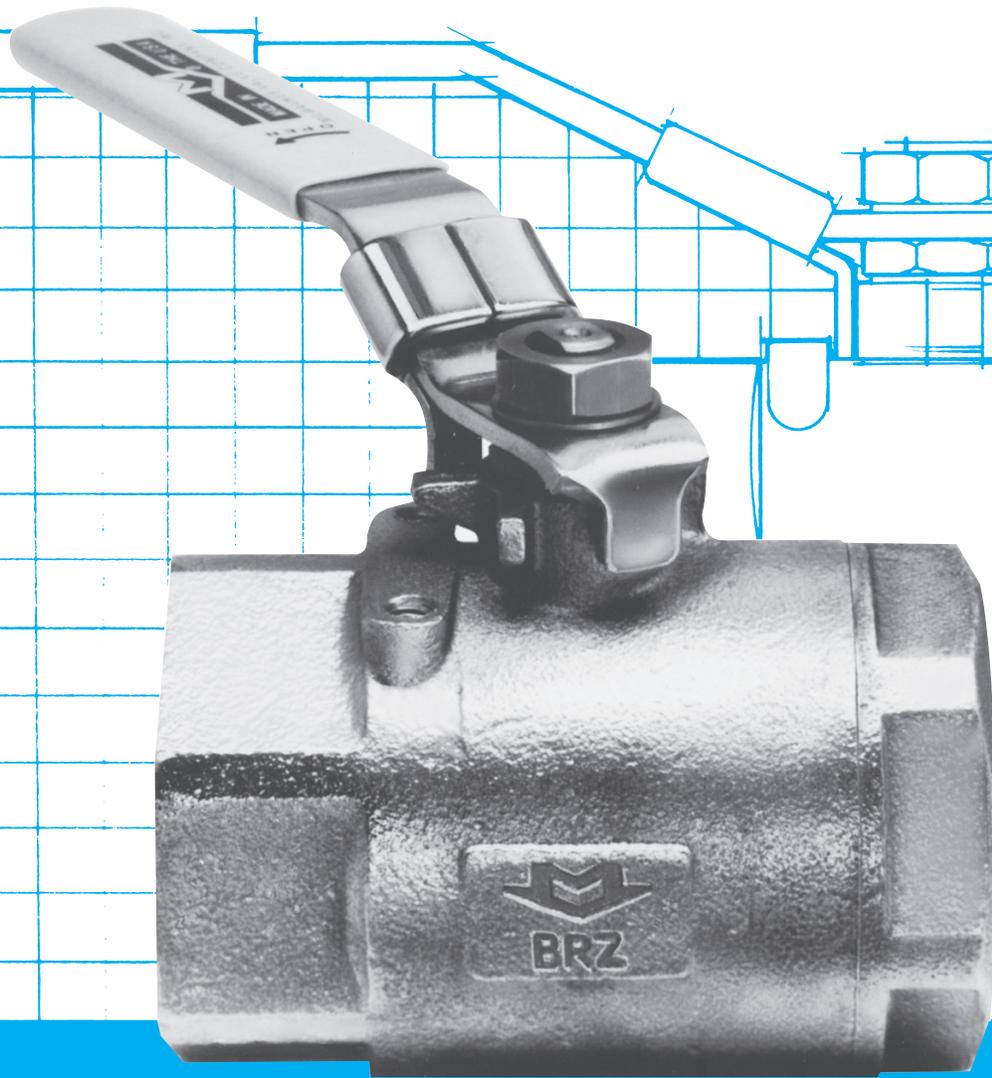


20BBOR BRONZE AND 20BSOR BRONZE WITH STAINLESS STEEL TRIM TWO-PIECE BALL VALVES



INNOVATION IN EVERY VALVE



MILWAUKEE VALVE

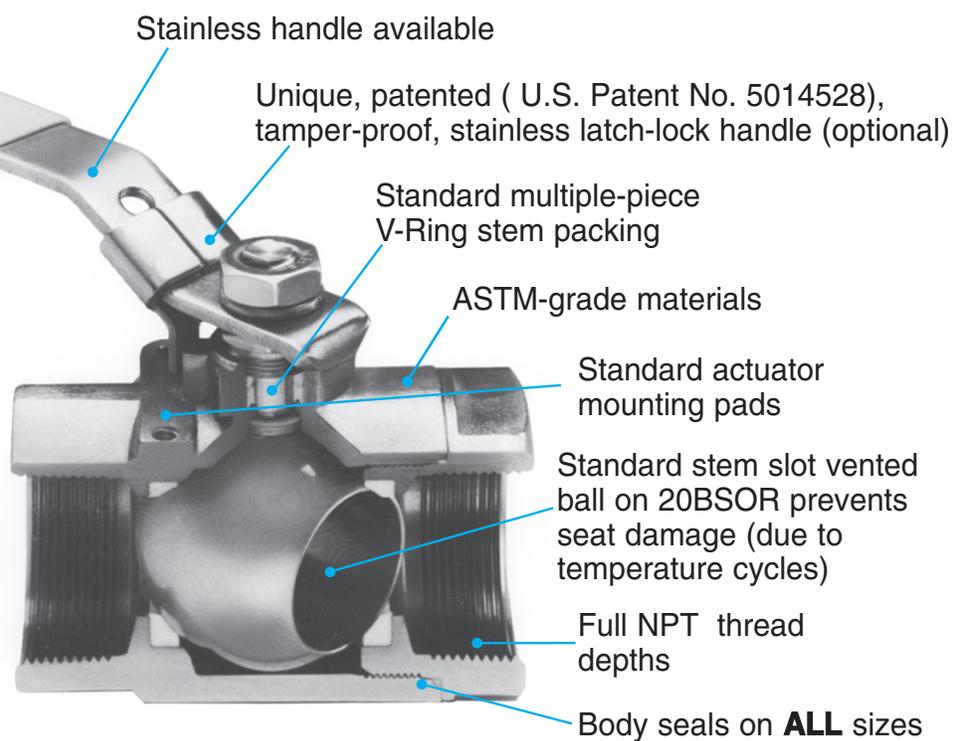
20BBOR AND 20BSOR TWO-PIECE BALL VALVES

The 20BBOR and 20BSOR Series ball valves are the most advanced 2-piece valves available.

Designed with the most current end-user and distributor input, they include such standard features as: multi-piece V-Ring stem packing for longer leak-free life; full NPT thread depths; superior ASTM grade materials of construction and the highest pressure ratings in the industry.

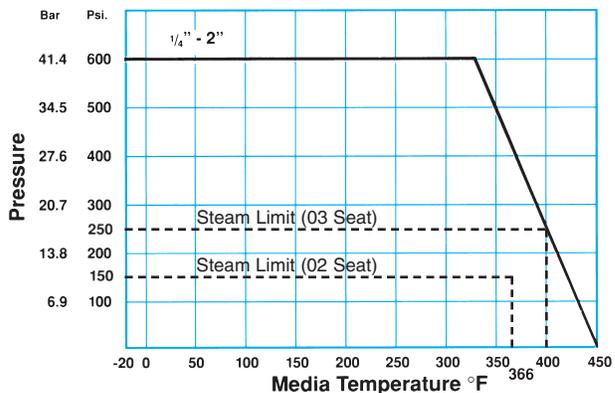
In addition, the Milwaukee Valve 20BBOR/20BSOR series was designed with special high-cycle-life seats with the lowest operating torques, insuring the best value in actuated ball valves available.

Milwaukee 20BBOR/20BSOR Series – the only ball valve you need to specify and inventory.



PERFORMANCE DATA

PRESSURE/TEMPERATURE RATINGS



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

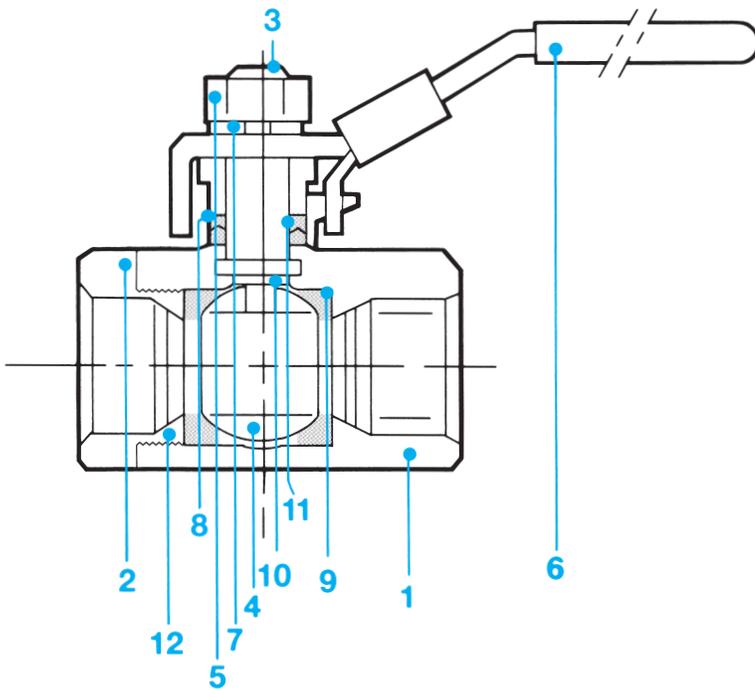
SPECIFICATIONS

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

Each valve shall be tested for zero seat leakage per ANSI B.16.34.

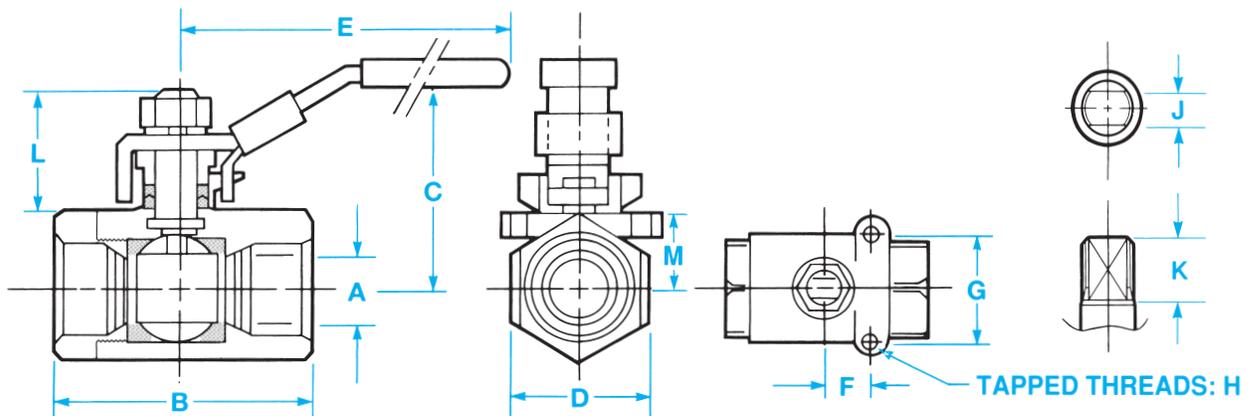
Milwaukee Valve 20BBOR/20BSOR Series or approved equal.

MATERIAL LIST



PART	20BBOR-02	20BSOR-02
1. Body	Bronze ASTM B584 C84400	Bronze ASTM B584 C84400
2. Tailpiece	1/4"-3/4" ASTM B16 C36000 1"-2" ASTM B584 C84400	1/4"-3/4" ASTM B16 C36000 1"-2" ASTM B584 C84400
3. Stem	Brass ASTM B16 C36000	Stainless Steel ASTM A276 Type 316
4. Ball	ASTM B16 C36000 Hard Chrome Plated	Stainless Steel ASTM A276 Type 316
5. Handle Nut	Plated Steel	Stainless Steel 18-8
6. Handle Assembly	Plated C.R. Steel	Stainless Steel Type 304
7. Lock Washer	Plated Steel	Stainless Steel Type 410
8. Packing Nut	Brass ASTM B16 C36000	Brass ASTM B16 C36000
9. Seat (02 Standard)	15% Glass Filled Reinforced PTFE	15% Glass Filled Reinforced PTFE
10. Thrust Washer	Reinforced PTFE w/15% Glass Fiber	Reinforced PTFE w/15% Glass Fiber
11. Packing	PTFE	PTFE
12. Body Seal	PTFE	PTFE

DIMENSIONS



DIMENSIONS – INCHES AND MILLIMETERS (20 – 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								
A	0.375	9.53	0.375	9.53	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	53.09	2.360	59.94	2.800	71.12	3.230	82.04	3.620	91.95	4.060	103.12	4.650	118.11
C	1.650	41.91	1.650	41.91	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	20.83	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	106.35	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	12.70	0.500	12.70	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	28.45	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		1/4 – 20NC		1/4 – 20NC		1/4 – 20NC									
J	0.196	4.98	0.196	4.98	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	9.91	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	22.23	1.000	25.40	1.250	31.75	1.250	31.75	1.375	34.93	1.375	34.93	1.375	34.93
M	0.410	10.41	0.410	10.41	0.570	14.48	0.750	19.05	0.910	23.11	1.050	26.67	1.250	31.75	1.520	38.61

ORDERING INFORMATION

1/2" 20BBOR-02-LS-AD

Size:
1/4"-2"

Series:
20 = Two-Piece,
Adaptor-Loaded

Body Material:
B = Bronze

Ball/Stem Material:
B = Brass
S = Stainless Steel

External Options:

LL = Patented* Stainless
Latch-Lock Handle
LS = Patented** Stainless
Latch-Lock Handle –
Spring-Loaded
LO = Locking Stainless
Oval Handle
OS = Stainless Oval Handle –
Spring-Loaded
SH = Stainless Handle
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 = Assembled Dry
GB = Grounded Ball***
GS = Grounded Stem***
VB = Vented Ball (SS Only)

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

Port Size:

R = Single * – U.S. Patent No. 5,014,528
Reduced Bore ** – 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.

Valves built to take it... since 1901

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MILWAUKEE VALVE

BAL-2