



Pipe sizing selection

Pipe Length Tank to House	Pipe Internal Diameter for Estimated Peak Flowrate demand (Litres per Minute)					
	20 lpm	30 lpm	40 lpm	50lpm	60 lpm	70 lpm
upto 10 metres	Pipe ID 20mm	Pipe ID 20mm	Pipe ID 20mm	Pipe ID 25mm	Pipe ID 25mm	Pipe ID 25mm
upto 20 metres	Pipe ID 20mm	Pipe ID 20mm	Pipe ID 25mm	Pipe ID 25mm	Pipe ID 25mm	Pipe ID 32mm
upto 30 metres	Pipe ID 20mm	Pipe ID 25mm	Pipe ID 25mm	Pipe ID 25mm	Pipe ID 32mm	Pipe ID 32mm
upto 40 metres	Pipe ID 20mm	Pipe ID 25mm	Pipe ID 25mm	Pipe ID 32mm	Pipe ID 32mm	Pipe ID 32mm

Important: The suction lines length, joins and bends are to be minimized as they reduce pump performance
Note: Above table allows a maximum of 30kPa frictional loss at peak flow rate

Control system selection

Control System	Elevation to highest outlet from water level	Estimate of the peak flowrate demand					
		20 lpm	30 lpm	40 lpm	50 lpm	60 lpm	70 lpm
PC System	Under 15m						
	Over 15m	X	X	X	X	X	X
MP System	All						

Standard Install Pump Selection Chart

- Step 1** **Is the Tank above ground or buried?** (Circle)
 Above ground water tank Buried water tank Long suction
- Step 2** **Calculate an estimate of the peak flowrate required**
 (a) Number of bathrooms _____ x 12 litres/minute = _____ litres per minute
 (b) Number of bedrooms _____ x 5 litres/minute = _____ litres per minute
 Add (a) + (b) to give an estimate of the peak demand = _____ litres per minute
- Step 3** **Is the home single or two stories?** (Circle)
 Single Level home Two Level home
 We work on a minimum pump delivery pressure of 250kPa (37psi) for single level homes and on 300kPa (45psi) for two level homes.
- Step 4** **Select pump model,** (from chart on next page)
 First Choice: _____
 Second Choice: _____
 Note: the pumps are ranked to best suit the job, if in doubt on the flow rate increase flowrate by 10 lpm and you will be well covered.
- Step 5** **Control system for switching the pump on and off** Control System _____
 Code **“PC”** - this is the most common household pump control and is suitable for pumps flow rates upto 70 litres/min after that the friction loss through the controller is excessive. It is recommended that you install with 2 or 8 litre pressure tank to prevent unnecessary starts.
 Code **“MP”** - this is a mechanical switch and is ideal on small to large systems, needs to be combined with a pressure tank PT. Suitable for all pump flow rates.
- Step 6** **Select pressure tank** PT _____ litres (from chart back page)
 Tank sizes available 2, 8, 18, 20, 60, 80, 100, 127, 170, 240, 300 and 450 litre
 Code **“PT”** - this is for the pressure tank that is to be added to the system. If on a PC system the tank size need only be a PT2 or PT8, however on a MP system the total tank volume should ideally be 2-3 x the peak flow rate.
- Step 7** **Write out the code for ordering**
 _____ _____ _____ \$ _____
 Pump Model Control System Pressure Tank Price
- Step 8** **Discharge and Suction Pipe** guidelines refer to table on back page.

Pressure tank selection

Control System	Tank Size guidelines	Estimated Peak Flowrate demand (Litres per Minute)					
		20 lpm	30 lpm	40 lpm	50lpm	60 lpm	70 lpm
PC Electronic pressure control	Minimum Tank Volume	2 litre*	2 litre*	2 litre*	2 litre	2 litre	8 litre
	Ideal Tank Volume	8 litre	8 litre	8 litre	8 litre	18 litre	18 litre
MP Mechanical pressure switch	Minimum Tank Volume	8 litre	8 litre	18 litre	18 litre	60 litre	80 litre
	Ideal Tank Volume	60 litre	80 litre	100 litre	127 litre	170 litre	240 litre

Note:
 The above tables contain codes for base model pumps from which they can be accessorised.
 The above tables are a guide and do not cover all eventualities.
 If in doubt please contact Orion Distributors.

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How to read a pump performance curve

A pump performance curve is a tool to determine how a pump performs in terms of HEAD and FLOW.
 Every pump will be capable of developing a specific pressure (PSI, kPa, or BAR measurement translated into metres held) at a specific flow (normally represented in litres per minute).

FLOW: If you do not know the flow you require, add all the outlets together, e.g. - A house has 2 bathrooms, kitchen with dishwasher, washing machine, guest toilet with hand basin (4 bathroom basin taps, 4 bathroom bath taps, 4 shower taps, 3 toilets, 1 guest room basin, 2 kitchen sink taps, 1 dishwasher, 1 washing machine = Total 20).

If we assume each tap needs to deliver 9 litres/min @ 44psi (300kPa or 3 bar), then we need to determine how many outlets are likely to operate simultaneously. Assume worst case scenario is 2 showers, 1 toilet, 1 basin, 1 kitchen sink, 1 dishwasher, 1 washing machine. Total of 7 outlets x 9 litres/min = 63 litres/min.

HEAD: STATIC HEAD refers to the measurement in metres from the pump to the highest point (height) to which it is expected to deliver.

DYNAMIC HEAD is determined by combining the Static head, distance and friction losses in the pipe system (friction head loss). These losses change in measurement depending on the volume of liquid which is being pumped at any one time. As such, the losses are dynamic, they change in relation to flow rate.

After calculating the Total Head, look at the pump performance curve to determine the capability of the chosen pump to deliver the required flow rate.

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On the left hand axis is head in metres and across the bottom axis is flow in litres/min.

If we calculated that the Total Head as an example is 50 metres and we have a required flow rate of 63 litres/min, we choose a pump that will match or exceed those requirements on the performance curve.

Above ground water storage (flooded suction)

	Pump Selection	Estimated Peak Flowrate demand (Litres per Minute)					
		20 L/min	30 L/min	40 L/min	50 L/min	60 L/min	70 L/min
Single Level Home 250kPa	Option A	INOX 60PC 20 l/m @ 250 kPa	INOX 80PC 30 l/m @ 250 kPa	INOX 100PC 40 l/m @ 250 kPa	DAB-EUROINOX 40/50 MP 50 l/m @ 250 kPa	DIVERTRON 1200 60 l/m @ 250 kPa DAB-JINOX102MPC 60 l/m @250kpa	DAB-JINOX132MP 70 l/m @250 kpa
	Option B	INOX 60MP 20 l/m @ 250 kPa	INOX 80MP 30 l/m @ 250 kPa	DAB-JINOX 102MP 40 l/m @ 300 kPa	DAB-JINOX102MPC 50 l/m @ 300 kpa DIVERTRON 1200 50 l/m @ 300 kpa	DIVERTRON 1200 60 l/m @ 250 kPa DAB-JINOX102MPC 60 l/m @250kpa	DAB-EUROINOX40-50MP 70 l/m @ 250 kpa
Two Level Home 300Kpa	Option A	INOX 100PC 20 l/m @ 330 kPa	INOX 100PC 30 l/m @ 310 kPa	DAB-JINOX 102MP 40 l/m @ 300 kPa	DAB-JINOX102MPC 50 l/m @ 300 kpa DIVERTRON 1200 50 l/m @ 300 kpa	DAB-JINOX112MPC 60 l/m @300kpa	DAB-JINOX132MP 70 l/m @300 kpa
	Option B	INOX 100MP 20 l/m @ 330 kPa	INOX 100MP 30 l/m @ 310 kPa	DAB-JINOX 102MP 40 l/m @ 300kPa	DAB-JINOX102MP 50 l/m @ 300 kpa DIVERTRON 1200 50 l/m @ 300 kpa	DAB-JINOX112MP 60 l/m @300kpa	DAB-EUROINOX40-50MP 70 l/m @ 300 kpa

Buried water storage or pump above tank or long suction line

	Pump Selection	Estimated Peak Flowrate demand (Litres per Minute)					
		20 L/min	30 L/min	40 L/min	50 L/min	60 L/min	70 L/min
Single Level Home 250kPa	Option A	INOX 100 MP 20 l/m @ 310 kPa	INOX 100 MP 30 l/m @ 290 kPa	INOX 100 MP 40 l/m @ 250 kPa	DIVERTRON 1200 50 l/m @ 250 kpa DAB-JINOX102MP 50 l/m @ 300 kpa	DIVERTRON 1200 60 l/m @ 250 kPa DAB-JINOX112MP 60 l/m @300kpa	DAB-JINOX132MP 70 l/m @300 kpa
	Option B	DAB-JINOX82MP 20 l/m @ 310 kpa	DAB-JINOX82MP 30 l/m @ 300 kpa	DAB-JINOX102MP 40 l/m @ 300 kpa	DIVERTRON 1200 50 l/m @ 300 kpa DAB-JINOX102MP 50 l/m @ 300 kpa	DIVERTRON 1200 60 l/m @ 250 kPa DAB-JINOX112MP 60 l/m @300kpa	DAB-JINOX132MP 70 l/m @300 kpa
Two Level Home 300Kpa	Option A	INOX 100 MP 20 l/m @ 310 kPa	INOX 100 MP 30 l/m @ 290 kPa	INOX 100 MP 40 l/m @ 250 kPa	DIVERTRON 1200 50 l/m @ 300 kpa DAB-JINOX102MP 50 l/m @ 300 kpa	DIVERTRON 1200 60 l/m @ 250 kPa DAB-JINOX112MP 60 l/m @300kpa	DAB-JINOX132MP 70 l/m @300 kpa
	Option B	DAB-JINOX82MP 20 l/m @ 310 kpa	DAB-JINOX82MP 30 l/m @ 300 kpa	DAB-JINOX102MP 40 l/m @ 300 kpa	DIVERTRON 1200 50 l/m @ 300 kpa DAB-JINOX102MP 50 l/m @ 300 kpa	DIVERTRON 1200 60 l/m @ 250 kPa DAB-JINOX112MP 60 l/m @300kpa	DAB-JINOX132MP 70 l/m @300 kpa