

# Self-Actuated Instantrol Temperature Regulator Assembly RT-711 Series

## PURPOSE

The RT-711 "Instantrol" Temperature Regulator Assembly is especially designed to control the temperature output of an instantaneous type heat exchanger.

Controlling the temperature of the fluid passing through a steam heat exchanger, where the heating surface is very large in relation to a very small storage capacity and where the load demand is erratic and the changes are sudden, is the most difficult control application to which a self-actuated temperature regulator can be applied. The RT-711 Series can offer almost straightline control, under varying conditions, when installed as recommended.

## FEATURES

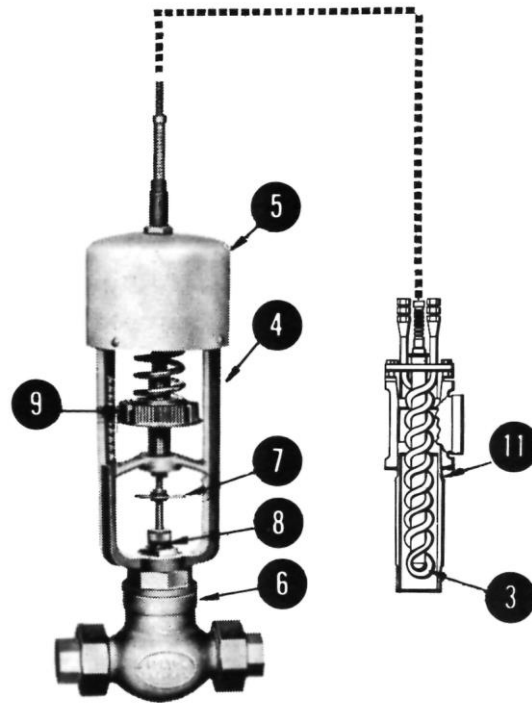
1. 3/4" - 2" sizes.
2. High quality components from single manufacturer.
3. Patented internally finned sensing bulb with anticipation coil.
4. Heavy-duty construction with cast iron frame.
5. Two-ply seamless Robertshaw longlife bellows.
6. Single-seated, fully balanced steam valve.
7. Quick-disconnect stem.
8. Teflon\* chevron lifetime stem packing.
9. Setpoint adjustment wheel.
10. Action adjustment valve.
11. Sized sensing bulb housing.

\*Registered trademark of DuPont Company.

## COMPONENTS

The "Instantrol" Temperature Regulator Assembly consists of a self-actuated (no external power required) temperature regulator with: an anticipation loop which includes an action adjustment valve (for tuning out minor cycles); with a patented, internally finned (for quicker temperature response) sensing bulb; and a sized sensing bulb housing.

The capillary from regulator head to sensing bulb housing flange is 5' in length to insure close coupling to the heat exchanger fluid outlet. Two fitted copper tubes in the anticipation loop are 30" in length.

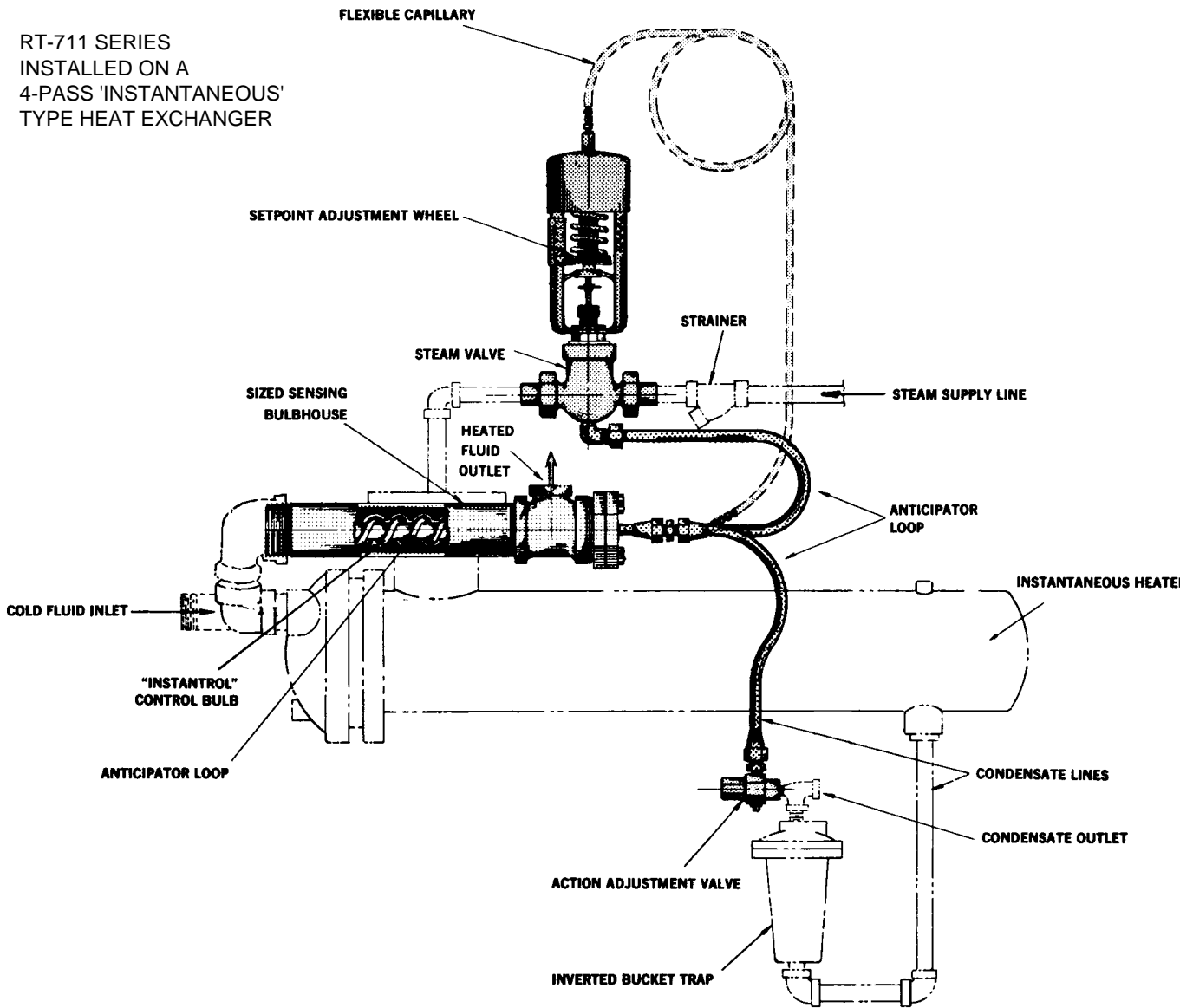


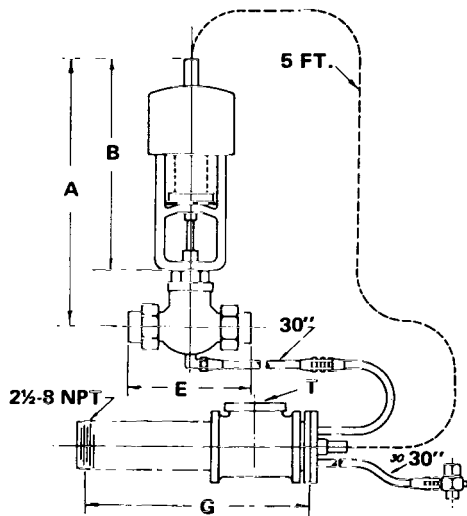
## HOW TO ORDER

### Specify:

1. "Instantrol" assembly number.
2. Valve size.
3. Adjustable temperature range and/or setpoint.
4. Medium being heated.
5. Full invoicing and shipping instructions.

RT-711 SERIES  
 INSTALLED ON A  
 4-PASS 'INSTANTANEOUS'  
 TYPE HEAT EXCHANGER





### DIMENSIONS AND SHIPPING WEIGHTS

Valve Size, Inches	3/4*	1*	1-1/4*	1-1/2*	2†
Valve Style	MA - Single-Seated, Balanced				
Valve Connections	Screwed Unions				Flanged 125 Lb. Std.
A	15-5/16	15-5/16	15-1/2	16	16-13/16
B	11-7/8				
E	6-15/16	7-1/8	7-1/2	8-1/2	7
G	20				
T, NPT	1-11 1/2	1 1/2-11 1/2	1 1/2-11 1/2	2-11 1/2	3-8
Approx. Shipping Wt. Lbs.	22	23	28	30	45

\* Bronze Body † Cast Iron

### CONTROL

For optimum control, 40 psi is the maximum recommended steam supply pressure; however, the supply pressure should be no greater than that required to meet the actual maximum heated fluid capacity requirement. A pressure regulator, such as models RP-1070, RP-1073 or RP-1065 through RP-1066 Series, should be used to reduce higher steam supply pressures down to the maximum pressure required on the installation. The steam trap on the heat exchanger condensate return line **MUST BE** an inverted bucket type. A strainer is recommended on the steam supply line. No back pressure can be tolerated on the condensate return. If these conditions are met and the steam valve is sized properly, the temperature control achievable will approach straight line.

### SETPOINT ADJUSTMENT

Cataloged setpoint adjustment ranges are: 90° - 160°F., 110° - 180°F. and 145° - 210°F. Setpoints outside of these spans are available on special order. The basis for range selection is location of the control point in the upper third of the setpoint adjustment range span.

### CAPACITIES

Due to the widely varying methods used by heater manufacturers for rating heater capacities, it is impossible to establish firm pressure-capacity relationship for the regulator assembly without also knowing the characteristics of the heater with which it is to be used.

The following table will serve for indication of the VALVE, capacities based on the supply pressures shown and full critical pressure drop across the valve.

Capacities - Lbs. Steam Per Hour

Valve Size, Inches	Cv	Steam Pressure - PSI					
		2	5	10	20	30	40
3/4"	9.8	280	320	425	600	775	940
1"	12.8	380	450	550	775	1000	1200
1 1/4"	19.5	600	700	875	1200	1500	1850
1 1/2"	24.5	745	890	1100	1500	1900	2200
2"	47.5	1400	1700	2100	2900	3800	4700

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