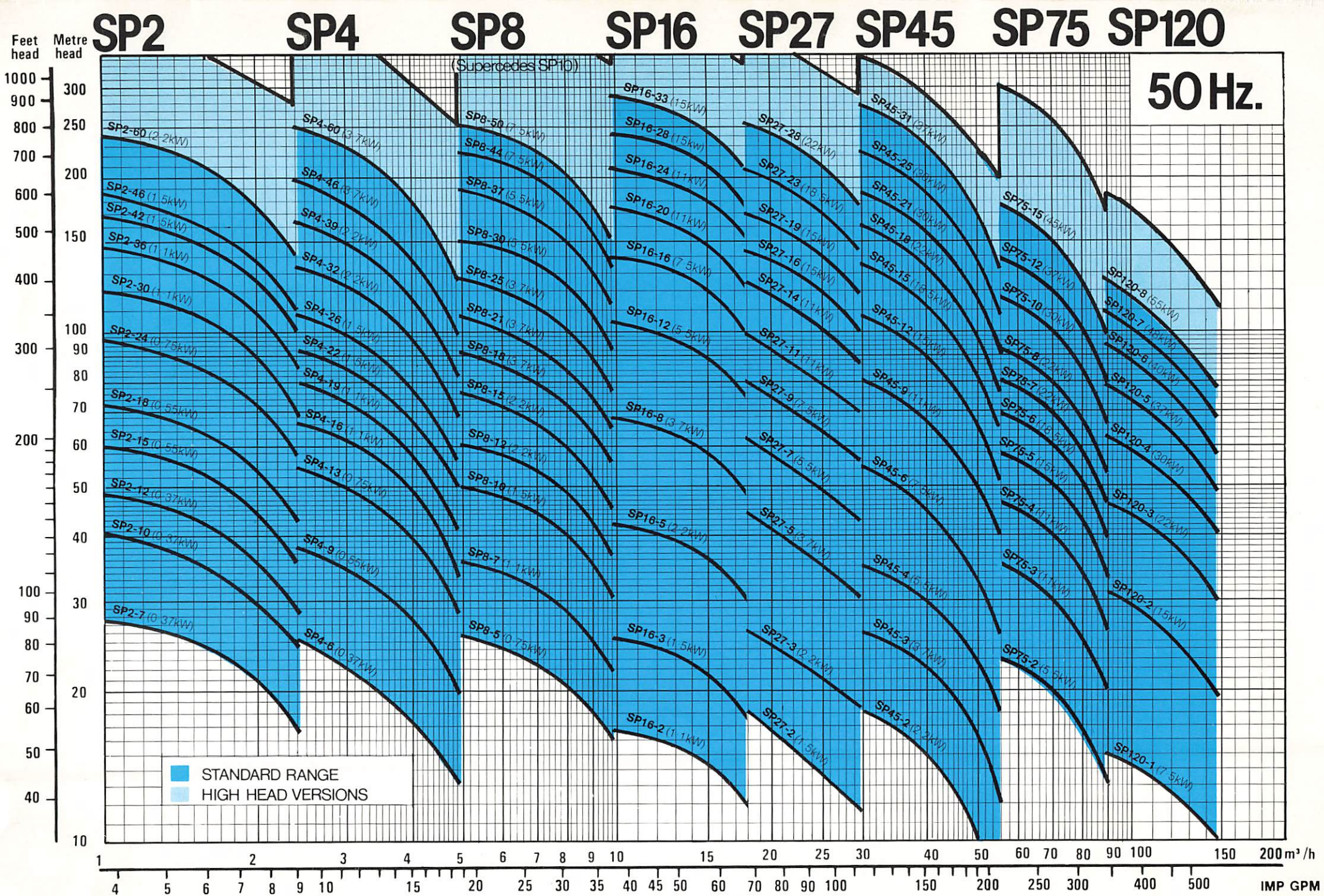


**SP**  
**STAINLESS**  
**STEEL**  
**SUBMERSIBLE**  
**PUMPS**



**GRUNDFOS<sup>®</sup>**





# GRUNDFOS SP PUMPS IN STAINLESS STEEL THE ULTIMATE CHOICE IN ELECTRO- SUBMERSIBLES

HIGH EFFICIENCY  
AND MINIMUM  
MAINTENANCE



**GRUNDFOS**<sup>®</sup>

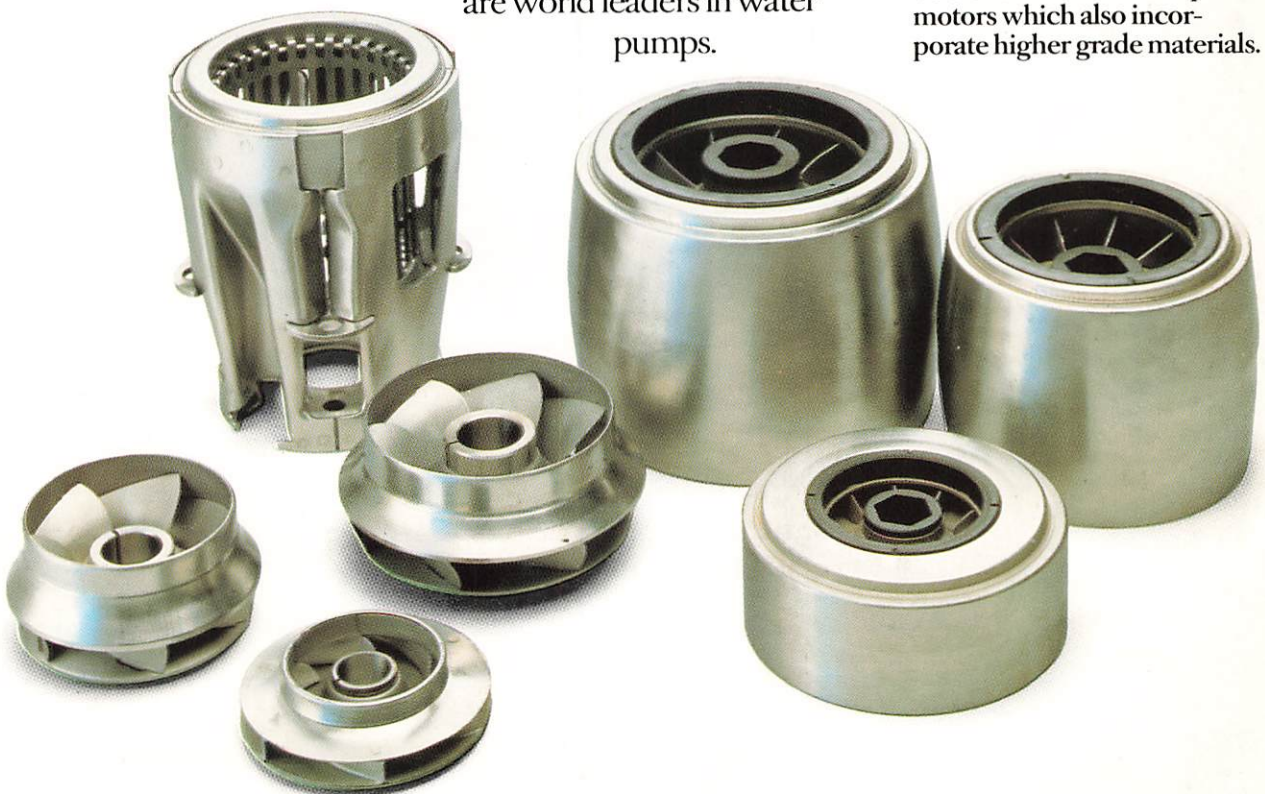
Built to the very highest standards, GRUNDFOS SP stainless steel submersible pumps offer users the dependability and long life so important for borehole water supply. Precision made fabricated stainless steel components offer resistance to corrosion and high pump efficiency. Fabricated impellers provide a low rotating mass, which coupled with high standards of engineering combine to ensure quiet, smooth and vibration-free running.

Rubber is used for impeller neckrings and shaft bearings, providing high resistance to wear, even when the pumped water contains small amounts of sand and other impurities, in suspension. Specialised production techniques coupled with high volume production enables GRUNDFOS to produce top quality components at competitive prices.

Add high efficiency, low power consumption and no routine maintenance—and it's easy to see why GRUNDFOS are world leaders in water pumps.

The GRUNDFOS SP range covers flows from 0.15 to 44 litres/sec. (120 to 34,000 g.p.h.) and Heads up to 300 metres (980 ft.). In most model ranges, special higher head versions are available on request. Pumps are designed to fit a minimum borehole size of 4 in. (See chart for details).

The standard range of SP pumps employs grade 304 stainless steel for most major components, but for applications requiring a higher degree of corrosion resistance (for example salt-laden or brackish water), the SP 'N' version can be specified in which case the components are manufactured from grade 316 stainless steel. SP 'N' versions are fitted with special motors which also incorporate higher grade materials.



## PUMP SELECTION GUIDE

Model	Minimum Borehole Diameter	FLOW RANGE		MAXIMUM HEAD*		Pump Outlet Size
		litres/sec.	GPM	metres	feet	
SP2	4"	0.14-0.7	1.8-9.2	264	865	1¼" BSPF
SP4	4"	0.56-1.5	7.4-19.8	245	800	1½" BSPF
SP8	4"/6"	1.1-3.0	15-40	250	820	2" BSPF
SP16	6"	2.7-5.5	36-73	283	928	2½" BSPF
SP27	6"	5.0-9.2	66-120	250	820	3" BSPF
SP45	6"/8"	8.3-14.4	110-190	274	900	3" OR 4" BSPF
SP75	8"	13.9-25.0	184-330	184	603	4" OR 5" BSPF OR 5" FLANGE
SP120	10"	24.0-44.4	320-586	124	405	5" OR 6" BSPF OR 5" OR 6" FLANGE

\*Higher head versions available upon request (See performance chart)

Whilst stainless steel is used extensively throughout the range, certain SP models incorporate a small number of components in other metals. Please refer to technical data sheets for full details.

**ACCESSORIES** A complete range of starters, including auto-transformer type, and control panels can be supplied which include overload prevention.

### SINGLE PHASE MOTORS

Single phase motors are supplied with a control box. There are two types of control boxes, one for 0.37 to 0.75 kw motors inclusive, type SA-SPM2, and the other for 1.1 to 2.2 kw motors, type SA-SPM3.

#### SA-SPM2 Control Box (0.37 to 0.75 kw)

This consists of a pressure die-cast aluminium housing with a removable lid for access to the electrical connections.

A canister, containing starting relay, starting capacitor and manual reset Klixon overload unit, plugs into the main handling.

#### SA-SPM3 Control Box (1.1 to 2.2) kw

This consists of an extruded aluminium housing with a removable lid and a pull-out base plate. On the base plate are mounted a starting relay, starting capacitor, operating capacitor and two Klixon overload units.

The above control boxes are essential for motor operation and should be used in conjunction with either a manual On/Off switch or an automatically controlled starter, as required.

NOTE: 3-phase motors should be protected against over current, under voltage, by a high quality starter containing an overload unit which trips in under 10 seconds with a locked rotor. It must also incorporate a 'single-phasing' protection device.

### Control Boxes

MOTOR kW	WEIGHT kg	HEIGHT mm.	WIDTH mm.	DEPTH mm.
0.37	2.6 kg.	260	160	118
0.55				
0.75				

#### SA-SPM2 Control Box



#### SA-SPM3 Control Box



**CABLE JOINTS** Each pump is supplied complete with a cable joint kit. When drop cable is ordered with the pump, the joint will be made at our Works, before despatch.

On pumps fitted with 4in. motors, a waterproof plug-in cable connector kit is supplied, allowing pump and drop cable to be detached instantly for servicing or inspection. A kit containing screwed connectors, tubing and resin mixture is supplied for pumps fitted with larger motors, providing a simple, safe and waterproof joint.

**CABLE:** Neoprene sheathed 3 and 4 core cables are available, ranging in size from 1.5-25mm<sup>2</sup>. **CABLE STRAPPING:** Consists of 7.5 metre length of punched rubber strapping and 16 stainless steel buttons and is ideal for securing the drop cable, water level indicator tube and electrode cables to the rising main. SP submersible pumps must be completely submerged during operation, it is recommended that a low level cut-out electrode is fitted in cases where low water level, in a borehole or well, is a problem.

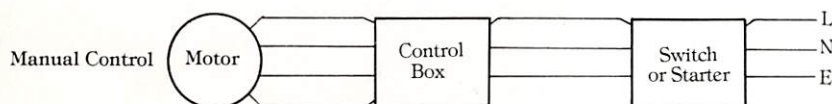
In cases where a pump is to be installed vertically or horizontally in a lake, sump or large diameter well, a full pipe shroud must be fitted over pump and motor, so that all the pumped water enters the motor end of the shroud and passes over the motor before entering the pump inlet. This arrangement ensures that the motor receives a constant flow of cooling water.

**HORIZONTAL OPERATION** Pumps fitted with 4 in. or 6 in. motors may be operated horizontally and 8in./10in. motors can be supplied for horizontal operation if necessary. The pump and motor must be adequately supported along the entire length of the unit and must not be subjected to bending stress, but the centre section of the motor must receive an unimpeded flow of cooling water.

**WATER LEVEL INDICATOR** Consists of a pressure gauge, plastic tubing, hand pump and fittings and enables an accurate check to be made on the water level in the borehole.

**BOREHOLE ELECTRODES** These units can be supplied and details are available on request.

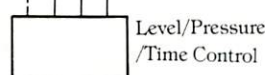
### Recommended Single Phase Layout



Automatic Control



Note: On three phase installations the control box is omitted.



# GRUNDFOS



# GRUNDFOS®

## SP 2

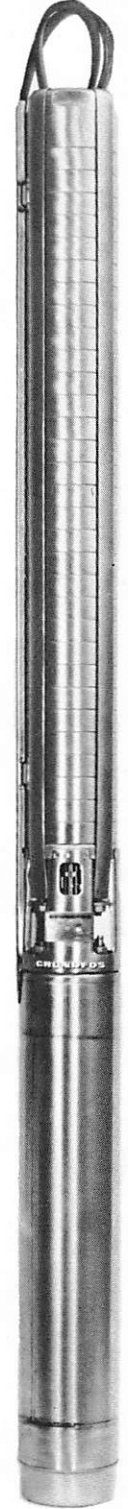
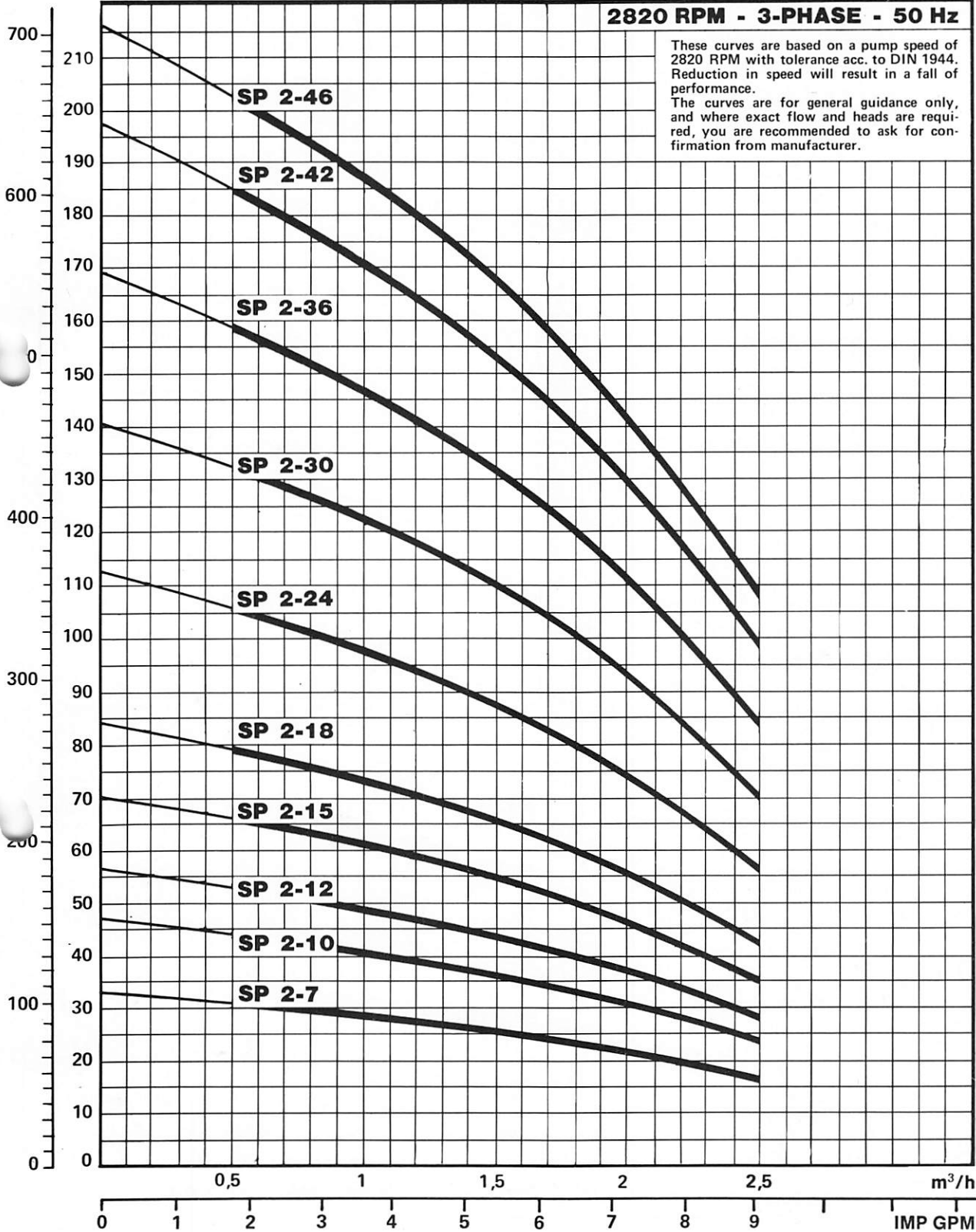
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### SUBMERSIBLE PUMP

### 50 Hz

## TECHNICAL DATA

Feet head  
Metres head



type SP 2-30  
motor 1,5 HP

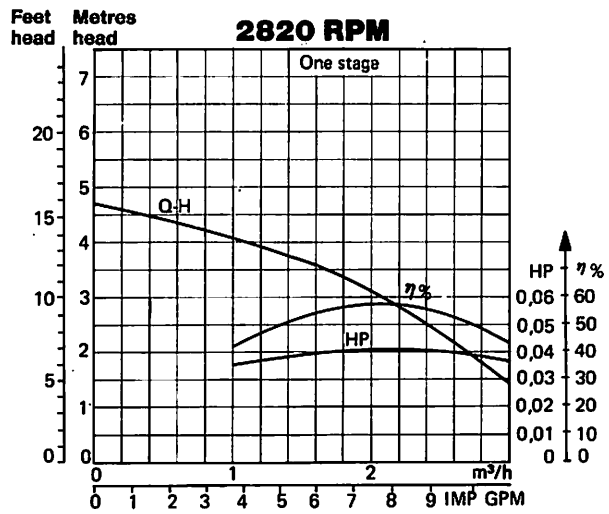
**Flow Range 0,5-2,5 m³/h 1,8-10 IMP GPM**  
**Minimum Bore Hole Size 4"**  
**Pump Outlet 1 1/4" BSP**

GRUNDFOS SUBMERSIBLE PUMPS  
are available for capacities varying from 0,5-160 m³/h, 1,8-587 IMP GPM

30 EX 09 000 12 75

**PERFORMANCES 3x220, 3x380, and 3x415 VOLTS, 50 Hz**

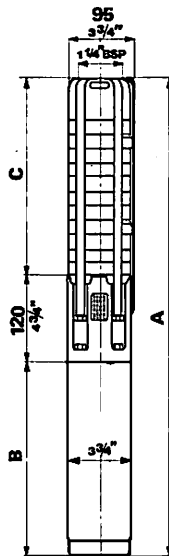
Pump Type	Motor Power		Operating Current Amps			Full Load Current Amps			Ist /full.
	HP	kW	220 V	380 V	415 V	220 V	380 V	415 V	
SP 2-7	0,5	0,37	2,3	1,3	1,2	2,6	1,5	1,4	3,8
SP 2-10	0,5	0,37	2,4	1,4	1,3	2,6	1,5	1,4	3,8
SP 2-12	0,5	0,37	2,6	1,5	1,4	2,6	1,5	1,4	3,8
SP 2-15	0,75	0,55	3,3	1,9	1,8	3,5	2,0	1,9	4,2
SP 2-18	0,75	0,55	3,5	2,0	1,9	3,5	2,0	1,9	4,2
SP 2-24	1,0	0,75	4,1	2,4	2,2	4,1	2,4	2,2	3,6
SP 2-30	1,5	1,10	5,4	3,0	2,7	5,7	3,2	2,9	3,9
SP 2-36	1,5	1,10	5,7	3,2	2,9	5,7	3,2	2,9	3,9
SP 2-42	2,0	1,50	6,8	4,0	3,6	7,1	4,2	3,8	4,0
SP 2-46	2,0	1,50	7,0	4,1	3,7	7,1	4,2	3,8	4,0



**DIMENSIONS AND WEIGHTS**

Pump Type	Measurements mm Inches			Weight kgs lbs		Shipp. volume m³ cb. ft.
	A	B	C	net	gross	
SP 2-7	668 26 <sup>7</sup> / <sub>32</sub>	320 12 <sup>19</sup> / <sub>32</sub>	228 9	15 33	19 42	0,037 1,307
SP 2-10	731 28 <sup>25</sup> / <sub>32</sub>	320 12 <sup>19</sup> / <sub>32</sub>	291 11 <sup>7</sup> / <sub>16</sub>	16 35	20 44	0,037 1,307
SP 2-12	773 30 <sup>7</sup> / <sub>16</sub>	320 12 <sup>19</sup> / <sub>32</sub>	333 13 <sup>1</sup> / <sub>8</sub>	17 37	21 46	0,037 1,307
SP 2-15	861 33 <sup>3</sup> / <sub>8</sub>	345 13 <sup>19</sup> / <sub>32</sub>	396 15 <sup>19</sup> / <sub>32</sub>	20 44	24 53	0,037 1,307
SP 2-18	924 36 <sup>3</sup> / <sub>8</sub>	345 13 <sup>19</sup> / <sub>32</sub>	459 18 <sup>1</sup> / <sub>16</sub>	21 46	25 55	0,037 1,307
SP 2-24	1050 41 <sup>11</sup> / <sub>32</sub>	345 13 <sup>19</sup> / <sub>32</sub>	585 23 <sup>1</sup> / <sub>32</sub>	25 55	29 64	0,037 1,307
SP 2-30	1216 47 <sup>7</sup> / <sub>8</sub>	385 15 <sup>5</sup> / <sub>32</sub>	711 27 <sup>15</sup> / <sub>16</sub>	31 68	36 79	0,049 1,730
SP 2-36	1342 52 <sup>27</sup> / <sub>32</sub>	385 15 <sup>5</sup> / <sub>32</sub>	837 32 <sup>31</sup> / <sub>32</sub>	33 73	38 84	0,049 1,730
SP 2-42	1508 59 <sup>2</sup> / <sub>8</sub>	425 16 <sup>3</sup> / <sub>4</sub>	963 37 <sup>15</sup> / <sub>16</sub>	42 93	57 126	0,049 1,730
SP 2-46	1592 62 <sup>11</sup> / <sub>16</sub>	425 16 <sup>3</sup> / <sub>4</sub>	1047 41 <sup>7</sup> / <sub>32</sub>	44 97	60 132	0,086 3,037

**DIMENSION SKETCH**



**BY INQUIRY**

Please supply the following information with each inquiry:

1. The quantity of water required.
2. Total manometric head including frictional loss and tank pressure, if any.
3. The diameter of the bore hole (the smallest inside dimension).
4. The distance from ground level to water level at rest.
5. The lowering of the water level, when a certain quantity is pumped.
6. The total length of the borehole less the length of a borehole filter, if any.
7. The type of electric supply, voltage and frequency.
8. Supplementary information concerning the installation, if any.

**GRUNDFOS SUBMERSIBLE PUMP**

Type SP 2 is a multi-stage centrifugal pump manufactured from stainless steel and direct coupled to a submerged motor mounted underneath the pump. The pump type is mainly suitable for mounting in bore holes and the pump as well as the motor are therefore designed with a minimum diameter. The suction is effected through a strainer between pump and motor. The pump is water lubricated and has a non-return valve built into the top of the pump.

In the suction interconnector the pump shaft is fitted with a priming screw which prevents the pump from running dry.

**STAINLESS STEEL:** Shaft, impellers, guide vanes, intermediate chambers, valve casing, valve cone, suction interconnector, clips, strainer, coupling, cable guard, split cone, and priming screw.

**RUBBER:** Neck rings, valve seat, and top bearing.

**SUBMERSIBLE MOTOR**

The motor is a three-phase squirrel motor of the can type. The shaft of stainless steel is carried in two radial bearings made from tungsten carbide/ceramic. The thrust bearing which takes up the axial thrust of the pump is placed in the bottom of the

motor and consists of a ceramic ring running on self-equalizing slide shoes of carbon. The bearings are water lubricated, and the rotor casing is from our works filled with water and secured against frost damage. A possible filling-up is automatically carried out with water from the bore hole. Excess pressure in the rotor casing owing to rise of temperature is equalized by a diaphragm. The stator is casted in heat-conducting plastics and hermetically sealed between rotor can and stator housing made from stainless steel.

**MOTOR PROTECTION**

To protect a submersible motor electrically, a quick-tripping motor starter is required, which trips in less than 10 seconds when the motor is locked.

If the voltage is unstable, wry, or if there is an undervoltage of more than 10% when the motor is started, a manually operated motor starter is required for stable protection.

**INSTALLATION AND MAINTENANCE**

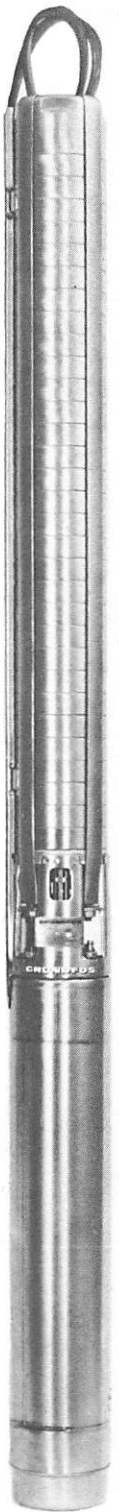
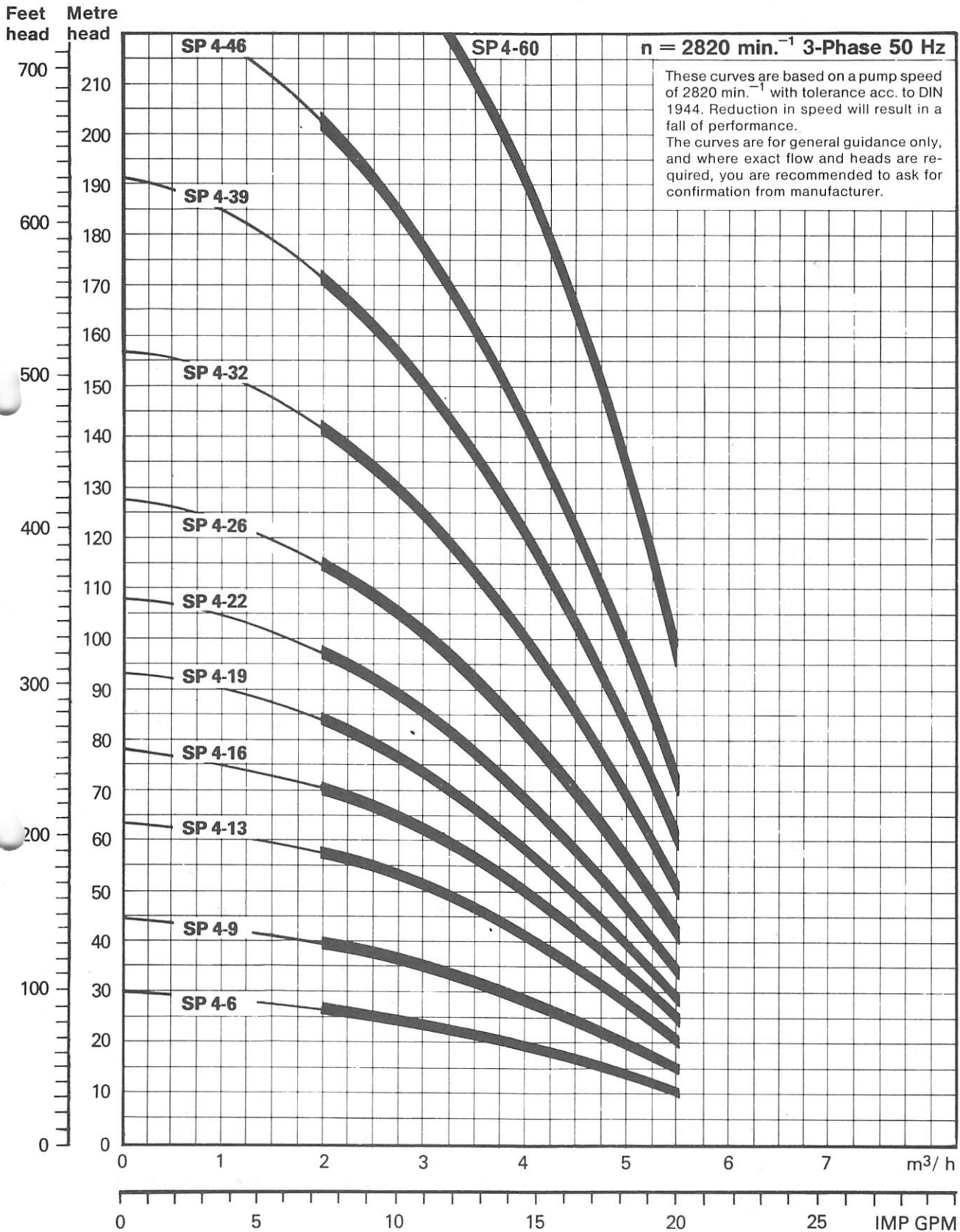
See the SP instruction.

Subject to alterations.





## TECHNICAL DATA



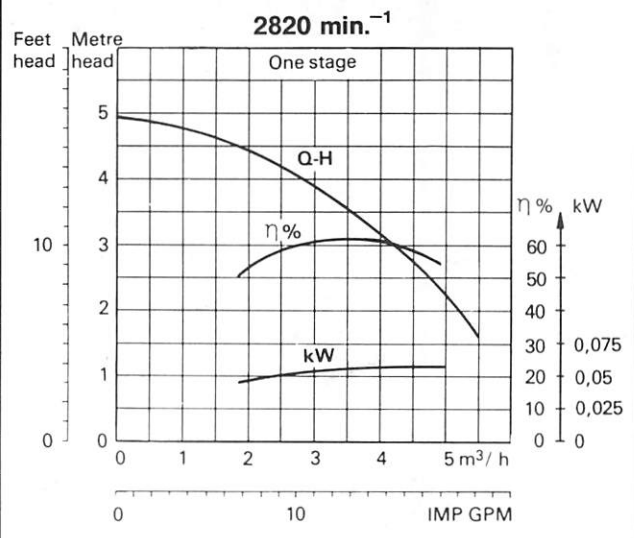
Type SP 4-32  
Motor 3 HP

Flow Range 2.0-5.5 m<sup>3</sup>/h – 7.3-20.2 IMP GPM  
Minimum Bore Hole Size 4”  
Pump Outlet 1 1/2” BSP

GRUNDFOS SUBMERSIBLE PUMPS are available for capacities varying from 0.5-160 m<sup>3</sup>/h – 1.8-587 IMP GPM

**PERFORMANCES 3x220, 3x380, AND 3x415 VOLTS – 50 Hz**

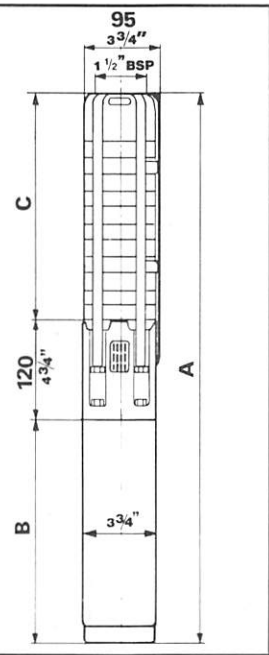
Pump Type	Motor Power		Operating Current amps			Full Load Current amps			Ist/Ifull
	HP	kW	220 V	380 V	415 V	220 V	380 V	415 V	
SP 4- 6	0.5	0.37	2.4	1.4	1.3	2.6	1.5	1.4	3.8
SP 4- 9	0.75	0.55	3.3	1.9	1.8	3.5	2.0	1.9	4.2
SP 4-13	1.0	0.75	4.1	2.4	2.2	4.1	2.4	2.2	3.6
SP 4-16	1.5	1.1	4.7	2.7	2.4	5.7	3.2	2.9	3.9
SP 4-19	1.5	1.1	5.7	3.2	2.9	5.7	3.2	2.9	3.9
SP 4-22	2.0	1.5	6.2	3.7	3.4	7.1	4.2	3.8	4.0
SP 4-26	2.0	1.5	7.1	4.2	3.8	7.1	4.2	3.8	4.0
SP 4-32	3.0	2.2	8.3	4.8	4.5	10.1	5.8	5.4	4.1
SP 4-39	3.0	2.2	10.1	5.8	5.4	10.1	5.8	5.4	4.1
SP 4-46	5.0	3.7	12.0	7.0	6.2	16.1	9.4	8.6	4.3
SP 4-60	5.0	3.7	15.2	8.8	8.1	16.1	9.4	8.6	4.3



**DIMENSIONS AND WEIGHTS**

Pump Type	Measurements mm inches			Weight kgs lbs		Shipp. vol. m <sup>3</sup> cb. ft.
	A	B	C	net	gross	
SP 4- 6	647 25.47	320 12.60	207 8.15	16 35	20 44	0.04 1.30
SP 4- 9	735 28.94	345 13.58	270 10.62	17 37	21 46	0.04 1.30
SP 4-13	819 32.24	345 13.58	354 13.94	18 40	22 49	0.04 1.30
SP 4-16	922 36.30	385 15.16	417 16.42	21 46	25 55	0.04 1.30
SP 4-19	985 38.78	385 15.16	480 18.90	22 49	26 57	0.04 1.30
SP 4-22	1088 42.84	425 16.73	543 21.38	25 55	30 66	0.05 1.73
SP 4-26	1172 46.14	425 16.73	627 24.69	27 60	32 71	0.05 1.73
SP 4-32	1374 54.09	501 19.72	753 29.64	32 71	37 82	0.05 1.73
SP 4-39	1521 59.88	501 19.72	900 35.43	37 82	43 95	0.09 2.99
SP 4-46	1812 71.34	645 25.40	1047 41.22	46 101	52 115	0.10 3.50
SP 4-60	2106 82.91	645 25.4	1341 52.8	52 115	72 159	0.12 4.20

**DIMENSION SKETCH**



**BY INQUIRY**

- Please supply the following information with each inquiry:
1. The quantity of water required.
  2. Total manometric head including frictional loss and tank pressure, if any.
  3. The diameter of the bore hole (the smallest inside dimension).
  4. The distance from ground level to water level at rest.
  5. The lowering of the water level, when a certain quantity is pumped.
  6. The total length of the bore hole less the length of a bore hole filter, if any.
  7. The type of electric supply, voltage and frequency.
  8. Supplementary information concerning the installation, if any.

**GRUNDFOS SUBMERSIBLE PUMP**

Type SP 4 is a multi-stage centrifugal pump manufactured from stainless steel and direct coupled to a submerged motor fitted underneath the pump. The pump type is mainly suitable for installation in bore holes, and the pump as well as the motor are therefore designed with a minimum diameter. The suction is effected through a strainer between pump and motor. The pump is water lubricated and has a non-return valve built into the top of the pump. In the suction interconnector is fitted a priming screw which prevents the pump from running dry.

**STAINLESS STEEL:** Shaft, impellers, guide vanes, intermediate chambers, valve casing, valve cone, suction interconnector, straps, strainer, coupling, cable guard, and priming screw.

**TIN BRONZE:** Split cone and split cone nut.

**RUBBER:** Neck rings, valve seat, and top bearing.

**GRUNDFOS SUBMERSIBLE MOTOR**

The motor is a three-phase squirrel cage motor of the can type. The shaft of stainless steel is carried in two radial bearings made from tungsten carbide/ceramic. The thrust bearing

which takes up the axial thrust of the pump is placed in the bottom of the motor and consists of a ceramic ring running on self-equalizing slide shoes of carbon. The bearings are water lubricated, and the rotor casing is from our works filled with water and secured against frost damage. A possible filling-up is automatically carried out with water from the bore hole. Excess pressure in the rotor casing owing to rise of temperature is equalized by a diaphragm. The stator is cast in heat-conducting plastics and hermetically sealed between rotor can and stator housing made from stainless steel.

**MOTOR PROTECTION**

To protect a submersible motor electrically, a quick-tripping motor starter is required, which trips in less than 10 seconds when the rotor is locked. If the voltage is unstable, wry, or if there is an undervoltage of more than 10% when the motor is started, a manually operated motor starter is required for stable protection.

**INSTALLATION AND MAINTENANCE**

See the SP instructions.

Subject to alterations.



### TECHNICAL DATA

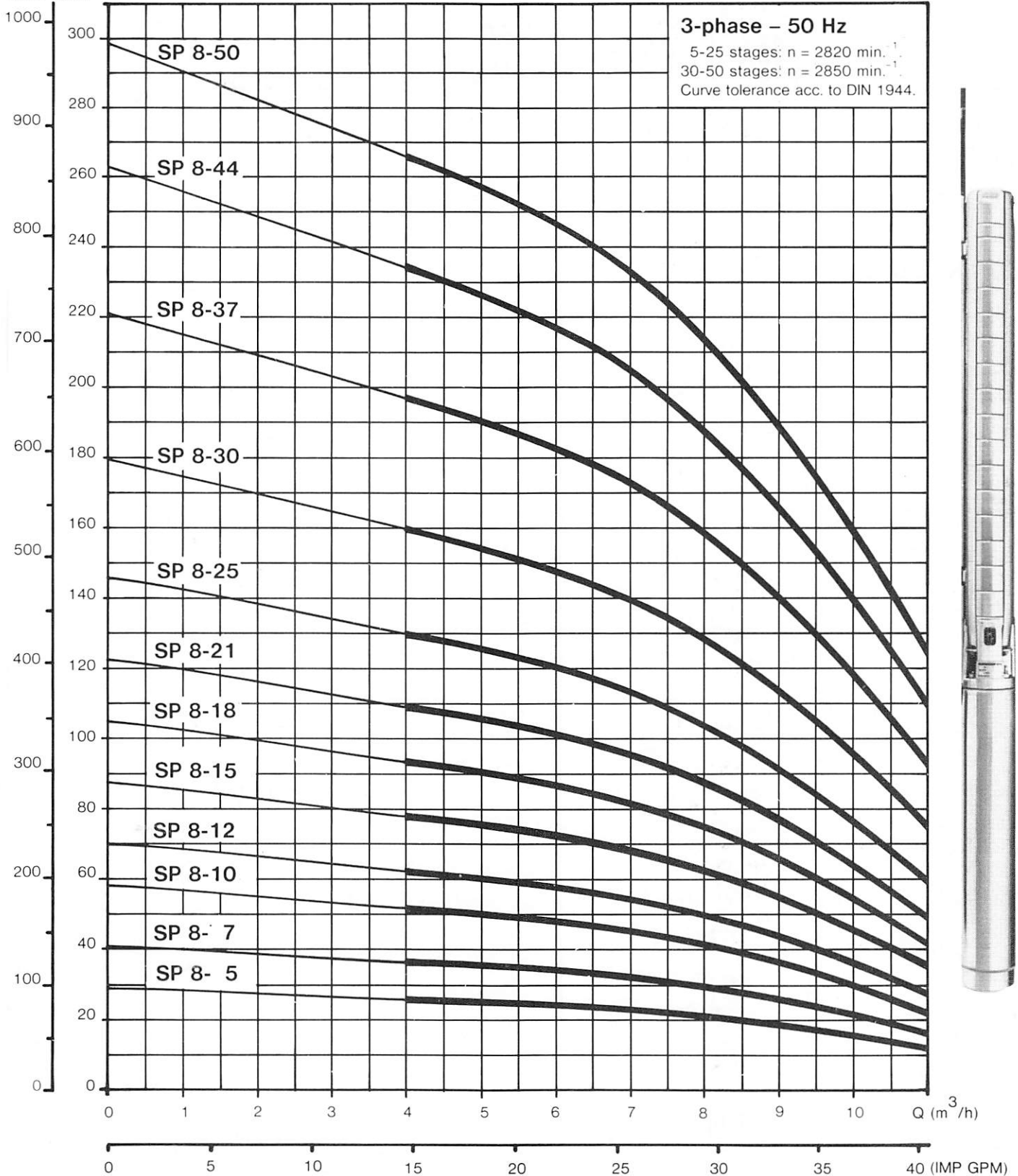
3-phase - 50 Hz

5-25 stages: n = 2820 min.<sup>-1</sup>

30-50 stages: n = 2850 min.<sup>-1</sup>

Curve tolerance acc. to DIN 1944.

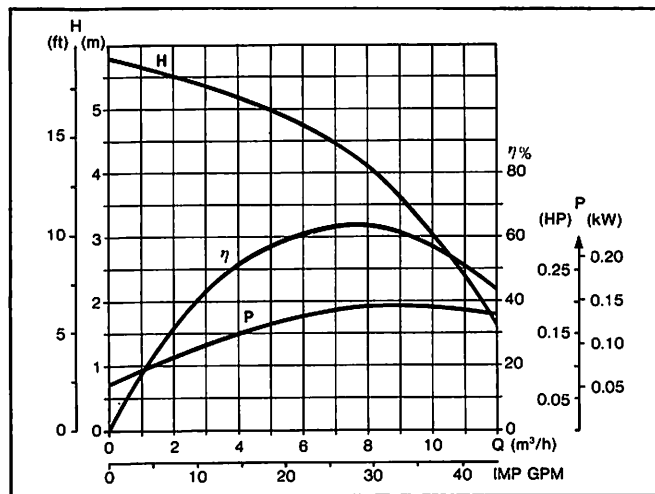
Feet  
Metres  
head head



SP 8 flow range: 4-11 m<sup>3</sup>/h (15-40 IMP GPM).

The GRUNDFOS submersible pump range covers flows from 0.1-160 m<sup>3</sup>/h (0.4-587 IMP GPM).

PERFORMANCES PER STAGE



MATERIALS

SP 8 – Standard version:

All main components in stainless steel: DIN W.-nr. 1.4301. Max. water temperature: Pumps with 4" motors, 40°C. Pumps with 6" motors, 35°C.

SP 8-N – Sea water version:

All main components in stainless steel: DIN W.-nr. 1.4401. Max. water temperature: Pumps with 4" motors, 40°C. Pumps with 6" motors, 35°C.

A hot water version is available on request.

MINIMUM INTERNAL DIAMETER OF BOREHOLE:

SP 8- 5 to SP 8-25 inclusive: 4" (104 mm).

SP 8-30 to SP 8-50 inclusive: 6" (152 mm).

Connection to riser main: 2" BSP, length of thread 24 mm.

Pumps with larger numbers of stages are available on request: SP 8-58, SP 8-66, SP 8-73, SP 8-82, SP 8-91, SP 8-100, and SP 8-110.

These pumps are delivered in special stainless steel sleeves (pump section only).

ELECTRICAL DATA

PUMP TYPE	MOTOR		MAX. OPERATING CURRENT (amps)			FULL LOAD CURRENT I <sub>1/1</sub> (amps)			POWER FACTOR (full load)			I <sub>start</sub> / I <sub>1/1</sub>			
	kW	HP	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V	
4" MOTOR	SP 8- 5	0.75	1.0	4.1	2.4	2.2	4.1	2.4	2.2	0.82	0.82	0.81	3.5	3.4	3.6
	SP 8- 7	1.1	1.5	5.1	3.0	2.8	5.6	3.3	3.0	0.84	0.84	0.84	3.8	3.7	3.7
	SP 8-10	1.5	2.0	6.7	3.9	3.6	6.7	3.9	3.6	0.88	0.88	0.88	4.7	4.7	4.7
	SP 8-12	2.2	3.0	8.5	4.9	4.5	10.1	5.8	5.4	0.88	0.87	0.87	4.1	4.1	4.1
	SP 8-15	2.2	3.0	10.1	5.8	5.3	10.1	5.8	5.4	0.88	0.87	0.87	4.1	4.1	4.1
	SP 8-18	3.7	5.0	12.8	7.5	6.9	16.1	9.4	8.6	0.88	0.87	0.88	4.3	4.3	4.2
	SP 8-21	3.7	5.0	14.3	8.3	7.6	16.1	9.4	8.6	0.88	0.87	0.88	4.3	4.3	4.2
SP 8-25	3.7	5.0	16.1	9.4	8.6	16.1	9.4	8.6	0.88	0.87	0.88	4.3	4.3	4.2	
6" MOTOR	SP 8-30	5.5	7.5	18.3	10.9	11.5	21.5	12.8	13.0	0.85	0.85	0.76	5.4	5.2	5.6
	SP 8-37	5.5	7.5	21.2	12.6	12.9	21.5	12.8	13.0	0.85	0.85	0.76	5.4	5.2	5.6
	SP 8-44	7.5	10.0	25.6	14.9	15.7	28.5	16.7	17.1	0.86	0.85	0.77	5.5	5.4	5.7
	SP 8-50	7.5	10.0	28.2	16.3	16.9	28.5	16.7	17.1	0.86	0.85	0.77	5.5	5.4	5.7

The electrical data are for SP submersible pumps fitted with GRUNDFOS motors. When using other motor makes, the data can be used as a guide only. Always check the motor name plate. Other voltages are available on request.

DIMENSIONS AND WEIGHTS

PUMP TYPE	DIMENSIONS mm					WEIGHT kgs.		SHIPP. VOL. m <sup>3</sup>	Diagram
	A	B	C	D	E*	Net	Gross		
4" MOTOR	SP 8- 5	696	286	410	95	95	14	18	Diagram showing dimensions A, B, C, D, E and a 2" BSP connection.
	SP 8- 7	820	326	494	95	95	16	20	
	SP 8-10	986	366	620	95	95	20	24	
	SP 8-12	1205	501	704	95	95	30	35	
	SP 8-15	1331	501	830	95	95	32	37	
	SP 8-18	1601	645	956	95	95	40	46	
	SP 8-21	1727	645	1082	95	95	42	48	
SP 8-25	1895	645	1250	95	95	45	51		
6" MOTOR	SP 8-30	2090	630	1460	140	140	57	77	
	SP 8-37	2384	630	1754	140	140	78	105	
	SP 8-44	2733	685	2048	140	140	97	125	
	SP 8-50	2985	685	2300	140	140	105	135	

\*E = Max. diameter of pump incl. cable guard + motor.

BY INQUIRY

Please supply the following information with each inquiry:

1. Q – the quantity of water required.
2. H – the total manometric head required including frictional losses and tank pressure, if any.
3. The diameter of the borehole (the smallest inside dimension).
4. The distance from ground level to water level at rest.
5. The lowering of the water level, when a certain quantity is pumped.
6. The total length of the borehole, less the length of a borehole filter, if any.
7. The type of electric supply, voltage and frequency.
8. Supplementary information concerning the installation, if any.

Subject to alterations



### TECHNICAL DATA

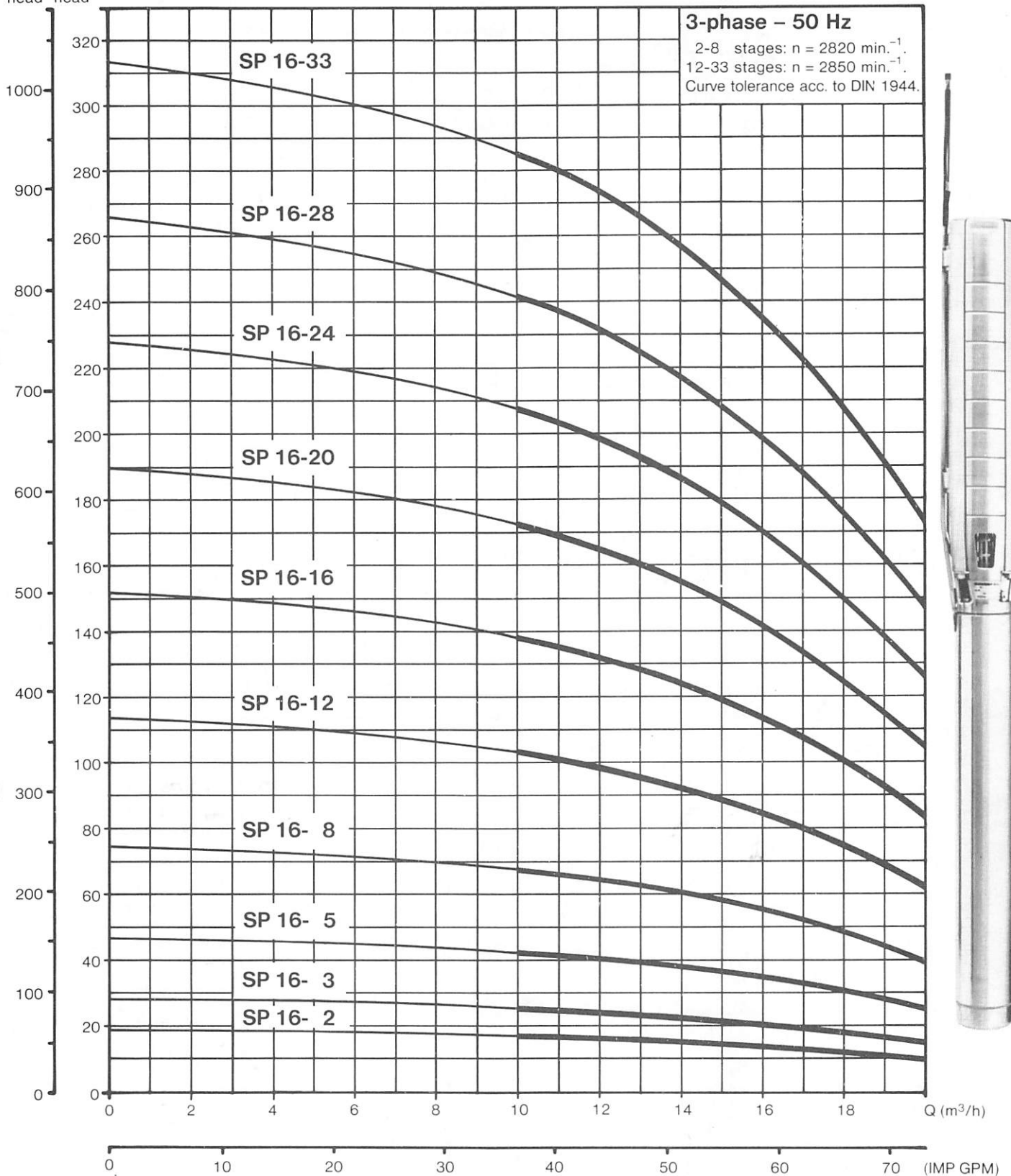
3-phase - 50 Hz

2-8 stages: n = 2820 min.<sup>-1</sup>

12-33 stages: n = 2850 min.<sup>-1</sup>

Curve tolerance acc. to DIN 1944.

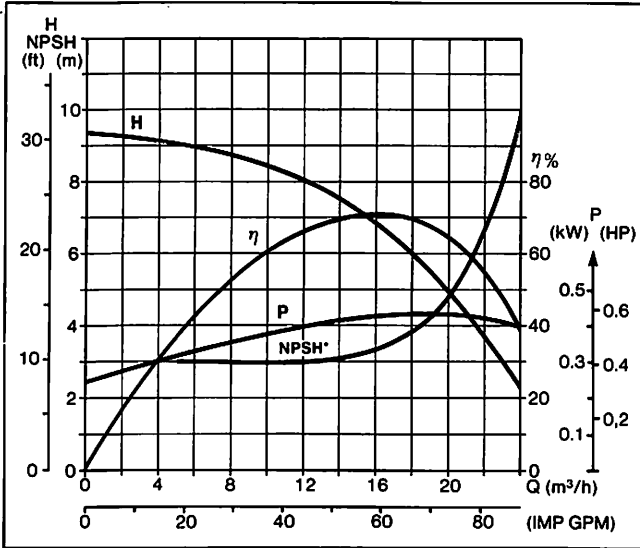
Feet head  
Metres head



SP 16 flow range: 10-20 m<sup>3</sup>/h (37-74 IMP GPM).

The GRUNDFOS submersible pump range covers flows from 0.1-160 m<sup>3</sup>/h (0.4-587 IMP GPM).

PERFORMANCES PER STAGE



\* NPSH is determined at 1 percent head loss.

MATERIALS

SP 16 – Standard version:

All main components in stainless steel: DIN W.-nr. 1.4301. Max. water temperature: Pumps with 4" motors, 40°C. Pumps with 6" motors, 35°C.

SP 16-N – Sea water version:

All main components in stainless steel: DIN W.-nr. 1.4401. Max. water temperature: Pumps with 4" motors, 40°C. Pumps with 6" motors, 35°C.

A hot water version is available on request.

MINIMUM INTERNAL DIAMETER OF BOREHOLE: 6" (152 mm).

Connection to riser main: 2 1/2" BSP, length of thread 27 mm.

Pumps with larger numbers of stages are available on request: SP 16-40 and SP 16-50.

These pumps are delivered in special stainless steel sleeves (pump section only).

ELECTRICAL DATA

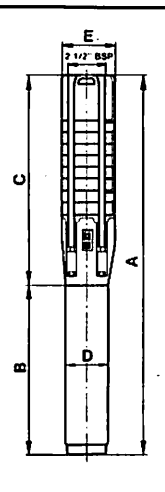
	PUMP TYPE	MOTOR		MAX. OPERATING CURRENT (amps)			FULL LOAD CURRENT I <sub>1/1</sub> (amps)			POWER FACTOR (full load)			I <sub>start</sub> / I <sub>1/1</sub>		
		kW	HP	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V
4" MOTOR	SP 16- 2	1.1	1.5	4.5	2.7	2.5	4.6	3.3	3.0	0.84	0.84	0.84	3.8	3.7	3.7
	SP 16- 3	1.5	2.0	5.9	3.4	3.1	6.7	3.9	3.6	0.88	0.88	0.88	4.7	4.7	4.7
	SP 16- 5	2.2	3.0	9.9	5.7	5.3	10.1	5.8	5.4	0.88	0.87	0.87	4.1	4.1	4.1
	SP 16- 8	3.7	5.0	15.2	8.9	8.1	16.1	9.4	8.6	0.88	0.87	0.88	4.3	4.3	4.3
6" MOTOR	SP 16-12	5.5	7.5	20.5	12.4	12.8	21.5	12.8	13.0	0.85	0.85	0.76	5.4	5.2	5.6
	SP 16-16	7.5	10.0	27.5	15.9	16.6	28.5	16.7	17.1	0.86	0.85	0.77	5.5	5.4	5.7
	SP 16-20	11.0	15.0	35.0	21.0	22.0	41	24.5	25.0	0.87	0.86	0.78	6.3	6.0	6.4
	SP 16-24	11.0	15.0	39.5	23.5	24.5	41	24.5	25.0	0.87	0.86	0.78	6.3	6.0	6.4
	SP 16-28	15.0	20.0	50	28.5	31.0	56	32.5	34.0	0.85	0.85	0.76	5.9	5.8	6.1
	SP 16-33	15.0	20.0	55	32.0	33.5	56	32.5	34.0	0.85	0.85	0.76	5.9	5.8	6.1

The electrical data are for SP submersible pumps fitted with GRUNDFOS motors. When using other motor makes, the data can be used as a guide only. Always check the motor name plate. Other voltages are available on request.

DIMENSIONS AND WEIGHTS

	PUMP TYPE	DIMENSIONS mm					WEIGHT kgs.		SHIPP. VOL. m <sup>3</sup>
		A	B	C	D	E*	Net	Gross	
4" MOTOR	SP 16- 2	670	326	344	95	131	20	24	0.04
	SP 16- 3	755	366	389	95	131	22	26	0.04
	SP 16- 5	980	501	479	95	131	24	28	0.04
	SP 16- 8	1259	645	614	95	131	39	44	0.05
6" MOTOR	SP 16-12	1440	630	810	140	140	75	90	0.12
	SP 16-16	1675	685	990	140	140	79	95	0.14
	SP 16-20	1930	760	1170	140	140	90	110	0.16
	SP 16-24	2110	760	1350	140	140	100	122	0.17
	SP 16-28	2380	850	1530	140	140	110	134	0.19
	SP 16-33	2605	850	1755	140	140	116	142	0.20

\* E = Max. diameter of pump incl. cable guard + motor.



BY INQUIRY

Please supply the following information with each inquiry:

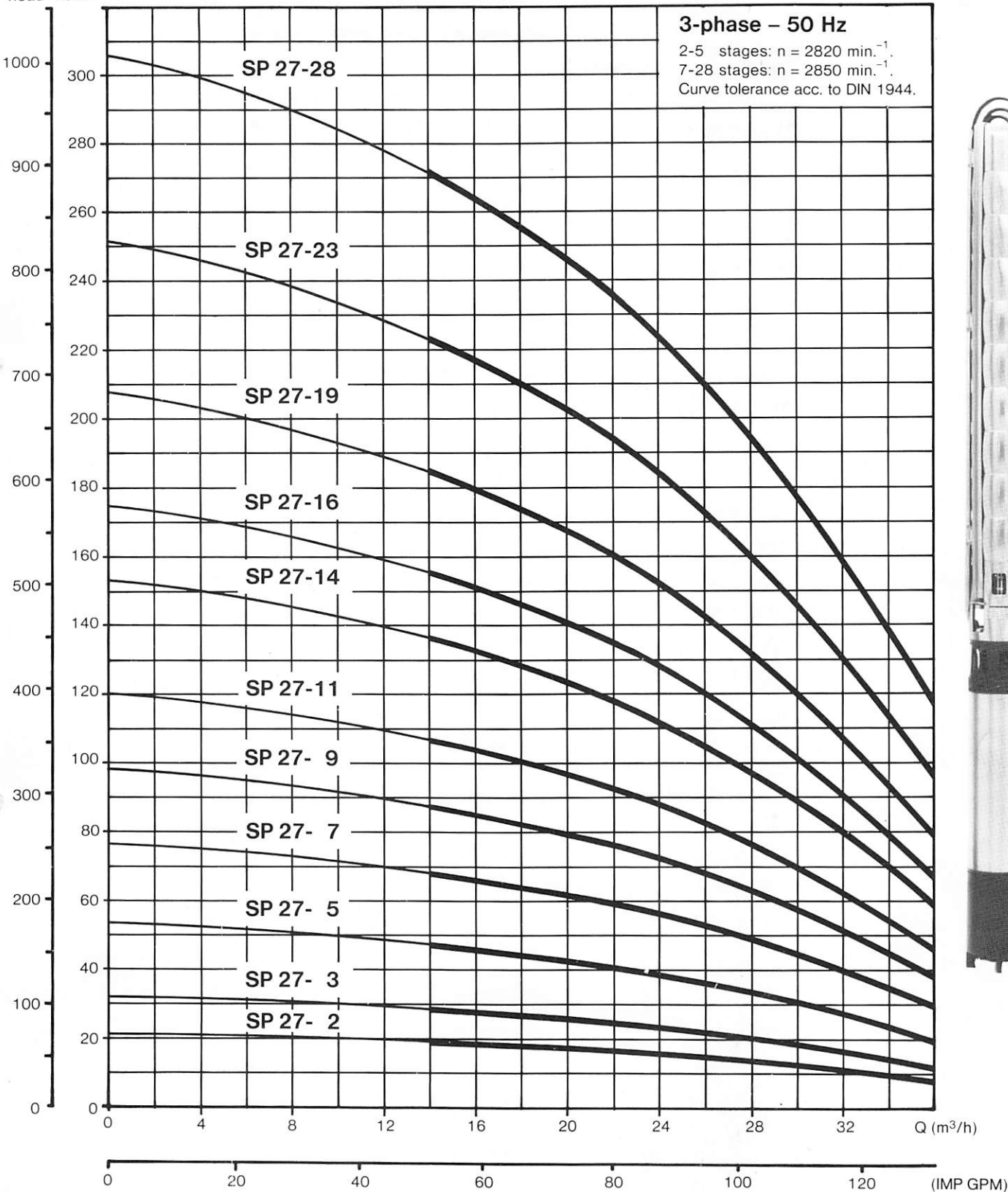
1. Q – the quantity of water required.
2. H – the total manometric head required including frictional losses and tank pressure, if any.
3. The diameter of the borehole (the smallest inside dimension).
4. The distance from ground level to water level at rest.
5. The lowering of the water level, when a certain quantity is pumped.
6. The total length of the borehole, less the length of a borehole filter, if any.
7. The type of electric supply, voltage and frequency.
8. Supplementary information concerning the installation, if any.

Subject to alterations



### TECHNICAL DATA

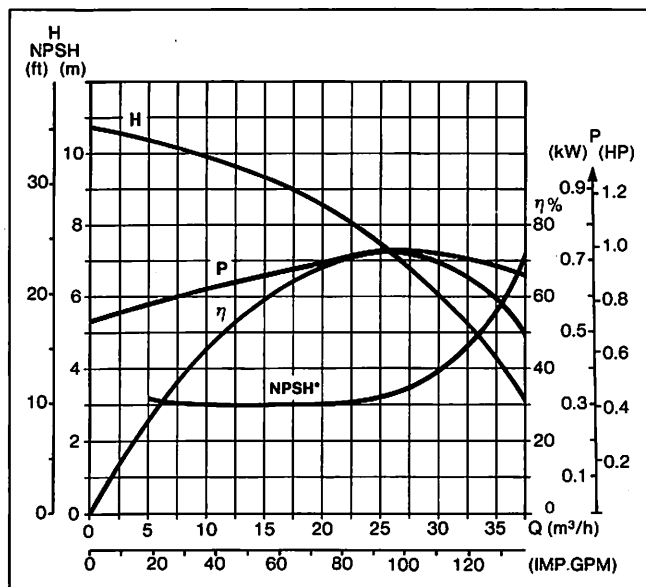
Feet head  
Metres head



SP 27 flow range: 14-36 m<sup>3</sup>/h (52-132 IMP GPM).

The GRUNDFOS submersible pump range covers flows from 0.1-160 m<sup>3</sup>/h (0.4-587 IMP GPM).

PERFORMANCES PER STAGE



\* NPSH is determined at 1 percent head loss.

MATERIALS

SP 27 - Standard version:

All main components in stainless steel: DIN W.-nr. 1.4301. Max. water temperature: Pumps with 4" motors, 40°C. Pumps with 6" motors, 35°C.

SP 27-N - Sea water version:

All main components in stainless steel: DIN W.-nr. 1.4401. Max. water temperature: Pumps with 4" motors, 40°C. Pumps with 6" motors, 35°C.

A hot water version is available on request.

MINIMUM INTERNAL DIAMETER OF BOREHOLE: 6" (152 mm).

Connection to riser main: 3" BSP, length of thread 30 mm.

Pumps with larger numbers of stages are available on request: SP 27-36 and SP 27-45.

These pumps are delivered in special stainless steel sleeves (pump section only).

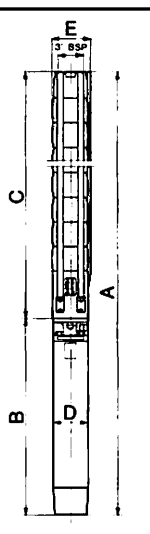
ELECTRICAL DATA

PUMP TYPE	MOTOR		MAX. OPERATING CURRENT (amps)			FULL LOAD CURRENT I <sub>1/1</sub> (amps)			POWER FACTOR (full load)			I <sub>start</sub> / I <sub>1/1</sub>			
	kW	HP	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V	
4" MOTOR	SP 27- 2	1.5	2.0	6.3	3.6	3.3	6.7	3.9	3.6	0.88	0.88	0.88	4.7	4.7	4.7
	SP 27- 3	2.2	3.0	9.4	5.5	5.0	10.1	5.8	5.4	0.88	0.87	0.87	4.1	4.1	4.1
	SP 27- 5	3.7	5.0	15.7	9.1	8.3	16.1	9.4	8.6	0.88	0.87	0.88	4.3	4.3	4.2
6" MOTOR	SP 27- 7	5.5	7.5	20.5	12.2	12.6	21.5	12.8	13.0	0.85	0.85	0.76	5.4	5.2	5.6
	SP 27- 9	7.5	10.0	26.5	15.3	15.1	28.5	16.7	17.1	0.86	0.85	0.77	5.5	5.4	5.7
	SP 27-11	11.0	15.0	33.0	19.5	21.0	41	24.5	25.0	0.87	0.86	0.78	6.3	6.0	6.4
	SP 27-14	11.0	15.0	39.0	23.5	24.0	41	24.5	25.0	0.87	0.86	0.78	6.3	6.0	6.4
	SP 27-16	15.0	20.0	48	27.5	30.0	56	32.5	34.0	0.85	0.85	0.76	5.9	5.8	6.1
	SP 27-19	15.0	20.0	54	31.5	33.0	56	32.5	34.0	0.85	0.85	0.76	5.9	5.8	6.1
	SP 27-23	18.5	25.0	63	37.0	38.5	67	39.5	40	0.87	0.87	0.80	5.9	5.7	6.1
SP 27-28	22.0	30.0	75	45	46	80	48	47	0.88	0.87	0.81	5.7	5.4	6.0	

The electrical data are for SP submersible pumps fitted with GRUNDFOS motors. When using other motor makes, the data can be used as a guide only. Always check the motor name plate. Other voltages are available on request.

DIMENSIONS AND WEIGHTS

PUMP TYPE	DIMENSIONS mm					WEIGHT kgs.		SHIPP. VOL. m³	
	A	B	C	D	E*	Net	Gross		
4" MOTOR	SP 27- 2	796	363	433	95	139	20	24	0.036
	SP 27- 3	1024	501	523	95	139	29	33	0.036
	SP 27- 5	1348	645	703	95	139	40	45	0.049
6" MOTOR	SP 27- 7	1529	630	899	140	142	68	84	0.135
	SP 27- 9	1764	685	1079	140	142	80	98	0.153
	SP 27-11	2019	760	1259	140	142	92	112	0.171
	SP 27-14	2289	760	1529	140	142	98	121	0.193
	SP 27-16	2559	850	1709	140	142	113	138	0.208
	SP 27-19	2829	850	1979	140	142	119	148	0.233
	SP 27-23	3229	920	2339	140	142	136	170	0.266
SP 27-28	3759	970	2789	140	142	147	187	0.299	



\* E = Max. diameter of pump incl. cable guard + motor.

BY INQUIRY

Please supply the following information with each inquiry:

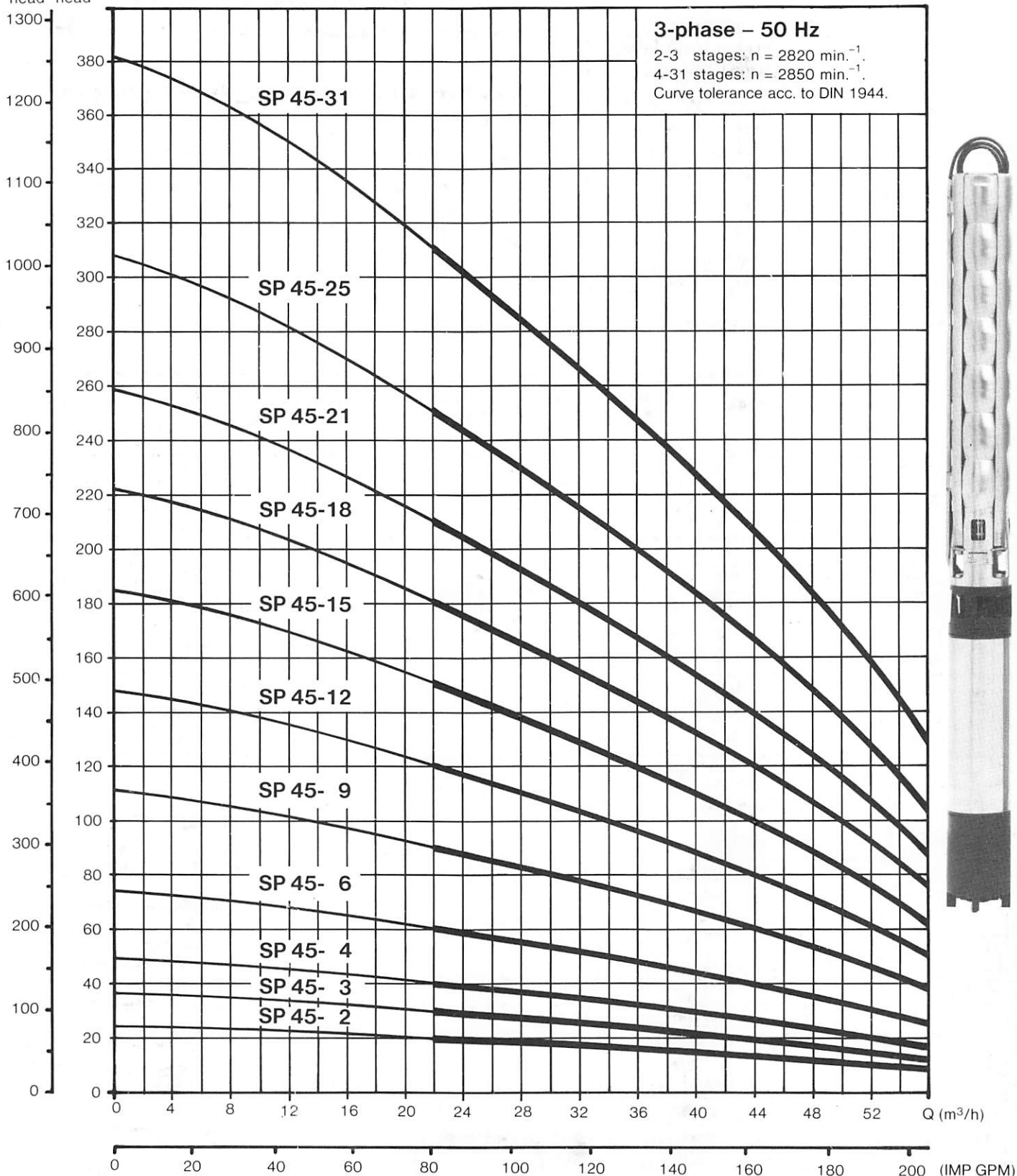
1. Q - the quantity of water required.
2. H - the total manometric head required including frictional losses and tank pressure, if any.
3. The diameter of the borehole (the smallest inside dimension).
4. The distance from ground level to water level at rest.
5. The lowering of the water level, when a certain quantity is pumped.
6. The total length of the borehole, less the length of a borehole filter, if any.
7. The type of electric supply, voltage and frequency.
8. Supplementary information concerning the installation, if any.

Subject to alterations



Feet  
Metres  
head  
head

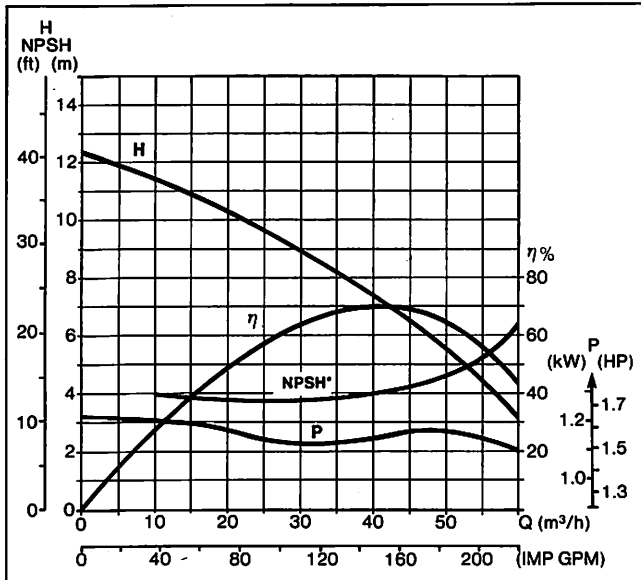
### TECHNICAL DATA



SP 45 flow range: 22-56 m<sup>3</sup>/h (80-205 IMP GPM).

The GRUNDFOS submersible pump range covers flows from 0.1-160 m<sup>3</sup>/h (0.4-587 IMP GPM).

## PERFORMANCES PER STAGE



\* NPSH is determined at 1 percent head loss.

## MATERIALS

### SP 45 - Standard version:

All main components in stainless steel: DIN W.-Nr. 1.4301. Max. water temperature: Pumps with 4" motors, 40°C. Pumps with 6" and 8" motors, 35°C.

### SP 45-N - Sea water version:

All main components in stainless steel: DIN W.-Nr. 1.4401. Max. water temperature: Pumps with 4" motors, 40°C. Pumps with 6" and 8" motors, 35°C.

A hot water version is available on request.

## MINIMUM INTERNAL DIAMETER OF BOREHOLE:

SP 45- 2 to SP 45-3 inclusive: 6" (152 mm).

SP 45- 4 to SP 45-18 inclusive: 6" (152 mm).

**Note:** The connection to the riser main is 3" as standard, but the pump is also available with a 4" connection.

With a 4" connection and a 6" motor in a 152 mm bore hole, the cable dimension **must not** exceed 4x6 mm<sup>2</sup> (flat cable) out of consideration for the cable joint.

SP 45-21 to SP 45-31 inclusive: 8" (200 mm).

Connection to riser main: 3" (4"), length of thread 30 (36) mm.

Pump with larger number of stages are available on request: SP 45-38.

These pumps are delivered in special stainless steel sleeves (pump section only).

## ELECTRICAL DATA

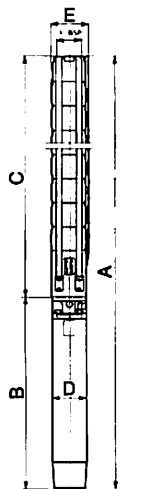
	PUMP TYPE	MOTOR		MAX. OPERATING CURRENT (amps)			FULL LOAD CURRENT I <sub>1/1</sub> (amps)			POWER FACTOR (full load)			I <sub>start</sub> / I <sub>1/1</sub>		
		kW	HP	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V
4" M.	SP 45- 2	2.2	3.0	10.0	5.8	5.3	10.1	5.8	5.4	0.88	0.87	0.87	4.1	4.1	4.1
	SP 45- 3	3.7	5.0	15.2	8.8	8.1	16.1	9.4	8.6	0.88	0.87	0.88	4.3	4.3	4.2
6" MOTOR	SP 45- 4	5.5	7.5	19.1	11.3	11.9	21.5	12.8	13.0	0.85	0.85	0.76	5.4	5.2	5.6
	SP 45- 6	7.5	10.0	27.0	15.8	16.5	28.5	16.7	17.1	0.86	0.85	0.77	5.5	5.4	5.7
	SP 45- 9	11.0	15.0	39.5	23.5	24.3	41	24.5	25.0	0.87	0.86	0.78	6.3	6.0	6.4
	SP 45-12	15.0	20.0	54	31.0	33.0	56	32.5	34.0	0.85	0.85	0.76	5.9	5.8	6.1
	SP 45-15	18.5	25.0	64	38.0	39.0	67	39.5	40	0.87	0.87	0.80	5.9	5.7	6.1
	SP 45-18	22.0	30.0	76	45	46	80	48	47	0.88	0.87	0.81	5.7	5.4	6.0
8" M.	SP 45-21	30	40	-	55	55	-	64	62	-	0.86	0.82	-	5.3	6.0
	SP 45-25	30	40	-	63	62	-	64	62	-	0.86	0.82	-	5.3	6.0
	SP 45-31	37	50	-	76	76	-	78	76	-	0.88	0.82	-	4.9	5.5

The electrical data are for SP submersible pumps fitted with GRUNDFOS motors. When using other motor makes, the data can be used as a guide only. Always check the motor name plate. Other voltages are available on request.

## DIMENSIONS AND WEIGHTS

	PUMP TYPE	DIMENSIONS mm					WEIGHT kgs.		SHIPP. VOL. m <sup>3</sup>
		A	B	C	D	E*	Net	Gross	
4" M.	SP 45- 2	958	501	457	95	147	28	32	0.036
	SP 45- 3	1202	645	557	95	147	37	42	0.049
6" MOTOR	SP 45- 4	1303	630	673	140	150	63	78	0.139
	SP 45- 6	1558	685	873	140	150	75	95	0.160
	SP 45- 9	1933	760	1173	140	150	89	115	0.193
	SP 45-12	2323	850	1473	140	150	107	139	0.227
	SP 45-15	2693	920	1773	140	150	122	157	0.252
	SP 45-18	3043	970	2073	140	150	130	170	0.286
8" M.	SP 45-21	3522	1120	2402	191	191	187	237	0.399
	SP 45-25	3922	1120	2802	191	191	195	249	0.440
	SP 45-31	4582	1180	3402	191	191	224	284	0.512

\* E = Max. diameter of pump incl. cable guard + motor.



## BY INQUIRY

Please supply the following information with each inquiry:

- Q - the quantity of water required.
- H - the total manometric head required including frictional losses and tank pressure, if any.
- The diameter of the borehole (the smallest inside dimension).
- The distance from ground level to water level at rest.
- The lowering of the water level, when a certain quantity is pumped.
- The total length of the borehole, less the length of a borehole filter, if any.
- The type of electric supply, voltage and frequency.
- Supplementary information concerning the installation, if any.

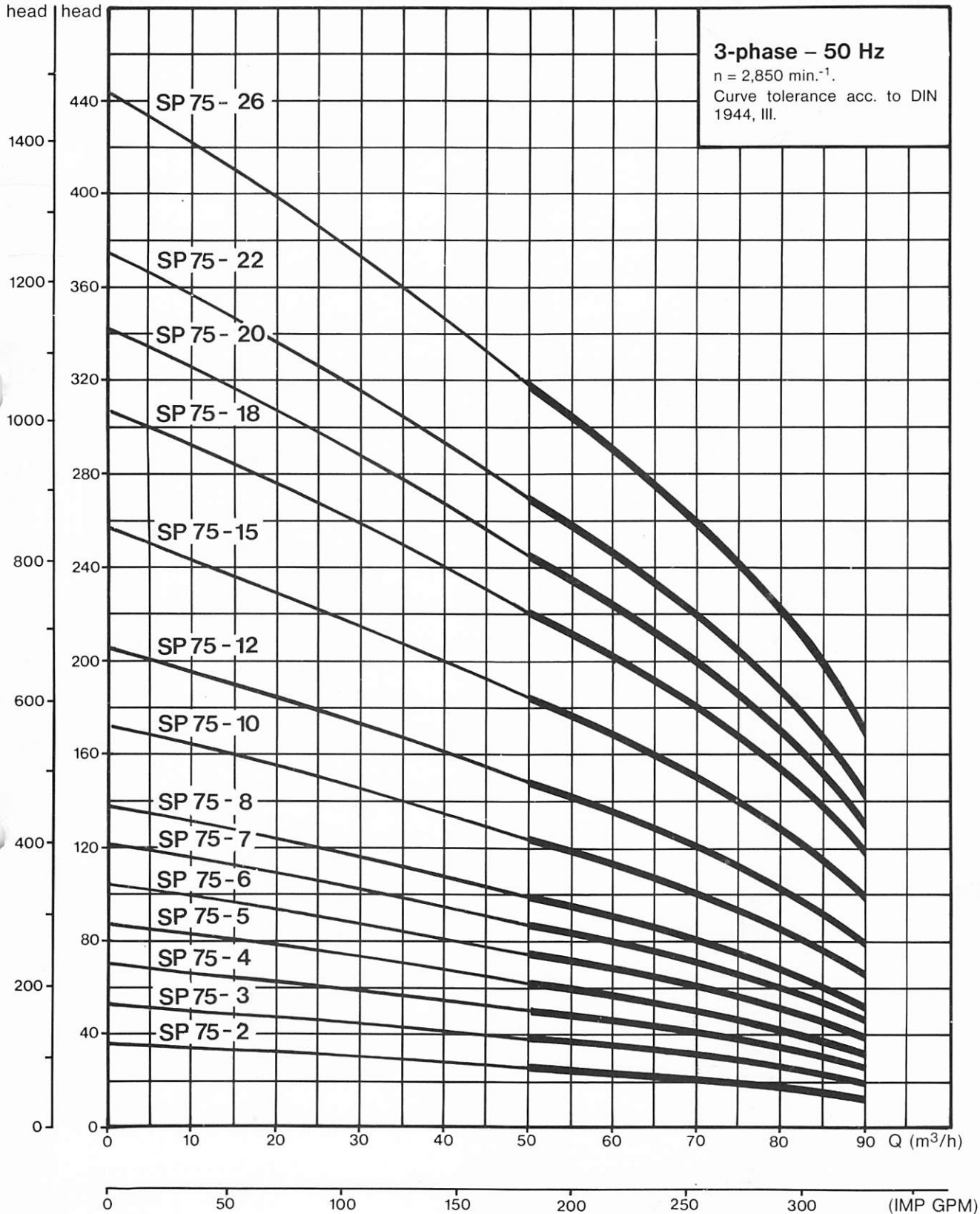
**Subject to alterations**



### TECHNICAL DATA

Feet head  
Metres head

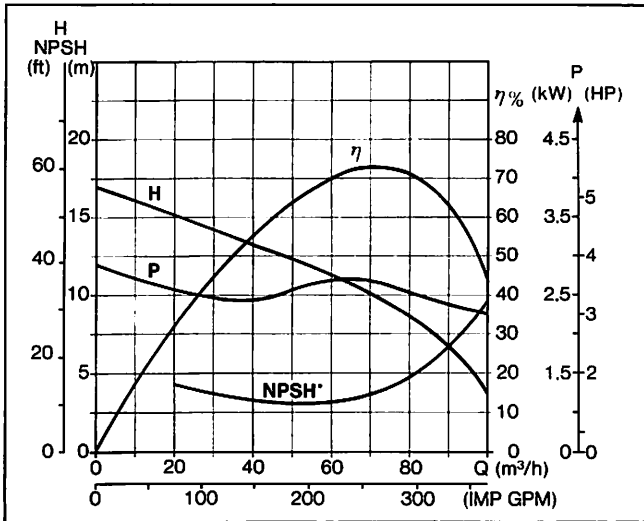
**3-phase – 50 Hz**  
n = 2,850 min.<sup>-1</sup>.  
Curve tolerance acc. to DIN 1944, III.



**SP 75 flow range: 50-90 m<sup>3</sup>/h (183-330 IMP GPM).**

The GRUNDFOS submersible pump range covers flows from 0.1-160 m<sup>3</sup>/h (0.4-587 IMP GPM).

PERFORMANCES PER STAGE



\* NPSH is determined at 1 percent head loss.

MATERIALS

SP 75 - Standard version:

All main components in stainless steel: DIN W.-Nr. 1.4301. Max. water temperature: 35°C.

SP 75-N - Special version:

All main components in stainless steel: DIN W.-Nr. 1.4401. Max. water temperature: 35°C.

A hot water version is available on request.

MINIMUM INTERNAL DIAMETER OF BOREHOLE:

8" (200 mm).

Connection to riser main: 5" BSP (4" BSP and 5" flange on request).

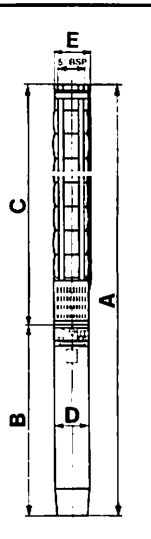
ELECTRICAL DATA

	PUMP TYPE	MOTOR		MAX. OPERATING CURRENT (amps)			FULL LOAD CURRENT I <sub>1/1</sub> (amps)			POWER FACTOR (full load)			I <sub>start</sub> / I <sub>1/1</sub>		
		kW	HP	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V
6" MOTOR	SP 75- 2	5.5	7.5	20.5	12.0	12.5	21.5	12.8	13.0	0.85	0.85	0.76	5.4	5.2	5.6
	SP 75- 3	11.0	15.0	31.5	18.6	20.5	41	24.5	25.0	0.87	0.86	0.78	6.3	6.0	6.4
	SP 75- 4	11.0	15.0	38.5	22.0	24.0	41	24.5	25.0	0.87	0.86	0.78	6.3	6.0	6.4
	SP 75- 5	15.0	20.0	50	30.0	31.0	56	32.5	34	0.85	0.85	0.76	5.9	5.8	6.1
	SP 75- 6	18.5	25.0	58	34.0	36.0	67	39.5	40	0.87	0.87	0.80	5.9	5.7	6.1
	SP 75- 7	22.0	30.0	67	40	41	80	48	47	0.88	0.87	0.81	5.7	5.4	6.0
	SP 75- 8	22.0	30.0	74	44	45	80	48	47	0.88	0.87	0.81	5.7	5.4	6.0
8" MOTOR	SP 75-10	30	40	-	56	57	-	64	62	-	0.86	0.82	-	5.3	6.0
	SP 75-12	37	50	-	67	68	-	78	76	-	0.88	0.82	-	4.9	5.5
	SP 75-15	45	60	-	81	83	-	94	93	-	0.87	0.82	-	5.2	5.7
	SP 75-18	55	75	-	96	97	-	113	110	-	0.88	0.83	-	5.2	5.8
	SP 75-20	55	75	-	107	108	-	113	110	-	0.88	0.83	-	5.2	5.8
	SP 75-22	75	100	-	118	119	-	154	149	-	0.88	0.88	-	4.7	5.3
	SP 75-26	75	100	-	136	135	-	154	149	-	0.88	0.88	-	4.7	5.3

The electrical data apply to SP submersible pumps fitted with GRUNDFOS submersible motors. If other pump makes are used, the data can be used as a guide only. Always check the motor name plate. Other voltages are available on request.

DIMENSIONS AND WEIGHTS

	PUMP TYPE	DIMENSIONS mm					WEIGHT kgs		SHIPP. VOL. m³
		A	B	C	D	E*	Net	Gross	
6" MOTOR	SP 75- 2	1205	630	575	140	177	78	91	0.08
	SP 75- 3	1445	760	685	140	177	97	105	0.09
	SP 75- 4	1555	760	795	140	177	100	116	0.10
	SP 75- 5	1755	850	905	140	177	113	140	0.10
	SP 75- 6	1935	920	1015	140	177	120	147	0.12
	SP 75- 7	2095	970	1125	140	177	128	154	0.12
	SP 75- 8	2205	970	1232	140	177	131	161	0.15
8" MOTOR	SP 75-10	2585	1120	1465	191	191	213	233	0.24
	SP 75-12	2865	1180	1685	191	191	229	252	0.26
	SP 75-15	3265	1250	2015	191	191	250	295	0.28
	SP 75-18	3712	1350	2362	191	191	276	305	0.49
	SP 75-20	4062	1480	2582	191	191	356	388	0.55
	SP 75-22	4282	1480	2802	191	191	360	396	0.55
	SP 75-26	4722	1480	3242	191	191	375	415	0.62



BY INQUIRY

Please supply the following information with each inquiry:

1. Q - the quantity of water required.
2. H - the total manometric head required including frictional losses and tank pressure, if any.
3. The diameter of the borehole (the smallest inside dimension).
4. The distance from ground level to water level at rest.
5. The lowering of the water level, when a certain quantity is pumped.
6. The total length of the borehole, less the length of a borehole filter, if any.
7. The type of electric supply, voltage and frequency.
8. Supplementary information concerning the installation, if any.

\*E = Maximum diameter of pump incl. cable guard and motor.  
For pump with 5" flange: E = 220 mm.

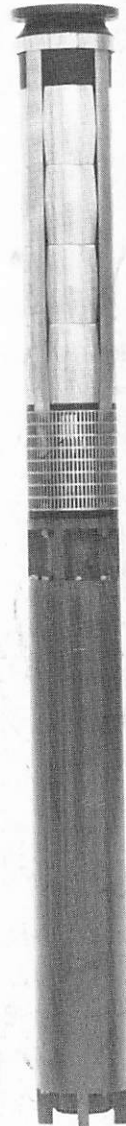
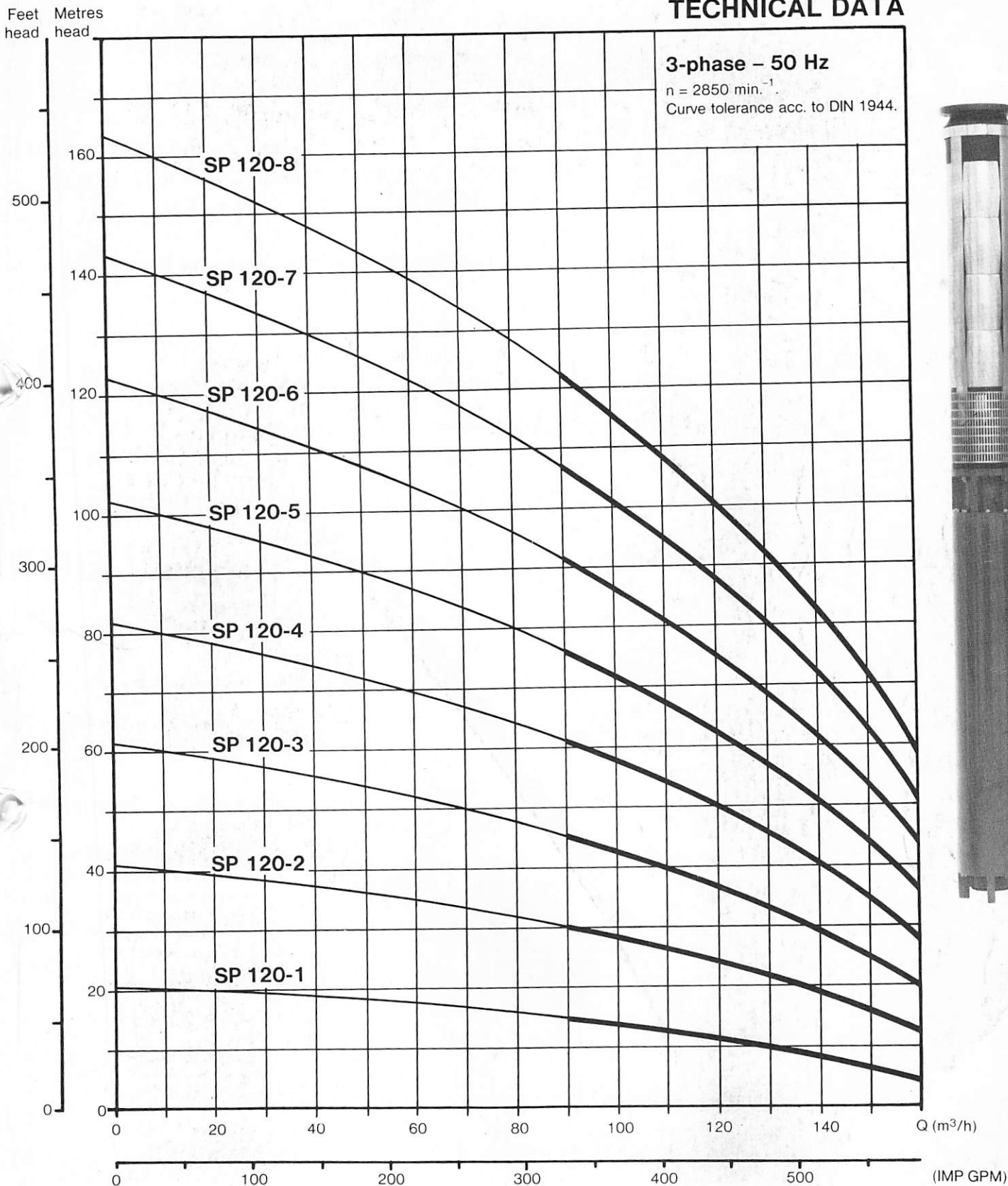
Subject to alterations.

#### TECHNICAL DATA

3-phase – 50 Hz

$n = 2850 \text{ min.}^{-1}$

Curve tolerance acc. to DIN 1944.

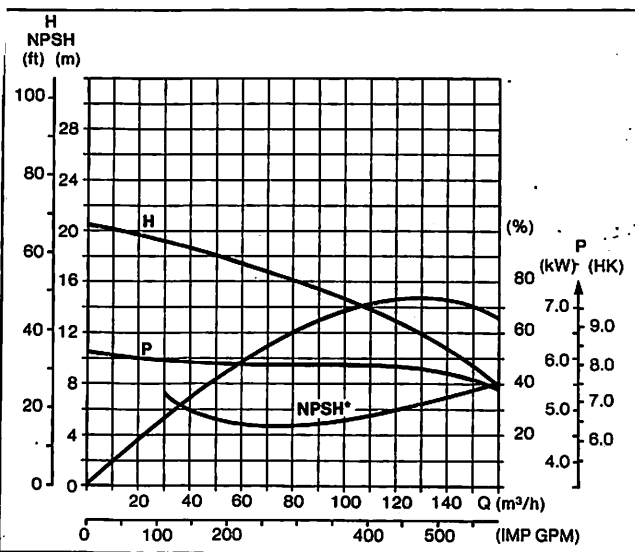


SP 120 flow range: 90-160 m<sup>3</sup>/h (330-587 IMP GPM).

The GRUNDFOS submersible pump range covers flows from 0.1-160 m<sup>3</sup>/h (0.4-587 IMP GPM).

# SP 120

## PERFORMANCES PER STAGE



\* NPSH is determined at 1 percent head loss.

## MATERIALS

### SP 120 - Standard version:

All main components in stainless steel: DIN W.-nr. 1.4301. Max. water temperature: 35°C.

### SP 120-N - Sea water version:

All main components in stainless steel: DIN W.-nr. 1.4401. Max. water temperature: 35°C.

A hot water version is available on request.

## MINIMUM INTERNAL DIAMETER OF BOREHOLE: 10" (250 mm).

Connection to riser main: 6" flange (6" BSP or 5" BSP on request).

Pumps with larger numbers of stages are available on request: SP 120-10 and SP 120-12.

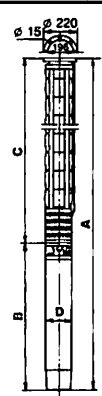
## ELECTRICAL DATA

	PUMP TYPE	MOTOR		MAX. OPERATING CURRENT (amps)			FULL LOAD CURRENT I <sub>1/1</sub> (amps)			POWER FACTOR (full load)			I <sub>start</sub> / I <sub>1/1</sub>		
		kW	HP	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V	3x220 V	3x380 V	3x415 V
6" M.	SP 120-1	7.5	10.0	25.0	14.6	15.5	28.5	16.7	17.1	0.86	0.85	0.77	5.5	5.4	5.7
	SP 120-2	15.0	20.0	50	29.0	31.0	56	32.5	34.0	0.85	0.85	0.76	5.9	5.8	6.1
	SP 120-3	22.0	30.0	70	42	43	80	48	47	0.88	0.87	0.81	5.7	5.4	6.0
8" MOTOR	SP 120-4	30	40	-	58	57	-	64	62	-	0.86	0.82	-	5.3	6.0
	SP 120-5	37	50	-	70	71	-	78	76	-	0.88	0.82	-	4.9	5.5
	SP 120-6	45	60	-	83	85	-	94	93	-	0.87	0.82	-	5.2	5.7
	SP 120-7	55	75	-	96	97	-	113	110	-	0.88	0.83	-	5.2	5.8
	SP 120-8	55	75	-	107	106	-	113	110	-	0.88	0.83	-	5.2	5.8

The electrical data are for SP submersible pumps fitted with GRUNDFOS motors. When using other motor makes, the data can be used as a guide only. Always check the motor name plate. Other voltages are available on request.

## DIMENSIONS AND WEIGHTS

	PUMP TYPE	DIMENSIONS mm					WEIGHT kgs.		SHIPP. VOL. m³
		A	B	C	D	E*	Net	Gross	
6" M.	SP 120-1	1228	685	543	140	220	85	107	0.140
	SP 120-2	1553	850	703	140	220	110	135	0.178
	SP 120-3	1833	970	863	140	220	125	155	0.202
8" MOTOR	SP 120-4	2143	1120	1023	191	220	180	220	0.354
	SP 120-5	2363	1180	1183	191	220	210	225	0.390
	SP 120-6	2593	1250	1343	191	220	234	283	0.426
	SP 120-7	2853	1350	1503	191	220	305	365	0.573
	SP 120-8	3013	1350	1663	191	220	325	390	0.601



\* E = Max. diameter of pump incl. cable guard + motor.

## BY INQUIRY

Please supply the following information with each inquiry:

1. Q - the quantity of water required.
2. H - the total manometric head required including frictional losses and tank pressure, if any.
3. The diameter of the borehole (the smallest inside dimension).
4. The distance from ground level to water level at rest.
5. The lowering of the water level, when a certain quantity is pumped.
6. The total length of the borehole, less the length of a borehole filter, if any.
7. The type of electric supply, voltage and frequency.
8. Supplementary information concerning the installation, if any.

Subject to alterations



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