



**HAYWARD CS SERIES
CORPORATION STOP
INSTALLATION, OPERATION AND
MAINTENANCE INSTRUCTIONS**





SAFETY WARNINGS

PLEASE READ THE FOLLOWING INFORMATION PRIOR TO INSTALLING AND USING HAYWARD CS SERIES CORPORATION STOPS. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PRODUCT DAMAGE, PROPERTY DAMAGE, PERSONAL INJURY, OR EVEN DEATH.

1. Hayward Flow Control (Hayward), a division of Hayward Industries, guarantees its products against defective material and workmanship only. Hayward assumes no responsibility for property damage or personal injury resulting from improper installation, misapplication, or abuse of any product.
2. Hayward assumes no responsibility for property damage or personal injury resulting from chemical incompatibility between its products and the process fluids to which they are exposed. Determining whether a particular PVC, CPVC, PP, or PVDF product is suitable for an application is the responsibility of the user. Chemical compatibility charts provided in Hayward literature are based on ambient temperatures of 70°F and are for reference only.
3. Hayward products are designed for use with non-compressible liquids.

WARNING

Hayward PVC and CPVC products should NEVER be used or tested with compressible fluids such as compressed air or nitrogen. Use of PVC and CPVC products in compressible fluid applications may result in product damage, property damage, personal injury, or even death.

WARNING

The Series CS is intended for use in liquid service only. Do not attempt to use this valve for controlling air or gases. Use of this product in air or gas service may result in product damage, property damage, personal injury, or even death.

4. The maximum recommended fluid velocity through any Hayward product is eight feet per second (8 ft/s). Higher fluid velocity can result in damage due to the water hammer effect.
5. Piping systems must be designed and supported to prevent excess mechanical loading on Hayward products due to system misalignment, weight, shock, vibration, and the effects of thermal expansion and contraction.
6. The effect of temperature on plastic piping systems must be considered when the systems are initially designed. The pressure rating of plastic systems must be reduced with increasing temperature. Maximum operating pressure is dependent upon material selection as well as operating temperature. Before installing any Hayward product, consult Hayward product literature for pressure vs. temperature curves to determine any operating pressure or temperature limitations.
7. PVC and CPVC plastic products become brittle below 40°F. Use caution in their installation and operation below this temperature.

WARNING

Hayward PVC and CPVC products should not be used in services with operating temperature below 34°F.

8. Due to differential thermal expansion rates between metal and plastic, transmittal of pipe vibration and pipe loading forces, **DIRECT INSTALLATION OF PLASTIC VALVES INTO METAL PIPING SYSTEMS IS NOT RECOMMENDED.** Wherever installation of plastic valves into metal piping systems is necessary, it is recommended that at least 10 pipe diameters in length of plastic pipe be installed upstream and downstream of the plastic valve to compensate for the factors mentioned above.
9. Published operating requirements are based on testing of new product using clean water at 70°F. Product performance is affected by many factors including fluid chemistry, viscosity, specific gravity, flow rate, and temperature. These should be considered when sizing Hayward products.
10. Systems should always be depressurized and drained prior to installing or maintaining any Hayward product.

WARNING

Failure to depressurize and drain system prior to installing or maintaining valve may result in product damage, property damage, personal injury, or even death.

11. Always follow your site and or company procedures for any safety training and or site specific precautions or warnings in addition to those in this document.

Installation Instructions:

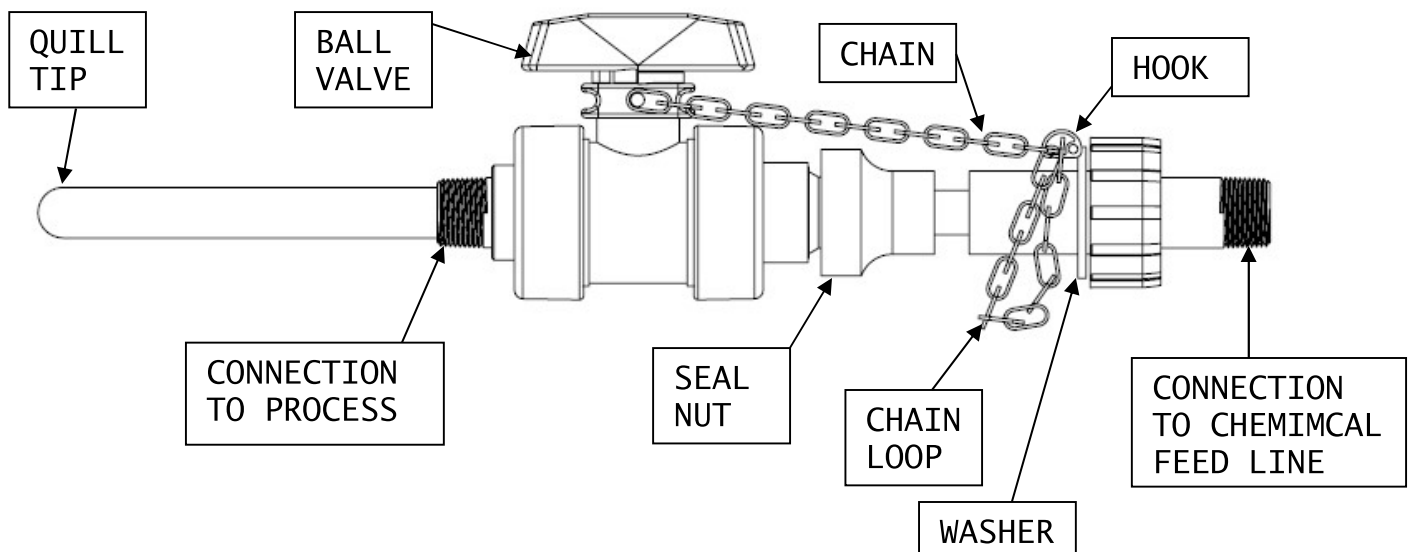
WARNING

Ensure the system is not under pressure and that the chemical lines are flushed with water or appropriate fluid before installation.

Always wear suitable protective equipment during installation.

Make sure the safety chain is locked in position before pressurizing system to prevent potential quill ejection.

1. Identify location on pipe for corporation stop placement. Ensure there is room for proper operation of the corporation stop.
2. Ensure interior of the pipe is empty and at equilibrium with ambient pressure.
3. Prepare the location for the injection port on the pipe with appropriate means for the installation.
4. For clean liquids, the 45° tip opening should face the flow to facilitate mixing. For slurries and other fluids that can clog the tip, the 45° tip opening should face away from the flow (note arrow direction before installing).
5. Use PTFE tape on the pipe thread of the corporation stop to prevent potential leaks.
6. Check that both ends of the chain are attached- one end to valve body, the other end to the hook on the washer on the quill.
7. Loosen the seal nut.
8. Adjust the quill length inside the pipe by sliding the quill at the seal nut so that the quill tip is close to the middle of the pipe diameter.
9. Tighten the seal nut. Hand tight is usually sufficient to affect a seal between the quill and seal nut.
10. Remove slack from the chain by using a link between the ends of the chain. Hook the intermediate link onto the quill washer to shorten the effective chain length. **Never** remove the ends of the chain from the ball valve or the quill during installation. Leave the assembly so the intermediate link can be unhooked in the future without unhooking the ends of the chain from the assembly.
11. Connect the chemical feed line to the corporation stop assembly.
12. As the system is pressured, check for leaks in any of the connections. If a leak is detected, de-pressure system and remake connections.





Operation:

Hayward CS Series Corporation Stops are threaded into a process pipe or tank to deliver chemical to a desired application point. The integrated quill keeps the chemical off the wall of the tank or pipe and will ensure better mixing of the chemical with the process fluid. This is enhanced by the 45° angle at the quill tip. The ball check in the quill portion functions to impede the process fluid going back up the chemical line. Corporation stops allow for quill maintenance without having to turn off or shut down the process or main line.

Maintenance:

WARNING

Always wear suitable protective equipment before servicing.

Make sure the safety chain is locked in position before starting maintenance to prevent potential quill ejection.

1. The objective is to remove the quill for servicing.
2. Wear suitable protective equipment.
3. Verify the safety chain has one end connected to the valve, one end connected to the washer on the quill, and an intermediate link also connected to the washer on the quill. The intermediate link should be removable without removing either end of the chain from the corporation stop assembly.
4. **To prevent quill ejection, do not remove either end of the chain from the assembly at this point.**
5. Unhook the intermediate link from the quill.
6. In this step, be sure to only turn the seal nut and not the union nut on the valve. Slowly unscrew the seal nut behind the ball valve assembly until the quill can slide. Slide the quill out until the ball valve can be closed.
7. Turn off the injection system if it is not off.
8. Close the ball valve.
9. The quill and the open end of the ball valve will contain line fluid and or injection fluid. Protect yourself from this fluid.
10. With the ball valve closed, remove the chain end from the hook on the quill.
11. Slide the quill completely out of the corporation stop assembly. IF the chemical feed lines are hard plumbed to the corporation stop, the union nut next to the washer can be unscrewed and then the chemical feed line separated from the quill.
12. With water or a suitable fluid which is compatible with the fluid being injected, flush to dislodge any debris that may be holding the ball off of the seat area.
13. If the quill is damaged, the ball check is damaged, or the spring is damaged or corroded, replace components as necessary.
14. To replace quill into the corporation stop, first reattached end of chain to the hook on the washer.
15. Insert quill into the seal nut and hand tighten seal nut to create a seal to quill.
16. Open the ball valve and slide quill into the ball valve until the tip is in the center of the pipe.
17. Re-tighten the seal nut as necessary. Hand tight is usually sufficient to affect a seal between the quill and seal nut.
18. Remove slack from the chain by using a link between the ends of the chain. Hook the intermediate link onto the quill washer to shorten the effective chain length. **Never** remove the ends of the chain from the ball valve or the quill during installation. Leave the assembly so that the intermediate link can be unhooked in the future without unhooking the ends of the chain from the assembly.
19. Connect the chemical feed line to the thread or union on the end of the corporation stop assembly.
20. As the system is pressured, check for leaks in any of the connections. If a leak is detected, de-pressure system and remake connections

Technical Data:

Size:	1/2", 3/4", 1"
Connections:	NPT Double Thread (Male)
Maximum Temperature:	PVC 140°F (60°C); CPVC 180°F (82.2°C)
Maximum Operating Pressure at 70°F:	150 psi (10 bar)
Materials of Construction:	
Ball / Spring:	PTFE / Hastelloy C
Valve Body & Quill:	PVC, CPVC

