Filtration Media Systems – ACAL Neutralisers

Features

- Simple pH adjustment of acidic waters
- Used to increase hardness in soft waters
- Pressure rated media vessel
- Simple in-line operation
- 1191FP in/out head with bypass & re-fill port on 1054/1354/1465 vessels
- Optional auto backflush control head

Standard filter head/refill port head for 1054/1354/1465 systems

Calcite is a crushed and screened calcium carbonate media used to raise the pH of acidic or low pH waters. When properly applied, it corrects pH sufficiently to reach a non-corrosive equilibrium. On contact with calcite, acidic waters slowly dissolve the media to raise the pH by 1-2 units, reducing potential leaching of copper and other metals found in typical plumbing systems. Periodic backwashing will prevent channel formation through the media bed and maintain high flow service rates. The calcite media is periodically replenished as it is depleted.

ACAL calcite filters with food grade media are used to treat water for drinking from RO systems to improve taste as well as provide a pH neutral water stream. Non-food grade calcite media may be used for stock watering and non-potable applications. Most systems are used with filtered water sources where backwashing is not required. Where suspended solids are present, we recommend an automatic control head to periodically backwash the media and remove trapped suspended solids.

Model	*Volume (Litres)*	*Nominal Flow Rate (lpm)*	*Turbidity*	*Bypass Mixer*	*Port Thread*	*Tank Size (Dia x H)*
ACAL-1054	62	7-26	NTU < 5	1191FP	25 mm	250 x 1400 mm
ACAL-1354	105	15-52	NTU < 10	1191FP	25 mm	330 x 1400 mm
ACAL-1465	148	19-60	NTU < 10	1191FP	25 mm	360 x 1650 mm
ACAL -1665	194	26-80	NTU < 10	N/A	25-32 mm	410 x 1650 mm
ACAL -2162	344	45-130	NTU < 10	N/A	32 mm	540 x 1580 mm
ACAL -2472	470	56-260	NTU < 10	N/A	32-40 mm	610 x 1850 mm
ACAL -3072	697	90-280	NTU < 10	N/A	32-40 mm	762 x 1850 mm
ACAL -3672	1011	132-400	NTU < 10	N/A	40-50 mm	920 x 1850 mm

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Pressure drop through the filter is typically <70kPa but varies with flow control valve (if fitted), installation pipe diameter, flow rate and sediment loading on the media. An integrated bypass mixing valve assembly is included on smaller systems to allow the system to be isolated and to mix untreated and treated waters to maintain the required pH with minimal TDS increase. Manual bypass assemblies are recommended for larger tank systems using 3 ball-type valves. Inlet and outlet pressure gauges will also assist with system performance monitoring. System flow rates vary with feedwater pH to allow for sufficient contact time between the water and the calcite media. Low pH waters require a reduced flow rate for effective pH adjustment while higher flow rates may be used if minimal pH adjustment is required.

1191/1190FP In-Out Heads

1191 In/Out Head – Order No. D1400

1191OFP In/Out Head with Fill Port – Order No. D1220-01

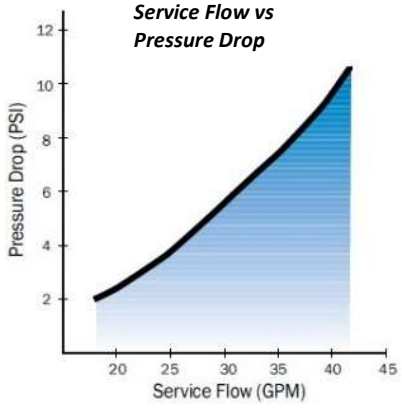
The 1191/1190FP 1" In/Out Heads are designed for downflow filter applications or upflow pH neutralisation.

Molded out of a rugged thermoplastic resin, the 1191 Head features a ¼" FPT air vent port which can be drilled out to accept an air relief valve. The 1" Head is fully ported to provide maximum flow rates. The 1191 incorporates a standard 2½" tank connection and features parallel inlet and outlet ports to easily adapt to standard plumbing connections or Clack's all-plastic, four-way bypass valve. A full line of fitting plumbing connection kits are available.

The 1190FP Head has a removable fill port cap to allow easy access to media bed. The 1190FP includes a removable upper distributor basket providing access to the top of the riser pipe, allowing water to be drained from the tank when replacing media. The 1190FP includes a utility wrench to be used with the removable cap. A full line of top and bottom distributors is available.

Order No.	*Description*	*Qty/Carton*
D1400	1191 In/Out Head	24
D1220-01	1190FP In/Out Head 1/Fill Port (includes wrench)	12

Service Flow vs Pressure Drop



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Standard ACAL pH neutralising filters use the 1190FP valve which allows for periodic refilling of the calcite media without having to remove the pipework or head from the media tank. With the addition of the optional V3006 bypass assembly, blending of treated and untreated water is possible to achieve the final water quality required.

1191/1190FP Accessories

Typical Installations

1191 In/Out Head shown with optional V3191-01 Vertical 90°Adapter Kit, V3006 Bypass Assembly and V3007-13 1" SharkBite™ Fittings.
NOTE: *On upflow the bypass will give two-way function capabilities (service and bypass). The red bypass handles also need to be reversed to indicate proper service flow condition.*

1191 In/Out Head shown with optional V3006 Bypass Assembly and V3007-01 ¾" x 1" PVC Solvent Elbow Assembly

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Calcite is a crushed and screened white marble media which can inexpensively be used to neutralize acidic or low pH waters to a neutral, less corrosive effluent.

Calcite is a naturally occurring calcium carbonate media. One of the advantages of Calcite is its self-limiting property. When properly applied, it corrects pH only enough to reach a non-corrosive equilibrium. It does not overcorrect under normal conditions. On contact with Calcite, acidic waters slowly dissolve the calcium carbonate to raise the pH which reduces the potential leaching of copper, lead and other metals found in typical plumbing systems.

As the Calcite's calcium carbonate neutralises the water, it will increase hardness and a softener may become necessary after the neutralising filter. A bypass flow control valve system will enable mixing of the treated and untreated water sources to achieve optimal pH control with lowest increase in hardness and conductivity of the blended stream.

Calcite can be effectively combined with Corosex (mixture of calcium carbonate and magnesium carbonate) to combine the high flow neutralization properties of Corosex, along with the slower reacting low-flow properties of Calcite, increasing the ability to correct low pH.

Advantages

- Naturally occurring material
- Low uniformity coefficient for maximum contact for controlled pH correction
- Slower reacting for controlled pH correction
- Inexpensive

Physical Properties

- Colour: Near white
- Bulk Density: 90 lbs./cu. ft.
- Mesh Size: 16 x 40
- Specific Gravity: 2.7
- Effective Size: 0.4 mm
- Uniformity Coefficient: 1.5
- Hardness: 3.0 (Mohs scale)
- Composition: CaCO3, 95% min. MgCO3, 3.0% max.

Conditions for Operation

- A gravel support bed is recommended
- Water pH range: 5.0-7.0
- Bed depth: 24-30 in.
- Freeboard: 50% of bed depth (min.)
- Backwash rate: 8-12 gpm/sq. ft.
- Backwash Bed Expansion: 35% of bed depth
- Service flow rate: 3-6 gpm/sq. ft. but may be modified to adapt to local conditions

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