RICHTER
Process Pumps & Valves

IDEX | Trusted Solutions, Improving Lives™

Plug Valve series

Your safety is our goal, worldwide.

V&A

- **Lined Plug Valve - sizes ranging from NPS ½ to NPS 6 Pressure rating: Class 150**

- **Sleeved Plug Valve - sizes ranging from NPS ½ to NPS 8 Pressure rating: Class 150 & Class 300**

World class manufacturing facility with exclusive testing lab to validate the top performance of our plug valve

- Globe control valves RSS with heavy-duty bellows and a unique seat/plug design for even the smallest k_v/Cv values
- Control valves KNR with a special V-control ball and play-free torque transmission
- Cavity-free sealless sampling valves PA
- Safety valves KSE, KSEA and LPV for vapours, gases and fluids special chlor-alkali electrolysis design

Richter products are known worldwide for their reliability and exemplary safety in complex plants, also under extremely difficult conditions, e.g. with elevated temperatures and high solids content or highly permeating media.

- Magnetic drive chemical process pumps MNK and RMA with eddy-current-free can systems
- SAFEGLIDE® PLUS: dry run-optimised plain bearings for magnetic drive pumps
- Vortex pumps, self-priming pumps and peripheral pumps for demanding applications
- SAFERUN® condition monitoring for magnetic drive pump MNK
- Magnetic drive PFA/PTFE lined pumps to 600 m³/h

Product effectiveness and advice on applications go hand in hand; we therefore place great emphasis on staff & customer training courses.

ZERO EMISSION & HIGHER LIFE CYCLE

Our plug valve has a unique stem seal design comprising of cup springs which ensure uniform force distribution on the sealing member and plug.

This ensures zero emission with enhanced life cycle.

BETTER SLEEVE RETENTION

Our plug valve is featured with better sleeve retention which avoids sleeved dislocation in case of liquid containing impurities/mild slurries.

This design also avoids cold flow, deformation and enables long lasting inline sealing.

CONSISTENT OPERATING TORQUE & HIGHER FLOW COEFFICIENT

Precisely designed plug valve ensures lower and consistent operating torques which helps smoother and hassle free operations. This design further avoids jamming of plug.

Optimized flow path offers higher flow coefficient, increasing your overall system efficiency.

ZERO MAINTENANCE

The PTFE sleeve has low coefficient of friction, hence no lubrication is required.

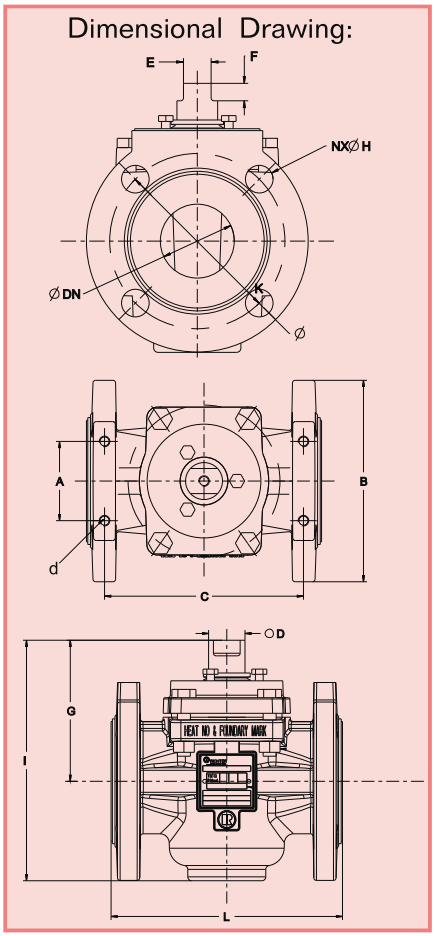
Since in a plug valve jamming is avoided in the design damage of manual operators is eliminated.

EASE OF OPERATIONS & HIGHER PLANT EFFICIENCY

The 360° port lips provide self cleaning action to remove scaling from the plug during its rotation. There are no cavities where fluid can accumulate and contaminate future processing.

The above features combined with higher flow coefficient and consistent torque ensure higher plant efficiency.

Dimensional Drawing:



(All Dimensions are in mm.)

Design Standard: ASME B16.34

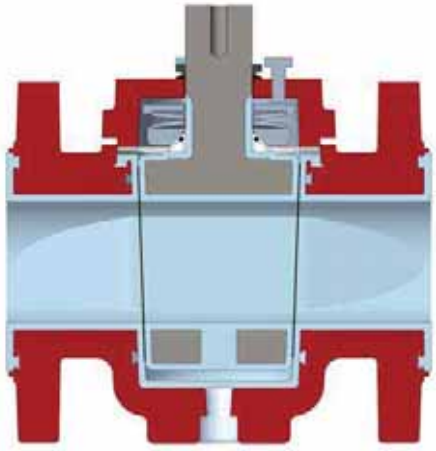
Pressure rating: ASME class 150

Plug valve class 150

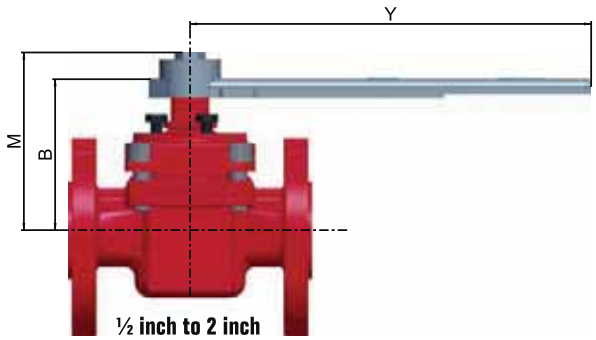
Face to face as per ANSI B16.10. Flanges to ASME B16.5 cl150.

Size - NPS (DN)	A	B	C	D	E	F	G	H	I	K	L	N	d	Wt. (kg)
½" (15)	42	90	90	15.2	10	9	70	16	121.5	60.5	108	4	M8	2.5
¾" (20)	42	100	98	15.2	10	9	71	16	124.5	70	117	4	M8	3.5
1" (25)	50	110	106	20	14	10	71	16	125	79.5	127	4	M8	4
1½"(40)	50	127	142	21.7	14	12	91	16	158	98.5	165	4	M8	7
2" (50)	60	153	151	28	19	12	108.5	19	185	120.5	178	4	M8	10
3" (80)	80	191	170	28	19	16	126	19	222	152.5	203	4	M10	18
4"(100)	100	230	196	38.5	26	18	159	19	274.5	190.5	229	8	M12	29
6"(150)	120	280	234	48	32	20	199	22.2	345.5	242.5	267	8	M12	50

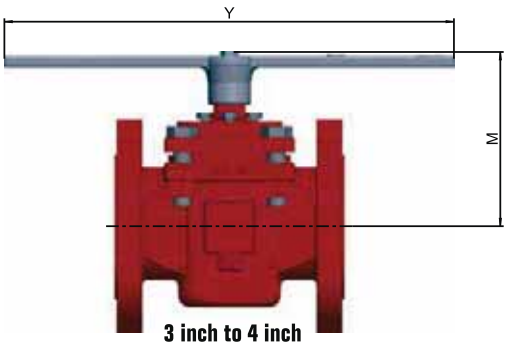
** Note: For 6" size, top two holes are M20*



Dimensions with lever operator



½ inch to 2 inch



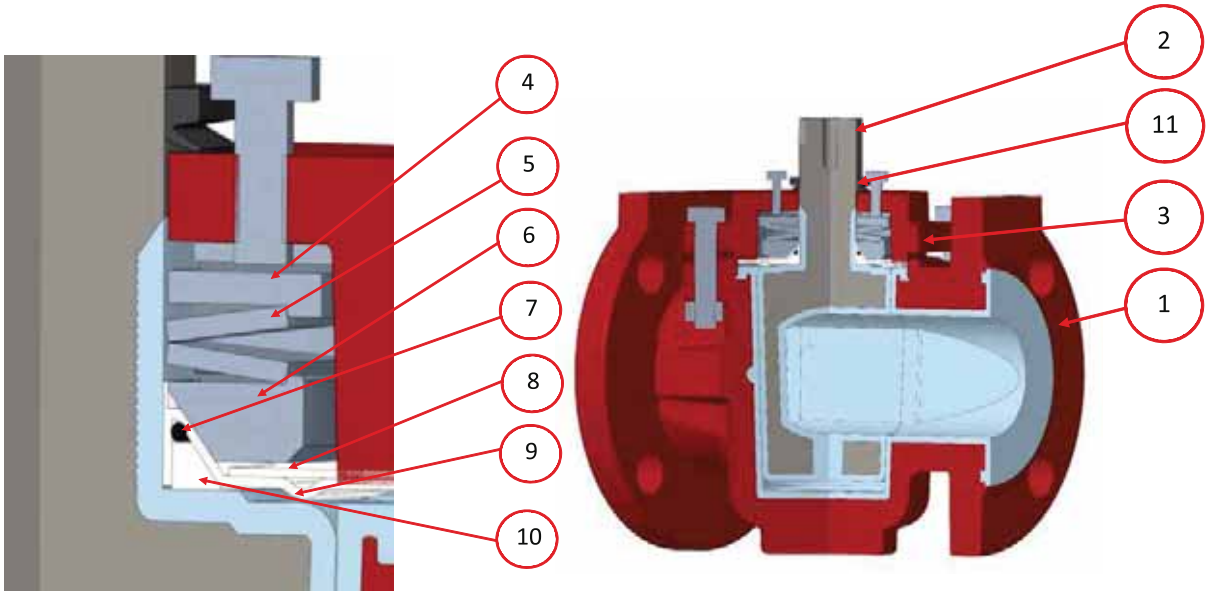
3 inch to 4 inch

CL150			
Size	**B**	**Y**	**M**
0.5"	70	210	84.2
0.75"	71	210	85.2
1"	71	300	85.2
1.5"	91	300	105.2
2"	108.5	300	124.1

CL150 (higher range)		
Size	**Y**	**M**
3"	400	156.6
4"	450	191

List of Components and Materials

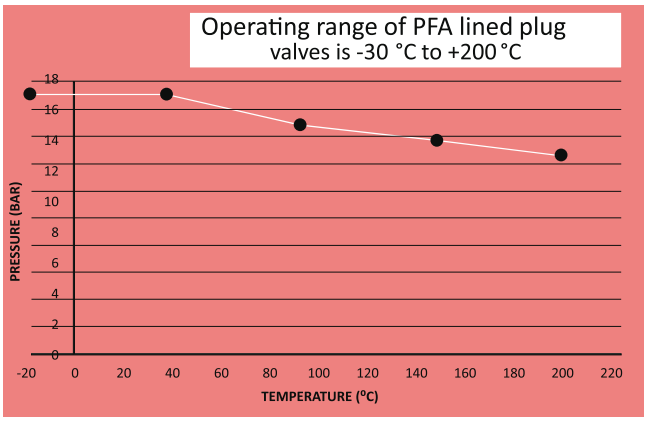
SR. No.	Designation	Material	Qty.
1	Valve Body	DI (ASTM A395-60-40-18 / PFA)	1
2	Plug	17-4PH (CB7Cu1-H1150 / PFA)	1
3	Bonnet / Cover	DI (ASTM A395-60-40-18)	1
4	Thrust Plate	SS316	1
5	Cup Spring	Stainless Steel (1.431)	2
6	Pressure Plate	SS316	1
7	O Ring	VITON	1
8	Diaphragm Plate	SS316	1
9	Diaphragm	PTFE	1
10	Wedge Ring	PTFE	1
11	V-Ring	VITON	1

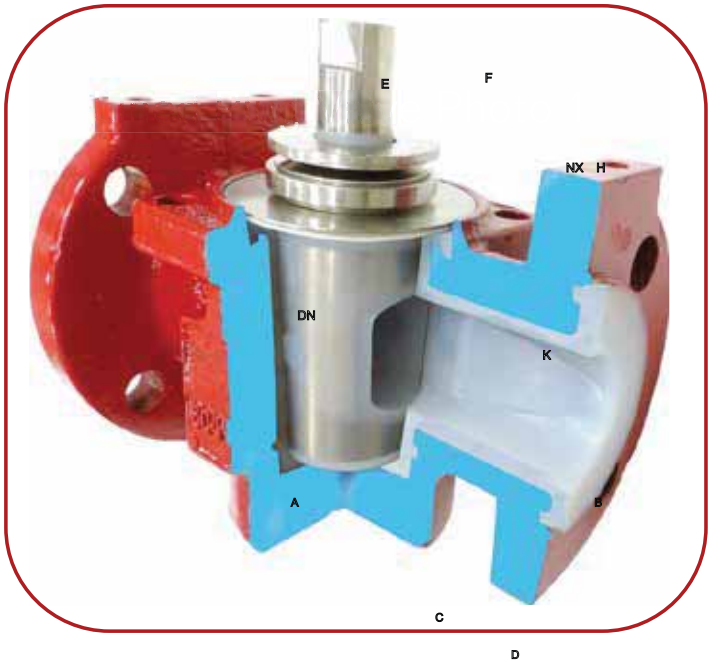


Torque values & Cv values

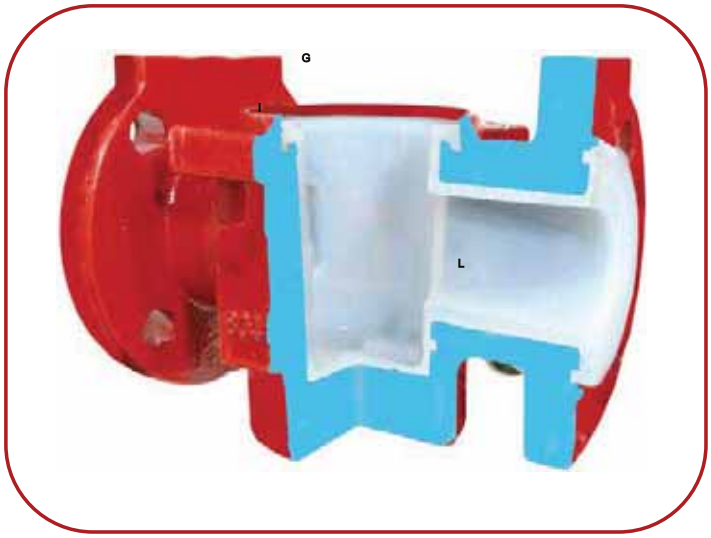
Size - NPS (DN)	Torque NM	CV Values
½" (15)	20	10
¾" (20)	20	10
1" (25)	32	52
1½"(40)	50	132
2" (50)	80	190
3" (80)	135	330
4"(100)	185	611
6"(150)	490	1226

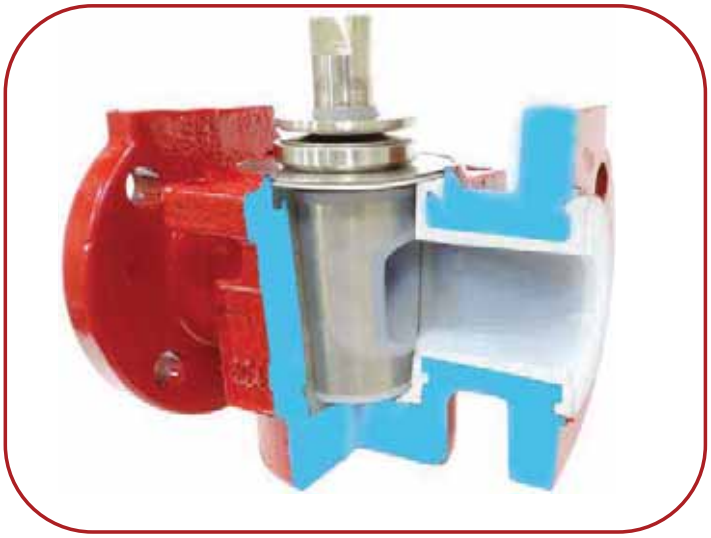
Pressure – Temperature diagram





- **Better Stem Sealing**
- **Consistent & Operating Torques**
- **Higher Flow Coefficient**



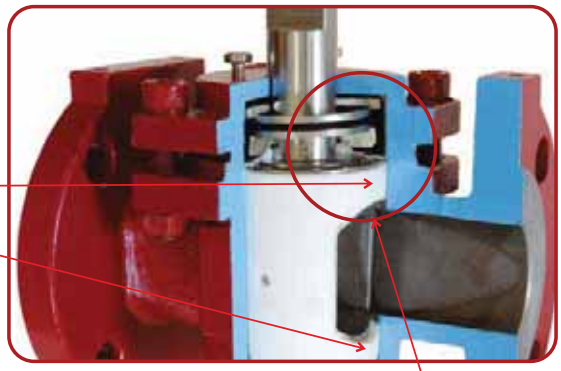


Richter has been the lining expert since 60 years. Some of the features of its lining valve are as follows:

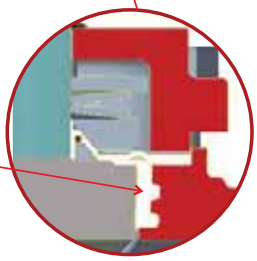
- Single piece body; no chance of leakage
- Minimum 3mm lining at edges throughout 3mm or plus thickness in body & port area
- Vacuum proof lining
- Unique lining process (German standard) ensures defect proof lining on the valve body as well as plug
- Transparent lining of PFA and no pigments are used

Bonnet bolts are used to adjust valve easily in any abnormal conditions.

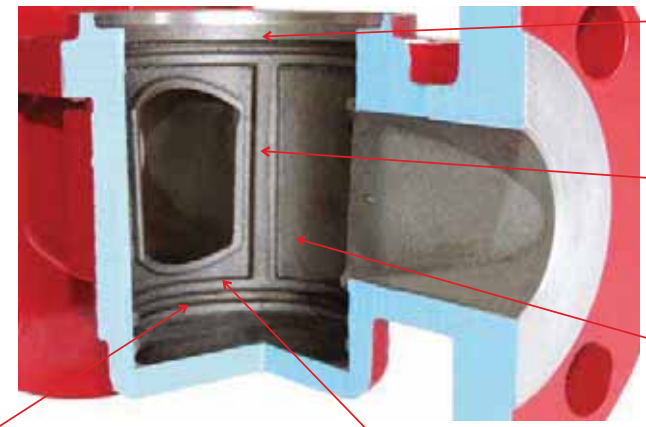
Dynamically stabilized stem seal is a secondary stem seal to ensure zero stem leakage in dynamic conditions of fluid during varying pressure and temperatures. Dynamically stabilized stem sealing is a live loaded stem sealing with use of cup spring to stabilizes equal and live load varying pressure and temperature conditions. This design ensures uniform distribution of force on the plug even in case of uneven tightening of adjusting bolts.



Primary sealing of flowing media is done between Pre compressed & Locked PTFE Sleeve in body and Plug. This will ensure that liquid is not leaked to stem area.



Full Port locking ring ensures proper retention of sleeve. It works as seal between plug and port area so that media cannot travel to top and bottom side of valve.



Top retention of sleeve

High pressure sealing ribs

Sleeve relief area

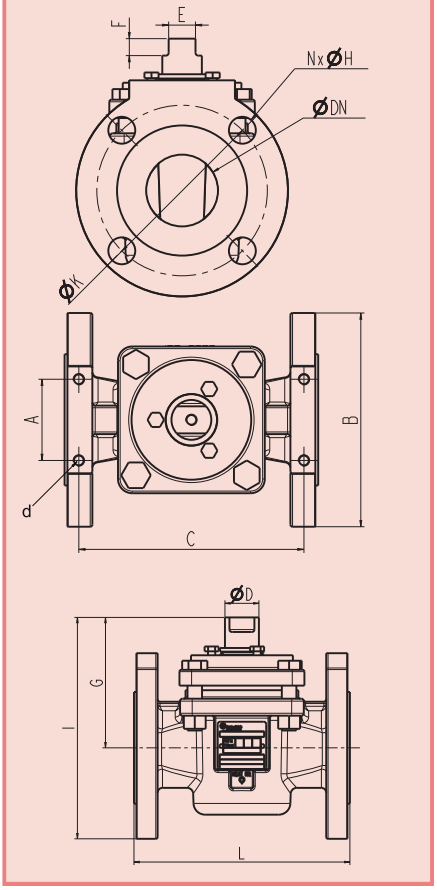
Bottom retention of sleeve

Full port locking ring

Design Standard: ASME B16.34

Pressure rating: ASME class 150 & class 300

Dimensional Drawing:



(All Dimensions are in mm.)

Plug valve class 150

Face to face as per ANSI B16.10. Flanges to ASME B16.34 cl150.

Size - NPS (DN)	A	B	C	D	E	F	G	H	I	K	L	N	d	Wt.(kg)
½" (15)	42	90	94	15.2	10	9	63.5	16	109	60.5	108	4	M8	2.5
¾" (20)	42	100	102	15.2	10	9	69.5	16	120	70	117	4	M8	3.5
1" (25)	50	110	110	20	14	10	77	16	132	79.5	127	4	M8	4
1½"(40)	50	125	144	21.7	14	12	94	16	156.5	98.4	165	4	M8	7
2" (50)	60	150	158	28	19	12	107.5	19	182.5	120.7	178	4	M8	10
3" (80)	80	190	177	28	19	16	127	19	222	152.4	203	4	M10	18
4"(100)	100	230	204	38.5	26	18	155	19	270	190.5	229	8	M12	29
6"(150)	120	280	240	48	32	20	193	22.2	333	241.3	267	8	M12	50
8"(200)	170	345	260	55	36	20	219.5	22.2	392	298.5	292	8	M12	72

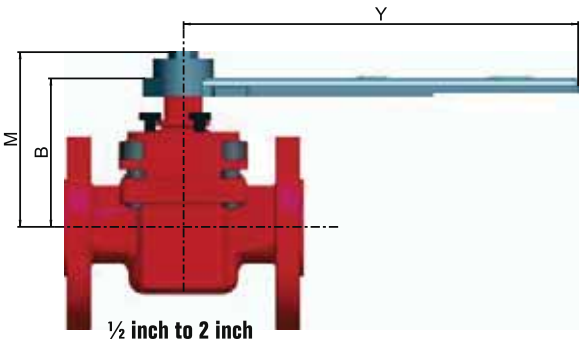
** Note: For 6" & 8" size, top two holes are M20*

Plug valve class 300

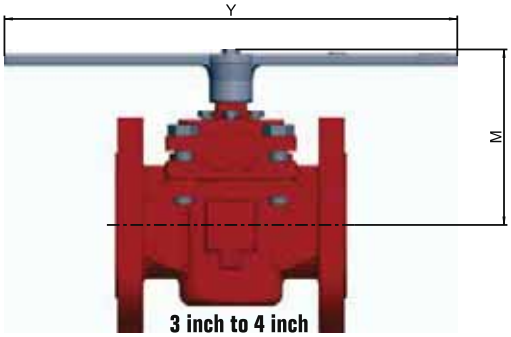
Face to face as per ANSI B16.10. Flanges to ASME B16.34 cl300.

Size - NPS (DN)	A	B	C	D	E	F	G	H	I	K	L	N	d	Wt.(kg)
½" (15)	42	95	123.3	15.2	10	9	63.5	15.9	111	66.7	140	4	M8	3
¾" (20)	42	115	133	15.2	10	9	69.5	19	127	82.6	152	4	M8	4.5
1" (25)	50	125	146	20	14	10	77	19	140	88.9	165	4	M8	6
1½"(40)	65	155	167	21.7	14	12	94	22.3	171.5	114.3	190	4	M8	11
2" (50)	70	165	192	28	19	12	107.5	19	190	127	216	8	M8	13
3" (80)	85	210	254	28	19	16	127	22.2	232	168.3	285	8	M10	24
4"(100)	110	255	272	39.5	26	18	155	22.3	382.5	200	305	8	M12	40
6"(150)	140	320	362	48	32	20	193	22.2	353	269.9	403	12	M16	80
8"(200)	190	380	378	55	36	20	219.5	25.5	409.5	330.2	419	12	M16	110

Dimensions with lever operator



½ inch to 2 inch



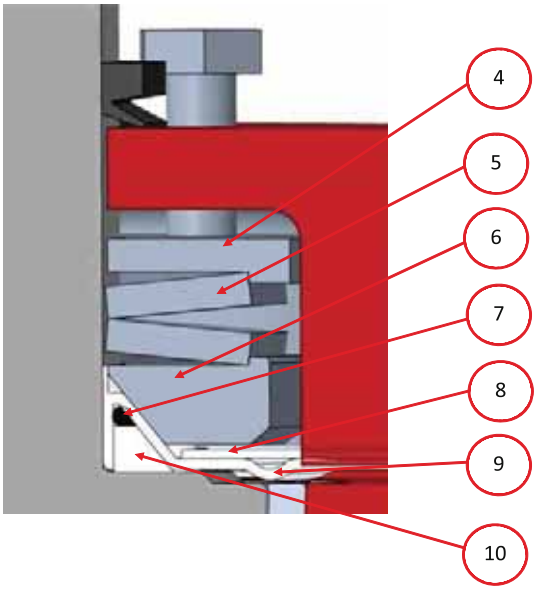
3 inch to 4 inch

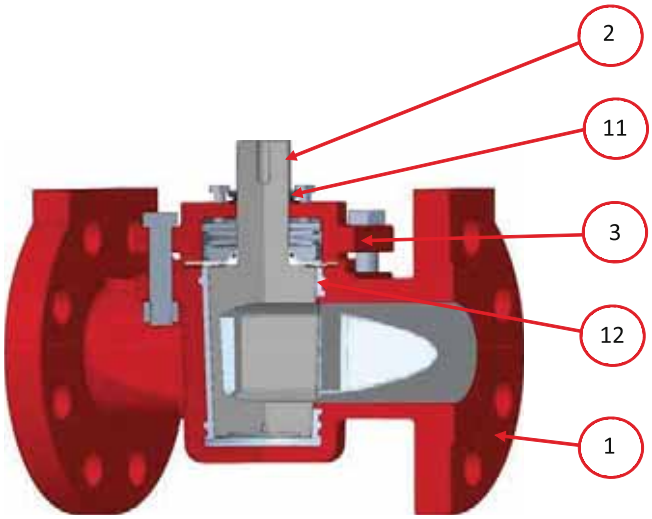
	CL150 / 300		
Size	B	Y	M
0.5"	63.5	210	77.7
0.75"	69.5	210	83.7
1"	77	300	91.2
1.5"	94	300	108.2
2"	107.5	300	123.1

CL150 / 300 (higher range)		
Size	Y	M
3"	400	156.6
4"	450	191

List of Components and Materials

SR. No.	Designation	Material	Qty.
1	Valve Body	WCB (ASTM A216)	1
2	Plug	CF8M	1
3	Bonnet / Cover	WCB (ASTM A216)	1
4	Thrust Plate	SS316	1
5	Cup Spring	Stainless Steel (1.431)	2
6	Pressure Plate	SS316	1
7	O Ring	VITON	1
8	Diaphragm Plate	SS316	1
9	Diaphragm	PTFE	1
10	Wedge Ring	PTFE	1
11	V-Ring	VITON	1
12	Sleeve	PTFE	1

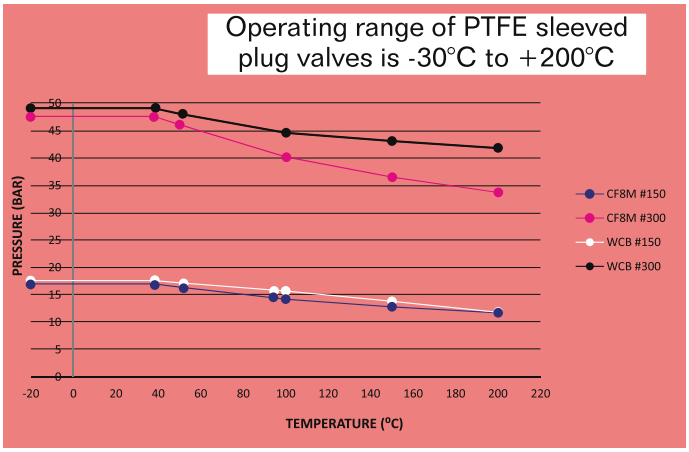




Torque values & Cv values

Size NPS (DN)	Torque (Nm) at △P=20 bar for class 150	Torque (Nm) at △P=50 bar for class 300	CV Values
½"	12	12	10
¾"	12	12	10
1"	25	25	48
1½"	35	35	98
2"	75	75	190
3"	120	120	330
4"	240	240	630
6"	450	450	1200
8"	785	785	1900

Pressure – Temperature diagram



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Our corporate objective is safe chemical engineering.
Customer-orientated solutions are our strength.

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Worldwide.

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