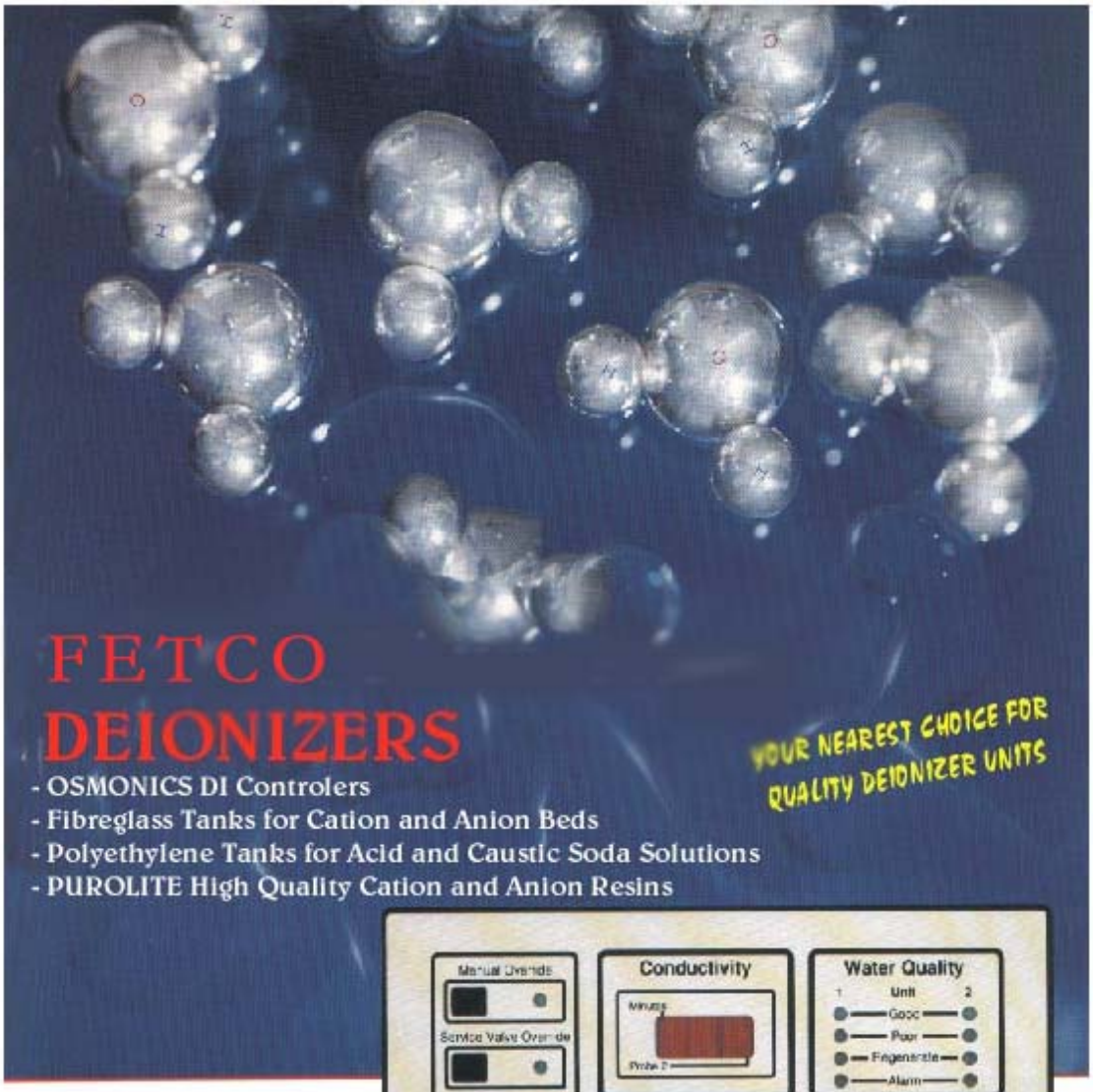
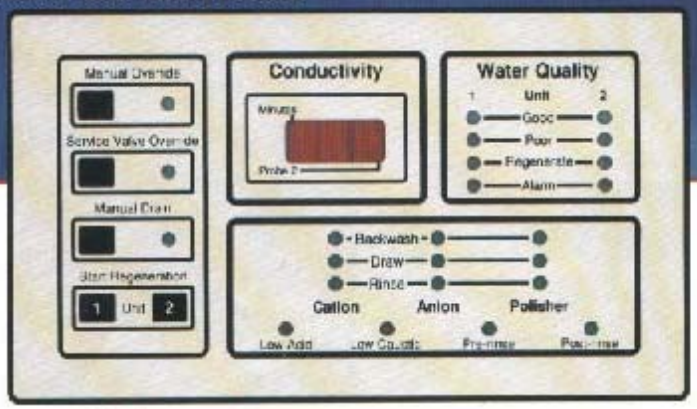


FETCO
DEIONIZERS

YOUR NEAREST CHOICE FOR QUALITY DEIONIZER UNITS

- OSMONICS DI Controlers
- Fibreglass Tanks for Cation and Anion Beds
- Polyethylene Tanks for Acid and Caustic Soda Solutions
- PUROLITE High Quality Cation and Anion Resins



The clearest advance in DI control is also your most economical choice.

DEIONIZERS

Semi-Automatic Deionizers for low Volume and flow rate applications

Flow Rates : 1 - 6 GPM
Exchange
Capacities : 10 - 40 Kilograins

An economical alternative to rental exchange deionization (DI), the series 730 control provides dependable, semi-automatic performance in lighter duty applications.

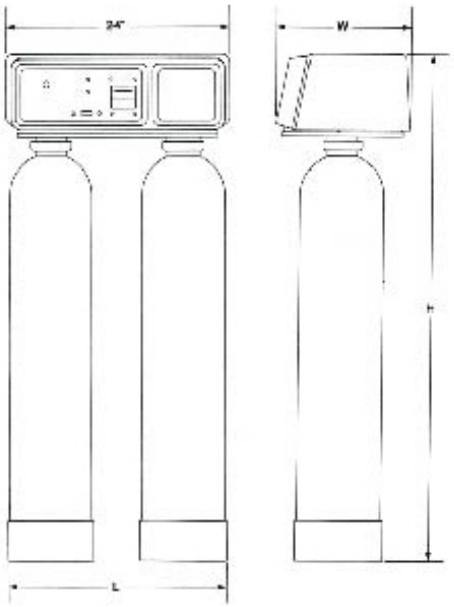
Depending on your type of use and the quality of your influent water, the series 730 control can lower your cost of deionized water by as much as one-half when compared with the cost of exchange service.

Features such as automatic shutoff in case of power failure, and check valves to prevent the accidental flow of water into the regenerant containers, add to the 730 control's performance appeal. And, the unit's specially adapted valves, electronics, meters, piping and fittings all come preassembled for quick, easy installation.

730 Specifications

Model	Tank Size (Inches)	Flow Rates GPM	ΔP at Nominal Flow Rates(psi)	Exchange Capacity Grains CaCO	Resin Volume	Approximate Overall Dimensions (H x L x W Inches)		
CIDI730-2	8 x 35	1.0 - 2.0	8.2	10,000	0.7	47.75	24.00	14.50
CIDI730-4	10 x 54	3.0 - 4.0	13.2	30,000	1.5	63.75	24.00	14.50
CIDI730-6	12 x 54	4.0 - 6.0	18.2	40,000	2.0	61.75	24.00	14.50

Schematic Drawing



Features

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D.I. & Softening Systems

Automatic Deionizers for moderate to high volume and flow rate applications

Engineered for medium-sized deionization (DI) applications, these dependable units feature the same precision electronics and performance characteristics as their large-scale counterparts, all in a smaller, top-mounted package. Applications cover the full spectrum of industrial, commercial, medical and agricultural users. The 168 valve gives 7700 series controls improved performance characteristics.

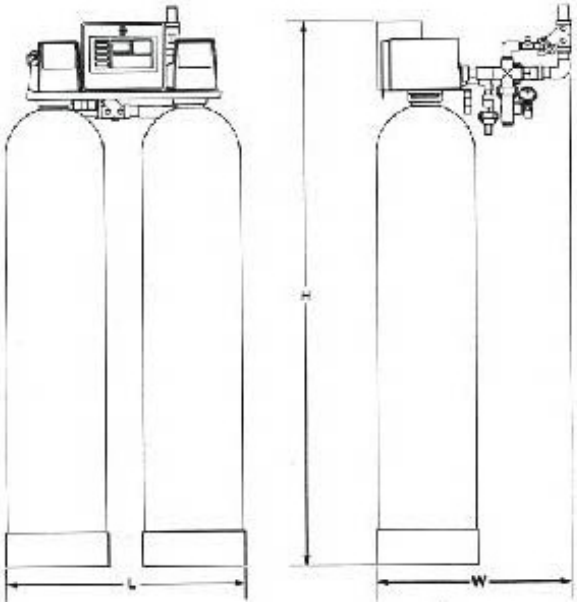
Flow Rates : 1 - 12 GPM

Exchange Capacities : 10 - 70 Kilograins

7700 Specifications

Model	Tank Size (Inches)	Flow Rates GPM	ΔP at Nominal Flow Rates(psi)	Exchange Capacity Grains CaCO	Resin Volume	Approximate Overall Dimensions (H x L x W Inches)		
CIDI7710/7720-2	8 x 35	1.0 - 2.0	19	10,000	0.7	50.5	28.0	24.0
CIDI7710/7720-5	13 x 54	4.0 - 7.0	20	50,000	2.5	66.5	32.0	24.0
CIDI7710/7720-7	14 x 65	7.0 - 10.0	23	70,000	3.5	77.5	33.0	24.0
CIDI7750/7760-10	14 x 65	10.0 - 12.0	14	70,000	3.5	80.0	36.5	24.5

Schematic Drawing



Features of CIDI 7700 & 7800

- Custom programmable for automatic precision and simplicity.
- Delivers duplex DI water more economically than any other deionizer.
- The most advanced DI control package available.
- No other DI controls offer so much performance at such a low price.
- The digital-type meter displays both water quality and regeneration time remaining .
- A third tank polisher can be accommodated under the single control to pick up sodium or silica leakage.
- A single set of printed circuit boards control both simultaneous and sequential regeneration.
- All programming features are easily accessible on the front panel.
- Indicator lights show at a glance which phase of the regeneration cycle the system is in.
- Direct eduction of chemicals through the multiport valves eliminates additional chemical draw valves.
- Automatic prerinse prior to regeneration prevents false regeneration and preserves chemicals.
- Monitored final rinse rids the system of residual chemicals before the deionizer returns to service.

Automatic Deionizers for high volume and flow rate applications

Designed and built for maximum deionization (DI) demands, these high-capacity controls can easily handle the heaviest requirements of manufacturing and medical applications, as well as those of large-scale commercial users such as printing or food processing plants, electroplating or metal finishing facilities and high-volume car and truck wash installations.

Flow Rates : 10 - 75 GPM

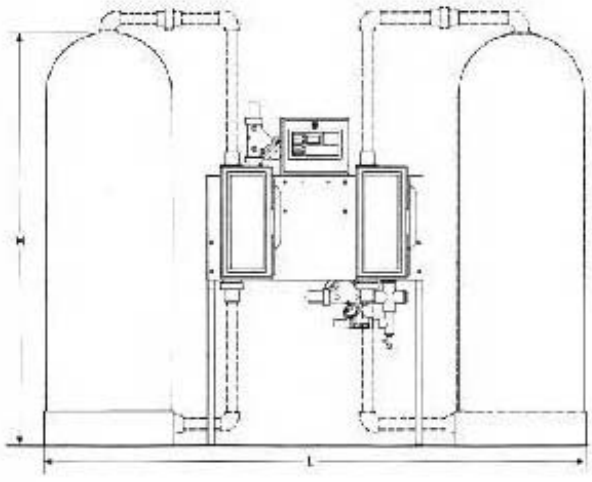
Exchange Capacities : 100 - 500 Kilograins

7800 Specifications

Model	Tank Size (Inches)	Flow Rates GPM	ΔP at Nominal Flow Rates(psi)	Exchange Capacity Grains CaCO	Resin Volume	Approximate Overall Dimensions (H x L x W Inches)		
CIDI7840/7850-10	21 x 60	10.0 - 15.0	22	100,000	5	64.5	91.5	26.5
CIDI8740/7850-20	24 x 69	20.0 - 30.0	25	200,000	10	73.5	97.5	28.0
CIDI7840/7850-30	30 x 72	30.0 - 45.0	28	300,000	15.0	81.5	109.5	31.0
CIDI7840/7850-40	36 x 72	40.0 - 60.0	32	400,000	20	81.5	121.5	36.0
CIDI7540/7850-50	36 x 72	50.0 - 75.0	36	500,000	25	81.5	121.5	36.0

- Modular construction reduces downtime and simplifies troubleshooting and service.
- Rugged NEMA 12 electrical enclosures, standard on all controls, meet or exceed NEMA showering arc (ICS 2-230), surge withstand (IEEE 587) and electrostatic discharge (MIL-STD-88380).
- Automatic shutoff during power failure prevents resins from being exhausted past their quality endpoint. NOVRAM backup saves all data during a power failure, then returns the display to the last data point when power is restored. No batteries are required.
- A low level sensor can be easily wired into the control to warn of low chemical volumes.
- Provisions for a remote control panel and auxiliary "START REGENERATION" source allow regeneration to be initiated and controlled from a location remote from the actual installation site.
- Level controlled shutoff to a product storage tank can be utilized with the addition of a simple float switch in the storage tank.
- Relays and fuses on the power printed circuit board provide for the operation of recirculation and supply pumps.

Schematic Drawing



Ion-exchange resin devices

Conventional water-softening devices intended for household use depend on an ion-exchange resin in which "hardness" ions trade places with sodium ions that are electrostatically bound to the anionic functional groups of the polymeric resin. A class of minerals called zeolites also exhibits ion-exchange properties; these minerals were widely used in earlier water softeners. Water softeners may be desirable when the source of water is a well, whether municipal or private.

How does it works (Softening Process)

The water to be treated passes through a bed of the resin. Negatively-charged resins absorb and bind metal ions, which are positively charged. The resins initially contain univalent hydrogen, sodium or potassium ions, which exchange with divalent calcium and magnesium ions in the water. As the water passes through the resin column, the hardness ions replace the hydrogen, sodium or potassium ions which are released into the water. The "harder" the water, the more hydrogen, sodium or potassium ions are released from the resin and into the water.

Resins are also available to remove carbonate, bi-carbonate and sulphate ions which are absorbed and hydroxyl ions released from the resin. Both types of resin may be provided in a single water softener.

Regeneration

As these resins become loaded with undesirable cations and anions they gradually lose their effectiveness and must be regenerated. If a cationic resin is used (to remove calcium and magnesium ions) then regeneration is usually effected by passing a concentrated brine, usually of sodium chloride or potassium chloride, or hydrochloric acid solution through them.

For anionic resins a solution of sodium or potassium hydroxide (lye) is used. Most of the salts used for regeneration gets flushed out of the system and may be released into the soil or sewer. These processes can be damaging to the environment, especially in arid regions.[*citation needed*] Some jurisdictions prohibit such release and require users to dispose of the spent brine at an approved site or to use a commercial service company. Most water softener manufacturers provide metered control valves to minimize the frequency of regeneration. It is also possible on most units to adjust the amount of reagent used for each regeneration. Both of these steps are recommended to minimize the impact of water softeners on the environment and conserve on reagent use.[*citation needed*] Using acid to regenerate lowers the pH of the regeneration waste.

In industrial scale water softening plants, the effluent flow from re-generation process can be very significant. Under certain conditions, such as when the effluent is discharged in admixture with domestic sewage, the calcium and magnesium salts may precipitate out as hardness scale on the inside of the discharge pipe.

If potassium chloride is used the same exchange process takes place except that potassium is exchanged for the calcium, magnesium and iron instead of sodium. This is a more expensive option and may be unsuited for people on potassium-restricted diets.