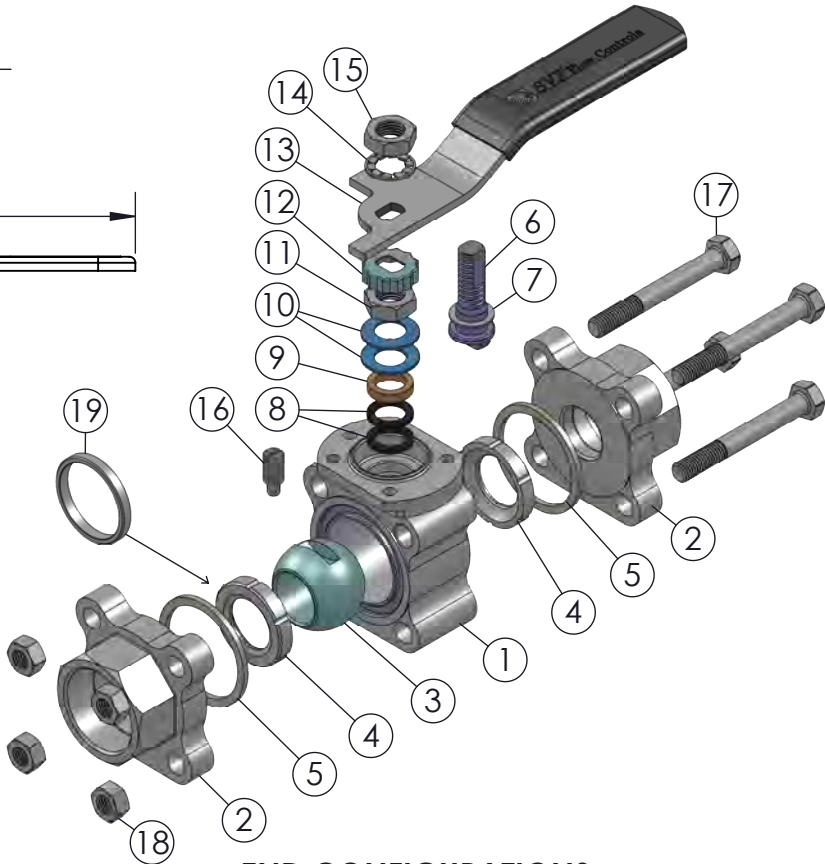
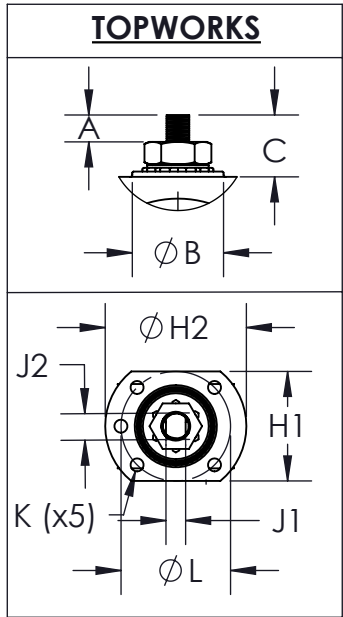
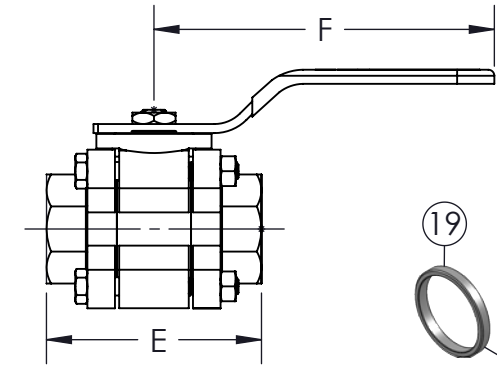
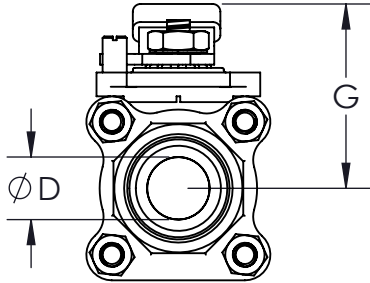
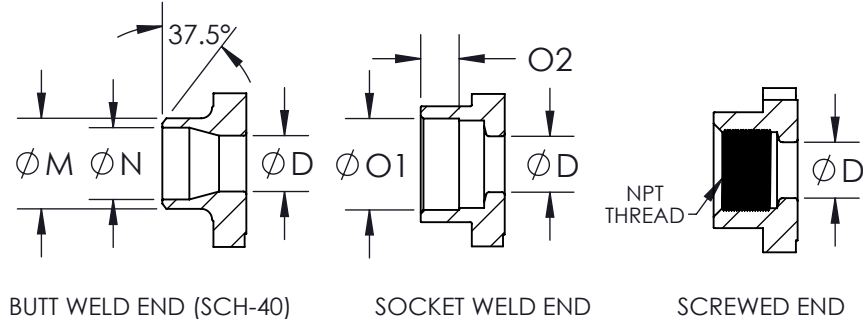


\* FULL PORT VALVES  
 \*\* AT FULL DIFFERENTIAL PRESSURE FOR CLEAN FLUIDS WITH SUPRALON SEATS

SIZE	A	øB	C	øD	E	F	G	H1	øH2	J1	J2	K	øL	øM	øN	øO1	O2	NPT THREAD	ISO 5211	WEIGHT (lbs)	Cv	TORQUE** (in-lbf)	BODY BOLT SIZE	BODY NUT SIZE
1/4" *	0.21 (5)	1.0 (25)	0.37 (9)	0.44 (11)	2.60 (66)	5.0 (127)	1.8 (46)	1.5 (38)	1.8 (46)	0.22 (6)	0.37 (9)	M5-0.8	1.42 (36)	0.54 (14)	0.36 (9)	0.56 (14)	0.44 (11)	1/4"-18NPT	F03	2	3	50	M6-1.0 X 45	M6-1.0P
3/8" *	0.21 (5)	1.0 (25)	0.37 (9)	0.44 (11)	2.60 (66)	5.0 (127)	1.8 (46)	1.5 (38)	1.8 (46)	0.22 (6)	0.37 (9)	M5-0.8	1.42 (36)	0.68 (17)	0.49 (12)	0.69 (18)	0.44 (11)	3/8"-18NPT	F03	2	5	50	M6-1.0 X 45	M6-1.0P
1/2"	0.21 (5)	1.0 (25)	0.37 (9)	0.44 (11)	2.60 (66)	5.0 (127)	1.8 (46)	1.5 (38)	1.8 (46)	0.22 (6)	0.37 (9)	M5-0.8	1.42 (36)	0.84 (21)	0.62 (16)	0.86 (22)	0.44 (11)	1/2"-14NPT	F03	2	8	50	M6-1.0 X 45	M6-1.0P
3/4"	0.23 (6)	1.0 (25)	0.37 (9)	0.56 (14)	2.81 (71)	5.0 (127)	1.9 (48)	1.5 (38)	1.8 (46)	0.22 (6)	0.37 (9)	M5-0.8	1.42 (36)	1.05 (27)	0.82 (21)	1.07 (27)	0.56 (14)	3/4"-14NPT	F03	2	12	50	M6-1.0 X 50	M6-1.0P
1"	0.34 (9)	1.2 (30)	0.70 (18)	0.82 (21)	3.70 (94)	6.0 (152)	2.4 (61)	1.7 (43)	2.1 (53)	0.30 (8)	0.43 (11)	M5-0.8	1.65 (42)	1.32 (34)	1.05 (27)	1.33 (34)	0.56 (14)	1"-11.5NPT	F04	4	32	150	M8-1.25 X 65	M8-1.25P
1-1/4"	0.34 (9)	1.2 (30)	0.93 (24)	1.00 (25)	4.25 (108)	6.0 (152)	2.6 (66)	1.7 (43)	2.1 (53)	0.30 (8)	0.43 (11)	M5-0.8	1.65 (42)	1.66 (42)	1.38 (35)	1.68 (43)	0.53 (13)	1-1/4"-11.5NPT	F04	5	57	175	M8-1.25 X 75	M8-1.25P
1-1/2"	0.40 (10)	1.4 (36)	1.18 (30)	1.25 (32)	4.57 (116)	7.0 (178)	3.2 (81)	2.1 (53)	2.6 (66)	0.34 (9)	0.56 (14)	M6-1.0	1.97 (50)	1.90 (48)	1.61 (41)	1.92 (49)	0.53 (13)	1-1/2"-11.5NPT	F05	7	80	450	M10-1.5 X 85	M10-1.5P
2"	0.40 (10)	1.4 (36)	1.18 (30)	1.50 (38)	5.04 (128)	7.0 (178)	3.3 (84)	2.1 (53)	2.6 (66)	0.34 (9)	0.56 (14)	M6-1.0	1.97 (50)	2.38 (60)	2.07 (53)	2.41 (61)	0.68 (17)	2"-11.5NPT	F05	11	104	600	M10-1.5 X 95	M10-1.5P
2-1/2"	0.42 (11)	1.4 (36)	1.22 (31)	2.00 (51)	5.95 (151)	11.0 (279)	3.4 (86)	2.1 (53)	2.6 (66)	0.34 (9)	0.56 (14)	M6-1.0	1.97 (50)	2.88 (73)	2.47 (63)	2.94 (75)	1.06 (27)	2-1/2"-8NPT	F05	17	240	925	M10-1.5 X 120	M10-1.5P



**END CONFIGURATIONS:**



**PRODUCT INFORMATION:**

1. END CONNECTIONS AVAILABLE IN: SCREWED (FNPT), SOCKET WELD, BUTT WELD, SCREWED x SOCKET WELD, SCREWED x BUTT WELD (SCH-40 OR SCH-10)
2. BALL IS VENTED ON THE STEM SLOT AREA
3. ALL STAINLESS STEEL PASSIVATED
4. MANGANESE PHOSPHATE COATING ON WCB CARBON STEEL
5. 2-1/2" N8 (STAINLESS STEEL AND CARBON STEEL) VALVES REQUIRES 17-4PH (ASTM A564-630) STEM AS STANDARD COMPONENT
6. COMPLETE VALVE AUTOMATION

**OPTIONS:**

1. OVAL HANDLE
2. LOCKING DEVICE
3. ISO STEM EXTENSION
4. ANTI-STATIC DEVICE

**APPLICABLE STANDARDS:**

1. ASME B16.34: DESIGN
2. API 598: INSPECTION AND TESTING
3. ISO 5211: MOUNTING
4. ANSI B1.20.1: NPT
5. ANSI B16.11: FORGED STEEL FITTINGS, SOCKET-WELDING
6. ANSI B16.25: BUTT WELD ENDS
7. ANSI CLASS 600 PRESSURE RATING

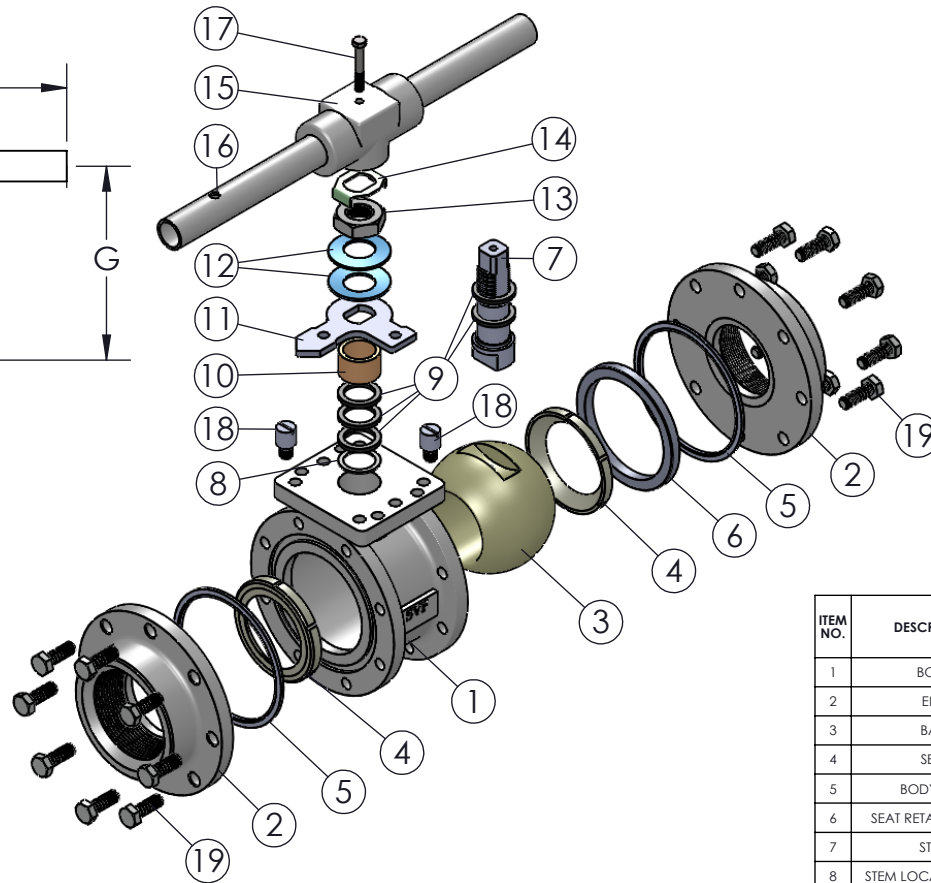
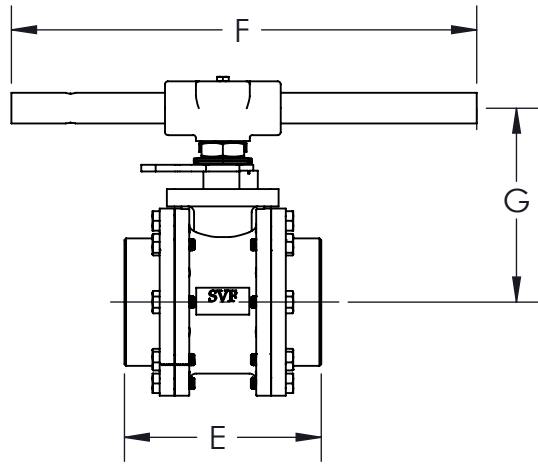
ITEM NO.	DESCRIPTION	MATERIALS				QTY.
1	BODY	A351-CF8M	A216-WCB	A351-CN7M	A494 CW-12MW	1
2	END	A351-CF3M	A216-WCB	A351-CN7M	A494 CW-12MW	2
3	BALL	A351-CF8M	A351-CN7M	B164-N0440	A494 CW-12MW	1
4	SEAT	SUPRALON				2
5	BODY SEAL	SUPRALON				2
6	STEM	A276-316	A351-CN7M	B164-N0440	A564-630 A494 CW-12MW	1
7	STEM THRUST WASHER	SUPRALON				1
8	STEM SEAL	SUPRALON				2
9	GLAND FOLLOWER	304 STAINLESS STEEL				1
10	BELLEVILLE WASHER	17-7 PH STAINLESS STEEL				2
11	JAM NUT	304 STAINLESS STEEL				1
12	LOCK TAB	304 STAINLESS STEEL				1
13	LEVER HANDLE	304 STAINLESS STEEL				1
14	SERRATED LOCK WASHER	304 STAINLESS STEEL				1
15	HANDLE NUT	304 STAINLESS STEEL				1
16	STOP PIN	304 STAINLESS STEEL				1
17	BODY BOLT	304 STAINLESS STEEL				4
18	BODY NUT	304 STAINLESS STEEL				4
19	SEAT RETAINER (2-1/2" ONLY)	316 STAINLESS STEEL				1

DRAWN BY: E.P. DATE: 06/20/2017  
 CHECKED BY: E.G. DATE: 10/27/2017  
 APPROVED BY: J.S. DATE: 10/27/2017  
(FOR REF ONLY IF NOT APPROVED)  
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 PROJECTION THIRD ANGLE

DESCRIPTION: 1/4" - 3/8" N8 3-PIECE BALL VALVE, FULL PORT & 1/2" - 2-1/2" N8 3-PIECE BALL VALVE, STANDARD PORT, FOR STEAM AND THERMAL FLUID SERVICE  
 UNITS: INCH (MILLIMETERS) DATE: 09/07/2018 REV: C

\* AT FULL DIFFERENTIAL PRESSURE FOR CLEAN FLUIDS WITH SUPRALON SEATS

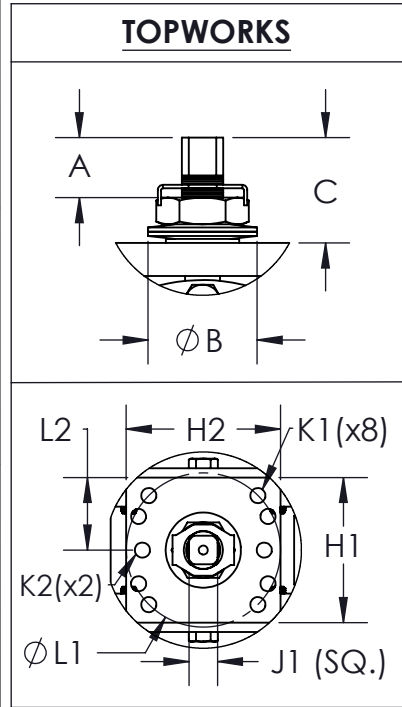
SIZE	A	øB	C	øD	E	F	G	H1	H2	J1	K1	K2	øL1	L2	øM	øN	øO1	O2	NPT THREAD	ISO 5211	WEIGHT (lbs)	Cv	TORQUE* (in-lbf)	BODY BOLT SIZE
3"	0.77 (20)	1.98 (50)	1.98 (50)	2.50 (64)	6.68 (170)	14.0 (356)	7.3 (182)	3.78 (96)	4.02 (102)	0.75 (19)	M10x1.5P	0.39 (10)	4.02 (102)	1.89 (48)	3.58 (91)	3.06 (78)	3.54 (90)	0.68 (17)	3" NPT	F10	30	320	1500	M10 - 1.5 X30



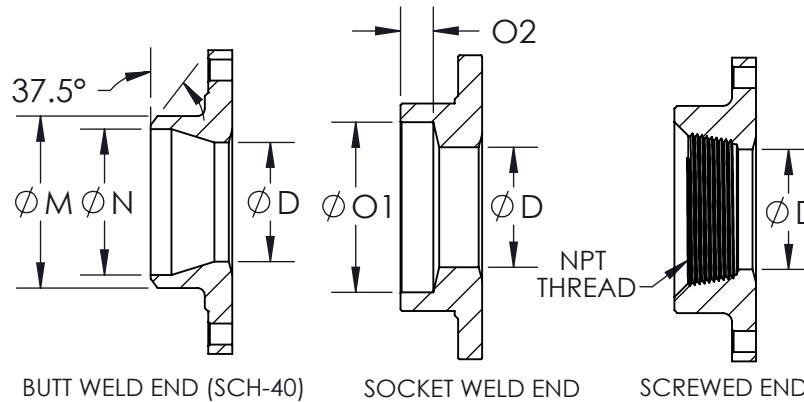
**PRODUCT INFORMATION:**  
 1. END CONNECTIONS AVAILABLE IN: SCREWED (FNPT), SOCKET WELD, BUTT WELD, SCREWED x SOCKET WELD, SCREWED x BUTT WELD (SCH-40 OR SCH-10)  
 2. LOCKING DEVICE IS STANDARD COMPONENT  
 3. BALL IS VENTED ON THE STEM SLOT AREA  
 4. ALL STAINLESS STEEL PASSIVATED  
 5. MANGANESE PHOSPHATE COATING ON WCB CARBON STEEL.  
 6. COMPLETE VALVE AUTOMATION

**OPTIONS:**  
 1. ISO STEM EXTENSION  
 2. ANTI-STATIC DEVICE

**APPLICABLE STANDARDS:**  
 1. ASME B16.34: DESIGN  
 2. API 598: INSPECTION AND TESTING  
 3. ISO 5211: MOUNTING  
 4. ANSI B1.20.1: NPT  
 5. ANSI B16.11: FORGED STEEL FITTINGS, SOCKET-WELDING  
 6. ANSI B16.25: BUTT WELD ENDS



**END CONFIGURATIONS:**



ITEM NO.	DESCRIPTION	MATERIALS				QTY.	
1	BODY	A351-CF8M	A216-WCB	A351-CN7M	A494 CW-12MW	1	
2	END	A351-CF3M	A216-WCB	A351-CN7M	A494 CW-12MW	2	
3	BALL	A351-CF8M	A351-CN7M	B164-N0440	A494 CW-12MW	1	
4	SEAT	SUPRALON				2	
5	BODY SEAL	SUPRALON				2	
6	SEAT RETAINER RING	304 STAINLESS STEEL				1	
7	STEM	A276-316	A351-CN7M	B164-N0440	A564-630	A494 CW-12MW	1
8	STEM LOCATION RING	316 STAINLESS STEEL				1	
9	STEM THRUST WASHER	SUPRALON				5	
10	GLAND FOLLOWER	304 STAINLESS STEEL				1	
11	LOCKING PLATE	316 STAINLESS STEEL				1	
12	BELLEVILLE WASHER	17-7 PH STAINLESS STEEL				2	
13	STEM NUT	304 STAINLESS STEEL				1	
14	LOCK TAB	304 STAINLESS STEEL				1	
15	HANDLE ADAPTER	316 STAINLESS STEEL				1	
16	PIPE HANDLE	316 STAINLESS STEEL				1	
17	HANDLE BOLT	304 STAINLESS STEEL				1	
18	STOP PIN	304 STAINLESS STEEL				2	
19	BODY BOLT	304 STAINLESS STEEL				16	

DRAWN BY E.P.	DATE 06/20/2017
CHECKED BY E.G.	DATE 10/27/2017
APPROVED BY J.S.	DATE 10/27/2017
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PROJECTION THIRD ANGLE:	

**OSVF**  
FLOW CONTROLS

DESCRIPTION:  
**3" N8 3-PIECE BALL VALVE FOR STEAM AND THERMAL FLUID SERVICE, STANDARD PORT**

UNITS: INCH (MILLIMETERS)    DATE: 10/27/2017    REV: B