

Crusader Commercial Series CS15 & CS2

Series Overview

CS15 and CS2 electronic water softeners bring advanced technology and enhanced performance to commercial water treatment. These systems remove hardness and minerals from water. The CS15 and CS2 Series feature a state-of-the-art 1.5" and 2" control valve, high-performance mineral tank, and brine tank with ProGuard Feeder to handle the most demanding needs. They are equipped with a solid-state microprocessor control and LCD display to simplify system operation and setup.

Features & Benefits

- Complete diagnostic information and valve history data stored in non-volatile memory
- Treated water brine refill - "Dry Brining"
- Two independent relay driver outputs
- ProGuard feeder
- 12-volt DC battery operation available
- Fully programmable regeneration cycle sequence (maximum of nine steps)
- Stores system configuration and operation data in non-volatile memory - will not be lost during a power outage.
- Time-of-day battery backup with up to 8 hours of RTC
- Screen displays "low battery" when battery needs to be replaced
- Variable reserve automatically adjusts to changing water usage patterns
- Double regeneration option available
- Multiple regenerations (option) available in a day
- Service technician "short-cycle" regeneration
- 1.5" or 2.0" female NPT inlet/outlet top-mount control valves
- Optional 2.0" NPT control valve with Quick Connect base available for top and side-mount tank connections
- Lead-free brass valve bodies (1.5" & 2.0") utilize an NSF/FDA approved black epoxy electro-deposited coating for exceptional corrosion resistance in acidic or high-TDS waters.
- 1.5" NPT meter providing $\pm 5\%$ accuracy across 0.5 to 75 gpm flow rate (Stainless Steel Meter Body)
- 2.0" NPT meter providing $\pm 5\%$ accuracy across 1.5 to 150 gpm flow rate (Stainless Steel Meter Body)
- Composite mineral tanks using bottom Vortech™ (14" - 16" Diameter) or hub & lateral distributors
- Easy-access front panel settings with backlit LCD dot-matrix display
- Color-specific display illumination: Solid blue - in service; Solid green - in regeneration; Flashing yellow - maintenance; Flashing red - error
- Realtime flow indicator
- Scrolling text display for enhanced User-interface information
- Contractor name and phone number display fields



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| MODEL NUMBER | SERVICE FLOW RATES | | | | BACK-WASH GPM | GRAINS EXCHANGE CAPACITY PER REGENERATION | | | | MINERAL TANK DIA. x HT. (INCHES) | OVERALL HEIGHT (INCHES) | RESIN VOL. CU. FT. | BRINE TANK DIA. x HT. (INCHES) | SALT STORAGE LBS |
|--------------|--------------------|----------|---------------------|----------|------------------|---|---------------|--------------------------|---------------|--|----------------------------|-----------------------|--------------------------------------|---------------------|
| | CONTINUOUS | | INTERMITTENT (PEAK) | | | MAX. GRAINS | | MIN. GRAINS | | | | | | |
| | GPM | PSI DROP | GPM | PSI DROP | | @ 15 LBS SALT PER CU. FT. | SALT USED LBS | @ 8 LBS SALT PER CU. FT. | SALT USED LBS | | | | | |
| | | | | | | | | | | | | | | |

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|----------|----|----|----|----|-----|---------|-----|---------|----|---------|----|----|---------|------|
| CS15-90 | 35 | 15 | 46 | 25 | 4.2 | 90,000 | 45 | 72,000 | 24 | 14 X 65 | 78 | 3 | 24 X 50 | 800 |
| CS15-120 | 40 | 15 | 51 | 25 | 6.5 | 120,000 | 60 | 96,000 | 32 | 16 X 65 | 78 | 4 | 24 X 50 | 800 |
| CS15-150 | 52 | 15 | 67 | 25 | 10 | 150,000 | 75 | 120,000 | 40 | 21 X 62 | 75 | 5 | 24 X 50 | 800 |
| CS15-180 | 51 | 15 | 65 | 25 | 10 | 180,000 | 90 | 144,000 | 48 | 21 X 62 | 75 | 6 | 24 X 50 | 800 |
| CS15-210 | 50 | 15 | 64 | 25 | 10 | 210,000 | 105 | 168,000 | 56 | 21 X 62 | 75 | 7 | 24 X 50 | 800 |
| CS15-240 | 55 | 15 | 71 | 25 | 15 | 240,000 | 120 | 192,000 | 64 | 24 x 72 | 84 | 8 | 30 x 50 | 1250 |
| CS15-270 | 54 | 15 | 69 | 25 | 15 | 270,000 | 135 | 216,000 | 72 | 24 x 72 | 84 | 9 | 30 x 50 | 1250 |
| CS15-300 | 53 | 15 | 68 | 25 | 15 | 300,000 | 150 | 240,000 | 80 | 24 x 72 | 84 | 10 | 30 x 50 | 1250 |

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|----------|----|----|-----|----|------|-----------|-----|---------|-----|---------|----|----|---------|------|
| CS2-120 | 47 | 15 | 60 | 25 | 6.5 | 120,000 | 60 | 96,000 | 32 | 16 x 65 | 78 | 4 | 24 x 50 | 800 |
| CS2-150 | 72 | 15 | 94 | 25 | 10.0 | 150,000 | 75 | 120,000 | 40 | 21 X 62 | 75 | 5 | 24 X 50 | 800 |
| CS2-180 | 70 | 15 | 91 | 25 | 10.0 | 180,000 | 90 | 144,000 | 48 | 21 X 62 | 75 | 6 | 24 X 50 | 800 |
| CS2-210 | 66 | 15 | 85 | 25 | 10.0 | 210,000 | 105 | 168,000 | 56 | 21 X 62 | 75 | 7 | 24 X 50 | 800 |
| CS2-240 | 76 | 15 | 98 | 25 | 15.0 | 240,000 | 120 | 192,000 | 64 | 24 X 72 | 84 | 8 | 30 X 50 | 1250 |
| CS2-270 | 74 | 15 | 96 | 25 | 15.0 | 270,000 | 135 | 216,000 | 72 | 24 X 72 | 84 | 9 | 30 X 50 | 1250 |
| CS2-300 | 73 | 15 | 94 | 25 | 15.0 | 300,000 | 150 | 240,000 | 80 | 24 x 72 | 84 | 10 | 30 x 50 | 1250 |
| CS2-450 | 84 | 15 | 109 | 25 | 25.0 | 450,000 | 225 | 360,000 | 120 | 30 x 72 | 92 | 15 | 39 x 48 | 2150 |
| CS2-600 | 93 | 15 | 119 | 25 | 35.0 | 600,000 | 300 | 480,000 | 160 | 36 x 72 | 93 | 20 | 39 x 48 | 2150 |
| CS2-750 | 98 | 15 | 127 | 25 | 48.0 | 750,000 | 375 | 600,000 | 200 | 42 x 72 | 93 | 25 | 42 x 60 | 3100 |
| CS2-900 | 96 | 15 | 120 | 25 | 48.0 | 900,000 | 450 | 720,000 | 240 | 42 x 72 | 93 | 30 | 50 x 60 | 4500 |
| CS2-1200 | 98 | 15 | 127 | 25 | 63.0 | 1,200,000 | 600 | 960,000 | 320 | 48 x 72 | 93 | 40 | 50 x 60 | 4500 |

System Design Options

- Choose method to initiate regeneration: meter immediate, meter delayed, meter delayed + immediate, days override (1-28), auxiliary input (differential pressure switch)
- Single: One softener with meter, one brine tank. See choices for regeneration initiation
- Twin Parallel: Two identical softeners, each with its own meter, only one brine tank. Meter delayed regeneration used with offset regeneration times. Both softeners are online for double the service flow rate and exchange capacity of a single softener
- Twin Alternating: Two identical softeners, only one meter and brine tank, and one motorized alternating valve. Meter immediate regeneration used. One softener online, one softener on standby
- Parallel Progressive: Minimum two, up to as many as six, identical softeners, each with its own meter and brine tank, and each with its own "no hard water bypass" valve. *A system controller is required to interlock these multiple systems.* Only one softener, known as the primary unit, is online until the service flow rate increases past a pre-set GPM, for second softener to come online. If the service flow rate increases beyond a second pre-set GPM, the third softener will come online (tri-plex), and so on (four-plex, five-plex, up to a six-plex system). As the service flow rate decreases, softeners will go back on standby accordingly. When the primary unit goes into regeneration, the next softener in the sequence becomes the primary unit
- "No hard water" bypass valve
- "Separate source regeneration" using motorized alternating valve
- ASME stamped mineral tanks are available.

