

EBARA

	Page
- SPECIFICATIONS	200
SELECTION CHART	201
TYPE KEY AND CURVE SPECIFICATIONS	202
PERFORMANCE CURVE	203
- CONSTRUCTIONS	300
SECTIONAL VIEW DRAWING	300
SECTIONAL VIEW TABLE	301
- DIMENSIONS AND WEIGHT	400
PUMP	400
DIMENSIONS TABLE	400
- TECHNICAL DATA	500
OIL FILLED MOTOR	500
OIL FILLED MOTORS CABLE SELECTION	500

SPECIFICATIONS

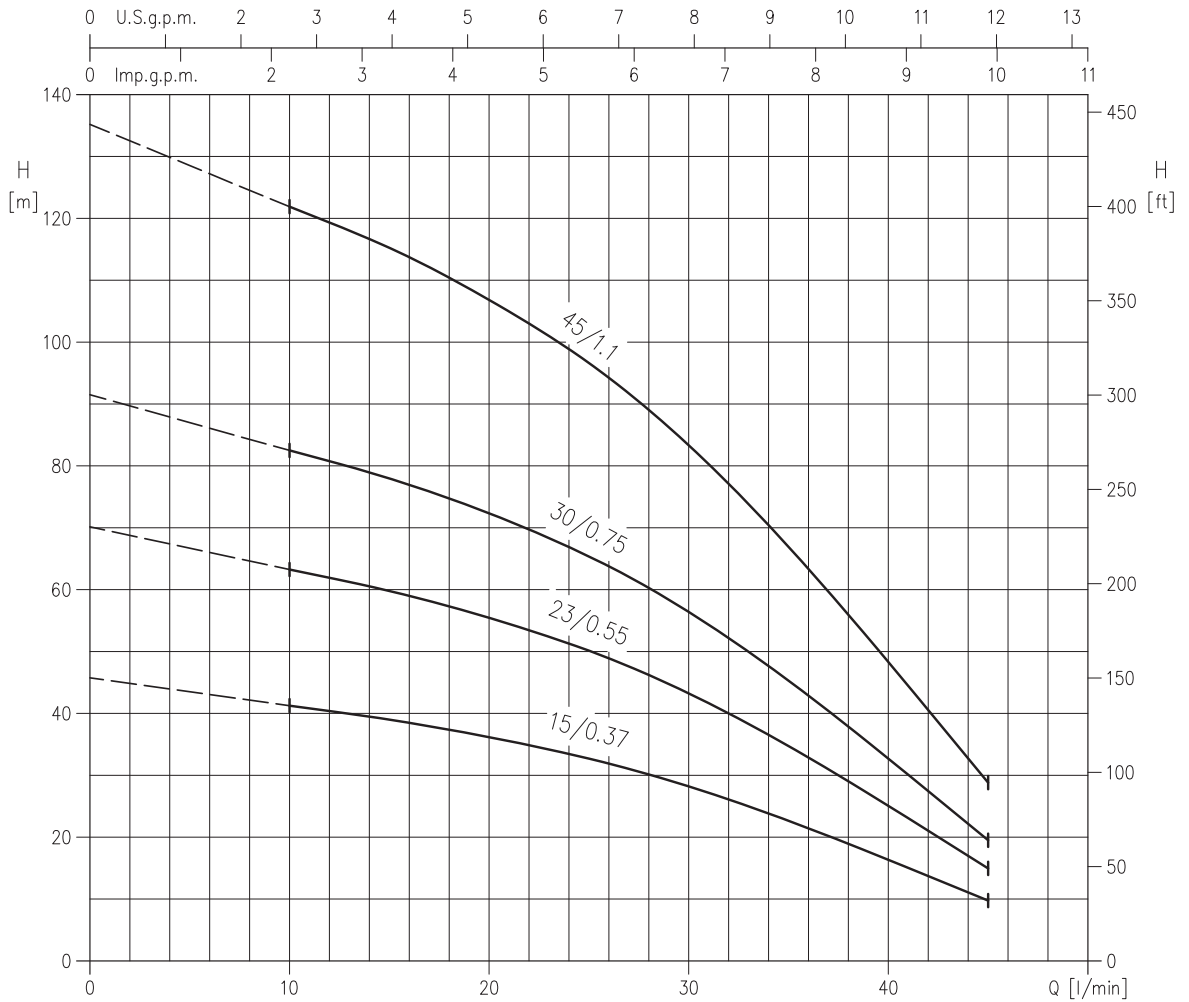
50Hz

Rev. B

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	G1 " - UNI ISO 228
Material	Impeller	PPO mod. glass + fibre reinforced
	Intermediate casing	POM Polyacetals
	Diffuser plate	POM Polyacetals
	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"	
Manufacturer	Sumoto	
	Single phase	Three phase
Power rating	[kW]	0.37÷0.75
	[HP]	0.5÷1
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)	
material	EPDM/Cross Seald Polyethylene	
Power cable size [mm ²]	4x1.5	
	length [m]	L=1.75
Flange mount	NEMA standard	

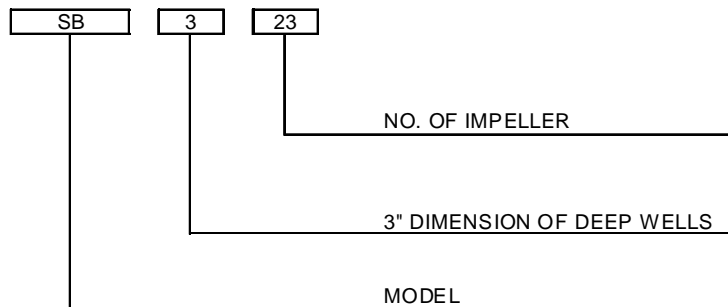
SB 3



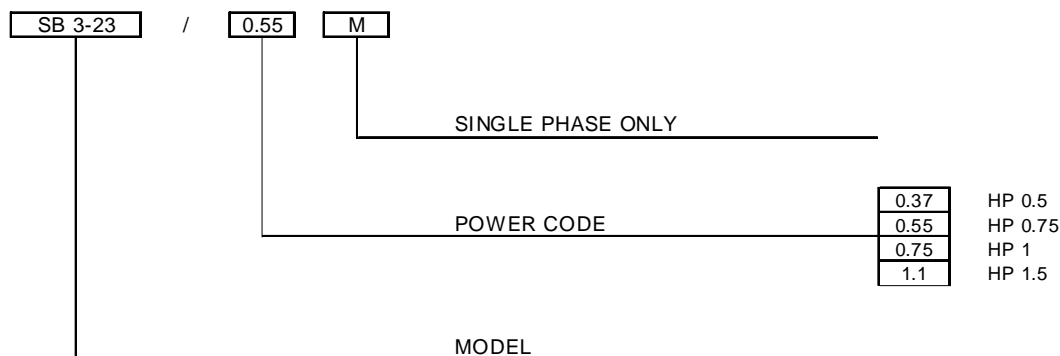
Pump type	Power		Q=Capacity									
	[kW]	[HP]	l/min m ³ /h	0	10	15	20	25	30	35	40	45
SB 3-15	0.37	0.5		46	41.5	39	36.2	32.7	28.2	22.7	16.5	9.8
SB 3-23	0.55	0.75		70.5	63.5	60	55.5	50	43.5	34.7	25.1	15
SB 3-30	0.75	1		91.5	82.5	78	72.5	65.5	56.5	45.5	32.7	19.5
SB 3-45	1.1	1.5		135.5	122	115	107	96.6	83.5	67	48.5	28.8

TYPE KEY:

PUMP WITHOUT MOTOR



PUMP WITH MOTOR



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)

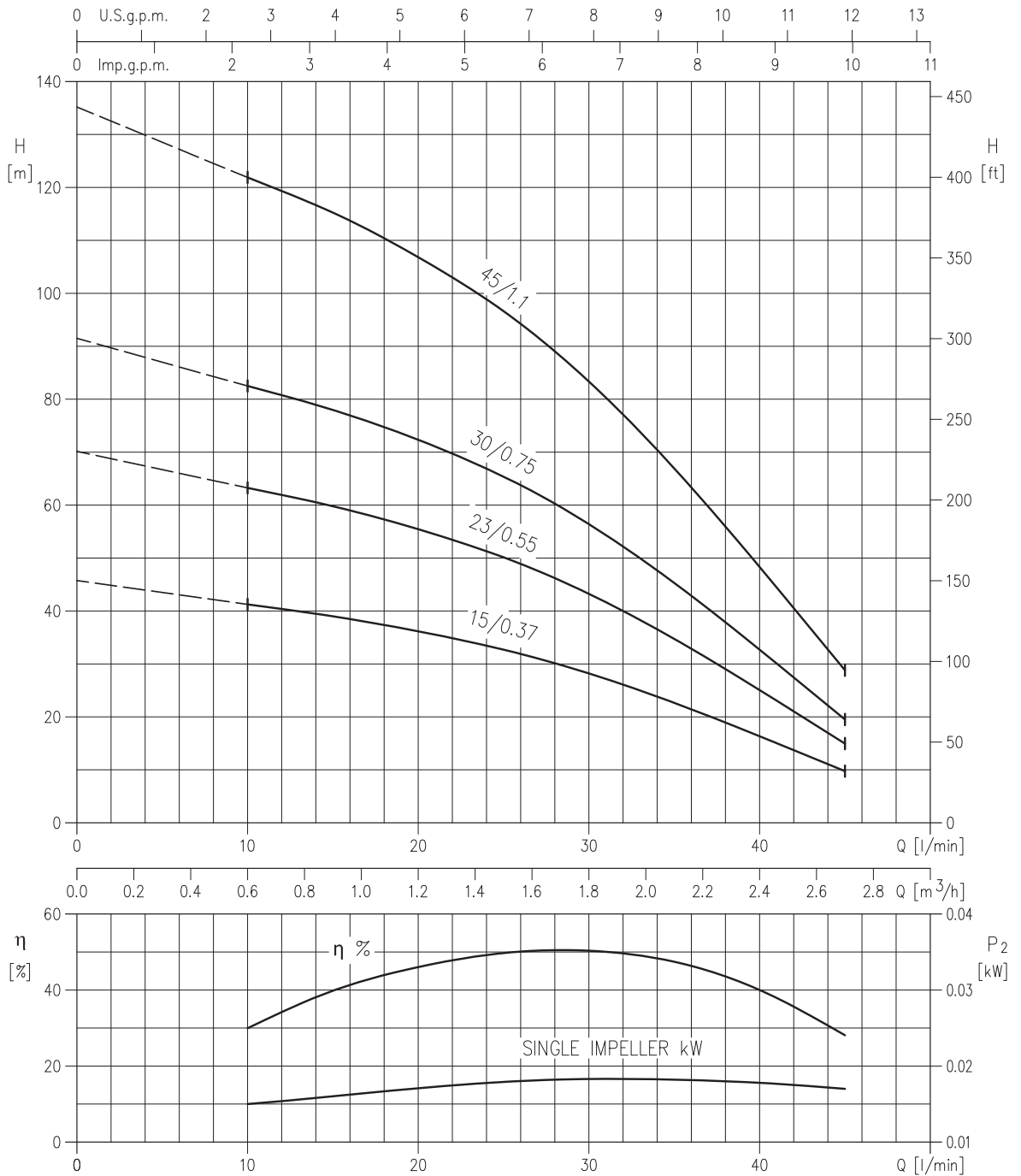
The NPSH curve is an average curve obtained in the same conditions of performance curves.

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.

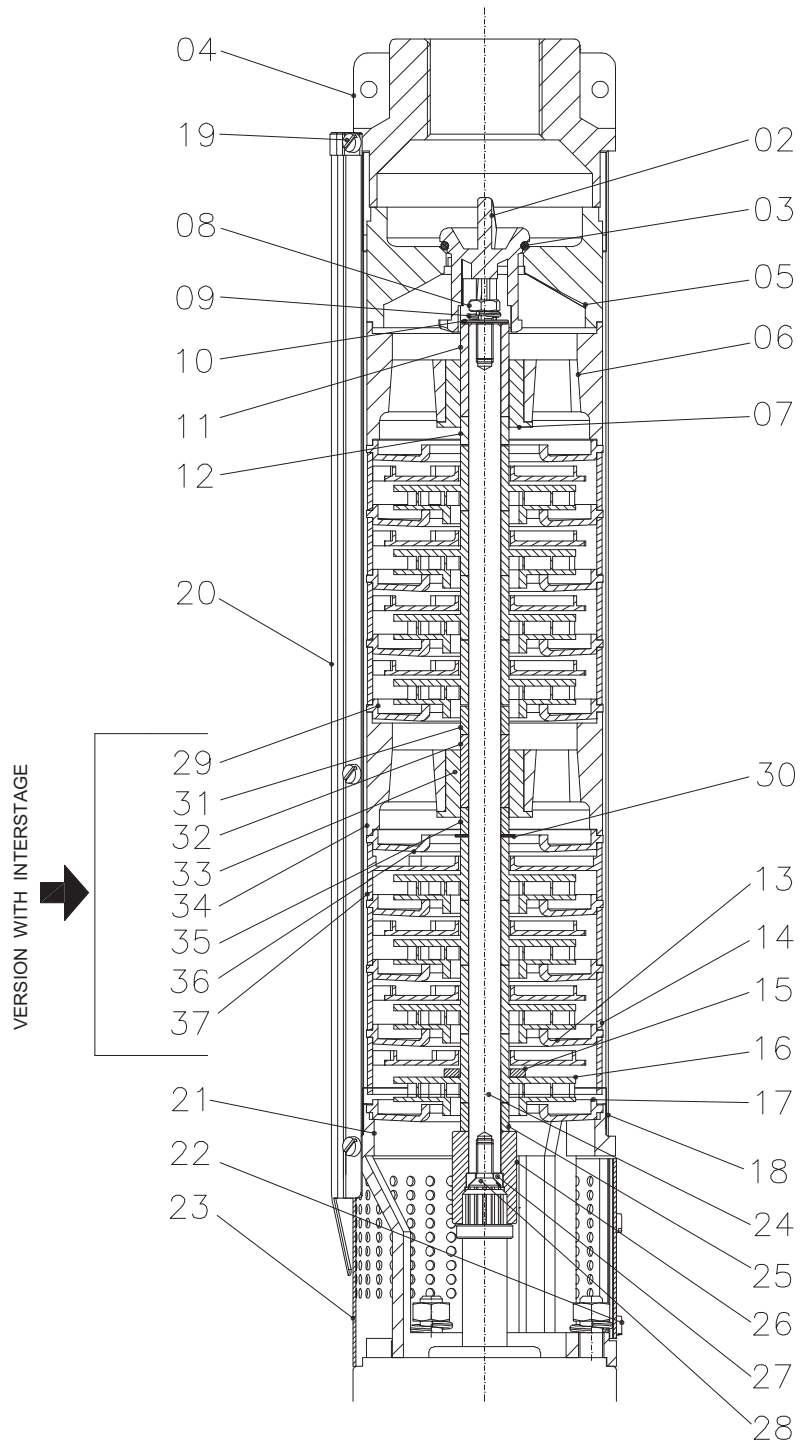
Symbols explanation:

- Q = volume flow rate
- H = total head
- P_2 = pump power input (shaft power)
- η = pump efficiency



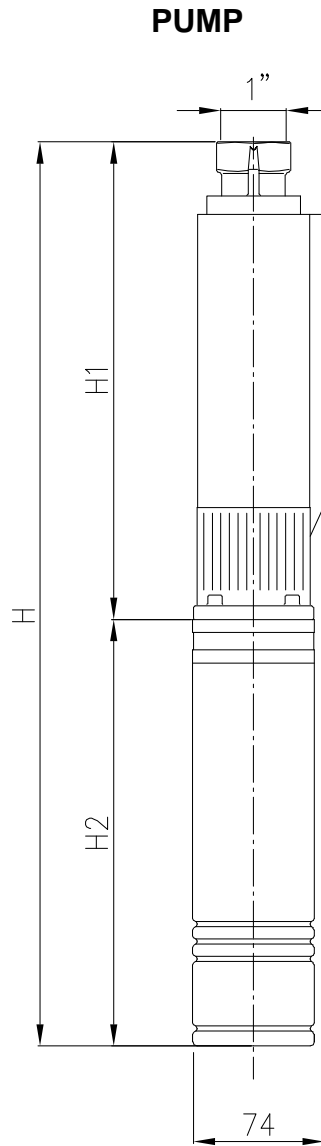
Rotation speed $\approx 2800 \text{ min}^{-1}$
 Applicable standard of test : ISO 9906 Annex A

SECTIONAL VIEW DRAWING



SECTIONAL VIEW TABLE

N°	PART.NAME	MATERIAL	Q.TY
01	Plug	PVC	1
02	Valve	POM Polyacetals	1
03	O-Ring	NBR	1
04	Discharge casing	EN 1.4301 (AISI 304)	1
05	Valve seat	PPO mod. + G.F.	1
06	Bearing seat	PPO mod. + G.F.	1
07	Bearing	PUR Polyurethane	1
08	Screw	EN 1.4301 (AISI 304)	1
09	Washer	EN 1.4301 (AISI 304)	1
10	Washer	EN 1.4401 (AISI 316)	1
11	Bearing	EN 1.4401 (AISI 316)	1
12	Spacer	PPO mod. + G.F.	1
13	Diffuser plate	POM Polyacetals	1
14	Diffuser	POM Polyacetals	n
15	Washer	EN 1.4301 (AISI 304)	1
16	Impeller	PPO mod. + G.F.	n
17	Diffuser plate	POM Polyacetals	n
18	Pump casing	EN 1.4301 (AISI 304)	1
19	Screw	EN 1.4301 (AISI 304)	4
20	Cable cover	EN 1.4016 (AISI 430)	1
21	Suction casing	EN 1.4301 (AISI 304)	1
22	Screw	EN 1.4301 (AISI 304)	2
23	Strainer	EN 1.4016 (AISI 430)	1
24	Shaft	EN 1.4105 (AISI 430F)	1
25	Spacer	PPO mod. + G.F.	1
26	Coupling	EN 1.4401 (AISI 316)	1
27	Washer	EN 1.4401 (AISI 316)	1
28	Screw	EN 1.4301 (AISI 304)	1
29	Diffuser plate	POM Polyacetals	n
30	Adjusting ring	EN 1.4301 (AISI 304)	n
31	Spacer	PPO mod. + G.F.	1
32	Sleeve	EN 1.4401 (AISI 316)	1
33	Bearing	PUR Polyurethane	1
34	Bearing seat	PPO mod. + G.F.	1
35	Spacer	PPO mod. + G.F.	1
36	Diffuser plate	POM Polyacetals	n
37	Diffuser	POM Polyacetals	n



Pump type	Power		Pump without motor		Pump with oil filled motor				Pump weight [Kg]	Weight of pump with motor	
	[kW]	[HP]	H1 [mm]	DNM	single phase H2 [mm]	H [mm]	three phase H2 [mm]	H [mm]		single phase [Kg]	three phase [Kg]
SB 3-15	0.37	0.5	580	G1	377	957	-	-	3.3	9.3	-
SB 3-23	0.55	0.75	780	G1	397	1177	377	1157	4.4	10.8	10.5
SB 3-30	0.75	1	1000	G1	416	4116	397	1397	5.6	12.4	12
SB 3-45	1.1	1.5	1380	G1	-	-	416	1796	7.6	-	14.4

MOTOR DATA

OIL FILLED MOTOR

Power		Hight thrust [N]	Single phase 230 V				Three phase 400 V			
[kW]	[HP]		Input [kW]	IN [A]	IA [A]	Power factor	Input [kW]	IN [A]	IA [A]	Power factor
0.37	0.5	1200	0.72	3.75	8.8	0.96	0.72	2,0	8,0	0.71
0.55	0.75	1200	1	4.5	12.2	0.98	0.98	2.1	9.1	0.75
0.75	1	1200	1.31	5.85	14.5	0.98	1.19	2.5	11.7	0.75
1.1	1.5	1200	-	-	-	-	1.75	3.2	14,0	0.75

OIL FILLED MOTORS CABLE SELECTION

EXAMPLE : MOTOR 0.55 kW 230 V CABLE LENGTH 95 m - 4x2.5 mm2

Single phase 230 V

POWER		CABLE TYPE AND MAXIMUM LENGTH (*)				
[kW]	[HP]	4x1	4x1.5	4x2.5	4x4	4x6
0.37	0.5	50	75	125	-	-
0.55	0.75	38	57	95	152	-
0.75	1	30	45	75	120	174

Three phase 400 V

POWER		CABLE TYPE AND MAXIMUM LENGTH (*)				
[kW]	[HP]	4x1	4x1.5	4x2.5	4x4	4x6
0.37	0.5	240	-	-	-	-
0.55	0.75	164	246	-	-	-
0.75	1	133	200	333	-	-
1.1	1.5	97	146	244	390	-

(*) Maximum cable length with a voltage drop of 3% at 30°C ambient temperature.

If the operating voltage U_i in the installation is different from the nominal voltage U_n , it is possible to calculate the permissible maximum length L_{max} , with the given table length L_{tab} , with the following formula: