

FluoroSeal Inc.

Specialty Valves



SPECIAL SERVICE

SLEEVED PLUG VALVES — SPECIAL SERVICE



SPECIAL SERVICE FLUOROSEAL® PLUG VALVES

Whether you are looking for a valve to suit a specific application, or want to customize a standard FluoroSeal® Plug Valve, you have come to the right place. Our special service valves provide you with both an array of turn-key solutions and the ability to fully match your application needs.

CAGED CONTROL PLUG VALVES

The Caged Control Valve is ideal for abrasive applications with high solids concentrations and is commonly used in both throttling and on/off applications. Caged valves have been used successfully in many critical applications in the Mining, Pulp & Paper, and Chemical Processing industries.

The design of the Caged Control Valve provides maximum protection to the polymer sealing surfaces in the plug valves. The key to the caged design is that the PTFE sleeve in the valve is never directly exposed to the process flow. This allows the sleeve to maintain its sealing integrity in abrasive applications.

The design of the Caged Control Valve allows the plug to rotate freely around a fixed cage within the body. The cage is stationary in the body while the plug rotates, thus allowing the sealing area of the plug to be in direct contact with the sleeve to provide bubble-tight shutoff. The cage stays in position protecting the polymer sleeve from erosion/abrasion while the plug is in any intermediate position such as when the valve is moving from the open to the closed position or when the valve is throttling.

The cage has upper and lower graphite filled RTFE bearings that prevent galling between the plug and cage. A keyway keeps the cage from rotating in the body. This allows free movement of the plug around the cage.

The Caged Control Valve still allows for in-line adjustment for through valve leakage just as a standard plug valve does since the plug and the cage are independent of each other.

The cage and plug in the Caged Control Valve are generally made from CD4MCu material, an abrasion resistant alloy with the corrosion resistance of 316 SS. Caged Control Valves are available in any material, from carbon steel and stainless steel to any of the more exotic alloys.



From Left to Right: Full Flow (Plug 0°), Control Flow (Plug Throttling), Shutoff (Plug 90°)

PLUG-ANSI-DIN-R003-2012

UREA SERVICE — A CAGED CONTROL SHOWCASE

An excellent example of the efficiency designed into a Cage Control Valve is its use in urea service. In combination with a side flush option as demonstrated in Double Block and Bleed Valves, the FluoroSeal® Cage Control Plug Valve can withstand frequent pressure drops and urea crystallization present in the fabrication of this chemical reactant.

Inherently corrosive and erosive, urea service requires a valve designed to protect its main seals from the attack of the urea flow and possible particulates. Not only does the Caged Control Valve achieve this, it also effectively prevents the valve from clogging and sticking.

SPECIAL CLEANING PLUG VALVES

FluoroSeal® Special Cleaning Plug Valves can be prepared for a variety of demanding service applications, such as hydrogen, isocyanate, oxygen, phosgene and chlorine.

In the case of chlorine, FluoroSeal® Chlorine Service Valves are provided with a vented plug to relieve pressure to the upstream side. This modification results in a uni-directional valve which is indicated on the valve with a flow direction arrow.

FluoroSeal® Sleeved Plug Valves are manufactured in accordance with the recommendations of the Chlorine Institute Pamphlet 6 and provide superior performance in this demanding application. All FluoroSeal® Chlorine Valves are made from thoroughly cleaned and dried components under controlled conditions and this control is maintained throughout parts preparation, assembly, testing and special protective packaging. Other customer requirements can be incorporated upon request, provided that they conform to the specifications of Pamphlet 6.

H₂S SERVICE — NACE / MR0175 / ISO 15156-1/2/3 COMPLIANCE

FluoroSeal® Plug Valves are available for use in H₂S-containing environments in conformance with the material requirements of NACE / MR0175 / ISO 15156-1/2/3. Available upon client request and approval, all FluoroSeal® plug valves can be manufactured to incorporate NACE / ISO pre-qualified materials identified in NACE MR0175 / ISO 15156-2/3. It is FluoroSeal Inc. policy that, where environmental or other conditions require, FluoroSeal Inc. will work with the client to select materials based on field experience or laboratory testing in accordance with the requirements/procedures of NACE MR0175 / ISO 15156-2/3.

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Chlorine Service Packaging Caution Tags

SLEEVED PLUG VALVES — SPECIAL SERVICE



DOUBLE BLOCK & BLEED AND SAMPLING PLUG VALVES

Because of the double port seals in both directions and the sealed isolation of the chamber below the plug and the areas around the plug, 90° to the port openings, a drainage connection into the plug cavity may be drilled and tapped through the body from either side or the bottom.

A 1/2" (12.7 mm) drain connection is standard, but other sizes can also be provided. Specify connection size; length as indicated on the drawing and whether the bleed valve is required. A FluoroSeal® Fig. R152/302SE is ideally suited as the bleed valve.

ANSI/ASME

Bleed valve diameter 1/2" available in block valve size 2", 2 1/2", 3", 4"

Bleed valve diameter 3/4" available in block valve size 6", 8"

Bleed valve diameter 1" available in block valve size 10", 12", 14", 16", 18", 24"

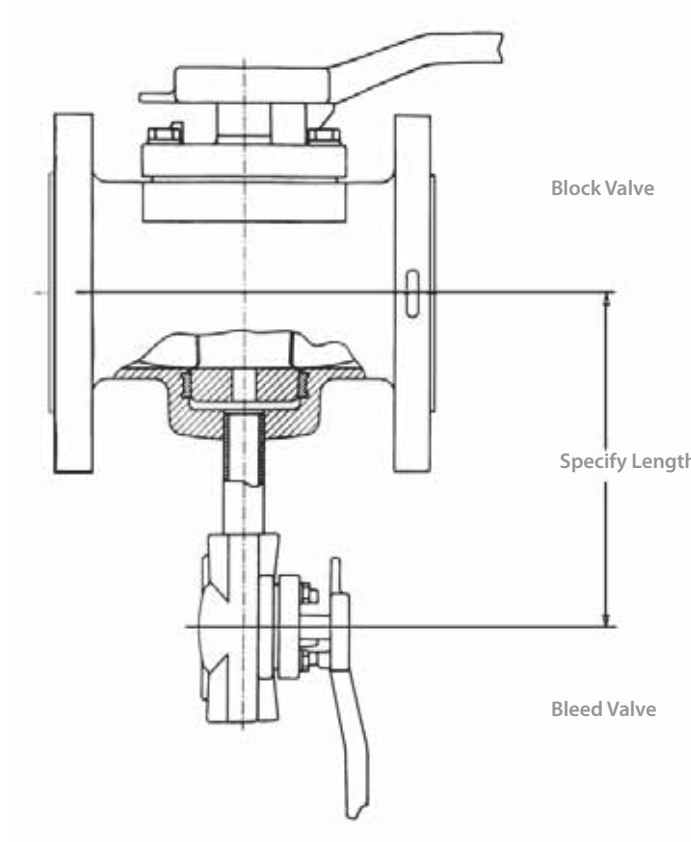
DIN

Bleed valve diameter DN 15 available in block valve size DN 50, DN 65, DN 80, DN 100

Bleed valve diameter DN 20 available in block valve size DN 150



ANSI/ASME FluoroSeal® Double Block and Bleed Plug Valve with Gear



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FIRE SAFE SLEEVED PLUG VALVES

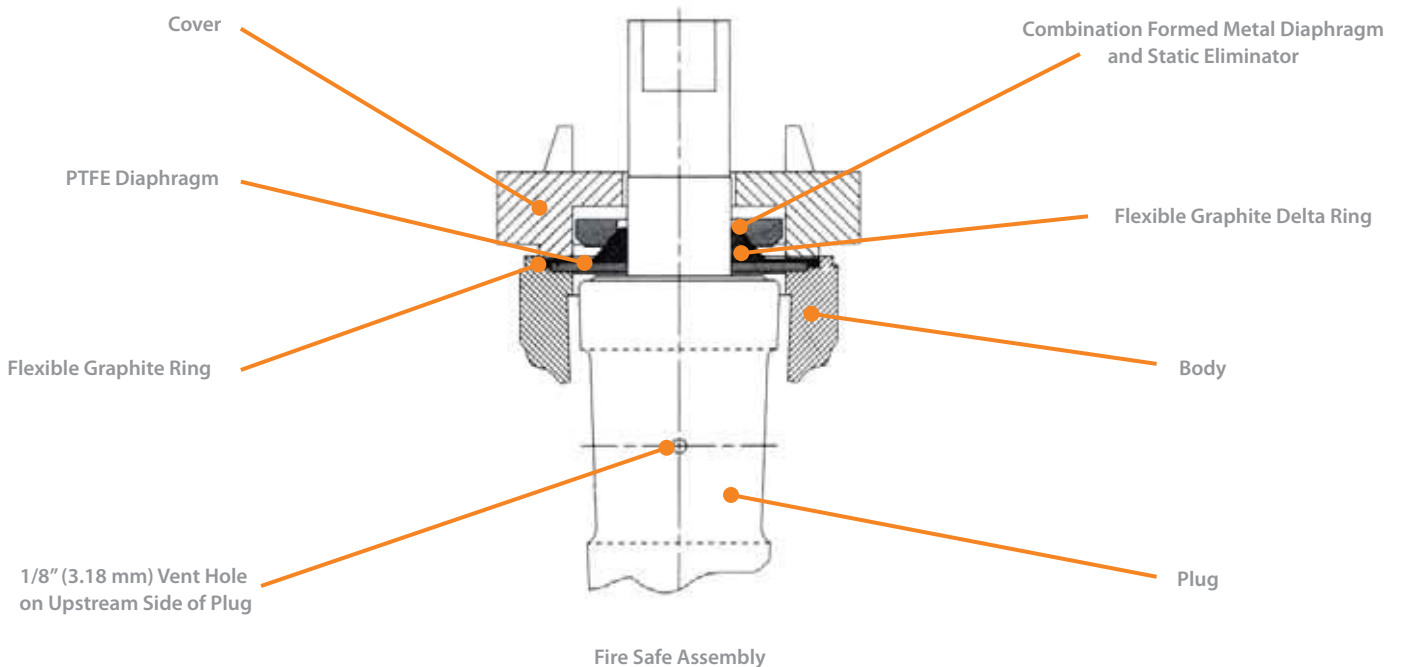


FluoroSeal® Sleeve Plug Valves with the Fire Safe top seal have been tested and certified by an independent laboratory to the requirements of API 607, Fifth Edition (ISO 10497-5) for external leakage.

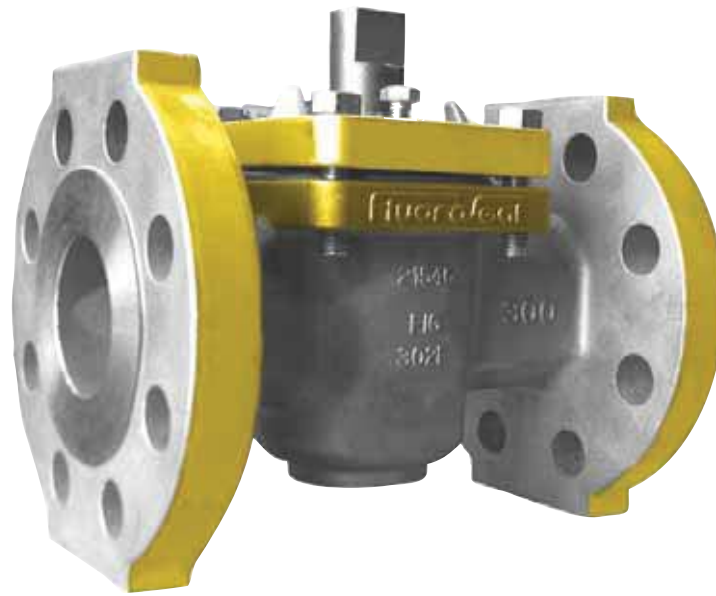
The FluoroSeal® Fire Safe design utilizes a PTFE sleeve and PTFE diaphragm as the external sealing components under normal conditions. Should these components be destroyed by fire, external leakage is prevented by:

1. A secondary flexible graphite seal ring encapsulated and compressed between the metal diaphragm and the machined counterbore in the valve body
2. A flexible graphite delta ring encapsulated and compressed between the unique shaped metal diaphragm and the machined plug stem

FluoroSeal® Fire Safe Valves also utilize a vented plug designed to relieve pressure buildup resulting from expansion of the service media within the plug, due to elevated temperatures caused by fire. The pressure is relieved to the upstream side, providing a preferred flow direction indicated by an arrow on the valve cover.



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ANSI/ASME Class 300 Lbs FluoroSeal® HF Alkylation Plug Valve

HF ALKYLATION PLUG VALVES

FluoroSeal® HF Alkylation Valves are designed and manufactured in strict compliance with the requirements of the major HF Alkylation’s Process Licensors specifications. Due to the severity of the process, all testing procedures are strictly adhered to per Licensor’s requirements.

FluoroSeal Inc.’s commitment to high quality requires each valve body to be subjected to a hydrostatic shell test at 1.5 times the ANSI rating at 100°F (38°C), as defined in ASME B16.34 (DIN EN 12266-1). In addition, every valve body casting is tested with helium gas at 300 psig for 100% assurance of no through-wall leakage. We also conduct a full X-Ray test on the bodies to ensure that they meet FluoroSeal Inc.’s casting requirements per ASTM E446 (DIN EN 444 and DIN EN 462).



APPLICATIONS

- | | | |
|--------------|-----------------|---------------|
| Blending | Crude Desalting | Gas Plants |
| Isometration | Light Ends | Sulfur Plants |

MATERIALS OF CONSTRUCTION

	ANSI/ASME	DIN
Body	ASTM A494 Gr. M35-1	2.4365
Plug	ASTM A494 Gr. M35-1	2.4365
Cover	ASTM A494 Gr. M35-1	2.4365
Cover Bolts	ASTM A193 Gr. B7M	
Adjusting Bolts	ASTM A193 Gr. B7M	
Thrust Washer	ASTM A494 Gr. M35-1	2.4365
Metal Diaphragm	MONEL® 400	MONEL® 400
Delta Ring	Flexible Graphite	Flexible Graphite
Cover Seal Ring	Flexible Graphite	Flexible Graphite
Diaphragm	PTFE Fluorocarbon	PTFE Fluorocarbon
Sleeve	PTFE Fluorocarbon	PTFE Fluorocarbon
Paint	Special for Leak Detection	Special for Leak Detection

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