

Building connections that last™



# Sharpe® Series 77

Three & Four Way High  
Performance Ball Valve  
Datasheet



# Three & Four Way High Performance Ball Valve

## Sharpe® Series 77



### Design & Features

#### Body Material

316 Stainless Steel & Carbon Steel

#### Full Port Design

All sizes from 1/2" through 4" are full port designs at all connections.

Bodies rated to 600 CWP.

#### Stem Design

Live-loaded, bottom entry, blowout proof stem featuring packing that extends valve cycle life over conventional ball valves and is best choice for actuation.

Stem seals are live-loaded using Belleville springs to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment.

#### ISO 5211 Integral Direct Mount Mounting Pad

Direct mount pad eliminates need for brackets and couplers\*.

Ideal for actuation.

Actuators may be retrofitted on existing Sharpe® Series 77 without disruption of line integrity.

Allows for secondary containment unit to be added when necessary.

#### Multiport Configurations

The Sharpe® Series 77 Valves are ideal choices for many piping designs involving diverting or mixing.

In certain applications a single Series 77 valve can replace two, three or four two-way valves, reducing cost and saving space.

#### Four-Seat Design

Three-way and four-way Series 77 valves utilize four seats to securely support the ball.

#### Trunnion Support Ball

Sizes 2" and larger valves incorporate a trunnion-supported ball for positive centering and reduced seat wear.

#### End Connections

Series 77 valves are available in many end connections, including threaded, socket weld and ASME Class 125/150 flanged.

#### Lockable Handle

All Sharpe® Series 77 valves are supplied with lockable lever or pipe handles.

#### Traceability

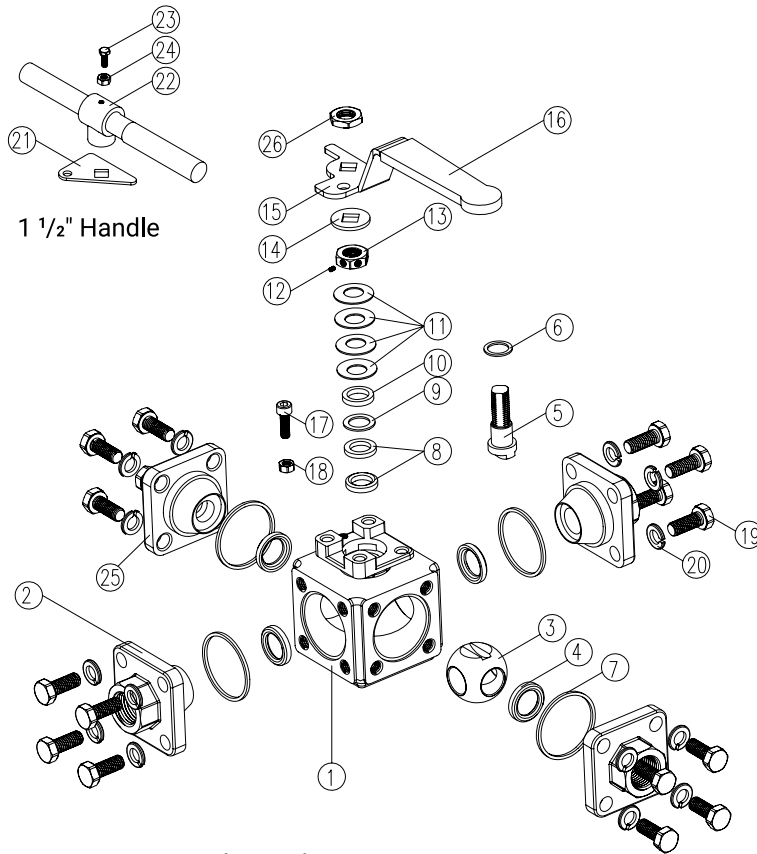
Body and end piece castings are marked with heat codes providing traceability to the chemical analysis and material test reports performed at the foundry. CMTR's (Certified Material Test Reports) are available upon request.

#### Note:

\*Mounting bracket must be used for high temperature (>180° F) and steam applications.

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### Parts & Materials 1/2" – 1 1/2"

No.	Part Name	Qty.	Material
1	Body	1	316 Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB**
2	Ends	3 or 4	316 Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB**
3	Ball	1	316 Stainless Steel
4	Seat	4	TFM™ 1600/TFM™ Cavity Filler
5	Stem	1	316 Stainless Steel
6	Lower Thrust Washer	1	TFM™ 1600
7	Body Seal	4	PTFE
8	Chevron Stem Packing	1 set	PTFE
9	Thrust Washer	1	TFM™ 1600
10	Gland	1	300 Series Stainless Steel
11	Belleville Washer	4	SUS304-CSP
12	Socket Set Screws	1	300 Series Stainless Steel
13	Stem Nut	1	300 Series Stainless Steel

No.	Part Name	Qty.	Material
14	Washer	1	300 Series Stainless Steel
15	Handle	1	300 Series Stainless Steel
16	Handle Sleeve	1	Vinyl
17	Stop Bolt	1	300 Series Stainless Steel
18	Stop Nut	1	A2-70
19	Bolts	16	300 Series Stainless Steel
20	Bolt Washer	16	300 Series Stainless Steel
21	Stop Plate	1	300 Series Stainless Steel
22	Handle Adapter	1	300 Series Stainless Steel
23	Bolt	1	300 Series Stainless Steel
24	Nut	1	300 Series Stainless Steel
25	Body Flange	1/0*	316 Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB**
26	Nut	1	300 Series Stainless Steel

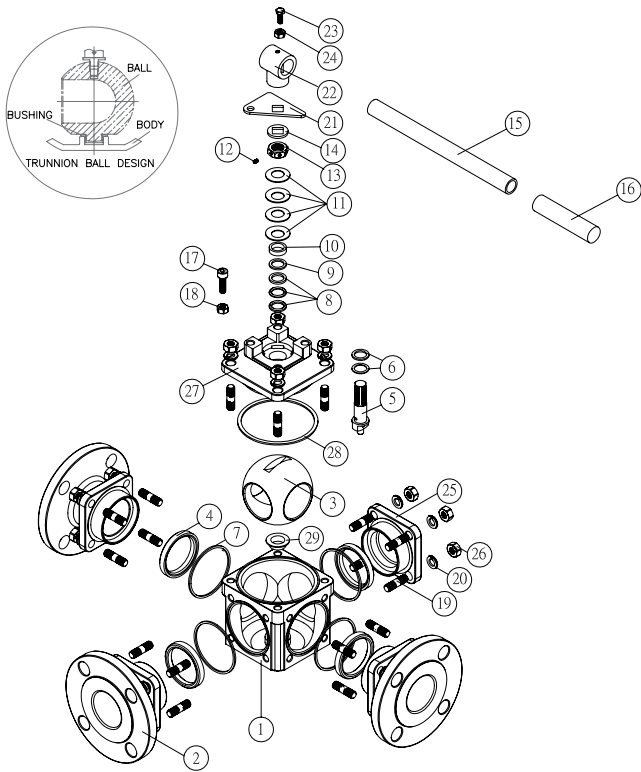
**Note:**

\*1 for three-way, 0 for four-way

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# Three & Four Way High Performance Ball Valve

## Sharpe® Series 77



### Parts & Materials 2" - 4"

No.	Part Name	Qty.	Material
1	Body	1	316 Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB**
2	Ends	3 or 4	316 Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB**
3	Ball	1	316 Stainless Steel ASTM A351 CF8M
4	Seat	4	TFM™ 1600/ TFM™ Cavity Filler
5	Stem	1	316 Stainless Steel
6	Lower Thrust Washer	2	TFM™ 1600
7	Body Seal	4	PTFE
8	Chevron Stem Packing	1 set	PTFE
9	Thrust Washer	1	TFM™ 1600
10	Gland	1	300 Series Stainless Steel
11	Belleville Washer	4	SUS304-CSP
12	Socket Set Screws	1	300 Series Stainless Steel
13	Stem Nut	1	300 Series Stainless Steel
14	Washer	1	300 Series Stainless Steel
15	Handle	1	300 Series Stainless Steel

No.	Part Name	Qty.	Material
16	Handle Sleeve	1	Vinyl
17	Stop Bolt	1	300 Series Stainless Steel
18	Stop Nut	1	A2-70
19	Stud	20	300 Series Stainless Steel
20	Stud Washer	20	300 Series Stainless Steel
21	Stop Plate	1	300 Series Stainless Steel
22	Handle Adapter	1	300 Series Stainless Steel
23	Bolt	1	300 Series Stainless Steel
24	Nut	1	300 Series Stainless Steel
25	Body Flange	1/0*	316 Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB**
26	Stud Nut	20	300 Series Stainless Steel
27	Body Cover	1	316 Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB**
28	Cover Seal	1	PTFE
29	Bushing	1	TFM™ 1600

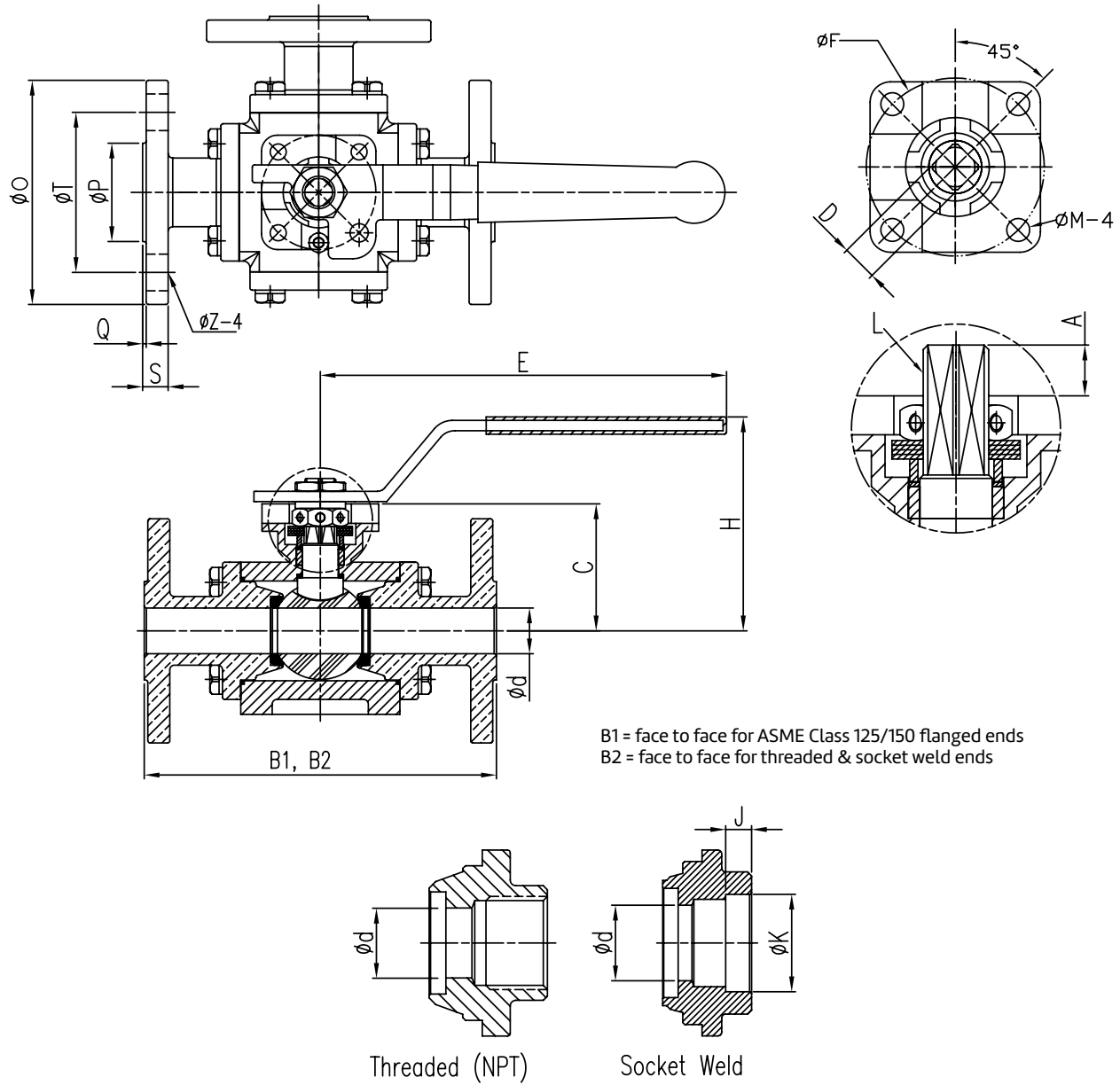
**Note:**

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# Three & Four Way High Performance Ball Valve

## Sharpe® Series 77



### Dimensions 1/2" - 1 1/2"

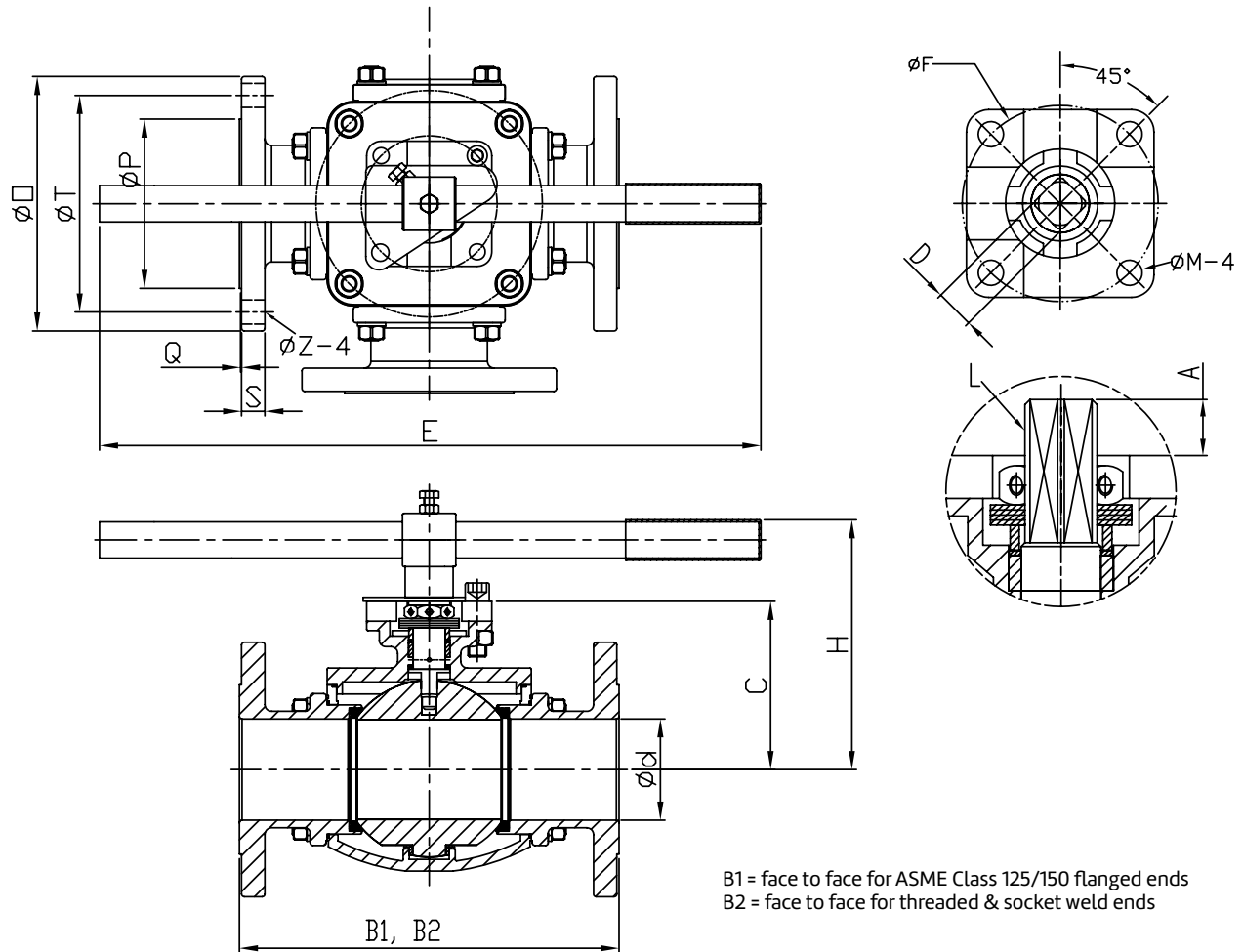
Size	A	B1	B2	C	Ød	D	E	ØF	H	J	K	L	M	ØO	ØP	Q	S	ØT	ØZ
1/2	0.35	5.84	4.20	1.74	0.610	0.354	5.30	1.65 (F04)	3.19	0.394	0.858	7/16-20 UNF	0.236	3.50	1.38	0.06	0.44	2.38	0.63
3/4	0.43	6.06	4.35	2.19	0.787	0.433	6.99	1.97 (F05)	3.72	0.512	1.079	9/16-18 UNF	0.276	3.86	1.69	0.06	0.44	2.75	0.63
1	0.43	6.63	4.98	2.37	0.984	0.433	6.99	1.97 (F05)	3.90	0.512	1.343	9/16-18 UNF	0.276	4.25	2.00	0.06	0.44	3.13	0.63
1-1/2	0.59	8.36	6.05	3.32	1.496	0.551	9.90	2.75 (F07)	5.16	0.512	1.929	M18x2.5	0.354	5.00	2.88	0.06	0.56	3.88	0.63

#### Note:

The dimensions above are for information only. Please refer to Sharpe® Valves if you need dimensions for construction.

# Three & Four Way High Performance Ball Valve

## Sharpe® Series 77



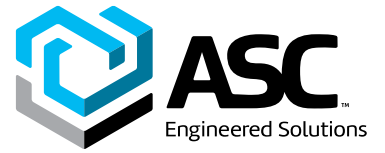
### Dimensions 2" - 4"

Size	A	B1	B2	C	Ød	D	E	ØF	H	J	K	L	M	ØO	ØP	Q	S	ØT	ØZ
2	0.60	8.66	6.73	3.59	2.008	0.551	9.90	2.75 (F07)	5.43	0.630	2.402	M18x2.5	0.354	6.00	3.62	0.06	0.63	4.75	0.75
2 ½	1.05	11.22	9.42	4.97	2.559	0.669	19.55	4.02 (F10)	7.38	0.630	3.031	7/8-14 UNF	0.472	7.00	4.13	0.06	0.69	5.50	0.75
3	1.05	11.22	9.42	4.97	2.992	0.669	19.55	4.02 (F10)	7.38	0.630	3.551	7/8-14 UNF	0.472	7.52	5.00	0.06	0.75	6.00	0.75
4	1.20	13.66	11.38	5.95	3.937	0.866	23.48	4.02 (F10)	8.39	1.181	4.543	1 1/8-12 UNF	0.472	9.02	6.18	0.06	0.94	7.50	0.75

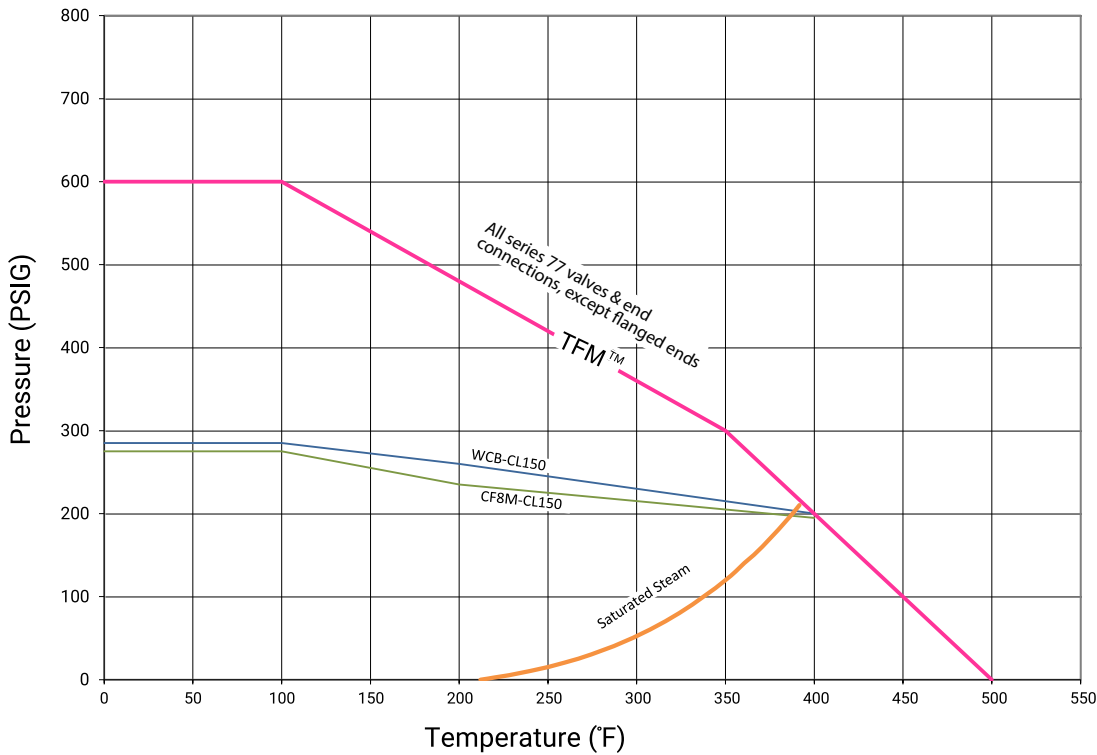
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# Three & Four Way High Performance Ball Valve Sharpe® Series 77



**Pressure - Temperature Ratings Series 77**



## C<sub>v</sub> Data

Valve Size	T Port	L Port
1/2	13	8
3/4	22	13
1	35	21
1-1/2	85	49
2	160	93
2-1/2	267	154
3	365	211
4	649	375

## Torque (at 600 CWP)

Valve Size	IN-LB
1/2	113
3/4	165
1	312
1-1/2	538
2	755
2-1/2	1475
3	1475
4	1736

## Approx. Weight (Lbs.)

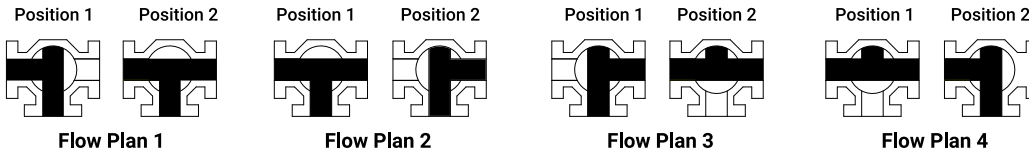
Valve Size	Body	Threaded, Socket Weld, Butt Weld	Flanged End		Clamp End	Blind End
			CL150	CL300		
1/2"	2.00	0.60	1.60	2.00	0.80	0.50
3/4"	2.50	0.80	2.00	3.20	0.95	0.50
1"	3.10	1.30	2.70	4.25	1.60	0.95
1-1/2"	5.50	1.80	5.00	8.22	2.20	1.65
2"	5.50	2.70	6.00	8.20	2.90	1.90
2-1/2"	8.20	-	10.00	12.90	3.90	3.00
3"	11.50	-	11.00	16.60	4.20	3.20
4"	21.50	-	21.90	30.00	9.70	8.30

# Three & Four Way High Performance Ball Valve

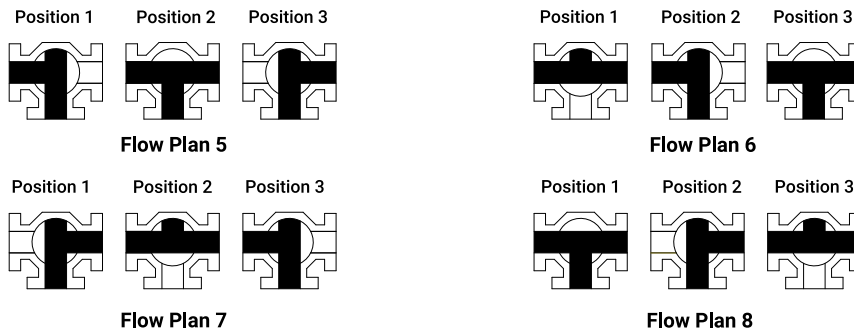
## Sharpe® Series 77

### Technical Information

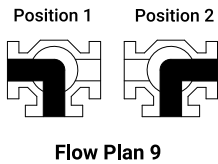
#### T - Port 90° Turn



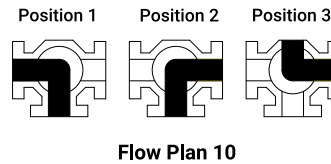
#### T- Port 180° Turn



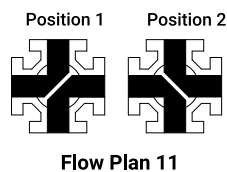
#### L - Port 90° Turn



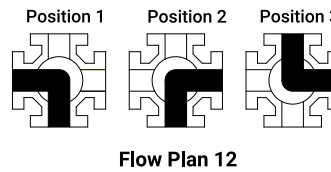
#### L - Port 180° Turn



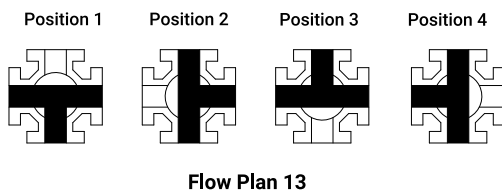
#### LL - Port 90° Turn



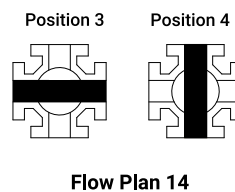
#### L - Port 180° Turn



#### T-Port 270° Turn



#### Four - Way 90° Turn



#### Note:

\*Series 77 Valves are not to be used as an isolation valve.



# Three & Four Way High Performance Ball Valve

## Sharpe® Series 77



## How to order Sharpe® Series 77

### Example:

A 3" flanged (code D) 3-way ball valve design (flow plan 9), with cast ASTM A351 CF8M body & end connections, stainless ball & stem, TFM seats, and PTFE seals, is:

**3 77-66MT6D9**

3	77	-	6	6	M	T	6	D	9
Size	Series		Body Material	Ball & Stem Material	Seat Material	Seal Material	End Material	End Connection	Flow Plan
1/2	77	6	Stainless Steel (cast ASTM A351 CF8M)	316 Stainless Steel	M TFM™ Seat	T PTFE	6 Stainless Steel (cast ASTM A351 CF8M)	D ASME Class 125/150 RF Flange	1 8
3/4									2 9
1									3 10
1-1/2									4 11
2		4	Carbon Steel (cast A216 WCB)**		C TFM™ Cavity Fill		4 Carbon Steel (cast A216 WCB)**	A Threaded Ends (2-1/2" - 4")**	5 12
2-1/2									6 13
3									7 14
4									
								B Socket Weld (2- 1/2" - 4")**	
								C Butt-weld Sch. 10, 40, & 80**	

### Note:

\*\*POA.

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