

pH Correction

For Neutralising Acid Water and Remineralising Very Pure Water



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Acid water causes corrosion of pipework and heating cylinders. Neutral water has a pH value of 7, and the maximum permitted pH is 9.5 which is alkaline.

A pH value below 7 is considered to be acid and corrosion starts at levels below 6.5. A pH value below 6 is extremely aggressive. It is also difficult to remove Iron and Manganese from acid water, so often the first stage of Iron and Manganese removal is to raise the pH.

For waters in which the pH is not below 5 the simplest and safest way to raise the pH is to run it through a pressure vessel containing a bed of specially activated dolomitic limestone, a mixture of calcite and magnacite. The limestone gradually dissolves, increasing alkalinity.

Periodically the dolomitic limestone will need to be topped up as its level decreases. The medium itself is inert and easy to handle.

For waters that are otherwise clean and pure a basic up-flow system is all that is required. For water with Iron or turbidity problems a backwashing downflow system will be needed to remove accumulated debris.



Specifying and Sizing

The contact time of the raw water with the pH correction media is most important for safety performance. The recommended maximum service flows for each system are shown in the Technical Details columns overleaf.

For every 10mg/L CO₂, alkalinity and total hardness will be raised by approximately 18mg/L as CaCO₃. Consumption – for each 10mg/L CO₂ removed, there will be a consumption of approximately 12mg/L of media.

Website www.excelwater.co.uk

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System Management – Upflow

Upflow ‘manual’ pH correction units are used for raising the pH of otherwise clean water or for the re-mineralising of pure water produced by Reverse Osmosis or desalination. For water with significant Iron and Manganese levels an auto-backwashing or combination system will be required. Domestic units up to 13” include service flow controller and quick release couplings (QRCs) for ease of refilling. Larger industrial systems of 14” diameter and above use a top and bottom entry vessel for maximum flow. These do not include flow controllers or QRCs. With certain waters periodic manual high volume flushing will be needed in a ‘manual’ system to break up any Calcium Carbonate that has re-deposited onto the pH correct media bed. A manually operated flushing system can be incorporated into the unit in the factory.

Technical Details

Flow Rate 3/h	0.60	0.85	1.00	1.20	1.50	2.10	2.60	3.40
Connections In/Out	¾” BSP	¾” BSP	¾” BSP	2” socket	2” socket	2” socket	2” socket	2” socket
Height mm	1570	1430	1570	1920	1920	1920	1860	2210
Diameter mm	270	315	335	370	410	510	560	620

System Management – Backwashing Systems

Includes service and drain line flow controllers. Backwash flow per vessel is 1.5 times the service flow. Therefore where possible use two or more small units instead of one large one to reduce the pumping requirement. In areas of high media usage, special vessels can be supplied with an additional filling port eliminating the need to remove the backwashing valve during media replenishment.

Technical Details

Flow Rate m3/h	0.60	0.85	1.00	1.20	1.50	1.90	2.60	3.40	5.30	7.70	10.50
B/W flow m3/h	0.90	1.28	1.50	1.80	2.25	2.85	3.90	5.10	7.95	11.55	15.75
Connections In/Out	1” BSP	1” BSP	1” BSP	1” BSP	1” BSP	1” BSP	1” BSP	2” BSP	2” BSP	2” BSP	2” BSP
Height mm	1570	1430	1570	1860	1860	1990	1830	2210	2370	2450	2220
Diameter mm	270	315	335	370	410	510	560	620	770	930	1080

Special Product Features

High efficient British made media uses less mineral volume to correct pH than conventional systems. Replacement media is safe to handle and convenient.