



## Submittal RA2000 for 2-Pipe Valve Assembly

Job Name _____	Job Location _____
Engineer _____	Approval _____
Contractor _____	Approval _____
Representative _____	Contractor P.O. No. _____

### Application

RA 2000 Thermostatic Radiator Valves regulate the flow of hot water or low pressure steam through free-standing radiators, baseboards, or convectors in hot water and two-pipe steam systems. Operators and valves are packaged separately to allow an installer an ability to select a suitable combination for each application.



### Features

- Replaceable packing assembly while system is in operation
- Non-electric thermostatic radiator valve conforms to ASHREA/ANSI standard 102-1983
- Same valve body can be used for both hot water or low pressure steam applications
- Patented vapor charged bellows for quick response from valve mounted operators
- "Snap-action" mechanism for standard valve mounted operators for ease of installation and removal without the use of tools
- Available version of tamper resistant operators

### Operational Capabilities

Adjustable Temp. Range	45-86°F (7-30°C)
Max. Sensor Temperature	140°F (°60C)

#### Hot Water Systems

Max. Temperature	250°F (°121C)
Max. Static Pressure	145 psi
Max. Test Pressure	232 psi
Max. Diff. Pressure (water)	15 psi

#### Two Pipe Low Pressure Steam Systems

Max. Temperature	250°F (°121C)
Max. Test Pressure	232 psig
Max. Steam Pressure	15 psig

### RA2000 Valve Bodies

	Code No.	Valve Type	Connection	Cv <sub>o</sub>	Qty
	013G8015	Straight	1/2" NPT	1.6	
	013G8020		3/4" NPT	2.7	
	013G8025		1" NPT	2.8	
	013G8032		1-1/4" NPT	2.8	
	013G8014	Angle	1/2" NPT	1.6	
	013G8019		3/4" NPT	2.7	
	013G8024		1" NPT	2.8	
	013G8031		1-1/4" NPT	2.8	
	013G8013	Side Mount Angle	1/2" NPT	1.6	
	013G8018		3/4" NPT	2.7	
	013G8023		1" NPT	2.8	
	013G8030		1-1/4" NPT	2.8	
	013G8042	Straight	1/2" solder	1.6	
	013G8044		3/4" solder	2.7	

◇ Cv value in GPM at pressure drop of 1 psi

### RA2000 Operators

Code No.	Sensor	Capillary	Qty
013G8250	Built-in	-	
013G8252	Remote	6'	
013G8240	Tamper resistant, built-in	-	
013G2922	Tamper resistant, Remote	6'	
013G8562	Wall mount remote	6'	
013G8565		16'	
013G8568		26'	
013G8564	Wall mount remote	6' + 6'	
013G5002	Manual handle	-	

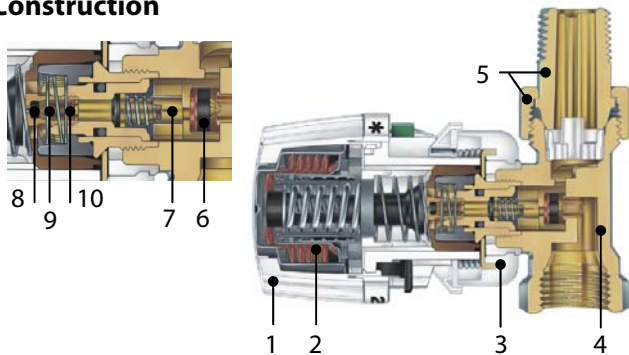
## Specification

The thermostatic radiator valve assembly shall be selected to maintain room temperature within  $\pm 1^\circ\text{F}$ . The operator shall be of a bellows design with a vapor or liquid charge and shall be connected to the valve via a snap-on fast mounting system or secured by an Allen screw. The thermostatic operator shall be capable of temperature adjustment between  $45^\circ$  and  $86^\circ\text{F}$  ( $7$  and  $30^\circ\text{C}$ ) and be locked and limited by the use of limiting pins or internal mechanism.

The valve shall be of nickel plated brass construction with a fully replaceable packing gland capable of replacement while the system is in operation. The valve disc shall be constructed of EPDM, capable of withstanding  $250^\circ\text{F}$  ( $121^\circ\text{C}$ ).

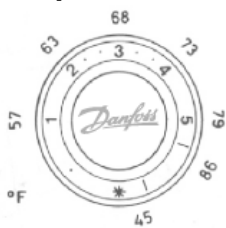
The thermostatic radiator valve shall be Danfoss or an approved equal.

## Construction



1.	Operator	ABS plastic
2.	Bellows	Vapor charged
3.	Mounting base	Plastic
4.	Valve body	Nickel plated brass
5.	Union nut/Tail piece	Nickel plated brass
6.	Valve disc	EPDM
7.	Valve spindle	Brass
8.	Pressure pin	Stainless Steel
9.	Packing O-ring	EPDM
10.	Packing gland	DRZ brass

## Temperature settings



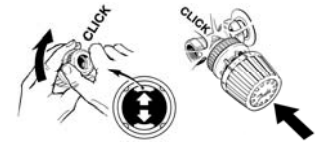
The numbers reflected on the dial (1-5) correlate to available temperature positions. The lowest setting (\*) provides frost protection and maintains the room temperature at approximately  $45^\circ\text{F}$ .

## Mounting of Operator

013G8250 & 013G8252

*Snap on attachment*

Rotation of the base retracts teeth allowing the operator to be pushed and mounted onto the valve



013G8240 & 013G2922

*Allen key requirement*

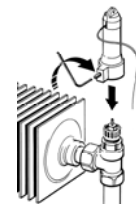
Firmly seat the operator to the valve then tighten operator with an Allen key



Wall mounted versions

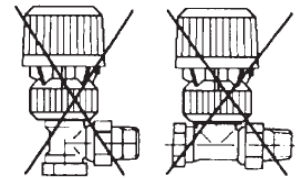
*Allen key requirement*

Firmly seat the remote operator to the valve then tighten remote operator with an Allen key



## Operator Orientation

The valve mounted built-in thermostatic operator (013G8250) should not be installed in a vertical orientation. The result will cause the operator to close prematurely. The operator should be installed in a horizontal position allowing proper air flow across the sensing element. If the operator is unable to be reoriented, a different thermostatic operator should be selected with a remote sensor.



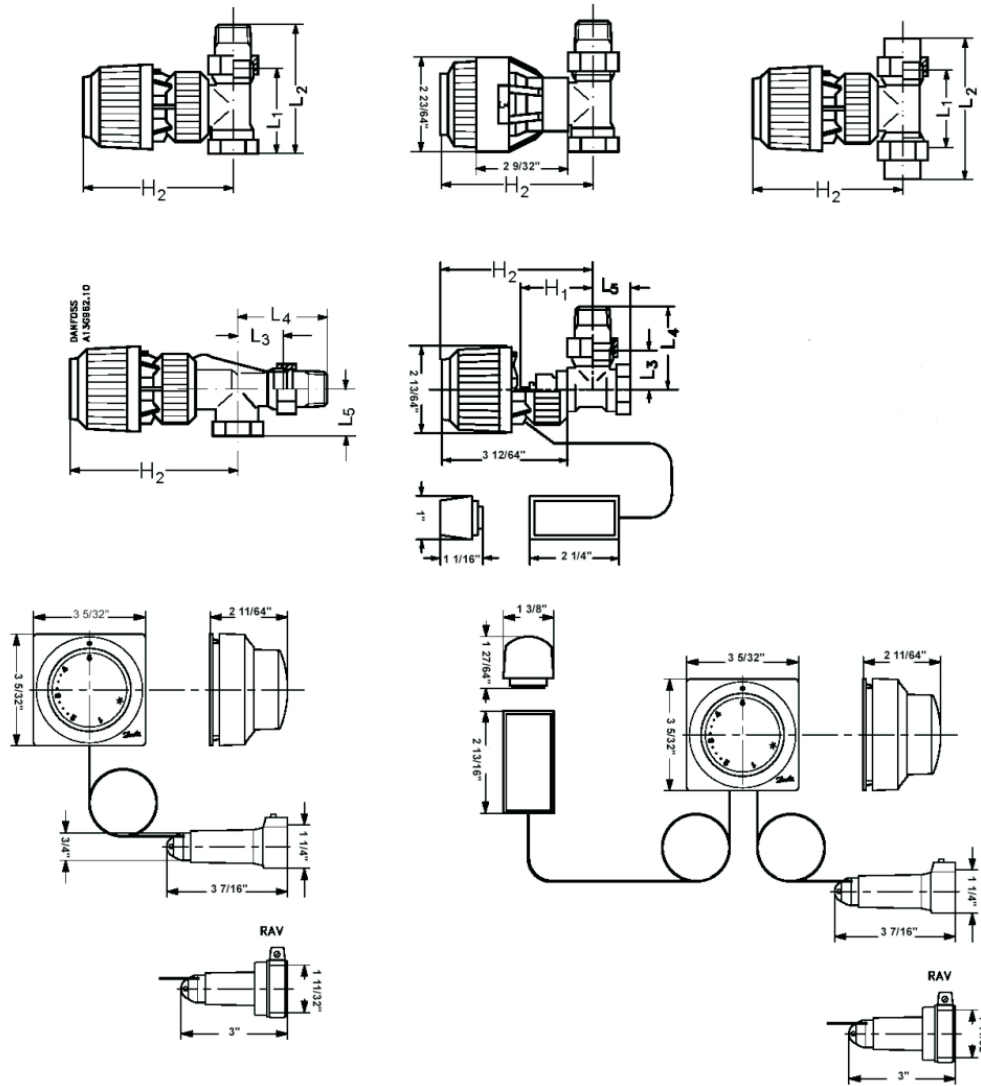
## Limiting and Locking Operator Setting

All RA2000 operators have the ability to limit or lock the temperature range or setting. For built-in style operators pins are inserted on the back of the operator, while wall mounted versions require the face plate to be removed and tabs located on the dial to be set.

## Theft protection

To prevent the removal of standard built-in operators (013G8250 and 013G8252) from the valve an optional anti-theft protection clip is inserted at the base of the operator.

## Dimensions



Valve Type	Connection Type	L1	L2	L3	L4	L5	H1	H2
Straight	1/2" NPT	25/8"	3 3/4"				157/64"	3 3/4"
	3/4" NPT	229/32"	43/16"				21/16"	315/16"
	1" NPT	317/32"	431/32"				21/16"	315/16"
	1-1/4" NPT	4 1/4"	529/32"				29/64"	41/64"
Angle	1/2" NPT			13/16"	29/32"	11/64"	157/64"	3 3/4"
	3/4" NPT			111/32"	25/8"	19/64"	21/16"	315/16"
	1" NPT			19/16"	3"	111/32"	21/16"	315/16"
	1-1/4" NPT			1 3/4"	33/8"	19/16"	21/16"	315/16"
Side Mount Angle	1/2" NPT			11/8"	2 1/4"	11/64"	23/8"	4 1/4"
	3/4" NPT			111/32"	25/8"	19/64"	27/16"	45/16"
	1" NPT			19/16"	3"	111/32"	23/8"	4 1/4"
	1-1/4" NPT			1 3/4"	33/8"	19/16"	23/8"	4 1/4"
Double Solder Union	1/2"	25/8"	315/16"				157/64"	3 3/4"
	3/4"	215/16"	45/8"				21/16"	315/16"

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