

## Detailed Description

### "Adapt-a-Valve"

#### Inspection Chamber / Sewer Line Cleanout / Backwater valve

The combination Mainline "Adapt-a-Valve" Inspection Chamber / Sewer Cleanout / Backwater valve is truly a break through in technology and is quickly setting a New Standard across North America.

#### Physical Properties

The Inspection Chamber / Sewer Cleanout is a 4-inch fitting with a 6-inch riser. Along with the 6-inch riser and directional flow shape found at the bottom of the Chamber / Cleanout, sewer cleaning cables and city flushing equipment have no problem traveling in and out of the Chamber / Cleanout.

The Chamber / Cleanout has integrally molded guide slots in the body which allow the fitting to be converted at any time to a backwater valve by simply adding from the list of the accessories available, should the need arise!

#### Accessories

"Adapt-a-Valve" backflow accessories are truly what excel this Inspection Chamber / Cleanout light years ahead of its time. The

1. "Test-Eze" gate for the Isolation of the sewer system
2. "Normally-closed" cassette (swing check)
3. "Normally-open" cassette which maintains the free circulation air from the plumbing system to the city sewer system.

These optional accessories give the fitting the versatility that no other fitting has! (*Details Yellow Brochure*)

#### Design / Engineering

##### Reliability

In the engineering of the Mainline "Adapt-a-Valve" Inspection Chamber / Cleanout reliability was placed at the forefront.

We know that backwater valves are mechanical devices and require maintenance/cleaning to work effectively. They are products which are generally never maintained and are out of site - out of mind therefore the failure rate is high because they are only maintained or serviced after failure.

Because they sit in a sewage environment with little or no maintenance, Mainline's engineering staff knew that they needed to design a fitting that promoted "self cleaning".

The "self cleaning" action was achieved 3-ways!

1. The 1 1/2 "step through design gives the valve the grade that no other valve has, ensuring that no solids will build up in the valve body.
2. Using the valve in the "Normally- open" configuration allows this grade to continue through the body and offers zero flow restriction.
3. Utilizing the valve with the "Normally-closed" Cassette / Gate (swing check) we used a light weight gate with a lubricous shinny face that would not collect with sewage and restrict the flow.

In studying industry standard backwater valves (swing check) we found three common design flaws with every valve on the market:

#1. Every manufacturer has the seal on the gate, whether through the use of an o-ring or the use of a solid rubber gate. The problem with this is that because sewage has to push this gate open sewage easily collects and adheres to the o-ring or rubber gate.

#2. Some manufacturers use a heavy gate design with rubber gates and have a living hinge for the swinging motion. This heavy gate can cause flow restriction and can attribute to solids building up on the gate making them ineffective during sewer back-up occurrences.

#3. All manufactures have minimal drops ¼" through the valve bodies with little or no grade built through the body.

The result of these three design flaws means that sewage hits a heavy gate and slows right down, sewage collects on gate sealing surface and sewage stops with the minimal grade through the body. Stopped or slowed sewage will rest and settle at the bottom of the valve. All three of these flaws are common denominators to a high maintenance valve.

In the designing of "Adapt-a-Valve's" "Normally-closed" Cassette / Gate (swing check) the approach was simple: avoid the three contributing factors to valve failure. Because "Adapt-a-Valve" uses a cassette style cartridge, the seal is on the cassette not on the gate. The gate has a shiny lubricous face where sewage does not collect. "Adapt-a-Valve" utilizes a gate so light that one can literally 'blow' it open. Result? Next to no flow restriction. "Adapt-a-Valve" has a 1¾" drop through the body which means ample grade through the body. This ensures that no sewage will remain in the valve body.

The advantage is that you have the very best in valve design when maintenance is of a concern. The step through design does limit "Adapt-a-Valve" to new construction and retrofits are allowed only when replacing the entire line to make up the inlet to outlet differences.

#### **Test-Eze Gate (Isolation Valve)**

The insertion of the Test-Eze Gate allows the isolation of the "Adapt-a-Valve" Inspection Chamber / Cleanout. Isolation gates are used for closing off of the sewer system for flushing of city mains, servicing of sewer lines, abandonment of premises, disconnection due to non-payment of utilities, isolation of seasonal properties / hurricanes / etc., diversion valves for septic fields and for contractors pressure testing of plumbing systems upstream of the Inspection chamber / cleanout. A very versatile accessory!

#### **Extendable Feature "EASY ACCESS"**

Being because backwater valves are mechanical devices and require access for maintenance, plumbing codes state any backwater valve deeper than 24" requires them to be installed in vaults or manholes. The "Adapt-a-Valve's" 'extendable features' allow the body to be extended with standard DWV pipe and the cassette to be extended with standard ¾" PVC pipe. By extending the body and cassette the backwater valve feature can easily be removed or inserted from the top of the valve body opening this allows for easy servicing at any depth, eliminating the need for expensive vaults or manholes.

#### **Summary**

By installing the "Adapt-a-Valve" Inspection Chambers / Sewer line Cleanouts / Backwater Valves municipalities North America wide will have at their disposal the very best in technology. A municipality would have a "quick fix" solution with "Adapt-a-Valve's" exceptional backflow protection options should a municipality ever experience a problem with sewer backups in any lateral. These backflow options would protect the lateral from backup thus saving the building from thousands of dollars in damage that could result in potential claims against the municipality.