

# Installation, Operation and Maintenance Manual

## Hydro-Safe®

### Models:

Cube Max-CP1, Cube Max-S2, Cube Max-S3, Cube Max-CP1L,  
 Cube Max-S2L, Cube Max-S3L, Cube Max-S3L+, Cube Max-CP1BBL  
 Cube Max-S2BBL, Cube Max-S3BBL

### Important

Please read the entire manual before proceeding with the installation and startup. Your failure to follow any attached instructions or operating parameters may lead to the product's failure.

Save manual for future reference



Tested and certified by WQA against NSF/ANSI Standard 42 for the reduction of claims specified on the performance data sheet & NSF/ANSI 372 for "lead free" compliance.



Cube Max-S3

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**Note:** Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

# System Specifications

Maximum Pressure:

Slimline Systems - 125 psi (8.6 bar)

Cube Max Models CP1, CP1L, S2, S2L, S3, S3L

Big Blue Systems - 90 psi (6.2 bar)

Cube Max Models CP1BBL, S2BBL, S3BBL, and S3L+

Maximum Temperature: 100°F (38°C)

pH 6.5 to 8.5

Hardness (maximum for systems containing OneFlow) 75 grains (1282 ppm CaCO3)

Chlorine < 2ppm

Iron (maximum) 0.3 mg/l

Manganese (maximum) 0.05 mg/l

Copper (for systems containing OneFlow) < 0.1 mg/l

Oil & H2S- None allowed

Polyphosphate (for systems containing OneFlow)- None allowed

Silica (maximum for systems containing OneFlow) 10 ppm

For all other feed water quality requirements abide by the current USEPA Safe Drinking Water Act standards.

Inlet/Outlet Connections: 3/8" (10mm) NPT for Slimline Models, 1/4" (20mm) NPT for Big Blue Models.

Maximum Flow Rate:

System Flow Rate	
System Model	Flow Rate
Cube Max-CP1	1 GPM
Cube Max-S2	1 GPM
Cube Max-S3	1 GPM
Cube Max-CP1L	2 GPM
Cube Max-S2L	2 GPM
Cube Max-S3L	2 GPM
Cube Max-S3L+	2 GPM
Cube Max-CP1BBL	4 GPM
Cube Max-S2BBL	4 GPM
Cube Max-S3BBL	4 GPM

Cube Max line is available in different configurations depending upon filtration and flow requirements.

Slimline models use 2 3/4" (70mm) diameter filters and are available in either 10" (250mm) or 20" (500mm) length options. The slimline systems are equipped with 3/8 NPT fittings.

Big Blue systems use 4 1/2" inches in diameter filters and are available in either 10 inch or 20 inch length options. The Big Blue models are equipped with 1/4" (20mm) NPT fittings.

# Replacement Filters

System Replacement Filters			
System Model	Filter Ordering Code	Frequency	Description
Cube Max-CP1	CBMXR-S-CBSC	6 Months	10" Carbon and Scale Filter
Cube Max-S2	CBMX-S2S-PM		All Filters for System Maintenance
	CBMXR-S-CB	6 Months	10" Carbon Block
	DOR-OF110RM	12 Months	10" OneFlow Anti-Scale Cartridge
	STMAXR-S-ACSC	6 Months	10" Phosphate Scale Control (Option)
Cube Max-S3	CBMX-S3S-PM		All Filters for System Maintenance
	HSR-S-SED-5M	6 Months	10" Sediment Pre Filter
	CBMXR-S-CB	6 Months	10" Carbon Block
	DOR-OF110RM	12 Months	10" OneFlow Anti-Scale Cartridge
	STMAXR-S-ACSC	6 Months	10" Phosphate Scale Control(Option)
Cube Max-CP1L	CBMXR-L-CBSC	6 Months	20" Carbon and Scale Filter
Cube Max-S2L	CBMX-S2L-PM		All Filters for System Maintenance
	CBMXR-L-CB	6 Months	20" Carbon Block
	DOR-OF120RM	12 Months	20" OneFlow Anti-Scale Cartridge
	STMAXR-L-ACSC	6 Months	20" Phosphate Scale Control (Option)
Cube Max-S3L	CBMX-S3L-PM		All Filters for System Maintenance
	HSR-L-SED-5M	6 Months	20" Sediment Pre Filter
	CBMXR-L-CB	6 Months	20" Carbon Block
	DOR-OF120RM	12 Months	20" OneFlow Anti-Scale Cartridge
	STMAXR-L-ACSC	6 Months	20" Phosphate Scale Control (Option)
Cube Max-S3L+	CBMX-S3LP-PM		All Filters for System Maintenance
	HSR-S-SED-5M	6 Months	10" Sediment Pre Filter
	CBMXR-L-CB	6 Months	20" Carbon Block (2)
	OFTWHRM	12 Months	20" OneFlow Anti-Scale Cartridge
	STMAXR-BL-ACSC	6 Months	20" Phosphate Scale Control (Option)
Cube Max-CP1BBL	CBMXR-BL-CBSC	6 Months	20" Carbon and Scale Filter
Cube Max-S2BBL	CBMX-S2B-PM		All Filters for System Maintenance
	CBMXR-BL-CB	6 Months	20" Carbon Block
	DOR-OF140RM	12 Months	20" OneFlow Anti-Scale Cartridge
	STMAXR-BL-ACSC	6 Months	20" Phosphate Scale Control (Option)
Cube Max-S3BBL	CBMX-S3B-PM		All Filters for System Maintenance
	HSR-BL-SED-5M	6 Months	20" Sediment Pre Filter
	CBMXR-BL-CB	6 Months	20" Carbon Block
	DOR-OF140RM	12 Months	20" OneFlow Anti-Scale Cartridge
	STMAXR-BL-ACSC	6 Months	20" Phosphate Scale Control (Option)

## Filter Cartridge Life Span

Filter cartridges should be changed at end of filter life, due to lack of filtering performance, or whenever a 15 psi pressure drop or greater is experienced during normal operation, whichever comes first.

## Filter Placement Reference

The replacement filter cartridges are to be installed from left to right, in any given system, as they appear in the above chart from top to bottom respectively.

Example: Cube Max-S3 will have a HSR-S-SED-5M in the left housing, a CBMXR-S-CB in the middle housing and a DOR-OF110RM in the right housing.

**Please note:** Cartridge capacities are estimates and may be less depending on incoming water quality.

## Notice to Installer

- Do not discard this manual after installation. This manual contains important operation, maintenance and precautionary information. Please present this manual to the user/owner/operator after installation.
- It is strongly suggested that you read this manual before installing system to ensure the best possible installation.
- Installation must comply with all local and state plumbing codes and regulations.
- Connect the system to cold water supply only. Water Temperature cannot exceed 100°F (38°C).
- System must be installed in a vertical, upright and level position.
- Do not use with water that is microbiologically unsafe or of unknown water quality.
- Notice to user/owner/operator: Please retain this manual for future reference for parts, maintenance, or troubleshooting.
- It is recommended that all personnel responsible for operation and maintenance of this product read the precautions, maintenance, and operation sections of this manual.

## Installation Precautions

- Do not install system on line pressure above the rated pressure as noted in System Specifications above.
- Do not install the system on a hot water line. Failure to limit the water temperature to 100°F (38°C) can result in housing failure and property damage.
- Do not connect the system backwards with the feed water line connected to the outlet.
- Do not use liquid pipe thread compounds for threaded connections. Use Teflon® tape only.
- Do not solder plumbing connections that are attached to the housings or inlet/outlet fittings. System damage may occur due to high temperature.
- Do not allow the system to freeze. Turn off water supply and drain the system if temperature falls below 32°F (0°C).
- Do not install system in direct sunlight or where the system will be exposed to harsh chemicals or may be subjected to being hit by moving equipment, carts, mops, or any other item that may cause damage.
- Allow 3" (76mm) minimum clearance under the housings for filter replacement.
- If water hammer is evident, install water hammer arrestors before the system.
- Do not over tighten fitting connections.
- Always back up valves and fittings with a wrench when installing fittings to avoid over tightening or loosening existing fittings.
- Do not install the unit behind equipment where it may be difficult to access the system for future filter replacements.

Position the system in a suitable location. The direction of flow through the system is left to right. Keep this in mind when determining installation locations. Do not mount the system near any source of heat. Also do not mount this system over anything that may be adversely affected by water.

## OneFlow Application Practices

Note: Systems using OneFlow technology prevent hardness related scale formation inside the plumbing system at influent hardness levels of 75 grains per gallon of calcium carbonate and less. Due to variances in water chemistry certain aesthetic conditions external of the plumbing system may not be attained. New copper lines need to be passivized before placing unit into service. Copper usually originates from new copper plumbing upstream of the OneFlow system. All new copper plumbing before the system should be allowed to passivate by operating under normal conditions for a period of 4 weeks prior to starting the system up. This will allow the copper surfaces to be fully flushed and develop a natural protective surface.

To further minimize any problem with excess copper, avoid applying excess flux on the inner surfaces of the pipe and use a low-corrosivity water soluble flux listed under the ASTM B813 standard. OneFlow is not for use on closed loop systems.

## Operation

With sufficient pressure, operation of this system is completely automatic. Dependable operation involves only monitoring system pressure differential, periodic filter changes, and service documentation.

## Installation

**\*Please note: All cartridge filters are preinstalled, in the housings, at the factory.**

1. Turn off all equipment to be fed by the system, locate the water supply shutoff valve and turn it off.
2. Apply Teflon tape to the threads of the inlet and outlet valve and pressure gauge assemblies. Thread the inlet and outlet valve and pressure gauge assemblies into the inlet and outlet of the system. The valve and pressure gauge assembly with the ¼" (8mm) Quick-Connect flush valve fitting is to be installed on the outlet of the system. See the drawings on pages 4 and 5 of this manual for proper valve and pressure gauge assembly placement. **NOTE: DO NOT OVERTIGHTEN THESE FITTINGS INTO THE FILTER HEADS.**
3. Anchor the system on a wall stud or suitable mounting material spanning wall studs. System must be vertical, upright and level.
4. Run a suitable line from the tap water source to the inlet ball valve on the left side of the system. Slimline models require 3/8" (10mm) NPT fittings, Big Blue models require ¾" (20mm) NPT fittings. Brace the inlet ball valve on the system with a wrench when connecting the feed water line. **NOTE: DO NOT OVERTIGHTEN CONNECTION FITTING INTO BALL VALVE.**
5. Select the appropriate size tubing for the equipment being fed, and connect it to the outlet ball valve of the system. **NOTE: DO NOT OVERTIGHTEN CONNECTION FITTING INTO BALL VALVE.**
6. Install the ¼" (8mm) tubing into the Quick-Connect fitting on the outlet of the system and hold it over a drain. Open the ¼" (8mm) drain valve.
7. Once all inlet and outlet piping has been completed, check and make sure all filter housing are tight, slowly open the inlet valve and allow all air to purge from the system. Slowly close the ¼" (8mm) drain valve, allow the system to reach operating pressure, and check for leaks.
8. If no leaks are present, open the ¼" (8mm) drain line again and allow it to run to drain for 5 minutes to flush the system then close the valve.
9. Open the outlet water valve and check for leaks.
10. Record the start up date and pressure gauge values in system maintenance log.

**Note: Overtightening components can damage the system causing water damage and/or system failure.**

# Maintenance

Routine maintenance of this system involves periodic filter changes.

Filter cartridges should be changed at end of filter life, due to lack of filtering performance, or whenever a 15 psi pressure drop or greater is experienced during normal operation, whichever comes first.

## Filter Cartridge Replacement Procedure

**IMPORTANT: Determine whether all equipment connected to the system must be turned off prior to shutting off water supply from filters.**

1. If required, turn off downstream equipment.
2. Turn OFF water to the system by closing the inlet and outlet ball valves.
3. Open the ¼" drain valve on the outlet of the system to relieve pressure in the housings.
4. Remove housings by unscrewing them. They have a standard right hand thread.
5. Clean inside of housing sump with warm water. If desired, disinfect housing using a teaspoon of household bleach. Add to filter bowl and fill with water. Let stand 5 minutes and then discard and rinse.
6. Insert new cartridges into filter housings.
7. Make certain the O-ring is properly positioned and reinstall filter housings. Tighten housings hand tight. Check O-ring for damage and replace if damaged or distorted.

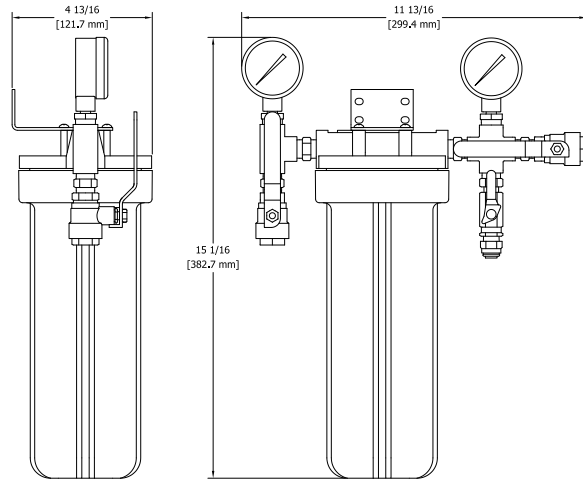
**Do not overtighten filter housing, overtightening may damage O-ring(s), cause water leaks, or affect system performance.**

8. Slightly open the inlet ball valve and fully open the ¼" drain valve. Once full flow of water flows from the drain port, slowly open the inlet valve to the full open position. Allow water to flush to drain for 5 minutes.
9. Slowly close the drain valve and check the system for leaks.
10. Slowly open the outlet valve to restore water flow to downstream equipment.
11. Record filter change date in system maintenance log.

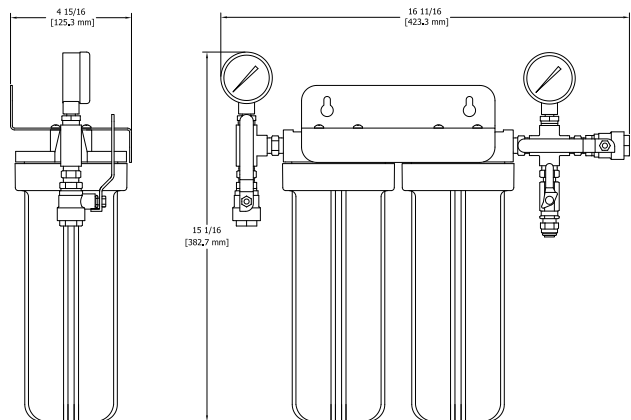
## Replacement Parts

Description	Ordering Code
Ball Valve 3/8 NPT	HSR-BV3/8
Ball Valve 3/4 NPT	HSR-BV3/4
Pressure Gauge	HSR-GAUGE
10" Slimline Housing	HSR-10HS
20" Slimline Housing	HSR-20HS
10" Big Blue housing	HSR-10BHS
20" Big Blue Housing	HSR-20BHS
Slimline O-Ring	HSR-RING-S
Big Blue O-Ring	HSR-RING-B

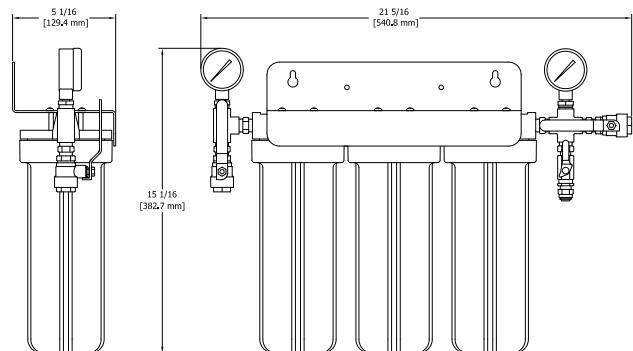
### Cube Max-CP1



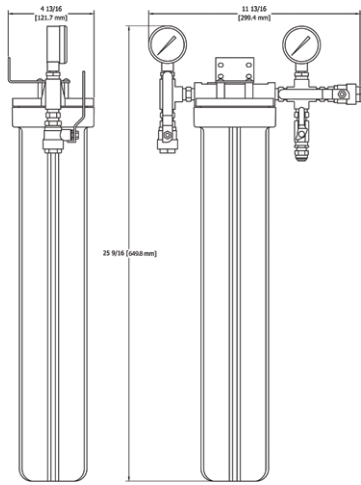
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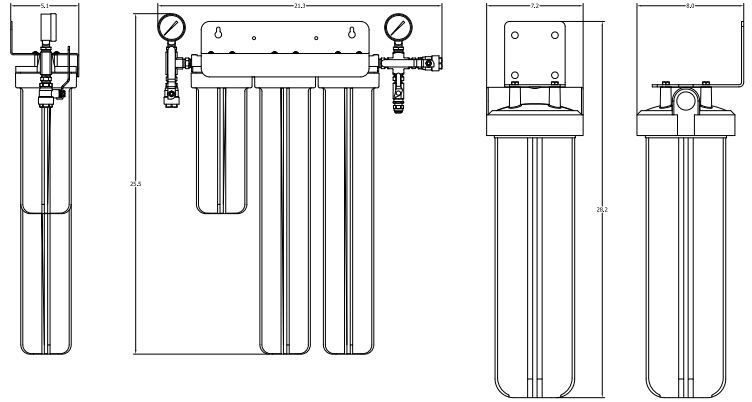
### Cube Max-S3



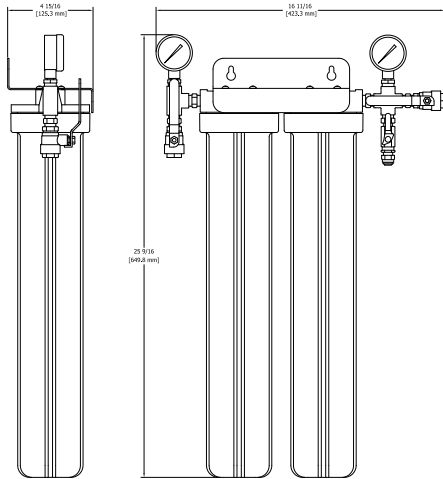
**Cube Max-CP1L**



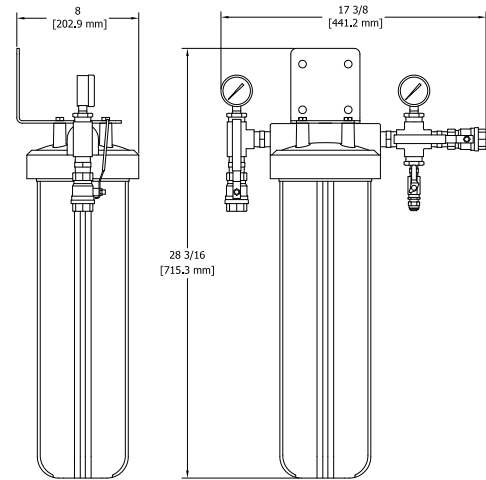
**Cube Max-S3L+**



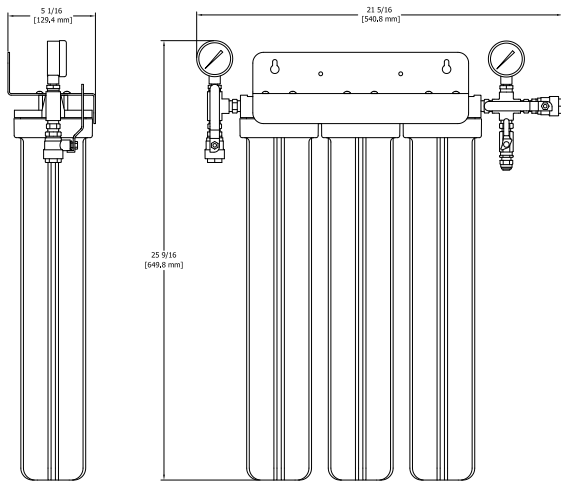
**Cube Max-S2L**



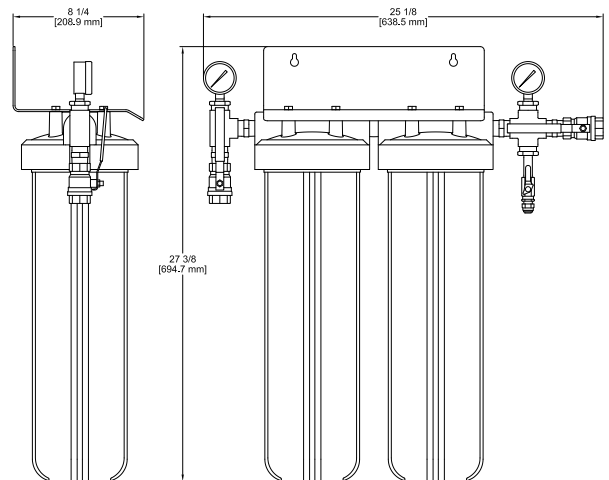
**Cube Max-CP1BBL**



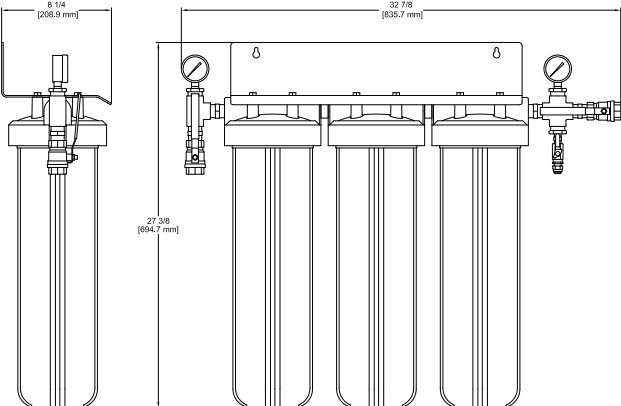
**Cube Max-S3L**



**Cube Max-S2BBL**



Cube Max-S3BBL



# Notes

**Note:** Allow 3" (76mm) of clearance at bottom of system for removal of filterbowls for filter cartridge replacement

**CALIFORNIA PROPOSITION 65 WARNING**

**WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. (California law requires this warning to be given to customers in the State of California.)

**For more information:** [www.watts.com/prop65](http://www.watts.com/prop65)

**LIMITED WARRANTY:** Watts Regulator Co. (the "Company") warrants each Cube Max water filtration line system, excluding filters and water treatment cartridges, to be free from defects in material and workmanship under normal usage for a period of five years from the date of original shipment. The Company warrants all filters and water treatment cartridges to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge.

THE WARRANTY SET FORTH HEREIN IS GIVEN EXPRESSLY AND IS THE ONLY WARRANTY GIVEN BY THE COMPANY WITH RESPECT TO THE PRODUCT. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE COMPANY HEREBY SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. The remedy described in the first paragraph of this Limited Warranty shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication, improper installation or improper maintenance or alteration of the product. Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult applicable state laws to determine your rights. **SO FAR AS IS CONSISTENT WITH APPLICABLE STATE LAW, ANY IMPLIED WARRANTIES THAT MAY NOT BE DISCLAIMED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF ORIGINAL SHIPMENT.**



A Watts Water Technologies Company

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