MILLIKEN LUBRICATED PARALLEL PLUG VALVES

PRODUCT CATALOG
MAY 1, 2000

VALVE AND CONTROL SPECIALISTS

Valve and Flow Control Specialists
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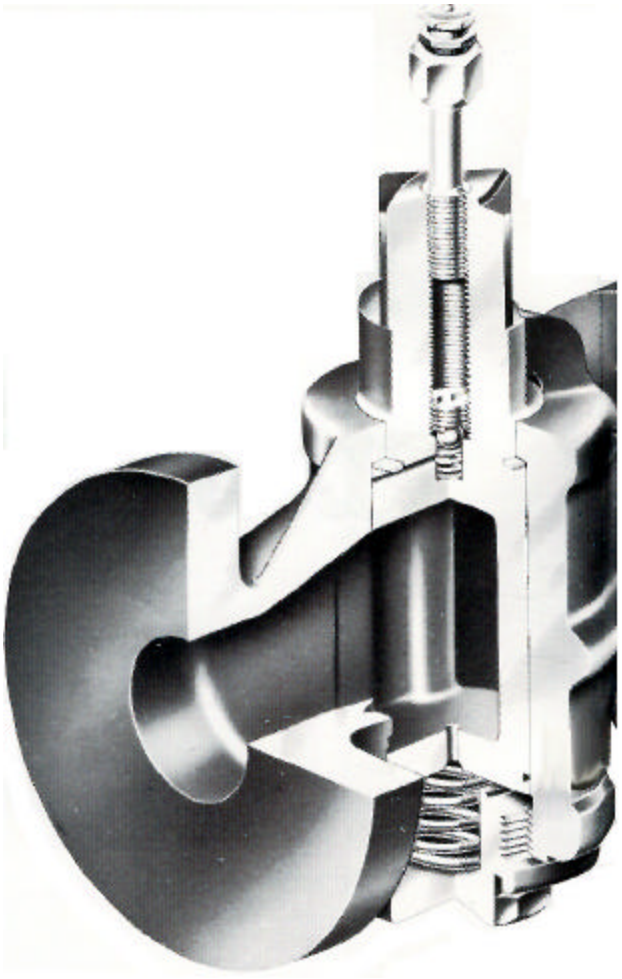
Milliken
Lubricated Parallel Plug Valves



Numerical Index

Fig. No.	Pattern	Sizes (in)	Class	Ends	Operation	Page
170M	Short	1-4	125	Screwed	Wrench	12 - 13
171M	Short	1-8	125	Flanged	Wrench	12 - 13
171MG	Short	6-24	125	Flanged	Gear	12 - 13
200L	Threeway	1/2 - 4	125	Flanged	Wrench	20 - 21
200M	Short	1/2 - 4	125	Screwed	Wrench	14 - 15
200R	Round Port	1/2 - 3	125	Screwed	Wrench	16 - 17
200T	Threeway	1/2 - 4	125	Screwed	Wrench	20 - 21
201L	Threeway	1/2 - 4	125	Flanged	Wrench	20 - 21
201LG	Threeway	5 - 8	125	Flanged	Gear	20 - 21
201M	Short	1/2 - 6	125	Flanged	Wrench	14 - 15
201MG	Short	5 - 8	125	Flanged	Gear	14 - 15
201R	Round Port	1/2 - 4	125	Flanged	Wrench	16 - 17
201RG	Round Port	4 - 10	125	Flanged	Gear	16 - 17
201T	Threeway	1/2 - 4	125	Flanged	Wrench	20 - 21
201TG	Threeway	5 - 8	125	Flanged	Gear	20 - 21
205M	Regular	1 - 6	125	Flanged	Wrench	18 - 19
205MG	Regular	5 - 24	125	Flanged	Gear	18 - 19
220L	Threeway	1/2 - 4	125	Screwed	Wrench	20 - 21
220T	Threeway	1/2 - 4	125	Screwed	Wrench	20 - 21
221L	Threeway	1/2 - 4	125	Flanged	Wrench	20 - 21
221LG	Threeway	5 - 8	125	Flanged	Gear	20 - 21
221T	Threeway	1/2 - 4	125	Flanged	Wrench	20 - 21
221TG	Threeway	5 - 8	125	Flanged	Gear	20 - 21
400M	Regular	1/2 - 4	250	Screwed	Wrench	22 - 23
401M	Regular	1/2 - 4	250	Flanged	Wrench	22 - 23
401MG	Regular	5 - 12	250	Flanged	Gear	22 - 23
200LL	Four-way	1/2 - 2	125	Screwed	Wrench	24
201LL	Four-way	1 1/2 - 3	125	Flanged	Wrench	25
240M	Short	1/2 - 4	125	Screwed	Wrench	26
241M	Short	1 - 8	125	Flanged	Wrench	27

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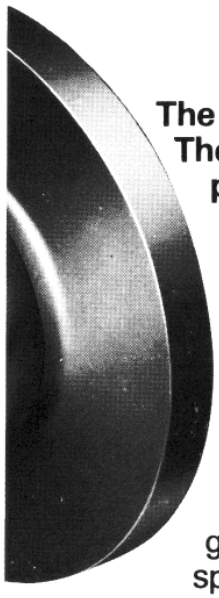
Valve & Flow Control Specialists



The principle of the Milliken valve is as simple as its design. The plug, which is the only moving part in the valve, when 'open', presents a straight through passage in line with the pipe-line, and when turned through 90 degrees to the 'closed' position stops the flow.

A special sealing compound is used to effect a completely leak tight seal. When line pressure is applied to the valve in the closed position, the parallel plug is forced to the downstream side of the valve. The plug is then in contact with the body in the area surrounding the outlet port in the body. The sealing compound which surrounds the outlet port by means of special grooves in the plug, forms a barrier to line pressure and is also spread over the sealing surfaces of the plug and body so that a very thin film of compound is established between the plug and body surfaces on the downstream side.

The metal to metal contact of plug and body together with the barrier of sealing compound ensures a completely leak tight valve. The sealing compound also preserves the body and plug surfaces from corrosion and to some extent, abrasion, and provides lubrication for ease of operation. Providing the valve is correctly maintained which in general simply means injecting a small amount of sealing compound from time to time and moving the plug, a valve giving positive shut-off will result and provide many years of satisfactory service.

Gearing

Gearboxes can be fitted to valves. In the catalog we indicate where we consider this necessary as standard. All valves can be supplied with totally enclosed weather-proof gearing. Spur gearing can be supplied if necessary to suit the installation.

Quality Assurance

It is the policy of the Company to establish and maintain an effective and efficient Quality Program , which is acceptable to many leading authorities.

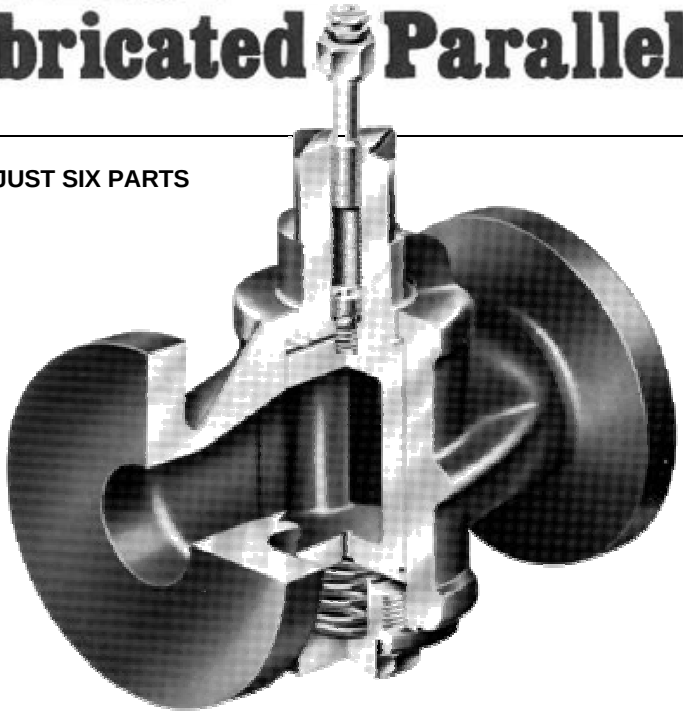
Our Quality Manual is available on request.

After Sales Service

A team of skilled Service Engineers are available to carry out maintenance and/or rectification work on site for valves, both during and after the warranty period.

Milliken Lubricated Parallel Plug Valves

JUST SIX PARTS



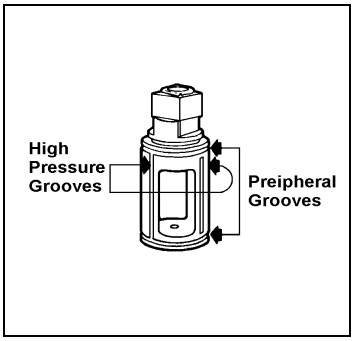
Injection Nipple

Plug

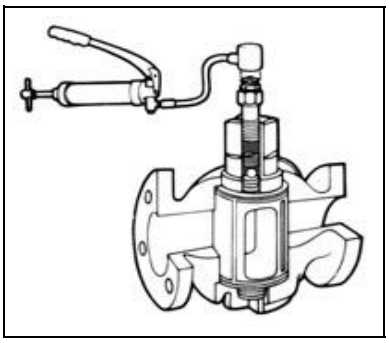
Spring

PTFE Thrust Ring

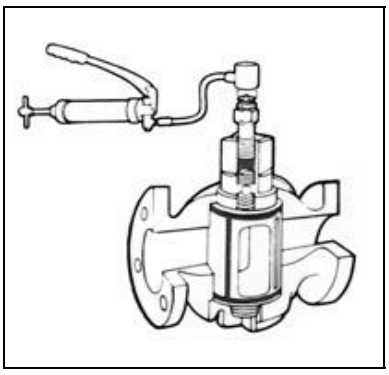
Bottom Cover



The plug has 2 peripheral grooves which are connected to 2 vertical high pressure grooves ……..

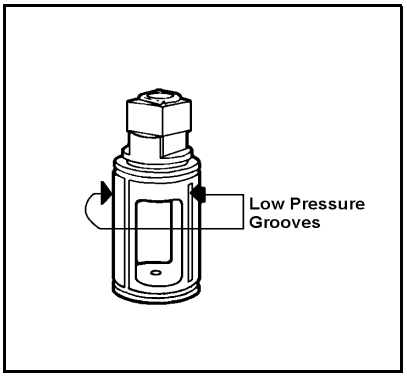


The compound passes through a small ball check valves ……..

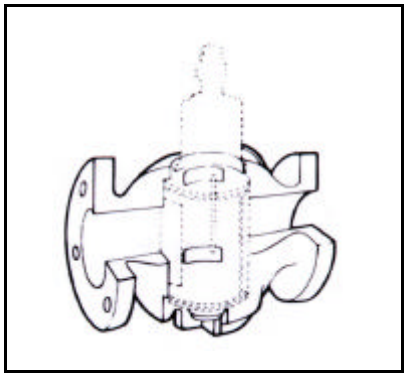


and into the bottom peripheral groove ……

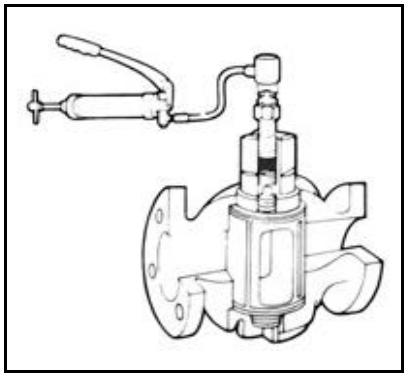
The Sealing System how it works



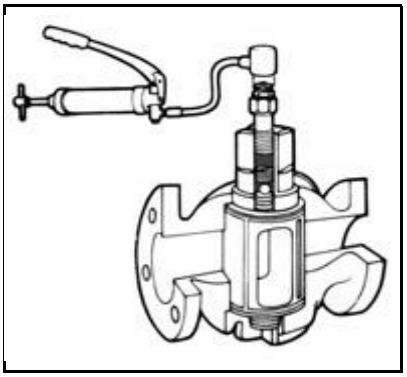
positioned on either side are 2 low pressure grooves.



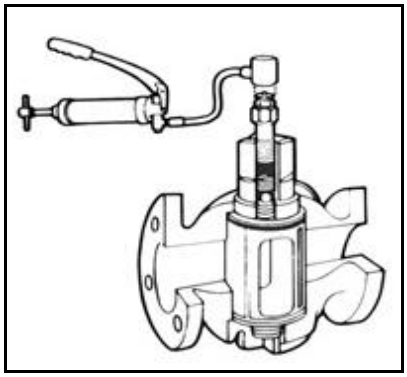
The body has 2 small recesses cast in it which connect the low pressure grooves to the 2 peripheral grooves.



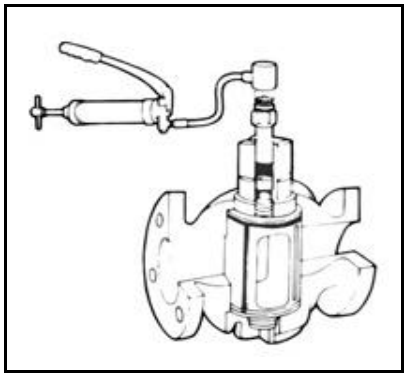
Compound is injected into the plug.



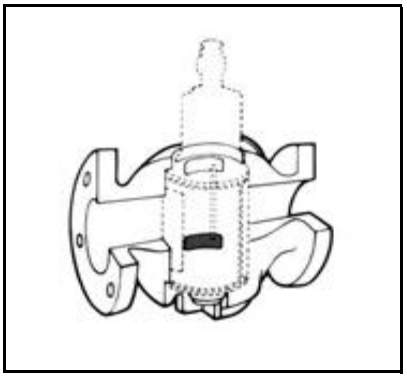
into a horizontal cross hole



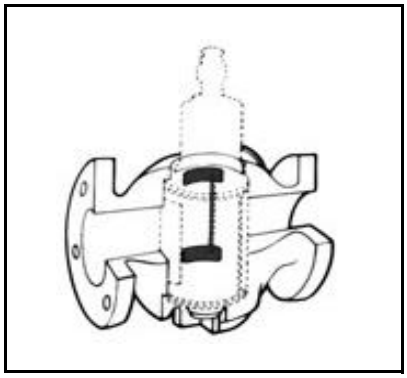
and into the top peripheral groove.



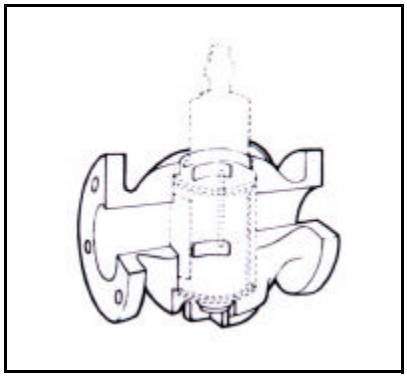
From here it is forced down the high pressure grooves ..



with the pluf fully open or fully closed the compound enters the top body recess.



Through the low pressure grooves and into the bottom body recess ……..



with the valve partly open the body recesses do not connect with the low pressure grooves.

Milliken Valve Availability

Fig. No.	Ansi B16.1		Screwed
	Class 125	Class 250	Class 250 Rating
170M			
171M + 171MG	■		
200M			
201M + 201MG			
200R + 200RG	■		
201R + 201RG			
205M + 205MG	■		
200L + 200T			
201L + 201LG	■		
201T + 200TG	■		
220L + 220T			
221L + 221LG	■		
221T + 221TG	■		
400M			■
401M + 401MG		■	
200LL			
201LL	■		
240M + 241M	■		

Milliken Valves are Canadian Gas Association (CGA) approved, and American Gas Association (AGA) approved. Please contact Milliken for a detailed listing.

Underwriters Laboratory

Certain Milliken valves can be ordered with UL approval labels permanently affixed to the valve. For a detailed listing of these valves and specific approval please refer to Milliken Data Sheet S-1110.

Requirement for the UL approval must be given at the time of the order.

Materials Specification

Component	Material	Specification ASTM
Body	Cast Iron	A126 Cl B
Plug	Cast Iron	A126 Cl B
Bottom Cover	Cast Iron	A126 Cl B

Alternate Materials

The above components can be supplied in ductile iron (speroidal graphite iron) to ASTM 395

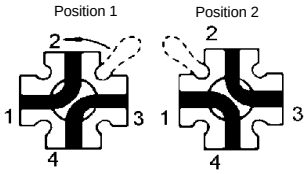
ORDERING

Please be sure to quote the correct catalog numbers when ordering Milliken valves. It is also important to state the exact details of the service (pressure, temperature, nature of liquid, gas, etc.) to ensure that the correct sealing compound is supplied. In the case of acids, state concentration. The following abbreviations are used when referring to the Milliken valves in the pages of this catalog.

G Gear-operated
M Fitted with Cast Iron Plug
R Round Port
SJ Steam Jacketed Bottom Cover

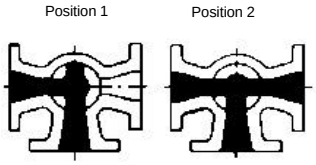
Three-way and Four-way Valve Port Positions

(VIEW IS FROM TOP OF VALVE)



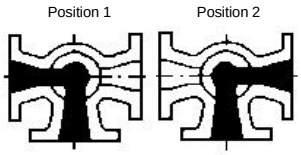
4-way, 4-port, 90° turn

STYLE B



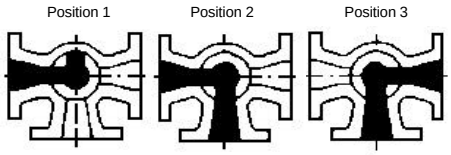
3-way, 3-port, 90° turn

STYLE C



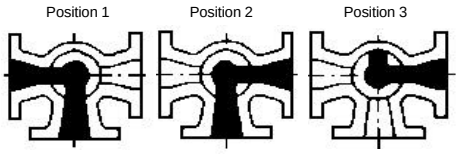
3-way, 2-port, 90° turn

STYLE A



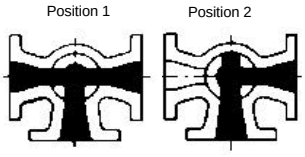
3-way, 2-port, 180° turn

STYLE P



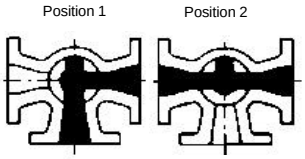
3-way, 2-port, 180° turn

STYLE R



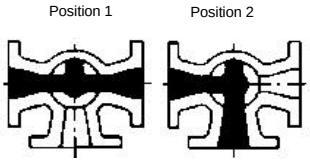
3-way, 3-port, 90° turn

STYLE D



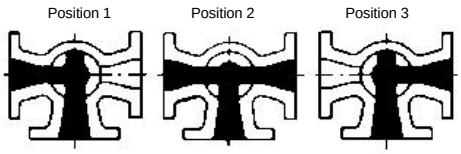
3-way, 3-port, 90° turn

STYLE E



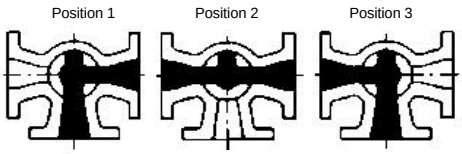
3-way, 3-port, 90° turn

STYLE F



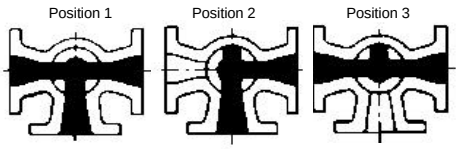
3-way, 3-port, 180° turn

STYLE G



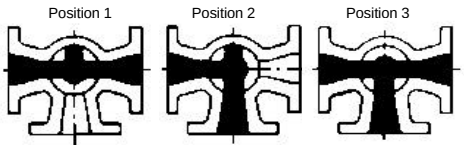
3-way, 3-port, 180° turn

STYLE H



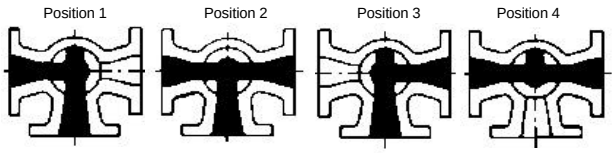
3-way, 3-port, 180° turn

STYLE I



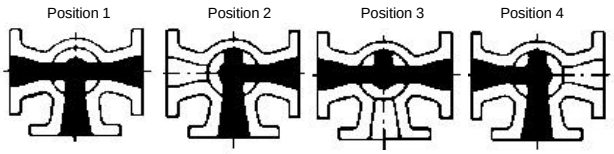
3-way, 3-port, 180° turn

STYLE J



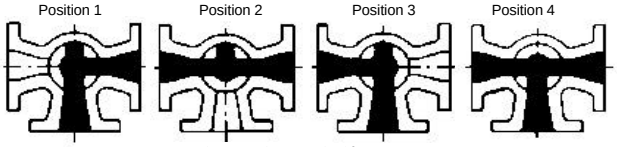
3-way, 3-port, 270° turn

STYLE K



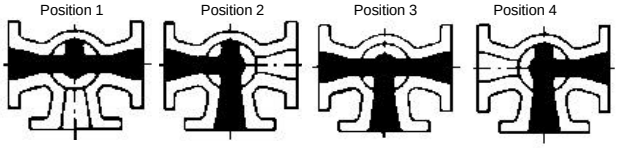
3-way, 3-port, 270° turn

STYLE L



3-way, 3-port, 270° turn

STYLE M



3-way, 3-port, 270° turn

STYLE N

HOW TO ORDER

When ordering three-way valves secify the size and figure number of the valve, plus the style letter of the port position desired. **Example:** 3" - figute 201T, Style C. Three-way and four-way valves can be furnished without stop rings to allow a full 360° turn.

Milliken Pressure/Temperature Ratings

Valve Specification	Pressure/Temperature Rating
Valves fitted with ANSI B16.1 Flanges - Class 125 Sizes 1/2 to 12 inch	125 psi at 450°F 200 psi from -20° to 150°F
Valves fitted with ANSI B16.1 Flanges - Class 125 Sizes 14 to 24 inch	100 psi at 350°F 150 psi from -20° to 150°F
Valves fitted with ANSI B16.1 Flanges - Class 250 Sizes 1/2 to 12 inch	250 psi at 450°F 500 psi from -20° to 150°F
Valves fitted with ANSI B16.1 Flanges - Class 250 Sizes 14 to 24 inch	200 psi at 406°F 300 psi from -20° to 150°F
Screwed End Valves - Similar to Class 250	253 psi at 500°F 500 psi from -23° to 248°F

Note
The pressure/temperature ratings given apply to the valve only.
The maximum temperature at which a valve may operate depends upon the sealing compound with which the valve is filled. However, should the sealing compound have a higher temperature than the temperature given in the pressure/temperature ratings then the lower temperature must apply.

Hydrostatic Test Pressure

Note: All valves 1/2 to 1 1/2 in inclusive are pneumatically tested to:

Body: 300 psi
Seat: 100 psi

FIG. No.	END CONNECTION	CLASS RATING	NOM. SIZE	PRESSURE	
				BODY TEST psi	SEAT TEST psi
170M 200M 200R 200L/T 220L/T	Screwed	125	2 in & above	348	200
200LL	Screwed	125	2 in & above	350	-
400M	Screwed	250	2 in & above	750	500
171M 201M 201R 201L/T 221L/T 205M	Flanged	125	2 in to 12 in 14 in & above	350 265	200 150
201LL	Flanged	125	2 in & above	350	-
401M	Flanged	250	2 in to 12 in	750	500
240M	Screwed	125	2 in & above	350	200
241M	Flanged	125	2 in & above	350	200

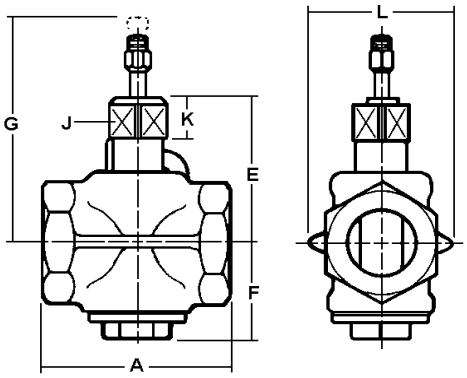
Milliken

Short Pattern
Rectangular Port
Full Bore

Class 125 - ANSI B16.1 Flanges
Class 125 - NPT Screwed End Valves
PN16 - Metric Flanges
PN16 - Screwed End Valves

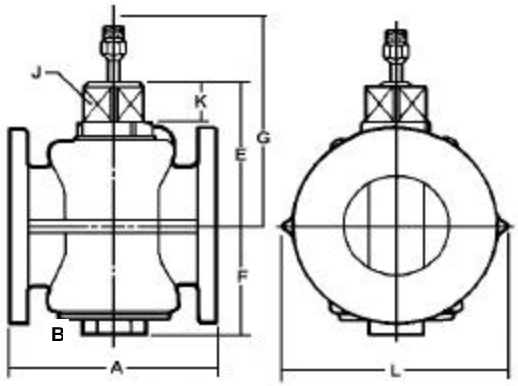
See page 10 for Pressure/Temperature Ratings and Test Pressures.

200M

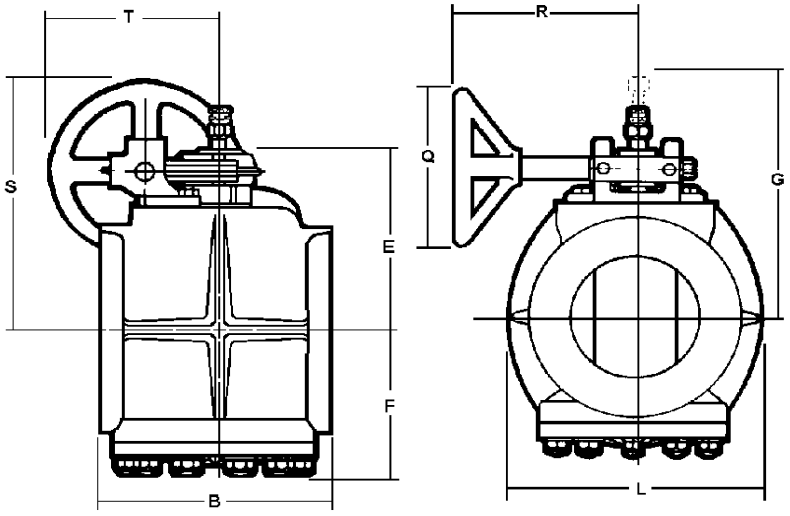


200M
Sizes 1/2in to 4in

201M



201M
Sizes 1/2in to 4in
Sizes 5in through 8in have bolted bottom cover



201MG
Sizes 5in to 8in

Valve Identification

End Connectors	Operation	Fig. No.
Screwed	Wrench	200M
Flanged	Wrench	201M
Flanged	Geared	201MG

Specification

Screwed end valves are supplied screwed to NPT standards. Valves are supplied with flanges to ANSI B16.1 Class 125. Flanged valves 2 inch to 8 inch face dimensions are in accordance with ANSI B16.10 short pattern and are therefore interchangeable with Class 125 cast iron gate valves. The close proximity of the flange to the body on valves sizes 4 inch to 8 inch does not allow room for all bolt holes to be drilled thru. When required drilled, these valves are supplied with tapped and clearance holes as necessary.

Notes:

We Recommend that valves 5 inches and above are gear operated.
Fully enclosed gearing supplied as standard.
For particulars of wrenches see page 28.
Valves can be supplied with steam jacketed bottom cover.

Details of Tapped Holes

	Metric	ANSI 125
5/8 in - 11 UNC	-	4 in
3/4 in - 10 UNC	-	5, 6 & 8 in
M16	100 & 125 mm	-
M20	150, 175 & 200 mm	-

Flanges are drilled unless otherwise specified by the customer.

Sealing Compounds

Sealing Compound recommendations are given on pages 29-30.

Wrench Operated

Nominal Size		in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8
		mm	15	20	25	32	40	50	65	80	100	125	150	200
200M End to End (Screwed)	A	in	3 3/16	3 1/2	4 3/16	4 3/8	4 5/8	6	6 1/2	7 3/8	9	-	-	-
		mm	81	88	106	111	117	152	165	187	229	-	-	-
201M End to End (Flanged)	B	in	4 1/4	4 1/2	4 3/4	4 3/8	4 5/8	7	7 1/2	8	9	10	10 1/2	11 1/2
		mm	108	114	121	111	117	178	190	203	229	254	267	292
Center of Port to Top of Plug	E	in	2 3/8	2 1/2	2 5/8	3 1/4	3 5/8	5	5 3/8	6 5/8	7 1/4	8 1/4	9 1/4	10 1/4
		mm	60	64	67	83	92	127	137	168	184	185	186	187
Center of Port to Bottom	F	in	1 1/2	1 3/4	2	2 1/2	2 3/4	3 1/4	3 3/4	4 3/8	5 5/8	6 5/8	7 5/8	8 5/8
		mm	38	45	51	64	70	83	95	111	143	144	145	146
Clearance to remove Sealing Screw	G	in	4	4 1/8	4 1/4	4 7/8	5	7 3/4	8 1/8	10	10 5/8	11 5/8	12 5/8	13 5/8
		mm	102	105	108	124	127	197	206	254	270	271	272	273
Square of Plug Head A/F	J	in	27/32	27/32	27/32	1 1/16	1 1/16	1 3/8	1 3/8	2	2 1/4	3 1/4	4 1/4	5 1/4
		mm	21	21	21	27	27	35	35	51	57	58	59	60
Height of Plug Head	K	in	7/8	7/8	27/32	1	1	1 3/8	1 3/8	2	2	3	4	5
		mm	22	22	21	25	25	35	35	51	51	52	53	54
Greatest Width of Body	L	in	1 7/8	2 1/8	2 1/2	2 7/8	3 1/2	4 1/2	5 1/4	6 3/4	8 5/8	10 5/8	11 5/8	14
		mm	48	54	64	73	89	114	133	172	219	270	292	356
Diameter of Sealing Compound Stick		in	3/8	3/8	3/8	3/8	1/2	1/2	5/8	5/8	5/8	5/8	5/8	7/8
		mm	9.5	9.5	9.5	9.5	13	13	16	16	16	16	16	22
Wrench			G	G	G	J	J	L	L	O	P	P	Q	Q
Approximate Weight (Screwed)		lb	1.8	2.6	4.6	5.7	6.8	13	19	31	68	-	-	-
		kg	0.8	1.2	2.1	2.6	3.1	6	8.8	14	31	-	-	-
(Flanged)		lb	4.8	5.9	8.6	10	13	22	29	42	84	128	169	286
		kg	2.2	2.7	3.9	4.6	5.7	10	13	19	38	58	77	130

Gear Operated

Nominal Size		in	5	6	8
		mm	125	150	200
201MG End to End	B	in	10	10 1/2	11 1/2
		mm	254	267	292
Center of Port to Top of Plug	E	in	8 3/8	9 1/2	12
		mm	213	241	305
Center of Port to Bottom	F	in	6 3/4	7 1/8	8 3/4
		mm	172	181	222
Clearance to remove Sealing Screw	G	in	11 3/4	12 7/8	16 5/8
		mm	299	327	422
Greatest Width of Body	L	in	10 5/8	11 5/8	14
		mm	219	219	219
Diameter of Wheel	Q	in	12	12	12
		mm	305	305	305
Center to Face of Wheel	R	in	10	10	10
		mm	254	254	254
Center to Top of Wheel	S	in	12 3/4	14 1/8	16 15/32
		mm	324	359	418
Center to End of Wheel	T	in	10	10	10
		mm	254	254	254
Diameter of Sealing Compound Stick		in	5/8	5/8	7/8
		mm	16	16	22
Approximate Weight		lb	158	209	367
		kg	72	95	167

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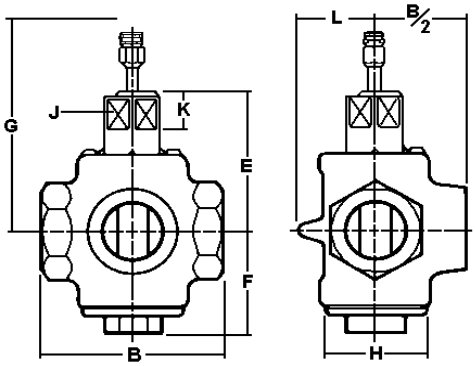
Three way pattern
Full Bore
Standard Port
and
Transflow Port

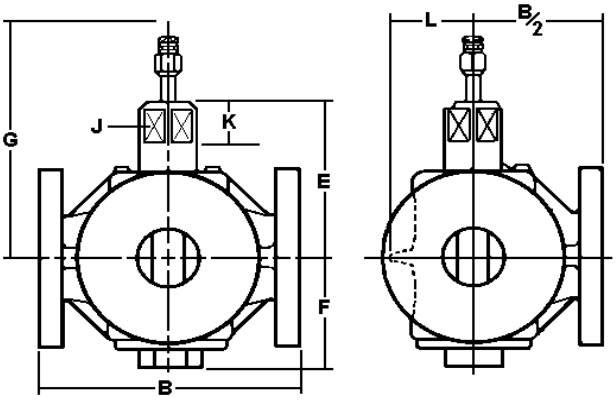
Class 125 - ANSI B16.1 Flanges
Class 125 - NPT Screwed End Valves
PN16 - Metric Flanges
PN16 - Screwed End Valves

See page 10 for Pressure/Temperature Ratings and Test Pressures.

200L, 220L
200T, 220T

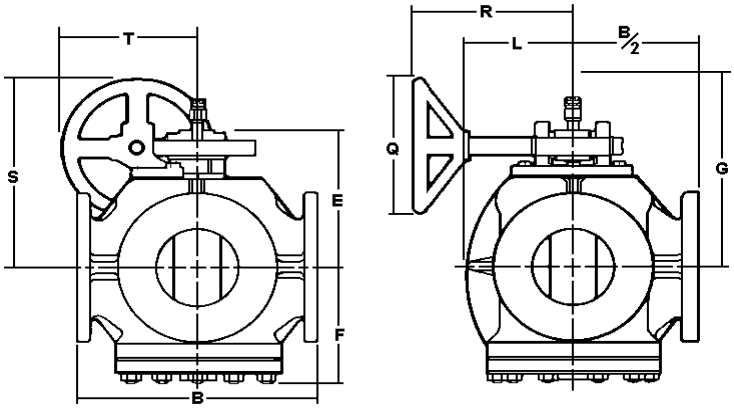


200L, 220L
200T, 220T
Sizes 1/2in to 4in+
+4in size has bolted cover



201L, 221L
201T, 221T
Sizes 1/2in to 4in+
+4in size has bolted cover

201L, 221L
201T, 221T



200LG, 220LG
200TG, 220TG
Sizes 5in to 8in

Notes:

We Recommend that valves 5 inches and above are gear operated.
Fully enclosed gearing supplied as standard.
For particulars of wrenches see page 28.
Valves can be supplied with steam jacketed bottom cover.
All valves can be supplied Transflow pattern, which will allow reduced flow through ports during the rotation of the plug from one position to another.

Sealing Compounds

Sealing Compound recommendations are given on pages 29-30.

Specification

Screwed end valves are supplied screwed to NPT standards. Valves are supplied with flanges to ANSI B16.1 Class 125.

Flanges are drilled unless otherwise specified by the customer.

Valve Identification

End Connectors	Operation	Fig. No.
	Non-Transflow	
Screwed	Wrench	200L
Screwed	Wrench	200T
Flanged	Wrench	201L
Flanged	Wrench	201T
Flanged	Geared	201LG
Flanged	Geared	201TG

End Connectors	Operation	Fig. No.
	Transflow	
Screwed	Wrench	220L
Screwed	Wrench	220T
Flanged	Wrench	221L
Flanged	Wrench	221T
Flanged	Geared	221LG
Flanged	Geared	221TG

Wrench Operated

Nominal Size			1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
		mm	15	20	25	32	40	50	65	80	100
200L/T 220L/T End to End (Screwed)	A	in	3 7/8	3 7/8	4 1/4	5	5 1/2	6 3/4	7 5/8	9	11 3/8
		mm	98	98	108	127	140	171	194	229	289
201L/T 221L/T End to End (Flanged)	B	in	5 7/8	5 7/8	6	6 1/2	7 1/4	8 1/2	9 3/4	11 1/2	14
		mm	149	149	152	165	184	216	248	292	356
Center of Port to Top of Plug	E	in	2 5/8	2 5/8	3 1/8	3 5/8	4 1/2	5 3/8	6 1/8	6 7/8	8 1/2
		mm	67	67	79	92	114	137	156	175	216
Center of Port to Bottom	F	in	1 7/8	1 7/8	2 1/8	2 5/8	3	3 3/4	4 3/8	5 3/8	6
		mm	48	48	54	67	76	95	111	137	152
Clearance to remove Sealing Screw	G	in	4 1/4	4 1/4	4 5/8	5 1/4	5 1/4	8 1/8	8 3/4	10 1/8	11 7/8
		mm	108	108	118	133	133	206	222	257	302
Square of Plug Head A/F	J	in	27/32	27/32	1 1/16	1 1/16	1 3/8	1 3/8	2	2 1/4	2 11/16
		mm	21	21	27	27	35	35	51	57	68
Height of Plug Head	K	in	7/8	7/8	1	1	1 3/8	1 3/8	2	2	2 1/2
		mm	22	22	25	25	35	35	51	51	64
Greatest Width of Body	L	in	1 1/8	1 1/8	1 5/8	1 3/4	2 1/4	2 5/8	3 3/8	4 3/8	6
		mm	29	29	41	45	57	67	86	111	152
Diameter of Sealing Compound Stick		in	3/8	3/8	3/8	3/8	1/2	1/2	5/8	5/8	5/8
		mm	9.5	9.5	9.5	9.5	13	13	16	16	16
Wrench			G	G	J	J	L	L	O	P	Q
Approximate Weight (Screwed)		lb	3.7	3.5	5.5	8.4	11	18	33	64	112
		kg	1.7	1.6	2.5	3.8	5.2	8.4	15	29	51
(Flanged)		lb	3.7	3.5	5.5	8.4	11	18	33	64	112
		kg	1.7	1.6	2.5	3.8	5.2	8.4	15	29	51

Gear Operated

Nominal Size			5	6	8
		mm	125	150	200
201MG End to End	B	in	15 1/4	16	22 3/4
		mm	387	406	578
Center of Port to Top of Plug	E	in	9 3/4	11 1/2	13 7/8
		mm	248	292	352
Center of Port to Bottom	F	in	7 5/8	8 1/4	11 5/8
		mm	194	210	295
Clearance to remove Sealing Screw	G	in	13	14 3/4	18 1/2
		mm	330	375	470
Greatest Width of Body	L	in	6 5/8	7 3/8	10 3/4
		mm	168	187	273
Diameter of Wheel	Q	in	12	12	12
		mm	305	305	305
Center to Face of Wheel	R	in	10	10	10
		mm	254	254	254
Center to Top of Wheel	S	in	21	23 1/4	27 5/8
		mm	533	591	702
Center to End of Wheel	T	in	10	10	10
		mm	254	254	254
Diameter of Sealing Compound Stick		in	5/8	5/8	7/8
		mm	16	16	22
Approximate Weight		lb	275	332	711
		kg	125	151	323

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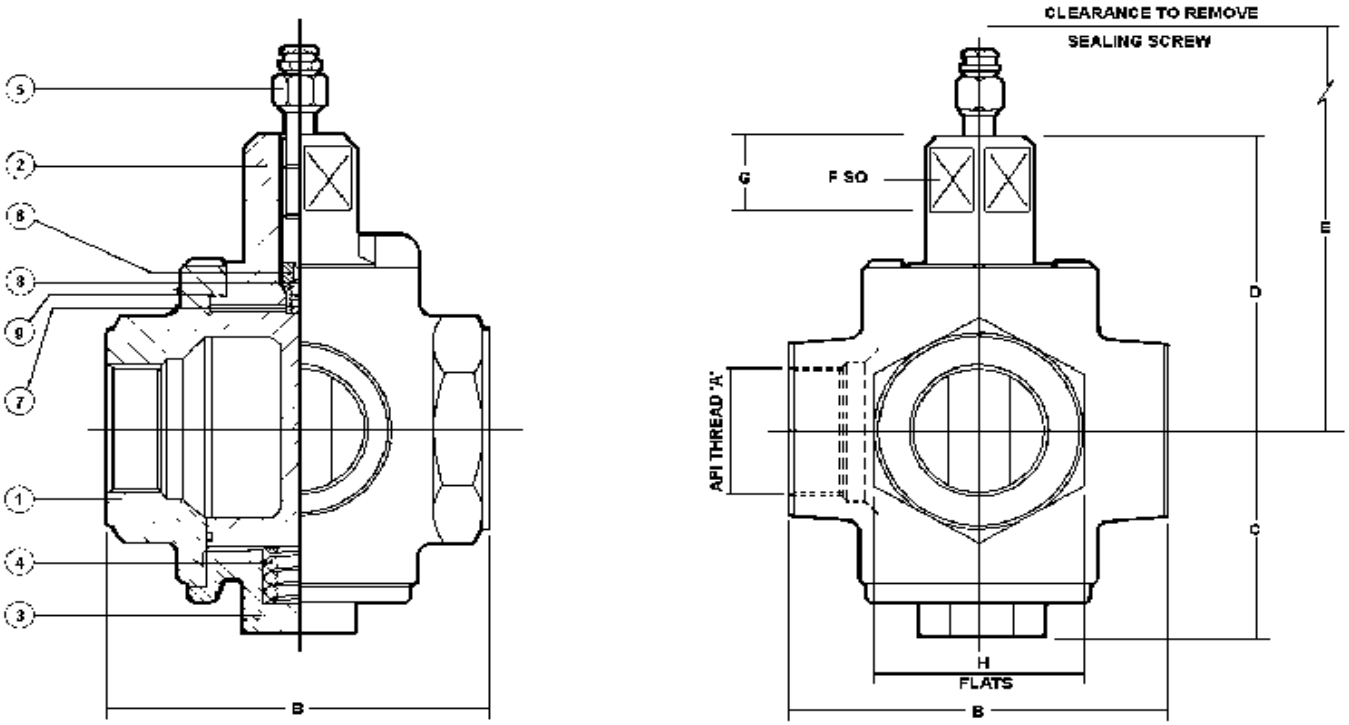
Four-way Pattern
Standard Port

Class 125 - NPT Screwed End Valves
PN16 - Screwed End Valves

See page 10 for Pressure/Temperature Ratings and Test Pressures.

Fig. 200LL - screwed end connections



WRENCH OPERATED						
Nominal Size		**1/2"**	**3/4"**	**1"**	**1 1/2"**	**2"**
End to End (Screwed)	**B**	3 7/8	3 7/8	4 1/4	5 1/2	6 3/4
Center of Port to Bottom	**C**	1 7/8	1 7/8	2 1/16	3	3 3/4
Center of Port to Top of Plug	**D**	2 5/8	2 5/8	3 1/16	4 1/2	5 5/16
Clearance to Remove Sealing Screw	**E**	4 1/4	4 1/4	4 1/2	5 15/16	8 3/8
Square of Plug Head	**F**	27/32	27/32	1 1/16	1 3/8	1 3/8
Height of Plug Head	**G**	27/32	27/32	15/16	1 3/8	1 3/8
A/F Dimension	**H**	1 3/4	1 3/4	2 1/16	2 3/4	3 1/2
Wrench		G	G	J	L	L
Weight		5	5	7	16	26

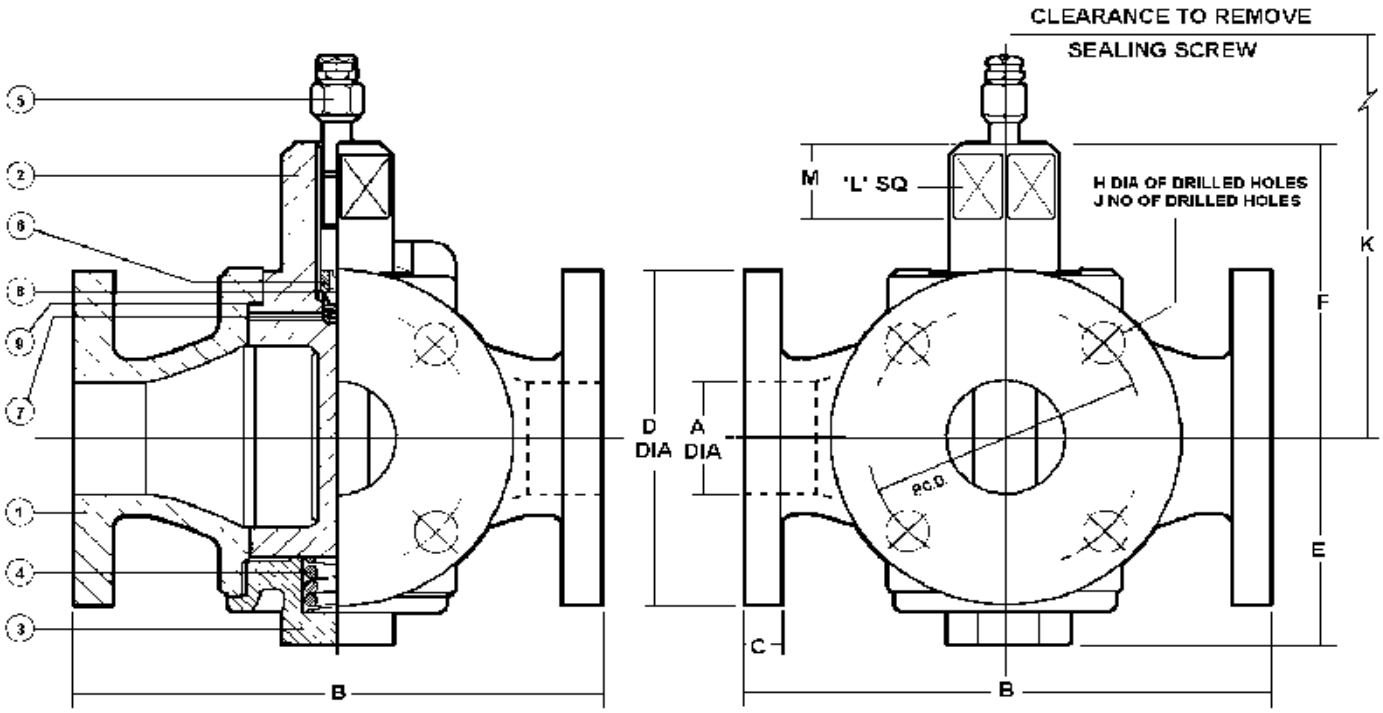
Milliken

Four-way Pattern
Standard Port

Class 125 - ANSI B16.1 Flanges
PN16 - Metric Flanges

See page 10 for Pressure/Temperature Ratings and Test Pressures.

Fig. 201LL - flanged end connections



WRENCH OPERATED

Nominal Size		**1 1/2"**	**2"**	**2 1/2"**	**3"**
201LL Face to Face	**B**	**8**	**9**	**10**	**11**
Flange Dimensions	**C**	**9/16**	**5/8**	**11/16**	**3/4**
Flange Diameter	**D**	**5**	**6**	**7**	**7 1/2**
Center of Port to Bottom	**E**	**3**	**3 3/4**	**4 3/8**	**5 3/8**
Center of Port to Top of Plug	**F**	**4 1/2**	**5 5/16**	**6 1/16**	**6 7/8**
Diameter of Bolt Circle	**G**	**3 7/8**	**4 3/4**	**5 1/2**	**6**
Diameter of Drilled Holes	**H**	**5/8**	**3/4**	**3/4**	**3/4**
Number of Drilled Holes	**J**	**4**	**4**	**4**	**4**
Clearance to Remove Sealing Screw	**K**	**6**	**8 3/8**	**9 1/8**	**10 1/2**
Square of Plug Head	**L**	**1 3/8**	**1 3/8**	**2**	**2 1/4**
Height of Plug Head	**M**	**1 3/8**	**1 3/8**	**2**	**2**
Wrench		**L**	**L**	**O**	**P**
Weight		**26**	**44**	**75**	**101**

Milliken

ACCESSORIES

for use on Milliken lubricated parallel plug valves

STANDARD WRENCH No.106

Wrenches are not normally supplied with valves. They must be ordered separately.

Standard Malleable Iron Wrenches are quite satisfactory for operating all sizes of valves.

Wrenches have cast bosses, which for a slight additional charge, can be drilled, tapped and fitted with a set screw if the wrench is to be permanently attached to the valve.

Reference Letters		G	J	L	O	P	Q
Size of Square (across flats)	in	27/32	1 1/16	1 3/8	2	2 1/4	2 11/16
Center to End of lever	in	6 3/4	8 1/2	10 1/2	14 1/2	17 1/2	21
Weight	lb	0.5	1	1.5	3.5	5	7.5

LOCKING & SEALING DEVICE

Wrench Size	G	J	L	O	P	Q
Reference Letters	LSG	LSJ	LSL	LSO	LSP	LSQ

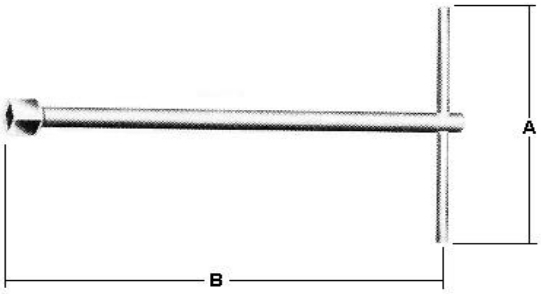
For straightway valves, locking & sealing devices are the same as the corresponding wrench size. Specify by letter.

Steam Jackets can be supplied when the valve is going to be used for viscous services such as Heavy Oil & Asphalt. Steam Jackets are available for valves 1 1/2" thru 10".

Other accessories are available. Please consult factory for pricing and acailability.

STEAM JACKETS

TEE HANDLE PATTERN WRENCH



These wrenches have cast sockets welded to steel pipes and are made to order. When ordering, give dimension B.

Reference letters	TG	TJ	TL	TO	TP	TQ
Size of Square (across flats)	27/32	1 1/16	1 3/8	2	2 1/4	2 11/16
Dimension "A"	6 3/4	8 1/2	10 1/2	14 1/2	17 1/2	21

DOUBLE ENDED PATTERN WRENCH

These wrenches have a malleable iron socket with steel pipe ends drilled for chain connection. Chains are not supplied unless specially ordered. The exact length of chain required on each end of the wrench should be specified.

Reference letters	DG	DJ	DL	DO	DP	DQ
Size of Square (across flats)	27/32	1 1/16	1 3/8	2	2 1/4	2 11/16
Overall Length	19	22	26 1/8	36 3/8	42	51 3/4