

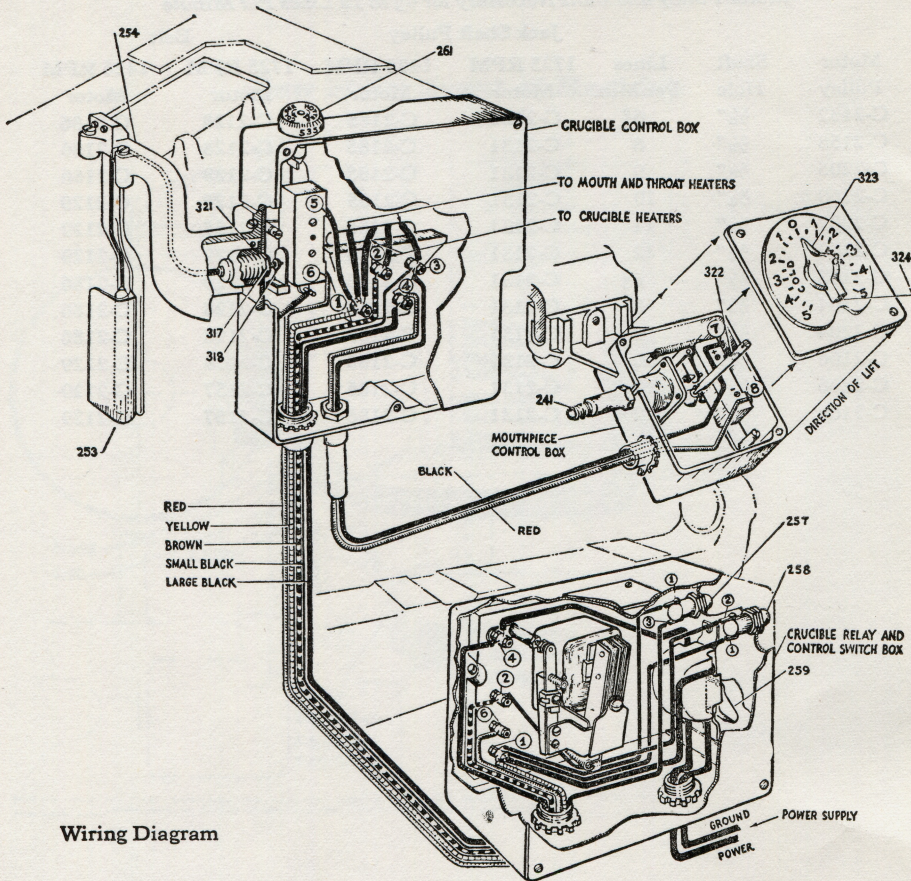
ELECTRIC POT MICRO-THERM CONTROL

The principal operating parts of the Micro-Therm Electric Pot Temperature Control consist of two bulb and bellows expansion units which operate to make and break the contacts of a pair of Micro switches, thus providing individual control of crucible and mouthpiece temperatures.

Due to the large current requirements of the crucible heating elements, the Micro switch in the crucible circuit does not directly control the flow of current. Instead, the Micro switch operates a relay, which in turn controls the flow of current through

the crucible heaters. The mouthpiece circuit, however, operates without the use of a relay, since the flow of current through the mouthpiece heaters is sufficiently low to be handled entirely by the mouthpiece Mu switch.

The wiring diagram illustrated below applies to all A.C. Micro-Therm Electric Pots. The D.C. Micro-Therm Control is wired in the same manner, the only difference being that a double contact relay is used in the crucible circuit and a different type Micro switch is used in the mouthpiece circuit. Both these changes serve to cut



down the arcing effect of D.C. current. In installing the D.C. wiring, the polarity at the mouthpiece switch terminals must be as indicated at points 7 and 8 on the wiring diagram. If not connected in this manner, reverse the two wires at these points.

ADJUSTMENTS—When electrical connections have been completed and the crucible is ready for operation, turn control switch to “on” position. Lamps 257 and 258 will light. Lamp 258 will remain lighted only as long as current flows to the crucible heaters and 257 will remain lighted only as long as current flows to the mouthpiece heaters. After the metal has melted, insert a glass rod thermometer. When it registers 535° F. lamp 258 should go out. If it does not, turn the dial 261 toward “colder” until the lamp does go out. At this point, the 535° marking on the dial should coincide with the line on the box. If it does not, loosen the two set screws which fasten the dial to the adjusting shaft and turn the dial so that the markings agree. Then tighten the two set screws. The crucible, temperature control is now adjusted for 535° F. To increase the temperature, turn dial toward “hotter”; to decrease the temperature turn dial toward “colder.” To adjust mouthpiece control, set pointer 323 to 0 on dial and loosen pointer set screw 324. To increase temperature turn adjusting shaft 322 clockwise toward “hot” on the dial, or to decrease temperature turn adjusting shaft 322 counter-clockwise toward “cold” on the dial. When the adjustment is satisfactory set the pointer 323 to 0, tighten pointer set screw. If necessary to remove the mouthpiece control box cover, set pointer 323 to 0 and loosen pointer set screw 324. After removing pointer 323, loosen cover holding screws and remove cover.

REPLACING BULB AND BELLOWS ASSEMBLY—To replace a damaged expansion tube and bulb assembly 253, turn control switch 259 to “off” position, then remove expansion tube and bulb guard 254, four round-head screws 321, lift old bulb 253 from pot and remove adjusting screw 318 with plunger, spring and lock nut 317. Place a thermometer in crucible, and allow sufficient time for crucible temperature to drop to at least 505° F. A new bulb and

bellows can be easily damaged if immersed in metal above this temperature. When crucible has been allowed to cool to about 505° F., place new bulb in pot and reassemble.

As an extra precaution, if sufficient time is available, we recommend bailing out the crucible prior to applying a new bulb and bellows assembly. In this way, the new bulb and bellows can be applied to an empty pot and brought up to casting temperature gradually, thus affording extra protection against any possible damage caused by abrupt temperature changes.

Mouthpiece bulb and bellows assembly 241 is replaced in a similar manner, and should not be applied to a mouthpiece at casting temperature. After turning control switch to “off” position, allow mouthpiece to cool for 30 minutes, and during this time place new bulb and bellows on top of pot cover, thus allowing it to warm up gradually.

CAUTION—Expansion tube and bulb assemblies **MUST NOT** be inserted into the pot until they have been exposed to room temperature (70°) F. for at least one hour. *Make sure that bulb 253 is 1/2 inch from crucible heaters.* All Micro-Therm controls have been carefully tested and adjusted at the factory, so there should be very little need to readjust when operating at normal temperature. *Do not permit the crucible or mouthpiece to overheat, (525° F. for mouthpiece), (600° F. for crucible), it may damage the expansion tube and bulb.*

FUSES—Fuse protection for the Micro-Therm Electric Pot must be provided outside the unit itself. The 30 em pot fuses for 100-125 volt equipment should be two 20 ampere fuses and for 200-250 volt equipment, two 10 ampere fuses. The 42 em pot fuses for 100-125 volt equipment should be two 30 ampere fuses and for 200-250 volt equipment, two 15 ampere fuses.

Fuses of ampere ratings larger than recommended should never be used, otherwise the equipment may be seriously damaged and require replacement.

NOTE—For complete instruction on the operation, care and maintenance of this equipment, please consult the Micro-Therm Electric Pot Instruction Book.