

# SPECIALTY PRODUCTS

## WSVB Series

Watson McDaniel reserves the right to change the designs and/or materials of its products without notice.  
©2004 Watson McDaniel Company

### Safety Relief Valves "UV" Steam-ASME Section VIII Pressure Vessels

Revised 9/2004

Model	<b>WSVB</b>
Sizes	1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2"
Connections	NPT
Body Material	Bronze
PMO Max. Operating Pressure	250 PSIG (steam)
TMO Max. Operating Temperature	406 °F



### TYPICAL APPLICATIONS

The **WSVB** Safety Relief Valves are used for over-pressure protection on unfired pressure vessels in saturated steam systems.

### HOW IT WORKS

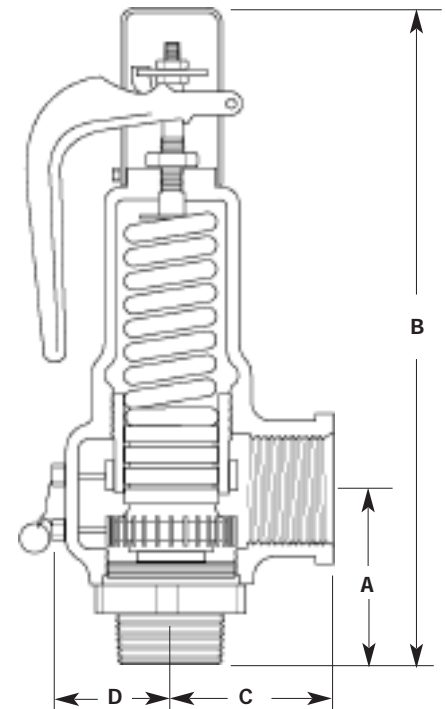
As safety relief valves open on a non-compressible fluid application, the disc lifts directly proportional to the increase in system pressure over the valve set point. Safety relief valves not only provide over pressure protection resulting from thermal expansion of liquids but will respond with a rapid full opening "pop" action on systems which contain steam, air or gas.

### FEATURES

- Stainless Steel springs
- Teflon® PFA seat resists corrosive boiler chemicals
- Two control rings for maximum performance & adjustability
- Tapped body drain allows piping of condensate away from equipment

### SAMPLE SPECIFICATION

Safety relief valves shall be cast bronze construction with stainless steel springs, Teflon PFA seats and rust-proof steel stems. Units shall be qualified to the ASME Boiler Code, Section VIII and suitable for steam service.



### DIMENSIONS – inches / pounds

Model No.	Orifice Size	Inlet x Outlet MNPT x FNPT	A	B	C	D	Weight (lbs)
WSVB-12M-13S-D	D	1/2" x 3/4"	1 <sup>25</sup> / <sub>32</sub>	6 <sup>1</sup> / <sub>8</sub>	1 <sup>23</sup> / <sub>64</sub>	27 <sup>1</sup> / <sub>32</sub>	1.5
WSVB-13M-13S-D	D	3/4" x 3/4"	1 <sup>25</sup> / <sub>32</sub>	6 <sup>3</sup> / <sub>16</sub>	1 <sup>23</sup> / <sub>64</sub>	27 <sup>1</sup> / <sub>32</sub>	1.5
WSVB-13M-14S-E	E	3/4" x 1"	1 <sup>6</sup> / <sub>64</sub>	6 <sup>5</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>16</sub>	1.9
WSVB-14M-14S-E	E	1" x 1"	2 <sup>5</sup> / <sub>64</sub>	6 <sup>3</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>16</sub>	2.08
WSVB-14M-15S-F	F	1" x 1 1/4"	2 <sup>3</sup> / <sub>8</sub>	8 <sup>25</sup> / <sub>32</sub>	2	1 <sup>7</sup> / <sub>16</sub>	3.90
WSVB-15M-15S-F	F	1 1/4" x 1 1/4"	2 <sup>7</sup> / <sub>16</sub>	8 <sup>27</sup> / <sub>32</sub>	2	1 <sup>7</sup> / <sub>16</sub>	4.05
WSVB-15M-16S-G	G	1 1/4" x 1 1/2"	2 <sup>11</sup> / <sub>16</sub>	10 <sup>3</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	7.03
WSVB-16M-16S-G	G	1 1/2" x 1 1/2"	2 <sup>3</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	6.98
WSVB-16M-17S-H	H	1 1/2" x 2"	3 <sup>3</sup> / <sub>64</sub>	11 <sup>9</sup> / <sub>32</sub>	2 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>16</sub>	11.20
WSVB-17M-17S-H	H	2" x 2"	3 <sup>7</sup> / <sub>64</sub>	11 <sup>11</sup> / <sub>32</sub>	2 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>16</sub>	11.33
WSVB-17M-18S-J	J	2" x 2 1/2"	3 <sup>7</sup> / <sub>16</sub>	13 <sup>5</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>16</sub>	19.20
WSVB-18M-18S-J	J	2 1/2" x 2 1/2"	3 <sup>13</sup> / <sub>16</sub>	14	3 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>16</sub>	19.80

### MATERIALS

Body	Bronze
Guide Ring	Brass
Disc	Brass
Seat Insert	Teflon® PFA
Stem	Steel-Plated

SPECIALTY

# SPECIALTY PRODUCTS

## WSVB Series

### Safety Relief Valves "UV" Steam-ASME Section VIII Pressure Vessels

Revised 9/2004

CAPACITIES – Pounds of saturated steam per hour (lbs/hr)						
SET PRESSURE (PSIG)	Orifice "D" .405 Diameter	Orifice "E" .541 Diameter	Orifice "F" .676 Diameter	Orifice "G" .866 Diameter	Orifice "H" 1.082 Diameter	Orifice "J" 1.386 Diameter
15	179	320	499	819	1278	2099
20	207	369	576	945	1474	2420
25	234	417	652	1070	1669	2741
30	262	467	728	1195	1865	3062
35	292	521	812	1333	2080	3415
40	322	574	896	1471	2295	3768
45	352	628	980	1609	2510	4121
50	382	682	1064	1746	2725	4474
55	412	736	1148	1884	2940	4827
60	443	790	1232	2022	3155	5180
65	473	843	1316	2160	3370	5533
70	503	897	1400	2298	3585	5886
75	533	951	1484	2435	3800	6239
80	563	1005	1568	2573	4015	6592
85	593	1059	1652	2711	4230	6946
90	623	1112	1736	2849	4445	7299
95	654	1166	1820	2987	4660	7652
100	684	1220	1904	3124	4875	8005
105	714	1274	1988	3262	5090	8358
110	744	1328	2072	3400	5305	8711
115	774	1381	2156	3538	5520	9064
120	804	1435	2240	3676	5735	9417
125	835	1489	2324	3813	5950	9770
130	865	1543	2408	3951	6165	10123
135	895	1597	2492	4089	6380	10476
140	925	1651	2576	4227	6595	10829
145	955	1704	2660	4365	6810	11182
150	985	1758	2744	4502	7025	11535
160	1046	1866	2912	4778	7455	12241
170	1106	1973	3080	5054	7885	12947
180	1166	2081	3248	5329	8315	13654
190	1227	2189	3416	5605	8745	14360
200	1287	2296	3584	5881	9175	15066
210	1347	2404	3752	6156	9605	15772
220	1408	2512	3920	6432	10035	16478
230	1468	2619	4088	6707	10465	17184
240	1528	2727	4256	6983	10895	17890
250	1590	2834	4424	7259	11325	18596
Approx. 1 PSI Incr.	6.0	10.8	16.8	27.6	43.0	70.6

Notes: Ratings are 90% of actual capacity.  
Set Pressures over 250 PSI; consult factory.

SPECIALTY