IMPORTANT GENERAL INSTRUCTIONS

These instructions are to be followed when installing Chromalox Heating cables on pipes in ordinary locations. Consult factory for installation of braided cable in hazardous locations. Chromalox has three basic types of heating cables: Self-Regulating, Constant Wattage and Mineral Insulated. Although they are all resistance type cables, they each have different operating characteristics. These characteristics may make one type of cable more suitable for a particular application than another. This manual, however, is not intended as a product selection manual. Refer to bulletin PJ304 “Chromalox Design for Heat Tracing Products” for product selection guidelines. Below is a chart highlighting certain characteristics for Chromalox heating cables.

<table>
<thead>
<tr>
<th>Hazardous ratings available</th>
<th>Self-Regulating</th>
<th>Constant Wattage</th>
<th>Mineral Insulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usable on plastic pipe</td>
<td>Yes</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Can be cut to length in field</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Can be single over lapped</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

* Low temperature cables only. UL listing only applies to 3W/ft. cables

INCOMING INSPECTION

1. Open package and visually check for breaks or nicks in the cable jacket. File claim with carrier if any damage is found.
2. Never energize the cable when it’s coiled or on a reel. Test only when it is laid out straight.
3. After removing the cable from the carton or wrapping, check the resistance of the unit from buss wires to braid or metal sheath with a 500VDC megger to assure the cables have not been damaged during shipping and handling. If the cable has no braid or metal sheath, uncoil the cable onto a metal surface and check resistance between the buss wires and the metal surface.
4. The heating cables should be stored in their shipping cartons or on reels in a dry atmosphere until they are ready to be installed.

WARNING

ELECTRIC SHOCK HAZARD. Any cable with an insulation resistance reading less than 10 megohms before installation should not be installed. Contact your local Chromalox representative.
A. IMPORTANT — GENERAL NOTES REGARDING INSTALLATION OF HEAT TRACING SYSTEMS.

WARNING

FIRE HAZARD. Failure to follow these guidelines could result in property damage or personal injury.

1. Read this instruction sheet and those enclosed with the accessories to familiarize yourself with the products.
2. Selection of heating cable type and rating should be in accordance with the procedures located in the “Chromalox Design Guide for Heat Tracing Products” (PJ304).
3. Ensure all pipes, tanks etc. have been hydrostatically tested prior to the installation of the heating cable.
4. Always install tracing at the 5 or 7 o’clock position on a pipe.
5. Installation Guidelines for fire protection systems:
   a. For use on insulated UL listed steel schedules 5, 10, 20 and 40 standpipe and sprinkler system pipe up to and including 6 in. size. Includes use on elbows, tees, flanges, hangers and valves as shown. (show figures of heating cable installed to various equipment as mentioned above). UL listed fiberglass insulation with a minimum k-factor of 0.25 BTU/hr -˚F-ft -in with weatherproof cladding must be used.
   b. For systems having piping which connects between buildings in unheated areas, coolers and freezers.
   c. For systems having sprinkler piping that is installed in coolers or freezers where the temperature is -40˚F or greater.

Not intended to be used as the means to prevent freezing of sprinkler branch lines including all accessories for these lines and automatic (deluge, preaction, dry pipe, alarm, etc.) valves as referenced in NFPA 13.

For use in Ordinary Hazard Occupancies only as specified in NFPA 13 the standard for the installation of sprinkler systems.

Fire suppression system heater circuits must be connected to monitoring equipment. A listed power supply relay with the appropriate voltage coil shall be connected in parallel prior to the heat tracing (should figure with typical installation). The output contacts of the listed power supervisory relay should be connected to a listed fire control panel which has provisions for supervisory circuits.

6. Do not attempt to heat trace any piece of equipment which will not be insulated.
7. Do not install heating cable on equipment which could become hotter than the heating cable’s maximum exposure temperature.
8. Do not install heating cable in an area or on equipment which contains potentially corrosive materials without having a suitable protective jacket on the cable.
9. The minimum bending radius for all Chromalox heating cables is six times the minor diameter.
10. Allow a minimum of 2” between cable runs.
11. Always install heat tracing on the outside radius of elbows.
12. Never install heat tracing over expansion joints without leaving slack in the cable.
13. Never use tie-wire or pipe straps to secure Self-Regulating Maximum Circuit length or Constant Wattage heating cables.
14. Observe all published specifications. Do not expose cables to temperatures above their specified maximum. Do not run cables longer than specified maximum circuit lengths. See table 3 for details.
15. Pumps and small vessels should be heat traced and controlled with the piping on the inflow end. The cable on the pump or vessel should be physically separate to permit disconnection during maintenance or removal.
16. Use aluminum foil tape to cover the heating cable whenever the cable is not in good contact with the pipe (i.e. at supports, valves, pumps, etc.) or whenever its use is specified by the Chromalox Design Guide PJ304.
17. Separately controlled circuits should be provided on dead end legs and closed bypasses.
18. No heat tracing circuit should extend more than two feet beyond a point where two or more pipes join when such junctions permit optional flow paths. In such cases, separately controlled traces should be used.
19. The minimum installation temperature for all Chromalox heating cables is -40˚F (-40˚C).
20. Chromalox Type SRL heating cables are well suited for heat tracing plastic pipes. Consult bulletin PJ304 “Chromalox Design Guide for Heat Tracing Products” for design recommendations. Installation details AD1 through AD17 apply for plastic pipe only when Type SRL heating cable is used. Consult factory for applications involving other products.

B. INSTALLING A SINGLE RUN OF CABLE ON A PIPE.

1. Mount the reel of cable on a holder and place near one end of the pipe run to be traced. Choose the end from which it will be the easiest to pay out the cable.
2. Pay out the cable from the reel and loosely string along the pipe, ensuring the cable is always next to the pipe when being paid out.
3. When you reach the end of the circuit, secure the heater cable — Allowing the cable to be walked on or subjected to other abuse which could cause mechanical damage.

To prevent damage to cable, avoid such things as:
— Pulling the cable over sharp edges.
— Forcibly pulling the cable free if it snags while being paid out.
— Allowing the cable to be walked on or subjected to other abuse which could cause mechanical damage.
4. (If the heater cable is to be spiralled, go to step 4A.)
   a. Note the path of the heater cable and the spiral factor of the design. A simple way to think about spiral factor is: A1.1 spiral factor means install 11 feet of heating cable on every 10 feet of pipe, etc. At about every 10 feet of pipe, pull the required amount of cable and let hang in a loop, and attach the cable to the pipe.
   b. Rotate the loops around the pipe until all the slack has been taken up. Even out the spirals of the heater cable and secure to the pipe as necessary to obtain good contact. The entire circuit can be installed with hanging loops with the spiralling on the pipe being done when you trace the heat sinks. Refer to installation detail AD3.
5. At a heat sink (pipe supports, valves, pumps, reducers, gauges, bucket strainers, etc.), attach the heater cable to the pipe just before the heat sink. Refer to the design specs to determine the amount of heater cable you need to install on the heat sink. Pull this amount of cable into a loop, attach the heater cable on the other side of the heat sink and continue attaching the cable down the pipe as before.
6. When you reach the heater cable reel, you should have the heater cable attached all along the pipe, with the correct amount of heater cable pulled in loops at all heat sinks. Attach the cable to the pipe, (leave an extra foot if at an end seal, two feet if at a power connection) and cut the heater cable from the reel.

7. Install the heater cable loops on the heat sinks. Refer to the proper installation detail (AD5-AD12) for a general idea of how to install the cable, but remember:
   • It is important to get the proper amount of heater cable on the heat sink, rather than exactly as the detail shows. The detail is just a guide.
   • Self-Regulating heater cables are very flexible and can be single overlapped for installation ease. Feel free to use this feature when you can.

   ![WARNING]

**FIRE HAZARD. Do not overlap constant wattage or mineral insulated heating cables.**

- By having the cable installed this way, it can be removed easily from the heat sink without cutting if access to, or removal of the heat sink is required.

**Note:** If a tee is designed into the system, or if you are using two or more short cable lengths to complete a circuit, allow two or three feet of each cable to overlap. This will allow flexibility in assembling the connection kit and locating it on the pipe.

C. INSTALLING MORE THAN ONE HEATING CABLE ON A PIPE.

There are two cases where you will need to install more than one heater cable on a pipe:
   • When the design calls for more than one cable.
   • When the lines being heat traced are considered important enough to install a backup (redundant) heat tracing system.

The installation requirements are different for these cases.

1. Installing multiple heater cables for design requirements.

The most common multiple cable requirement is two cables on a pipe. Below are the recommended techniques for the two cable systems. They also apply to installations where three or more cables are to be installed on a pipe.

There are two ways of paying out two heater cables along a pipe. The first is to locate two reels of heater cable and supply one cable from each. This method works for all types of piping runs.

However, it may increase material waste by leaving unusable lengths from two reels. The second way is to supply both cables from one reel. This method is generally the easiest for relatively straight, simple piping runs. For each circuit, decide which method to use and then go to the appropriate part below.

   a. Supplying cable from two reels.
      
      The general procedure here is the same as given earlier, but there are a few things to do to make sure the system is correctly done.

   i. At each heat sink, the easiest thing to do is supply the extra heater called for by the design drawing from only one heater cable. This avoids having to measure out half of the requirement from each cable.
   
   ii. When doing the previous step, leave a small loop other cable at equipment which may be serviced, such as pumps, valves, instruments, etc. This is so both heater cables may be removed enough for future access.

   b. Supply heater cables from one reel.

The general procedure is the same as given earlier, but there are a few things to do to make sure the system is correctly done.

   i. With this method, a loop is pulled for the entire circuit. To do this, attach the end of the heater cable to the pipe near the heater cable reel. Remember to leave enough extra cable for the type of connection to be installed.
   
   ii. Begin pulling the cable off the reel in a large loop down the piping run. Be sure to keep the cable next to the pipe. Moving down the run, continue attaching the cable to the pipe, leaving the side of the loop going back to the reel unattached.
   
   iii. You will want both sides of the loop to be about the same length to avoid future problems. Also, it is easier to install the extra cable required at each heat sink from only one cable. Therefore, pull the right amount of extra heater cable needed at every second heat sink from the side of the loop you are attaching to the pipe. At the remaining serviceable heat sinks (pumps, valves, instruments, etc.) don’t forget to leave a short loop of cable for slack when access to the equipment is needed.

   iv. When the end of the piping run is reached, pull the proper amount of extra cable for the connection to be installed.
   
   v. Now, begin working the remaining side of the loop back toward the reel, installing it on the pipe and heat sinks as required.

2. Installation for Backup (Redundant) Systems.

The purpose of a backup system is to provide the proper amount of heat from the second heater cable if there are problems with the first. Therefore, each cable must be installed so it can do the job alone. The simplest way to do this is to install the first heater cable as given in Section B. Then, go back and install the backup heater cable the same way.

There are several things to keep in mind:

- The power connections and end seals for the two cables are often designed to be at opposite ends of the run in a redundant system. Remember to leave the proper amount of extra cable for the connection to be installed on each cable at that end.
- On piping one inch IPS or smaller, it can be difficult to apply both heater cables with good contact at all places. The main thing is to get the correct amount of cable installed. However, try to get as much contact with the piping and heat sinks from both cables as possible.
SUPPLEMENTAL INSTRUCTIONS FOR ATEX AND IECEx APPLICATIONS

SRL, SRP and SRM/E self-regulating heating cables, U Series connection accessories Type UPC, UMC, UES and RTES

1. Do not bend the cable for a length of 300mm from the cable gland inlet.
2. Connection and termination of Chromalox ATEX and IECEx certified cable must be carried out by using the U Series of certified cable connection kits as supplied by Chromalox Inc. These are only to be used for the operations for which they were designed.
3. The supply circuit to the heating cables must be protected by a safety differential device or equivalent ground fault protection.
4. The earthing braid of the heat trace cable must be bonded to a suitable earth terminal.
5. The minimum cable installation temperature for SRL, SRP and SRM/E cable is -40°C (-40°F).
6. The certified minimum cable exposure temperature for SRL, SRP and SRM/E cable is -60°C (-76°F).

7. The presence of heat trace cables under insulation on pipelines or vessels must be marked by the attachment of Caution labels at regular intervals on the installation.

WARNING

ELECTRIC SHOCK HAZARD. Disconnect all power before installing or servicing heating cable. Failure to do so could result in personal injury or property damage. Heaters must be installed by a qualified person in accordance with IEC 62086-2:2001.

WARNING

Any installation involving electric heating cables must be performed by a qualified person and must be effectively grounded in accordance with IEC 62086-2:2001 to eliminate shock hazard.

TYPICAL INSTALLATION DETAIL

AD1 - One Run of Cable

1. Do not spiral if ratio of heater length to pipe length is greater than 1.5. Instead, use two cables or choose a higher wattage heater.
2. Refer to pitch chart in design data section on circuit drawing for proper pitch length.

AD2 - Two Runs of Cable

Note: Heating cable is applied to the outside (long) radius of the pipe elbow.

AD3 - One Cable-Spiralling Method

AD4 - One Run of Cable at Pipe Elbow
**AD5 - Orifice Flange**

**Note:** Insulate over flanges & orifice plate and weatherseal. All piping must be fully insulated and weathersealed.

---

**AD6 - Expansion Joint**

**Note:** All piping must be fully insulated and weathersealed.

---

**AD7 - Welded Support**

**Note:** Pipe Support to be insulated two feet below pipe and weathersealed. All piping must be fully insulated and weathersealed.

---

**AD8 - Shoe Support**

**Note:** Insulate and weatherseal support. All piping must be fully insulated and weathersealed.

---

**AD9 - Valve**

**Note:** All piping must be fully insulated and weathersealed.

---

**AD10 - Pressure Gauge**

**Note:** Completely insulate & weatherseal line and gauge. All piping must be fully insulated and weathersealed.
### AD11 - Diaphragm Pressure Gauge

- Pressure Gauge
- Diaphragm Housing
- Shut-Off Valve
- Heating Cable
- Metallic Pipe
- Tape or Banding

**Note:** Completely insulate & weatherseal line. All piping must be fully insulated and weathersealed.

### AD12 - Level Gauge

- Level Gauge
- Tape or Banding

**Note:** All piping must be fully insulated and weathersealed.

### AD13 - U Series Power Connection

- Junction Box (not included)
- Grounded Braid
- Connect to bracket with grounding screw
- Pipe Strap
- Heating Cable
- Metallic Pipe
- Tape or Banding

**Note:** All piping must be fully insulated and weathersealed.

### AD14 - U Series Splice & Tee Connection

- Splice Connection using UMC Kit (See Instruction Sheet PJ497 for Installation Instructions)
- Heating Cable
- Pipe Strap
- Metallic Pipe
- Tape or Banding

**Note:** All piping must be fully insulated and weathersealed.
**TYPICAL INSTALLATION DETAIL**

**AD13 - EL Series Power Connection**

- Metallic Pipe
- Tape or Banding
- Heating Cable
  - Self Regulating
  - Constant Wattage

**Note:** All piping must be fully insulated and weathersealed.

**AD14 - EL Series Splice & Tee Connection**

- Junction Box (not included)
- Conduit Connection Hub (not included)
- Grounded Braid
  - Connect to bracket with grounding screw
- Heating Cable
  - Self Regulating
  - Constant Wattage

**Note:** All piping must be fully insulated and weathersealed.

**AD15 - End Seal**

- Metallic Pipe
- End Seal Kit (See Instruction Sheets PJ441, PJ443 or PJ450 for Installation Instructions)
- Heating Cable
  - Self Regulating
  - Constant Wattage
- Tape or Banding

**Note:** All piping must be fully insulated and weathersealed.

**AD16 - DL Series Power Connection**

- Junction Box (not included)
- RTPC Power Connection Kit (See Instruction Sheet PJ451 for Installation Instructions)
- Heating Cable
  - Self Regulating
  - Constant Wattage
- Metallic Pipe
- Pipe Strap
- Tape or Banding

**Note:** All piping must be fully insulated and weathersealed.

**AD17 - DL Series Splice & Tee Connection**

- RTST Splice and Tee Kit (See Instruction Sheet PJ452 for Installation Instructions)
- Heating Cable
  - Self Regulating
  - Constant Wattage
- Metallic Pipe
- Tape or Banding

**Note:** All piping must be fully insulated and weathersealed.

**AD18 - Sensor Placement**

1. For multiple heaters place control sensor 90° from nearest heater or centered between equally spaced heaters.
2. Place high-limit sensor approximately 15" from heater and mount in the same manner as shown below.

- Thermal Insulating
- Heating Cable
  - Self Regulating
  - Constant Wattage
- Mineral Insulated

**Note:** All piping must be fully insulated and weathersealed.
**WARNING**

**ELECTRIC SHOCK HAZARD.** Disconnect all power before installing or servicing heating cable. Failure to do so could result in personal injury or property damage. Heater must be installed by a qualified person in accordance with the National Electrical Code, NFPA 70.

**WARNING**

**ELECTRIC SHOCK HAZARD.** Any installation involving electric heating cables must be performed by a qualified person and must be effectively grounded in accordance with the National Electrical Code to eliminate shock hazard.

ACCESSORIES:
1. Selection of Installation Accessories should be in accordance with Chromalox bulletin PJ309 and PJ304.
2. Only use Chromalox installation kits and use them only for the operations for which they are designed.
3. The instructions included in the Chromalox installation accessories must be followed in order for the third party approvals (UL, FM, CSA, ATEX, IECEx, etc.) to apply.
4. Junction boxes must be in accordance with the requirements of the area classification.
5. All outdoor junction boxes must be located above grade level. Covers should be kept on the boxes at all time when not being worked in.
6. All terminations must be protected from the weather and from physical damage by locating them either under the weatherproof insulation or inside an appropriate junction box.
7. All equipment must be properly grounded.
8. Install installation accessories according to the instructions included in the kits and per installation details AD13 through AD17.

**CAUTION**

To prevent equipment damage, Circuits fed from overhead lines should be protected by secondary lighting arrestors.

**CONTROLS:**
1. All heating circuits should have temperature controls. Temperature control of the pipeline can be obtained through various Chromalox temperature controls. Refer to Chromalox bulletins PJ304 and PJ310 for recommendations.
2. Contactors must be used when load currents exceed the rating of the thermostat contacts. Equipment protection ground fault (30 mA EPD) thermal breakers are recommended with type SRL and SRP.
3. The temperature control should be mounted in a location where it will not be subjected to excessive shock or vibration.
4. Line sensing temperature sensors should be mounted in accordance with Installation Detail AD18 (see Detail on previous page).
5. Ambient sensing temperature sensors should be located at a point where the lowest ambient temperature is expected.
6. Exposed thermostat capillaries should have mechanical protection.

**CAUTION**

To prevent equipment damage, handle and secure temperature sensors, especially thermostat bulbs and capillaries with care to avoid distortion or crimping which might impair control accuracy.

WIRING

**I. Self-Regulating**

**Typical Wiring Diagrams**

**II. Constant Wattage**

**Typical Wiring Diagrams**

**III. Mineral Insulated**

**Typical Wiring Diagrams**
When the heater cable and connections for a circuit have been completed, immediately perform the following checks.
1. Visually inspect the heater cable and temperature controls for signs of mechanical damage. If damage is seen, either replace the complete heater cable, or cut out the damaged section and replace using the proper splice connection for the area and cable you are using.
2. Inspect all connections to be sure they are correctly assembled. Be sure each heater cable entry to a connection has a grommet and the compression plates and caps are properly tightened.
3. Turn the main circuit breaker ON.
4. Allow the pipe temperatures to be raised to the control point.
5. Measure the amperage draw, ambient temperature and pipe temperatures for each circuit and record in the installation log. This information may be needed for future maintenance and troubleshooting.
6. When the system is completely checked out, reset the thermostat to the proper temperature.
7. Insulation must be covered by a weatherproof barrier, such as an aluminum jacket.
8. If you are using metal jacketing and sheet metal screws, be sure the screws are not long enough to penetrate the thermal insulation and damage the heater cable.
9. Again, perform the megger test on the circuit immediately after the thermal insulation is installed to detect if any mechanical damage may have occurred.
10. When the insulation and the weatherproofing is complete, attach “Electric Traced” labels on the outside of the insulation. These should be installed where they are visible from normal operations, usually on alternating sides about every 10 feet. It is also useful to mark the location of any connections buried under the insulation.

**THERMAL INSULATION**

An installed heating circuit should be thermally insulated immediately to provide protection from damage from ongoing work. Things to remember about insulating:
1. Insulate the equipment being heat traced as soon as possible after the heating cable is installed. This will protect the cable from possible physical damage.
2. The type and thickness of thermal insulation specified on the design drawing must be used. If you use another type or thickness, the heater cable type or amount may have to be changed.
3. Never install wet insulation. Both the piping and the insulation must be dry when thermally insulating a circuit. Wet insulation may cause start-up or operational problems.
4. Properly weatherproof the thermal insulation. All places where valve stems, conduits, pipe supports, connection housing, thermal capillary tubes, etc. extend outside the insulation jacketing must be sealed with a suitable compound to keep water out.
5. Insulate valves fully up to, and including, the packing gland.
6. Heat trace and fully insulate the face of all non-diaphragm pressure instruments.
7. If you are using metal jacketing and sheet metal screws, be sure the screws are not long enough to penetrate the thermal insulation and damage the heater cable.
8. Insulation must be covered by a weatherproof barrier, such as an aluminum jacket.
9. Insulation must be covered by a weatherproof barrier, such as an aluminum jacket.
10. If you are using metal jacketing and sheet metal screws, be sure the screws are not long enough to penetrate the thermal insulation and damage the heater cable.

**COMMISSION TESTING**

For systems controlled by line-sensing thermostats:
1. Set the thermostat to the desired control temperature.
2. Turn the main circuit breaker ON.
3. Turn ON the branch circuit breakers controlled by the thermostat.
4. Allow the pipe temperatures to be raised to the control point. This may take up to four hours for most circuits (large full pipes may take longer).
5. Measure the amperage draw, ambient temperature, and pipe temperature for each circuit and record in the installation log. This information may be needed for future maintenance and troubleshooting.
6. When the system is completely checked out, reset the thermostat to the proper temperature.

For redundant systems:
Follow the procedure above for the type of control system you have, but commission the systems one at a time. Start up the primary system, qualify it and shut it down. Then start up the back-up system, qualify it and shut it down.
### SPECIFICATIONS

#### Table 1 – Maximum Temperatures

<table>
<thead>
<tr>
<th>CABLE TYPE</th>
<th>MAX. MAINTAIN (POWER ON)</th>
<th>MAX EXPOSURE (POWER OFF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRL / HSRL</td>
<td>150°F</td>
<td>185°F</td>
</tr>
<tr>
<td>SRM/E / HSRM</td>
<td>302°F</td>
<td>420°F</td>
</tr>
<tr>
<td>CWM</td>
<td>See table below</td>
<td>See table below</td>
</tr>
<tr>
<td>SRF</td>
<td>150°F</td>
<td>185°F</td>
</tr>
<tr>
<td>SRP</td>
<td>230°F</td>
<td>275°F</td>
</tr>
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#### Table 2 – Maximum Maintenance Temperatures

<table>
<thead>
<tr>
<th>Output (W/Ft.)</th>
<th>Temperatures (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td>w/o AT-1 Tape</td>
<td>340</td>
</tr>
<tr>
<td>w/ AT-1 Tape</td>
<td>350</td>
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</table>

#### Table 3 – Maximum Circuit Lengths

**SRL / HSRL Circuit Breaker Selection (Max. Circuit Lengths in Ft.)**

<table>
<thead>
<tr>
<th>Cable Rating</th>
<th>50°F Start-Up (Ft.)</th>
<th>0°F Start-Up (Ft.)</th>
<th>-20°F Start-Up (Ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRM/E / HSRM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-1</td>
<td>285 205 305 360</td>
<td>NR NR NR NR</td>
<td>275 135 200 270</td>
</tr>
<tr>
<td>3-2</td>
<td>575 400 600 660</td>
<td>NR NR NR NR</td>
<td>275 135 200 270</td>
</tr>
<tr>
<td>5-1</td>
<td>180 125 150 250 375</td>
<td>NR NR NR NR</td>
<td>180 135 200 270</td>
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<tr>
<td>5-2</td>
<td>360 250 375 505 720</td>
<td>NR NR NR NR</td>
<td>180 135 200 270</td>
</tr>
<tr>
<td>8-1</td>
<td>145 100 150 285 375</td>
<td>NR NR NR NR</td>
<td>145 100 150 285 375</td>
</tr>
<tr>
<td>8-2</td>
<td>360 250 375 505 720</td>
<td>NR NR NR NR</td>
<td>145 100 150 285 375</td>
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<td>50 80 105 130 180</td>
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<tr>
<td>10-2</td>
<td>190 145 200 385 490</td>
<td>80 125 170 210</td>
<td>190 145 200 385 490</td>
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**SRM/E / HSRM Circuit Breaker Selection (Max. Circuit Lengths in Ft.)**

<table>
<thead>
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<th>Cable Rating</th>
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<th>0°F Start-Up (Ft.)</th>
<th>-20°F Start-Up (Ft.)</th>
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<tr>
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<td>70 40 75 145 190 210</td>
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<td>120 175 235 300 360</td>
<td>145 100 150 285 375</td>
</tr>
<tr>
<td>20-1</td>
<td>60 75 115 150 160</td>
<td>50 65 105 145 160</td>
<td>60 75 115 150 160</td>
</tr>
<tr>
<td>20-2</td>
<td>115 150 230 305 350</td>
<td>100 135 200 270 350</td>
<td>115 150 230 305 350</td>
</tr>
</tbody>
</table>

**SRP Circuit Breaker Selection (Max. Circuit Lengths in Ft.)**

<table>
<thead>
<tr>
<th>Cable Rating</th>
<th>50°F Start-Up (Ft.)</th>
<th>0°F Start-Up (Ft.)</th>
<th>-20°F Start-Up (Ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRP 5/1</td>
<td>145 195 295 390 490</td>
<td>110 145 215 295 360</td>
<td>70 90 135 180 225</td>
</tr>
<tr>
<td>SRP 10/1</td>
<td>100 135 200 270 330</td>
<td>70 95 145 190 240</td>
<td>65 85 130 175 215</td>
</tr>
<tr>
<td>SRP 15/1</td>
<td>75 100 150 200 250</td>
<td>60 80 120 160 200</td>
<td>55 70 110 145 180</td>
</tr>
<tr>
<td>SRP 5/2</td>
<td>295 385 580 750 750</td>
<td>220 290 430 580 720</td>
<td>135 180 270 360 450</td>
</tr>
<tr>
<td>SRP 10/2</td>
<td>200 270 400 530 665</td>
<td>145 190 290 380 480</td>
<td>130 175 260 350 440</td>
</tr>
<tr>
<td>SRP 15/2</td>
<td>150 195 295 390 500</td>
<td>120 160 235 320 400</td>
<td>110 145 220 290 360</td>
</tr>
</tbody>
</table>
Recommended maintenance for Chromalox heat tracing systems consists of performing the steps involved in the commission testing on a regular basis. For those systems controlled by line sensing thermostats, Chromalox recommends checking the system at least twice per year. Systems controlled by an ambient-sensing thermostat should be checked when the season requiring their use is approaching.

Repair or replace all damaged heater cable, connections, thermal insulation and weatherproofing using only Chromalox connections and methods before testing the system.

Record all repairs made and measurements taken in the installation and maintenance log.
## INSTALLATION AND MAINTENANCE LOG

### Reference Information

| Circuit Number |  |
| Circuit Breaker Number |  |
| Drawing Number |  |
| Circuit Length |  |

### Heat Tracing Visual Checks

| Description | Initial | Date |
| No Signs of Moisture, Corrosion or Damage |  |  |
| Proper Electrical Connection |  |  |
| Proper Grounding of the Braid |  |  |

### Heat Tracing Electrical Checks

| Description | Meg Ohms | Date |
| Megger Test (500 VDC) (Bypass Controls) |  |  |
| Amperage Draw Test | Amperage | Amb. Temp. | Date |
| Compare to design Amperage Draw |  |  |
| Voltage at end of Circuit* | Voltage |  |

### Accessories/Control Checks

| Description | Set Point | Date |
| Temperature Control Properly Set |  |  |
| Sensors Protected and Undamaged | Initial | Date |
| All Enclosures and Kits Closed and Sealed | Initial | Date |

### Thermal Insulation Checks

| Description | Initial | Date |
| Location of Kits Visible on Outside of Insulation |  |  |
| Insulation is Complete, Dry and Weatherproof | Initial | Date |

* This test must be performed at installation or at any time the cable is cut or damaged in any way.

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**Limited Warranty:** Please refer to the Chromalox limited warranty applicable to this product at [http://www.chromalox.com/customer-service/policies/termsofsale.aspx](http://www.chromalox.com/customer-service/policies/termsofsale.aspx).

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**ARCO Engineering, Inc.**

3317 Gilmore Industrial Blvd.
Louisville, KY 40219

Ph: (502) 966-3134  Fx: (502) 966-3135

www.arcoengineering.com

**Chromalox®**

PRECISION HEAT AND CONTROL

1347 HEIL QUAKER BLVD., LAVERGNE, TN 37086

Phone: (615) 793-3900  www.chromalox.com