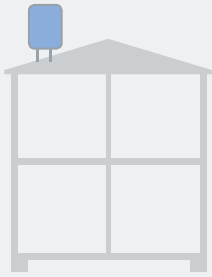


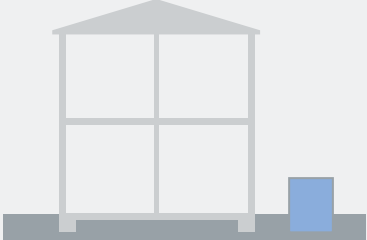


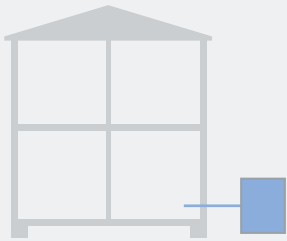





**PERFECT WATER**  
THROUGHOUT THE HOME

# **QUICK SELECTION GUIDE**

# 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>Boosting from roof tank</p>	 <p>UPA</p>		 <p>SCALA2</p>
<p>Positive inlet pressure (down to 1 meter below ground level)</p>  <p>Boosting from tank</p>		 <p>CM BOOSTER</p>	 <p>SCALA2</p>
 <p>Boosting from mains</p>	 <p>CM BOOSTER</p>	 <p>SCALA2</p>	 <p>CME BOOSTER</p>

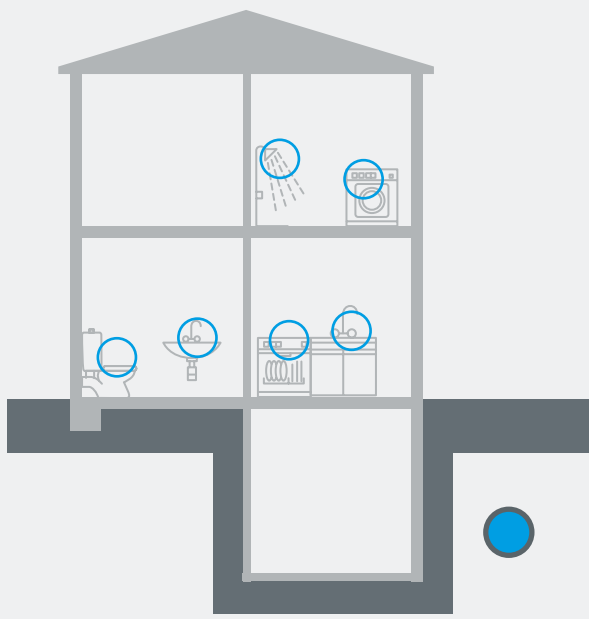
## PRESSURE BOOSTING - PUMP SELECTION

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>		 <b>CMB SP</b>	 <b>SCALA2</b>
	<b>SUBMERGED</b>		 <b>SB with PM1 or PM2</b>	 <b>SBA</b>
	 <p>Boosting in well, tank or borehole with a depth of more than 8 metres</p>		 <b>SQ</b>	 <b>SQE CONSTANT PRESSURE PACKAGE</b>

# 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

 <p><b>SCALA2</b></p> <ul style="list-style-type: none"> <li>· All-in-one design</li> <li>· Dry-run protection</li> </ul>	Floors \ Taps	 1-5	 6-10	 11-20	
		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





\* Max 15 meter to highest tap point










 <p><b>CME BOOSTER/ CMBE TWIN BOOSTER</b></p> <ul style="list-style-type: none"> <li>· Adjustable constant pressure level</li> <li>· Dry-run protection</li> <li>· Low noise &lt;55dB (A)</li> </ul>	Floors \ Taps	 1-5	 6-10	 11-20	 21-50	 51-70	 71-90	 91-120	
		4	1-75	1-75	3-62*	3-93*	3-93**	3-93**	N/A
		3	1-44	1-44	3-62*	3-62*	5-62*	3-62**	5-62**
		2	1-44	1-44	3-62*	3-62*	5-62*	3-62**	5-62**
		1	1-44	1-44	3-30*	3-62*	5-31*	3-62**	5-31**

\* CMBE or CMBE TWIN (duty/standby - setup done via Grundfos GO Remote app)  
\*\* CMBE TWIN only

# PRESSURE BOOSTING - QUICK SIZING

## CONVENTIONAL PUMP CONTROL


 <p><b>UPA</b></p> <ul style="list-style-type: none"> <li>· Low noise</li> <li>· High energy efficiency</li> <li>· Easy installation</li> </ul>	 <b>Taps 1-2</b>	 <b>Taps 2-4</b>	 <b>Taps 4-8</b>
	UPA15-90	UPA15-120	UPA-15-160
	UPA15-90	UPA15-120	UPA-15-160
	UPA15-90	UPA15-120	UPA-15-160
	UPA15-90	UPA15-120	UPA-15-160


 <p><b>CM BOOSTER</b></p> <ul style="list-style-type: none"> <li>· Compact design</li> <li>· Dry-run Protection</li> <li>· Easy installation</li> </ul>	Floors\Taps	 <b>1-5</b>	 <b>6-10</b>	 <b>11-20</b>	 <b>21-50</b>
	 4	CMB 1-54	CMB 3-47	CMB 3-47	CMB 5-47
	 3	CMB 1-45	CMB 3-37	CMB 3-47	CMB 5-47
	 2	CMB 1-45	CMB 3-37	CMB 3-47	CMB 5-4
	 1	CMB 1-36	CMB 3-28	CMB 3-37	CMB 5-4
		<ul style="list-style-type: none"> <li>· Adjustable start pressure</li> <li>· Pressure read-out</li> <li>· Cycling protection</li> <li>· Max run time stop</li> <li>· Auto-reset</li> </ul>		Fixed pressure	
		<b>CMB PM2</b> Max height 45 m	<b>CMB PM1 22</b> Max height 18 m	<b>CMB PM1 15</b> Max height 11 m	

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


 <p><b>SB</b></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.	<b>One-storey house</b> For toilet flushing, washing machine, car washing and garden watering	SB 3-35
		<b>Two-storey house</b> For toilet flushing, washing machine, car washing and garden watering	SB 3-45

**PRECONDITIONS**

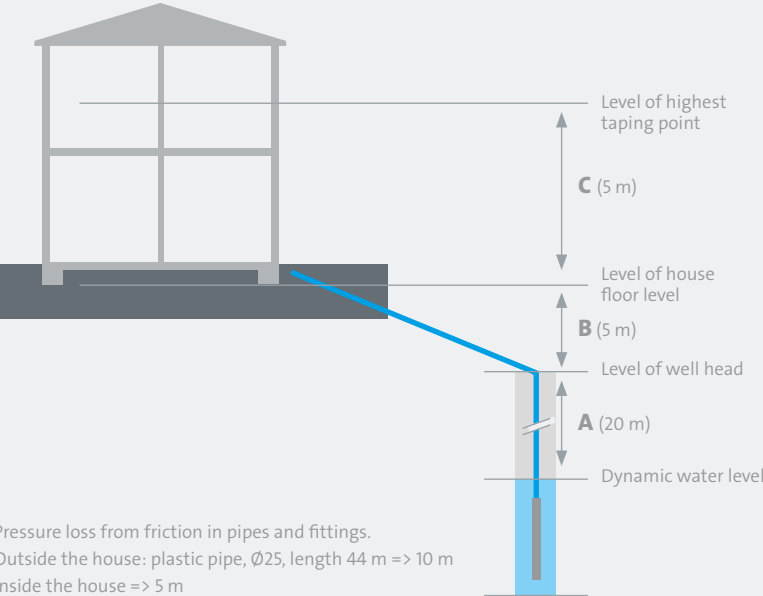
• 3 bar tap pressure is considered, to achieve 4 bar pressure add 2 more floors • Flooded Suction • 0.5 l/s per tap average, usage pattern is taken into account

# GROUNDWATER - QUICK SIZING - PUMP

## FLOW SIZING

 <b>SQ</b> · 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 <sup>3</sup> /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



Level of highest tapping point  
C (5 m)  
Level of house floor level  
B (5 m)  
Level of well head  
A (20 m)  
Dynamic water level

Pressure loss from friction in pipes and fittings.  
Outside the house: plastic pipe, Ø25, length 44 m => 10 m  
Inside the house => 5 m

### Calculate max. pressure required

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

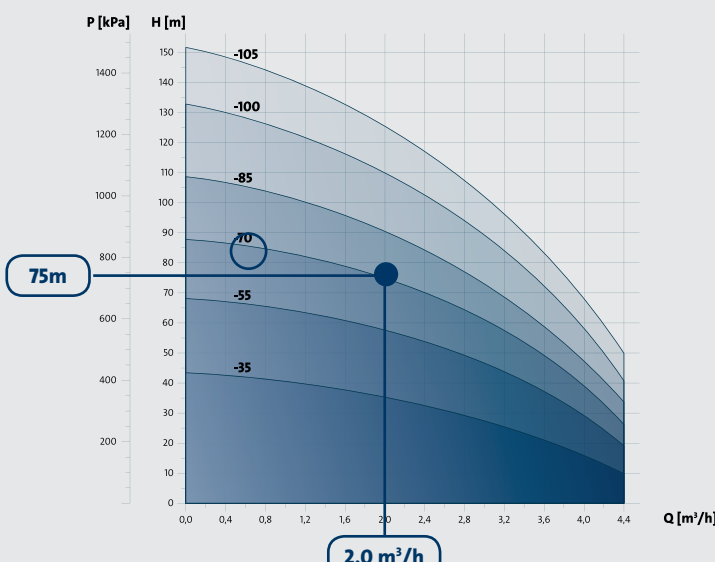
$$H_{total} = X + Y + Z$$

### Example of calculation

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

Maximum pressure required:  
 $H_{total} = 30 \text{ m} + 30 \text{ m} + 15 \text{ m} = 75 \text{ m}$

## PUMP SELECTION



P [kPa] H [m]

150  
1400  
140  
130  
1200  
120  
110  
1000  
100  
90  
800  
80  
70  
600  
60  
50  
400  
40  
30  
200  
20  
10  
0

0.0 0.4 0.8 1.2 1.6 2.0 2.4 2.8 3.2 3.6 4.0 4.4

Q [m<sup>3</sup>/h]

75m

2,0 m<sup>3</sup>/h


### Example of flow sizing

**Medium house**  
=> Nominal flow **2 m<sup>3</sup>/h** => Pump size **SQ2**

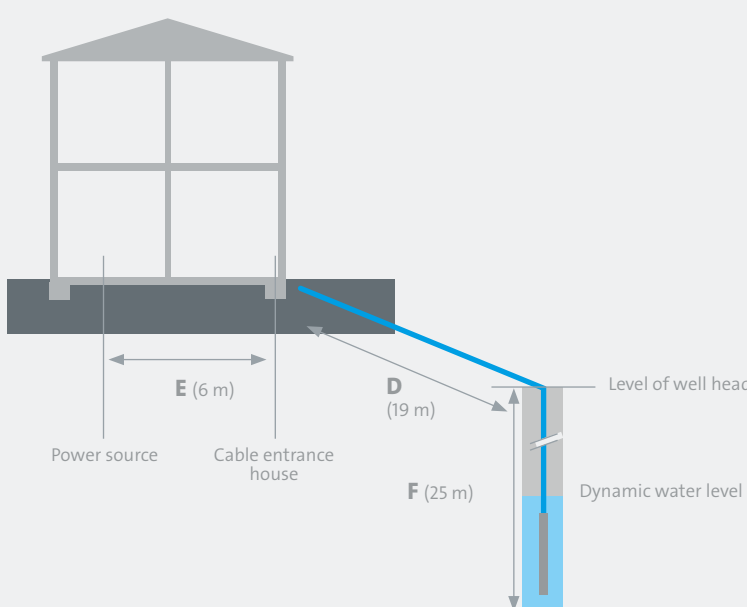
Pump choice  
**SQ 2 - 70**

# GROUNDWATER - QUICK SIZING - CABLE

## MAXIMUM CABLE LENGTH

 <p><b>SQ CABLE</b> · Supply voltage 240 V · 5% voltage drop</p>	P2 [kW]	I <sub>MAX</sub> [A]	Wire cross sectional area [mm <sup>2</sup> ]			
			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:

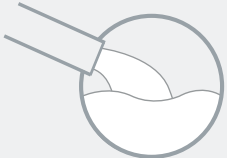
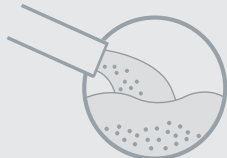
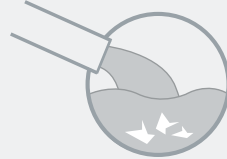
1. SQ pump incl. motor size  
**SQ 2-70, motor size 1,15 kW**
2. Distance from pump to the power source (outside 44 m (D + F) + inside 6 m (E))  
**50 m**
3. Selected cross-sectional area  
**1,5 mm<sup>2</sup>**



## WASTE WATER - PUMP SELECTION

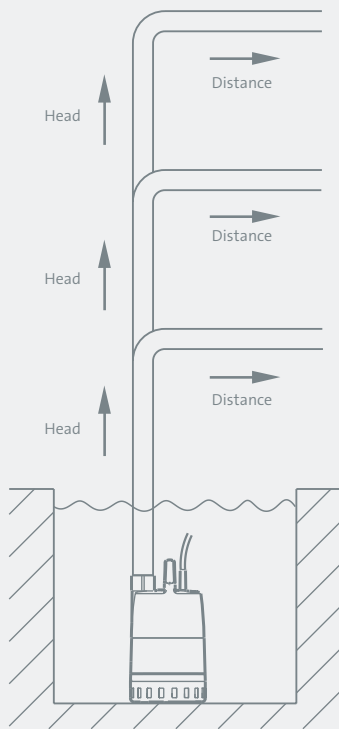
Use the tables below to select the best Grundfos pump for any type of wastewater task. Once you've settled on a pump model, use the corresponding sizing guide to get the perfect fit.

### DRAINAGE

		Max. solid size [mm]	
 <p><b>Drainage</b> For portable use or permanent installation, clean or greywater and salt water*</p>	Light duty	10 mm	<b>UNILIFT CC</b>
		10 mm	<b>UNILIFT KP</b>
	Heavy duty	12 mm	<b>UNILIFT AP12</b>
 <p><b>Effluent</b> Surface- and rainwater as well as greywater from sanitary appliances</p>		35 mm	<b>UNILIFT AP35</b>
		35 mm	<b>UNILIFT AP35B</b>
		50 mm	<b>UNILIFT AP50</b>
 <p><b>Sewage/Domestic wastewater</b> Domestic wastewater with toilet discharge</p>		50 mm	<b>UNILIFT AP50B</b>

\* Only special version of UNILIFT CC 7 and 9

# DRAINAGE - QUICK SIZING



## Ex. sizing and selection

- Select the best Grundfos pump for the type of wastewater task you need to solve:**  
- Use the table on previous page
- Find the right pump:**  
- How head: 9 m  
- How long distance: 400 m
- Result: AP12.50.11**

	AP12.40.08	AP12.50.11
Head \ Distance		
14 m		Max. 95 m
12 m	Max. 1 m	Max. 200 m
10 m	Max. 150 m	Max. 410 m
8 m	Max. 310 m	Max. 620 m

The selection and sizing illustration is based on an inner diameter of a DN 32 discharge pipe and secure a self cleaning velocity inside the pipe.




**UNILIFT CC**

	CC 5	CC 7	CC 9
Head \ Distance			
7 m			Max. 45 m
6 m			Max. 80 m
5 m		Max. 15 m	Max. 115 m
4,5 m		Max. 35 m	Max. 130 m
4 m		Max. 50 m	Max. 150 m
3 m		Max. 80 m	Max. 180 m
2,5 m	Max. 10 m	Max. 100 m	Max. 200 m
2 m	Max. 25 m	Max. 110 m	Max. 215 m


## DRAINAGE - QUICK SIZING

 <p><b>UNILIFT KP</b></p>	The selection and sizing illustration is based on an inner diameter of a DN 32 discharge pipe and secure a self cleaning velocity inside the pipe.			
		<b>KP 150</b>	<b>KP 250</b>	<b>KP 350</b>
	Head\Distance			
	7 m			Max. 25 m
	6 m		Max. 20 m	Max. 60 m
	5 m		Max. 50 m	Max. 95 m
	4 m		Max. 85 m	Max. 130 m
	3,5 m	Max. 15 m	Max. 105 m	Max. 145 m
	3 m	Max. 30 m	Max. 120 m	Max. 160 m
	2 m	Max. 65 m	Max. 160 m	Max. 195 m


 <p><b>UNILIFT AP12</b></p>	The selection and sizing illustration is based on an inner diameter of a 1 1/2" pipe for UNILIFT AP12.40 and 2" pipe for UNILIFT AP12.50 and secure a self cleaning velocity inside the pipe.				
		<b>AP12.40.04</b>	<b>AP12.40.06</b>	<b>AP12.40.08</b>	<b>AP12.50.11</b>
	Head\Distance				
	14 m				Max. 8 m
	12 m			Max. 40 m	Max. 115 m
	10 m		Max. 60 m	Max. 130 m	Max. 250 m
	8 m	Max. 45 m	Max. 150 m	Max. 220 m	Max. 370 m
	6 m	Max. 135 m	Max. 240 m	Max. 310 m	Max. 490 m
	4 m	Max. 225 m	Max. 330 m	Max. 400 m	Max. 610 m
	2 m	Max. 320 m	Max. 420 m	Max. 495 m	Max. 735 m

## DRAINAGE - QUICK SIZING

 <p><b>UNILIFT AP35</b></p>	The selection and sizing illustration is based on an inner diameter of a 1½" pipe and secure a self cleaning velocity inside the pipe.		
		<b>AP35.40.06</b>	<b>AP35.40.08</b>
	Head\Distance		
	9 m		Max. 30 m
	8 m		Max. 75 m
	7 m	Max. 35 m	Max. 120 m
	6 m	Max. 80 m	Max. 165 m
	5 m	Max. 130 m	Max. 215 m
	4 m	Max. 170 m	Max. 255 m
	3 m	Max. 220 m	Max. 305 m
2 m	Max. 265 m	Max. 350 m	

 <p><b>UNILIFT AP35B</b></p>	The selection and sizing illustration is based on an inner diameter of a 2" pipe and secure a self cleaning velocity inside the pipe.		
		<b>AP35B.50.06</b>	<b>AP35B.50.08</b>
	Head\Distance		
	9 m		Max. 15 m
	8 m		Max. 75 m
	7 m	Max. 20 m	Max. 135 m
	6 m	Max. 80 m	Max. 195 m
	5 m	Max. 140 m	Max. 260 m
	4 m	Max. 200 m	Max. 320 m
	3 m	Max. 260 m	Max. 385 m
2 m	Max. 325 m	Max. 440 m	

## DRAINAGE - QUICK SIZING

 <p><b>UNILIFT AP50</b></p>	The selection and sizing illustration is based on an inner diameter of a 2" pipe and secure a self cleaning velocity inside the pipe.		
		<b>AP50.50.08</b>	<b>AP50.50.11</b>
	Head\Distance		
	9 m		Max. 55 m
	8 m		Max. 115 m
	7 m	Max. 45 m	Max. 175 m
	6 m	Max. 105 m	Max. 235 m
	5 m	Max. 165 m	Max. 295 m
	4 m	Max. 225 m	Max. 360 m
	3 m	Max. 285 m	Max. 405 m
2 m	Max. 350 m	Max. 480 m	

 <p><b>UNILIFT AP50B</b></p>	The selection and sizing illustration is based on an inner diameter of a 2" pipe and secure a self cleaning velocity inside the pipe.			
		<b>AP50B.50.08</b>	<b>AP50B.50.11</b>	<b>AP50B.50.15</b>
	Head\Distance			
	14 m			Max. 65 m
	12 m			Max. 190 m
	11 m		Max. 25 m	Max. 250 m
	10 m		Max. 85 m	Max. 310 m
	9 m		Max. 145 m	Max. 370 m
	8 m	Max. 45 m	Max. 205 m	Max. 430 m
	6 m	Max. 165 m	Max. 330 m	*
5 m	Max. 225 m	Max. 390 m	*	
4 m	Max. 285 m	Max. 450 m	*	
3 m	Max. 345 m	*	*	
2 m	Max. 490 m*	Max. 740 m*	Max. 1060 m*	

\*The pumps shall not operate for longer time with this Head

















LIFTING STATIONS



Fixed inlet



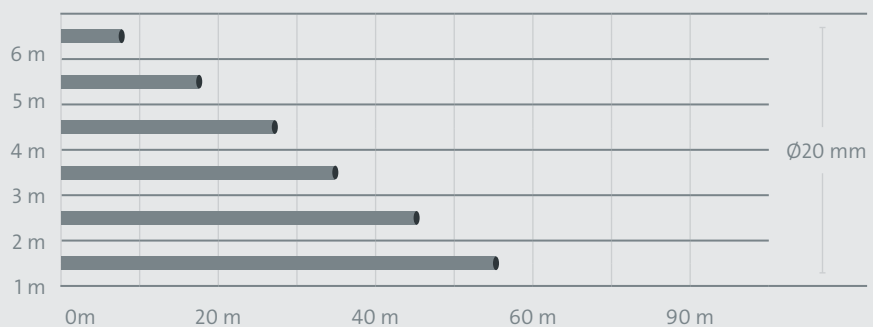
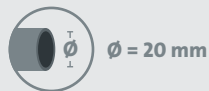
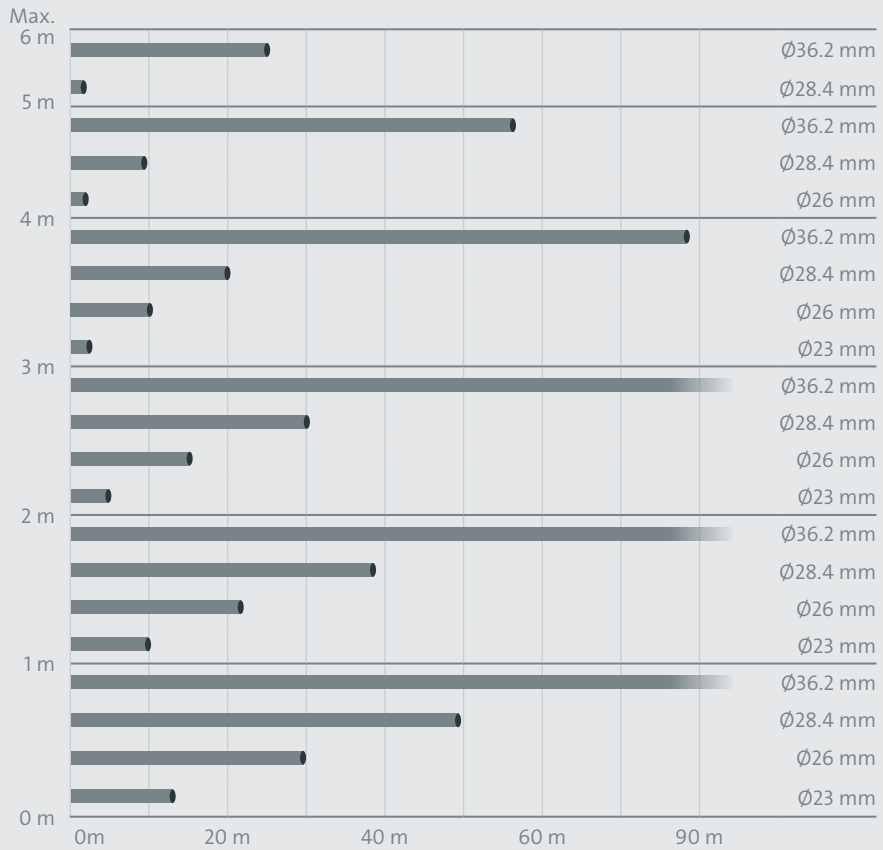
Additional optional inlet

	 <b>SOLOLIFT2</b> WC-1	 <b>SOLOLIFT2</b> WC-3	 <b>SOLOLIFT2</b> D-2	 <b>SOLOLIFT2</b> C-3	 <b>SOLOLIFT2</b> CWC-3
 Toilet	●	●			
 Wall-mounted toilet					●
 Urinal	○	○			○
 Sink	○	○	○	○	○
 Bidet		○	○	○	○
 Shower		○	○	○	○
 Bathtub				○	
 Washing machine				○	
 Kitchen sink				○	
 Dish-washer				○	
 Water softener				○	

# LIFTING STATIONS - QUICK SIZING



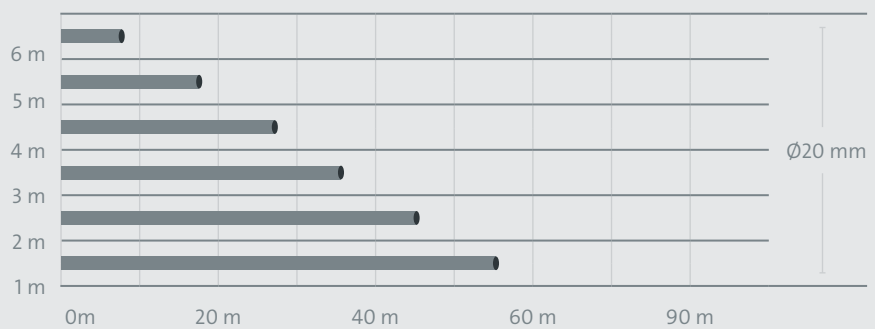
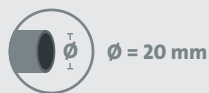
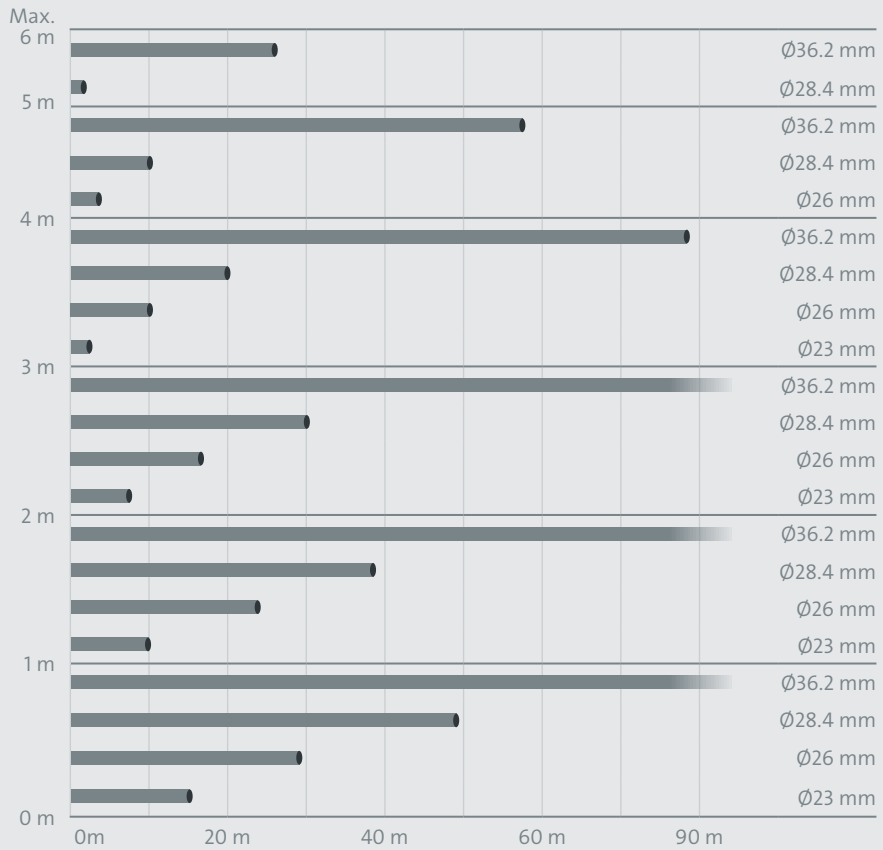
**SOLOLIFT2 WC-1**



# LIFTING STATIONS - QUICK SIZING



**SOLOLIFT2 WC-3**

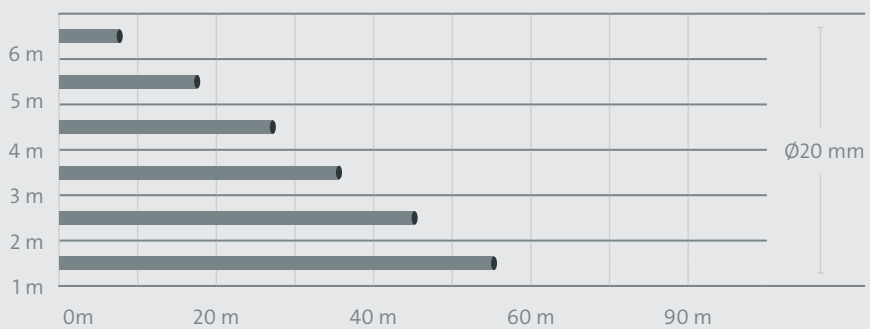
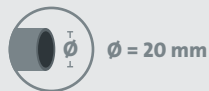
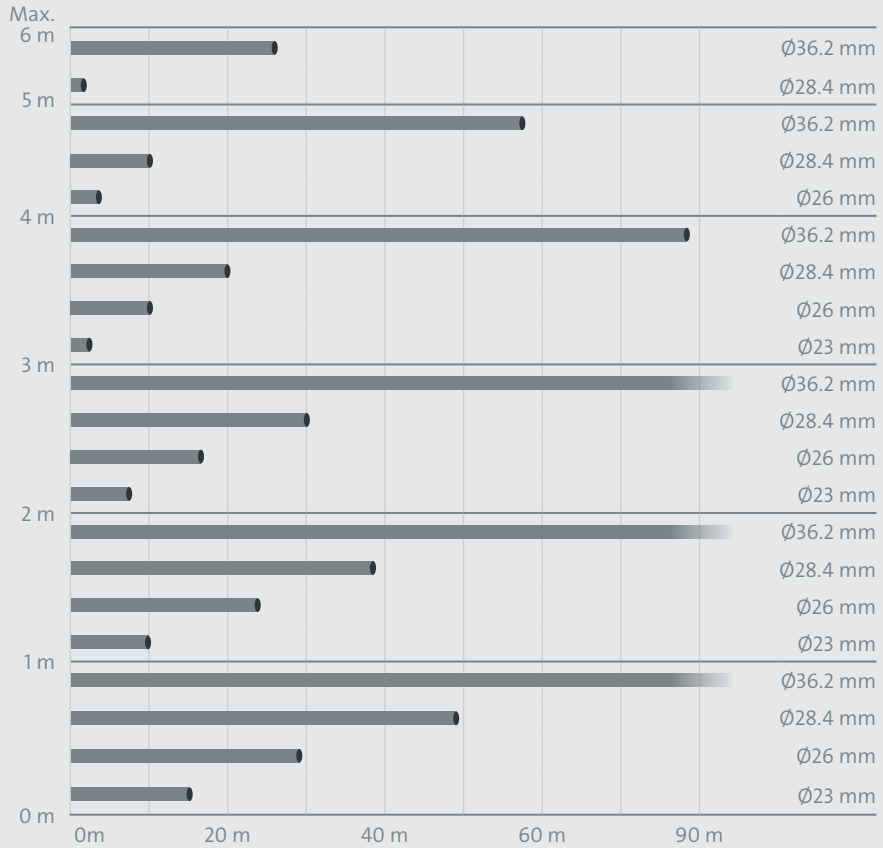




# LIFTING STATIONS - QUICK SIZING



**SOLOLIFT2 CWC-3**



Sink



Shower

# LIFTING STATIONS - QUICK SIZING



**SOLOLIFT2 C-3**

Height (m)	Flow rate (l/s)		Pipe diameter (mm)		Flow rate (l/s)		Pipe diameter (mm)		Flow rate (l/s)	Pipe diameter (mm)
	V	H	V	H	V	H	V	H		
6 m			9	13						Ø36.2 mm
	30	30								Ø28.4 mm
	14	14								Ø26 mm
	4									Ø23 mm
5 m										Ø20 mm
			31	35		3				Ø36.2 mm
	54	54	2.5	4						Ø28.4 mm
	30	30								Ø26 mm
4 m										Ø23 mm
										Ø20 mm
	2	2.5								Ø20 mm
			53	58	8	14		0.5		Ø36.2 mm
3 m										Ø28.4 mm
	78	78	9	11						Ø26 mm
	45	45	2.5	4.5						Ø26 mm
	21	21								Ø23 mm
2 m										Ø20 mm
										Ø20 mm
	6.5	7								Ø20 mm
			76	80	19	24		7		Ø36.2 mm
1 m										Ø28.4 mm
	102	102	16	18	1.5	3				Ø28.4 mm
	61	61	7	9.5						Ø26 mm
	30	30	2	2.5						Ø23 mm
0 m										Ø20 mm
										Ø20 mm
	12	12								Ø20 mm
			98	102	29	35		13	3	Ø36.2 mm
0 m										Ø28.4 mm
	126	128	23	25	5	6.5		1		Ø28.4 mm
	77	76	12	14	1	2.5				Ø26 mm
	39	39	5	5.5						Ø23 mm
0 m										Ø20 mm
										Ø20 mm
	16	16	0.5	0.5						Ø20 mm
			120	124	38	46		20	7	1
0 m										Ø28.4 mm
	150	150	30	32	9	10		3.5	0.5	Ø28.4 mm
	92	92	17	19	3.5	5		1.5		Ø26 mm
	47	47	8	8.5	1	1.5				Ø23 mm
0 m										Ø20 mm
	20	21	2.5	2.5						Ø20 mm
		0.5 l/s	1 l/s	1.5 l/s	2 l/s	2.5 l/s	3 l/s			



## LIFTING STATIONS - QUICK SIZING



**SOLOLIFT2 D-2**

4 m	x				Ø28.4 mm
	6				
3 m		24			Ø28.4 mm
	22	0,1			Ø20 mm
2 m		47	3		Ø28.4 mm
	37	4.5			Ø20 mm
1 m		71	10		Ø28.4 mm
	52	9,5			Ø20 mm
0 m	0.25 l/s	0.5 l/s	1 l/s	1.5 l/s	