

Step 1

ROUGH-IN



Illustration 1.1
SLC500 Control Box



Illustration 1.2
Cold Lead (E210)

One Cold Lead runs from the Transformer to the beginning of the Tuff Cable or Z Mesh heating element, and the other Cold Lead runs from the other end of the Tuff Cable or Z Mesh back to the Transformer. Note: The SLC500 comes with a total of 25 feet of Cold Lead. Never add additional Cold Lead without first consulting with Heatizon Technical Support.



Illustration 1.3
Thermostat Wire (M316)
(5 conductor 18 ga.)

A. LOCATION OF SLC500 CONTROL BOX (See Illustrations 1.1 to 1.3)

Determining the placement location of the SLC500 Control Box is the first step in the electrical rough-in process. The placement of this Control Box must allow for easy future access, good air flow, and protection from moisture. Acceptable locations include garages, basements, or utility rooms.

1. Use the following guidelines for locating the SLC500 Control Box.
 - a. Location must be easily accessible for installation, service and maintenance.
 - b. Maintain a minimum of 6 inches clearance between the SLC500 Control Box and any ceiling, wall, floor or adjacent Control Box.
 - c. Do not locate SLC500 Control Box in an area where it will be covered.
 - d. Maintain 45 inches of clear space in front of every SLC500 Control Box.
 - e. Placement outdoors is acceptable only if enclosed in a Heatizon Systems Enclosure Kit (ENCLKIT), which measures 24" X 24" X 12", with customized Back Plate.
 - f. Do not place in an area where high humidity is present or where Control Box may be exposed to water.
 - g. Consideration for sound and vibration of transformer is advised. Proper sound attenuation insulation or vibration isolation is recommended.
 - h. Location of the SLC500 Control Box must be within 12 total horizontal and vertical linear feet of the place where the heating element will begin and end.

Note: Knockout openings in all Heatizon Systems Products should never be used except with devices that are designed to fill those openings.

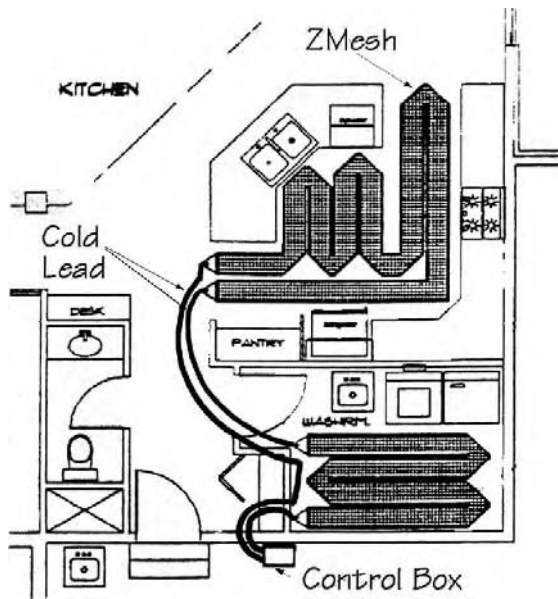


Illustration 1.4
Z Mesh and Cold Lead layout
for areas connected in series.

Note that multiple areas are heated by the same system by "jumping" areas together with Cold Lead. Cold Leads should always be in wall, joist, or truss space.

B. RUNNING COLD LEAD (See Illustrations 1.5 To 1.9)

1. Run Cold Leads the total horizontal and vertical distance from the selected SLC500 Control Box placement location, to the location where the Tuff Cable or Z Mesh will eventually begin and end.

After the SLC500 Control Box placement location has been selected, plan the Cold Lead runs by walking through the building. All Heatizon Systems products are closed loop systems. Two Cold Leads are required for each zone - one to the beginning and one to the ending points of the Tuff Cable or Z Mesh heating element.

2. When installing Heatizon Systems products, strict compliance with the National Electrical Code (NEC) and Heatizon Systems installation manual is essential. The following rules will help insure a proper and safe installation:

- a. Cold Lead runs should be planned from the Tuff Cable or Z Mesh heating element connection point to the SLC500 Control Box. Leave 14 inches of Cold Lead protruding through the wall where the SLC500 Control Box will be installed, and 10 inches of extra Cold Lead wherever the connection between the Cold Lead and either the Tuff Cable or Z Mesh will be made.
- b. Do not kink the Cold Leads.
- c. Locate the Cold Leads in non-insulated walls whenever possible.
- d. To minimize the size of the flux lines or lines of force of any magnetic field given off by the Colds Leads, always run two Cold Leads parallel to each other and as close to one another as possible. In order to minimize the potential for problems caused by any magnetic field given off by the Colds Leads, always avoid running Cold Leads in areas over, under, behind, or otherwise near the place where televisions and/or computer monitors using Cathode Ray Tube technology will be located.
- e. Do not install Transition Plates under cabinets.

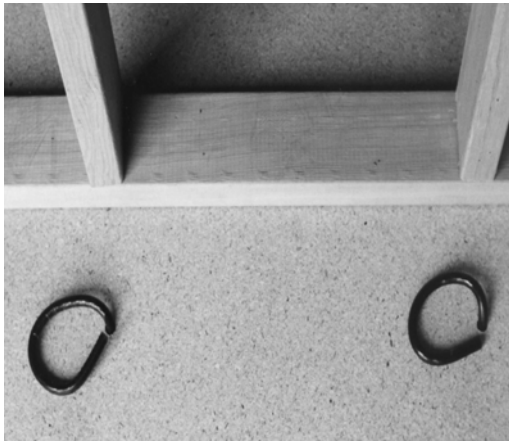


Illustration 1.5
Cold lead penetrating subfloor for floor installation of Transition Plates (E217).



Illustration 1.6
Cold lead roughed-in for wall installation of Transition Plate (E217).

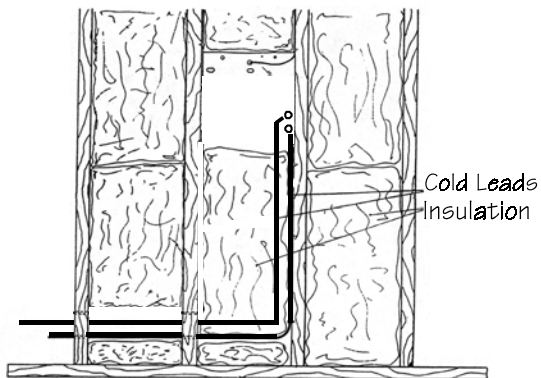


Illustration 1.7
Cold Lead Rough-In in standard wood frame wall.

f. When the Cold Leads are placed in a wall with insulation, place the Cold Leads on the same stud or put both Cold Leads in the same PVC conduit (**see Illustration 1.7**).

g. Magnetic and non-magnetic metal studs require special consideration. Refer to a current edition of NEC for installation considerations.

h. When using conduit, always run Cold Leads in pairs in the same conduit. Never run individual Cold Leads in metal conduit.

CAUTION: THIS IS AN ENTIRE COPPER SYSTEM. UNDER NO CIRCUMSTANCES ARE COMPONENTS MADE OF OTHER METALS SUCH AS ALUMINUM TO BE SUBSTITUTED FOR HEATIZON SYSTEM COMPONENTS. THE ADDITION OF ANY NON-HEATIZON SYSTEM COMPONENTS OR MATERIALS TO ANY HEATIZON SYSTEMS PRODUCT WILL VOID THE WARRANTY.

CAUTION: BUNDLE #2 COLD LEAD ONLY WITH PROPER SPACING AND ACCORDING TO NEC.

i. The Cold Lead length and element length affect the Watts per square foot your system will deliver to the area where the Tuff Cable or Z Mesh heating element is installed. If you have a question or concern, or if you are considering adding to the Cold Lead or heating element provided to you by Heatizon, contact Heatizon Systems or your Heatizon Distributor for more information.

j. When installing Transition Plates in floor heating installations and roof snow melting installations, extend Cold Lead up through sub-floor or sub-roof, leaving 10", and anchor in place (**see Illustration 1.5**). For wall installations of Transition Plates, anchor Cold Lead to sill plate and extend beyond face of finished material 10" (**see Illustration 1.6**). Cold Leads should be placed such that Transition Plates will never touch one another, and the tips of the Transition Plates should not be closer than 2" apart at the nearest point.

k. When installing Cold Lead in Tuff Cable heating or snow melt systems, Cold Leads should be placed such that connection points of E210BS Butt Splices are a minimum of 6" apart. Extend Cold Lead by 10" and secure Cold Lead in place.

NOTE: All connections between Cold Leads and Tuff Cable must be imbedded in a mortar, asphalt or other acceptable heat sink material.

Note: Read the specific wiring instructions and installation instructions provided for the activator you have selected in Step 4 of this manual, "Activation Devices" and those provided by the manufacturer of the Activation Device.

C. INSTALLING THE THERMOSTAT WIRE

1. Run the Thermostat Wire (M316) the total horizontal and vertical distance from the SLC500 Control Box placement location to the location you have selected for the Activation Device.
2. Do not forget to provide the appropriate power to your chosen Activation Device.

D. INSTALLING THE ELECTRICAL SERVICE REQUIREMENTS FOR THE SLC500 CONTROL BOX

1. Electrical Service Requirements are:

- **½ and 1 kVA systems** - operate on 120 volt power supply and require a single pole, 15-amp minimum breaker.

2. Run the appropriate conductor the total horizontal and vertical distance from the SLC500 Control Box to the electrical distribution panel.

Note: Run the appropriate line voltage wires from the distribution panel to the SLC500 Control Box in accordance with NEC.

Note: All Heatizon Systems products require a dedicated circuit.

E. JUMPERING (Illustrations 1.8 and 1.9)

1. All Tuff Cable or Z Mesh heating element to be energized by a single Transformer must be connected in series.

2. Z Mesh heating element can be jumpered by using an adequate length of Cold Lead and two E217 Transition Plates. Tuff Cable heating element can be jumpered by using an adequate length of cold lead and two E210BS Butt Splices. All jumpering of element is to be done using Heatizon Cold Lead (E210) only. **All Butt Splices (E210BS) must be imbedded in a Heat Sink.**

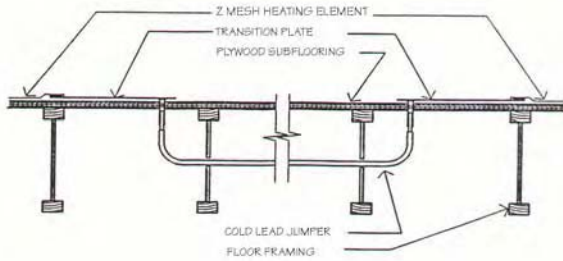


Illustration 1.8
Area to Area Jumper (Cold Lead jumper between two separate areas)

a. Area to Area Jumper. It is not necessary that all heated areas be adjacent to one another. Jumpering between different areas can be accomplished by using an adequate amount of Cold Lead (E210) and two (2) Transition Plates (E217) or two (2) Butt Splices (E210BS). See **Illustrations 1.4 and 1.8.**

b. Jumpering through joints. Always jumper through every kind of joint in all types of mortar, asphalt, mud bed, concrete, sand or any other heat sink except Heatizon Systems Heatsink Kit (CABSINKKIT). See **Illustration 1.9.**

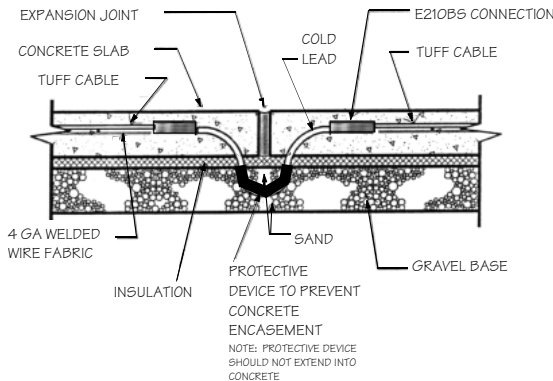


Illustration 1.9
Jumpering Through Joints (Cold Lead jumper for Tuff Cable in concrete application)

Note: Always determine the total length of Cold Lead and Tuff Cable or Z Mesh attached to each Control Box and Transformer, and make certain that the watts per square foot generated will meet your needs. See **System Operating Tables** and **Useful Information** sections of this manual for additional information.

Note: Never install Tuff Cable or Z Mesh element where they bridge or extend through any joint, unless provision is made for expansion and contraction.