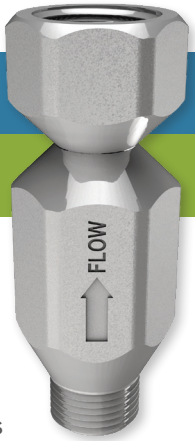
Halo Valve

NATURAL GAS SAFETY BREAKAWAY
INSTALLATION & OPERATION MANUAL (IOM)

THE SAFETY BREAKAWAY

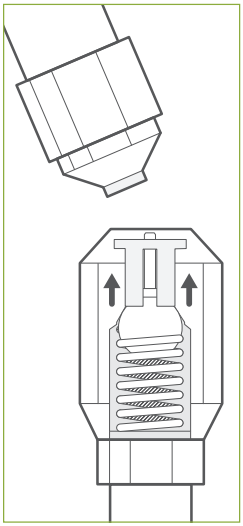
THAT'S A TRUE BREAKTHROUGH.



The HaloValve is an integrated shutoff safety breakaway device that stops the flow of natural gas when a gas line is broken or breached at the meter as the result of an impact event (vehicular, snow load, etc.). The HaloValve is designed to add a level of safety and protection for meters and other aboveground natural gas piping that is located in high-traffic areas or those with an elevated risk of impact.

How HaloValve Works

The HaloValve operates through a machined shear groove that provides a "weak link" in the gas piping. It is designed to withstand nominal lateral forces, but when a forceful impact occurs, the shear groove will break, causing an internal shutoff mechanism to halt the flow of gas.



There are several variables in determining the break force: speed of the force that is applied, distance from center of grove, direction of strike. For example, a break 10.5 inches from the center of the shear groove, perpendicular to the flow axis, would require a sudden impact average force of 155 lbs.

- The HaloValve is installed into the meter set or other natural gas piping
- When the fitting breaks, the internal ball acts as a plug to stop the escape of gas
- When gas flow is stopped, the risk of fire, explosion, property damage and serious personal injury IS mitigated

WARNING

Failure to read and follow all instructions before installing or operating the HaloValve can cause personal injury or property damage, and can even result in death.

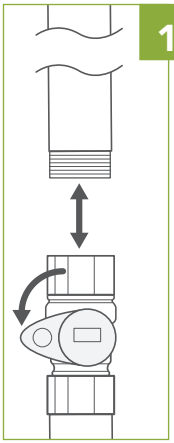
1. Given the many variables that exist with each meter installation it's not possible to predict the effectiveness of the device in every situation. While our testing indicates that the HaloValve clearly adds a level of protection to these high-risk installs, it's not a 100% effective solution.
2. The HaloValve is a precision instrument that requires particular care during its installation. Failure to properly observe and follow all installation instructions and any safety warnings can result in a defective installation that will compromise or impair the effectiveness of the HaloValve.

Installation Guidelines

The following guidelines should be followed during installation:

- Schedule 80 piping should be used whenever possible. The use of Schedule 80 piping will improve the odds that the HaloValve will function as the "weak link" in the setup and shut off gas flow when impacted.
- Any corroded piping or components in the system should be replaced prior to the installation of the HaloValve as the goal of the installation is to make the HaloValve the weakest link in the system.
- DO NOT allow dirt or other contaminants to enter the HaloValve.
- The HaloValve should be installed vertically just upstream or downstream of the shutoff valve. This orientation has been proven to be effective in halting gas flow as the result of both horizontal (vehicular) and vertical (snow load) impact events.

Installation Process



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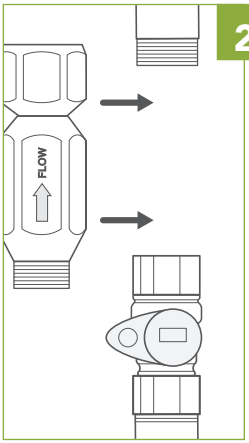
Close the shut-off valve to stop gas flow. Disconnect piping directly upstream of the shutoff valve.



2

With the gas valve closed, align the HaloValve with the piping directly above the valve. In many cases, the unit can be threaded directly into the shutoff valve, replacing a pipe nipple (HaloValve is available in 4" and 6" lengths). Tighten all connections.

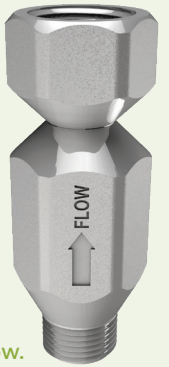
WARNING: Before installing the HaloValve, be aware that the meter set must be installed in compliance with all federal, state and local building and safety regulations, including Section 192.353 of Title 49 of the Code of Federal Regulations. The two (2) pertinent paragraphs in this instance are:

- Each meter and service regulator, whether located inside or outside of a structure, must be in a readily accessible location and protected from corrosion and other damage
- Each meter installed within a structure must be located in a ventilated area and situated not less than three (3) feet from any source of ignition or any source of heat that

- The HaloValve **must** be installed with the flow-direction arrow pointing in the direction of the gas flow
- Typically, the HaloValve will be installed above, or directly into the shutoff valve. This allows the installer to easily turn off gas supply during installation
- The HaloValve should be installed as close to the ground as possible
- DO NOT torque across the HaloValve Sheer Groove during installation

WARNING

The HaloValve will not function if it is installed against the flow of gas, therefore it is essential that the direction of the arrow on the HaloValve be pointed in the same direction as the gas flow.



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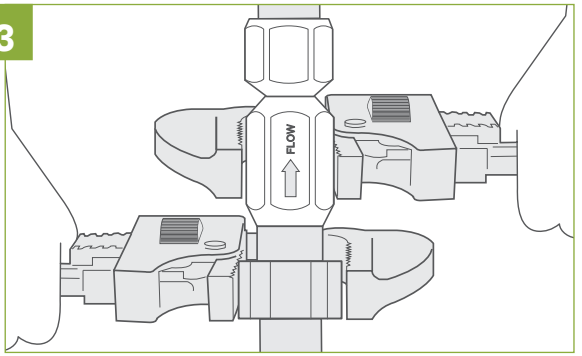
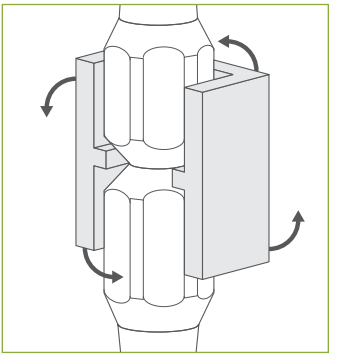


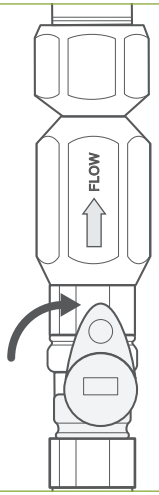
WARNING
DO NOT TORQUE ACROSS THE SHEAR GROOVE.
DOING SO MAY IRREPARABLY DAMAGE THE UNIT.



OPTIONAL
USE TOOL TO INSTALL.

Specifications (overall fitting length)

4



BODY	Stainless Steel (ASTM A351 CF-8M)
SEAL	Nitrile
PRESSURE RATING	300 psi (21 bar) / 1,000 psi (69 bar)
TEMPERATURE RATING	-40°F – 212°F (-40°C – 100°C)
CONNECTIONS	FNPT, MNPT
LINE SIZES	3/4" (19 mm) and 1" (25 mm)
OVERALL LENGTH	4" (102 mm) and 6" (152 mm)

With theHaloValve in place and pipes reconnected, reopen the gas valve to restore service.

**1" size only available in 6" length*

LIMITED WARRANTY

The Natural Gas Safety Breakaway (NGSB) is manufactured by OPW Engineered Systems according to its specifications. The manufacturer agrees to supply a replacement for any product that fails to function correctly under normal conditions and after proper installation. Such warranty is limited exclusively to the sale price of any NGSB that has been proven defective in such circumstances and excludes, without limitation, all costs and expenses of any kind relating to the testing, removal or replacement of NGSBs. THE REMEDY HEREBY PROVIDED SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR BUYER, AND NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY EXPRESS OR IMPLIED WARRANTY IS MADE WITH RESPECT TO THE NGSB OR ANY OPW PRODUCT. In no event shall OPW be liable for any loss, damage, expenses, direct or consequential, arising out of the installation or use of this product, including, without limitation, claims made by persons other than the direct purchaser of this product, and claims for loss of profits, business interruption, property damage or personal injury.