

SPECIFICATIONS

FIGURE 321A

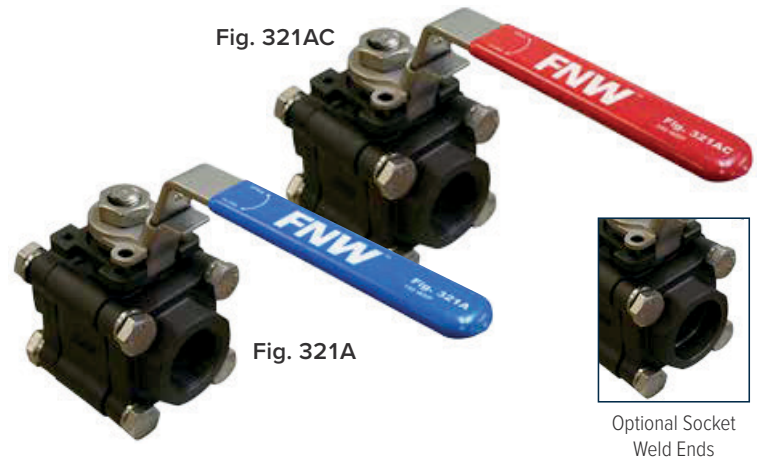
CARBON STEEL BALL VALVES



3-PC FULL PORT 2000 CWP

FEATURES

- 2000 PSI CWP* non-shock
- Working Steam Pressure (WSP)
 - 150 PSI - Fig. 321A
 - 250 PSI - Fig. 321AC
- End connections
 - Threaded
 - Socket weld
- Full port
- Blowout-proof stem
- Live-loaded packing
- Anti-static design
- Investment cast body
- TFM (super TFE) seats
- Stainless steel handle
- Locking lever
- Tapped hole mounting pad
- Vacuum rated to 26.967"Hg (75 Torr)**
- Vented ball
- Manufactured silicone-free
- Replacement locking handle
- Kits available (1/4"–2")
- Optional stem extension kit (uses existing valve handle) (1/4"–2")
- Optional oval handle kit (1/4"–1-1/4")



ACCESSORIES/OPTIONS



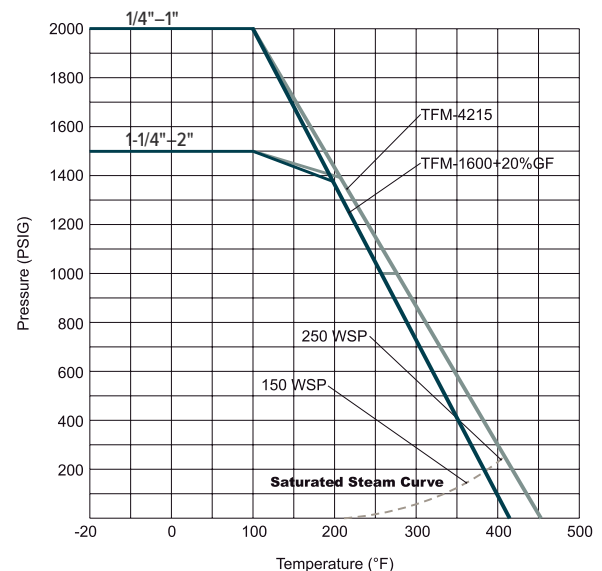
PRODUCT SPECIFICATIONS

Standards

- Design: MSS SP-110
- End connections
 - NPT - ASME B1.20.1
 - SW - ASME B16.11
- Seat/Shell test: MSS SP-110
- Corrosion resistance: NACE MR0103 and MR0175
- Fugitive emissions: ISO 15848-1

* 1/4"–1" - 2000 PSI CWP
1-1/4"–2" - 1500 PSI CWP

** Vacuum measurements are often made in inches of mercury below atmospheric pressure. The values calculated here assume standard atmospheric pressure of 29.92 inches of mercury.



SPECIFICATIONS

FIGURE 321A

CARBON STEEL BALL VALVES



3-PC FULL PORT 2000 CWP

FIGURE NUMBER MATRIX

FNW 321A			
SEAT/SEAT CODE	END CODE	SIZE CODE (IN.)	
Standard Temp (150 WSP) = Blank	Threaded NPT = Blank	1/4 = B	1 = G
High Temp (250 WSP) = C	Socket Weld = SW	3/8 = C	1-1/4 = H
		1/2 = D	1-1/2 = J
		3/4 = F	2 = K

KIT CODES

FNW 320A	
KIT TYPE	KIT SIZE (IN.)
Locking Handle = LHK	1/4-3/4 = BF
Stem Extension = SEK	1-1-1/4 = GH
Oval Handle = OH	1-1/2-2 = JK

Note: Figure 321A uses the same accessories as the 320A.

TORQUE (IN. -LBS)

Size / ΔP	150 PSIG	700 PSIG	1500 PSIG	3000 PSIG
	10 Bar	50 Bar	100 Bar	140 Bar
1/4, 3/8	62	62	62	62
1/2	62	62	62	71
3/4	71	71	71	80
1	115	133	133	142
1-1/4	150	195	230	-
1-1/2	221	274	328	-
2	292	407	487	-

Note: 30% safety factor is recommended when sizing actuator.

CV & WEIGHTS

Size (in.)	CV	Wt (lbs)	
		NPT	SW
1/4	16	2.34	2.34
3/8	23	2.34	2.34
1/2	18	2.29	2.25
3/4	36	3.15	3.15
1	48	4.59	4.59
1-1/4	58	7.61	7.61
1-1/2	120	9.92	9.92
2	190	15.21	15.48

REFERENCE CHART

Size (in.)	Dimensions (in.)																
	ØD	L	H1	H	W	ØE	S	U	A	J	K (UNF)	Ls	L2	M (UNC)	B L1	ØB1	ØB1
1/4	0.42	2.76	1.18	2.99	5.31	1.65	0.25	M5	0.68	0.41	3/8-24	2.13	1.61	1/4-20	0.93	0.43	0.55
3/8	0.50	2.76	1.18	2.99	5.31	1.65	0.25	M5	0.68	0.41	3/8-24	2.13	1.61	1/4-20	0.93	0.43	0.69
1/2	0.59	2.95	1.42	3.27	5.31	1.65	0.25	M5	0.80	0.46	3/8-24	2.44	1.83	5/16-18	1.10	0.43	0.86
3/4	0.79	3.15	1.56	3.27	5.31	1.65	0.25	M5	0.80	0.46	3/8-24	2.74	2.05	3/8-16	1.34	0.51	1.07
1	0.98	3.54	1.79	3.86	6.69	1.97	0.35	M6	0.92	0.49	9/16-18	3.18	2.36	3/8-16	1.81	0.51	1.34
1-1/4	1.25	4.33	1.97	4.06	6.69	1.97	0.35	M6	0.92	0.49	9/16-18	3.86	2.76	1/2-13	2.17	0.51	1.68
1-1/2	1.50	4.72	2.36	4.33	7.87	2.76	0.38	M8	1.18	0.59	5/8-18	4.12	3.24	1/2-13	2.24	0.51	1.91
2	1.95	5.51	2.68	4.69	7.87	2.76	0.38	M8	1.18	0.59	5/8-18	4.90	3.68	5/8-11	2.87	0.63	2.41

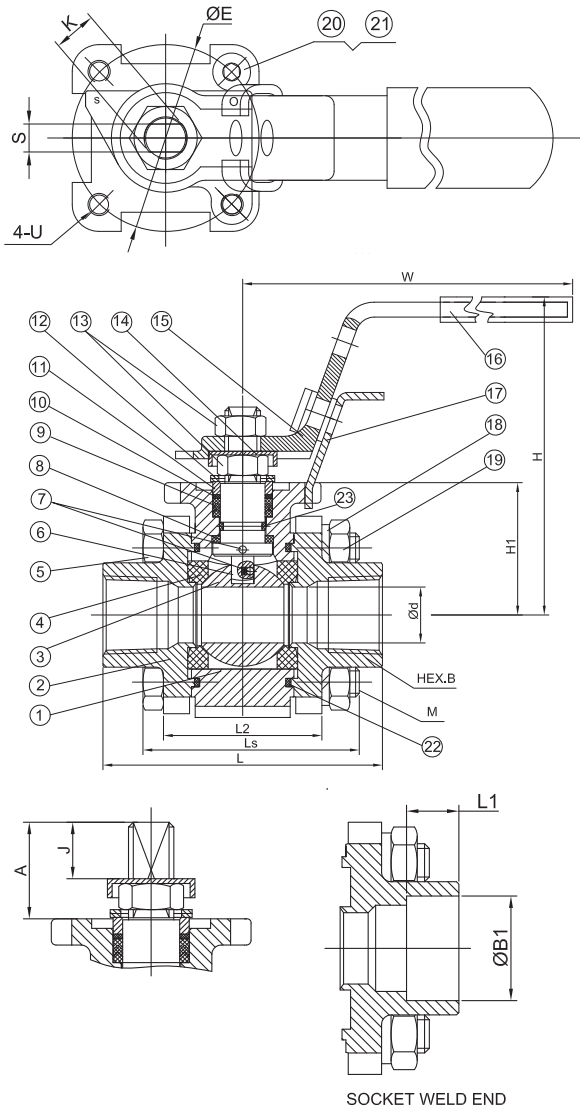
FIGURE 321A

CARBON STEEL BALL VALVES



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PARTS DIAGRAM



PART MATERIALS & QUANTITY

Ref #	Description (in.)	Material		Qty
		Figure 321A	Figure 321AC	
1	Body	ASTM A216 Gr. WCB Carbon Steel		1
2	End Cap	ASTM A216 Gr. WCB Carbon Steel		2
3	Ball	316SS Stainless		1
4	Seat	TFM1600+20% GF	TFM4215	2
5	Body Bolt	1/4-1-1/4	ASTM A193-B8 Stainless	4
	Bolt	1-1/2-2		8
6	Stem	316SS Stainless		1
7	Anti-Static Device	316SS Stainless		2
8	Thrust Washer	TFM4215		1
9	V-Ring Packing	PTFE	TFM1600	1 set
10	Bushing	50% Stainless+50% PTFE		1
11	Gland	316SS Stainless		1
12	Belleville Washer	301SS Stainless		2
13	Stem Nut	ASTM A194-8 Stainless		2
14	Stop-Lock-Cap	304SS Stainless		1
15	Handle	304SS Stainless		1
16	Handle Sleeve	Vinyl Plastic		1
17	Lock Device	304SS Stainless		1
18	Body Washer	1/4-1-1/4	304SS Stainless	4
		1-1/2-2		8
19	Bolt Nut	1/4-1-1/4	ASTM A194-8 Stainless	4
20	Stop Bolt	ASTM A193-B8 Stainless		1
21	Stop Washer	304SS Stainless		1
22	Body Gasket	PTFE	PTFE+20%CF	2
23	O-Ring	FKM		1

REPAIR KITS

FNW321ARK

SIZE CODE (IN.)

1/4-3/8 = BC	1-1/4 = H
1/2 = D	1-1/2 = J
3/4 = F	2 = K
1 = G	