

Super Chlorinating Instructions

Device overview:

Using the H₂O Neutralizer® for Chlorinating is just as easy as DeChlorinating. When using this device in a closed system (not to open discharge), all you have to maintain is greater incoming pressure than discharge pressure. We recommend having 10-15 psi of differential pressure. Check with the local controlling agencies as to the requirement of Backflow protection devices in your connection to the existing system. Your filling point should be at the high end of the system. You should be discharging your weakened water at the low point of the new system. If this is not possible, you will have to have additional pressure to overcome the additional force required to push the water uphill. You may be required to use two H₂O Neutralizers®; one on the intake (this is for chlorinating), and one on the discharge point of the new system (this is for DeChlorinating weakened super chlorinated water). When you are chlorinating your new system, your specifications will call out how hot your water should be (target ppm at filling time) and what your ppm should be after twenty-four hours of contact time. When you start to fill your system, the first main slug of water should be at a high level of chlorine residual, then start to reduce the residual level as you fill the rest of the system.

If you consider the entering water as individual water molecules issued "X" number of chlorine bullets, these bullets will be used as the water travels down the pipeline purifying the line. You want to make sure that the water first entering the system has plenty of chlorine bullets. This way the water will be purifying the line as far as possible in the system before that water becomes too weak to do the job. You must have sample points selected throughout the system to get accurate readings on your chlorine residual level. As your chlorine residual level starts to stay at the target level of super chlorinated water, you may turn down the control valve to lower the number of chlorine bullets being issued to the water molecules. When your discharge point has reached the proper chlorine residual level, you may shut down your filling operation.

It is recommended that you follow the AWWA C651-99 or current standard for Disinfecting Water Mains.

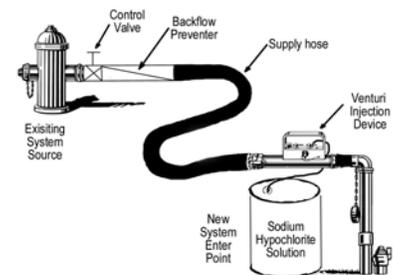
Equipment Setup

Starting at the water source:

1. Make connection to source water. It is recommended that you use a 2 ½" blow-off or fire hydrant or a 2" service line connection.
2. It is recommended that you install an appropriate cross-connection device. Check with local regulations.
3. Install a control valve.
4. Determine the line pressure from the source. Then compare the flow chart to the desired fill rate to determine what size orifice would be needed.
5. Install the required orifice to the unit. Always remember that you need to have the orifice smaller than the smallest ID of your filling line.
6. At the new system's entry point attach the 2 ½ FNST x Female Cam adapter. If you are connecting to a filling point which is not 2 ½" in size, you will need a bushing to down size to your filling line size. Make sure that you have installed the next size smaller orifice. If you are using a line size of 1" (minimum) you must install a bolt nut and washer into the ¾" orifice to block the entire flow, which will force the water through the by-pass allowing the device to function properly.
7. You must have a 10-15 psi differential pressure at the main line orifice for the modified venturi to properly work.
8. Attach the H₂O Neutralizer®.
9. Attach 3" Discharge hose to the H₂O Neutralizer®, and then attach to the source connection assembly. If you are using a 2 ½" hose, use 2 ½" FNST x Male Cam adapter, attached directly to the H₂O Neutralizer®, then run your hose to your source connection.
10. Select various sample points throughout the system, making sure that your first sample point is in close proximity to the entry point.
11. Prepare chlorine feed solution according to charts. Note, the device will give you 65 gph of feed solution; you should dilute your chlorine to avoid overloading your system with too high of a chlorine residual level.
12. You will be chlorinating your system by means of a modified slug method. When using this method make sure that your feed solution is of the proper strength and have a nearby sample point.
13. It is recommended to have a higher chlorine residual level at first, (minimum of 100 ppm) and then lower your residual level as you fill the pipeline. The reason for this is that the water that enters your pipeline at first must travel the full length of your system.
14. As you test from your sample points you will notice that the chlorine residual level will start to maintain the high level that you have at the entry point. At this time you can start to turn down the amount of chlorine that you are putting into the device by turning down the feed solution control valve or by diluting your feed solution.
15. Once you test for the desired chlorine residual level at your discharge point, you have finished your super chlorinating.
16. Follow the specifiers' requirement for contact time and discharge water in the proper manner.



Complete Set-Up



Feed Solution Formulas

NOTE: The below charts are based on 12.5% Sodium Hypochlorite and with the feed solution valve in the full open position. If you are using 5¼ % household bleach increase your feed solution strength by 2.3 times.

Feed Solution prepared in **FIVE GALLON** batches

		GPM				
		50	100	200	300	600
P P M	40	⅓ Cup	1½ Cups	2⅔ Cups	4 Cups	1 gal.
	60	½ Cup	2 Cups	4 Cups	5¾ Cups	1 gal.+ 3½ Cups
	80	1½ Cups	2⅔ Cups	5¼ Cups	1 gal.	2 gal.
	100	1⅓ Cups	3¼ Cups	6⅓ Cups	1 gal.+ 1½ Cups	2 gal. + 3 Cups
	150	2½ Cups	4¾ Cups	1 gal.+ 1½ Cups	1 gal.+ 6⅓ Cups	3 gal. + 4½ Cups
	200	3¼ Cups	6⅓ Cups	1 gal.+ 4¾ Cups	2 gal.+ 3 Cups	5 gal.

Feed Solution prepared in **THIRTY-TWO GALLON** batches

		GPM				
		50	100	200	300	600
P P M	40	4 Cups	1 gal.	2 gal.	2 gal. + 7¼ Cups	3 gals. + 5¾ Cups
	60	6 Cups	1 gal.+ 4 Cups	2 gal. + 7¼ Cups	2 gals. + 1¼ Cups	8 gal. + 4½ Cups
	80	7 Cups	2 gal.	3 gal. + 6¾ Cups	3 gals. + 5¾ Cups	11 gal. + 3¼ Cups
	100	1 gal. + 1¾ Cups	2 gal. + 3½ Cups	4 gal. + 6¼ Cups	7 gal. + 1 Cups	14 gal. + 2 Cups
	150	1 gal. + 6⅓ Cups	3 gal. + 5¼ Cups	7 gal. + 1 Cups	10 gal. + 5½ Cups	21 gal. + 3 Cups
	200	2 gal. + 3½ Cups	4 gal. + 6¼ Cups	9 gal. + 4½ Cups	14 gal. + 2 Cups	30 gal.

NO-BRAINER Feed Solution Formula

The no-brainer feed solution is very simple. Just use full strength Sodium Hypochlorite, and do all the controlling by means of the feed solution control valve. Your first test port must be within ten feet or less of the entry point. Quality test equipment is a requirement and the operator must have complete knowledge in its operation.

Calculate the target chlorine residual level that will be required for the project by using the Feed Solution Chart program. Determine the desired chlorine residual level you want for the first main slug of chlorine and adjust the control valve once the flow starts.

Monitor your residual levels by the tests from the different test ports and adjust the control valve. After you have reached the target residual level at the farthest point from the entry point you have finished your chlorination.

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