

## 35kV COLD SHRINK TERMINATION INSTALLATION & OPERATING INSTRUCTIONS

### DESCRIPTION:

The Chardon Cold Shrinkable Termination offers easy installation and reliable performance when terminating indoor and outdoor medium voltage cables. Made from high quality, UV resistant, silicone rubber, the Chardon Cold Shrinkable termination offers a combination of durability and high performance in the field. No tools, or heat sources are required. The products are designed to last the entire life of the cable.

The Chardon Cold Shrinkable terminations are tested according to IEEE Standard 48.

### KIT CONTENT:

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|--|---|
| <ul style="list-style-type: none"><li>● Cold Shrinkable Termination</li><li>● Cold Shrinkable Jacket Seal</li><li>● Paper Towel</li><li>● Silicone Lubricant</li><li>● Sealing Tape</li><li>● PVC Tape</li></ul> | <ul style="list-style-type: none"><li>● Silicone Tape</li><li>● Sandpaper Strip</li><li>● Gloves</li><li>● Installation Instructions</li><li>● Cable Lug (Optional)</li><li>● Grounding Kit for Tape Shield Cable (Optional)<br/>(Ground Braid / Constant-force Spring / Copper Tape)</li></ul> |
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### CAUTION:

- The installation of Chardon products must be carried out by qualified technical personnel.
- Contact with energized equipment can cause serious damage and even death.
- Wear appropriate protective equipment.
- Make sure Chardon Accessories are completely dry and in good condition at the time of installation.



### DANGER:

- Do not touch or handle energized products without adequate protective equipment. Errors in the compliance of this instruction can result in damage to the product, serious injuries to people and even death.
- All associated equipment must be de-energized during installation and maintenance.
- The following instructions do not cover details or variables in the change / installation of the product, to prevent contingencies, please contact the team of Chardon technicians if required.

### SAFETY INFORMATION

The instructions in this manual are not intended as a substitute for proper training or adequate experience in the safe operation of the equipment described. Only competent technicians, who are familiar with this equipment should install, operate and service it.

### Warranty

Chardon products are guaranteed for a period of 2 years after their date of purchase, to make this guarantee effective you can come only by presenting a purchase invoice to your authorized Chardon distributor. The warranty will not be valid in the following cases:

1. When the product has been used under conditions other than normal.
2. When the product has not been operated according to the instructions for use.
3. When the product has been altered or repaired by persons not authorized by Chardon.
4. When using components that are not compatible with Chardon accessories.

Inasmuch as CHARDON GROUP, Inc. has no control over the use which others may put the material, it does not guarantee that the same results as those described herein will be obtained, each user of the material should make his own tests to determine the material's suitability for his own particular use. Statements concerning possible uses of the materials described herein are not to be construed as constituting a license under any CHARDON GROUP, inc. patent covering such use or as recommendations for use of such materials in the infringement of any patent.

**FOR MORE INFORMATION, PLEASE CONTACT YOUR LOCAL DEALER.**

## STEP 1:

Check kit components to ensure correct fit according to your project's requirements of **Voltage**, **Cable Diameter** and **Conductor Size** to be used in your installation.

Check CABLE TYPE, for WIRE SHIELD CABLE follow **STEP 2A**, for TAPE SHIELD CABLE follow **STEP 2B**,

## STEP 2A Preparation of WIRE SHIELD CABLE

### STEP 2A:

- Remove the Cable Outer Jacket for a distance "**A**" + **95mm(3.74")** from the end of the cable. If present, remove the Cable Mylar Tape.
- Use one of the Cable Metal Screen Wires to secure the Cable Metal Screen Wires to Cable Insulation Shield.
- Use **Sandpaper** to grind the Cable Outer Jacket to rough the surface, clean the grinded surface apply the **Sealing Tape**.
- Bend the Cable Metal Screen Wires down and parallel to cable.
- Use one of the Cable Metal Screen Wires to secure the Cable Metal Screen Wires to Cable Outer Jacket.
- Wrap the **Sealing Tape** onto the Metal Screen Wires.
- Remove "**A**" of Cable Insulation Shield. Do not damage the Cable Insulation.
- Eliminate right angles by using Sandpaper. Before using **Sandpaper**, cover the Cable Insulation with **PVC Tape** for protecting it and remove **PVC tape** after sanding.

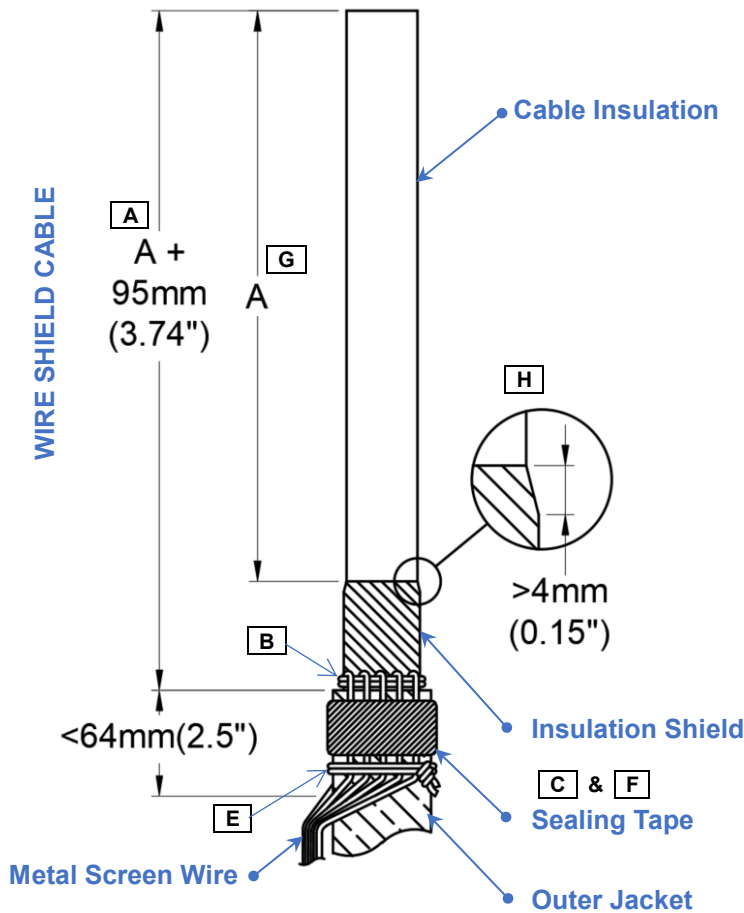
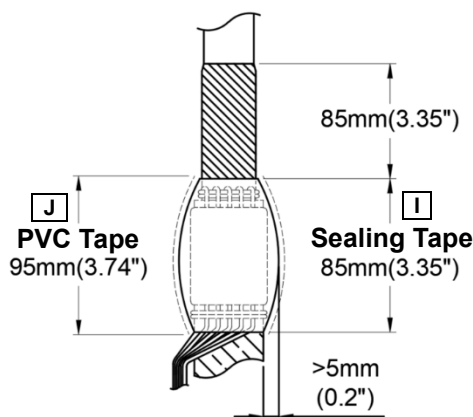


Table A	Diameter of Cable Insulation	A
A	18.7 ~ 26.0mm	L+430mm (L+16.93")
B	24.9 ~ 41.1mm	L+440mm (L+17.32")
C	36.6 ~ 59.0mm	L+445mm (L+17.51")

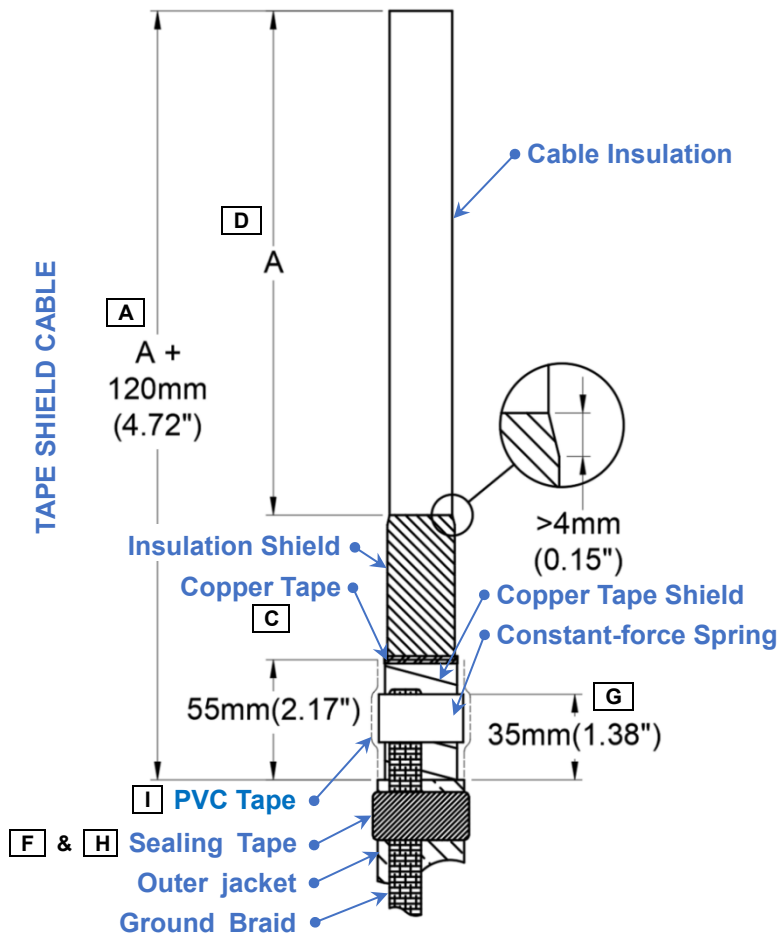
L: Cable Lug hole depth



- Measure **85mm(3.35")** below the Cable Insulation Shield, wrap highly stretched half-lapped with **85mm(3.35") Sealing Tape**. Note that the height of the tape layer should be **5mm(0.2")** higher than that of the Cable Outer Jacket.
- Wrap with **95mm(3.74")** 4 layers of **PVC Tape** to cover the Sealing Tape.

**Move on to STEP 3.**

## STEP 2B Preparation of TAPE SHIELD CABLE



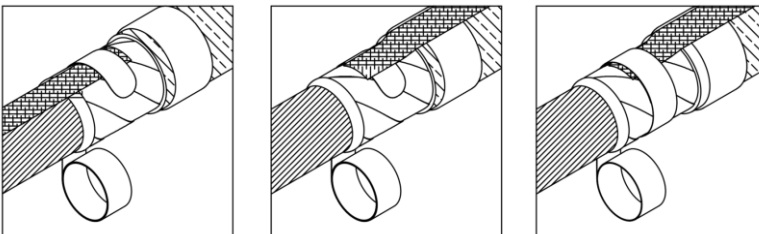
### STEP 2B:

- Remove the cable jacket for a distance of "**A**" + **120mm(4.72")** from the end of the Cable. Do not damage the Cable Copper Tape Shield.
- Keep the **55mm(2.17")** Cable Copper Tape Shield and remove excess.
- Apply a **Copper Tape** at the end of Cable Copper Tape Shield.
- Remove "**A**" of Cable Insulation Shield. Do not damage the Cable Insulation.
- Eliminate right angles by using **Sandpaper**. Before using sandpaper, cover the Cable Insulation with **PVC Tape** for protecting it and remove **PVC Tape** after sanding.

Table B	Diameter of Cable Insulation	A
A	18.7 ~ 26.0mm	L+420mm (L+16.54")
B	24.9 ~ 41.1mm	L+430mm (L+16.93")
C	36.6 ~ 59.0mm	L+435mm (L+17.13")

L: Cable Lug hole depth

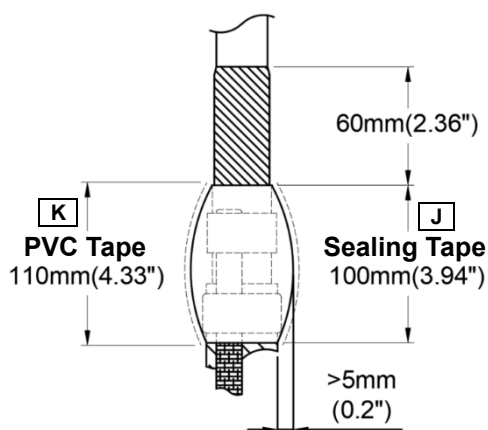
### G Constant-force Spring Installation



Press the **constant-force spring** against the **ground braid** and wind it once.

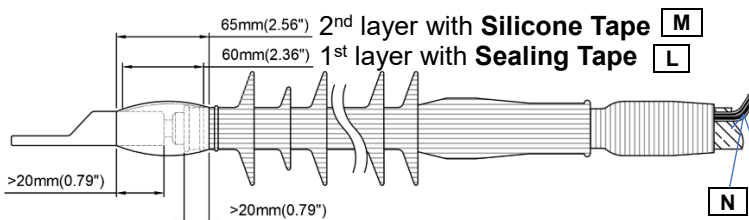
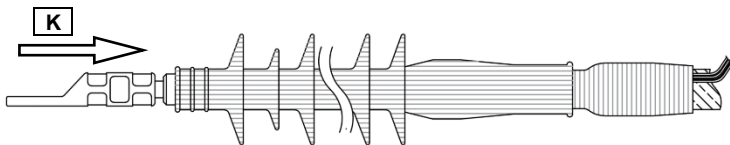
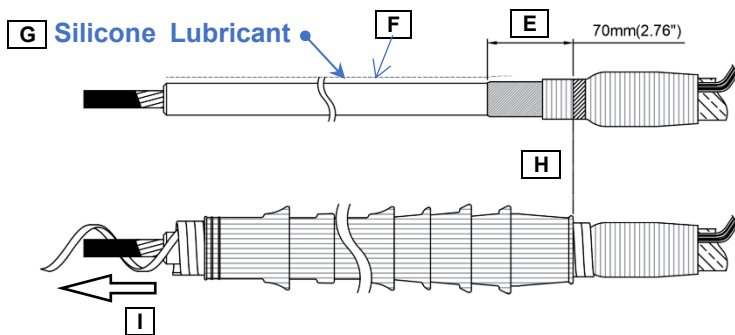
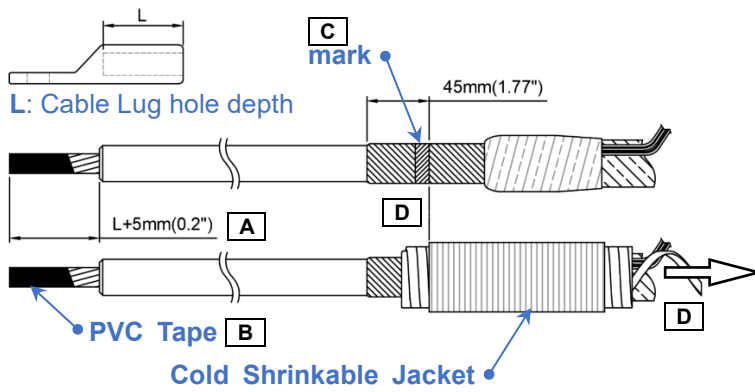
Bend **ground braid** down and parallel to the cable.

Wind the **constant-force spring** until complete.



- Use **Sandpaper** to grind the Cable Outer Jacket to rough the surface, clean the grinded surface apply the **Sealing Tape**.
- From the top of the Cable Outer Jacket, cover the **Ground Braid** with a **Constant-force Spring**. Install constant-force spring as shown.
- Wrap the **Sealing Tape** onto the **Ground Braid** and the Cable Outer Jacket.
- Wrap the Cable Copper Tape Shield, the **Constant-force Spring** and the **Ground Braid** with 2 layers of **PVC Tape**.
- Measure **60mm(2.36")** below the Cable Insulation Shield, wrap highly stretched half-lapped with **100mm(3.94") Sealing Tape**. Note that the height of the tape layer should be **5mm(0.2")** higher than that of the Cable Outer Jacket.
- Wrap with **110mm(4.33")** 4 layers of **PVC Tape** to cover the Sealing Tape.

**Move on to STEP 3.**



#### CAUTION:

The termination and cable should be kept as straight as possible and avoid excessive bending of cable. Excessive bending of cable may result in gaps between the termination and cable.



#### CAUTION:

The waste generated during the construction should be sorted and disposed of properly. It should not be discarded arbitrarily.

### STEP 3:

- Remove L+5mm(0.2") of Cable Insulation. Place a 3.2mm(0.125") maximum chamfer on the Cable Insulation.
- Use **PVC Tape** to secure the exposed ends of the cable conductors.
- Measure **45mm(1.77")** from the top of the Cable Insulation Shield down and make a mark by PVC tape or maker pen.
- Place the Cold Shrinkable Jacket Seal onto the cable, aligning the mark with the end of the hold out tube. Take out the hold out tube to complete the installation.



#### NOTE:

Do not substitute other lubricants for those provided.

### STEP 4:

- Remove mark tape on the Cable Insulation Shield if applicable. Measure **70mm(2.76")** from the top of the Cable Insulation Shield down and make a mark by PVC tape or maker pen.
- Polish and clean thoroughly the Cable Insulation using a **Sandpaper** and **Paper Towel**, always wiping from the Cable Insulation towards the Cable Insulation Shield without touching the Cable Insulation Shield.
- Apply the **Silicone Lubricant** over the shown area.
- Place **Cold Shrink Termination** onto the cable, aligning the mark with the termination.
- Remove out the hold out tube to complete the installation.

### STEP 5:

- Remove mark tape on the Cold Shrinkable Jacket Seal if applicable. Remove the **PVC Tape** of Cable Conductor and clean the exposed Cable Conductor with a wire brush.
- Place the **Cable Lug** on the Cable Conductor and crimp it from the top to the insulation. Rotate the tool between each successive crimp to prevent **Cable Lug** distortion.

### STEP 6:

- Wrap highly stretched half-lapped with **Sealing Tape** **>60mm(2.36")** between the Cable Insulation and **Cable Lug**.
- Wrap highly stretched half-lapped with **Silicone Tape** over the sealing tape **>65mm(2.56")**.
- Connect the Cable Metal Screen Wires or Ground Braid to the system ground.