



**MERCER VALVE CO., INC.®**  
"AUTO SEAT TECHNOLOGY"®

# 1400 SERIES



**MERCER VALVE**

**THINK...MERCER FIRST®**





## 1400 Series Product Overview

The 1400 Series is a safety relief valve designed for lower capacity systems. The unique design of the 1400 Series incorporates features of our patented Auto Seat Technology® that allows for less leakage and a more consistent set pressure. The smaller size of the valve allows for easier installations in tight confined spaces and allows for smaller inlet and outlet connections. The 1400 Series is certified through ASME Boiler Pressure Vessel Code Section VIII, Division 1 for Air and Gas Service. The 1400 Series is designed for applications ranging from 500-PSI up to 6,000-PSI.



### 1400 Series Features

- Incorporated features of “Auto Seat Technology”®
- Consistent Set Pressures allowing repeatable uses without repair or resetting.
- Open, Close, Seat and Seal.™
- Fully guided disk keeps the disk properly aligned, opening and closing, helping to reseal the valve.
- Mechanical Stop prevents wear on parts and controls valve lift.
- Low rated and fully guided spring allows for more consistent set pressures from pop to pop.
- Pop Action relief allows valve to go to full lift at set pressure. Helps with DOT regulated applications.
- Built in accordance with the requirements of ASME Boiler and Pressure Vessel Code. Sec. VIII Div 1.
- Non-rising stems allowing valves to be installed in small areas.

## 1400 Series Model Specifications



Inlet Sizes Available	1/2", 3/4", 1"
Outlet Sizes Available	3/4", 1"
Orifice Diameter, in (mm)	0.160 (4)
Orifice Area, in <sup>2</sup> (mm <sup>2</sup> )	0.020 (13)
Orifice Letter	B
ASME "Slope" (Gas)	0.291
Equivalent Flow Coefficient (Gas)	0.7937
Pressure Range, psig (kPag)	150 to 6000 (1034 to 41368)
Std Temp Range, °F (°C)	-20 to 400 (-29 to 204)

*NOTE: Mercer Valve reserves the right to change product designs and specifications without notice.*



## 1400 Series Dimensions and Weights

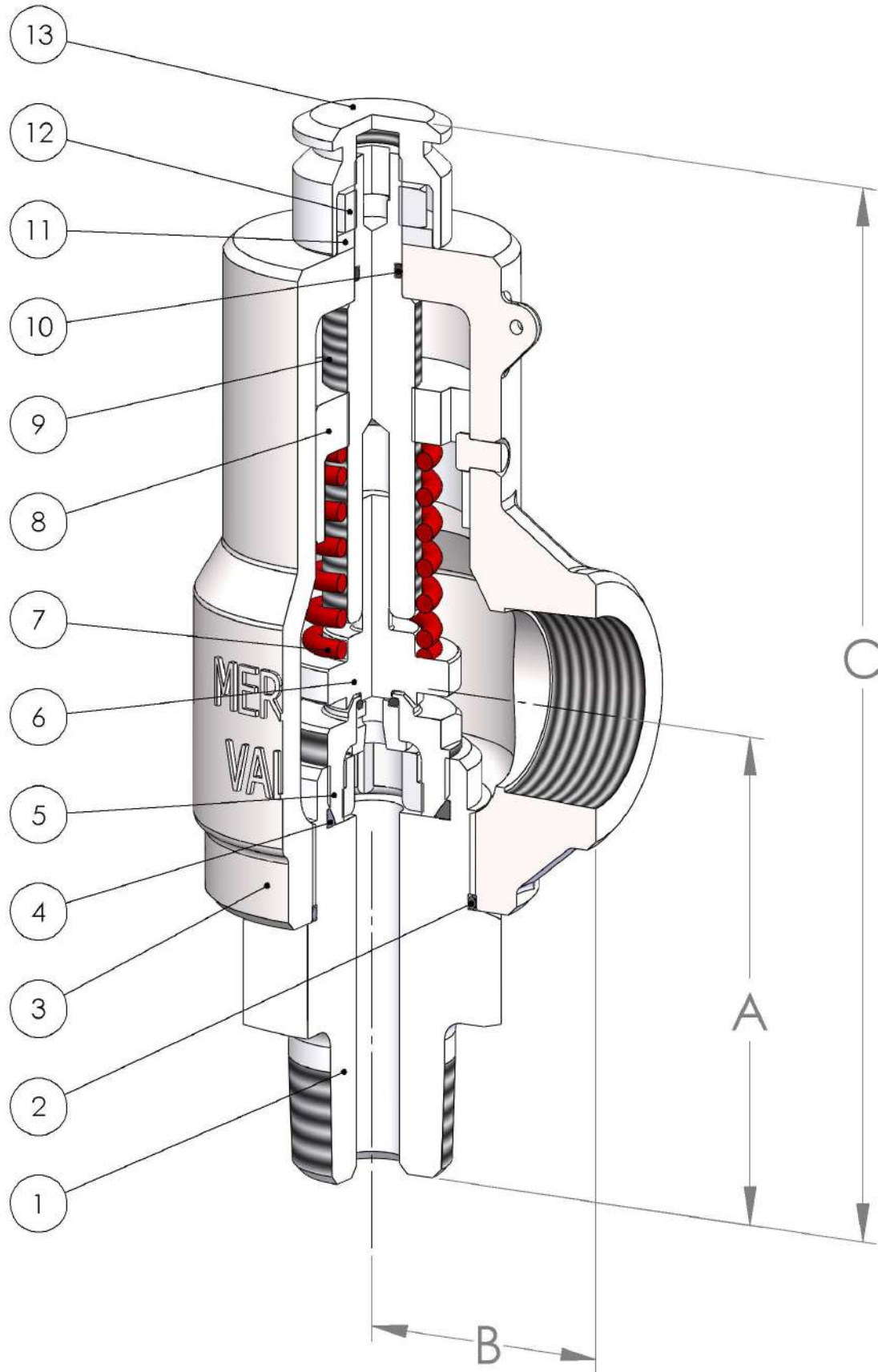
Inlet Code	Inlet Size and Type	Maximum Set Pressure psig(kpag)	Dimensions A x B x C in ± 1/16 (mm ± 2)			Approx. Weight lbs(kg)
			A	B	C	
1	1/2" NPT FEMALE	6000 (41368)	27/16 (62)	15/8 (41)	61/8 (156)	4.25 (1.9)
2	3/4" NPT FEMALE	6000 (41368)	27/16 (62)	15/8 (41)	61/8 (156)	4.25 (1.9)
3	1" NPT FEMALE	6000 (41368)	213/16 (71)	15/8 (41)	61/2 (165)	4.00 (1.8)
4	3/4" NPT MALE	6000 (41368)	33/16 (81)	15/8 (41)	67/8 (175)	4.25 (1.9)
5	1" NPT MALE	6000 (41368)	33/16 (81)	15/8 (41)	67/8 (175)	4.50 (2.0)
6	SAE J1926-1 3/4-16 PORT	6000 (41368)	27/16 (62)	15/8 (41)	61/8 (156)	4.25 (1.9)
7	SAE J1926-1 1 1/16-12 PORT	6000 (41368)	27/16 (62)	15/8 (41)	61/8 (156)	4.25 (1.9)
8	SAE J1926-1 1 5/16-12 PORT	6000 (41368)	213/16 (71)	15/8 (41)	61/2 (165)	4.85 (2.2)
9	SAE J518 3/4" CODE 62	6000 (41368)	43/16 (106)	15/8 (41)	77/8 (200)	5.0 (2.26)

NOTE: Mercer valve reserves the right to change product designs and specifications without notice.

## 1400 Series Parts and Materials

ITEM NO.	PART NAME	STANDARD MATERIALS
1	INLET BASE	316 STAINLESS STEEL
2	O-RING	FLUOROCARBON (FKM)
3	BODY SUBASSEMBLY	CF3M STAINLESS STEEL
4	O-RING	FLUOROCARBON (FKM)
5	NOZZLE SUBASSEMBLY	316 STAINLESS STEEL WITH SOFT SEAT
6	DISK	316 STAINLESS STEEL
7	SPRING	17-7 PH STAINLESS STEEL
8	ADJUSTMENT BUSHING	316 STAINLESS STEEL
9	ADJUSTMENT SCREW	316 STAINLESS STEEL
10	O-RING	FLUOROCARBON (FKM)
11	WASHER	316 STAINLESS STEEL
12	LOCKNUT	ALLOY STEEL
13	CLOSED CAP	316 STAINLESS STEEL

NOTE: Mercer Valve reserves the right to change product designs and specifications without notice.





## 1400 Series Capacity Charts

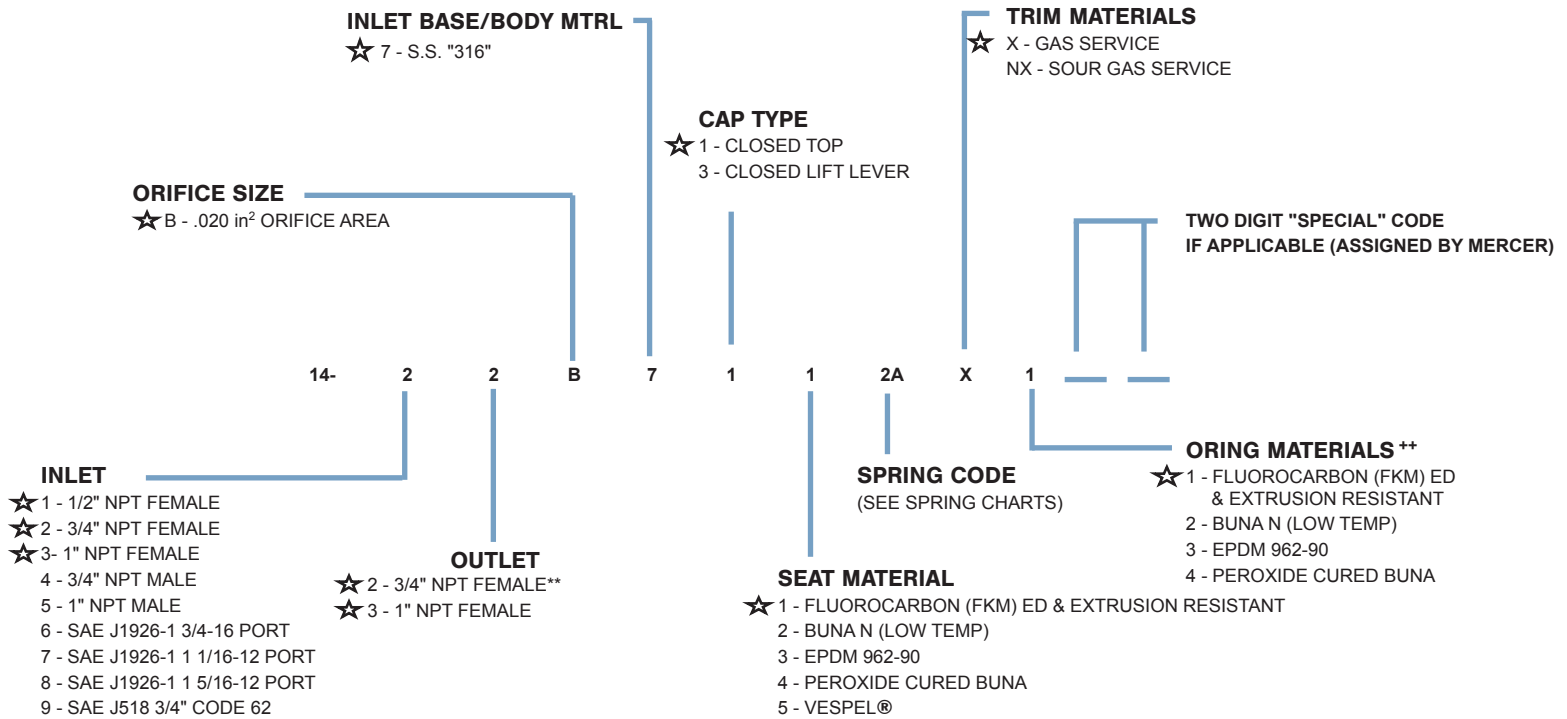
AIR CAPACITY AT 60°F  
AND STD ATMOSPHERIC CONDITIONS

Set Pressure (psig)	SCFM	MSCFH	MMSCFD	Nm3/h
500	164	10	0.24	264
600	196	12	0.28	315
700	228	14	0.33	367
800	260	16	0.37	418
900	292	18	0.42	469
1000	324	19	0.47	521
1100	356	21	0.51	572
1200	388	23	0.56	624
1300	420	25	0.61	675
1400	452	27	0.65	727
1500	484	29	0.70	778
1600	516	31	0.74	829
1700	548	33	0.79	881
1800	580	35	0.84	932
1900	612	37	0.88	984
2000	644	39	0.93	1035
2100	676	41	0.97	1087
2200	708	43	1.02	1138
2300	741	44	1.07	1191
2400	773	46	1.11	1243
2500	805	48	1.16	1294
2600	837	50	1.20	1345
2700	869	52	1.25	1397
2800	901	54	1.30	1448
2900	933	56	1.34	1500
3000	965	58	1.39	1551
3100	997	60	1.44	1603
3200	1029	62	1.48	1654
3300	1061	64	1.53	1706
3400	1093	66	1.57	1757
3500	1125	67	1.62	1808
3600	1157	69	1.67	1860
3700	1189	71	1.71	1911
3800	1221	73	1.76	1963
3900	1253	75	1.80	2014
4000	1285	77	1.85	2066
4100	1317	79	1.90	2117
4200	1349	81	1.94	2168
4300	1381	83	1.99	2220
4400	1413	85	2.03	2271
4500	1445	87	2.08	2323
4600	1477	89	2.13	2374
4700	1509	91	2.17	2426
4800	1541	92	2.22	2477
4900	1573	94	2.26	2529
5000	1605	96	2.31	2580
5100	1637	98	2.36	2631
5200	1669	100	2.40	2683
5300	1701	102	2.45	2734
5400	1733	104	2.50	2786
5500	1765	106	2.54	2837
5600	1797	108	2.59	2889
5700	1829	110	2.63	2940
5800	1861	112	2.68	2991
5900	1893	114	2.73	3043
6000	1925	115	2.77	3094

NATURAL GAS (0.6 SG) CAPACITY AT 60°F  
AND STD ATMOSPHERIC CONDITIONS

Set Pressure (psig)	SCFM	MSCFH	MMSCFD	Nm3/h
500	205	12	0.30	330
600	245	15	0.35	394
700	285	17	0.41	458
800	325	19	0.47	522
900	365	22	0.53	587
1000	405	24	0.58	651
1100	445	27	0.64	715
1200	485	29	0.70	780
1300	524	31	0.76	842
1400	564	34	0.81	907
1500	604	36	0.87	971
1600	644	39	0.93	1035
1700	684	41	0.99	1100
1800	724	43	1.04	1164
1900	764	46	1.10	1228
2000	804	48	1.16	1292
2100	844	51	1.22	1357
2200	884	53	1.27	1421
2300	924	55	1.33	1485
2400	964	58	1.39	1550
2500	1004	60	1.45	1614
2600	1044	63	1.50	1678
2700	1083	65	1.56	1741
2800	1123	67	1.62	1805
2900	1163	70	1.68	1869
3000	1203	72	1.73	1934
3100	1243	75	1.79	1998
3200	1283	77	1.85	2062
3300	1323	79	1.91	2127
3400	1363	82	1.96	2191
3500	1403	84	2.02	2255
3600	1443	87	2.08	2320
3700	1483	89	2.14	2384
3800	1523	91	2.19	2448
3900	1563	94	2.25	2512
4000	1603	96	2.31	2577
4100	1642	99	2.37	2639
4200	1682	101	2.42	2704
4300	1722	103	2.48	2768
4400	1762	106	2.54	2832
4500	1802	108	2.60	2897
4600	1842	111	2.65	2961
4700	1882	113	2.71	3025
4800	1922	115	2.77	3090
4900	1962	118	2.83	3154
5000	2002	120	2.88	3218
5100	2042	123	2.94	3282
5200	2082	125	3.00	3347
5300	2122	127	3.06	3411
5400	2162	130	3.11	3475
5500	2202	132	3.17	3540
5600	2241	134	3.23	3602
5700	2281	137	3.29	3667
5800	2321	139	3.34	3731
5900	2361	142	3.40	3795
6000	2401	144	3.46	3860

## 1400 Series Product Numbering System



★ **STANDARD MATERIALS OR OPTIONS**

\*\* **ONLY AVAILABLE ON INLET SIZES 1,2,4,6,7,&9**

++ **ORING MATERIAL MUST MATCH SEAT MATERIAL EXCEPT FOR OPTION 5 SEAT**

*Vespel® is a registered trademark of E. I. du Pont de Nemours and Company or its affiliates*

**NOTE: Mercer Valve reserves the right to change product designs and specifications without notice.**