

#### 72.5 kV 1250A IEC FRONT/COUPLING (REAR) T-BODY – INSTALLATION & OPERATING INSTRUCTIONS

#### DESCRIPTION

The CHARDON 72 kV 1250A IEC front / coupling (rear) T-body connectors are used to terminate polymeric cable to equipment, such as transformers, switchgear, motors etc. equipped with bushings meeting type F interface per CENELEC EN 50180 and 50181. They are fully screened and fully submersible when mated with the proper bushing or plug and they meet the requirements of IEC 60840.



#### FRONT T-BODY KIT CONTENT:

- Front t-body
- Cable Adapter
- Conductive Cap
- Compression Connector or Shear bolt Connector
- Insulating Plug
- Grounding Kit
- Stud Parts Kit
- Socket Wrench Kit(Optional)
- Paper Towel
- Silicone Grease (5g)
- Instruction Sheet

#### **REAR T-BODY KIT CONTENT:**

- Rear t-body
- Cable Adapter
- Compression Connector or Shear bolt Connector
- Connecting Rod
- Grounding Kit
- Stud Parts
- Paper Towel
- Silicone Grease (5g)
- Instruction Sheet

# PRIOR TO THE INSTALLATION OF CHARDON CABLE ACCESSORIES, MAKE SURE YOU HAVE THE TOOLS NEEDED

- Tool to Undress the Power Driver
- Electric Cable Cleaner
- Gloves
- Cable Cutter
- Sandpaper 120 grit or less.
- Measuring tape

- Knife, Razor or Blade of Steel with edge
- Vinyl tape
- Compression tool and dice
- Wire brush
- PVC Tape

CAUTION:	<ul> <li>The installation of Chardon products must be carried out by qualified technical personnel.</li> <li>Contact with energized equipment can cause serious damage and even death.</li> <li>Wear appropriate protective equipment.</li> <li>Make sure Chardon Accessories are completely dry and in good condition at the time of installation.</li> </ul>
DANGER:	<ul> <li>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.</li> <li>All associated equipment must be de-energized during installation and maintenance.</li> <li>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.</li> </ul>

#### 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.

# INSTALLATION

# 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.

# STEP 2:

Allow 65 mm clearance between cable tip and bushing for T-body installation.

a) Check if you will install a ground adapter.

b) Remove the outer jacket of 375mm the cable up to expose the metal screen.

c) If present, remove the mylar tape.

d) Take 2 of the neutral wires from the metal screen. Use a cut wire to turn the cable 2 times for securing neutral wires to cable jacket.

e) Use sandpaper to grind the cable jacket to rough the surface, clean the grinded surface apply the sealing tape.

f) Bend the neutral wires down and parallel to cable.

g) Use another cut copper wire to secure neutral wires to cable jacket.

h) Wrap the sealing tape onto the neutral wires.

i) Clean the exposed semiconductor layer.



# STEP 3:

Check if you will install Compression Connector. Measure 365mm from the end of the cable and mark using electrical tape. Then measure 290mm from the end of the cable down and remove the semiconductor shield, exposing the insulation. At the end of the insulation and insulation shield, chamfer the sharp end at a 45° angle.



# STEP 4:

Remove insulation exposing the conductor by A mm and chamfer the end of the cable insulation.

Take care not to nick the conductor. Use a PVC tape to wind the conductor.

Clean the insulation from the tip down using a cloth dampened with solvent.

Make sure there is no semiconductor screen residue on the exposed insulation, then clean and lubricate the insulation.



# STEP 5:

Clean and lubricate the insulation and inside of the adapter and install the cable adapter up to the "C" mark previously made in STEP3.



# STEP 6:

From a distance of 30mm at starting from the end of the adapter, wrap 80mm of sealing tapes. Wrap 2 layers of PVC tape on the sealing tapes.



#### **STEP 7-A (Compression Connector)**

Remove PVC tape and the oxide layer on the cable conductor surface with a brush. Remove protective cap and fully insert cable conductor into compression connector. Make sure that the eyelet of the connector is facing the bushing where the T-body will be installed. Compress once as shown in the following image.



Make sure the distance from the end of the connector to the cable adapter after crimping should be between 220mm to 230mm. Rotate the tool 90° between each successive crimp to prevent connector distortion. Re-align the connector with the cable to eliminate any bends caused by crimping.



#### STEP 7-B (Shear Bolt Connector)

Remove PVC tape and the oxide layer on the cable conductor surface with a brush. Remove protective cap and fully insert cable conductor into compression connector. Make sure that the eyelet of the connector is facing the bushing where the T-body will be installed. Hand-tighten all bolts to fix cable conductor at the center of the shear bolt connector. Use a torque wrench to tighten the bolt slowly until the shear points breaks away. Once the bolt shears off, use a file to even out all the sharp edges.



Make sure the distance from the end of the connector to the cable adapter 220mm to 230mm.



#### **STEP 8:**

Clean and evenly lubricate the entire interior surface of the cable adapter with silicone lubricant. Lubricate inside the cable entrance of the front T-body at least 50mm deep. Slide the front T-body onto the cable with a twisting motion.

Ensure that the hole in the top of the connector is visible through the interface end of the T-body.



#### STEP 9:

Tighten the stud to 55 Nm by using a 14 mm open end wrench.

Clean and evenly lubricate both interfaces of front T-body and bushing.

Push the front T-body onto the equipment bushing.

Make sure the stud passes through the hole of connector.



#### **STEP 10:**

Push wave washer and hex nut on the stud and tighten the nut to 50-55 Nm by using a torque wrench with 24 mm socket. Clean and evenly lubricate both interfaces of front T-body and insulating plug. Insert the insulating plug into the front T-body and engage the threads of the threaded stud. Tighten the insulating plug to 35-40 Nm by using a torque wrench with 19 mm socket.



#### **STEP 11:**

Clean the interior surface of the rubber cap. Place it over the insulating plug and push it until it snaps into place. Connect drain wire on front T-body to the grounding system.



**A** connector / bushing mated combination should not be allowed to carry the full weight of the cable. Therefore, it is necessary to clamp the cable as close as possible to the connector.

# **IEC Coupling (Rear) T-Body Instructions**

#### **STEP 12:**

Before installing coupling (rear) T-body, complete step 1 to step 9 of front T-body instructions. If front T-body was installed completely, remove insulating plug, washer, spring washer and hex nut.

Install the connecting rod and stud assembly by hand in the front T-body. Make sure the stud in the equipment bushing passes through the hole inside of the connector.

Tighten with a torque of approximately 50-55nm by using 22mm and 14mm open end wrench.



#### **STEP 13:**

Repeat steps 1 to step 8, prepare cable and install rear T-body connector.



#### **STEP 14:**

Clean and evenly lubricate both interfaces of front T-body and coupling (rear) T-body. Slide the coupling (rear) T-body over the rod and stud assembly and into the front T-body connector.



#### **STEP 15:**

Push wave washer and hex nut on the stud and tighten the nut to 50-55 Nm by using a torque wrench with 24 mm socket. Clean and evenly lubricate both interfaces of coupling (rear) T-body and insulating plug. Insert the insulating plug into the coupling (rear) T-body and engage the threads of the threaded stud. Tighten the insulating plug to 35-40 Nm by using a torque wrench with 19 mm socket.



#### **STEP 16:**

Clean the interior surface of the protective rubber cap. Place it over the insulating plug and push it until it snaps into place. Connect drain wire on front T-body and coupling (rear) T-body to grounding system.



#### 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 no compatible with Chardon accessories.

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