



Valves, Automation & Controls

SERIES 84/99 ***& FS84/FS99***



HIGH PERFORMANCE 3-PIECE BALL VALVE
STANDARD / FULL PORT
3-PIECE BALL VALVE

SMITH-COOPER®
INTERNATIONAL

Design & Features

Body Material

316 Stainless Steel, Carbon Steel, Hastelloy C & Alloy 20

3-Piece Design

In-line serviceable swing-out center section allows easy access to internal valve components without disturbing alignment of pipe.

Stem Design

Live-loaded, bottom entry, blowout proof anti-static stem features packing that extends valve cycle life over conventional ball valves and is the 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.

Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly. Design compensates for bolt expansion and reduces the chance of external leakage. Helps prevent seal ruptures in high pressure, cryogenic or steam applications.

Encapsulated Body Bolts

Heavy duty stainless steel bolting is protected from outside environment assuring valve integrity.

Ideal for wash-downs.

Slotted Seat Design

Relief slots help equalize body pressure and assure leak-tight sealing. Seats also provide a wiping action that cleans ball and seats each time valve is cycled.

Choice of Seats and Seals

A wide variety of seat and seal materials are readily available for the most demanding applications including; TFE, RTFE, TFM®, Nova, Delrin®, PEEK, EPDM and Viton®.

Variety of End Combinations

A wide choice of end connections are available including, but not limited to; threaded, socket weld, butt weld, flanged and flush bottom tank pad ends.

ISO 5211 Integral Mounting Pad

Ideal for actuation.

Centering lip feature assures precise alignment of bracket, stem and coupler.

Actuators may be retrofitted on existing Sharpe® Series 84/99 without disruption of line integrity.

Allows for secondary containment unit to be added when necessary.

Lockable Handle

All Sharpe® Series 84/99 & FS84/FS99 valves are supplied with lever or pipe handles and are designed to permit locking the valve in either the open or closed position.

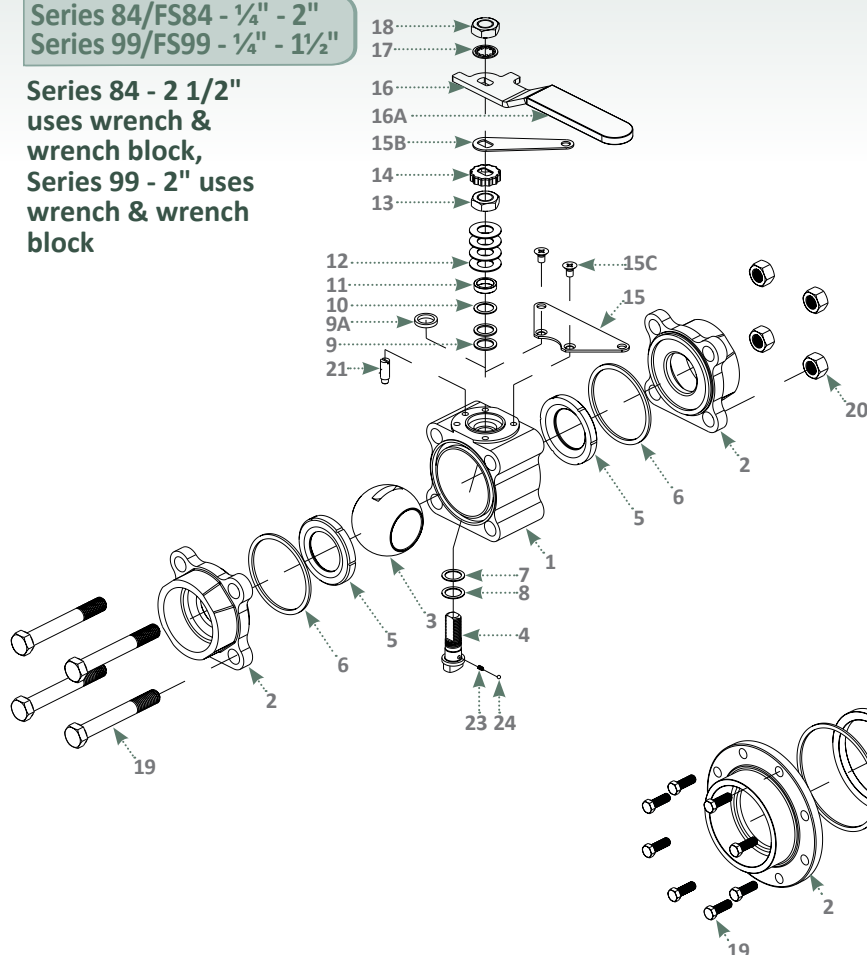
Traceability

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.

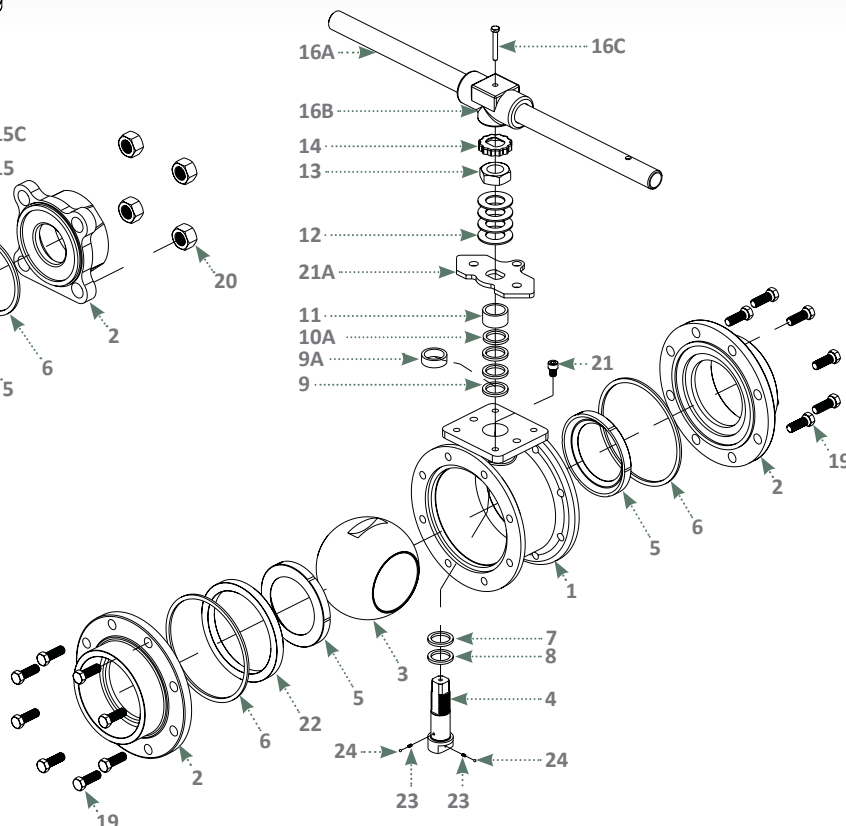
Parts & Materials

Series 84/FS84 - 1/4" - 2"
Series 99/FS99 - 1/4" - 1 1/2"

Series 84 - 2 1/2"
uses wrench &
wrench block,
Series 99 - 2" uses
wrench & wrench
block



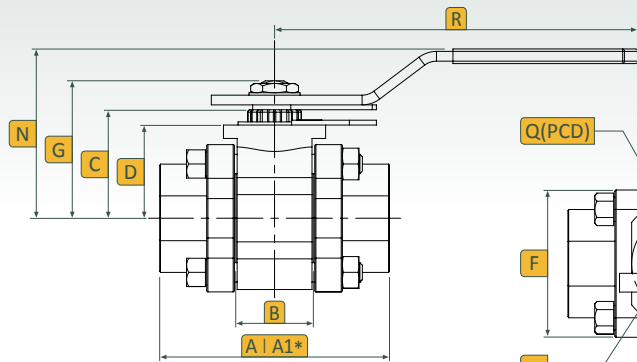
Series 84/FS84 - 2 1/2" - 4"
Series 99/FS99 - 2" - 3"



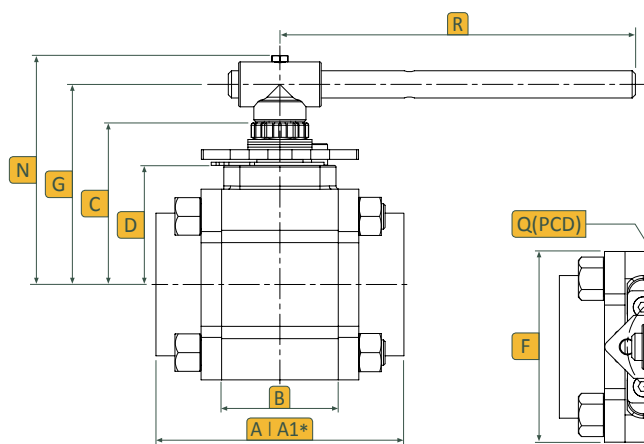
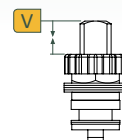
PART NO.	PART	QTY.	MATERIAL
1	Body	1	316 Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB Alloy 20 ASTM A351 CN7M Hastelloy C ASTM A494 Gr. CW-12MW
2	Ends Cap	2	316 Stainless Steel ASTM A351 CF8M 316L Stainless Steel ASTM A351 CF3M (used for stainless steel weld ends) Carbon Steel ASTM A216 WCB Alloy 20 ASTM A351 CN7M Hastelloy C ASTM A494 GR CS-12MW
	Ball	1	316 Stainless Steel Alloy 20 Hastelloy C
4	Stem	1	316 Stainless Steel 17-4PH Alloy 20 Hastelloy C
5	Seat	2	PTFE TFM® UHMWPE RTFE Nova PEEK Delrin®
6	Body Seal	2	PTFE Graphite Buna UHMWPE Viton®
7	Thrust Bearing	1	Nova (UHMWPE with UHMWPE Seats)
8	Thrust Bearing	1	PEEK (UHMWPE with UHMWPE Seats)
9	Stem Packing	2	Nova (UHMWPE with UHMWPE Seats)
9A	Stem Packing	1-2	Graphite (For Fire Safe & High Temperature Applications)
10	Seal Protector	1	PEEK
10A	Washer	1	300 Series Stainless Steel

PART NO.	PART	QTY.	MATERIAL
11	Gland	1	300 Series Stainless Steel
12	Belleville Washer	4	300 Series Stainless Steel
13	Packing Nut	1	300 Series Stainless Steel
14	Lock Tab	1	300 Series Stainless Steel
15	Lower Lock Latch	1	300 Series Stainless Steel
15B	Upper Lock Latch	1	300 Series Stainless Steel
15C	Latch Bolt	2	300 Series Stainless Steel
16	Handle (1/4"-2")	1	300 Series Stainless Steel
16A	Wrench (3" & 4")	1	Galvanized
16B	Wrench Block	1	300 Series Stainless Steel
16C	Hex Head Bolt	1	300 Series Stainless Steel
17	Lock Washer	1	300 Series Stainless Steel
18	Handle Nut (1/4"-2")	1	300 Series Stainless Steel
19	Body Bolts	4/16	304 Stainless Steel
20	Nuts	4	300 Series Stainless Steel
21	Stop Pin	1	300 Series Stainless Steel
21A	Stopper	1	300 Series Stainless Steel
22	Seat Retainer	1	300 Series Stainless Steel Carbon Steel
23	Anti-Static Spring	1	Hard Drawn Stainless Steel
24	Anti-Static Ball	1	300 Series Stainless Steel

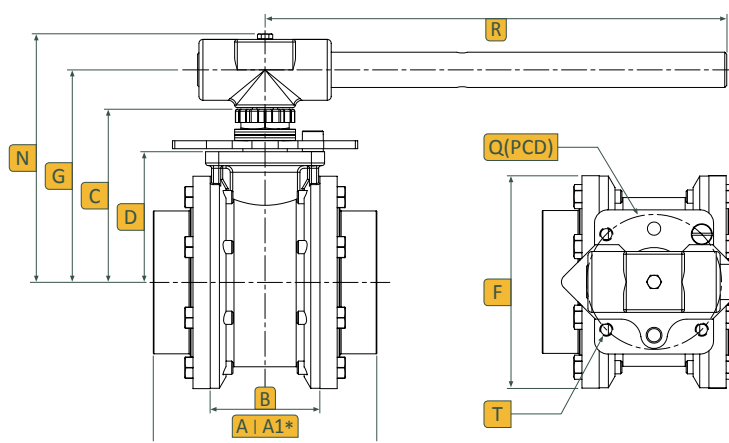
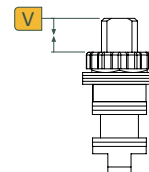
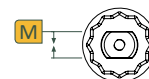
Dimensions



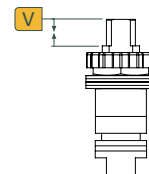
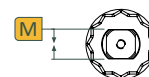
Series 84/FS84 - 1/2" - 2"
Series 99/FS99 - 1/4" - 1 1/2"



Series 84/FS84 - 2 1/2"
Series 99/FS99 - 2"



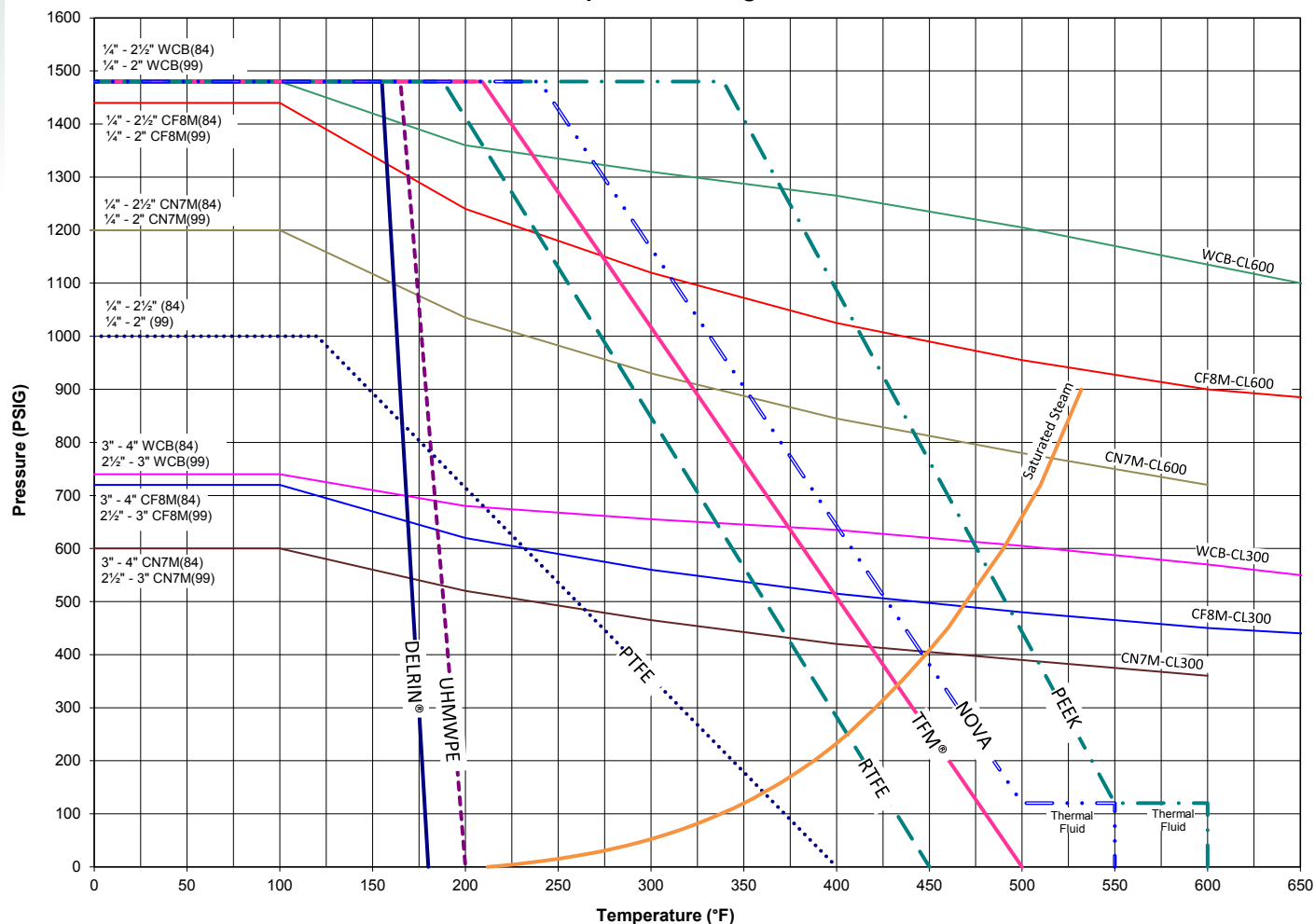
Series 84/FS84 - 3" - 4"
Series 99/FS99 - 2 1/2" - 3"



Standard Port	Full Port	A*	A1*	B	C	D	F	G	L	M	N	Ø Q (ISO)	R	T	V
84/FS84	99/FS99														
1/2"	1/4", 3/8"	2.62	2.62	0.82	1.22	1.06	1.81	1.58	3/8"-24 UNF	0.220	2.15	1.42 (F03)	4.53	M5 x PO.8	0.34
3/4"	1/2"	2.87	2.87	0.97	1.27	1.13	1.94	1.65	1/2"-24 UNF	0.220	2.28	1.42 (F03)	4.53	M5 x PO.8	0.39
1"	3/4"	3.72	3.72	1.25	1.73	1.51	2.38	2.23	3/4"-20 UNF	0.295	2.70	1.65 (F04)	5.79	M5 x PO.8	0.52
1 1/4"	1"	4.25	4.25	1.61	1.90	1.70	2.78	2.43	1"-20 UNF	0.295	2.89	1.65 (F04)	5.79	M5 x PO.8	0.53
1 1/2"	1 1/4"	4.58	4.50	1.90	2.17	1.73	3.12	2.90	1 1/4"-18 UNF	0.342	3.15	1.97 (F05)	6.78	M6 x P1.0	0.73
2"	1 1/2"	5.03	5.06	2.21	2.39	1.90	3.60	3.09	1 1/2"-18 UNF	0.342	3.37	1.97 (F05)	6.78	M6 x P1.0	0.73
2 1/2"	2"	5.88	5.87	2.87	3.98	2.93	4.77	4.88	M20 x P2.5	0.551	5.61	2.75 (F07)	8.73	M8 x P1.25	0.74
3"	2 1/2"	6.65	6.65	3.27	5.01	3.89	6.46	6.14	1" - 14 UNS	0.748	6.14	4.02 (F10)	13.74	M10 x P1.5	0.69
4"	3"	8.43	8.43	4.29	5.60	4.48	8.00	6.73	1" - 14 UNS	0.748	7.81	4.02 (F10)	13.74	M10 x P1.5	0.69

* A - 84/FS84 Face to Face dimension for threaded, butt weld & socket weld ends | * A1 - 99/FS99 Face to Face dimension for threaded, butt weld & socket weld ends
The dimensions above are for informational purpose only. Please refer to Sharpe® Valves if you need dimensions for construction.

Pressure-Temperature Ratings Series 84/99



Standard Port

Class 600 1/2" - 2 1/2"
Class 300 3" - 4"

Full Port

Class 600 1/4" - 2"
Class 300 2 1/2" - 3"

Note:

The maximum pressure/temperature ratings of the valve assemblies are limited to lowest of the body or seat material fitted. The valve body ratings are based on ASME B16.34 rating for materials. The graphs are based on laboratory testing and our experience in field. The seat ratings depend on the material, design, application and function. For higher pressure rating above 1,480 psig, please consult with Sharpe® Valves.

Performance Data

84/FS84	99/FS99	Cv Flow Coefficient	Equivalent Length of Pipe (Feet)	Approx. Weight (lbs.)	Port Size
-	1/4"	8	1.9	1.20	.44
1/2"	3/4"	8	1.9	1.20	.44
3/4"	1/2"	12	6.3	1.70	.56
1"	3/4"	32	3.1	3.00	.81
1 1/4"	1"	46	6.3	4.00	1.00
1 1/2"	1 1/4"	80	4.3	6.00	1.25
2"	1 1/2"	120	7.5	8.00	1.50
2 1/2"	2"	240	5.00	25.00	2.00
3"	2 1/2"	350	8.3	30.00	2.50
4"	3"	720	10.4	50.20	3.25

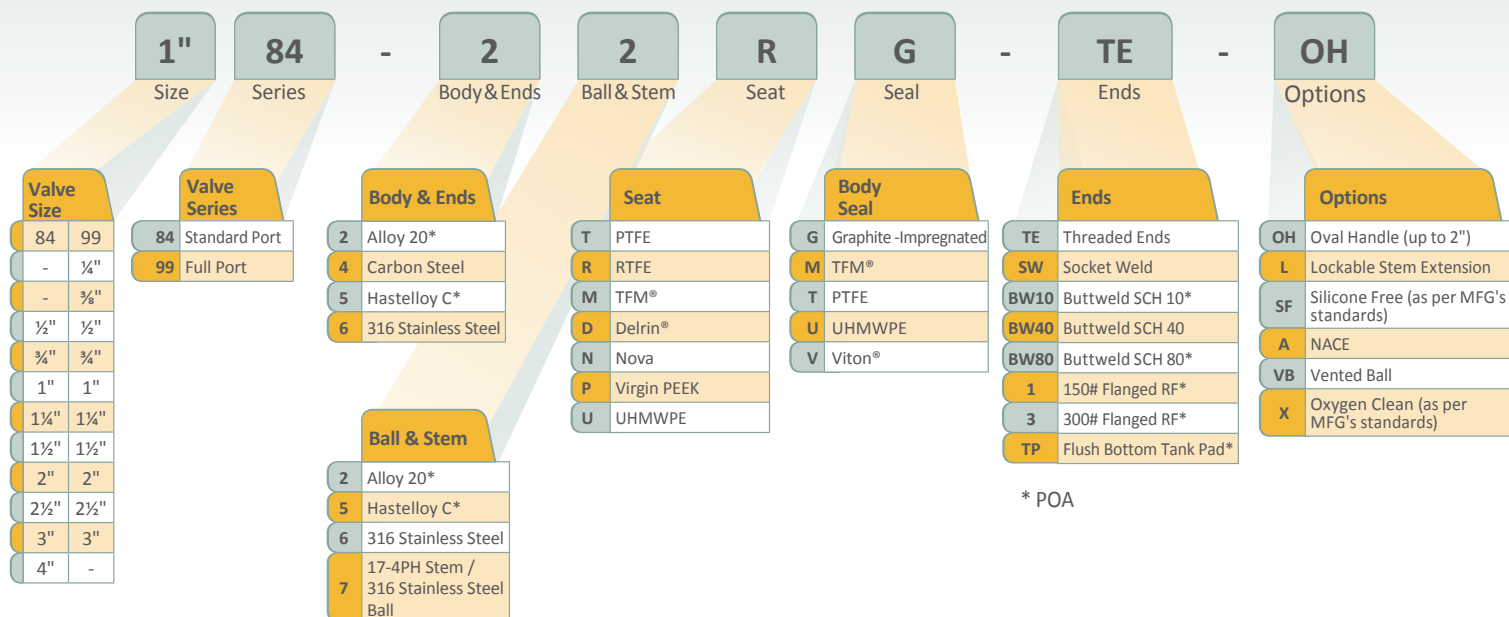
1. Delrin® and UHMWPE seats should not be used for steam service.
2. Delrin® must not be used in Oxygen applications.

Applicable Standards

Body Wall Thickness	ASME B16.34
SW & Threaded Ends	ASME B16.11
Butt-weld Ends	ASME B16.25
Flange Dimensions	ASME B16.5
Basic Design	ASME B16.34 (note 1)
Fire Safe	API 607 4th Edt. (FS84/FS99 only)
Testing (Options)	ASME B16.34 API 598

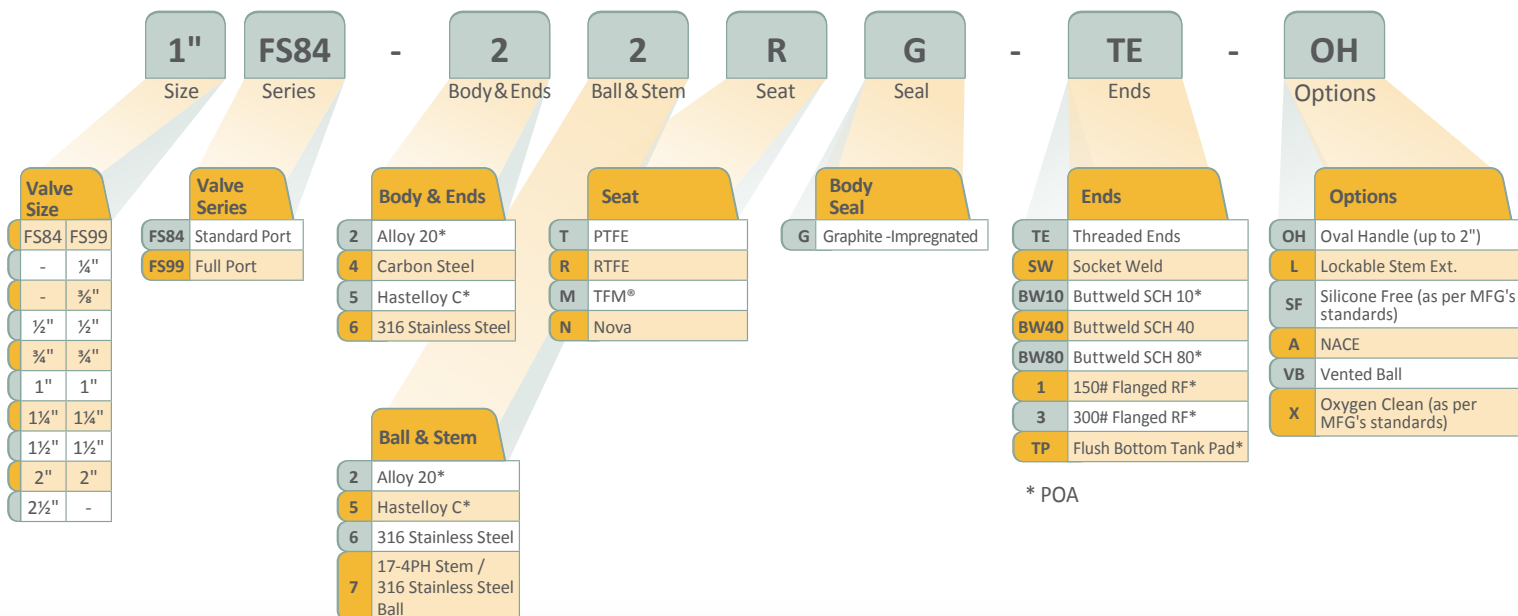
Note 1: When specified, valves can be furnished in accordance with ASME B16.34 requirements.

How To Order Series 84/99



Viton® is a registered trademark of E.I. DuPont. | TFM® is a registered trademark of Dyneon, LLC
Delrin® is a registered trademark of E.I. DuPont.

How To Order Series FS84/FS99



TFM® is a registered trademark of Dyneon, LLC



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