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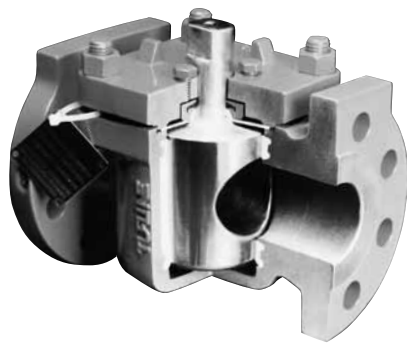
Tuflin[®] Full Port Sleeved Plug Valves

CRANE[®]

ChemPharma Flow Solutions

www.cranechempharma.com

Tufline Full Port Sleeved Plug Valves



**Two-Way
Full Port Sleeved Plug Valves**



**120° 3-Way Full Port
Sleeved Plug Valves**

Full port design advantages.

With the full-area round port there is no diminished or constricted flow. Ideal wherever low pressure-drop and high-flow efficiency are important.

No pockets or cavities.

Unlike full port ball valves, Tufline valves have no cavities to entrap contaminating media. This is an important consideration for food and pharmaceutical applications.

For applications such as polymers, chemicals, salts, slurries, brines, muds, plastics, or sewage, there are no cavities where the flow media can collect and solidify.

Easy cleaning.

When requested, the Full Port Sleeved Plug Valve can be supplied prepped to accommodate the use of a pipeline pig for mechanical cleaning. This facilitates processing of heavy, viscous substances such as tar and pitch.

Ease of cleaning is also important when handling condensable media such as sulfur, polyvinylchloride, phthalic-anhydride, and vinylchloride monomer.

Self-cleaning.

Metal lips completely surround the valve ports. With each rotation of the valve, heavy scale which may have collected on the plug seal surface is broken-up and wiped away.

Standard features that assure exceptional performance.

Superior sealing, fugitive emissions control, greatly extended service life, economy of operation, and ease of automation are all standard features of Tufline Sleeved Plug valve configurations.

More information.

For Tufline Sleeved Plug Valve detailed data, ask for the comprehensive 20-page catalog. It includes performance characteristics, and a variety of options. To receive a copy call your Crane ChemPharma, Xomox Sales Office.

General specifications appropriate for both valves

ANSI Classes:

150, 300, & 600
Other pressure classes available upon request.

Temperature rating:

-20°F to +600°F

Materials:

Typically, body material is CF8M (316 stainless steel) or WCB (carbon steel), Plugs are CF8M (316 stainless steel).

PTFE sleeves are standard.

A wide variety of other materials and options are available.

See the How To Order table on page 7.

End connections:

Raised face flanges with phonographic serrations are standard. Other flange facings are available on request.

Actuation:

All valves can be supplied with a variety of manual, pneumatic, or electric actuators.

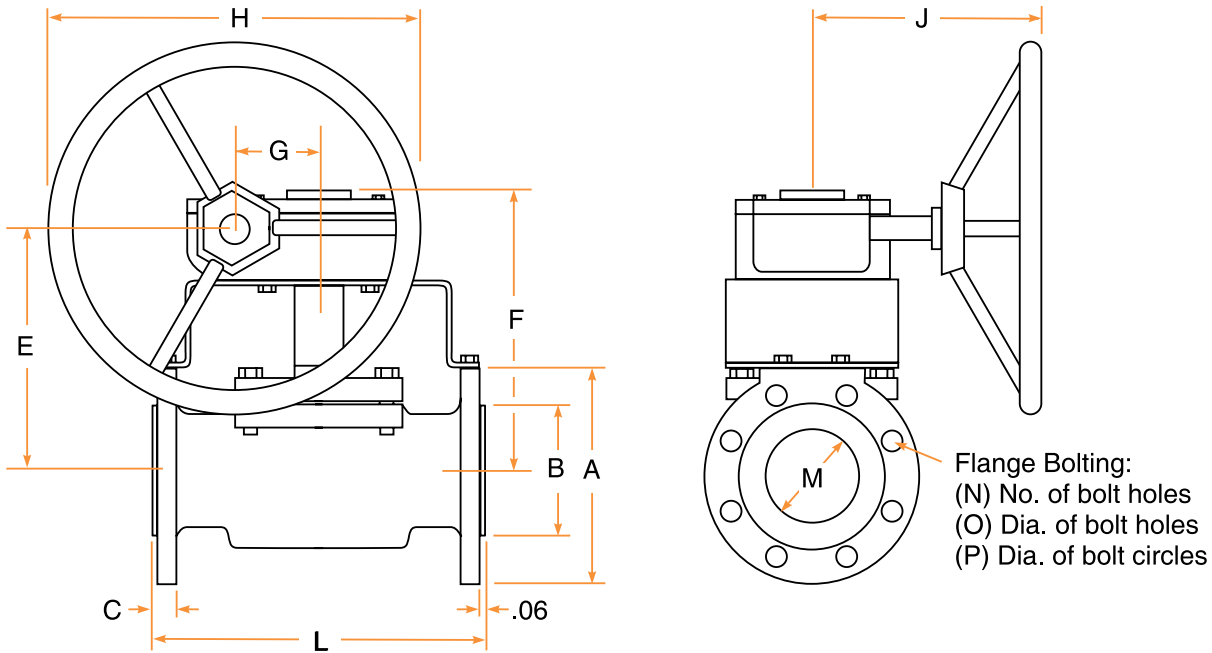
Tufline can provide reliable, single-source responsibility for your complete valve package.

Quality assurance:

At every step in the foundry, machining, manufacturing, and assembly processes, valve parts are inspected to assure high quality. Every valve is pressure tested for tight shutoff.

Tufline Full Port Sleeved Plug Valve Dimensions

Dimensions are in inches. Weights are in pounds.



Class 150 - Figure No. 2067 / Class 300 - Figure No. 20367

Size	A	B	C	E	F	G	H	J	M	L	Wts.	Cv	Torque*
3/4	4.62	1.69	.63						.83	6.00	20	50	400
1	4.88	2.00	.69		Valves 1/2 through 2 inch are typically not supplied with enclosed gear operators.				1.05	6.50	28	100	500
1 1/2	6.13	2.88	.81						1.56	7.50	35	270	1000
2	6.50	3.63	.88						2.06	8.50	54	450	1440
3	8.25	5.00	1.12	9.69	11.53	2.63	18.00	10.38	3.06	11.13	135	1130	3600
4	10.00	6.19	1.25	10.38	12.69	3.50	30.00	12.31	4.03	12.00	205	2200	4800
6	12.50	8.50	1.44	12.69	20.08	5.38	30.00	15.88	6.00	15.88	475	5350	17,000
8	15.00	10.63	1.62	14.38	24.08	5.43	24.00	17.25	7.98	19.75	875	10400	32,000
10	17.50	12.75	1.88	18.65	24.59	6.25	36.00	18.76	9.84	22.38	1600	15850	75,000
12	23.00	15.00	2.00	21.67	29.17	9.33	18.00	23.72	11.78	28.00	2500	22000	100,000
18	28.50	21.00	2.75	**	**	**	**	00.00	17.25	43.00	6000	47000	425,000

Class 150 Figure No. 2067

Size	N	O	P
3/4	4	.63	2.75
1	4	.63	3.13
1 1/2	4	.63	3.88
2	4	.75	4.75
3	4 ¹	.75	6.00
4	8 ¹	.75	7.50
6	8 ⁷	.88	9.50
8	8 ²	.88	11.75
10	12 ⁵	1.00	14.25
12	12 ²	1.00	17.00
18	16 ⁴	1.25	22.75

Class 300 Figure No. 20367

Size	N	O	P
3/4	4	.75	3.25
1	4 ¹	.75	3.50
1 1/2	4	.88	4.50
2	8	.75	5.00
3	8 ³	.88	6.63
4	8 ³	.88	7.88
6	12 ⁴	.88	10.62
8	12 ⁵	1.00	13.00
10	16 ⁶	1.12	15.25
12	16 ⁴	1.25	17.75
18	24 ⁸	1.38	24.75

* Valve break torque in inch-lbs with PTFE sleeve.

** Consult factory

Also available:

- 90° 3-way and 4-way configurations.
- Configurations specially approved for HF-alkylation.

1. Two top holes in flanges are tapped.
2. Two top and two bottom holes in flanges are tapped.
3. Four top holes in flanges are tapped.
4. Four top and four bottom holes in flanges are tapped.
5. Four top and two bottom holes in flanges are tapped.
6. Six top and two bottom holes in flanges are tapped.
7. All eight holes in flanges are tapped.
8. Six top and six bottom holes in flanges are tapped.

Tufline 120° 3-Way Full Port Sleeved Plug Valve

Facilitates more efficient and more economical system design.

The Tufline 120° Full Port 3-way Sleeved Plug Valve replaces conventional and cumbersome pipe "T" and twin block valve arrangements.

Improved flow characteristics.

In addition to the improved flow provided by the full port configuration, the 120° flow pattern provides greater flow efficiency than 90° 3-way valves.

Additional design features.

In addition to the unique design features found in the standard-port and 2-way full port configurations, this valve offers:

- Configuration for cleaning with a mechanical pig when requested.
- 120° and 240° manual or automated operation.
- Visual indication of flow direction.
- Allows transflow when switching.

Appropriate applications.

This valve is ideal for dual safety relief valve switching and other applications where low pressure drop and high flow efficiency are important.

This design offers significant advantages for handling slurries, diversion, or blending where full flow and a low pressure drop is desirable.

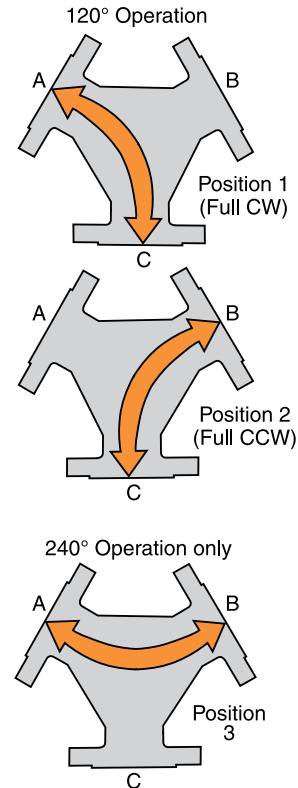
Port arrangements.

In the diagrams at the right, the color indicates the path of fluid flow.

Cv and torque values.

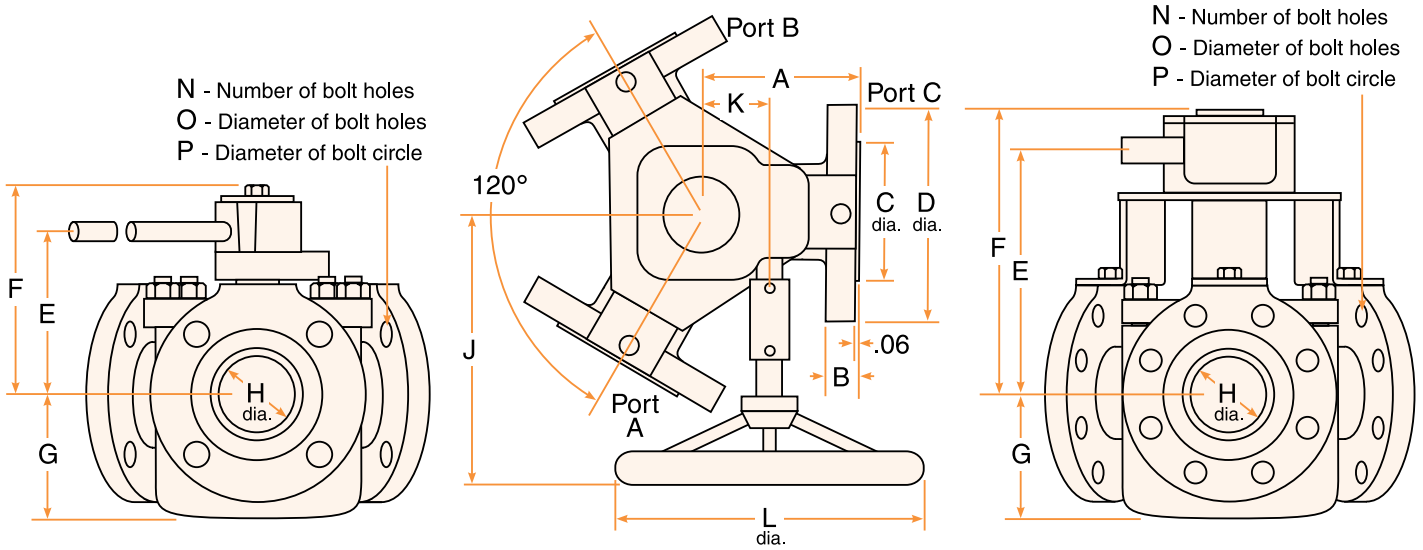
Size	Cv Factors For Valve Sizing	Valve Break Torques in. lbs* (PTFE Sleeve)
1	36	300
1½	90	1500
2	175	1500
3	400	7020
4	725	7560
6	1750	17,000
8	3200	32,000

* For Tufline-600 sleeves, multiply valve break torques by 1.35.



Tufline 120° 3-Way Full Port Sleeved Plug Valve Dimensions

Dimensions are in inches. Weights are in pounds.



Class 150 - Figure No. 9037 / With Wrench

Size	A	B	C	D	E	F	G	H	J	K	L	N	O	P	Wts.
1	3.00	.56	2.00	4.25	3.63	4.66	3.00	1.05	11.25	-	-	4	.62	3.13	21
1½	4.13	.88	2.88	6.50	4.88	6.06	3.75	1.61	29.00	-	-	4	*	3.88	44
2	4.13	.88	3.63	6.50	4.88	6.06	3.75	2.06	29.00	-	-	4	.75	4.75	47

*Tapped 1/2-13 UNC hole.

Class 150 - Figure No. 9037 / With Enclosed Gear

Size	A	B	C	D	E	F	G	H	J	K	L	N	O	P	Wts.
3	6.00	1.13	5.00	8.25	9.50	11.44	4.75	3.07	12.00	3.50	18.00	4	.75	6.00	135
4	7.00	1.25	6.19	10.00	10.38	12.75	5.63	4.03	11.31	4.13	16.00	8	.75	7.50	195
6	8.00	1.44	8.50	12.50	11.63	15.00	6.50	6.07	17.41	4.69	24.00	8	.88	9.50	265
8	9.50	1.62	10.62	15.00	14.50	17.81	7.50	7.98	18.71	2.11	24.00	8	.88	11.75	775

Class 300 - Figure No. 9337 / With Wrench

Size	A	B	C	D	E	F	G	H	J	K	L	N	O	.P	Wts.
1	3.00	.69	2.00	4.88	3.63	4.66	3.00	1.05	11.25	-	-	4	.75	3.50	23
1½	4.13	.88	2.88	6.50	4.88	6.06	3.75	1.61	29.00	-	-	4	**	4.50	44
2	4.13	.88	3.63	6.50	4.88	6.06	3.75	2.06	29.00	-	-	8	.75	5.00	47

*Tapped 3/4-10 UNC hole.

Class 300 - Figure No. 9337 / With Enclosed Gear

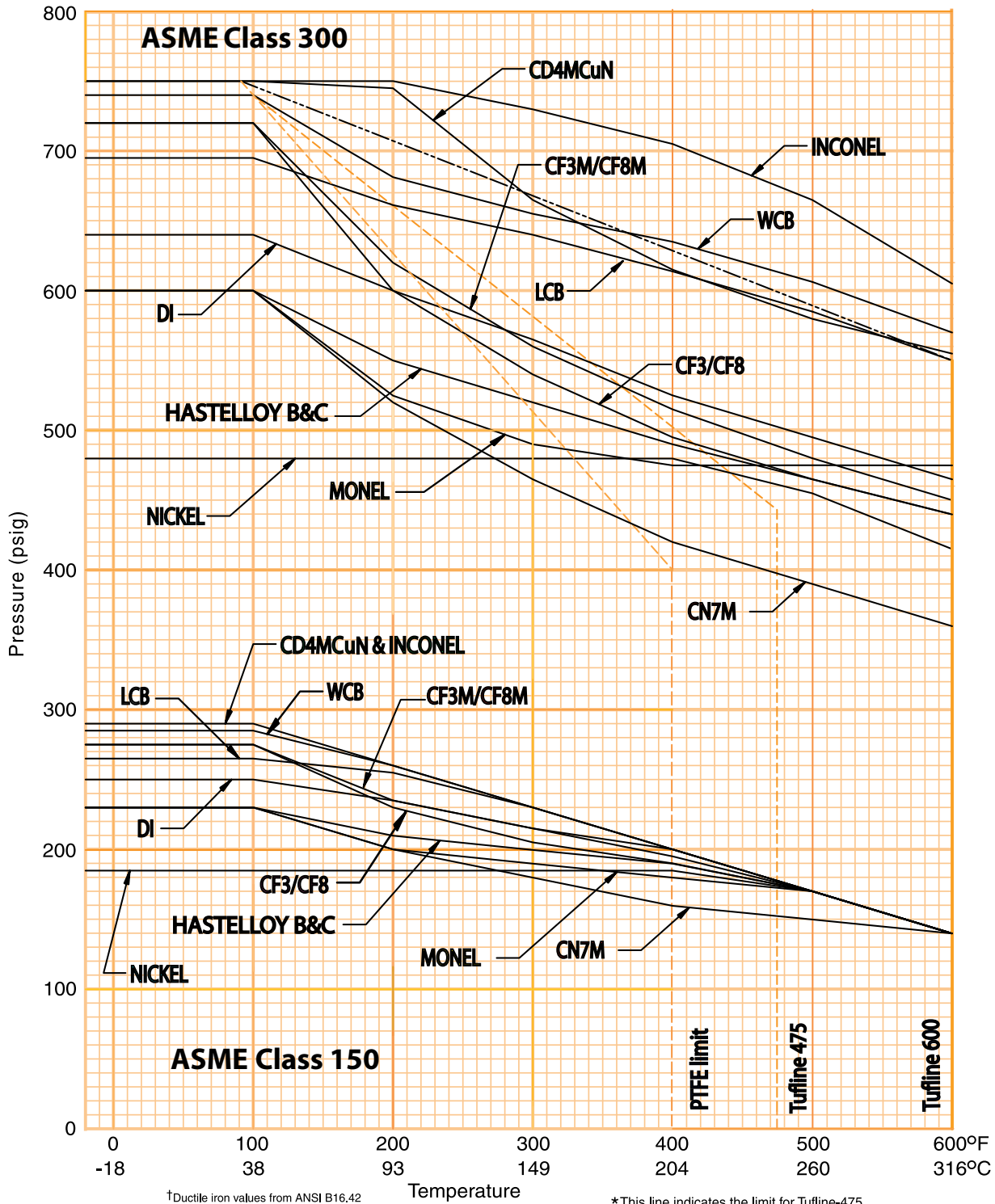
Size	A	B	C	D	E	F	G	H	J	K	L	N	O	P	Wts.
3	6.00	1.13	5.00	8.25	9.50	11.44	4.75	3.07	12.00	3.50	18.00	8	.88	6.63	135
4	7.00	1.25	6.19	10.00	10.38	12.75	5.63	4.03	11.31	4.13	16.00	8	.88	7.88	195
6	8.00	1.44	8.50	12.50	11.63	15.00	6.50	6.07	17.41	4.69	24.00	12	.88	10.63	265
8	9.50	1.62	10.62	15.00	14.50	17.81	7.50	7.98	18.71	2.11	24.00	12	1.00	13.00	775

Pressure-temperature ratings

The useful range of PTFE sleeved plug valves is -20°F to +400°F
 Tufline-475 sleeve: -20°F to +475°F
 Tufline-600 sleeve: -20°F to +600°F
 with maximum temperature variation of 200°F.

Applications beyond these ranges can be handled effectively but may require valve adjustments at the operating temperature.

Material selections are governed by the limits imposed by AMSE B16.34, 2004 edition.



†Ductile iron values from ANSI B16.42

*This line indicates the limit for Tufline-475 sleeve material when used in 8"-16" valves.



CRANE ChemPharma, Xomox Rack & Pinion (XRP)[™] Actuators and Matrix[®] Actuators.

Tufline automated valve packages assure you of single-source responsibility for flow control equipment.

With the CRANE, ChemPharma, Xomox family of valves, actuators, control accessories, and Xomox problem solving expertise, you are assured of valve packages that will provide optimum performance in your application.



CRANE ChemPharma, Xomox Automation & Service Centers.

Our Automation & Service Centers are strategically located to provide comprehensive:

- Automated valve packaging.
- Valve modification.
- Valve repair.
- Application counseling.

For more information, fast response, comprehensive service, and knowledgeable technical help, call your Crane ChemPharma, Xomox Automation & Service Center.

How to order

Size Figure No. Option Body Plug Sleeve Operator Service
1" - 2067 - FT - 6 - 6 - P1 - W - C

Figure No.

2-Way

Class 150 . . . **2067**
 Class 300 . . . **20367**
 Class 600 . . . **20667**

120° 3-Way

Class 150 . . . **9037**
 Class 300 . . . **9337**
 Class 600 . . . **9637**

Options

Fire Tested **FT**
 Tertiary Top Seal . . . **TS**
 Cage Control **CCV**
 Extended Packing . . **XP**
 Partial Jacket **PJ**
 Full Jacket **FJ**
 Port Arrangements
 for 3-Way valves
 (See page 4)
 **120° or 240°**

Body

Alloy 20 **0**
 WCB **2**
 Monel **3**
 304SS **4**
 Nickel **5**
 CF8M **6**
 Hastelloy B **8**
 Hastelloy C **9**
 CD4MCuN **27**
 Inconel **40**
 Other (Specify) . **X**

Service

Chlorine . . . **C**
 Oxygen . . . **O**
 Vacuum . . . **V**
 General
 Service . . . **Blank**
 Other** . . . **X**

Operator

Wrench **W**
 Gear **G**
 Actuator* **A**
 Less Operator . **N**

Sleeve

PTFE **P1**
 15% RPTFE . **P2**
 25% RPTFE . **P3**
 PFA **P6**
 Xomox-7 **P7**
 UHMWPE . . . **P8**
 Tufline-475 . **P16**
 Tufline-600 . **P20**
 Other
 (Specify) . . . **PX**

Plug

Alloy 20 **0**
 Monel **3**
 304SS **4**
 Nickel **5**
 CF8M **6**
 Hastelloy B **8**
 Hastelloy C **9**
 CD4MCuN **27**
 Inconel **40**
 Other (Specify) . **X**

* Specify actuator type and available air supply.

** Consult your Tufline Sales Engineer for a wide variety of other available service options.