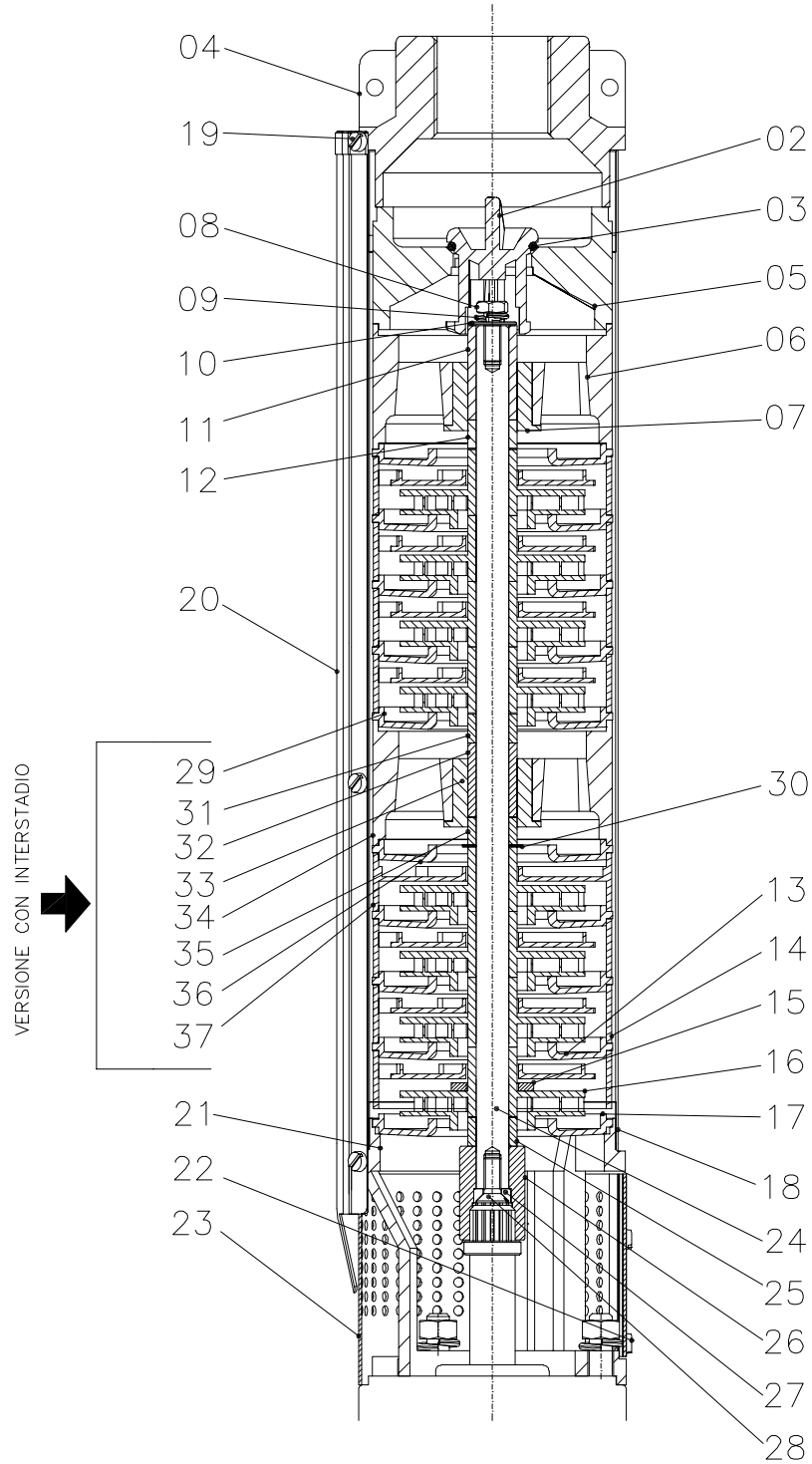
- ◆ Tolerances according to ISO 9906 Annex A
- ◆ The curves refer to effective speed of asynchronous motors at 50 Hz
- ◆ Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of $\nu = 1 \text{ mm}^2/\text{s}$ (1 cSt)
- ◆ The continuous curves indicate the 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
 - P₂ = pump power input (shaft power)
 - η = pump efficiency

PERFORMANCE CURVE

50 Hz



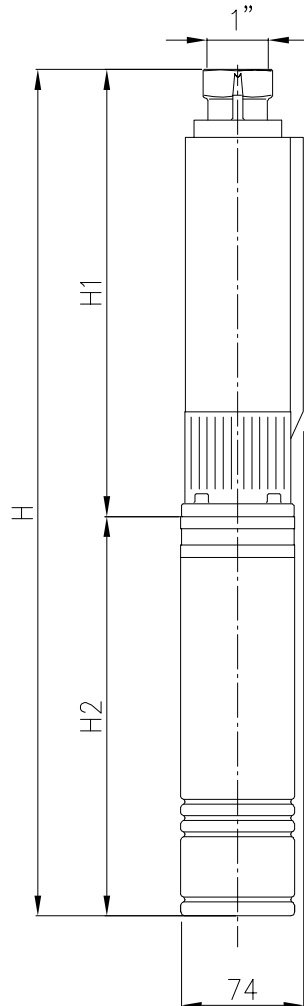
Rotation speed $\approx 2800 \text{ min}^{-1}$
 Applicable standard of test : ISO 9906 Annex A



CONSTRUCTIONS – Sectional view table

50 Hz

Pos.	Q.tà	Description	Material
1	1	Plug	PVC
2	1	Valve	POM Polyacetals
3	1	O-Ring	NBR
4	1	Discharge casing	EN 1.4301 (AISI 304)
5	1	Valve seat	PPO mod. + G.F.
6	1	Bearing seat	PPO mod. + G.F.
7	1	Bearing	PUR Polyurethane
8	1	Screw	EN 1.4301 (AISI 304)
9	1	Washer	EN 1.4301 (AISI 304)
10	1	Washer	EN 1.4401 (AISI 316)
11	1	Bearing	EN 1.4401 (AISI 316)
12	1	Spacer	PPO mod. + G.F.
13	1	Diffuser plate	POM Polyacetals
14	n	Diffuser	POM Polyacetals
15	1	Washer	EN 1.4301 (AISI 304)
16	n	Impeller	PPO mod. + G.F.
17	n	Diffuser plate	POM Polyacetals
18	1	Pump casing	EN 1.4301 (AISI 304)
19	4	Screw	EN 1.4301 (AISI 304)
20	1	Cable cover	EN 1.4016 (AISI 430)
21	1	Suction casing	EN 1.4301 (AISI 304)
22	2	Screw	EN 1.4301 (AISI 304)
23	1	Strainer	EN 1.4016 (AISI 430)
24	1	Shaft	EN 1.4105 (AISI 430F)
25	1	Spacer	PPO mod. + G.F.
26	1	Coupling	EN 1.4401 (AISI 316)
27	1	Washer	EN 1.4401 (AISI 316)
28	1	Screw	EN 1.4301 (AISI 304)
29	n	Diffuser plate	POM Polyacetals
30	n	Adjusting ring	EN 1.4301 (AISI 304)
31	1	Spacer	PPO mod. + G.F.
32	1	Sleeve	EN 1.4401 (AISI 316)
33	1	Bearing	PUR Polyurethane
34	1	Bearing seat	PPO mod. + G.F.
35	1	Spacer	PPO mod. + G.F.
36	n	Diffuser plate	POM Polyacetals
37	n	Diffuser	POM Polyacetals



Pump type	Power		Pump without motor H1 [mm]	Pump with 1-phase motor		Pump with 3-phase motor		Pump weight Kg	Weight of pump with motor	
	kW	HP		H2 [mm]	H [mm]	H2 [mm]	H [mm]		1 phase Kg	3 phase Kg
SB 3-15	0,37	0,50	580	377	957	377	957	3,3	9,3	9,3
SB 3-23	0,55	0,75	780	397	1177	377	1157	4,4	10,8	10,5
SB 3-30	0,75	1	1000	416	4116	397	1397	5,6	12,4	12
SB 3-45	1,1	1,5	1380	/	/	416	1796	7,6	/	14,4

MOTOR 3"

	Output		Input [kW]	Volt	IN [A]	IA [A]	Efficiency [%]	Power factor	Ts/Tn	µF
	kW	HP								
1-phase	0,37	0,5	0,72	230	3,75	8,8	51	0,96	0,58	16
	0,55	0,75	1		4,5	12,2	55	0,98	0,54	20
	0,75	1	1,31		5,85	14,5	57	0,98	0,55	25
3-phase	0,37	0,5	0,72	400	2	8	51	0,71	2,1	
	0,55	0,75	0,98		2,1	9,1	56	0,75	2	
	0,75	1	1,19		2,5	11,7	63	0,75	2	
	1,1	1,5	1,75		3,2	14	63	0,75	2	

EXAMPLE : MOTOR 0.75 kW 230 V CABLE LENGTH 70 m - 4x2,5 mm²

Single phase

POWER		CABLE TYPE AND MAXIMUM LENGTH (*)							
kW	HP	4x1	4x1,5	4x2,5	4x4	4x6	4x10	4x16	
0,37	0,50	50	75	125	-	-	-	-	
0,55	0,75	38	57	95	152	-	-	-	
0,75	1	30	45	75	120	174	-	-	

Three phase

POWER		CABLE TYPE AND MAXIMUM LENGTH (*)							
kW	HP	4x1	4x1,5	4x2,5	4x4	4x6	4x10	4x16	
0,37	0,50	240	-	-	-	-	-	-	
0,55	0,75	164	246	-	-	-	-	-	
0,75	1	133	200	233	-	-	-	-	
1,1	1,5	97	146	244	390	-	-	-	