

INSTRUCTIONS No. 2550.

**Bristol's Thermometer Controller**

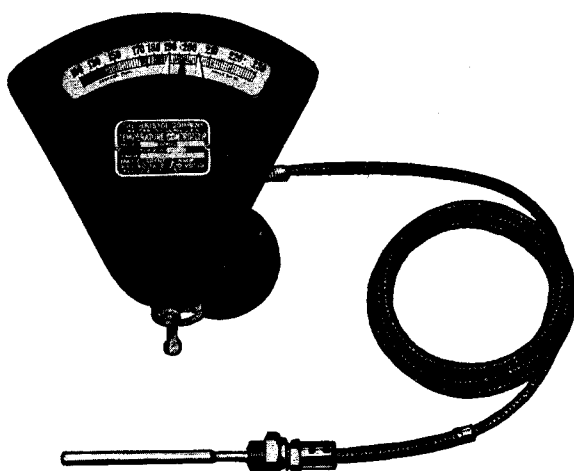


Fig 2434  
Distance Type

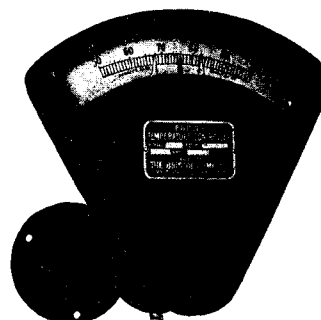


Fig. 2282  
Self-Contained Type

1.

**SELF-CONTAINED TYPE**

Fig. 2282. Install Instrument on a firm support, as free from vibration as possible, having it in a vertical position.

2.

**DISTANCE TYPE**

UNPACKING AND HANDLING.

Fig. 2434. Instrument, Bulb and Tubing are a unit and must be handled together without kinking or straining the connecting tubing.

3.

**INSTALLING**

Uncoil with care the connecting tubing.

REMEMBER THAT A PUNCTURE OR COLLAPSE OF THIS TUBING WILL MAKE THE CONTROLLER USELESS. Fasten Instrument to a firm support, as free from vibration as possible, making sure to have it in a vertical position, i. e. as shown in Fig. 2268. Staple the connecting tube close by the instrument, so as to prevent

**TYPICAL BULBS**

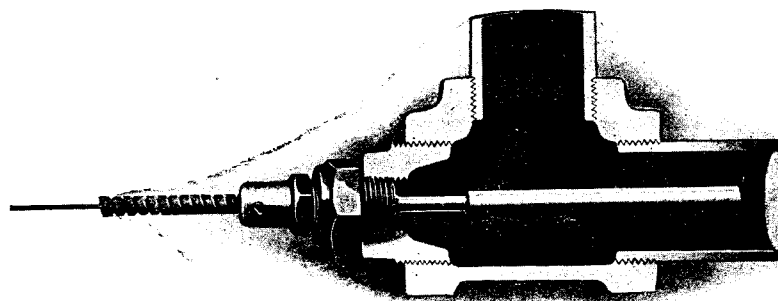


Fig. 1485 DETACHABLE SCREW-PLUG

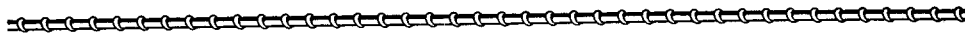


Fig. 807 PLAIN BULB



Fig. 798 SOCKET

4.

connection of the tube to the case from being strained or broken. Place Bulb at point where temperature is to be measured. The full length of the SENSITIVE portion of the bulb must be subjected to the temperature to be recorded. In Fig. 807 this would be the distance A. A tag tied to the bulb in shipping gives the length of the sensitive portion.

In Class II Thermometers, the bulb must be installed at the same level relative to the base of the Instrument-case as it was calibrated for. This information is given on a tag attached to the bulb.

The connecting tubing should not be at a higher temperature than the bulb, except this condition has been stated on the order and allowed for.

If the Bulb is provided with a detachable screw-plug as in Fig. 796, the screw-plug should be removed from the bulb and secured tightly into the tank, pipe or other closed space. The bulb can now be inserted and a tight connection made by means of the union, without turning bulb or twisting connecting tube. There should be no leak here, particularly where the corrosive nature of the gas or liquid has called for a special protection for the bulb (as for instance lead covering).

In case of a socket like Fig. 798, this also should be installed first, and the bulb then inserted.

Staple the connecting tube to wall or ceiling where it will be out of danger of being broken. A good way of protecting the tube will be to run it in electrical wire moulding. Do not cut any surplus tubing off, but coil it neatly at some convenient point.

#### WIRING CONNECTIONS

5.

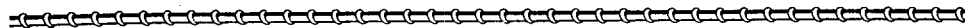
Make connections as per Wiring Diagram furnished. Do not apply more than 220 V. and be sure to have a fuse of 1 amp. or less in circuit. The binding posts are plainly marked H, C and L. Post C is the common connection which connects to the contacts on temperature indicating pointer B. (Fig. 2268). Post L connects with the contact E on low adjustable contact arm A and post H connects with contact G on high adjustable contact arm C.

(In case where the process calls for an opening of the valves, instead of a closing, when temperature becomes too high, reverse wiring connection at H and L.)

The interior of the instrument should require no attention. Access may be had, however, by removing cover after the three holding screws have been taken out.

To obtain the longest life possible of the contact, no one of the following maximum conditions should ever be exceeded.

- Maximum Power—50 Watts
- Maximum Current— $\frac{1}{2}$  Ampere
- Maximum Voltage—220 Volts



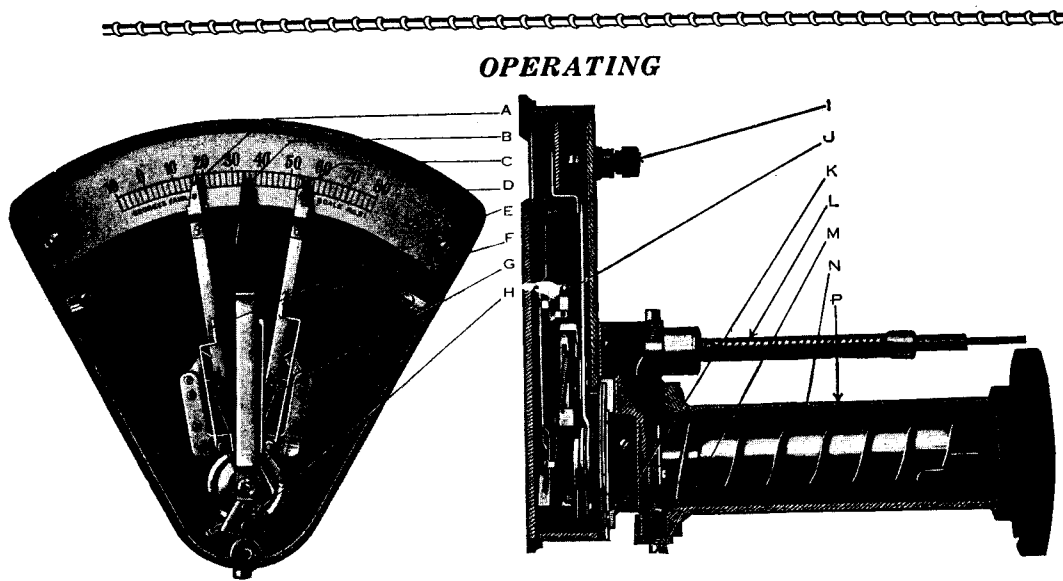


FIG. 2268

A - LOW ADJUSTABLE CONTACT ARM  
 B - INDICATING POINTER  
 C - HIGH ADJUSTABLE CONTACT ARM  
 D - SCALE PLATE  
 E - LOW ADJUSTABLE CONTACT  
 F - HIGH ADJUSTABLE CONTACT  
 G - CONTACT SPRING  
 H - POINTER COUNTERWEIGHT  
 I - BINDING POSTS  
 J - INDICATING POINTER CONTACT

K - BUTTON FOR ADJUSTING CONTACT  
 ARMS FROM OUTSIDE OF CASE  
 L - ARMORED CAPILLARY TUBING EX-  
 TENDING TO BULB  
 M - ZERO ADJUSTOR  
 N - SENSITIVE PRESSURE SPRING  
 P - PRESSURE SPRING HOUSING, ALSO  
 FORMING BRACKET TO FASTEN IN-  
 STRUMENT TO WALL

6. Referring to Fig. 2268, the pointer B is attached to the sensitive pressure spring N, which is actuated by the temperature. Two contact-arms A and C are provided. These contact-arms may be adjusted some distance apart as shown in Fig. 2268. The pointer makes contact with one or the other contact-arm whenever the temperature reaches the high or the low limit to which the contacts are set.

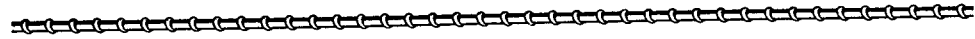
**ADJUSTMENT OF CONTACT-ARMS**

Either one or the other of the following two arrangements will be found on the Instrument for adjusting the contact-arms:

7. Fig. 2434 shows a lever and a slotted segment at the bottom of the Instrument. By loosening the knurled nut and shifting it sideways in the slot, the two contactors can be set any distance apart. The nut is then tightened again and the lever moved to right or left until the contact arms are in the proper position. If desired, the two contact-arms may be set very close together. In that case there will be only 1-32 inch between high and low contacts and the control will be as close to one point as possible.
8. Fig. 2268 shows a somewhat different arrangement for setting the contactors. Two knobs K are provided for this purpose, but their manipulation is similar to that of the method explained above.

**TESTING AND ADJUSTMENT**

9. Indications of the Instrument show the highest degree of accuracy only when the pointer is BETWEEN the two contact-arms A and C. If the temperature is lower or higher respectively than A or C, the pointer will



go past the contactor-arm, but is then somewhat retarded by a spring. When making an accuracy test, make sure therefore, that the pointer is between the two contact-arms. The safest way would be to take the low contact arm A to the lower end of the scale and the high contact arm C to the upper end.

10. If careful comparison with a standard thermometer at a constant temperature makes it desirable to change the Indication of the Instrument, this may be done by loosening the screw M (see Fig. 2268) and setting the pointer as desired. After adjustment tighten screw again.

***SUPPLIES AND REPLACEMENTS***

When ordering parts for this Instrument or referring to it in correspondence, please give Model and Serial numbers.

**The Bristol Company**  
**Waterbury, Conn.**  
**U. S. A.**

