Instruction Sheet 60031

Application Hose Nipple Cartridge

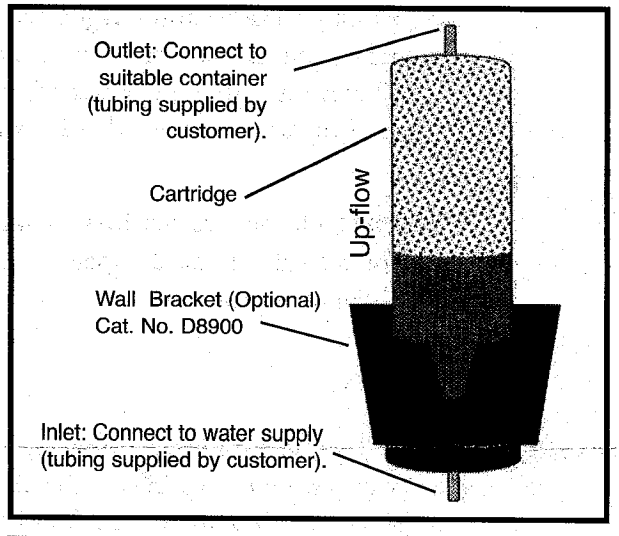

Figure 1. Cartridge Configuration

Installation

1. Remove from plastic bag.
2. Install in upright position in wall bracket.
3. Using 3/8" I.D. plastic or rubber tubing, connect bottom connection to water supply and top connection to point of distribution (open to atmosphere). Water temperature should not exceed 49°C (120°F). Water always flows upward through cartridge.

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Operation

Performance of ion exchange cartridges, such as High Capacity, Economy High Capacity, Ultrapure, and Cation, depends on several variables. At too low a flowrate, there is a tendency toward uneven distribution of water through resin bed (channeling), resulting in lower product purity and lower apparent capacity. At too high a flowrate, the kinetics of reactions taking place may prevent complete exhaustion of resins, also resulting in lower product purity and decreased capacity.

For operation of any single ion exchange cartridge on average tap water, a maximum flowrate of 45 l/hr (12 gph) is recommended. Flowrates up to 75 l/hr (20 gph) can be achieved using high quality feed water. Absorption (Organic Removal) and oxygen removal are slower processes than the ion exchange process, and require a flowrate adjustment accordingly. The Combination Cartridge is a combination of adsorption and ion exchange. Adjust flowrate on inlet side of cartridge as required.

Warning Do not restrict flow of water on outlet side of cartridge. Outlet side of cartridge must be open to atmosphere. Restriction will cause cartridge to rupture. ▲

Cartridge Replacement

D8901 - Full Size High Capacity Cartridge. Replace when entire bottom layer of resin changes in color from purple to light brown. Average specific resistance of effluent is 175,000 ohm-cm. Total ion exchange capacity is 1650 grains as $CaCO_2$.

D8921 - Full Size Pretreatment and Scale Eliminator. Pretreats feedwater to stills reducing maintenance. Contains resin to deionize water and carbon to remove volatile chlorine additives present in most municipal water supplies. Replace when entire middle layer of resin changes in color from purple to light brown. Total ion exchange capacity is 1250 grains as $CaCO_2$. Total carbon capacity is 1000 gallons.

D8902 Full Size Ultrapure. Replace when all but top 50 mm (2") of resin changes in color from dark brown to purple to light brown. Total ion exchange capacity is 915 grains as $CaCO_2$. Reversing the water flow through this particular cartridge - causing your feedwater to flow in through the outlet and down to the inlet – may increase cartridge life. In this case, the resin will change color from the top and the cartridge should be replaced when all but the bottom 50 mm (2") of resin changes in color.

D8904 Full Size Organic Removal. On an average replace when 5000 gallons of water have flowed through cartridge. It also removes chlorine from water.

Cartridge Replacement (continued)

D8905 Full Size Cation Removal. Replace when all but top 50 mm (2") of resin changes in color from purple to light brown. Total ion exchange capacity is 3000 grains as $CaCO_2$.

D8922 Full Size Ultrapure with Organic Removal. Combines deionization and organic removal. Replace when all but top 50 mm (2") of resin (upper layer) changes in color from purple to light brown. Exchange capacity is 730 grains as $CaCO_2$ to a 1 megohm-cm endpoint. Removes organic impurities through an activated carbon layer. Capacity is 2000 gallons. Carbon also removes chlorine additives present in most municipal tap water supplies.

D8951 1/2 Size Mixed Bed and Organic Removal. Replace when entire bottom layer of resin changes in color from purple to light brown. Total ion exchange capacity is 470 grains $CaCO_2$. Activated carbon capacity is 2000 gallons. Carbon removes organic impurities and chlorine additives present in most municipal tap water supplies to an endpoint of 50,000 ohm-cm.

D8903 Full Size Oxygen Removal. Will process about 15,000 liters (4,000 gallons) of water with a 1 ppm oxygen content. The cartridge capacity is 3-grams. The feedwater should contain less than 10 ppm of ionized solids.

Note The type of Hose Nipple Cartridge can be identified by the part number on the cartridge label. ▲

Cartridge Storage

Keep away from heat. Do not remove from plastic bag until cartridges are ready for use. Exchange capacity is greatly reduced if resins are allowed to dry completely. Shelf life for all cartridges is two years. Resins shrink due to moisture loss. Cartridges may not appear full; resins will expand when wet to fill cartridges.

Special Note

Water or other solutions purified by ion-exchange resin are not necessarily free from odor and color. These conditions may make them unsuitable for some purposes. In some instances; color or odor may be introduced to finished product by trace quantities of free amines or low molecular weight polymers which are present in fresh untreated resin. Generally, amine odor will lessen or disappear after passage of a few gallons of water through cartridge. If you have particularly critical requirements for use of ion exchange type hose nipple cartridges which, in addition to color change monitoring, require closer monitoring, contact Technical Services for monitoring equipment.

Warning Depending on feedwater source, cartridge number D8905 could produce water with an extremely low pH. ▲

Caution The Hose Nipple Cartridges, catalog numbers D8901 and/or D8902 MUST NOT be used with solutions containing Alcohol FAILURE TO COMPLY WITH THE ABOVE WILL CAUSE EQUIPMENT FAILURE. Due to material incompatibility, we recommend that the D8901 and D8902 cartridges be replaced by the D8911 Mixed-Bed Resin Cartridge for applications requiring alcohol solutions. ▲

Note The D8911 cartridge DOES NOT have a dye indicator. We recommend the use of a resistivity monitoring device to determine cartridge exhaustion. If you have any questions, contact your Thermo Scientific dealer or Technical Services. ▲

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Rev	ECR/ECN	Date	Description	By
0	--	6/25/10	Transfer to Marietta (was 60031 3/10/08)	CCS

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