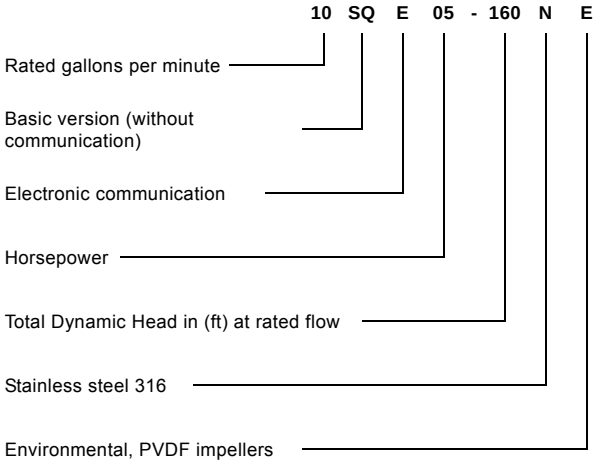
Identification

Type key example SQ, SQE, SQE-NE



5. Sizing and selection

System sizing guide

Step 1

Calculate minimum head requirements at no flow conditions:

H_{max} (required) = dynamic head + system pressure (in feet) + above grade elevation + friction loss

Step 2

Select pump from chart as follows:

- Choose model family based on the desired flow rate (i.e. 15SQE for a flow rate of 15 gpm)
- Select the first model with a value in Column 2 greater than the H_{max} calculated in Step 1 (For example: the choice for a 22 gpm model with an H_{max} of 140 ft would be the 22SQE-160).
- Double check your selection in the performance curves; see *7. SQ curve charts* on p. 18.

System sizing matrix		
	Column 1	**Column 2**
Pump type Model B	**Shutoff head (0 gpm) @ 3000 rpm min. speed**	**Head @ rated gpm @ 10700 rpm max. speed**
	TDH [feet]	**TDH [feet]**
5SQE-90	11	86
5SQE-140	17	131
5SQE-180	22	177
5SQE-230	28	222
5SQE-270	34	270
5SQE-320	39	315
5SQE-360	45	360
5SQE-410	51	405
5SQE-450	56	450
10SQE-110	12	105
10SQE-160	17	164
10SQE-200	23	215
10SQE-240	29	267
10SQE-290	34	328
10SQE-330	40	390
15SQE-70	10	75
15SQE-110	14	123
15SQE-150	19	164
15SQE-180	24	205
15SQE-220	29	246
15SQE-250	33	287
15SQE-290	38	328
22SQE-40	5	36
22SQE-80	9	77
22SQE-120	14	117
22SQE-160	18	159
22SQE-190	23	200
22SQE-220	27	240
30SQE-40	5	33
30SQE-90	11	82
30SQE-130	16	126

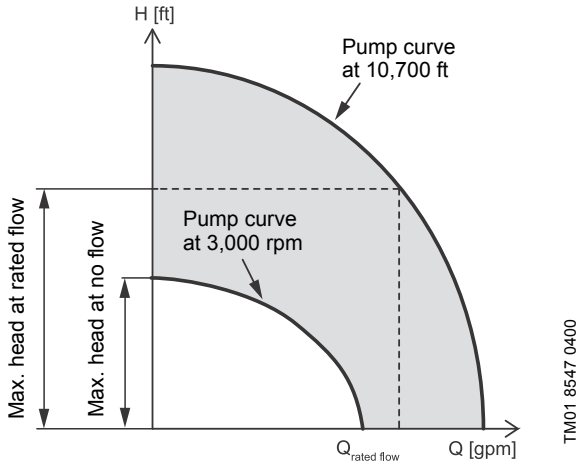


Fig. 14 Recommended sizing

Note: All calculated head requirements must lie between the selected pump models minimum and maximum speed curves.

8. Technical data

Electrical data

Supply voltage:	1x200-240V +6%/-10%, 50/60 Hz, PE 1x100-115V +6%/-10%, 50/60 Hz, PE
Operation via generator:	As a minimum, the generator output must be equal to the motor P1[kw] + 10%
Starting current:	The motor starting current is equal to the highest value stated on the motor nameplate
Starting:	Soft Start
Run-up time:	Maximum: 2 seconds
Motor protection:	Motor is protected against: – Dry running – overvoltage – undervoltage – overload – overtemperature.
Power factor:	PF=1
Motor cable:	3 wire, 14AWG XLPE, 5 ft
Motor liquid:	Type SML 2
pH Values:	SQ and SQE: 5 to 9 SQE-NE: 2 to 13
Liquid temperature:	The temperature of the pumped liquid must not exceed 86 °F (30 °C)

Note: If liquids with a viscosity higher than that of water are to be pumped, please contact Grundfos.

Control units CU 300 and CU 301

Voltage:	1 x 100-240 V – 10 %/+ 6 %, 50/60 Hz, PE
Power consumption:	5 W
Current consumption:	Maximum 130 mA
Enclosure class:	IP 55
Ambient temperature:	During operation: –22 °F to +122 °F (–30 °C to +50 °C) During storage: –22 °F to 140 °F (–30 °C to +60 °C)
Relative air humidity:	95 %.
Pump cable:	Maximum length between CU 300 or CU 301 and pump: 650 ft (198 m)
Back-up fuse:	Maximum: 16 A
Radio noise:	CU 300 and CU 301 comply with EMC Directive 89/336/EEC. Approved according to the standards EN 55014 and EN 55014-2
Marking:	CE, cUL (CU 301)
Load:	Max. 100 mA

Operating conditions

Minimum ambient fluid temperature:	+34 °F (+1 °C)
Maximum ambient fluid temperature:	+86 °F (+30 °C)
Well diameter:	3-inch or larger
Installation depth (maximum):	500 feet below static water level

Storage conditions

Minimum ambient temperature:	–4 °F (–20 °C)
Maximum ambient temperature:	+140 °F (+60 °F)
Frost protection:	If the pump has to be stored after use, it must be stored at a frost-free location, or it must be ensured that the motor liquid is frost-proof.

Motor data

Pump type	Hp	Voltage	Full load amps		Overload amps		Min. well diameter	Discharge
			230V	115V	230V	115V		
5SQE05-90	1/2	230V / 115V	2.1	4.2	5	11	3"	1" NPT
5SQE05-140	1/2	230V / 115V	2.9	6.0	5	11	3"	1" NPT
5SQE05-180	1/2	230V / 115V	3.7	7.7	5	11	3"	1" NPT
5SQE07-230	3/4	230V	4.6	-	8	-	3"	1" NPT
5SQE07-270	3/4	230V	5.3	-	8	-	3"	1" NPT
5SQE07-320	3/4	230V	6.2	-	8	-	3"	1" NPT
5SQE10-360	1	230V	7.2	-	11	-	3"	1" NPT
5SQE10-410	1	230V	8.1	-	11	-	3"	1" NPT
5SQE15-450	1 1/2	230V	9.2	-	12	-	3"	1" NPT
10SQE05-110	1/2	230V / 115V	2.9	6.1	5	11	3"	1 1/4" NPT
10SQE05-160	1/2	230V / 115V	4.1	8.6	8	11	3"	1 1/4" NPT
10SQE07-200	3/4	230V	5.3	-	8	-	3"	1 1/4" NPT
10SQE7-240	3/4	230V	6.0	-	8	-	3"	1 1/4" NPT
10SQE10-290	1	230V	7.7	-	11	-	3"	1 1/4" NPT
10SQE15-330	1 1/2	230V	8.9	-	12		3"	1 1/4" NPT
15SQE05-70	1/2	230V / 115V	2.9	6.0	5	11	3"	1 1/4" NPT
15SQE05-110	1/2	230V / 115V	4.0	8.3	5	11	3"	1 1/4" NPT
15SQE07-150	3/4	230V	5.1	-	8	-	3"	1 1/4" NPT
15SQE07-180	3/4	230V	6.2	-	8	-	3"	1 1/4" NPT
15SQE10-220	1	230V	7.4	-	11	-	3"	1 1/4" NPT
15SQE10-250	1	230V	8.4	-	11	-	3"	1 1/4" NPT
15SQE15-290	1 1/2	230V	9.7	-	12	-	3"	1 1/4" NPT
22SQE05-40	1/2	230V / 115V	1.9	3.9	5	-	3"	1 1/2" NPT
22SQE05-80	1/2	230V / 115V	3.4	7.2	5	-	3"	1 1/2" NPT
22SQE07-120	3/4	230V	4.9	-	8	-	3"	1 1/2" NPT
22SQE10-160	1	230V	6.4	-	8	-	3"	1 1/2" NPT
22SQE10-190	1	230V	7.9	-	11	-	3"	1 1/2" NPT
22SQE15-220	1 1/2	230V	9.5	-	12	-	3"	1 1/2" NPT
30SQE05-40	1/2	230V / 115V	2.8	5.7	5	-	3"	1 1/2" NPT
30SQE07-90	3/4	230V	5.2	-	8	-	3"	1 1/2" NPT
30SQE10-130	1	230V	7.6	-	11	-	3"	1 1/2" NPT