



# TEMPERATURE CONTROLLERS

## INDIRECT ACTION BASE ASSEMBLIES

### ACTION:

Indirect throttle; Pilot Output Pressure (Yellow) decreases with temperature rise.

### APPLICATION:

Used to control a set temperature in indirect heaters, emulsion treaters, reboilers, steam generators, heat exchangers, cooler shutter controls, and salt bath heaters.

### WORKING PRESSURE (sensing element):

psig	kg/cm <sup>2</sup>	
500	35.15	max. without Separable Socket
4000	281.23	max. with Separable Socket
7000	492.15	max. with Special Separable Socket

Separable Socket is an extra price item and must be ordered separately, if desired. To order Separable Sockets refer to Table of Contents

### TEMPERATURE RANGE:

T 12, T 18	-30°F minimum to 400°F maximum
	-34°C minimum to 204°C maximum
HT 12, HT 18	-30°F minimum to 750°F maximum
	-34°C minimum to 399°C maximum

### SUPPLY PRESSURE:

5 to 30 psig
.35 to 2.11 kg/cm <sup>2</sup>

### OPERATION:

These Thermostat Base Assemblies consist of a STAINLESS TUBE for monitoring the changing temperature, which is connected by a Low Expansion Alloy Rod to a DIAPHRAGM or BELLOWS ASSEMBLY. The differential pressure across the Diaphragm or Bellows combined with changes in the length of the STAINLESS TUBE throttle a PILOT PLUG seat. The PILOT PLUG consists of two stainless balls rigidly connected together. The seat at BALL 1 is the Supply Pressure inlet (Violet to Yellow). The seat at BALL 2 is the pressure vent (Yellow to Atmosphere).

Assume the set temperature of the Thermostat is above that of the system. The vent at BALL 2 is closed and the inlet at BALL 1 is open. Output Pressure (Yellow) is being sent to any Pilot or Motor Valve.

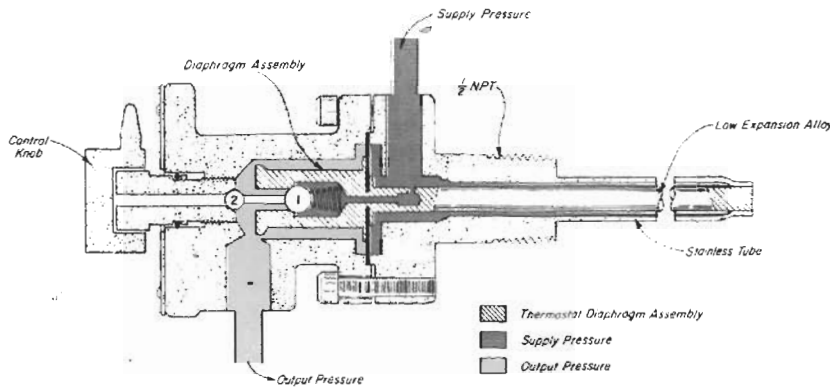
As the temperature rises in the system, the STAINLESS TUBE increases in length to move the Thermostat Diaphragm (or Bellows) Assembly in a direction to first close the seat at BALL 1 (Violet to Yellow) and open the seat at BALL 2 (Yellow to Atmosphere). Output Pressure (Yellow) decreases to cause the desired Pilot or Motor Valve action.

As the temperature decreases, the action is reversed to increase Output Pressure (Yellow).

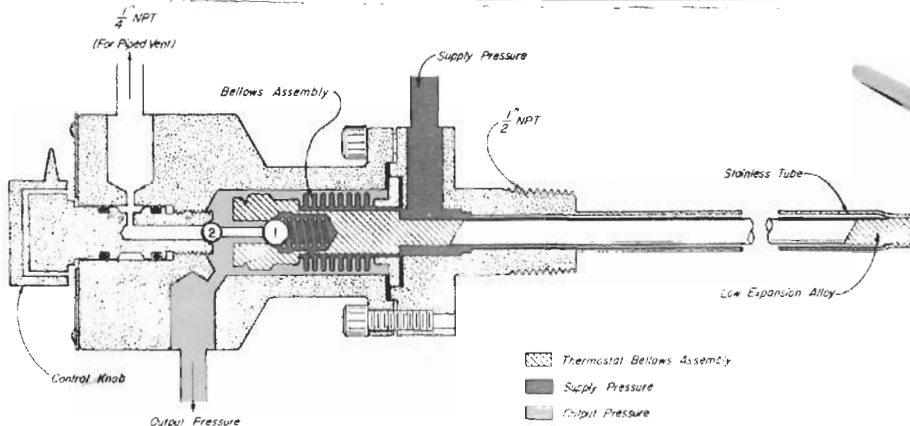
### RESPONSE RANGE:

T 12	- 1.75 psig/°F, .22 kg/cm <sup>2</sup> /°C
T 18	- 2.50 psig/°F, .31 kg/cm <sup>2</sup> /°C
HT 12	- 2.50 psig/°F, .31 kg/cm <sup>2</sup> /°C
HT 18	- 3.75 psig/°F, .47 kg/cm <sup>2</sup> /°C

### LOW TEMPERATURE BASE ASSEMBLY



### HIGH TEMPERATURE BASE ASSEMBLY

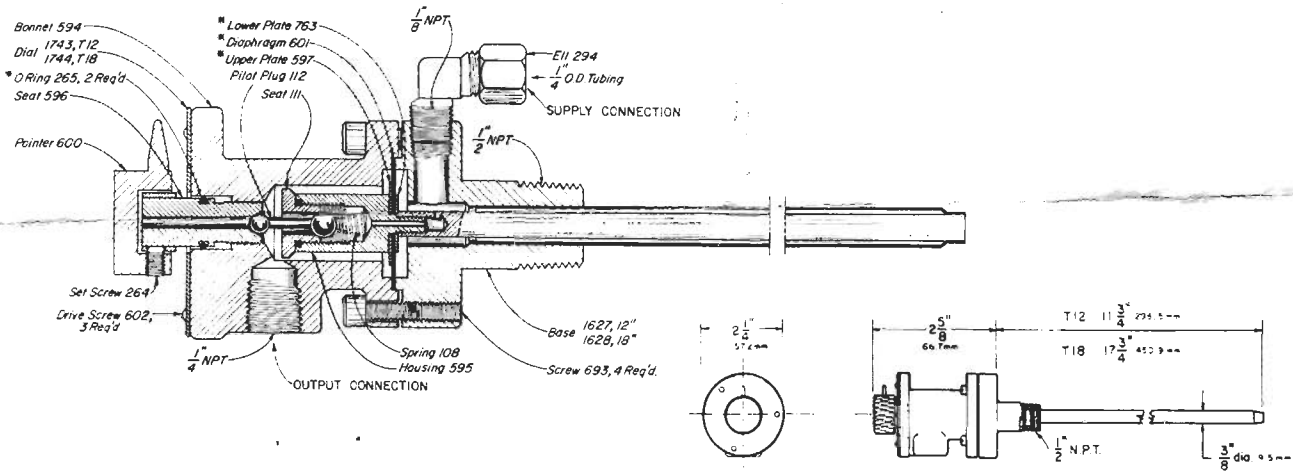


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## INDIRECT ACTION BASE ASSEMBLIES DUCTILE & STEEL

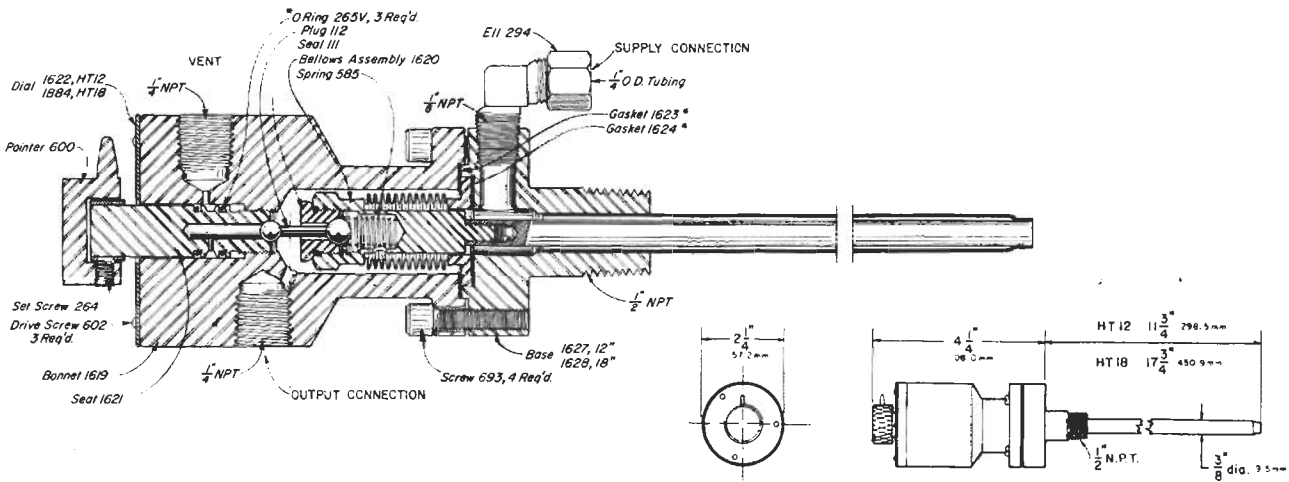


### T 12 & T 18 DUCTILE



DIMENSIONS

### HT 12 & HT 18 STEEL



DIMENSIONS

#### THERMOSTATS AVAILABLE:

CAT. NO.	BASE ASSEMBLY	MAX. TEMP. °F	MAX. TEMP. °C	REPAIR KIT
HAA	T 12	400	204	RLB
HAB	T 18	400	204	RLB
HBA	HT 12	750	399	RLQ
HBB	HT 18	750	399	RLQ

#### NOTES:

\*These are recommended spare parts and are stocked as repair kits.

Separable Sockets are available at extra cost, refer to Table of Contents for ordering.

## **CAUTION:**

The sensing element (12" Tube or 18" Tube) **MUST NOT BE BENT OR "KINKED"** as improper operation will result.



Tube must be free of obstructions inside **VESSEL OR PIPE WHERE INSTALLED.**

**CHECK THIS TUBE BEFORE INSTALLATION. IF BENT, DO NOT USE, RETURN TO SUPPLIER.**

Form MAT 010.6 Rev 1