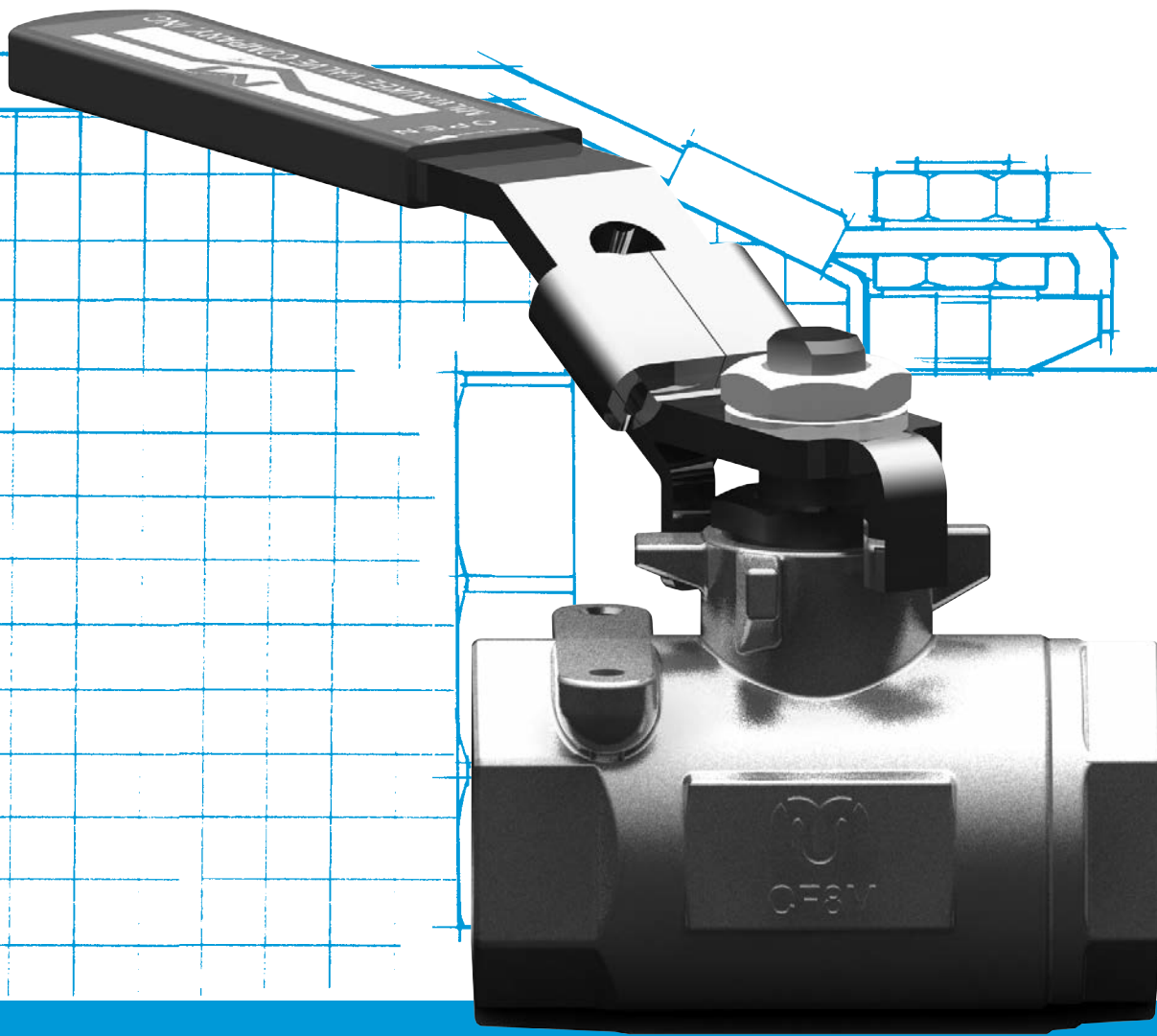


20/22SSOR STAINLESS STEEL AND 20/22CCOR & 20/22CSOR CARBON STEEL TWO-PIECE BALL VALVES



INNOVATION IN EVERY VALVE



MILWAUKEE VALVE

20/22SSOR, 20/22CSOR AND 20/22CCOR TWO-PIECE BALL VALVES

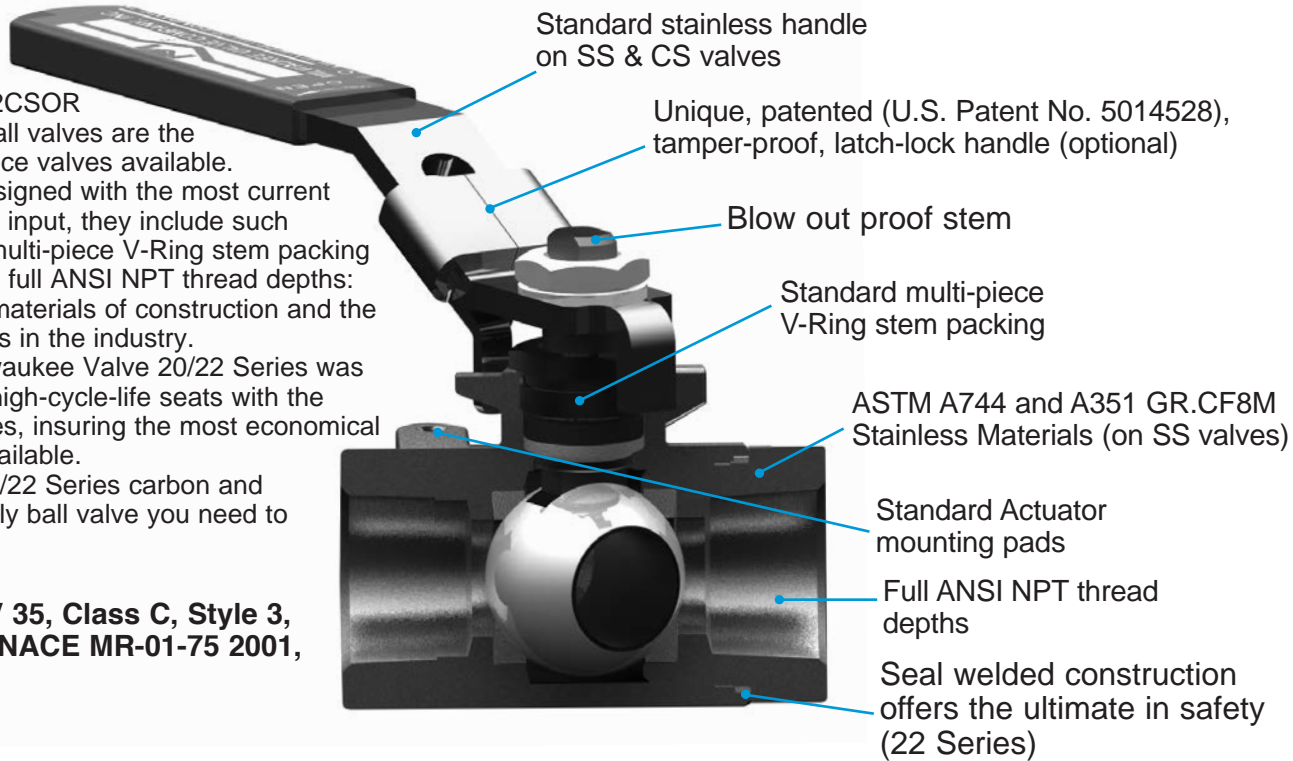
The 20/22SSOR, 20/22CSOR and 20/22CCOR Series ball valves are the most advanced two-piece valves available.

The 22 Series is designed with the most current enduser and distributor input, they include such standard features as: multi-piece V-Ring stem packing for longer leak-free life: full ANSI NPT thread depths: superior ASTM grade materials of construction and the highest pressure ratings in the industry.

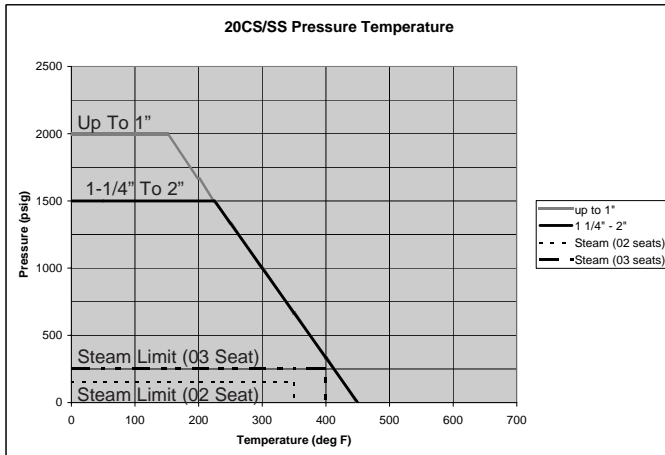
In Addition, the Milwaukee Valve 20/22 Series was designed with special high-cycle-life seats with the lowest operating torques, insuring the most economical actuated ball valves available.

Milwaukee Valve 20/22 Series carbon and stainless steel – the only ball valve you need to specify and inventory.

Conforms to: WW-V 35, Class C, Style 3, End Connection A, NACE MR-01-75 2001, MSS-SP-110.



PERFORMANCE DATA



TORQUE RATING AND C_v

VALVE SIZE	MAXIMUM BREAKAWAY TORQUE (in lbs.)	C_v
1/4-3/8	20	6.8
1/2	40	9.8
3/4	50	25
1	100	35
1-1/4	140	47
1-1/2	190	81
2	240	105

SPECIFICATIONS

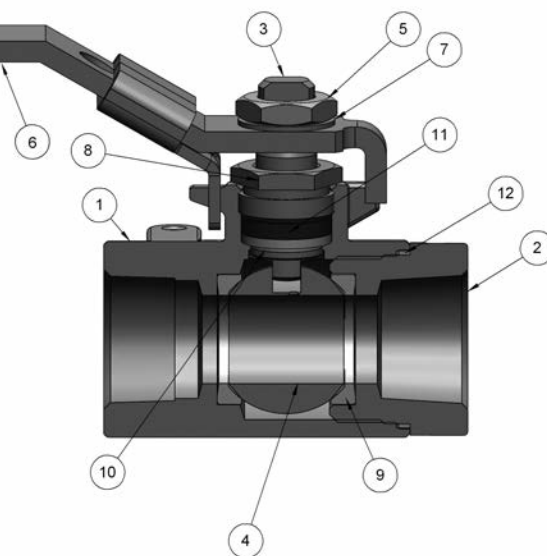
Approved values shall include multiple piece V-Ring stem packing, full ANSI NPT thread depths and ASTM grade body/tailpiece materials.

Each valve shall be tested for zero seat leakage, and each valve shall be hydrotested for shell integrity, per ANSI B.16.34.

Milwaukee Valve 20/22SSOR Series (for SS applications) or 20/22CS Series (for carbon steel with stainless trim applications) or 20/22CCOR for all carbon steel service or approved equal.

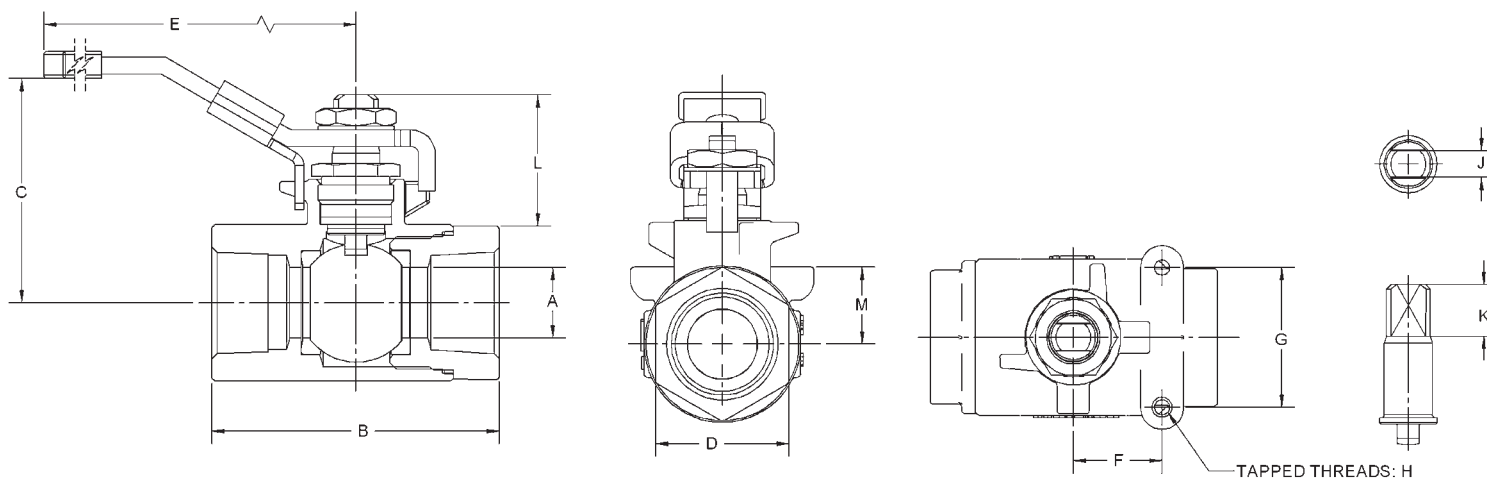
MATERIAL LIST

PART	20/22SSOR-02	20/22CCOR-02	20/22CSOR-02
1. Body	ASTM A351/A744 CF8M	Carbon Steel ASTM A216 WCB	Carbon Steel ASTM A216 WCB
2. Tailpiece	ASTM A351/A744 CF8M	Carbon Steel ASTM A216 WCB	Carbon Steel ASTM A216 WCB
3. Stem	Stainless Steel ASTM A276 Type 316	Stainless Steel ASTM A276 Type 316	Stainless Steel ASTM A276 Type 316
4. Ball	Stainless Steel ASTM A276 Type 316	Carbon Steel AISI-12L14 Hard Chrome Plated	Stainless Steel ASTM A276 Type 316
5. Handle Nut	Stainless Steel 18-8	Stainless Steel 18-8	Stainless Steel 18-8
6. Handle Assembly	Stainless Steel Type 304	Carbon Steel Zinc Plated	Stainless Steel Type 304
7. Lock Washer	Stainless Steel Type 304	Stainless Steel Type 304	Stainless Steel Type 304
8. Packing Nut	Stainless Steel ASTM 276 Type 316	Carbon Steel AISI-12L14	Carbon Steel AISI-12L14
9. Seat (-02)	15% Glass Filled Reinforced PTFE	15% Glass Filled Reinforced PTFE	15% Glass Filled Reinforced PTFE
10. Thrust Washer	PTFE	PTFE	PTFE
11. Packing	PTFE	PTFE	PTFE
12. Body Seal *	PTFE	PTFE	PTFE



* No Body Seal on 22 Series Valves.

DIMENSIONS



DIMENSIONS - INCHES AND MILLIMETERS (20/22 - SERIES BALL VALVES)

SIZE	1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"	
	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM
A	0.375	9.53	0.375	9.530	0.500	12.70	0.687	17.45	0.875	22.23	1.000	25.40	1.250	31.75	1.500	38.10
B	2.090	53.09	2.090	53.090	2.360	59.94	2.800	71.12	3.250	82.04	3.620	91.95	4.060	103.12	4.650	118.11
C	1.650	41.91	1.650	41.910	1.770	44.96	2.050	52.07	2.240	56.90	2.480	62.99	2.680	68.07	2.910	73.91
D	0.820	20.83	0.820	20.830	1.060	26.92	1.340	34.04	1.620	41.15	1.880	47.75	2.250	57.15	2.750	69.85
E	4.187	106.35	4.187	106.350	4.187	106.35	5.750	146.05	5.750	146.05	7.625	193.68	7.625	193.68	7.625	193.68
F	0.500	12.7	0.500	12.700	0.500	12.70	0.870	22.01	0.870	22.01	0.930	23.62	0.930	23.62	0.930	23.62
G	1.120	28.45	1.120	28.450	1.120	28.45	1.370	34.80	1.370	34.80	1.500	38.10	1.500	38.10	1.500	38.10
H	10-24NC		10-24NC		10-24NC		10-24NC		10-24NC		1/4-20NC		1/4-20NC		1/4-20NC	
J	0.196	4.98	0.196	4.980	0.196	4.98	0.275	6.99	0.275	6.99	0.355	9.02	0.355	9.02	0.355	9.02
K	0.390	9.91	0.390	9.910	0.390	9.91	0.560	14.22	0.560	14.22	0.650	16.51	0.650	16.51	0.650	16.51
L	0.875	22.23	0.875	22.230	1.000	24.40	1.250	31.75	1.250	31.75	1.375	34.93	1.375	34.93	1.375	34.93

ORDERING INFORMATION

1/2" 20SSOR-02-LS-VB

Size:
1/4"-2"

Series:
20 = Two-Piece,
Adaptor-Loaded
22 = Two-Piece,
Seal-Welded

Body Material:
C = Carbon Steel
S = Stainless Steel

Ball/Stem Material:
C = Carbon Steel-Plated
S = Stainless Steel

External Options:

LL = Patented* Stainless
Latch-Lock Handle
LS = Patented** Stainless
Latch-Lock Handle –
Spring-Loaded
OL = Locking Stainless
Oval Handle
OS = Stainless Oval Handle –
Spring-Loaded
XH = Extended Handle
(2" extension standard.
Other lengths available to
customer specifications.)

Seat Material:

01 = Virgin PTFE
02 = Reinforced PTFE
03 = Steam Service
Modified PTFE

Internal Options:

AD = Assembly Dry
GB = Grounded Ball
GS = Grounded Stem
VB = Vented Ball

Note: If specifying more
than one internal option,
list ALPHABETICALLY.

Port Size:

R = Single
Reduced Bore

* – U.S. Patent No. 5,014,528

** – U.S. Patent No. 5,183,073

End Connection Type:

O = NPT Female

NOTE: The information presented in this brochure
is correct at time of printing. Milwaukee Valve
reserves the right to change design, dimensions
and/or material specifications without notice.

The information presented on this sheet is correct at the time of publication. Milwaukee Valve reserves the right to change design, and/or material specifications without notice. For the installation, Operation and Maintenance Manual (IOM) see the engineering section on our website. For the most current information access www.milwaukeevalve.com

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MILWAUKEE VALVE

BAL-1