

# VALUE-LINE® 3-PIECE THREADED AND SOCKET-WELD BALL VALVES, SERIES 3A & 3C

The Jamesbury® *Value-Line* Series 3 three-piece ball valve offers exceptional economy and proven performance. These valves are available in either threaded or socket-weld configuration. The large port size provides high flow while minimizing pressure drop.

Standard body materials for the Series 3 valves are: Carbon steel with 316 stainless-steel trim and all 316 stainless steel. The stainless body caps of the 3-series socket weld valves are furnished with 316L (A351-CF3M) as standard. Seat materials are PTFE and filled PTFE which allow these valves to handle the vast majority of commonly encountered chemicals up to the full body rating, and steam to 250 psi (17 bar) (saturated). Stainless-steel fasteners are standard.

The pressure rating of these Series *Value-Line* valves is 1000 psi (68 bar) CWP. The seat and seal CWP rating are the same as the valve body. Seat temperature ratings are -60 to +500°F (-50 to +260°C).

The Series 3 is available with a wide variety of factory engineered actuation equipment.

## FEATURES

- Three-piece design facilitates easy in-line service and allows welded installation without damaging soft parts.
- A slide-lock handle is standard, meeting the requirement of OSHA 1910.147.
- Flexible-lip seats are self-compensating for wear and the effects of temperature and pressure fluctuations.
- Positive stem retention is provided by an internal entry stem.
- A full complement of standard accessories such as stem extensions and round handles is available. Accessories are interchangeable with those of Series 3000 valves.



- Factory-engineered linkage kits are available to facilitate the mounting of electric and pneumatic actuators.

## SPECIFICATIONS

### Flow Data

The table below provides flow coefficients of Standard-bore Series 3 valves. The  $C_v$  values represent the flow of water at +60°F through the valve in U.S. gallons per minute at a pressure drop of 1 psi. The metric equivalent,  $K_v$ , is the flow of water at 16°C through the valve in  $m^3/hr$  at a pressure drop of 1  $kg/cm^2$ . To convert  $C_v$  to  $K_v$ , multiply by 0.8569.

C <sub>v</sub> Values				
Valve Size		Standard Bore		
inches	DN	C <sub>v</sub>	Equivalent length of pipe –	
			feet	meters
1/2	15	13	1.52	0.46
3/4	20	33	1.1	0.34
1	25	44	2.1	0.64
1-1/4	30	46	8.4	2.56
1-1/2	40	95	4.5	1.37
2	50	111	12.0	3.66

### Valve Seat Ratings

These ratings are based on differential pressure with valve ball in the fully closed position and refer to seats only. Refer to valve body ratings below to be sure that all components are satisfactory for the application.

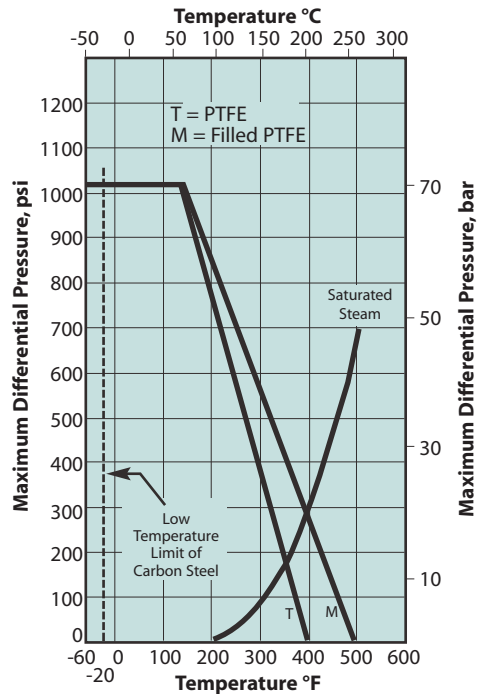
Valves in carbon steel are suitable for service to -20°F (-29°C), valves in 316 stainless steel to -60°F (-51°C).

### Valve Body Ratings

These are the maximum working pressure ratings of the valve body only. The seat ratings determine the practical pressure limitation in actual service. Working pressure rating is at -20°F to +100°F (-29°C to +38°C).

Valve Size		Working Pressure for Body Material: Carbon Steel and 316 Stainless Steel with 300 Series Stainless Steel Bolting	
Inches	DN	psi	bar
1/2 - 2	15 - 50	1000	69

### 1/2" - 2" (DN 15 - 50) Standard Port



### Valve Torque Data

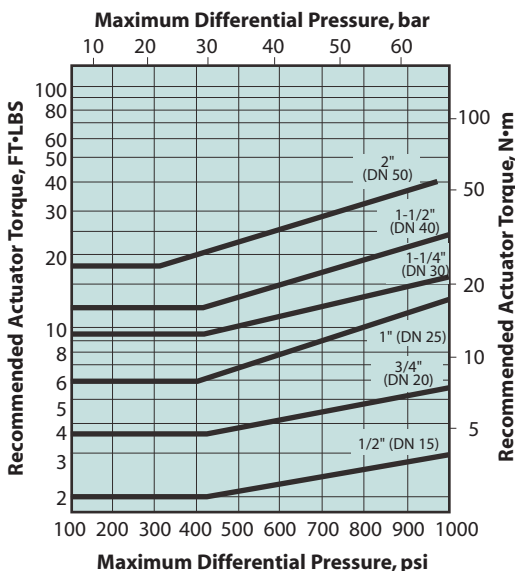
These torque charts for Series 3 valves are to be used as a guide for actuator selection. An actuator should be selected that provides the same or greater torque output than that shown in the appropriate chart. Refer to the bulletins on *Jamesbury* pneumatic and electric actuators for torque output values and actuator selection tables.

Additional requirements may be imposed by media characteristics, trim, and frequency of valve operation. For clean lubricating fluid service, required torque for PTFE (T)

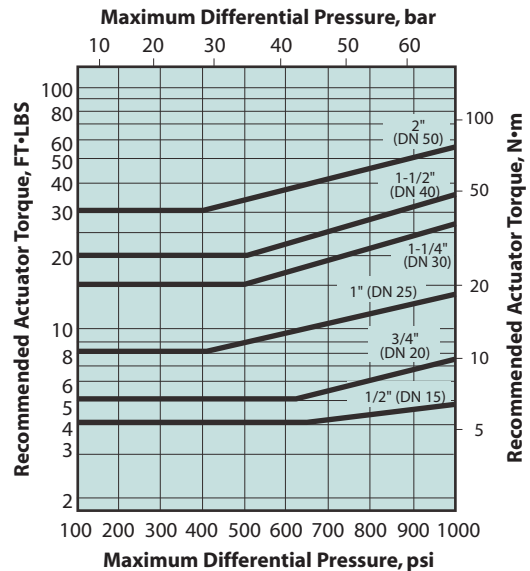
and filled PTFE (M) seated valves only may be reduced 20% when the valve is equipped with 316 stainless steel trim. For difficult service (slurries, semi-solids), increase values by 50%. *If in doubt, select a larger actuator.*

Values shown in the charts are based on standard factory procedures for valve-actuator assembly.

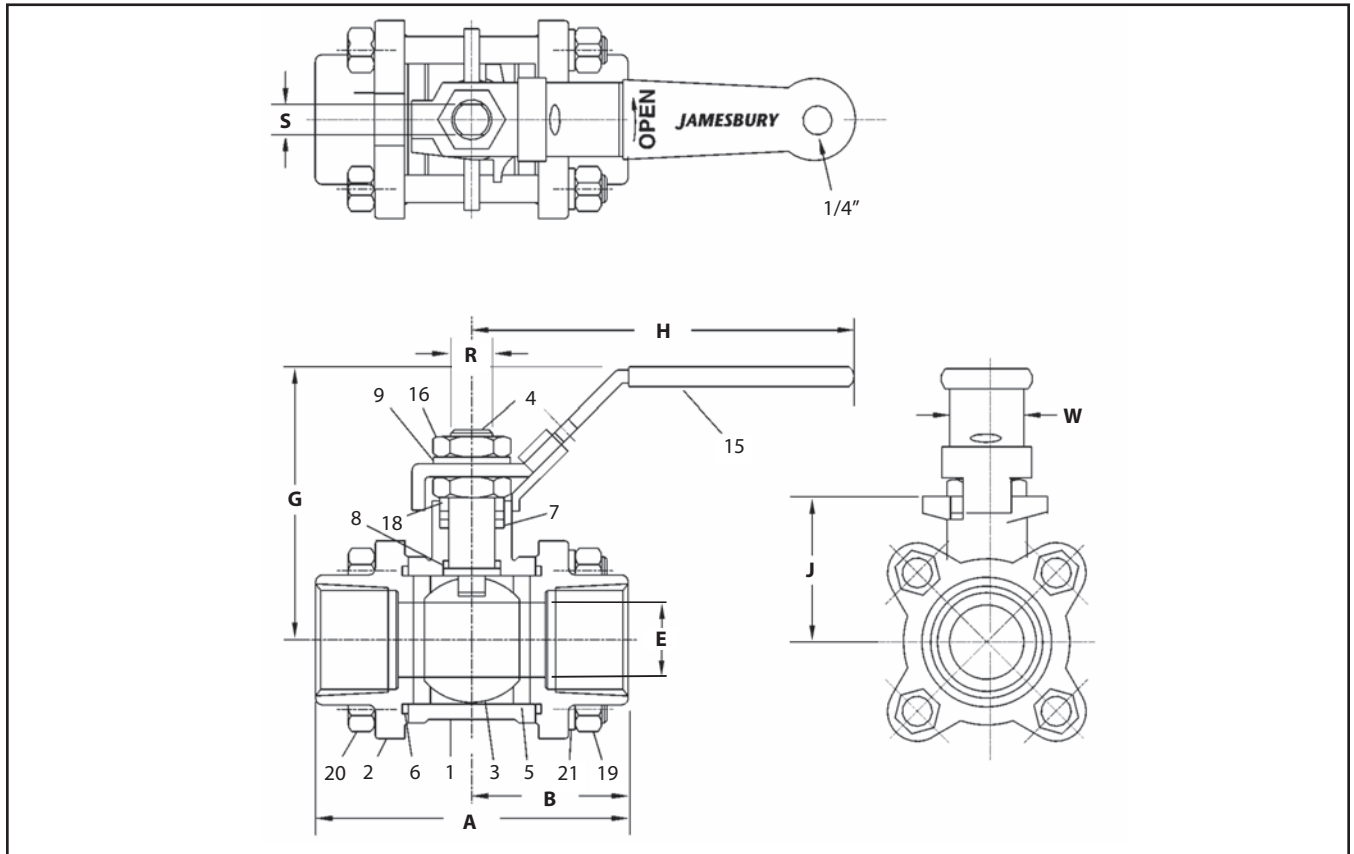
#### PTFE (T)-Seated Reduced Bore Valves



#### Filled-PTFE (M)-Seated Reduced Bore Valves



**DIMENSIONS**



Valve Size inches	Dimensions - inches									Approx. Weight lb.
	A	B	E	G	H	J	R	S	W	
1/2	2.38	1.19	0.50	2.20	4.00	NA	0.31	0.18	0.75	1.0
3/4	2.89	1.45	0.69	2.38	4.00	NA	0.31	0.18	0.75	1.7
1	3.48	1.74	0.87	3.00	5.50	NA	0.50	0.31	0.88	3.0
1-1/4	3.69	1.84	1.00	3.13	5.50	NA	0.50	0.31	0.88	3.7
1-1/2	4.04	2.02	1.25	3.84	7.00	NA	0.63	0.37	0.98	5.0
2	4.64	2.32	1.50	4.02	7.00	NA	0.63	0.37	0.98	7.4

Valve Size DN	Dimensions - mm									Approx. Weight kg
	A	B	E	G	H	J	R	S	W	
15	60	30	13	56	102	NA	8	5	19	0.45
20	73	37	17	60	102	NA	8	5	19	0.77
25	88	44	22	76	140	NA	13	8	22	1.36
30	94	47	25	80	140	NA	13	8	22	1.68
40	103	51	32	97	178	NA	16	9	25	2.27
50	118	59	38	102	178	NA	16	9	25	3.36

**BILL OF MATERIALS AND PARTS LIST**

Part Number	Quantity	Part Name	Body Material	
			Carbon Steel	316 Stainless Steel
1	1	Body	ASTM A216-WCB — Carbon steel	ASTM A351-CF8M — Stainless steel
2	2	Body Cap	ASTM A216-WCB — Carbon steel	ASTM A351-CF3M — Stainless steel
3	1	Ball	316 Stainless steel	
4	1	Stem	316 Stainless steel	
5	2	Seat	PTFE/Filled PTFE	
6	2	Body Seal	PTFE	
7	2	Stem Seal	PTFE	
8	1	Stem Bearing	PTFE	
9	1	Shakeproof Washer	Carbon steel	304 Stainless steel
15	1	Handle	Carbon steel	304 Stainless steel
16	2	Stem Nut	304 Stainless steel	
18	1	Compression Ring	304 Stainless steel	
19	4	Hex Nut	300 Stainless steel	
20	4	Body Bolt	300 Stainless steel	
21	4	Lockwasher	300 Stainless steel	

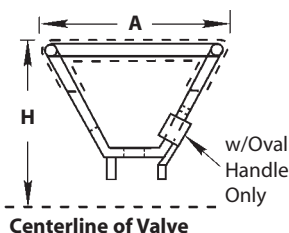
## ACCESSORIES

### Handles

The Series 3 ball valves described in this bulletin have two types of optional handles available, a round handle (not lockable) and a lockable oval handle. Both are available in a choice of carbon steel or stainless steel material. To order handles separately, specify the following part numbers.

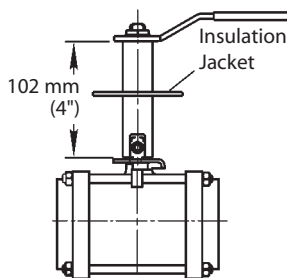
Handle Type	Material	Valve Size		
		1/2" – 3/4" (DN 15 – 20)	1" – 1-1/4" (DN 25 – 30)	1-1/2" – 2" (DN 40 – 50)
Round Handles	Carbon Steel	012-0785-22	012-0786-22	012-0787-22
	Stainless Steel	012-0785-30	012-0786-30	012-0787-30
Lockable Oval Handles	Carbon Steel	012-0794-22	012-0795-22	012-0796-22
	Stainless Steel	012-0794-30	012-0795-30	012-0796-30

Valve Size		Oval and Round Handle Dimensions			
Inch	DN	A		H	
		inch	mm	inch	mm
1/2	15	3.35	85	2.82	72
3/4	20	3.35	85	3.00	76
1	25	4.64	118	3.49	89
1-1/4	30	4.64	118	3.62	92
1-1/2	40	5.87	149	4.20	107
2	50	5.87	149	4.38	111



### Stem Extensions

A standard 102 mm (4") stem extension is offered for Series 3 ball valves for improved accessibility, particularly when used in insulated pipelines. (These extensions should not be confused with extended bonnets customarily used on cryogenic valves). Stem extensions can be provided factory mounted or shipped separately for field mounting.



Stem Extensions		
Valve Size		Part Number
inches	DN	
1/2 – 3/4	15 – 20	SE-072
1 – 1-1/4	25 – 30	SE-073
1-1/2 – 2	40 – 50	SE-074

**WARNING:** As the use of the valve is application specific, a number of factors should be taken into account when selecting a valve for a given application. Therefore, some of the situations in which the valves are used are outside the scope of this manual. If you have any questions concerning the use, application, or compatibility of the valve with the intended service, contact Metso for more information.

### HOW TO ORDER JAMESBURY BRAND 3-PIECE VALVES

Specify the valve you require by constructing a 12-character type code from the following information.

**EXAMPLE:** The valve specified is a 2" size with a standard-bore NPT body style with carbon steel body, 316 stainless-steel ball and stem, PTFE/PTFE seats and seals, and standard 300 stainless steel bolting.

1	2	3	4
2	3A	--	2236 TT-3

1	Size					
inches	1/2	3/4	1	1-1/4	1-1/2	2
DN	15	20	25	30	40	50

2	Series and Body Style
3A	3-piece standard-bore screwed NPT ball valve
3C	3-piece standard-bore socket-weld ball valve

3	Body/Trim Material
2236	Carbon steel body/316 stainless steel ball & stem
3600	316 Stainless steel body, ball & stem

4	Seat/Seal/Bolting
TT-3	PTFE/PTFE/300-series stainless steel
MT-3	Filled PTFE/PTFE/300-series stainless steel

Subject to change without prior notice.

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