# For Hot Water Boiler Applications

lob Name	Contractor
lob Location	Approval
Engineer	Contractor's P.O. No.
Approval	Representative

Series 174A, 374, 740

# ASME Water Pressure Relief Valves

For Pressure Protection of Hot Water Heating Boilers

Sizes: 3/4" - 2" (20 - 50mm)

#### Series 174A

Bronze body safety relief valves for pressure protection only of all types of hot water heating boiler equipment. Pressure range 30 to 150psi (2.1 - 10 bar) with corresponding high ratings from 650,000 to 14,370,000 BTU/hr. Female inlet and outlet connections. Sizes 3/4" - 2" (20 - 50mm).

#### Series 374A

Iron body with forged brass inlet, 550,000 BTU/hr rating.  $\ensuremath{\%^{\text{"}}}$  (20mm) only.

#### Series 740

Iron body with expanded outlets for hot water space heating boilers. Pressure range 30 to 75psi (2 to 5 bar) with corresponding high ratings from 925,000 to 10,700,000 BTU/hr.

### **Features**

- Seat located above drain; water can't be trapped and sediment can't foul seat.
- Non-mechanical seat-to-disc alignment will not stick or freeze
- Water seal of high temperature resisting material isolates spring working parts from water during relief.\*

# **Specifications**

### **Boiler Relief Valves**

An ASME Section IV certified pressure relief valve shall be installed on each boiler as noted. The valve shall have a BTU rating in excess of the BTU rating of the boiler's heating output. Each hot water space heating boiler shall be equipped with a pressure relief valve set to relieve below the maximum boiler working pressure. The valve shall feature a raised seat and non-mechanical disc alignment. Working parts and spring shall be isolated from any discharge by a high temperature resistant material.\* Valve shall be a Watts Series 174A, 374A or 740.

### NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.





Series 174A

Series 740

## Operation

As thermal expansion conditions develop, pressure builds up to the setting of the relief valve. This will cause discharging of small quantity of water.

Should operating controls fail, permitting runaway firing, the boiler water may reach steam temperatures. The valve will then open to discharge steam at the rate or faster than the boiler can generate it, thus restoring system pressure to a safer level.

### NOTICE

The discharge line must be the same size as the valve outlet, and must pitch downward from the valve to a safe place for disposal.

Valve lever must be tripped at least once a year to ensure that waterways are clear. This device is designed for emergency safety relief and shall not be used as an operating control.

### **A** WARNING

It is illegal to use this product in any plumbing system providing water for human consumption, such as drinking or dishwashing, in the United States. Before installing standard material product, consult your local water authority, building and plumbing codes.



<sup>\*</sup> Does not apply to 374A

### **Materials**

#### Series 174A

- Bronze body construction
- Nonmetallic disc-to-metal seating

#### Series 740

- Iron body construction
- Nonmetallic disc-to-metal seating

## Pressure - Temperature

### Series 174A

Pressure range: 30psi to 150psi (2 to 10 bar) with corresponding high BTU/hr ratings from 650,000 to 14,370,000 BTU/hr. Maximum Temperature: 250 °F (121 °C)

### Series. 374A

Pressure range: rated up to 550,000 BTU/hr at a 30psi (2 bar) setting. (Other settings available)

#### Series 740

Pressure range: 30psi to 75psi (2 to 5 bar) with corresponding high ratings from 925,000 to 10,700,000 BTU/hr. Maximum Temperature: 250 °F (121 °C)

### **Standards**



Tested and rated by the National Board of Boiler and Pressure Vessel Inspectors to the requirements of ASME. Meets Military Spec. MIL-V-18634B, Type I, Class 3A, Style A (Bronze Body), Style B (Iron Body).

# **Dimensions - Weights**

SERIES 174A									
	Size (Dn)			Height		Length		Weight	
Model	in.	mm	Model	in.	mm	in	mm	lbs.	kg.
374A	3/4 <b>X</b> 3/4	20 x 20	_	31/2	90	21/2	64	1.2	0.5
174A	3/4 <b>X</b> 3/4	20 x 20	М3	41/2	116	23/4	67	1.2	0.5
174A	1 x 1	25 x 25	M1	53/4	144	3	76	1.9	0.9
174A	1¼ x 1¼	32 x 32	M1	81/2	213	41/4	109	4.6	2.1
174A	1½ x 1½	40 x 40	M	91/4	232	43/4	122	6.9	3.1
174A	2 x 2	50 x 50	M	11½	290	61/2	162	14.4	6.5
SERIES 740									
740	3/4 x 1	20 x 25	M1	5%	143	3	76	1.88	9
740	1 x 11/4	25 x 32	M	71/4	184	31/2	89	3.13	1.4
740	1¼ x 1½	32 x 40	M	83/4	222	45/8	117	6.13	2.8
740	1½ x 2	40 x 50	M	91/4	235	51/4	133	7.50	3.4
740	2 x 2½	50 x 65	М	11%	295	63/4	171	16.50	7.5

## Capacity\*

60

65

70

75

4.13

4.58

4.82

1,566,000

1,672,000

1,779,000

1,886,000

2,200,000

2,349,000

2,499,000

2,649,000

**BTU/hr Steam Pressure Discharge Capacities**As tested and rated by the National Board of Boiler and Pressure Vessel Inspectors

			SERIES	174A			
5	Set	34" X 34"	1" x 1"	1¼" x 1¼"	1½" x 1½"	2" x 2"	
Pre	ssure	20 x 20mm	25 x 25mm	32 x 32mm	40 x 40mm	50 x 50mm	
psi	bar	Model M3	Model M1	Model M1	Model M	Model M	
30	2.07	650,000	1,005,000	1,682,000	2,020,000	3,815,000	
33	2.27	695,000	1,075,000	1,788,000	2,150,000	4,080,000	
35	2.41	725,000	1,125,000	1,877,000	2,250,000	4,250,000	
36	2.48	740,000	1,145,000	1,916,000	2,310,000	4,344,000	
40	2.76	800,000	1,240,000	2,071,000	2,490,000	4,690,000	
45	3.1	875,000	1,355,000	2,265,000	2,720,000	5,130,000	
50	3.45	950,000	1,470,000	2,459,000	2,950,000	5,575,000	
55	3.79	1,025,000	1,590,000	2,653,000	3,190,000	6,010,000	
60	4.13	1,100,000	1,702,000	2,847,000	3,425,000	6,450,000	
65	4.58	1,170,000	1,820,000	3,041,000	3,660,000	6,890,000	
70	4.82	1,245,000	1,935,000	3,325,000	3,890,000	7,330,000	
75	5.17	1,320,000	2,055,000	3,429,000	4,125,000	7,770,000	
80	5.51	1,400,000	2,166,000	3,605,000	4,360,000	8,215,000	
85	5.86	1,470,000	2,285,000	3,817,000	4,590,000	8,650,000	
90	6.6	1,545,000	2,400,000	4,011,000	4,825,000	9,090,000	
95	6.55	1,620,000	2,520,000	4,205,000	5,060,000	9,530,000	
100	6.89	1,695,000	2,635,000	4,399,000	5,290,000	9,970,000	
105	7.23	1,770,000	2,750,000	4,593,000	5,525,000	10,410,000	
110	7.58	1,845,000	2,865,000	4,787,000	5,760,000	10,850,000	
115	7.92	1,920,000	2,980,000	4,981,000	5,990,000	11,290,000	
120	8.27	1,995,000	3,100,000	5,175,000	6,225,000	11,730,000	
125	8.61	2,070,000	3,215,000	5,370,000	6,460,000	12,170,000	
130	8.96	2,145,000	3,330,000	5,564,000	6,690,000	12,610,000	
135	9.3	2,220,000	3,445,000	5,758,000	6,925,000	13,050,000	
140	9.65	2,295,000	3,565,000	5,952,000	7,160,000	13,490,000	
145	9.99	2,370,000	3,680,000	6,146,000	7,390,000	13,390,000	
150	10.34	2,445,000	3,795,000	6,340,000	7,630,000	14,370,000	
			SERIE	S 740			
Set		3/4" x 1"	1" x 11/4"	11/4" x 11/2"	1½" x 2"	2" x 2½"	
	ssure	20 x 25mm	25 x 32mm	32 x 40mm	40 x 50mm	50 x 65mn	
psi	bar	Model M1	Model M	Model M	Model M	Model M	
30	2.07	925,000	1,300,000	2,105,000	2,900,000	5,250,000	
33	2.27	989,000	1,390,000	2,250,000	3,100,000	5,613,000	
35	2.41	1,032,000	1,450,000	2,345,000	3,235,000	5,855,000	
36	2.48	1,053,000	1,480,000	2,395,000	3,300,000	5,975,000	
40	2.76	1,139,000	1,600,000	2,590,000	3,569,000	6,461,000	
45	3.10	1,245,000	1,750,000	2,830,000	3,903,000	7,067,000	
50	3.45	1,352,000	1,899,000	3,075,000	4,237,000	7,672,000	
55	3.79	1,459,000	2,049,000	3,315,000	4,572,000	8,277,000	



A Watts Water Technologies Company

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