

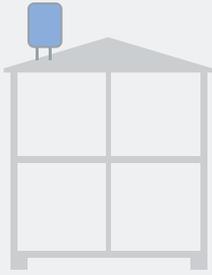
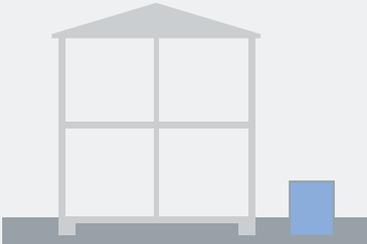
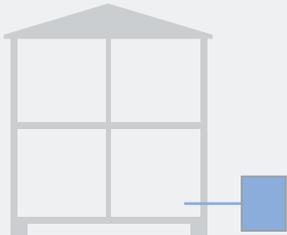
PERFECT WATER
THROUGHOUT THE HOME

QUICK SELECTION GUIDE

FOR PRESSURE BOOSTING

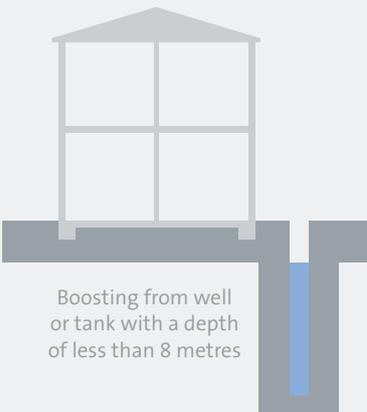
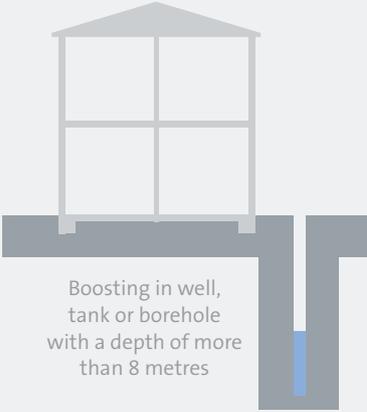
PRESSURE BOOSTING - PUMP SELECTION

Use the table below to select the best Grundfos pump for any type of water supply task. Once you've settled on a pump model, use the corresponding sizing guide to get the perfect fit.

	Good	Better	Best
<p>POSITIVE INLET PRESSURE (down to 1 metre below ground level)</p>  <p>Boosting from roof tank</p>		 <p>SCALA1</p>	 <p>SCALA2</p>
 <p>Boosting from tank</p>	 <p>Jet pump & booster</p>	 <p>SCALA1</p>	 <p>SCALA2</p>
 <p>Boosting from mains</p>	 <p>SCALA1</p>	 <p>SCALA2</p>	 <p>CME BOOSTER</p>

PRESSURE BOOSTING - PUMP SELECTION

Use the table below to select the best Grundfos pump for any type of water supply task. Once you've settled on a pump model, use the corresponding sizing guide to get the perfect fit.

		Good	Better	Best
NEGATIVE INLET PRESSURE	 <p>Boosting from well or tank with a depth of less than 8 metres</p>	<p>DRY INSTALLED</p>  <p>Jet pump & booster</p>	 <p>SCALA1</p>	 <p>SCALA2</p>
	 <p>Boosting in well, tank or borehole with a depth of more than 8 metres</p>	<p>SUBMERGED</p>  <p>SB with PM1 or PM2</p>	 <p>SBA</p>	 <p>SQ</p>

PRESSURE BOOSTING - QUICK SIZING

○ Tapping point

Ex. sizing and selection

- Required comfort level:**
- Adjustable constant pressure
- Find the right booster:**
- How many taps: 6 taps
- How many floors: 3 floors
- Result: **CMBE 1-44****

Taps	1-5	6-10
Floors		
4	CMBE 1-75	CMBE 1-75
3	CMBE 1-44	CMBE 1-44
2	CMBE 1-44	CMBE 1-44
1	CMBE 1-44	CMBE 1-44

ADJUSTABLE CONSTANT PRESSURE LEVEL

 CMBE	Floors \ Taps				
	4	CMBE 1-75	CMBE 3-62	CMBE 5-62	—
	3	CMBE 1-44	CMBE 3-62	CMBE 5-62	—
	2	CMBE 1-44	CMBE 3-62	CMBE 5-62	—
	1	CMBE 1-44	CMBE 3-30	CMBE 3-30	—

 CMBE TWIN (Duty/Assist)	Floors \ Taps				
	4	—	—	—	CMBE TWIN 5-62
	3	—	—	—	CMBE TWIN 5-62
	2	—	—	—	CMBE TWIN 5-62
	1	—	—	—	CMBE TWIN 5-31

 SCALA2 · All-in-one design · Dry-run protection	Floors \ Taps			
	4	SCALA2 3-45*	—	—
	3	SCALA2 3-45	SCALA2 3-45	—
	2	SCALA2 3-45	SCALA2 3-45	—
	1	SCALA2 3-45	SCALA2 3-45	SCALA2 3-45

PRESSURE BOOSTING - QUICK SIZING

CONVENTIONAL PUMP CONTROL

 <p>SCALA1</p> <ul style="list-style-type: none"> · All-in-one booster · Water on demand · Self-priming 	Floors\Taps	 1-5	 6-10	 11-20	 21-50
	 4	SCALA1 3-45*	SCALA1 5-55	—	—
	 3	SCALA1 3-45	SCALA1 3-45	SCALA1 5-55	—
	 2	SCALA1 3-35	SCALA1 3-45	SCALA1 5-55	—
	 1	SCALA1 3-25	SCALA1 3-35	SCALA1 3-45	—

 <p>SCALA1 TWIN (Duty/Assist)</p> <ul style="list-style-type: none"> · Easy solution for twin-booster · Easy installation · Enabled for Grundfos GO Remote 	Floors\Taps	 1-5	 6-10	 11-20	 21-50
	 4	—	—	SCALA1 TWIN 5-55	SCALA1 TWIN 5-55
	 3	—	—	—	SCALA1 TWIN 5-55
	 2	—	—	—	SCALA1 TWIN 5-55
	 1	—	—	—	SCALA1 TWIN 5-55

 <p>Jet pump & booster</p> <ul style="list-style-type: none"> · Easy to install · Self-priming · Robust design 	Taps or m ³ /h			
		1-5 taps 1-2 m³/h	6-10 taps 3-4 m³/h	11-20 taps 4-5 m³/h
	Manually controlled water supply	JP 3-42	JP 4-47/54	JP 5-48
	Constant water supply with pressure-drop compensation	JP 3-42 PT-V/H	JP 4-47/54 PT-V/H	JP 5-48 PT-V/H
Constant water supply. Dry-running protection and anti-cycling function	JP 3-42 PM	JP 4-47/54 PM	JP 5-48 PM	

PRECONDITIONS
 • 3 bar tap pressure is considered, to achieve 4 bar pressure add 2 more floors • Flooded Suction • 0.5 l/s per tap average, usage pattern is taken into account

PRESSURE BOOSTING - QUICK SIZING

CONVENTIONAL PUMP CONTROL

 <p>SBA</p>	Application	Recommended pump
	One-storey house For toilet flushing, washing machine, car washing and garden watering	SBA 3-35
	Two-storey house For toilet flushing, washing machine, car washing and garden watering	SBA 3-45

 <p>SB</p>	General recommendation	Application	Recommended pump
	If the distance from tank wall to the pump is above 1.5 metres (4.9 feet), the model with side inlet should be selected. If the distance from tank wall to the pump is less 1.5 metres (4.9 feet), the model with suction strainer should be selected.	One-storey house For toilet flushing, washing machine, car washing and garden watering	SB 3-35
		Two-storey house For toilet flushing, washing machine, car washing and garden watering	SB 3-45

PRECONDITIONS

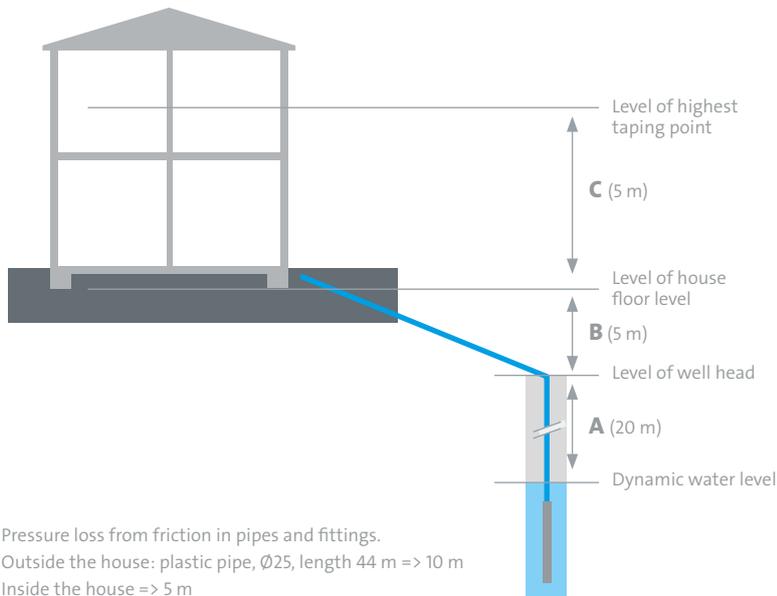
• 3 bar tap pressure is considered, to achieve 4 bar pressure add 2 more floors • Flooded Suction • 0.5 l/s per tap average, usage pattern is taken into account

GROUNDWATER - QUICK SIZING - PUMP

FLOW SIZING

 SQ · Compact design · Built-in motor protection · Easy installation	Kitchen sink	Dish washer, washing machine	Toilet w. wash basin and WC	Bathroom w. wash basin, WC and shower	Bathroom w. wash basin, WC and bathtub	Garden and lawn irrigation	Nominal flow [m ³ /h]	Recommended pump size
	Small house	1		1				1
Medium house	1	2	1	1			2	SQ2
Large house	2	2		1	1	2	3	SQ3
			2 x large house				5	SQ5
			3 x large house				7	SQ7

HEAD SIZING



Calculate max. pressure required

1. Pressure (H) at the tap requiring max. pressure = X
2. Static head (A + B + C) = Y
3. Pressure loss from friction in pipes and fittings = Z

$$H_{\text{total}} = X + Y + Z$$

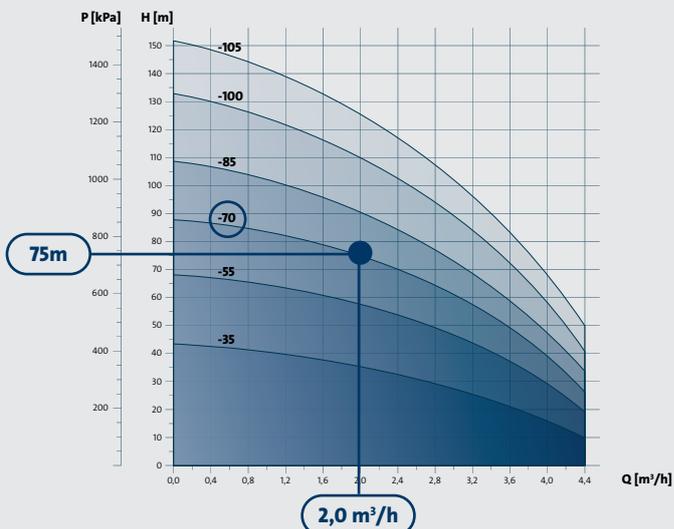
Example of calculation

1. Pressure at the tap (max pressure): 3 bar = 30 m
2. Static head: 20 m + 5 m + 5 m = 30 m
3. Pressure loss from friction in pipes and fittings: 10 m + 5 m = 15 m

Maximum pressure required:

$$H_{\text{total}} = 30 \text{ m} + 30 \text{ m} + 15 \text{ m} = \mathbf{75 \text{ m}}$$

PUMP SELECTION



Example of flow sizing

Medium house

=> Nominal flow **2 m³/h** => Pump size **SQ2**

Pump choice

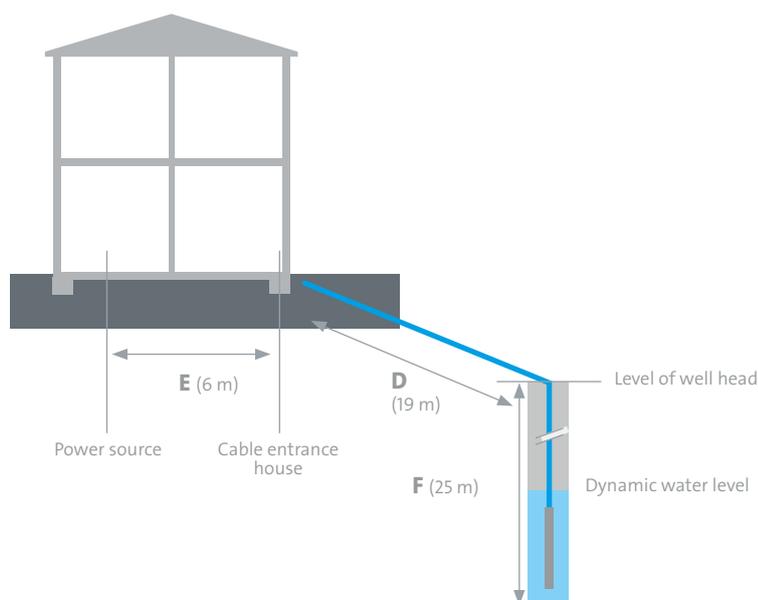
SQ 2 - 70

GROUNDWATER - QUICK SIZING - CABLE

MAXIMUM CABLE LENGTH

 <p>SQ CABLE · Supply voltage 240 V · 5% voltage drop</p>	P2 [kW]	I _{MAX} [A]	Wire cross sectional area [mm ²]			
			1.5	2.5	4.0	6.0
				Maximum cable length [m]		
	0.70	5.2	86	144	230	346
	1.15	8.4	53	89	142	214
	1.68	11.2	40	66	107	160
	1.85	12.0	37	62	100	150

HOW TO SELECT THE CROSS-SECTIONAL AREA



! Supply voltage 240 V 5% voltage drop and cable supplied by Grundfos.

How to select the cross-sectional area of the individual wire of a submersible drop cable

1. Select SQ pump incl. motor size
2. Required total length of cable (D + E + F)
3. Read the cross-sectional area of individual wire of the drop cable

Example:

1. SQ pump incl. motor size
SQ 2-70, motor size 1,15 kW
2. Distance from pump to the power source (outside 44 m (D + F) + inside 6 m (E))
50 m
3. Selected cross-sectional area
1,5 mm²