

**TECHNICAL UPDATE - TU-4012**

**SUBJECT: Forming Tight Bends in Dekoron Unitherm Electric Traced Tubing Bundles**

Occasionally an installer must bend a Dekoron Unitherm Electric Traced Bundle to a radius that is well below the minimum bend radius called out in the literature for that bundle.

One method to accomplish the tight bend is to remove the outer jacket of the bundle and the insulation, then bend the core tubes to the desired radius.

There are a number of precautions that must be taken if this method is used.

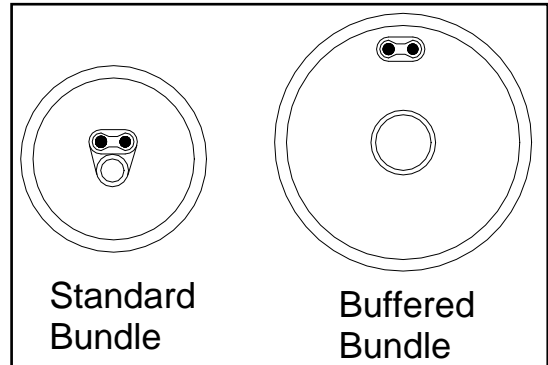
The first precaution is to check for auxiliary wires and tubes in the bundle. Dekoron Unitherm does not recommend this procedure for any bundle with auxiliary tubes or wires installed between the layers of insulation.

The second precaution is to determine the placement of the electric heating element. This will determine which procedure outlined below is used.

A normal bundle has the electric heat tracer installed so that it is in direct contact with the tubing.

A buffered bundle has layers of thermal insulation between the heater and the tubing. The buffered bundle is used in applications where the operating temperature of the bundle exceeds the maximum temperature rating of the heater.

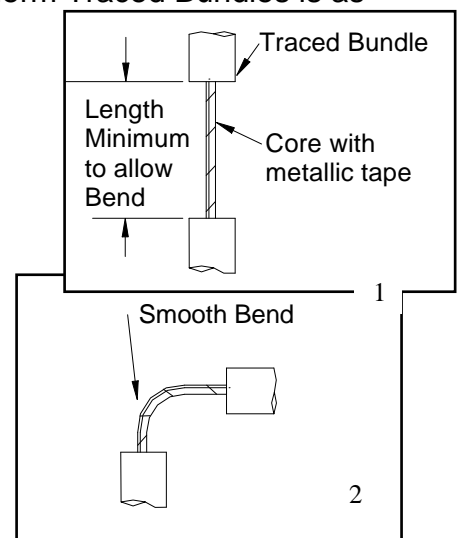
A drawing of a typical bundle of each type is shown in the figure above.



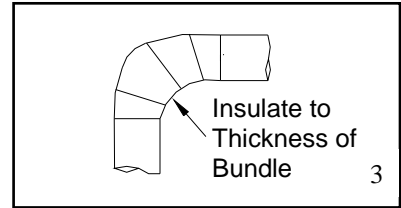
The procedure for making tight bends with Dekoron Unitherm Traced Bundles is as follows.

**For standard bundles:**

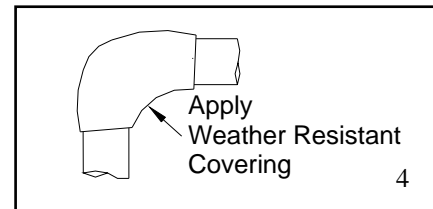
1. Remove the outer jacket and insulation down to the metallized tape covering the heated core. Be careful not to damage the tape or the components beneath. A Dekoron Unitherm Unicut tool (p/n 1631-01001) is recommended for this task. Remove only enough jacket and insulation to make the bend.
2. Make the bend required in the tubing using a suitable mandrel. Again, take care not to damage the heater or tape. **Caution**, a tubing bender is not recommended for this task.



3. Replace the thermal insulation to the same thickness as originally found on the bundle.

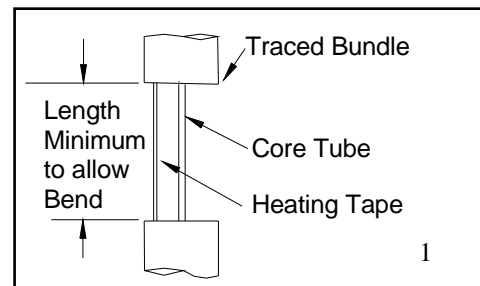


4. Cover with a weatherproof jacket. A Dekoron Unitherm Seal Patch Kit (p/n 1540-10000) has the items necessary to correctly insulate and jacket the bundle.

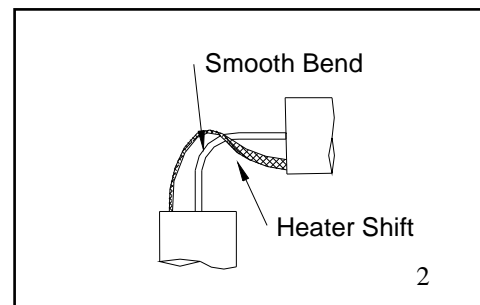


**For buffered bundles:**

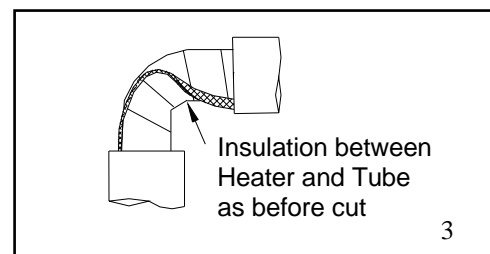
1. Remove the outer jacket and insulation down to the bare tube. Be careful not to damage the heating tape that is installed between layers of thermal insulation or other components in the bundle. A Dekoron Unitherm Unicut tool (p/n 1631-01001) is recommended for this task. Remove only enough jacket and insulation to make the bend.



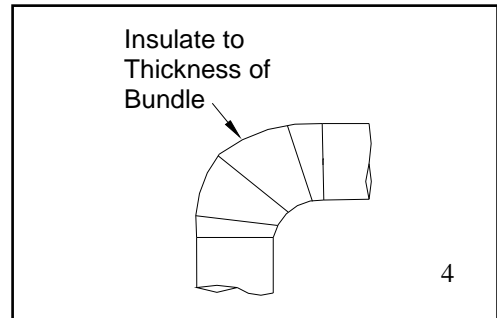
2. Make the bend required in the tubing using a suitable mandrel. Again, take care not to damage the heater or tape. A standard tubing bender can be used for this task but care must be taken to insure the heater is not stretched or cut during the bending process. The heater will likely shift around as shown during the bend.



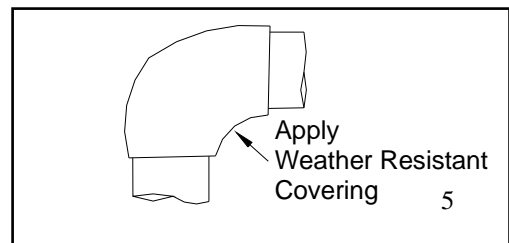
3. Apply insulation between the tube and heater. Build up insulation until it is the same thickness as found in the bundle. **Failure to provide enough insulation between the tube and heater will lead to heater burn-out.**



4. Replace the thermal insulation over the heater until the overall insulation is the same thickness as originally found on the bundle.



5. Cover with a weatherproof jacket. A Dekoron-Unitherm Seal Patch Kit (p/n 1540-10000 or 1540-20000) has the items necessary to correctly insulate and jacket the bundle.



Additional information and a video tutorial can be found on the Dekoron Unitherm website in the video library.