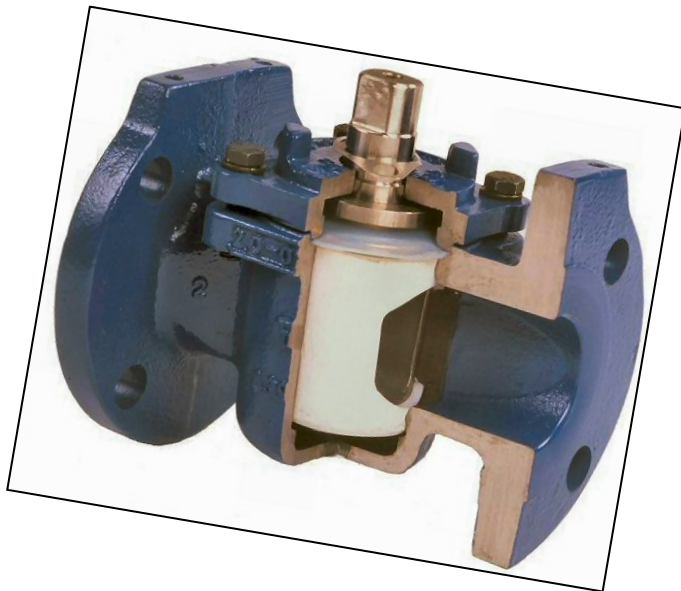
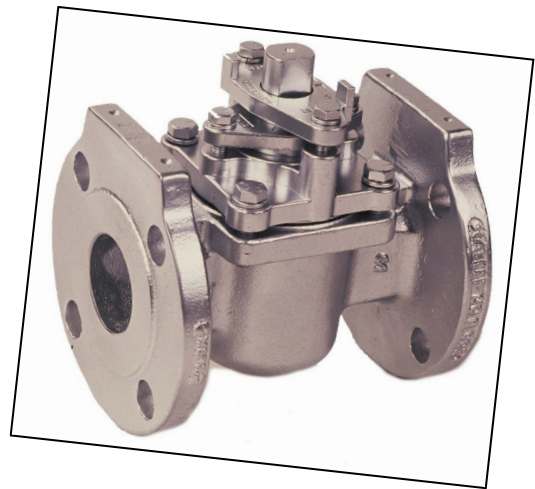
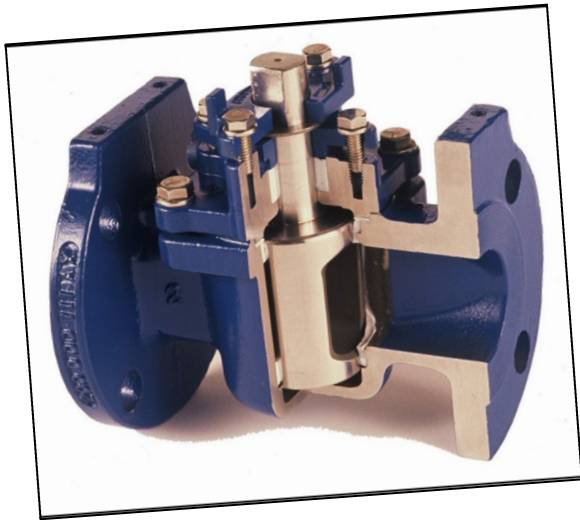


chem-plug® Valve



The Way You Need It, When You Need it—Customer Service Is Our Number ONE Priority

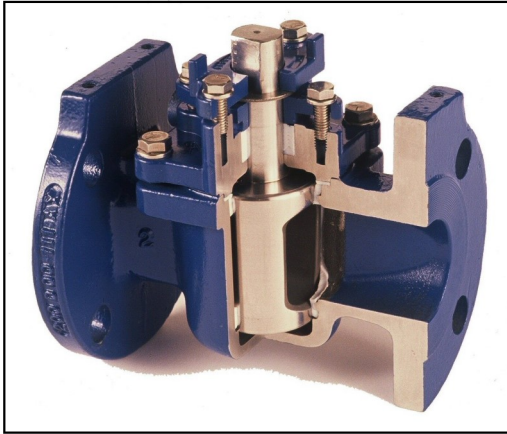
Southern Manufacturing Group, Inc.

www.smgvalves.com

SD-CP-10.2022



CHEM-PLUG® SLEEVED VALVES



Chem-Plug® sleeved valves are available in two basic designs - diaphragm top-seal models and V-ring top-seal models. Both types are further divided into 300lb. ANSI screwed end models and 150 or 300 lb. ANSI flanged end models. With special modifications, the V-ring top-seal models can be used for severe service applications such as gaseous or liquid chlorine service.

All Chem-Plug® sleeved valves are available in a comprehensive choice to body, plug and sleeve materials to suit almost any service where a plug valve is required.

(See page 11 for complete materials and ordering codes)

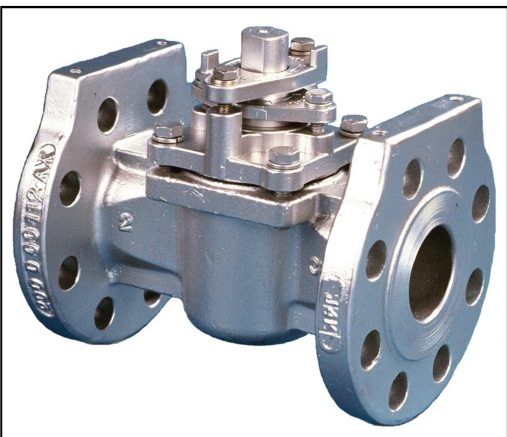


The solid PTFE sleeve is compression molded and sintered to provide optimum density which minimizes chemical permeation. This process assures that the sleeve will not deform during thermal cycling within the temperature limits of PTFE.

Raised sealing rings are cast 360° around the ports for positive sealing under pressure, vacuum, and temperature cycling.

Blow-out lips are cast adjacent to the port openings to prevent sleeve rotation and reduce sleeve cold flow.

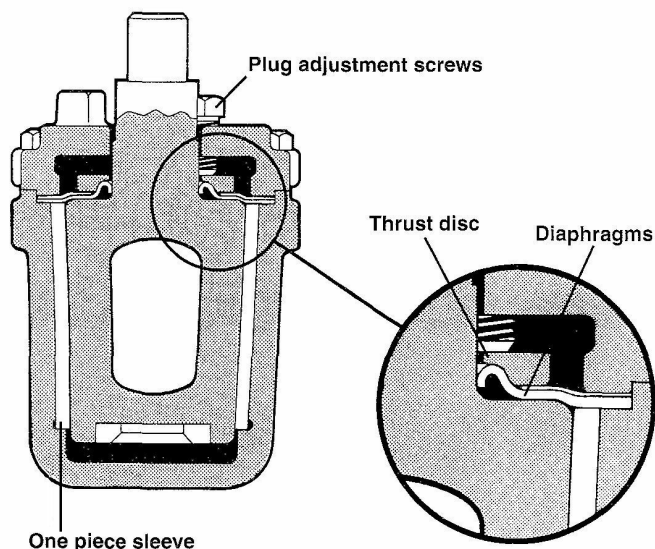
To prevent the buildup of a static electrical charge on the plug, a grounding spring is standard.



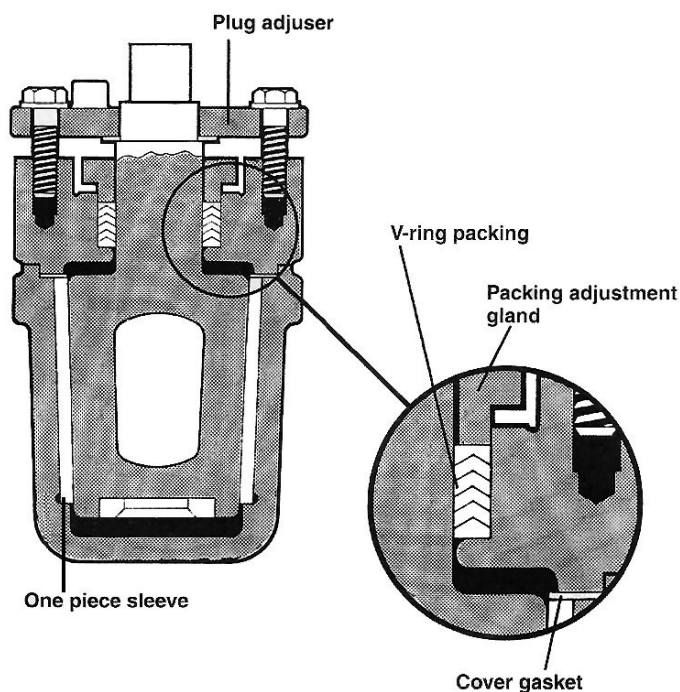
All Chem-Plug® sleeved valves feature adjustable plugs to compensate for normal wear and the resultant internal leakage.

Sleeved Chem-Plug® valves are available in multi-port configurations which are described in more detail in this brochure and in the accompanying Engineering Submittal Data Sheets.

All of the flanged Chem-Plug® sleeved valves conform to ANSI B16.34 and the Face to Face requirements of API 6D (short pattern), API 603, and ANSI B16.10.



DIAPHRAGM TOP SEAL MODELS Due to a unique hot forming process, the self-energized PFA diaphragm top seal provides positive stem sealing and a long service life. The rolled lip (see inset) around the stem, backed up by the thrust disc, means the sealing force exerted against the stem increases with the increase of line pressure inside the valve. The diaphragm has enough flexibility to compensate for any plug adjustments which may be necessary during the life of the valve. The stainless steel backup diaphragm provides additional support to the PFA diaphragm for longer and more reliable service life at elevated temperatures. Diaphragm top sealed Chem-Plug® valves are serviceable in the field. Special tools for replacing the diaphragm should be used so that the sealing surfaces are not damaged during the installation. Consult our staff for the availability of these tools.



V-RING TOP SEAL MODELS For those applications where positive stem seal adjustment is required, Chem-Plug® sleeved valves are available with V-ring top seals. These valves have a true stuffing box for top seal packing and gland adjustment to reduce leakage of hazardous substances by the stem to virtually zero. Chem-Plug® sleeved valves with V-ring top seal can be adjusted to compensate for normal wear. Like all Chem-Plug® valves, the plug can be adjusted separately from the top seal so that the packing does not have to be re-adjusted. Packing can be serviced or replaced without removing the valve from the pipeline. V-ring packing supplied by the factory is selected to be compatible with the temperature limits of the sleeve. Sleeves and packing for higher than standard temperatures can be supplied as an option.



MULTI-PORT VALVES

Chem-Plug® 3-way sleeved valves, with a choice of four different plug designs and 90° or 180° rotation, can be specified in eleven different flow patterns. This can eliminate multiple valving in diverting, blending, and segregation piping systems. Multi-port Chem-Plug® sleeved valves offer absolute safety in systems where simultaneous opening or closing of multiple valves might create hazardous or costly contamination of fluids. Multi-port Chem-Plug® valves are available in the same materials and options as other Chem-Plug® sleeved valves and for the same applications. See the data sheet for multi-port Chem-Plug® valves for complete information on flow patterns and optional materials and equipment.

FIRESAFE VALVES

Chem-Plug® valves with V-ring top seals can be provided with special packing and gasket materials to meet the external leakage requirements of API-607.

DOUBLE BLOCK AND BLEED VALVES

Chem-Plug® valves can be modified for use in double block and bleed applications.

JACKETED VALVES

Jacketed Chem-Plug® valves can be specified for applications where control of the body and fluid temperatures is required. Fabricated Chem-Plug® valves are available in both fully fabricated jacketing or partial fabricated jacketing.

Full details of the pressure and temperature ratings for the jacketing should be specified as well as special inlet, outlet, and drain locations.

AUTOMATED VALVES

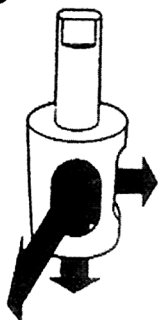
All Chem-Plug® valves can be supplied with automatic actuators for remote operation. Electric, hydraulic, and pneumatic actuators with accessories are available. All Chem-Plug® valves feature cast, integral actuator mounting pads.

This table shows standard models, materials, and applications. It is intended only as a general guide for non-critical and non-corrosive service at ambient temperatures. Specific pressure-temperature ratings are shown in the respective Engineering Submittal Data Sheets. Consult our

MODEL	DESCRIPTION	GENERAL APPLICATIONS
324 325	Screwed or socket weld ends, carbon steel (WCB) body and cover, ductile iron nickel plated plug, PTFE one piece sleeve, PFA diaphragm top seal. See page 11 for other materials.	300 lb. class, 300 PSI @ 400°F. Process industries, pharmaceuticals, pulp and paper, textiles, water treatment plants, and other similar applications.
022	Flanged ends, ductile iron body and cover, ductile iron nickel plated plug, PTFE one piece sleeve, PFA diaphragm top seal. See page 11 for other materials.	150 lb. class, 150 PSI @ 400°F. Process industries, pharmaceuticals, pulp and paper, textiles, water treatment plants, and other similar applications.
322	Flanged ends, WCB body and cover, ductile iron nickel plated plug, PTFE one piece sleeve, PTFE diaphragm top seal. See page 11 for other materials.	300 lb. class, 300 PSI @ 400°F. Process industries, pharmaceuticals, pulp and paper, textiles, water treatment plants, and other similar applications.
V324 V325	Screwed or socket weld ends, WCB body and cover, ductile iron nickel plated plug, PTFE one piece sleeve, PTFE V-ring top seal. See page 11 for other materials.	300 lb. class, 300 PSI @ 400°F. Process industries, pharmaceuticals, pulp and paper, textiles, water treatment plants, and wherever an adjustable top seal is required.
V022	Flanged ends, WCB body and cover, ductile iron nickel plated plug, PTFE one piece sleeve, PTFE V-ring top seal. See page 11 for other materials.	150 lb. class, 150 PSI @ 400°F. Process industries, pharmaceuticals, pulp and paper, textiles, water treatment plants, and wherever an adjustable top seal is required.
V322	Flanged ends, WCB body and cover, ductile iron nickel plated plug, PTFE one piece sleeve, PTFE V-ring top seal. See page 11 for other materials.	300 lb. class, 300 PSI @ 400°F. Process industries, pharmaceuticals, pulp and paper, textiles, water treatment plants, and wherever an adjustable top seal is required.
V023 V323	Flanged ends, fabricated, jacketed 316 Stainless Steel body and cover, 316 SS plug, PTFE one piece sleeve, PFA diaphragm top seal. See page 11 for other materials.	150 lb. class, 150 PSI @ 400°F; 300lb. class, 300 PSI @400°F. For applications where piping temperature must be kept higher than ambient temperature to maintain flow viscosity.
V334 V335	Screwed or socket weld ends, WCB body, 316 SS plug, PTFE one piece sleeve, PTFE V-ring top seal. See page 11 for other materials.	300 lb. class, 300 PSI @ 400°F. Process industries, pharmaceuticals, pulp and paper, textiles, water treatment plants, and wherever an adjustable top seal is required.
V032 V332	Flanged ends, 316 SS body and cover, 316 SS plug, PTFE one piece sleeve, PTFE V-ring top seal. Three way. See page 11 for other materials.	150 lb. class, 150 PSI @ 400°F; 300 lb. class, 300 PSI @ 400°F. For applications in diverting, blending, segregating piping systems and where simultaneous opening and closing of multiple valves might create problems.

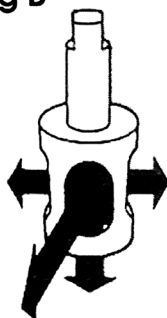
MULTI-PORT VALVE ARRANGEMENTS

Plug A



Flow Arrangement 1

Plug B



Flow Arrangement 3, 6, 7

Plug C


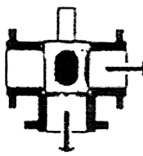
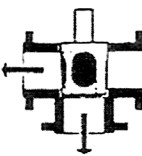

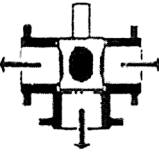
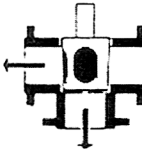

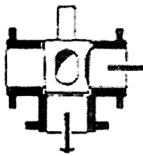
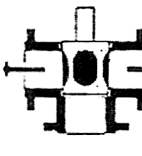
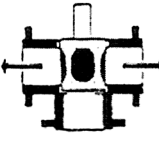
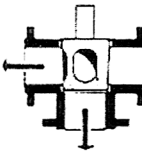

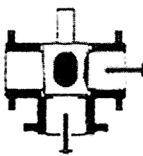
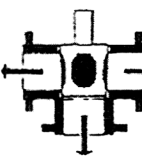
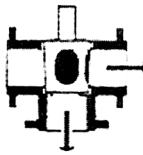
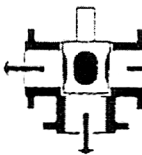
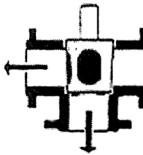

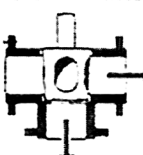
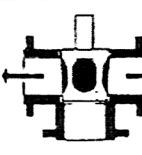
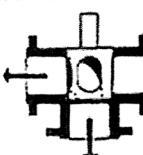

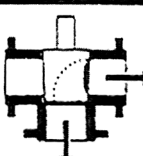
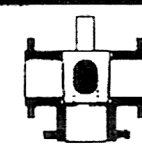
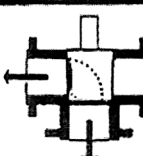
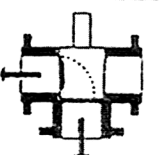
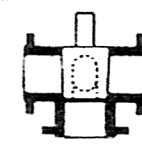
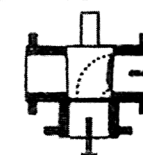


Flow Arrangement 4, 5, 8

Plug D



Flow Arrangement 12, 13

Flow Arrangement	Plug Type	0°	90°	180°
1	A 			
3	B 			
4	C 			
5				
6	B 			
7				
8	C 			
12	D 			
13				

Flow Coefficients of plug valves Models-022/322/324/V022/V322/V324/V023/V323/V032/V332									
SIZE	Flow pattern	1/2"	3/4"	1"	1 -1/2"	2"	3"	4"	6"
CvGPM	2-WAY	9	9	43	89	172	294	548	1075
CvGPM	Plug A	7	7	20	40	70	100	175	350
CvGPM	Plug B	7	7	20	40	70	100	175	350
CvGPM	Plug C Straight	5	5	17	37	47	87	159	255
CvGPM	Plug C Curved	4	4	11	21	40	54	94	210
CvGPM	Plug D	7	7	20	40	70	100	175	350
Port Area	Square Inches	0.35	0.35	0.6	1.25	2.15	4	8.15	19.3

chem-plug®

Actuator sizing torques of plug valves									
Size		1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"
Sleeved	Breakaway	240	360	384	720	720	1320	3000	6600
PTFE(In lb)	Running	120	180	190	360	360	680	1500	3300

Multipliers for Operating Conditions

The above torque values are based on ideal conditions. The following operating conditions can further increase torque and should be considered for safe sizing of actuators.

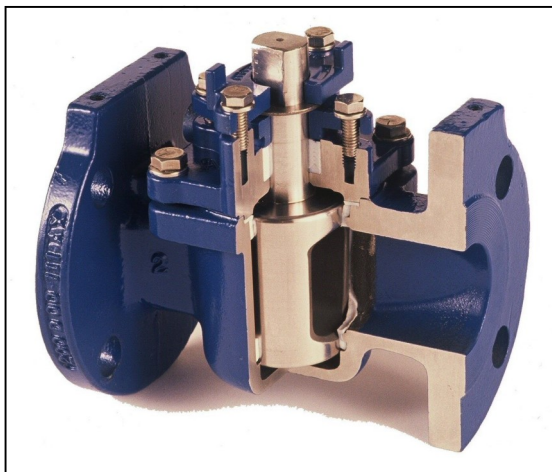
Multiplier

High viscosity or light solids	1.3
Infrequently operated valves	1.1
Temperature above 200 Deg F	1.1
Temperature below 0 Deg F	1.1
Abrasives, crystallizing or sludge	1.6
Ryton*, glass filled TFE sleeve	1.5

If more than one condition exists, use more than one multiplier.

Example: RYTON* SLEEVE IN ABRASIVE SERVICE = 1.6 x 1.5 x torque value.

How to Order



chem-plug®

SLEEVED VALVES

Model Number Codes			Material Codes				Special Features
ANSI CLASS	PORTS	Design and End connection	Body Material	Plug Material	Sleeve Material	Operators	
0=150lb	2=2-WAY	2=Sleeved flanged end	G=SS, CF3	V=Ductile Iron ³	F=PTFE	0=None	0=None
3=300lb	3=3-WAY	3=Sleeved flanged end, full jacket	H=Ductile Iron	K=SS, CF8	R=Ryton filled PTFE	1=Wrench	CB=Chain bar
		4=Sleeved screwed end	J=Steel, WCB	L=SS, CF8M	U=UHMWPE	2=Gear, Manual	CH=Chlorine prepared
		5=Sleeved socket weld end	K=SS, CF8	M=CD4MCU	T=Glass filled TFE	3=Electric	CW=Chain Wheel
		6=Sleeved screwed by socket weld ends	L=SS, CF8M	N=Alloy 20		4=Pneumatic	DB=Double block and bleed
		7=Sleeved flanged end, partial jacket	M=CD4MCU	P=Monel		5=Hydraulic (specify)	DT=Drilled, Tapped (specify)
			N=Alloy 20	Q=Hastelloy B		6=Special	EH=2" Extension hub
			P=Monel	R=Hastelloy C		7=Wrench with locking device	EP=Epoxy coated
			Q=Hastelloy B	X=Nickel		8=Gear with locking device	FS=Grafoil top seal fire safe (V type)
			R=Hastelloy C	Y=Inconel		9=Gear with Chain Wheel	OX=Oxygen prepared
			X=Nickel	S=Special			RH=Relief holes in plug (specify)
			Y=Inconel				X=Other (specify)
			S=Special				

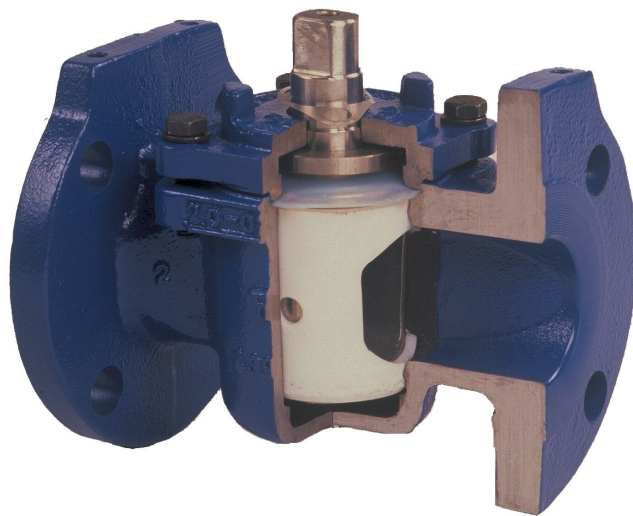
Example of Ordering Code: V023-JLF1-0

This is an example of a V-ring top seal, 150 lb. ANSI, 2-way, sleeved flanged end jacketed plug valve with a carbon steel body, stainless steel plug, PTFE sleeve, wrench operator and no special features.

Ryton is a Phillips Petroleum trademark.



chem-plug® Plug Valves



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