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Home

Industrial

Institutions

Restaurants

**Flood**

**Gate**

**Automatic Backwater Valve**



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## FLOOD-GATE FEATURES

- **Fully mechanical operation—no electricity required!**
- **Full port prevents obstruction of flow and trapped debris.**
- **In-Line Construction for easy installation in existing buildings.**
- **Positive Seal 99.9% effective in preventing leakage beyond the valve with 45 foot head of water pressure.**
- **Cast Iron Body and Stainless Steel Knife Gate for Long life and dependability.**

## FLOOD-GATE APPLICATIONS

### Homes:

Protect your investment from costly insurance claims.

### Commercial:

Basements, elevator pits, computer and electrical rooms to prevent costly downtime.

### Industrial:

Protect valuable machinery and equipment.

### Institutional:

Hospitals and schools to maintain maximum health environment.

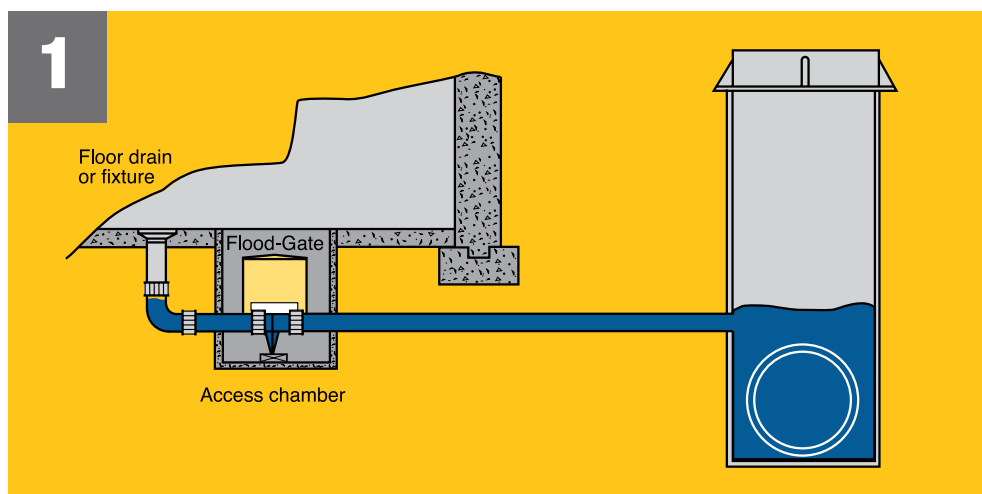
### Restaurants:

Helps protect against bacterial contamination.

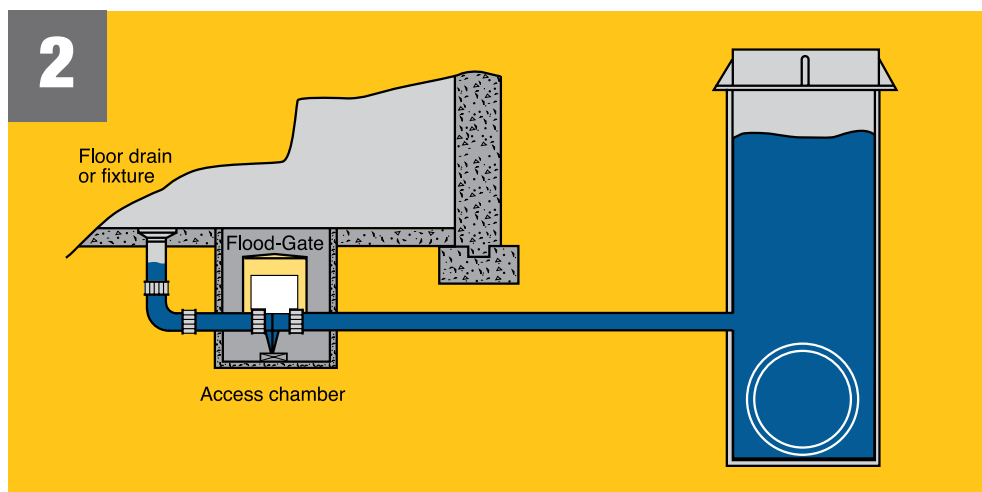
*Properly installed, the FLOOD-GATE will provide years of trouble-free automatic service.*

### HOW THE FLOOD-GATE WORKS AUTOMATICALLY:

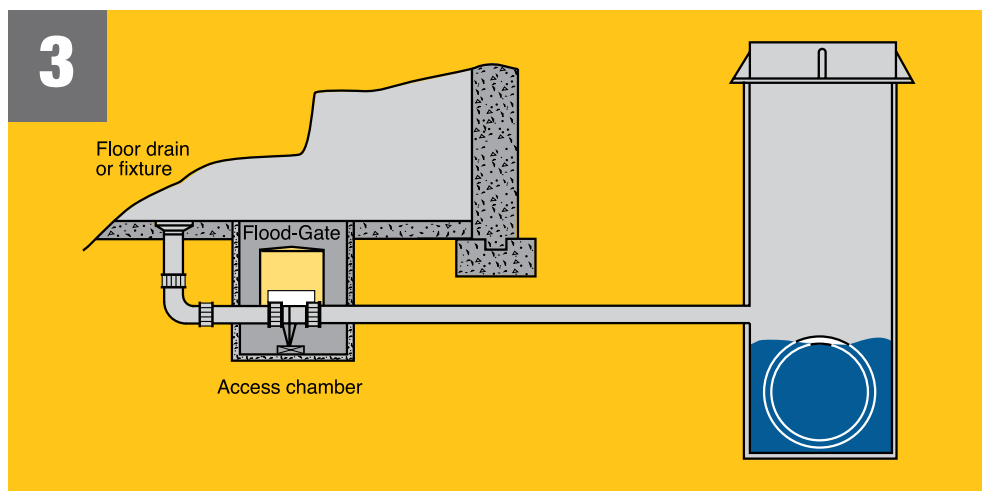
The Flood-Gate works to stop a sewerage backflow into a building. Backflows occur when there is a stoppage in the municipal/street sewer or septic system, causing the drainage water to rise above the top of the building's drains.



As the sewer backflow occurs, the air trapped in the expansion chamber is compressed by sewage backup. The pressure in the expansion chamber causes the knife gate to rise until the 4" or 6" drainage opening is completely sealed. This action occurs with a 9" head of drainage water for a 4" valve and a 14" for a 6" valve. When complete closure is obtained in the valve, all backflow is prevented from entering the building or structure.



Once the backflow subsides and the drainage water level returns to normal, the counterweight atop the expansion chamber forces the trapped air out of the chamber and into the drainage line, allowing the knife gate to lower to a full open position. Now the Flood-Gate is ready to guard against future backflow situations.



## FLOOD-GATE OPERATION AND APPROVALS

### OPERATION:

The FLOOD-GATE automatic backwater valve is designed to protect a building and its contents from damage due to a backup in the drainage system. The FLOOD-GATE is intended for installation in the sanitary drain line connecting a building's sanitary system with the local sanitary sewer system or septic tank. It can also be used in storm sewer applications.

### OPERATION OF KNIFE GATE:



#### Knife Gate Open

The trapped air in the expansion chamber creates an upward force on the counter-weight plate of the diaphragm.



#### Knife Gate Closing

When pressure increases beyond 6" head/water, the plate is forced upward, activating the closing of the knife gate.



#### Knife Gate Closes Off Valve

A 9" head/water (4" valve) or 14" head/water (6" valve) is sufficient to raise the gate to its fully closed position.

*Lacking any upward force, the gate is in the open position, which allows for unrestricted flow through a full port opening.*

### APPROVALS:

The FLOOD-GATE Automatic Backwater Valve conforms to requirements per ASME A112.14.1 for Backwater Valves.

IAPMO Listed, File No. 2696.

The FLOOD-GATE Automatic Backwater Valve has been approved for use in the following states: Illinois, Indiana, Kentucky, Michigan, Massachusetts, Ohio, West Virginia, and Wisconsin.

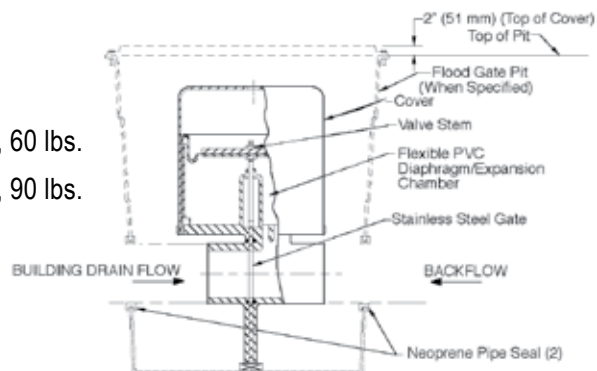
## FLOOD-GATE VALVE, DIMENSIONS AND OPTIONS



### FLOOD-GATE VALVE

7140Y04 4 in. (100 mm), 60 lbs.

7140Y06 6 in. (150 mm), 90 lbs.



See page 14 for dimensions

U.S. Patent No. 5,538,032

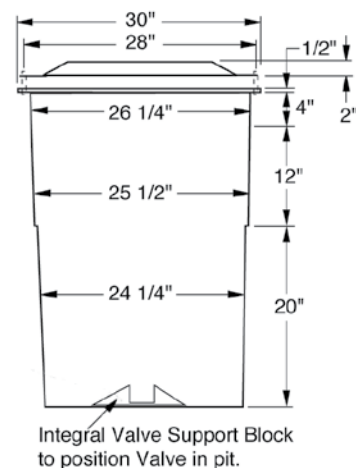
Other U.S. and foreign patents pending



### FLOOD-GATE PIT

- **FGP** (Poly Pit, secured, Gasketed Poly Lid, Hardware), 25 lbs.
- **FGS** (Poly Pit, secured, Gasketed Steel Lid, Hardware), 69 lbs.
- **FGSL** Steel Lid Only, 42 lbs.

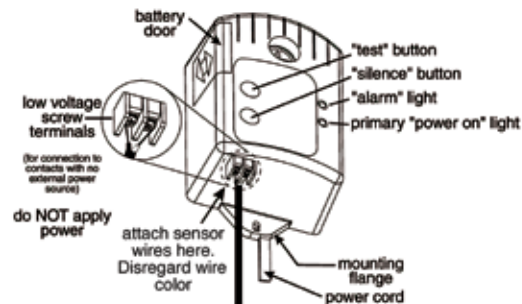
*NOTE: All Flood-Gate Pits (are furnished with two pipe gasket seals) - designate 4" or 6" valve. Pit can only be located in non-traffic areas.*



### FLOOD-GATE ALARM

- **FGA**
- Alarm Control Box
- 35 ft. of Cable
- Sensor
- One (1) 9 volt battery\* and/or 120 volt A/C power plug

\*9 volt battery not included



## FLOOD-GATE VALVE INSTALLATION: 4 INCH (7140Y04) & 6 INCH (7140Y06)

The FLOOD-GATE automatic backwater valve is designed to protect a building from flood damage due to a backup in the sanitary sewer system and can also be used in storm sewer applications. Properly installed, the FLOOD-GATE will provide years of trouble-free automatic service. Depending on individual circumstances, one of the two following installation guidelines must be followed:



*View looking at a Flood-Gate installation.*



*View of Flood-Gate in plastic pit with gravel ballast.*



*View of a Flood-Gate installed in a 4-foot deep concrete pit.*

### PIPING OPTION ONE:

Install the FLOOD-GATE in the horizontal drain line between the building and the sewer main. Although this provides complete protection from flooding, all of the plumbing fixtures in the building will be out of service once the FLOOD-GATE is activated. The optional alarm system is highly recommended with this type of installation.

### PIPING OPTION TWO:

Install the FLOOD-GATE where only the fixtures installed below grade (as in a basement) are connected on the upstream side of the valve. Fixtures installed above grade are connected on the downstream (sewer) side of the valve, allowing continued use of the above grade fixtures, while protecting below grade areas from flooding.

### PIT INSTALLATION:

When the FLOOD-GATE is partially recessed or fully recessed, it must be installed in a ventilated and permanently dry (water-free) access pit in the horizontal drain line between the building and the sewer main (a sealed or flooded pit will restrict the free movement of the valve).

### CRITICAL INSTALLATION DATA:

The distance from the top of the horizontal drain line, where the FLOOD-GATE is installed, to the top of basement floor drain must be AT MINIMUM 9 inches for MODEL # 7140Y04 and 14 inches for MODEL # 7140Y06. An additional two (2) inches more than this minimum is suggested, so that the top of the valve cover will be situated 2" below the pit cover.

### FACTORY TESTED:

The FLOOD-GATE VALVE must be properly installed with the proper direction of flow (as indicated by the arrows on the valve) to ensure proper functioning. Each FLOOD-GATE valve has been thoroughly inspected and tested at the factory. If the valve is damaged during shipment, or if any service to the valve is necessary, return the complete valve to the factory for repair or replacement. DO NOT attempt to disassemble or repair the FLOOD-GATE in the field.

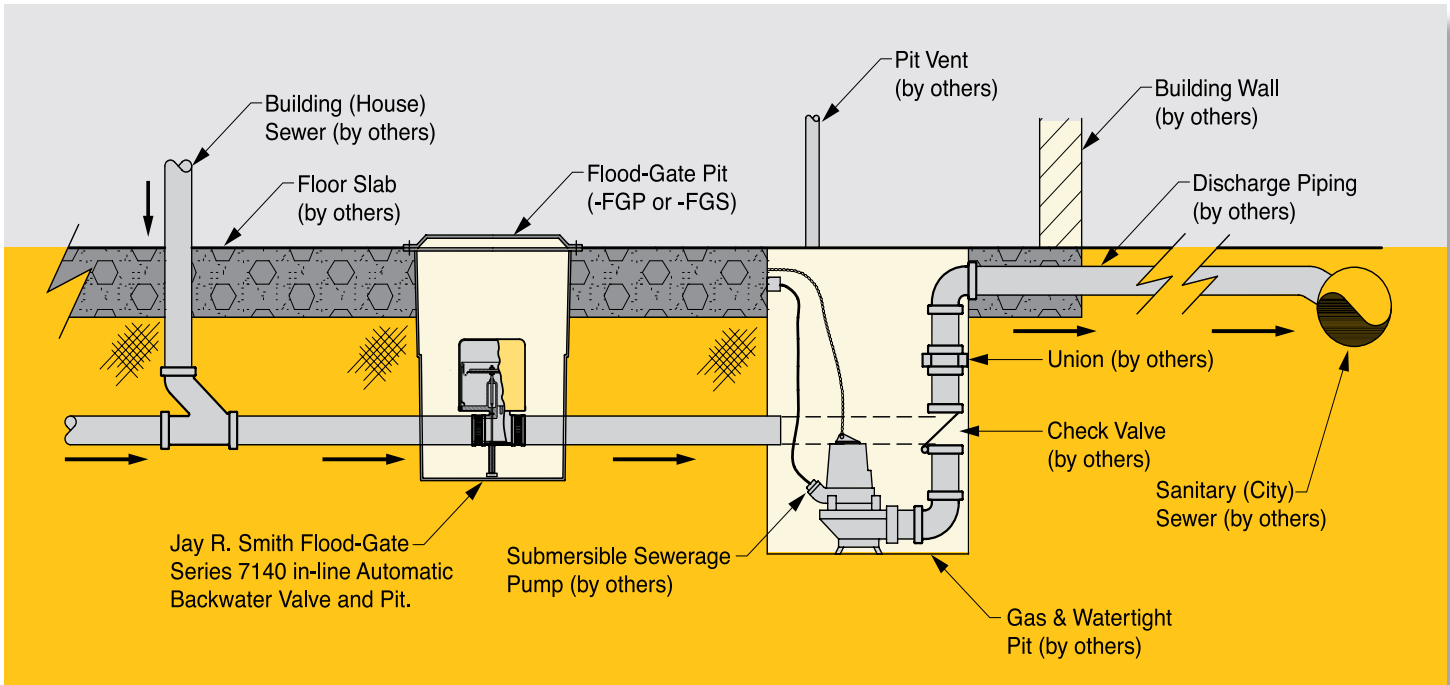
### MAINTENANCE:

On a quarterly basis, manually open and close the valve three or four times to exercise the bellows in the valve housing. To do this:

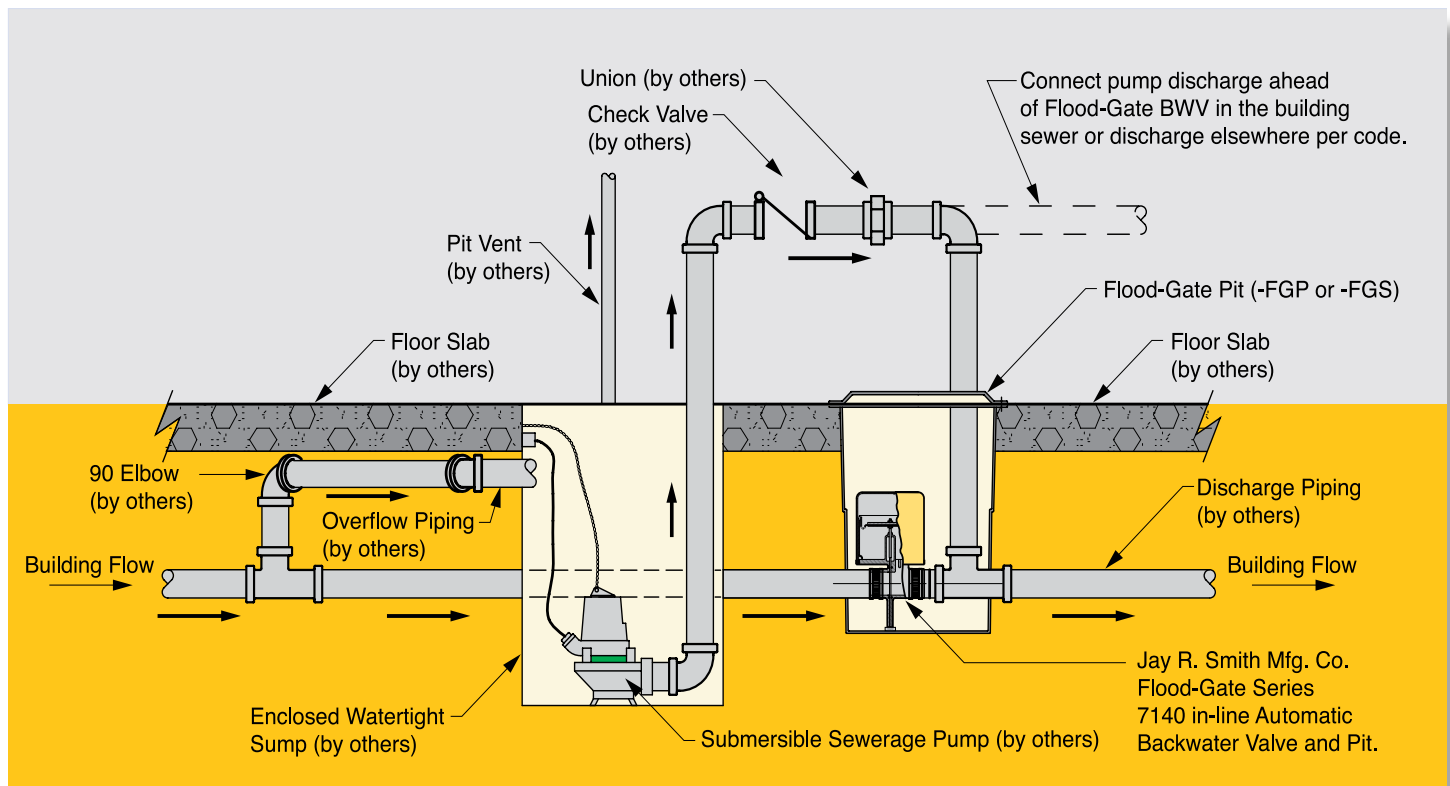
1. Insert the maintenance T-handle through the hole located in the center of the top of the valve cover; attach it to the threaded stem located on the top of the counterweight top.
2. Pull the handle up slowly until it stops.
3. Release the handle and allow it to return to the original position.
4. Repeat steps 2 and 3 until you have completed the action three or four times.
5. Remove the maintenance handle.

## Automatic Backwater Valve

### FLOOD-GATE SYSTEM SPECIAL INSTALLATIONS



Detail - in-line backwater valve and sewage pump



Detail - in-line backwater valve and sewage pump

## FLOOD-GATE VALVE OPTIONAL MONITORING SYSTEM

### INSTALLATION INSTRUCTIONS:

The monitoring system consists of two parts: the sensor and the monitor.

#### TO INSTALL:

1. Mount the sensor to the top of the valve cover with the two 1 1/4" and two 5/8" self-tapping screws provided. Once this is accomplished and the sensor has been mounted properly to the valve cover, the rod should penetrate the hole in the top of the valve cover and the sensor should be approximately 1 1/2" offset of the hole.
2. Attach the sensor wire to the alarm using the screw terminals without an active external power source. (Do not apply power) Route the cable from the sensor to the alarm. Using a Phillips head screwdriver, attach the sensor power cord to the screw terminals located on the base of the alarm, disregarding wire color. Screw the alarm onto the wall using the mounting flange located at the base of the alarm.
3. Insert one (1) 9-volt battery and/or attach the provided 120 V A/C power cord. The alarm/monitoring system is now operational. Proper operation can be verified using the test procedure included with the Flood-Gate alarm option. When the valve closes, the audible and visual alarm should activate.

#### INDICATOR MEANINGS:

<b>Green light on</b>	Power On with 120 V A/C plug being used
<b>Red light on</b>	Flood in progress, operation of water fixtures in building should cease. Audio alarm is sounded. Press the silence button to silence alarm. Red light remains on.
<b>No lights</b>	9-volt battery being used, 120 V A/C power plug being used/loss of power supply. Press test button to check monitoring system.
<b>Low battery chirp</b>	Indicates battery should be replaced.



#### FEATURES:

- Automatic alarm reset
- UL listed components
- CSA Certified
- Alarm horn sounds at 87 decibels at 10 feet.
- Low battery chirp
- Red "alarm" light and green "power on" light, alarm "test" switch, and horn "silence" switch.
- Auxiliary dry contacts for any UL listed mechanism.

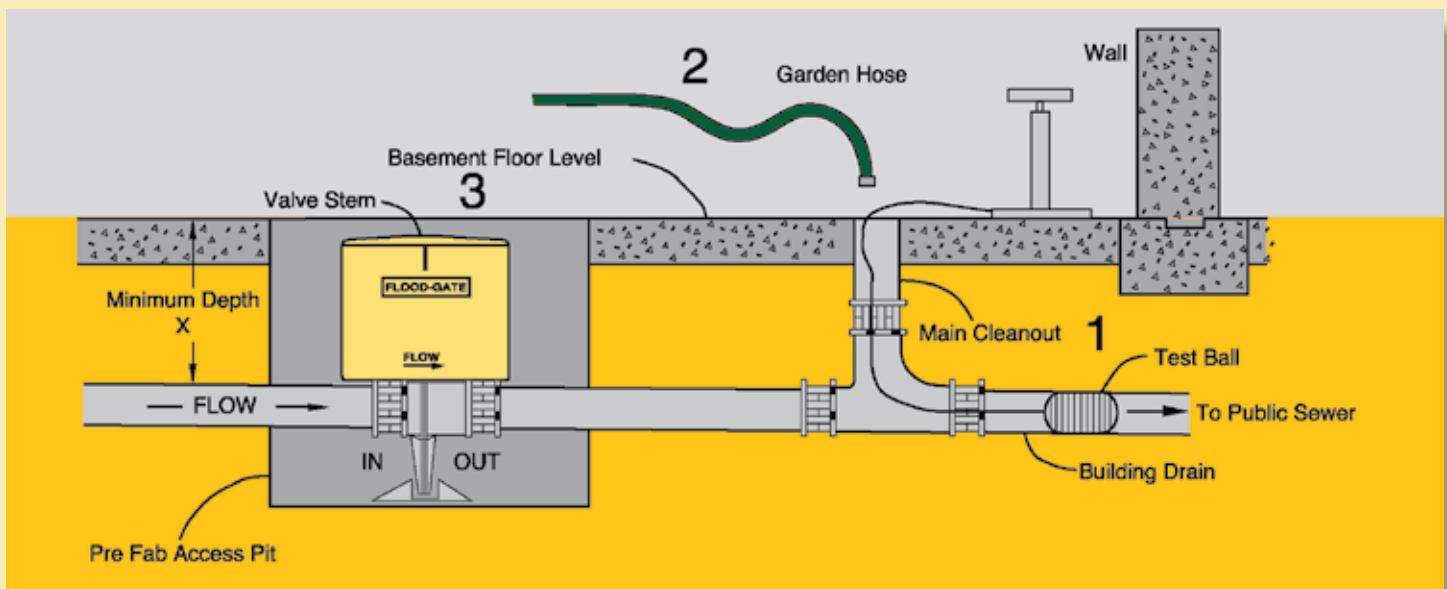


## FLOOD-GATE TESTING INSTRUCTIONS AND ILLUSTRATION

**IMPORTANT: THIS PROCEDURE MUST BE FOLLOWED AFTER THE INITIAL INSTALLATION.**

1. Place a "Test Ball" through the main cleanout into the horizontal drain line and inflate it.
2. With an ordinary garden hose, run water into the building drain through the cleanout opening (this will simulate a backup of the main sewer).
3. Watch the round opening in the top of the FLOOD-GATE VALVE cover. You should see the end of the valve stem rise as the valve closes. Full closure should occur before the water in the cleanout opening reaches floor level. This means the valve is closing properly.
4. Deflate the "Test Ball." This will allow the drain to open and you should be able to see the valve stem drop; returning to its normal open position.

**NOTE:** It is important to test the FLOOD-GATE after long periods of inactivity to assure readiness. Follow these instructions to test for proper operation.



### MINIMUM BURY DEPTH

MODEL # 7140Y04	X= 9 inches
MODEL # 7140Y06	X=14 inches

NOTE: X = The dimension from the top of the horizontal drain line to the top of basement floor drain.

## FLOOD-GATE SPECIFICATIONS

### APPLICATION:

Backwater Valve for gravity sanitary drainage system connected to municipal sanitary sewers or septic tanks.

### MATERIAL SPECIFICATIONS:

The assembly comprises numerous parts. The following is a brief description of the main components.

**1. Gate** - Manufactured from type 304 stainless steel with full port opening and integral closing stopper.

**2. Body** - Two cast iron halves, designed to bolt together to enclose gate. Cast iron shall be Class 25 to ASTM A48. Both sections are equipped with barrels suitable for mechanical coupling to upstream and downstream sections of pipe. Out (or downstream) fitting equipped with full port opening. Each half incorporates a continuous groove around the circumference of the opening to accept an O-ring. These O-rings act to seal against the gate.

**3. Spacer** - A stainless steel gasket is placed between the two body halves to permit the (thinner) gate to slide within the two halves of the body.

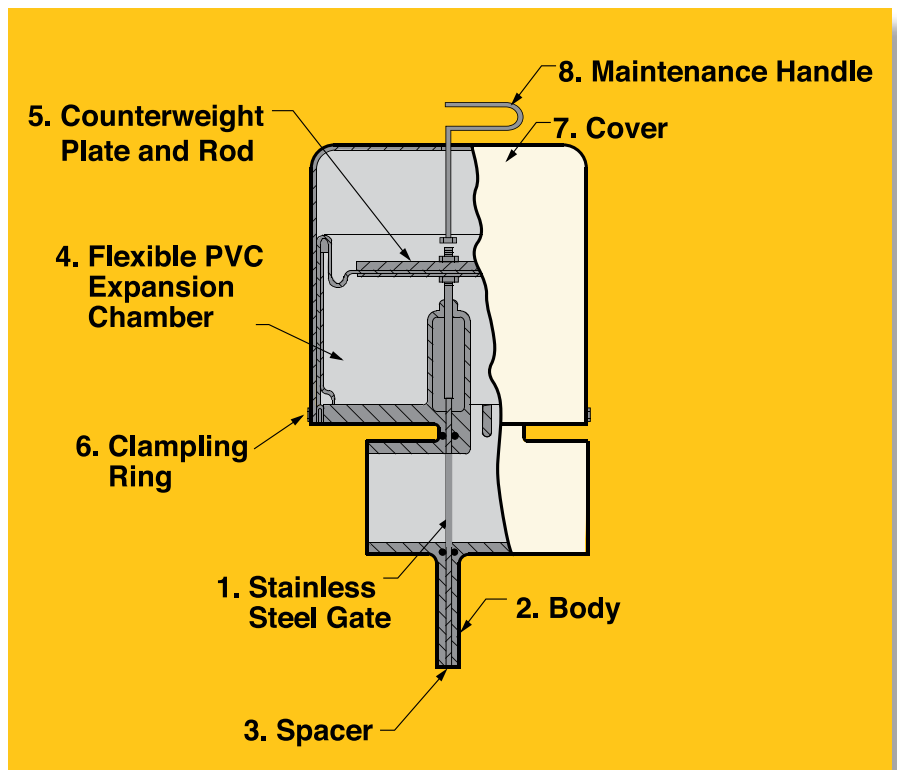
**4. Expansion chamber** - Flexible PVC diaphragm.

**5. Counterweight Plate, Plate Weight Holder, and Rod** - Counterweight Plate is affixed to the top of the expansion chamber using a threaded rod equipped with nuts. The nuts compress the top surface of the expansion chamber between the counterweight plate on top and the plate weight holder on the bottom. The rod is connected to the top of the gate. Expansion chamber Counterweight Plate is made of cast iron.

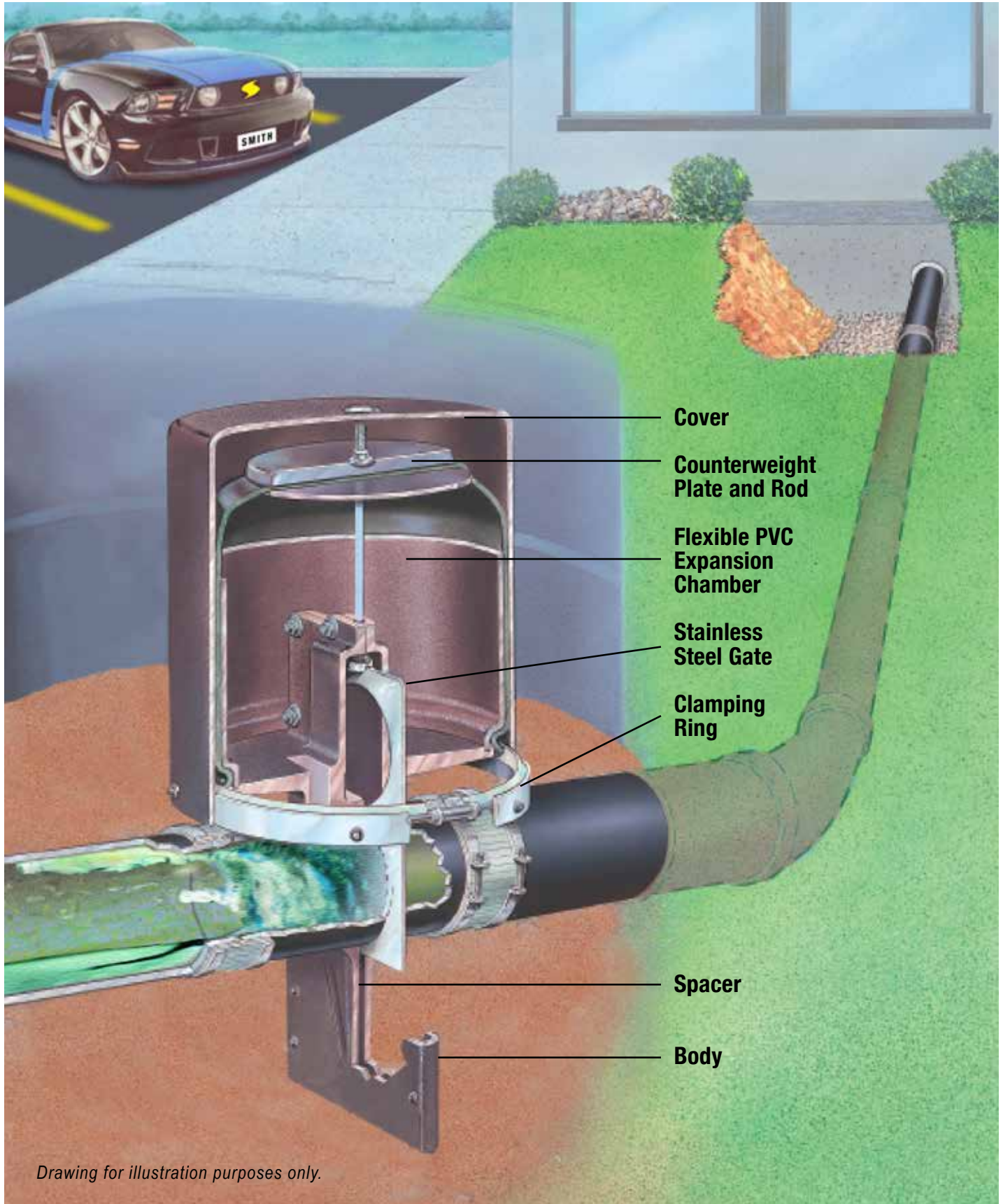
**6. Clamping Ring** - Clamps the bottom skirt of the expansion chamber to the circumference of the body, forming a watertight seal. This seal prevents wastewater that enters the expansion chamber through the downstream port under surcharge conditions from leaking out of the expansion chamber.

**7. Cover** - Polyethylene cylinder which is positioned over the expansion chamber to protect it and constrain its expansion under surcharge conditions.

**8. Maintenance Handle** - Tee shaped handle used to attach to stem in center of the counterweight plate to exercise valve during quarterly maintenance. The maintenance handle **MUST** be removed at the completion of required maintenance or the unit will not function properly.



## FLOOD-GATE ILLUSTRATION



*Drawing for illustration purposes only.*



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- Don Morris, President and CEO

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