

Installing the Transformer

Note: The length of the Tuff Cable or ZMesh and Cold Lead you received are compatible with the Transformer Heatizon Systems shipped. Prior to installing the Transformer, Heatizon Systems recommends that you make certain the Transformer you have is the proper size given the actual length of Cold Lead and either Tuff Cable or ZMesh heating element that you have installed. The sizing of the Transformer can be accomplished using either the System Operating Tables or formulas in the “Useful Information” section of this manual.

Note: The second “Heatizon Systems After Installation Element Test” must be performed immediately following the covering of the heating element but prior to installation of the Transformer and Control Unit. See the Heatizon Systems After Installation Test portion of the Installation Manual for details.

Note: Visually inspect the installed Heating Element and Cold Leads for cuts, shorts, and other damage; repair as necessary. Check for continuity to any conductive material, including but not limited to metal; eliminate as necessary. Conduct After-installation Element Tests per manufacturer’s installation instructions. Test system in presence of Architect, Contractor and Owner’s Representative, to be certain system functions in accordance with design intent.

Installation of Transformer

The Transformer is the powerhouse that allows Tuff Cable or ZMesh to produce up to 12 watts of heat per lineal foot. ZMesh systems are energized with ½, 1, 2, 3, 2x2, 2x3kVA transformers; and Tuff Cable systems are powered with Transformers from ½ to 6kVA.

All Single Transformers S050 to S106



All single Heatizon Systems Transformers require one pair of Cold Leads (CBX6 and SLC 500 systems require one pair of Cold Leads for the beginning and ending points of the Tuff Cable or ZMesh heating element). One of the Cold Leads from any given pair connect to the common tap located at the back of the Transformer and the other Cold Lead connects to one of the voltage taps at the front of the transformer.

Dual Transformers S202 and S203



S202 (2x2kVA) and S203 (2x3kVA) Transformers require two pair of Cold Leads, one pair for the beginning and ending points of the first length of Tuff Cable or ZMesh heating element, and the other pair for the beginning and ending points of the second length of Tuff Cable or ZMesh heating element. Each length of Tuff Cable or ZMesh must be approximately the same length. Refer to 2x2kVA or 2x3kVA System Operating Table for minimum and maximum lengths.

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Installation Instructions for all Transformers

Additional Information for Installation of Dual Transformers

Note: Make certain power supply is off before proceeding with installation of Transformer and Control Unit.

Install Transformer Support Screws. Install two 1/4-20 x 3/4" slotted round head Transformer mounting screws provided in the hardware kit into the pemnuts attached to the upper right hand portion of the back-plate (Back Plate should have been previously installed – see Rough-In Section). **DO NOT FULLY INSTALL TRANSFORMER SCREWS AT THIS TIME.** Leave a gap between screw head and Back Plate large enough to accommodate the Transformer mounting bracket.



Remember that S202 (2x2kVA) and S203 (2x3kVA) Transformers require two pair of Cold Leads and all other Transformers require only one pair.

Hang Transformer. Slip the Transformer support screws in the Back Plate and lower the Transformer until it rests on the screws. With the Transformer supported by the screws, tighten the two transformer support screws.



Install Side Plate (CBX6 and CBX23 only). Once the Transformer is mounted, the housing side plate should be installed. This plate is packaged in the Control Unit box. With the louvers facing outward, attach the side plate to the Back Plate on the right hand side of the Transformer using two 32 x 3/8" screws.



Prepare Cold Leads. Cut each Cold Lead to the proper length. One Cold Lead should be long enough to reach the common tap on the back of the Transformer, and the other should be able to reach all of the front voltage taps on the Transformer. Then, using appropriate strippers, strip 1/2" of insulation from each Cold Lead, and install provided crimp lugs with appropriate crimping tool.



For S202 and S203 Transformers, repeat Cold Lead Preparation for both the top voltage and common taps as well as the bottom voltage and common taps.

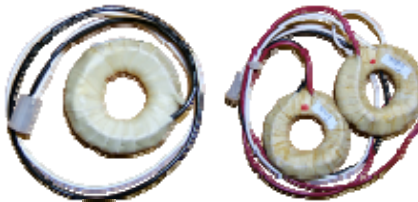
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Installation Instructions for all Transformers

Install Torroid (Not Required for CBX7 System.) Take the provided torroid and slide it around the Cold Lead connecting to the common tap. The other end of the torroid will slide through the opening in the Control Unit side plate, and eventually connect to the P3 terminal on the CBX6/23 Mother Board.



Make Cold Lead to Common Tap Connections. Make the connection between the common tap and Cold Lead using the provided 1/4" hex bolt, nut and lock washer. Tighten the connection securely.



Single
Torroid

Dual
Torroid

Make Cold Lead to Secondary Tap Connection.

CBX6/23: In order to select which secondary voltage tap to connect Cold Lead to, refer to the System Operating Tables in the back of the Heatizon Design and Installation Manual. When the proper tap has been selected, attach the Cold Lead using the provided 1/4" hex bolt, nut and lock washer. Tighten the connection securely.



CBX7: Attach the Cold Lead to the highest voltage tap on the Transformer using the provided 1/4" hex bolt, nut and lock washer. Tighten the connection securely.

Additional Information for Installation of Dual Transformers and CBX23/ CBX23T Control Units

If an S202kVA or S203kVA Transformer is being installed, two torroids were provided with the CBX23 or CBX23T Control Unit. These Torroids must be installed "in Phase" with each other to provide proper feedback signal to the Control Unit. The two torroids will be installed around each of the Cold Leads connected to the common tap on the top and bottom of the transformer. They should be installed with the RED DOT that was placed on the torroid at the factory facing towards the installer. Improperly installed dual Torroids will make adjustment of Control Board impossible at system start-up.

If an S202kVA or S203kVA Transformer is being installed, the Cold lead to Common Tap and Cold Lead to Secondary Tap procedures will be repeated for both sets of Cold Leads. One set will be attached to the common taps and voltage taps on the top side of the Transformer, and the other set of Cold Leads will be attached to the common taps and voltage taps on the bottom side of the Transformer.

Make Transformer Primary Power Connection. Select proper Transformer primary power wires. Most Heatizon Transformers are designed to be powered by more than one primary input voltage. The primary voltage may require 120, 208, 240 or 277 VAC power. Select the desired VAC from the chart (right) to determine appropriate wire selection. Run the selected wires through the top opening in the Control Unit board mount. Cap off all unused Transformers wires using one wire nut per wire.

Primary Power Supply Connections

White (Common) and Red	208VAC
White (Common) and Black	240VAC
White (Common) and Yellow	277VAC

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Note: Refer to the diagram on the Transformer to connect primary wiring. Wiring configuration will change with Transformer size and supply voltage.

NOTE: In order to avoid Transformer damage, do not attach Cold Leads without using a lock washer and tightening the nut completely.

