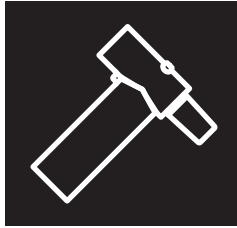


CAUTION : Read instructions thoroughly and completely prior to beginning installation.

Surge arrester - CENELEC Type C interface



400PBxSA

Part A : Surge arrester installation on (K)(M)400TB(/G) or (K)(M)440TB(/G) connector
(See page 2 - 6).

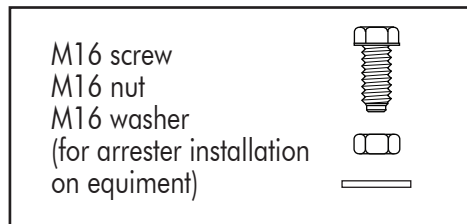
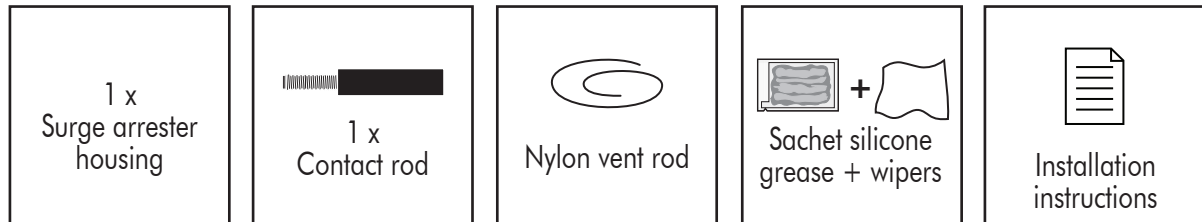
Part B : (K)(M)400TB(/G) or (K)(M)440TB(/G) connector installation on surge arrester (limited to 630 A)
(See page 7 - 12).

Part C : (K)400LB connector installation on surge arrester (limited to 630 A) (See page 13 - 17).

Part D : Surge arrester installation on equipment (See page 18 - 20).

Part E : Compact connector installation on surge arrester (limited to 630 A) (See page 21 - 27).

Contents:



Necessary tools, depending on installation

- Torque wrench
- 10 mm hex. wrench
- 10 mm socket
- 24 mm socket
- 22 mm socket
- Extension (L ≥ 130 mm)
- 8 mm hex. wrench
- 8 mm socket

IMPORTANT :

- Ensure that the Maximum Continuous Operating Voltage (M.C.O.V.) of the system does not exceed the M.C.O.V.-rating of the surge arrester.
- Check contents of package to ensure it is complete and inspect parts for damage and compatibility with mating parts.
- These products are supplied with protective shipping covers.
- Have all required tools at hand and observe cleanliness throughout the procedure.
- Handle the surge arrester with care to avoid that it is dropped or knocked since this could damage the internal structure.

Euromold
a Nexans company

This product should be installed only by competent personnel trained in good safety practices involving high voltage electrical equipment.

These instructions are not intended as a substitute for adequate training or experience in such safety practices. These instructions do not attempt to provide for every possible contingency.

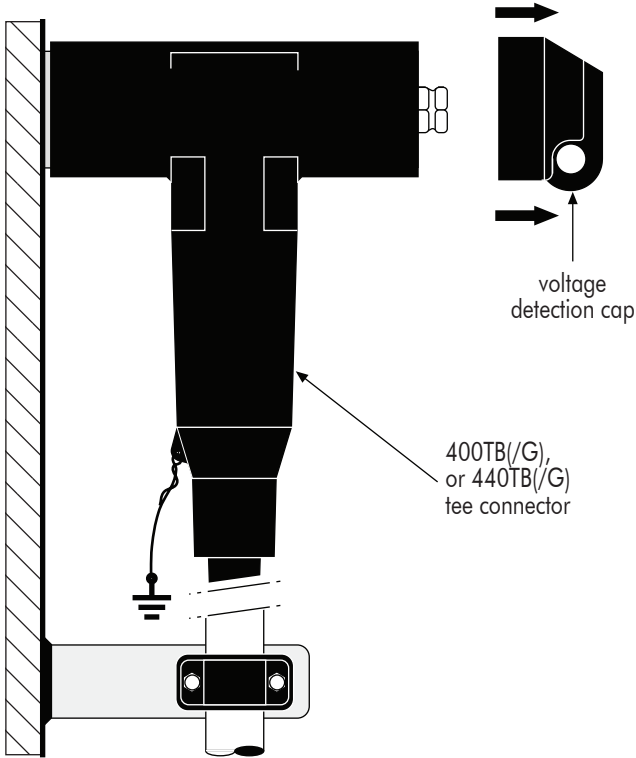
Failure to follow these instructions could result in damage to the product and serious or fatal injury.

IMPORTANT : Cable and associated apparatus must be de-energised, locked out, and tagged prior to product installation.

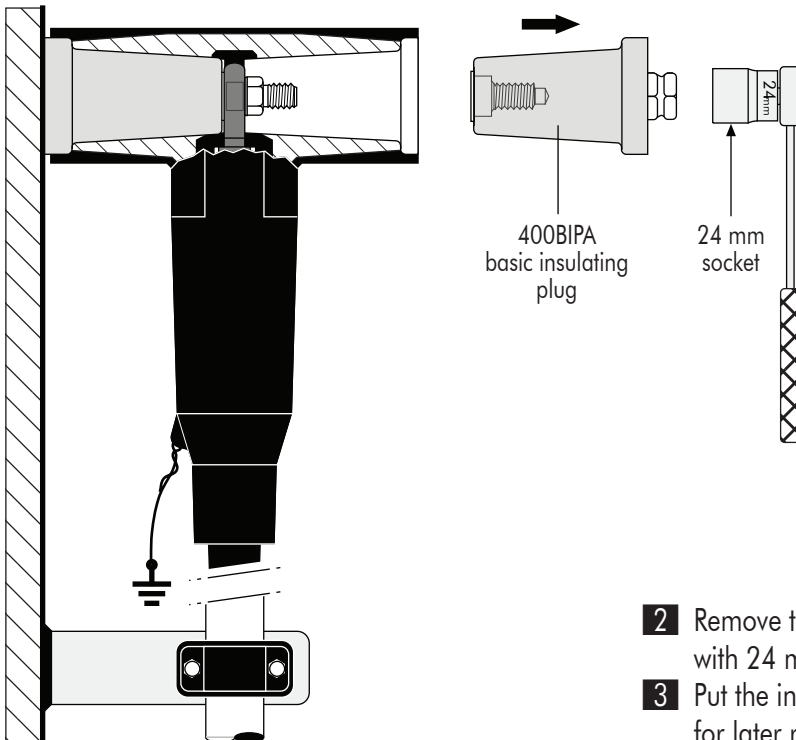
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IMPORTANT : The circuit must be tested to assure it is de-energised.

Part A: Surge arrester installation on (K)(M)400TB(/G) or (K)(M)440TB(/G) connector



- 1** Remove voltage detection cap from the tee connector.

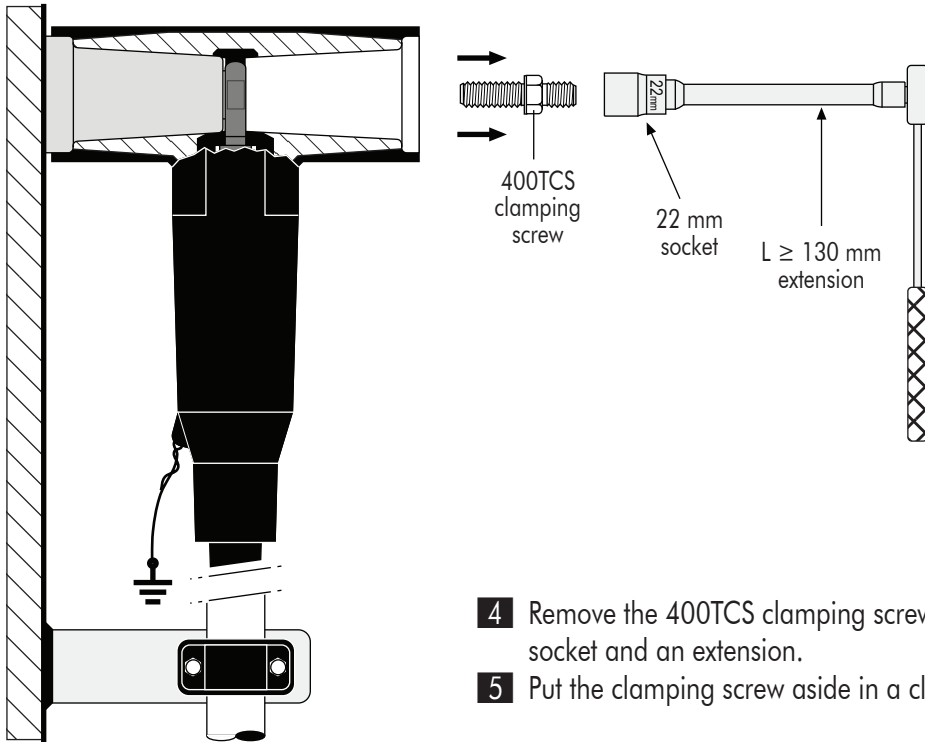


- 2** Remove the 400BIPA basic insulating plug. Use wrench with 24 mm socket.
- 3** Put the insulating plug aside in a clean and safe place for later re-use.

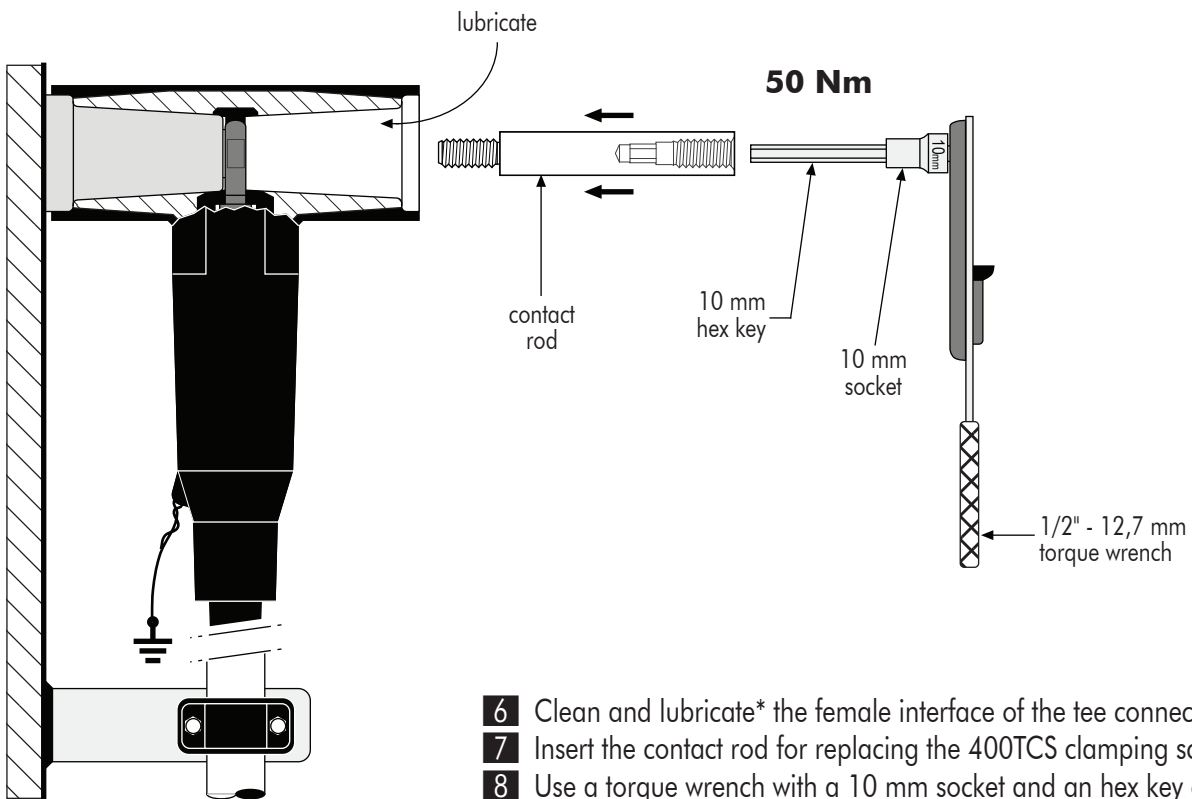


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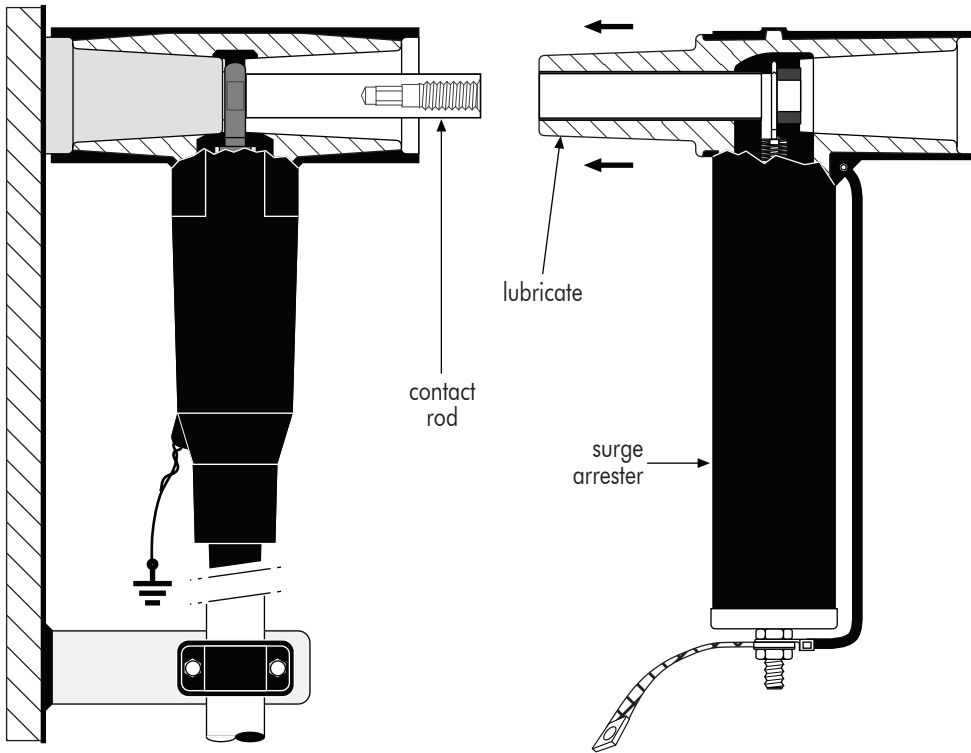




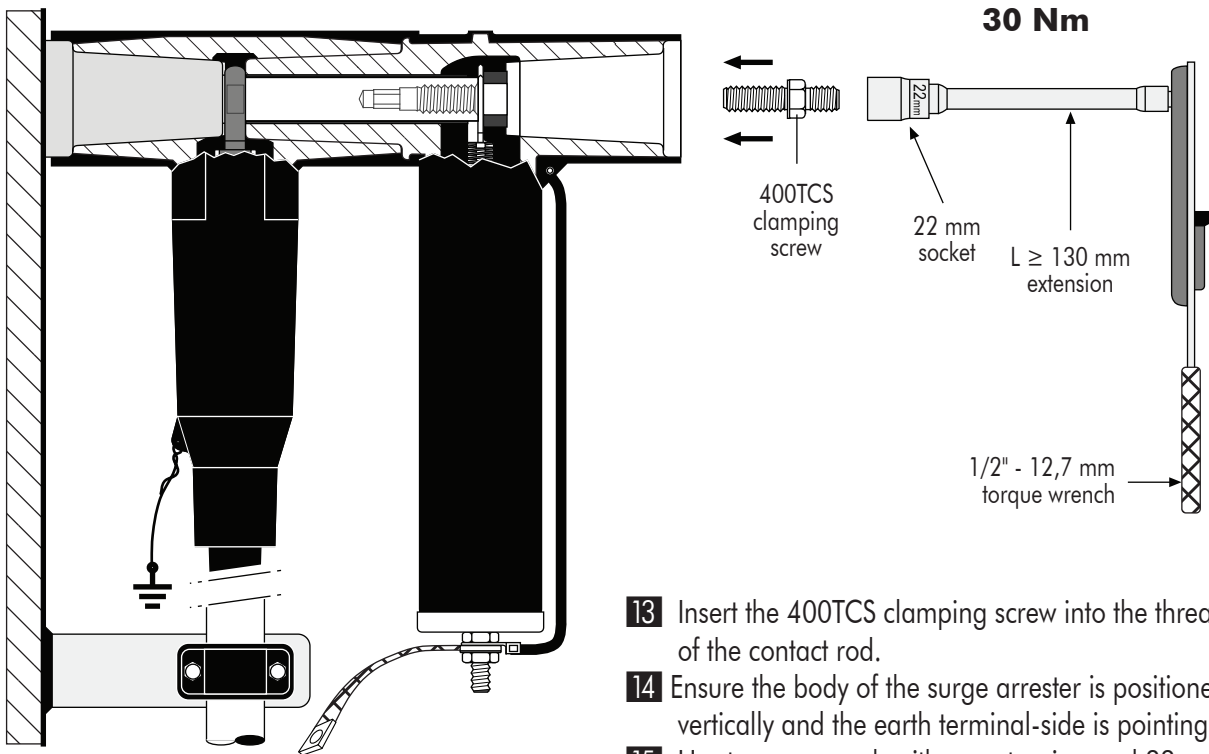
- 4 Remove the 400TCS clamping screw. Use a wrench with a 22 mm socket and an extension.
- 5 Put the clamping screw aside in a clean and safe place for later re-use.



- 6 Clean and lubricate* the female interface of the tee connector.
- 7 Insert the contact rod for replacing the 400TCS clamping screw.
- 8 Use a torque wrench with a 10 mm socket and an hex key of 10 mm.
- 9 Tighten exerting **50 Nm** (5 kgm or 35 foot-pounds) of torque. In order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts.



- 10 Inspect the male interface of the surge arrester and lubricate* it.
- 11 Slide the surge arrester with its male interface over the installed contact rod and push it home.
- 12 Make sure to align the contact rod and metal insert of the surge arrester during assembly.



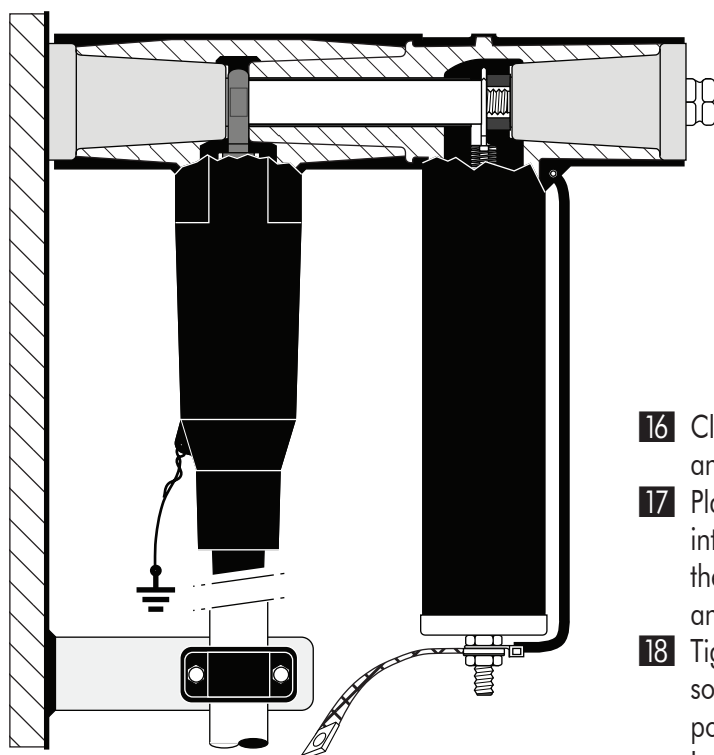
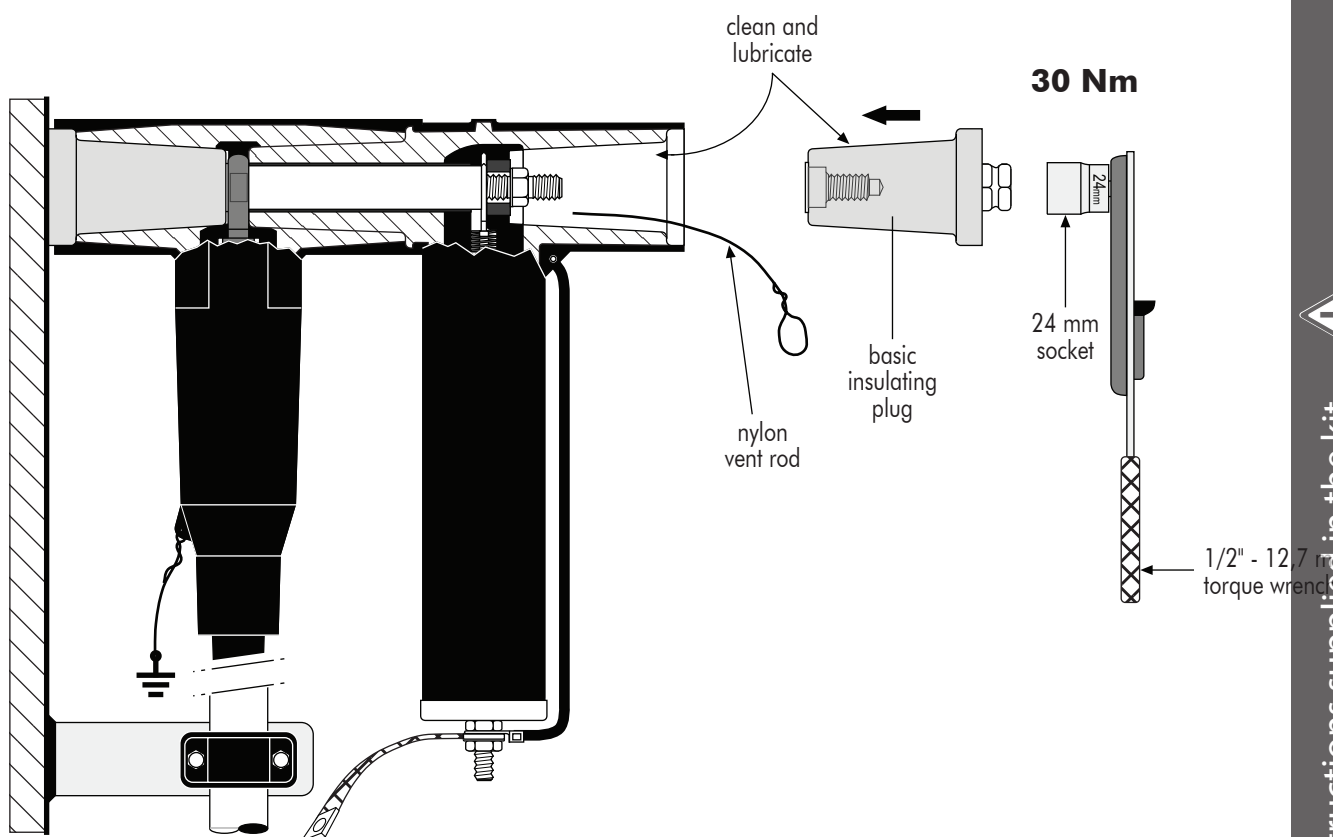
- 13 Insert the 400TCS clamping screw into the threaded hole of the contact rod.
- 14 Ensure the body of the surge arrester is positioned vertically and the earth terminal-side is pointing downwards.
- 15 Use torque wrench with an extension and 22 mm socket and tighten exerting **30 Nm** (3 kgm or 22 foot-pounds) of torque.
In order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts.



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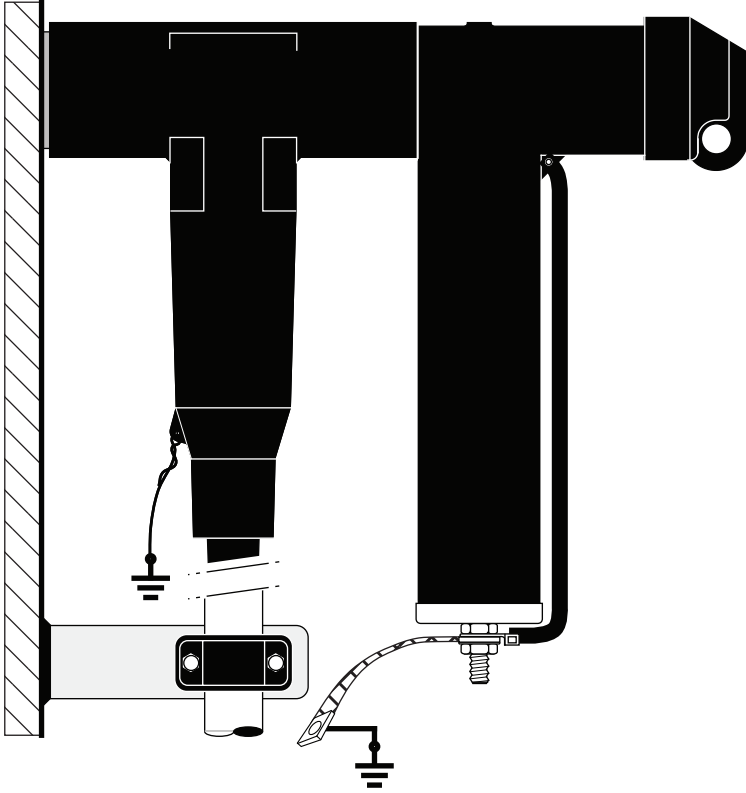


- 16 Clean and lubricate* the female interface of the arrester and interface of the 400BIPA basic insulating plug.
- 17 Place the nylon vent rod along the female connector's interface to exhaust the air during assembly and insert the insulating plug in the arrester, engage the threads and hand tighten.
- 18 Tighten assembly : use torque wrench with 24 mm socket and tighten exerting **30 Nm** (3 kgm or 22 foot-pounds) of torque.
In order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts.
- 19 **Remove the nylon vent rod.**



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- 20 Clean inner surface of voltage detection cap (do not lubricate) and place on the surge arrester. Push down hard until cap "snaps" into place.
- 21 Ensure the tee connector is earthed and connect earth braid of the surge arrester to the system earth.

NOTE :

A connector/bushing mated combination should not be allowed to carry the full weight of the cable.

Therefore it is necessary the cable is clamped as close as possible to the connector.

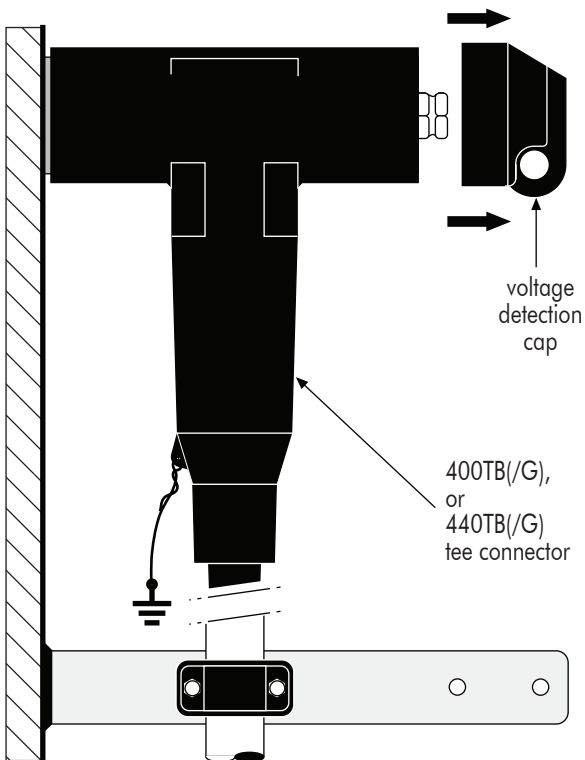


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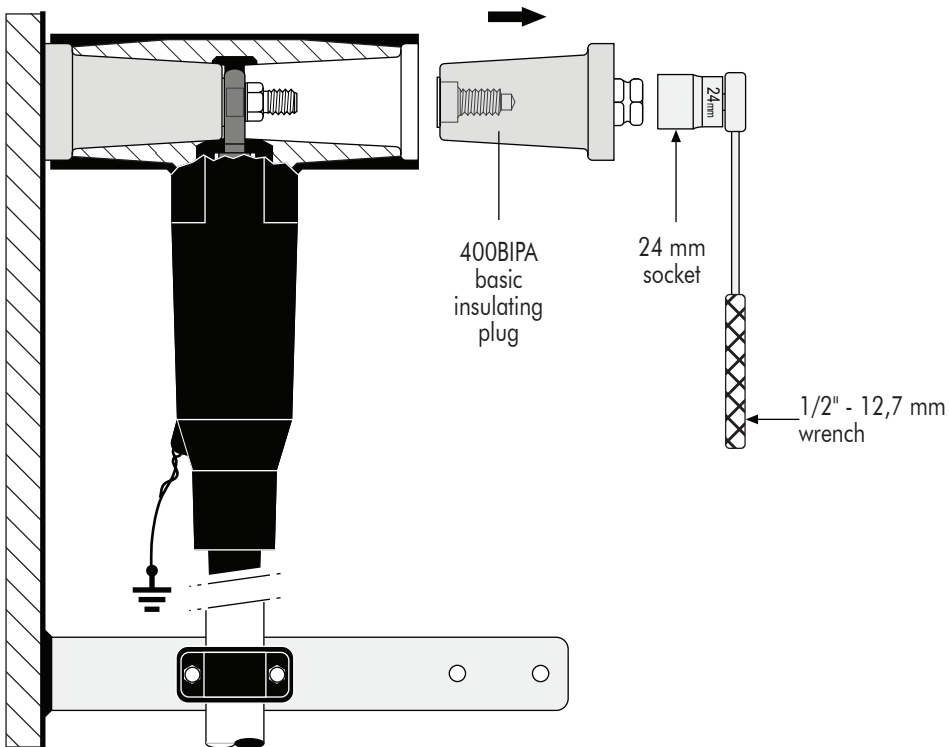


IMPORTANT : The circuit must be tested to assure it is de-energised.

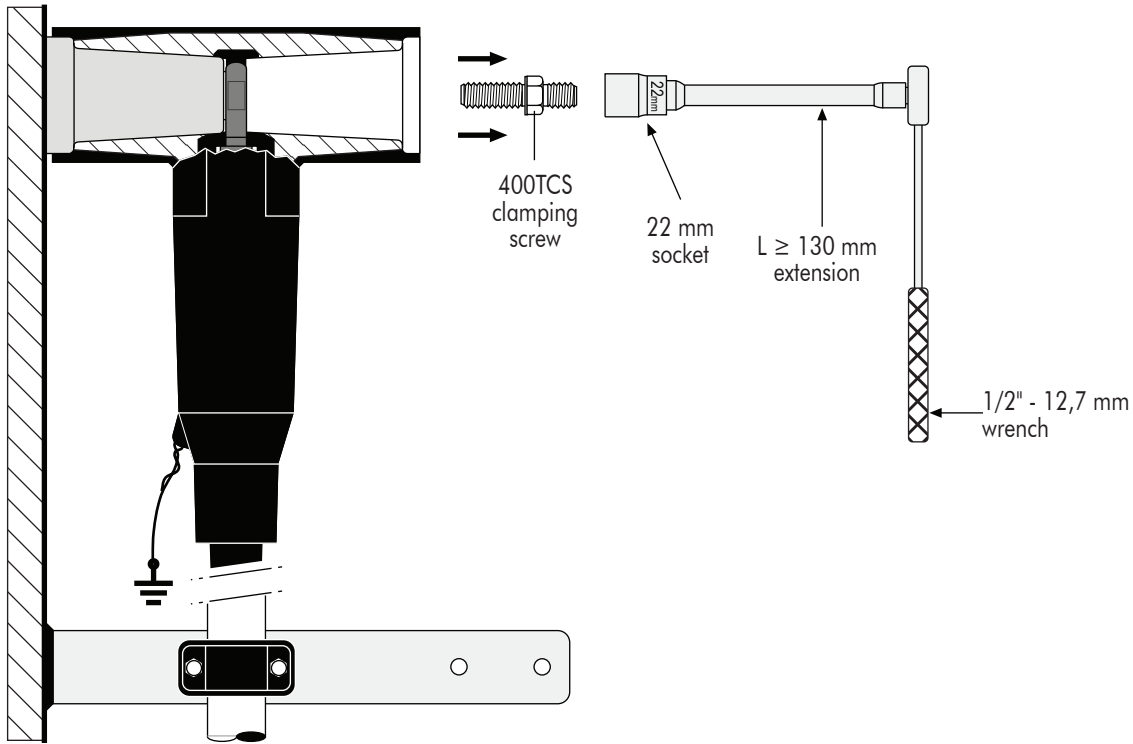
Part B : (K)(M)400TB(/G) or (K)(M)440TB(/G) connector installation on surge arrester



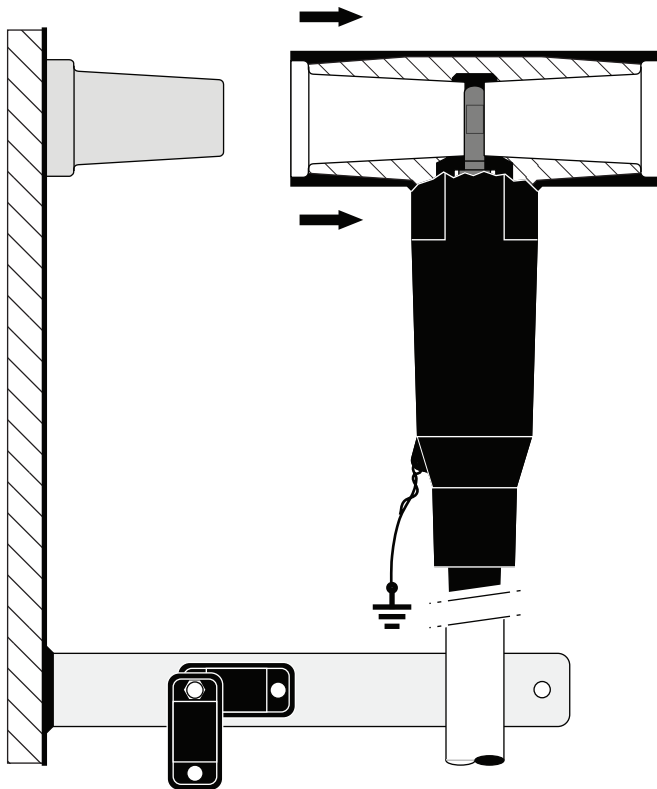
- 1** Remove voltage detection cap from the tee connector.



- 2** Remove the 400BIPA basic insulating plug. Use a wrench with 24 mm socket.
- 3** Put the insulating plug aside in a clean and safe place for later re-use.



- 4** Remove the 400TCS clamping screw. Use a wrench with a 22 mm socket and an extension.
- 5** Put the clamping screw aside in a clean and safe place for later re-use.

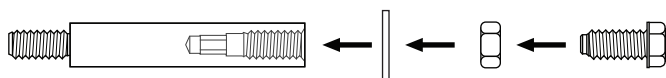


- 6** Loosen the cable clamp and remove the connector from the equipment.
- 7** Put the connector aside in a clean and safe place for later re-use.

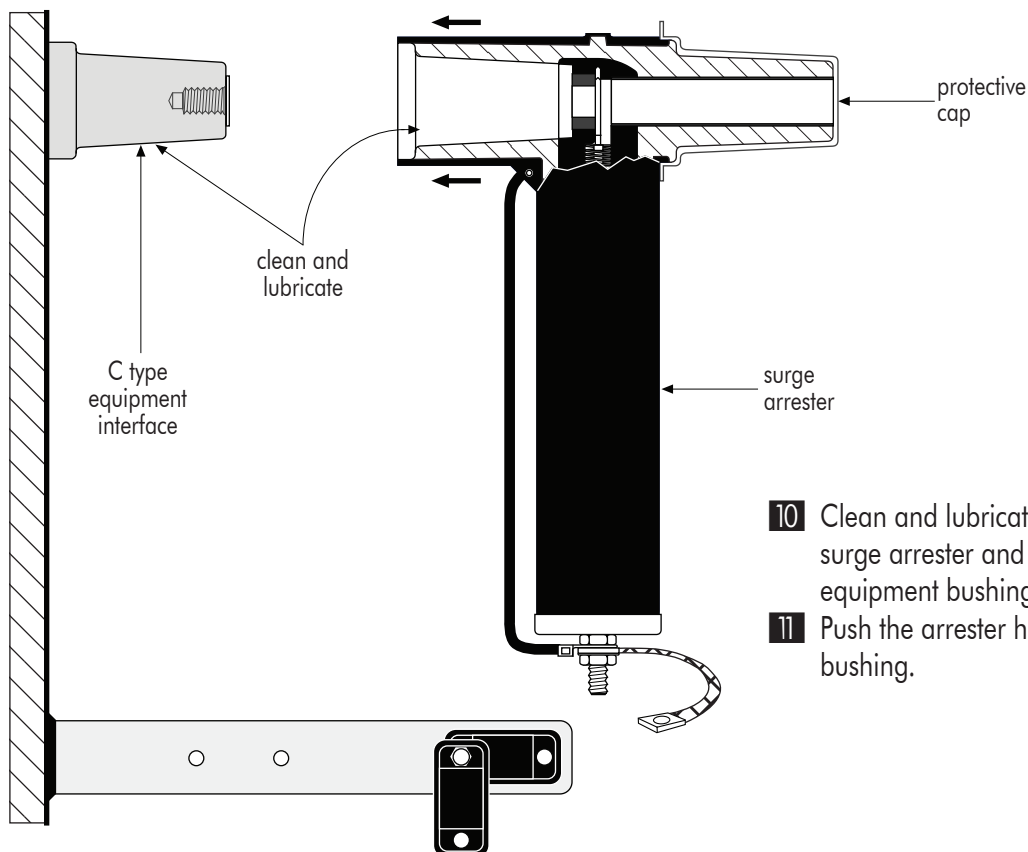


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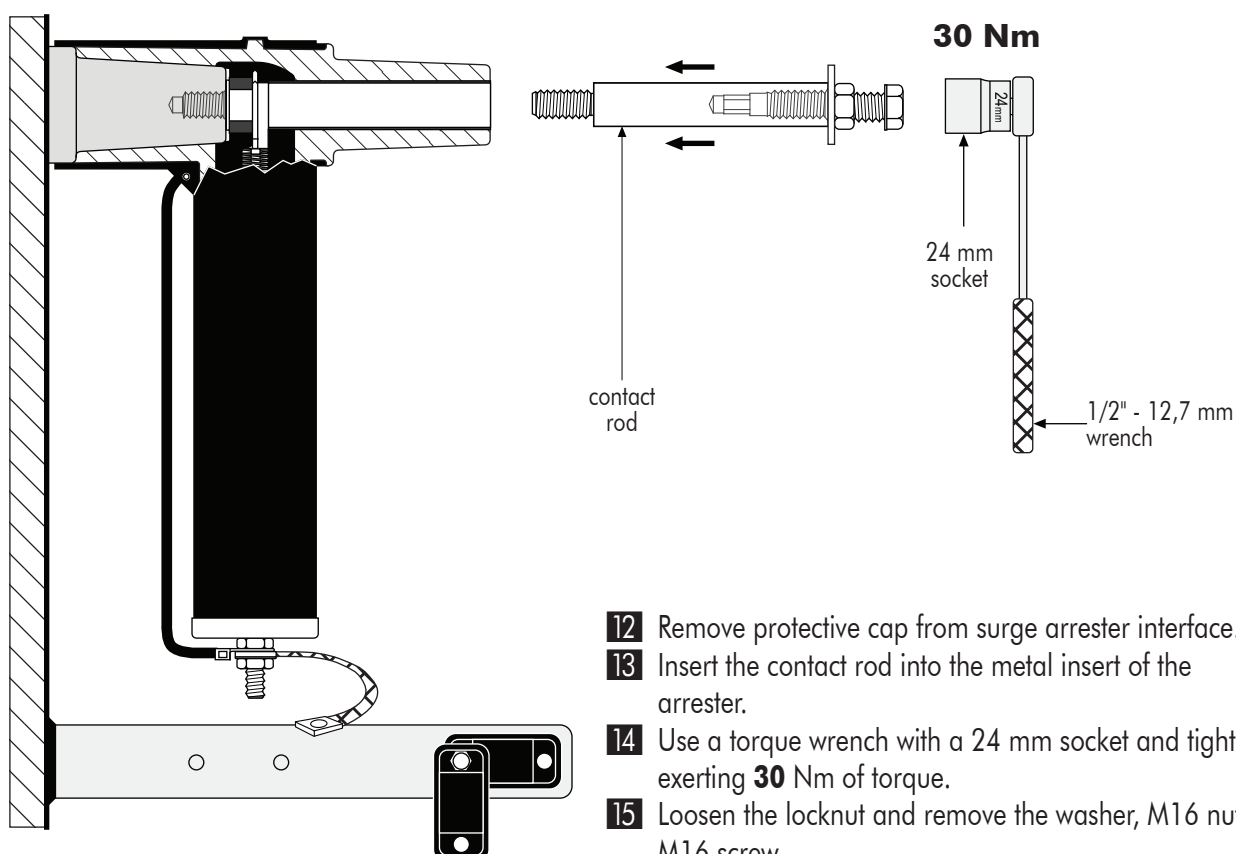




- 8 Insert the M16 washer (with an outer diameter of 40 mm), the M16 nut and the M16 screw into the contact rod.
- 9 Lock the nut onto the contact rod.



- 10 Clean and lubricate* the female interface of the surge arrester and male interface of the equipment bushing.
- 11 Push the arrester home on the equipment bushing.

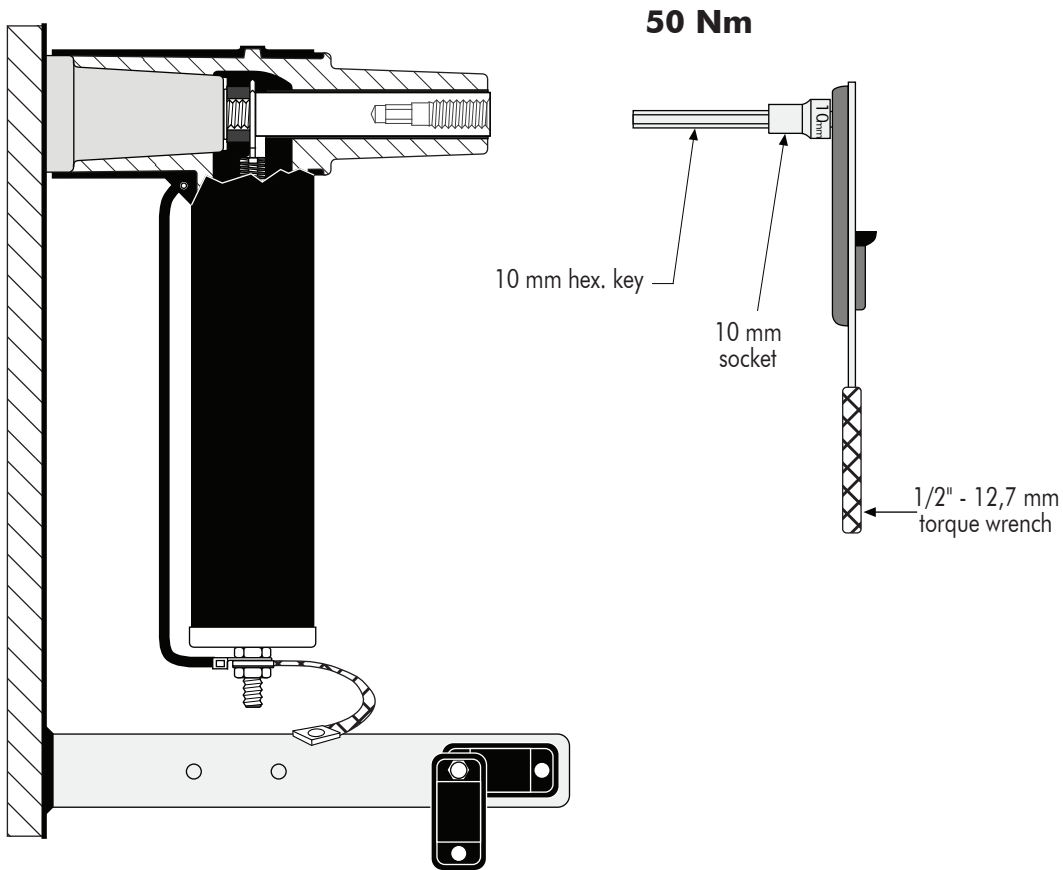


- 12 Remove protective cap from surge arrester interface.
- 13 Insert the contact rod into the metal insert of the arrester.
- 14 Use a torque wrench with a 24 mm socket and tighten exerting **30 Nm** of torque.
- 15 Loosen the locknut and remove the washer, M16 nut and M16 screw.

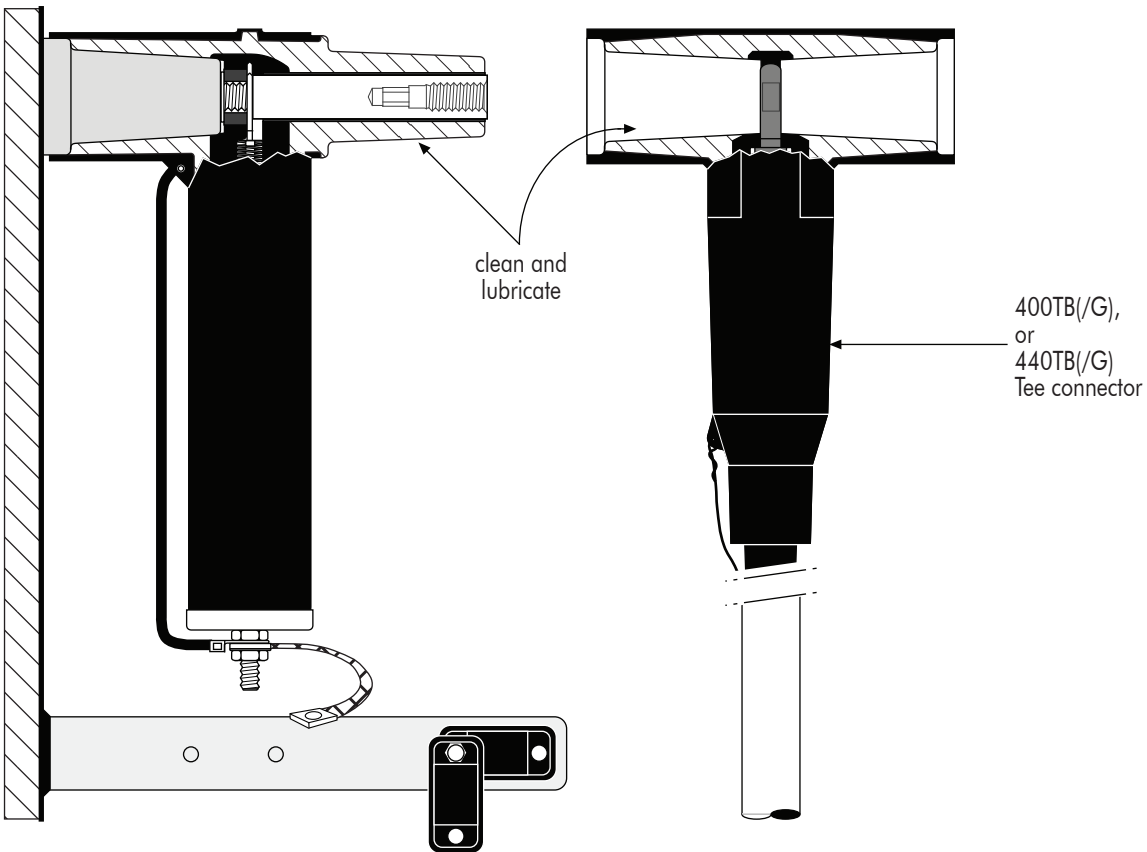


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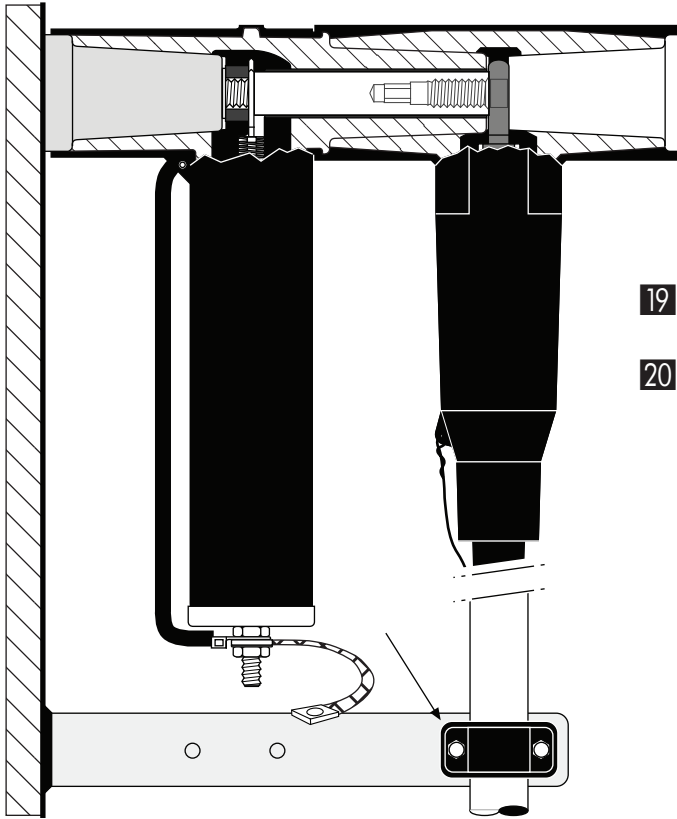


- 16 Check that the contact rod is flush with the the arrester housing.
- 17 Use a torque wrench with 10 mm socket and a hex. key of 10 mm. Tighten exerting **50 Nm**.



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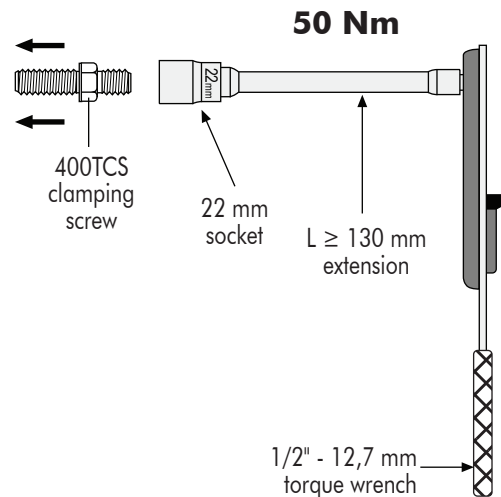
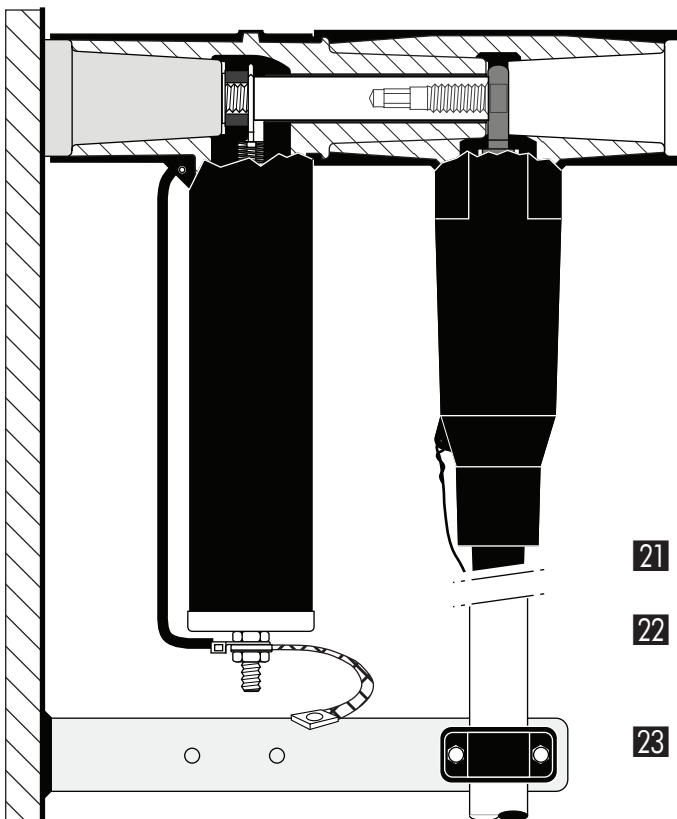




- 19 Clean and lubricate* the male interface of the arrester and the female interface of the tee connector.
- 20 Push the tee connector home on to the surge arrester.

NOTE :

A connector should not be allowed to carry the full weight of the cable. Therefore it is necessary the cable is clamped as close as possible to the connector.



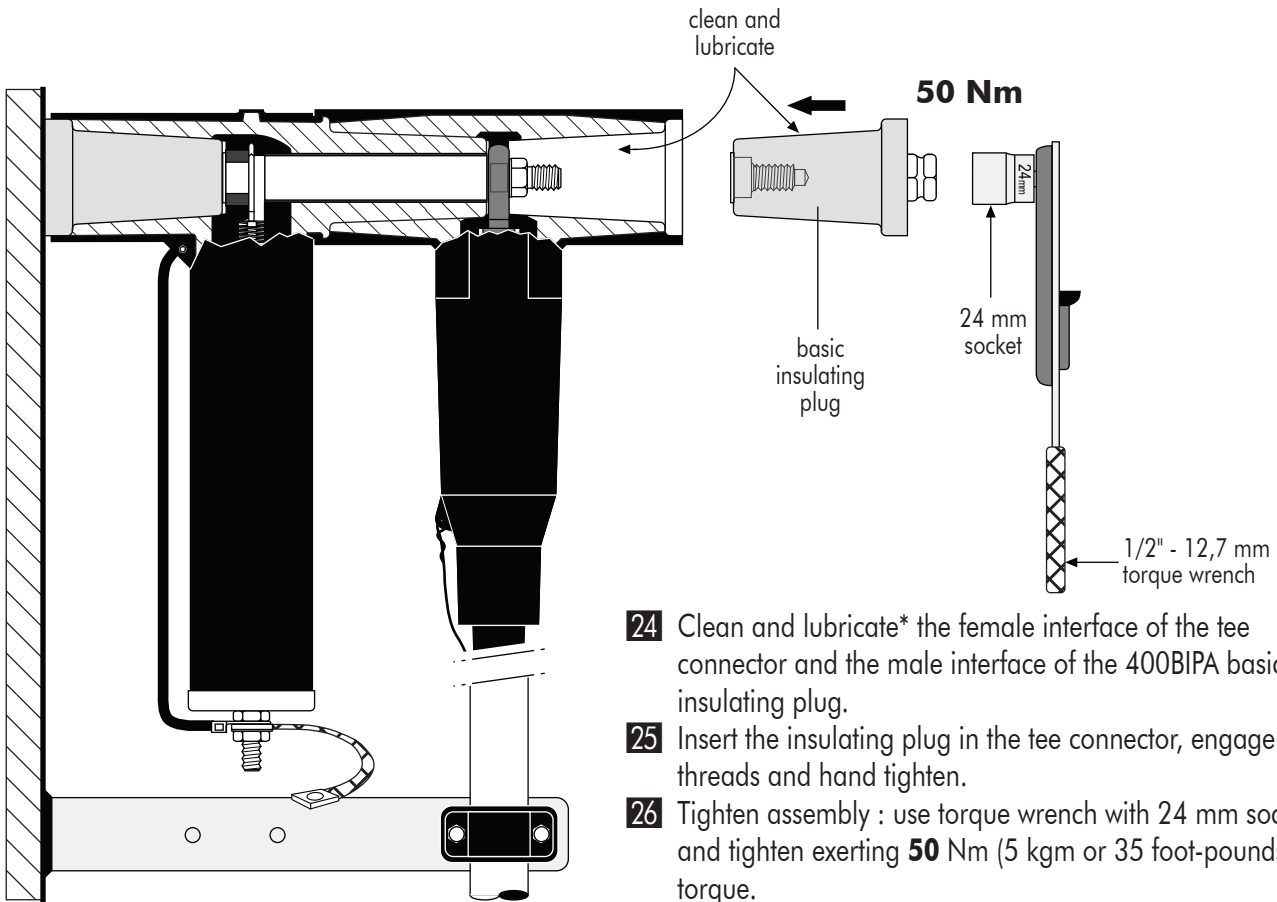
- 21 Insert the 400TCS clamping screw into the threaded hole of the contact rod.
- 22 Ensure the body of the surge arrester is positioned vertically and the earth terminal-side is pointing downwards.
- 23 Use torque wrench with an extension and 22 mm socket and tighten exerting **50 Nm** (5 kgm or 35 foot-pounds) of torque.

In order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts.



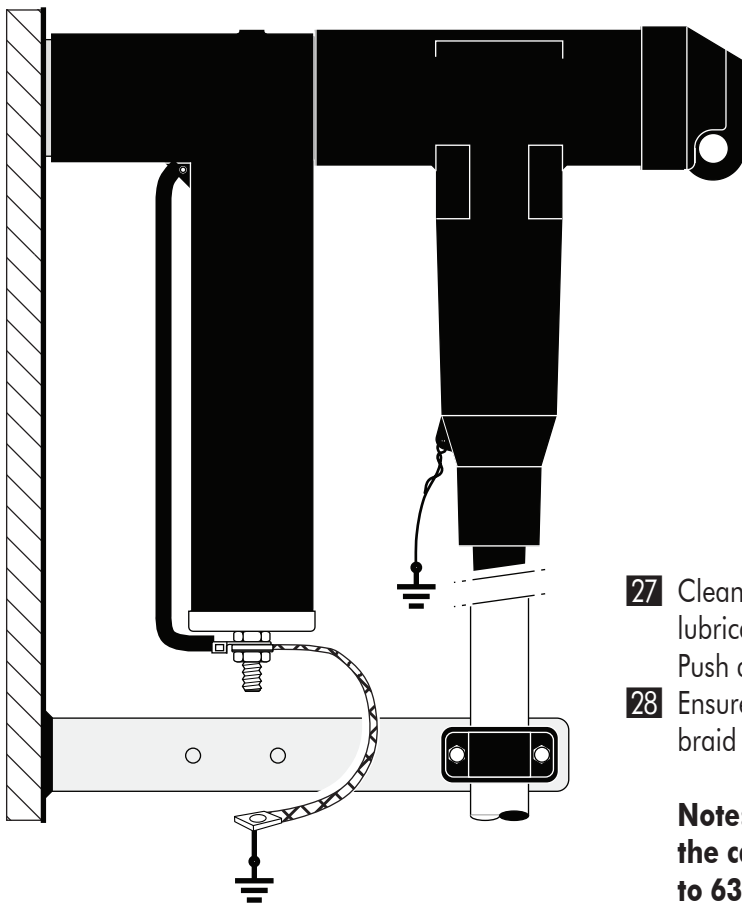
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- 24** Clean and lubricate* the female interface of the tee connector and the male interface of the 400BIPA basic insulating plug.
- 25** Insert the insulating plug in the tee connector, engage the threads and hand tighten.
- 26** Tighten assembly : use torque wrench with 24 mm socket and tighten exerting **50 Nm** (5 kgm or 35 foot-pounds) of torque.

In order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts.



- 27** Clean inner surface of voltage detection cap (do not lubricate) and place on the surge arrester. Push down hard until cap "snaps" into place.
- 28** Ensure the tee connector is earthed and connect earth braid of the surge arrester to the system earth.

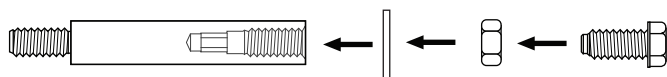
Note: In this setup the permanent current through the cable and the equipment bushing is limited to 630 A.



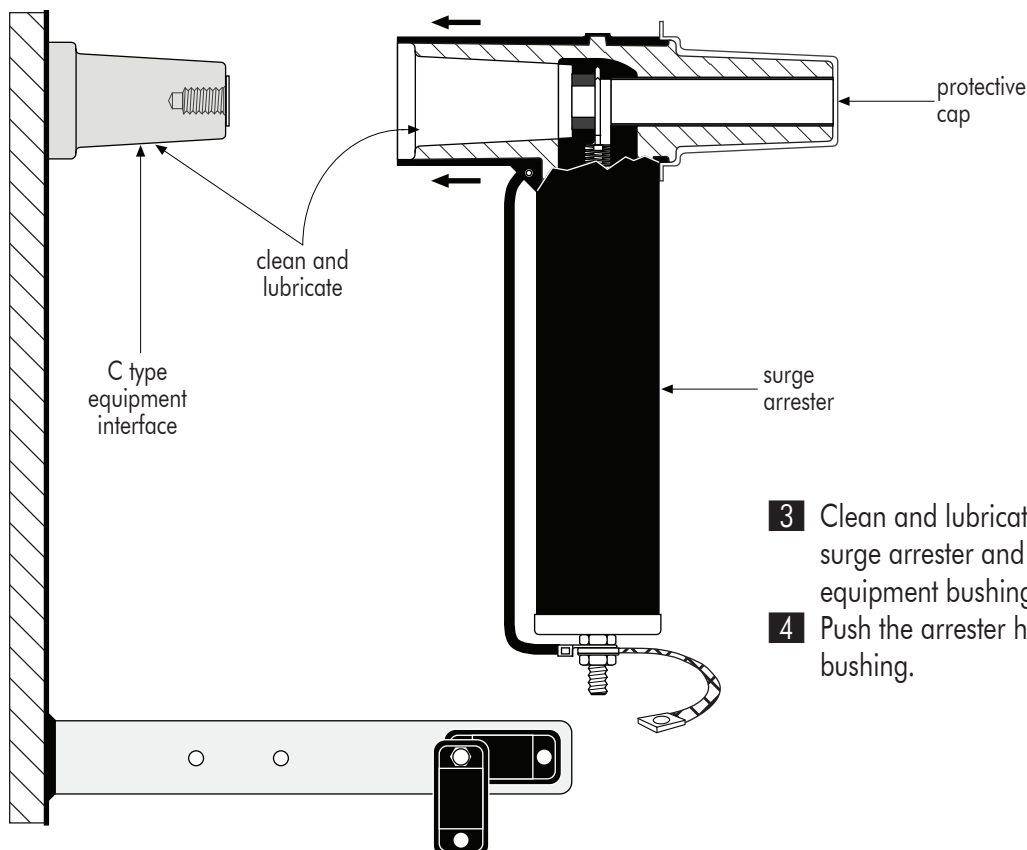
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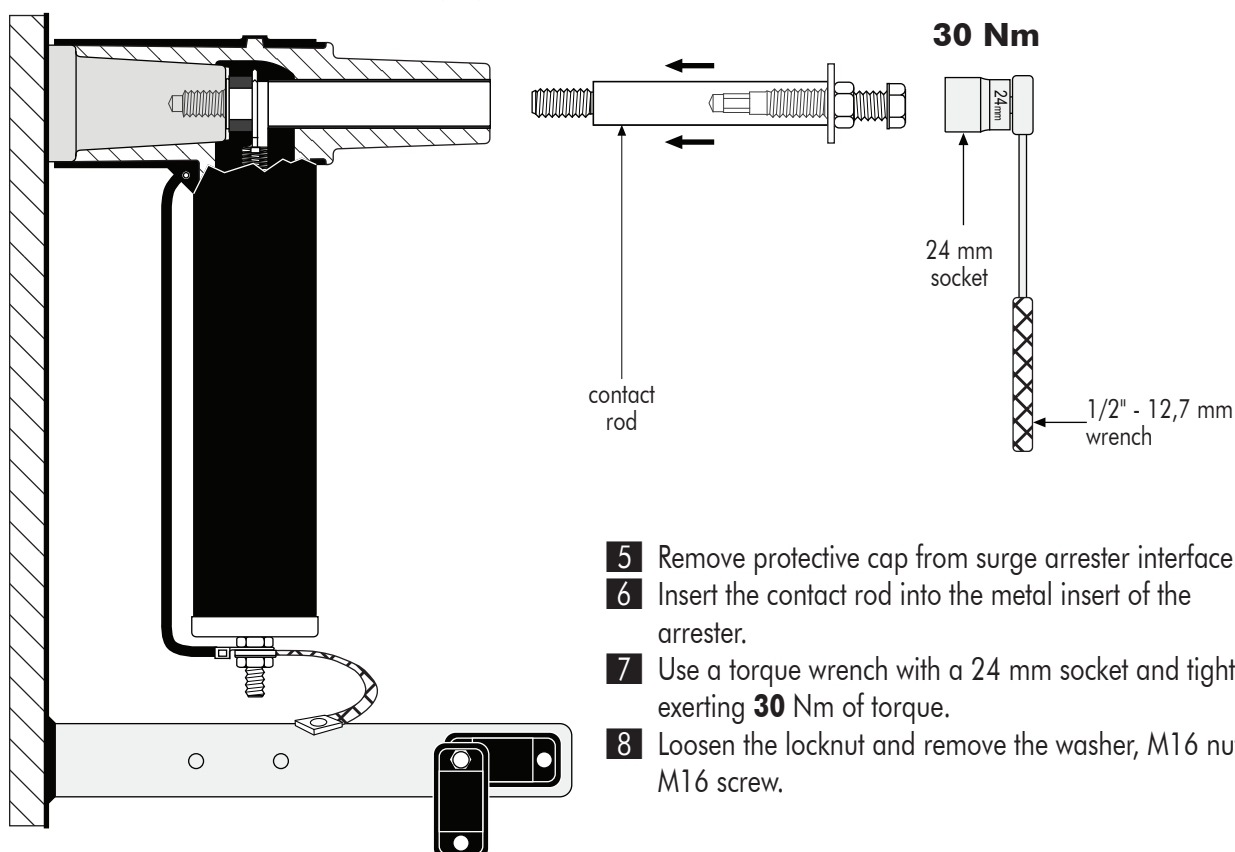
IMPORTANT : The circuit must be tested to assure it is de-energised.**Part C : (K)400LB connector installation on surge arrester**

- 1** Insert the M16 washer (with an outer diameter of 40 mm), the M16 nut and the M16 screw into the contact rod.
- 2** Lock the nut onto the contact rod.



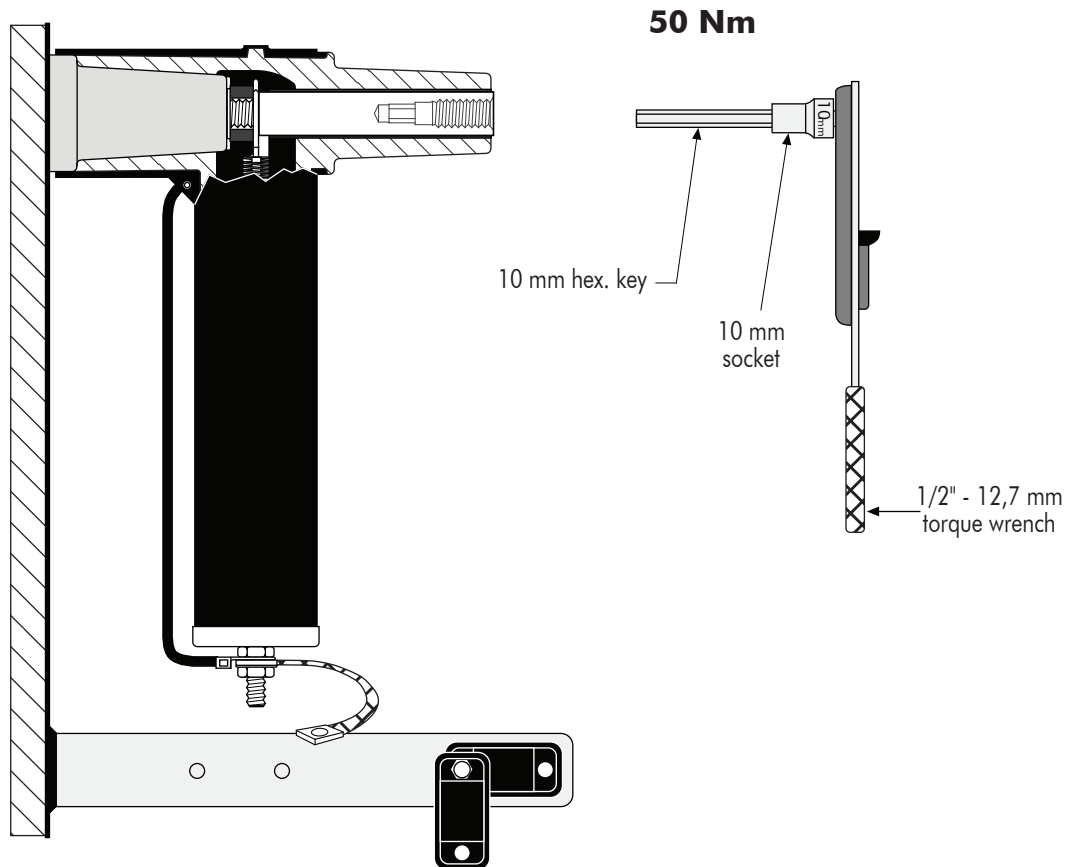
- 3** Clean and lubricate* the female interface of the surge arrester and male interface of the equipment bushing.

- 4** Push the arrester home on the equipment bushing.

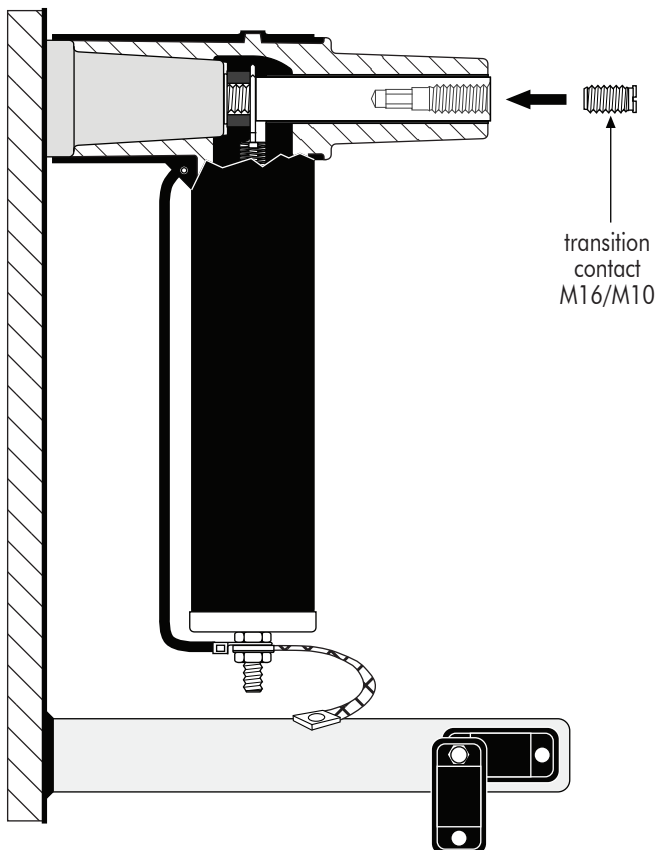


- 5** Remove protective cap from surge arrester interface.
- 6** Insert the contact rod into the metal insert of the arrester.
- 7** Use a torque wrench with a 24 mm socket and tighten exerting **30 Nm** of torque.
- 8** Loosen the locknut and remove the washer, M16 nut and M16 screw.

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- 9 Check that the contact rod is flush with the the arrester housing.
- 10 Use a torque wrench with 10 mm socket and a hex. key of 10 mm. Tighten exerting **50 Nm**.

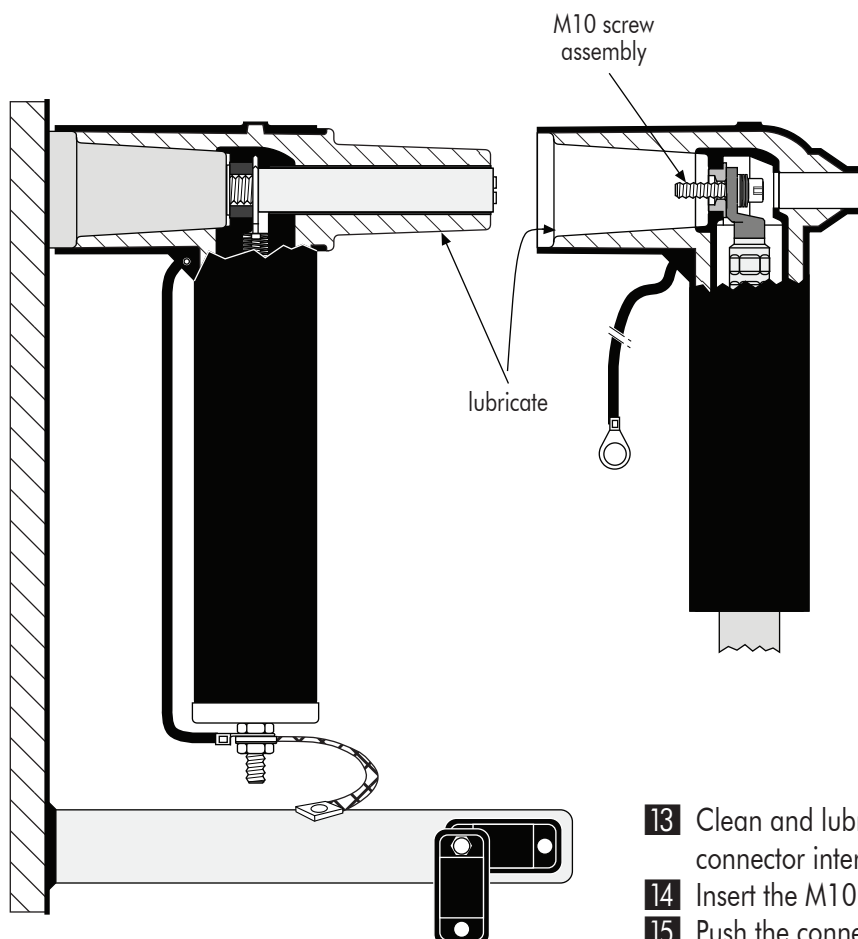


- 12 Screw the transition contact M16/M10 into the contact rod of the arrester and tighten.



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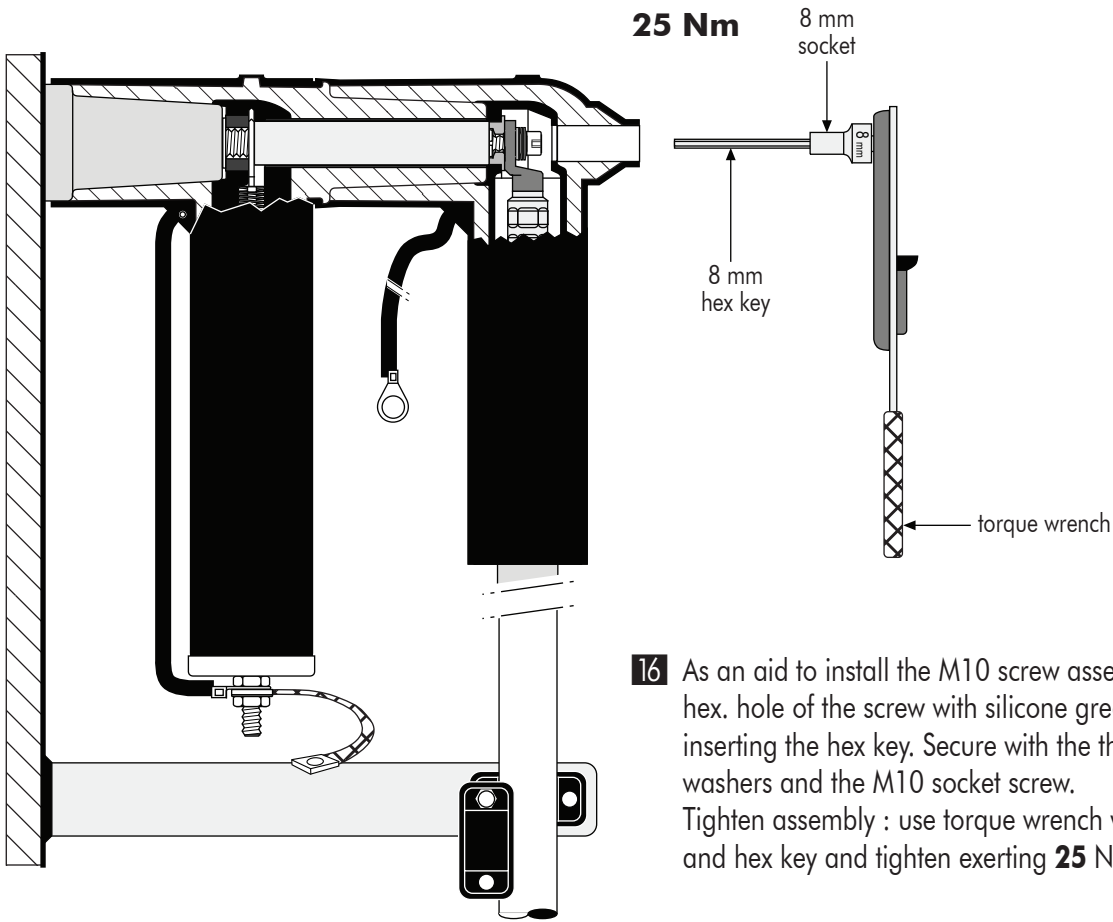




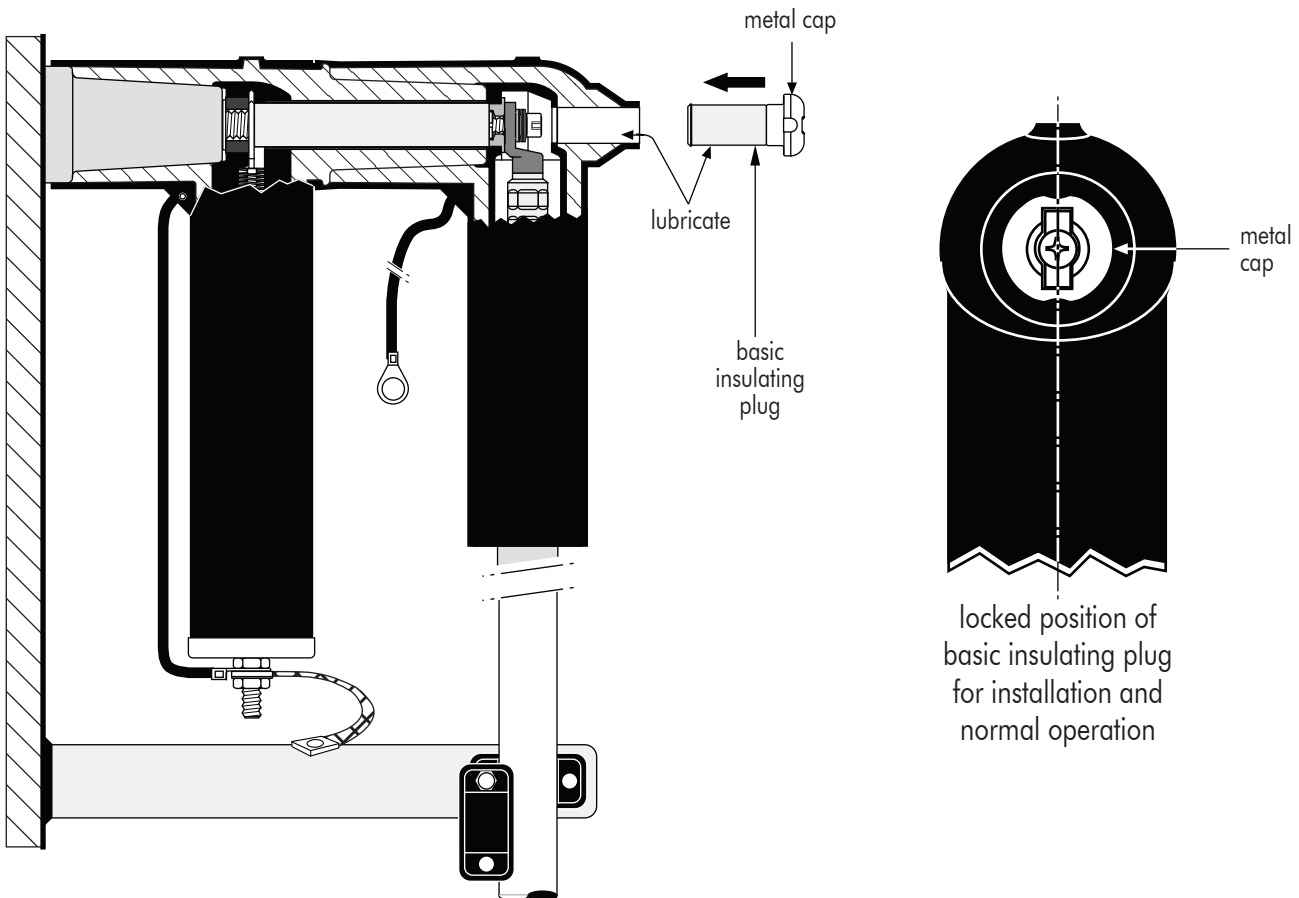
- 13** Clean and lubricate* lightly both arrester interface and connector interface.
- 14** Insert the M10 screw assembly into the cable lug hole.
- 15** Push the connector on to the arrester.

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- 16** As an aid to install the M10 screw assembly, fill up the hex. hole of the screw with silicone grease before inserting the hex key. Secure with the three spring washers and the M10 socket screw. Tighten assembly : use torque wrench with socket and hex key and tighten exerting **25 Nm** (2,5 kgm).



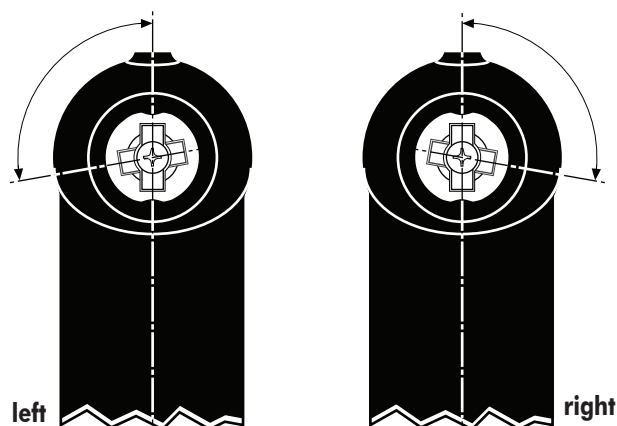
- 17** Lubricate* connector entrance and epoxy part of basic insulating plug and snap into place keeping the slot in the metal cap vertically.

* USE ONLY THE SILICONE LUBRICANT SUPPLIED



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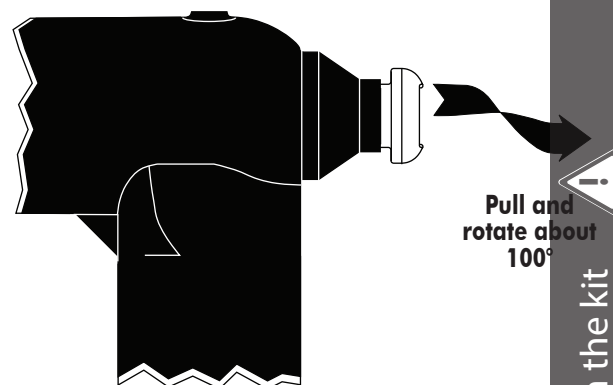




left

right

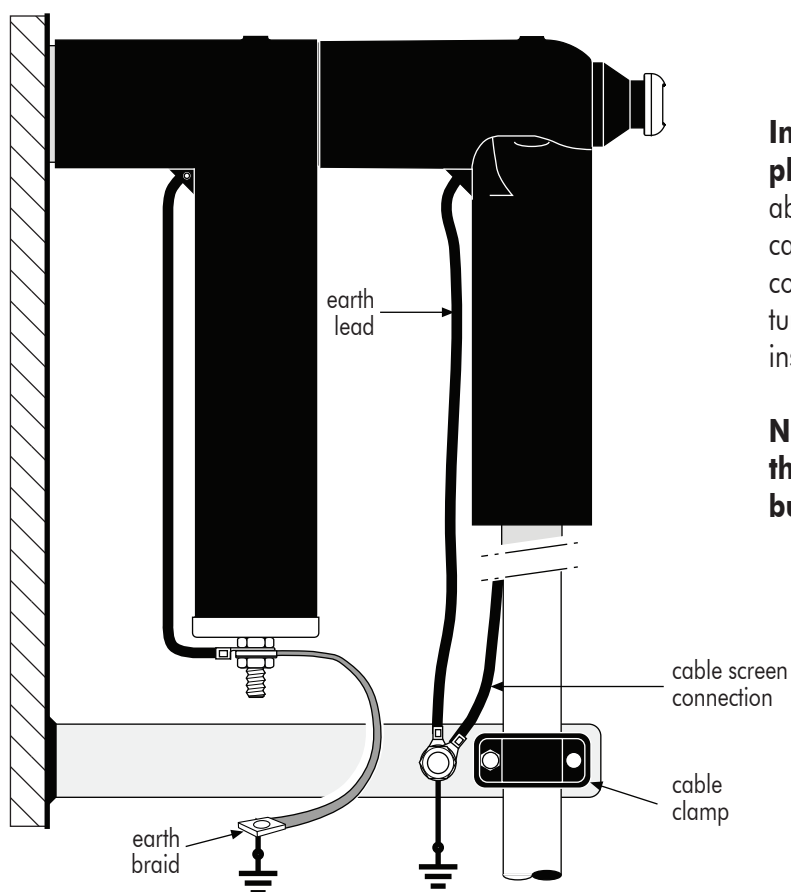
In case of removal of the basic insulating plug : Insert a metal rod or a screw driver of about 5 mm diameter into the slot of the metal cap. Pull the basic insulating plug out of the connector until a definite resistance is felt. While turning (left or right) for about 100°, pull the basic insulating plug out in one smooth operation.



Pull and rotate about 100°



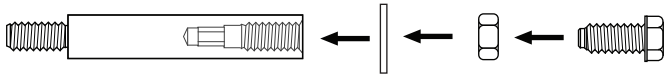
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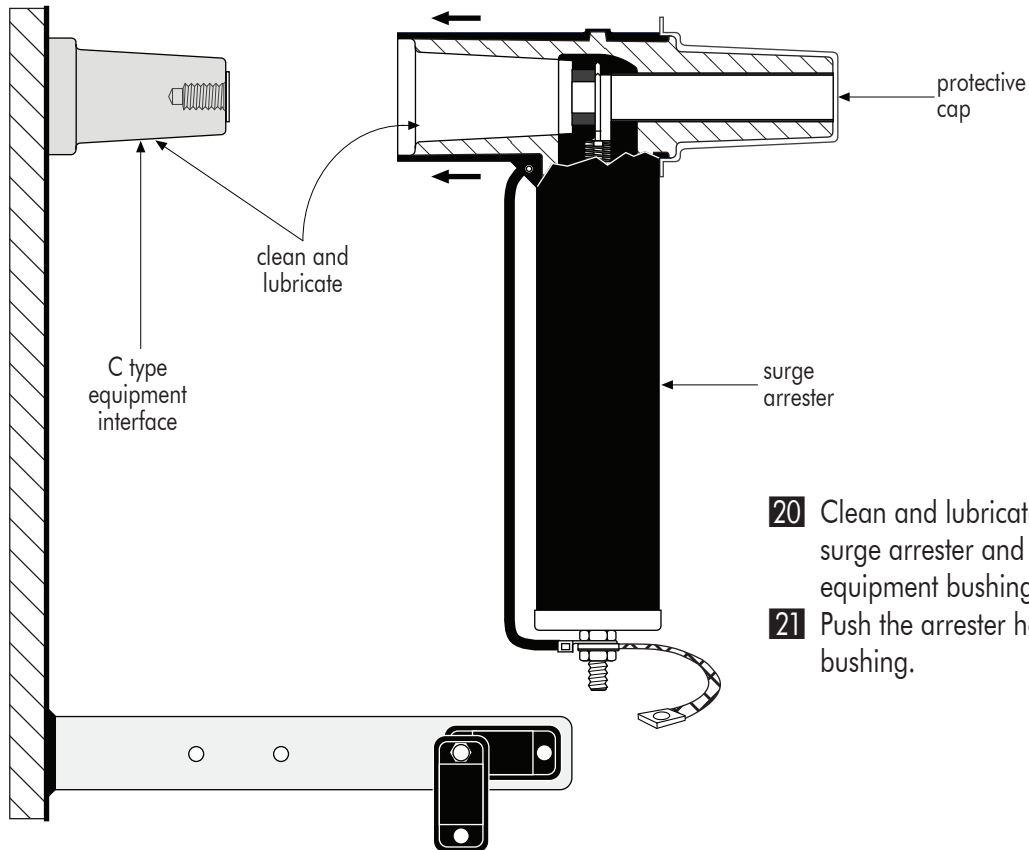
In case of removal of the basic insulating plug : Insert a metal rod or a screw driver of about 5 mm diameter into the slot of the metal cap. Pull the basic insulating plug out of the connector until a definite resistance is felt. While turning (left or right) for about 100°, pull the basic insulating plug out in one smooth operation.

Note: In this setup the permanent current through the cable and the equipment bushing is limited to 630 A.

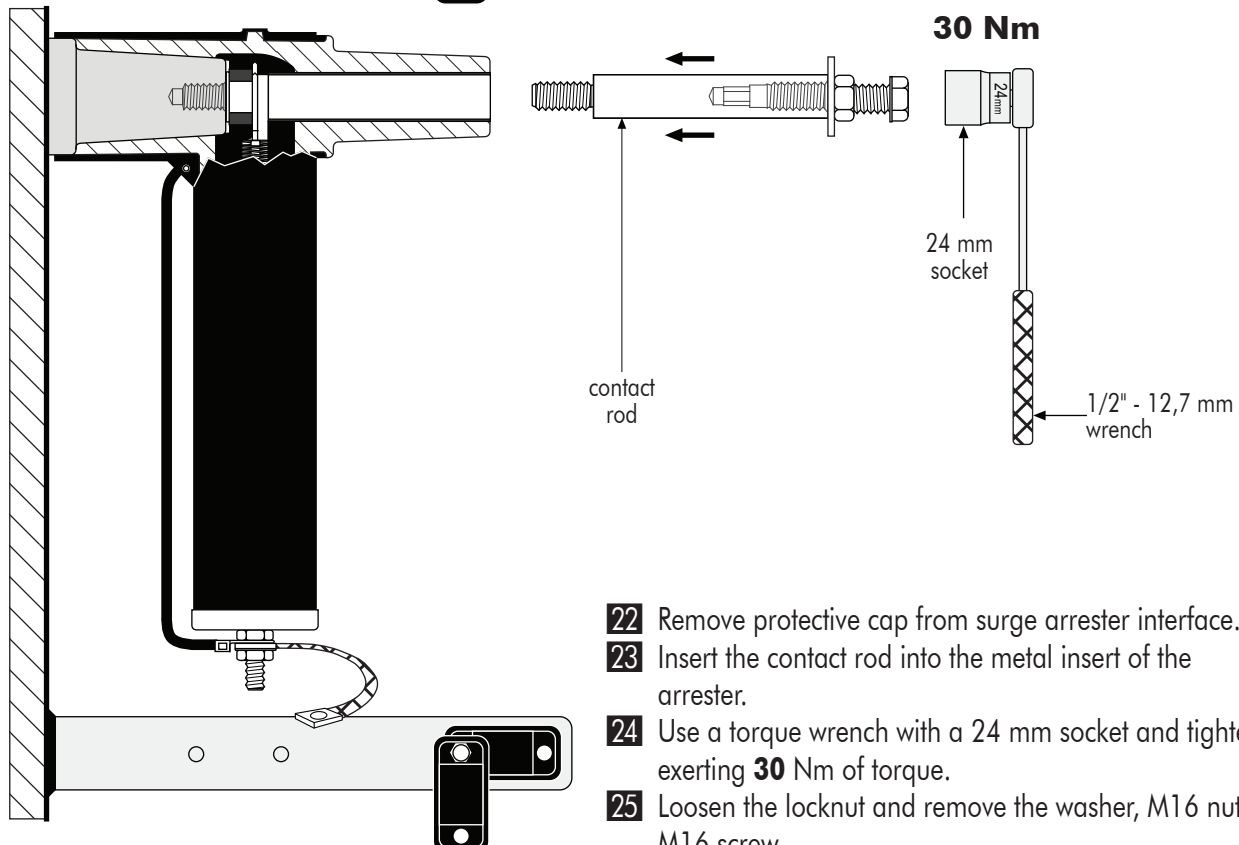


IMPORTANT : The circuit must be tested to assure it is de-energised.**Part D : Surge arrester installation on equipment**

- 18** Insert the M16 washer (with an outer diameter of 40 mm), the M16 nut and the M16 screw into the contact rod.
19 Lock the nut onto the contact rod.



- 20** Clean and lubricate* the female interface of the surge arrester and male interface of the equipment bushing.
21 Push the arrester home on the equipment bushing.



- 22** Remove protective cap from surge arrester interface.
23 Insert the contact rod into the metal insert of the arrester.
24 Use a torque wrench with a 24 mm socket and tighten exerting **30 Nm** of torque.
25 Loosen the locknut and remove the washer, M16 nut and M16 screw.

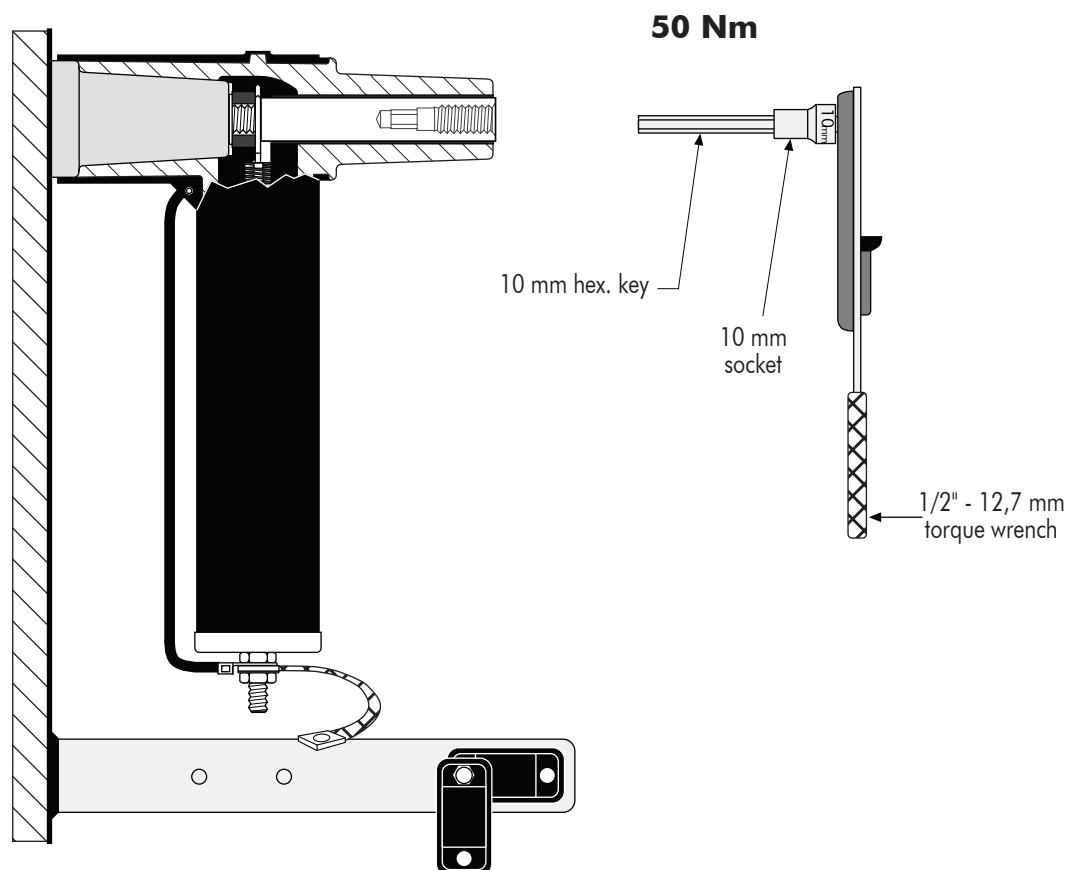


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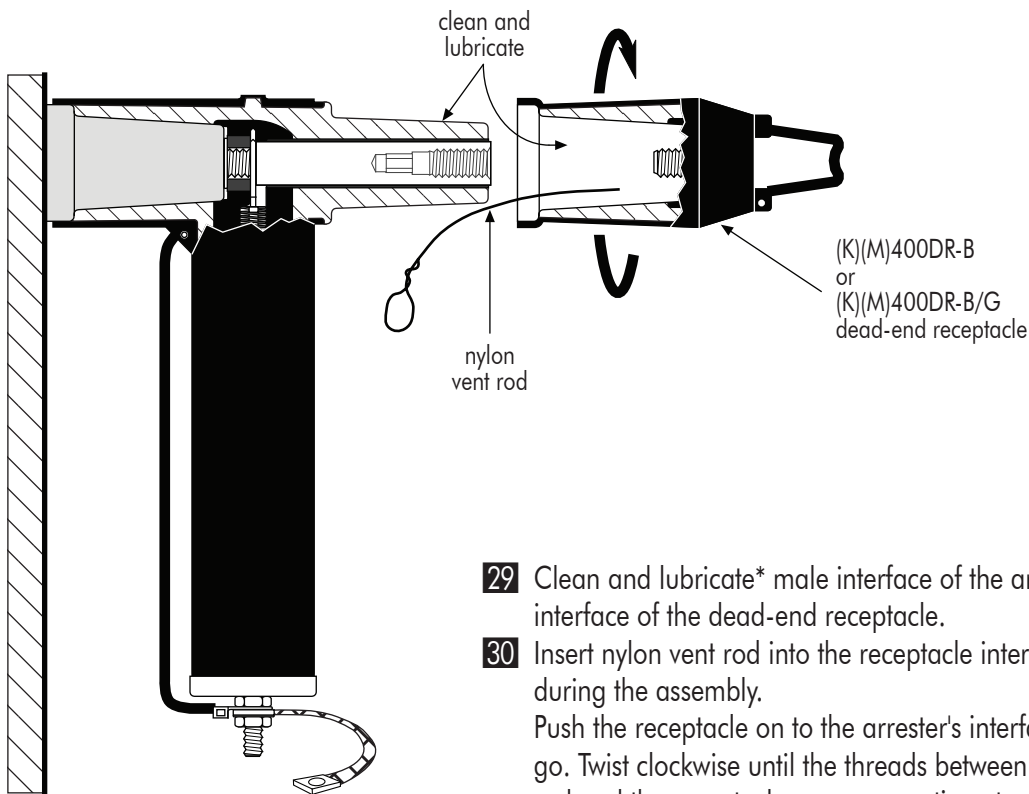
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* USE ONLY THE SILICONE LUBRICANT SUPPLIED

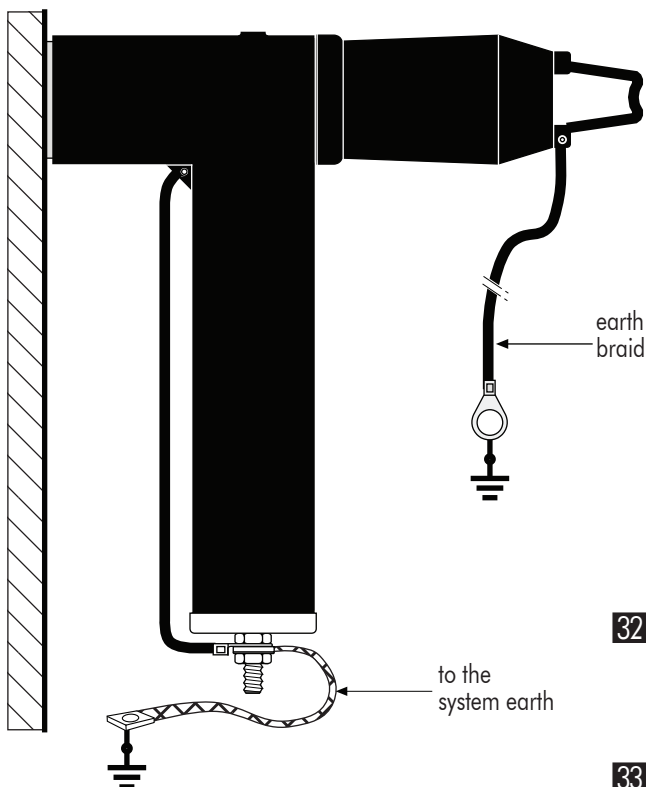


- 26** Check that the contact rod is flush with the the arrester housing.
- 27** Use a torque wrench with 10 mm socket and a hex. key of 10 mm. Tighten exerting **50 Nm**.





- 29** Clean and lubricate* male interface of the arrester and female interface of the dead-end receptacle.
- 30** Insert nylon vent rod into the receptacle interface to exhaust the air during the assembly. Push the receptacle on to the arrester's interface as far as it will go. Twist clockwise until the threads between the arrester's contact rod and the receptacle engage; continue turning without pushing until a resistance is felt. **Do not overtighten.**
- 31** Remove nylon vent rod.



- 32** Connect one end of the tinned earth wire, supplied with the (K)(M)400DR-B, to the earthing eye of the receptacle and other end to the system earth or connect earth lead of the (K)(M)400DR-B/G to the system earth.
- 33** Connect earth lead of the surge arrester to the system earth.



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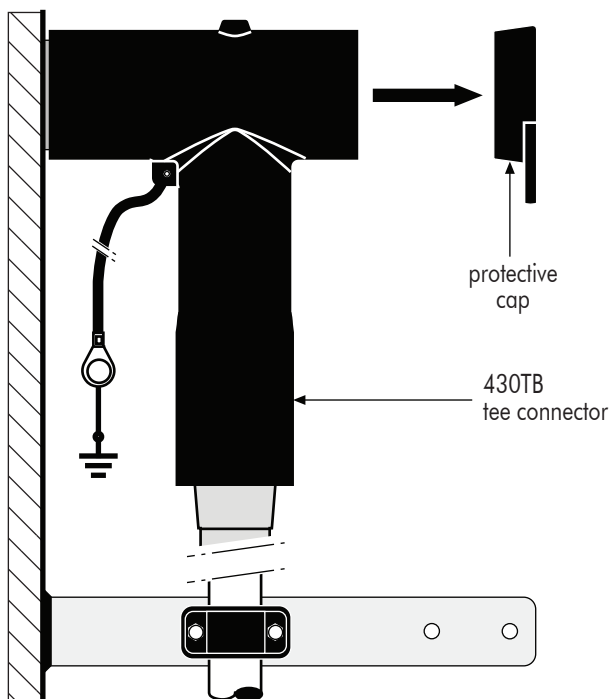


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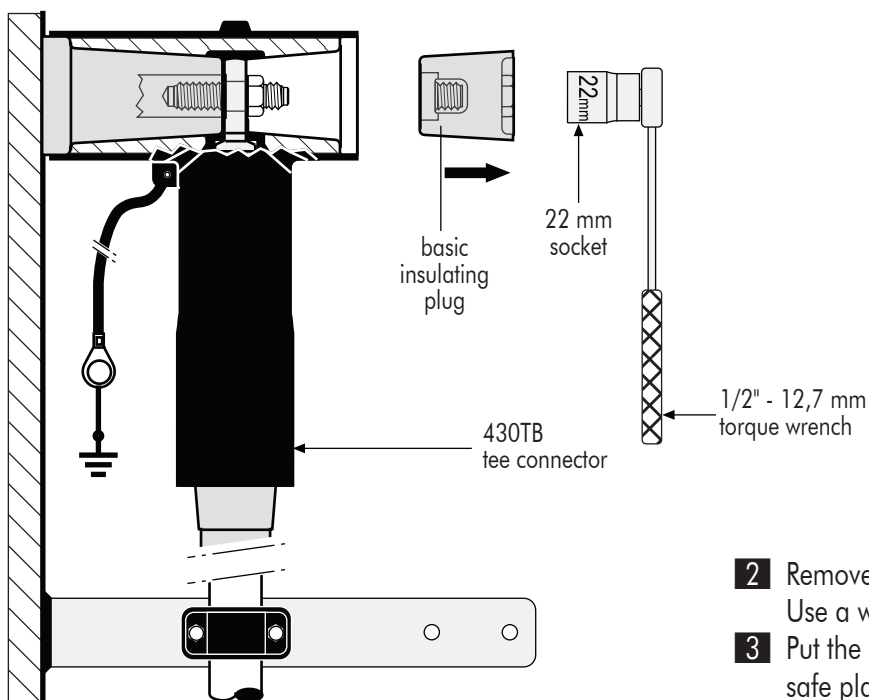
IMPORTANT : The circuit must be tested to assure it is de-energised.

Part E : Compact connector (430TB, 480TB, 484TB,...) installation on surge arrester.

Example shown below is with 430TB connector, installation with other compact connectors is similar.



- 1** Remove protective cap from the tee connector.

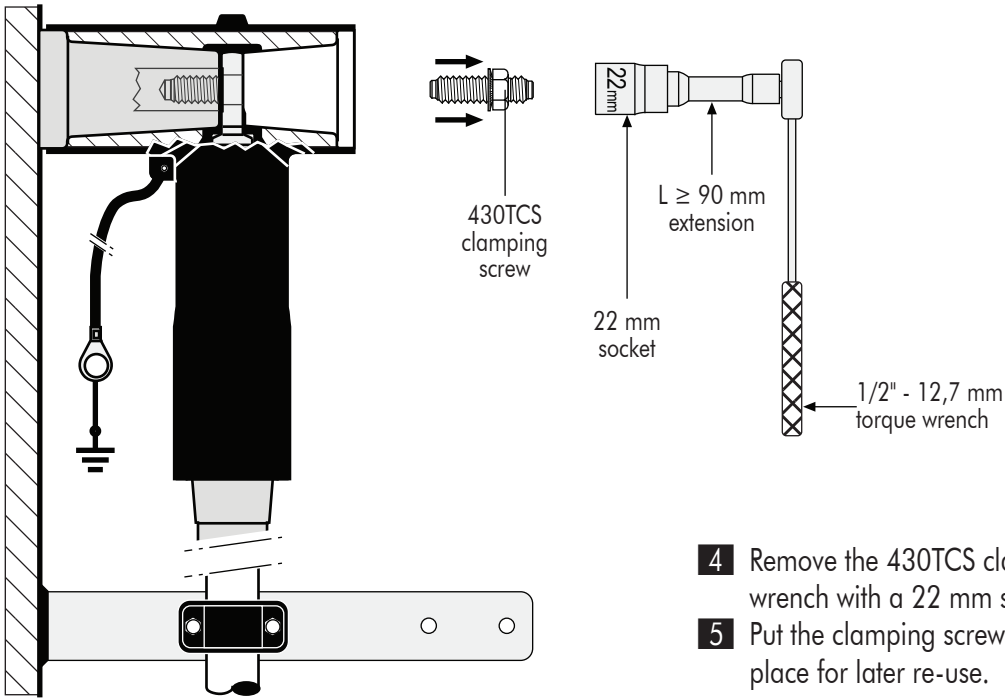


- 2** Remove the insulating plug. Use a wrench with 22 mm socket.
- 3** Put the insulating plug aside in a clean and safe place for later re-use.

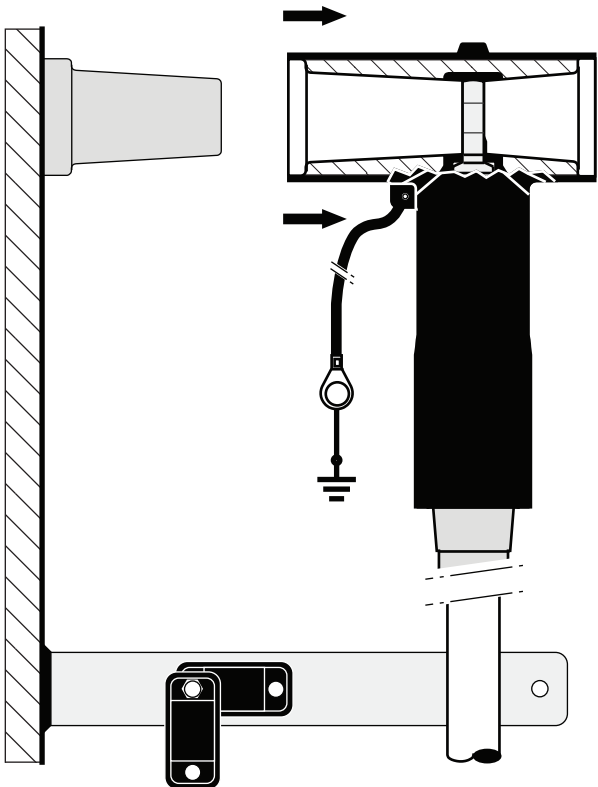


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- 4** Remove the 430TCS clamping screw. Use a wrench with a 22 mm socket and an extension.
- 5** Put the clamping screw aside in a clean and safe place for later re-use.

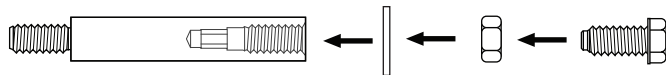


- 6** Loosen the cable clamp and remove the connector from the equipment.
- 7** Put the connector aside in a clean and safe place for later re-use.

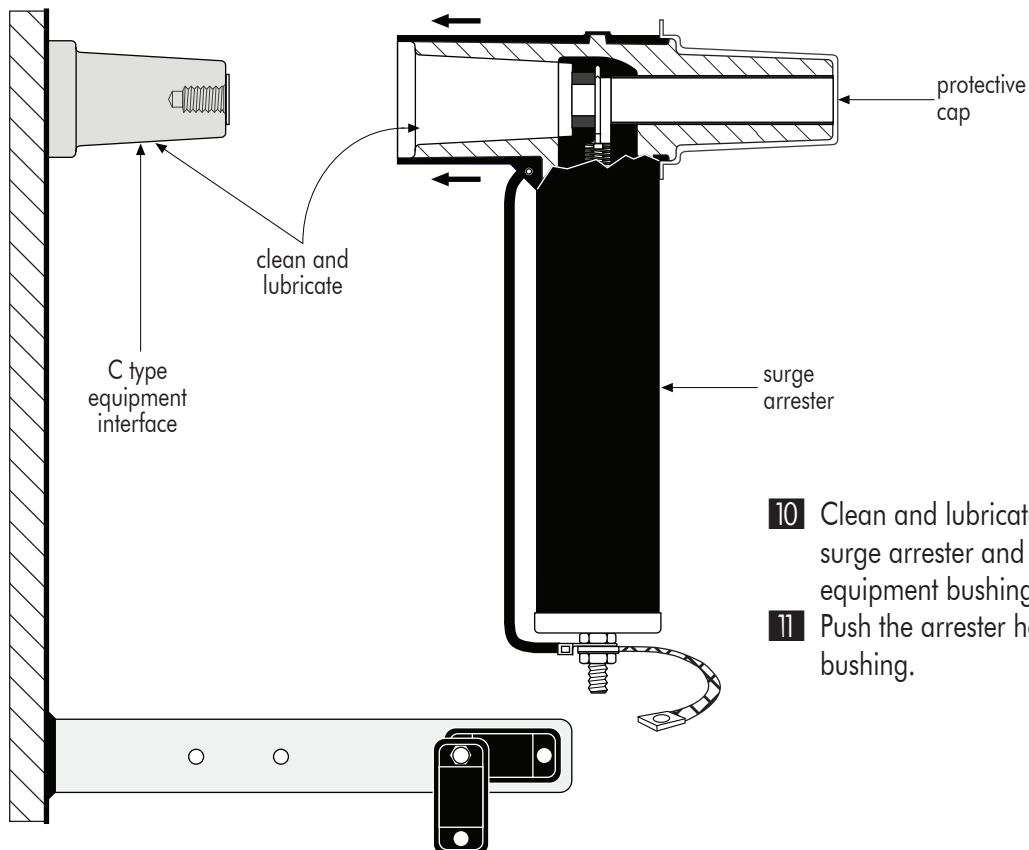


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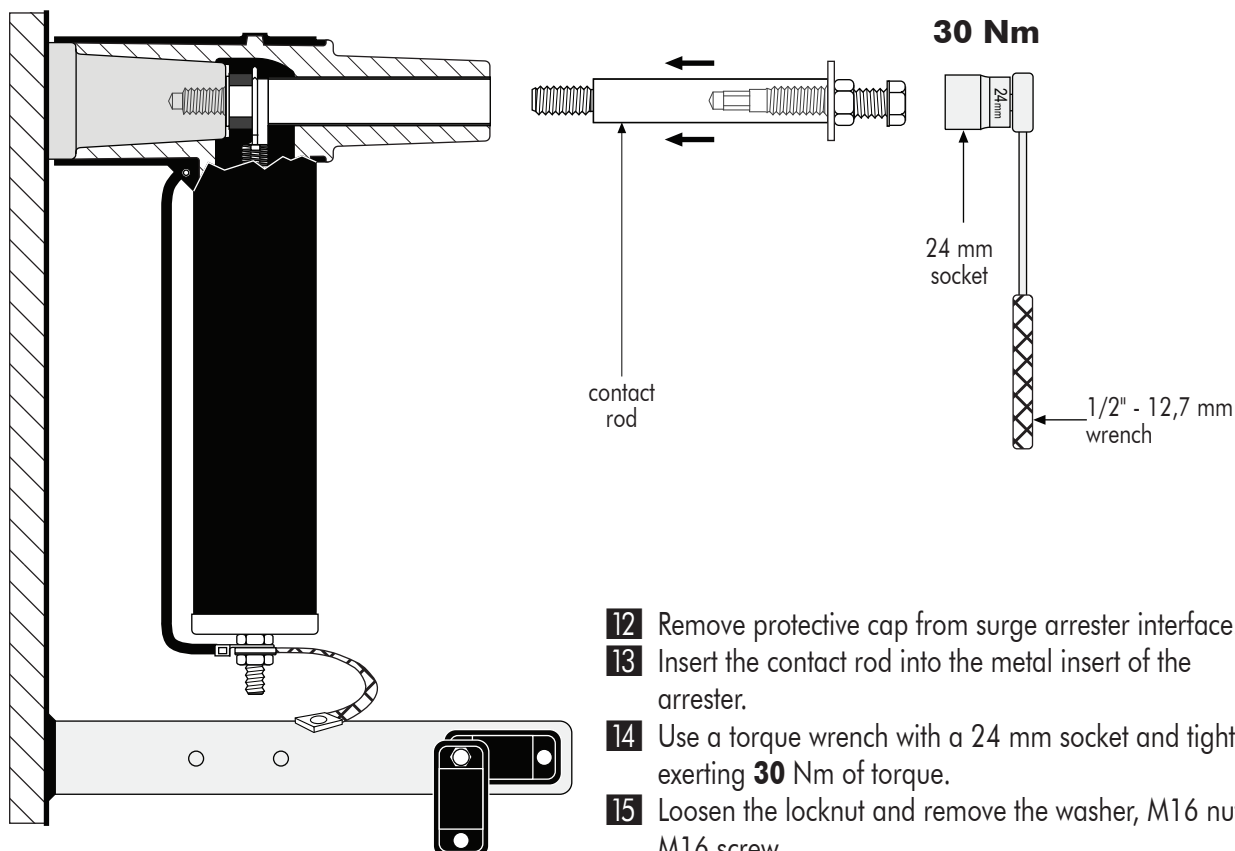




- 8** Insert the M16 washer (with an outer diameter of 40 mm), the M16 nut and the M16 screw into the contact rod.
- 9** Lock the nut onto the contact rod.

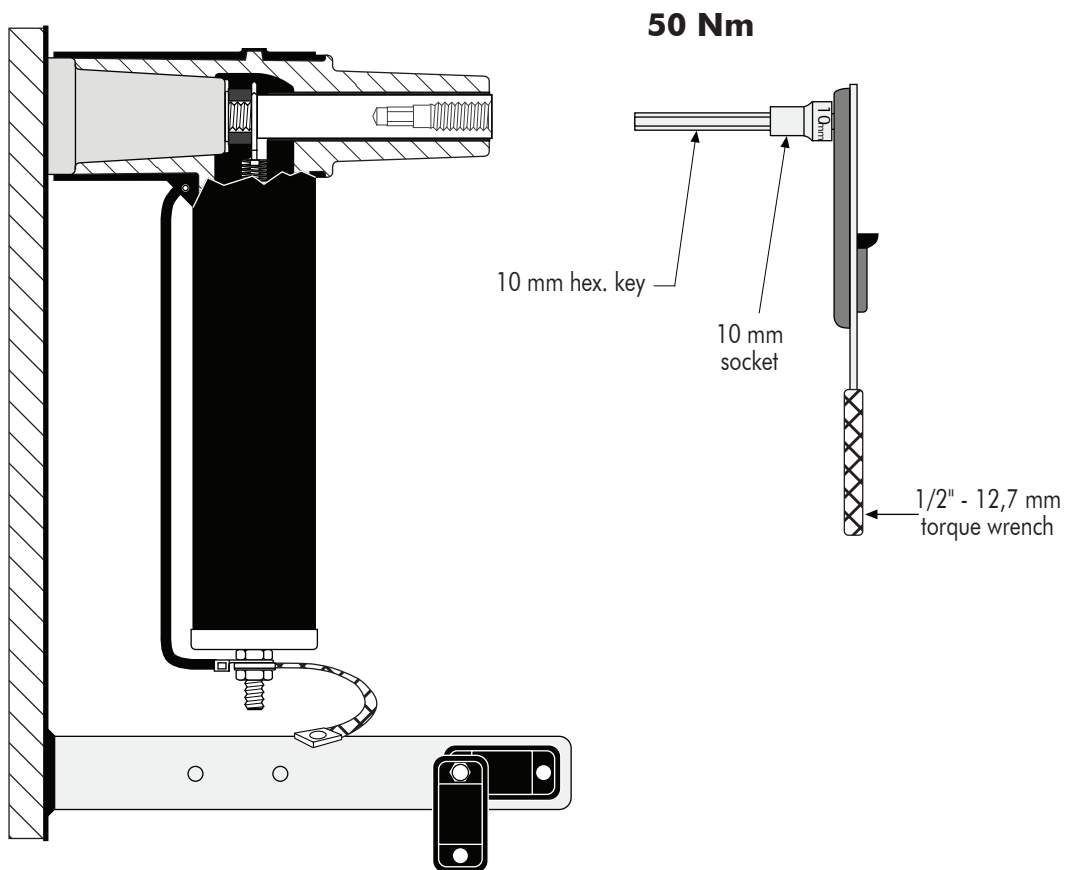


- 10** Clean and lubricate* the female interface of the surge arrester and male interface of the equipment bushing.
- 11** Push the arrester home on the equipment bushing.



- 12** Remove protective cap from surge arrester interface.
- 13** Insert the contact rod into the metal insert of the arrester.
- 14** Use a torque wrench with a 24 mm socket and tighten exerting **30 Nm** of torque.
- 15** Loosen the locknut and remove the washer, M16 nut and M16 screw.



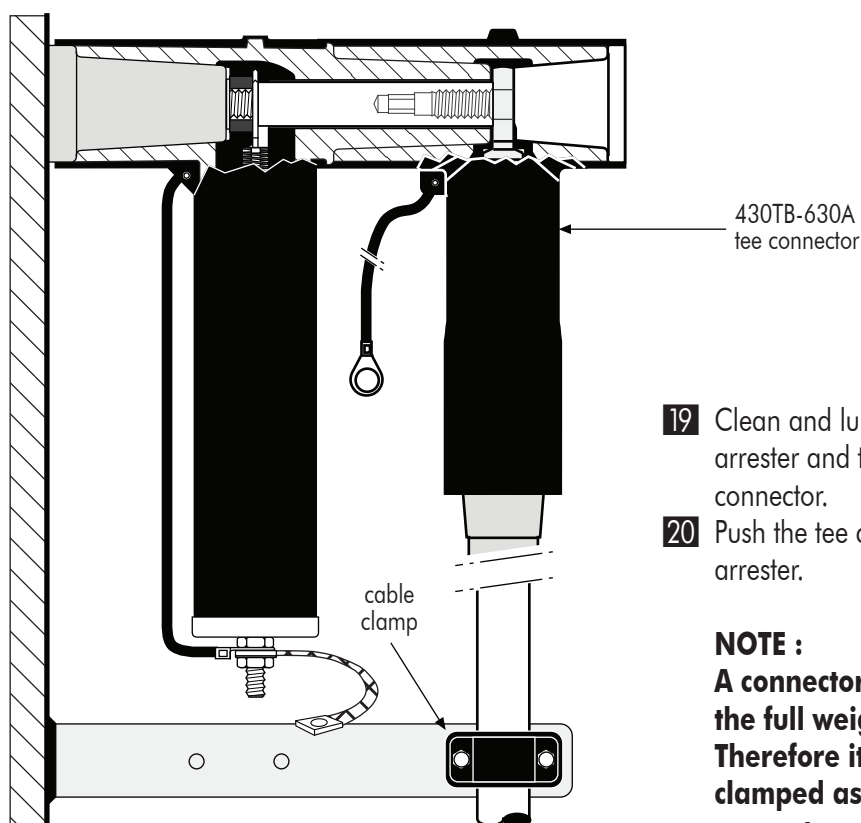
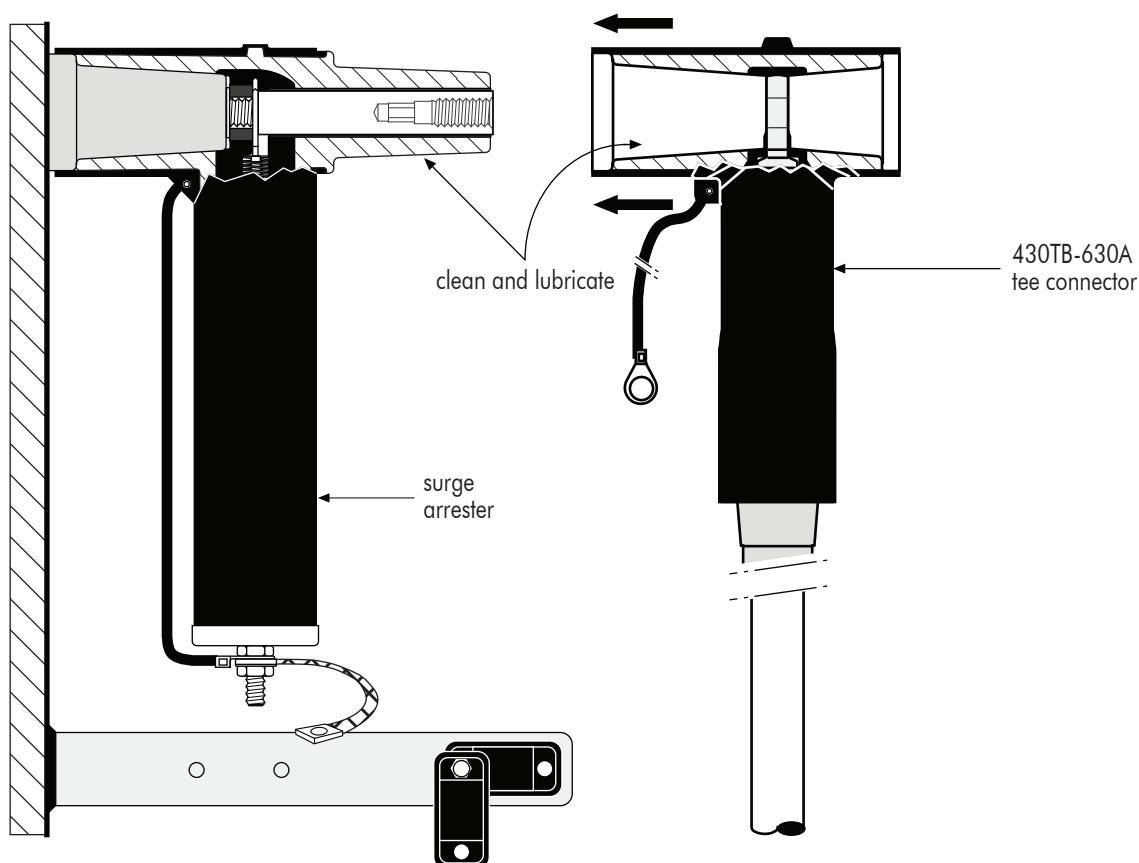


- 16 Check that the contact rod is flush with the the arrester housing.
- 17 Use a torque wrench with 10 mm socket and a hex. key of 10 mm. Tighten exerting **50 Nm**.



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- 19 Clean and lubricate* the male interface of the arrester and the female interface of the tee connector.
- 20 Push the tee connector home on to the surge arrester.

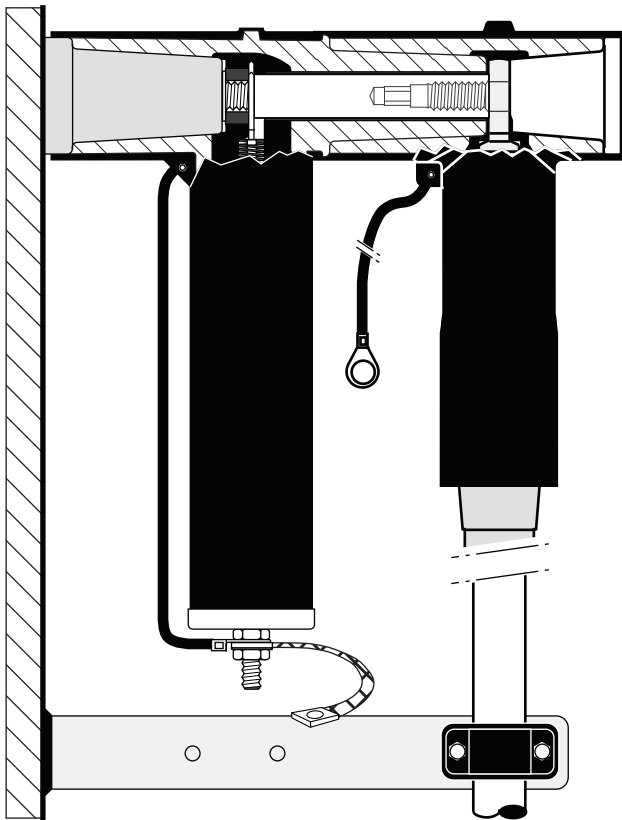
NOTE :

A connector should not be allowed to carry the full weight of the cable. Therefore it is necessary the cable is clamped as close as possible to the connector.

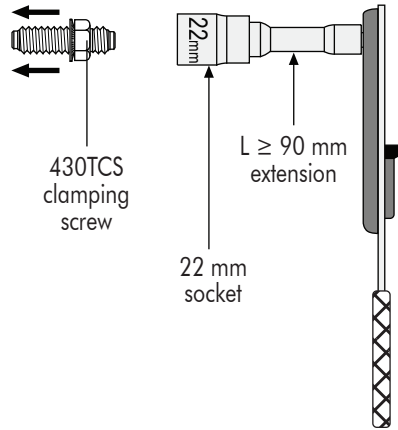


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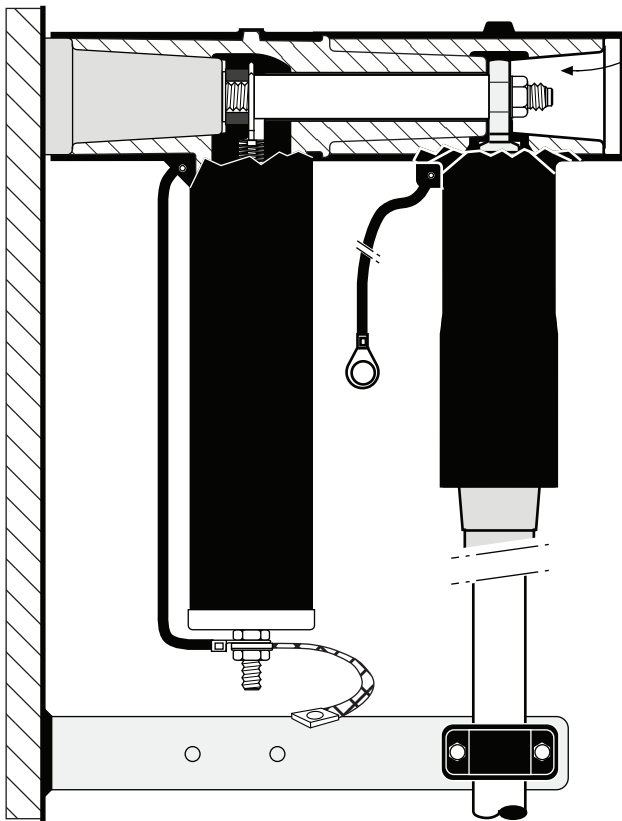




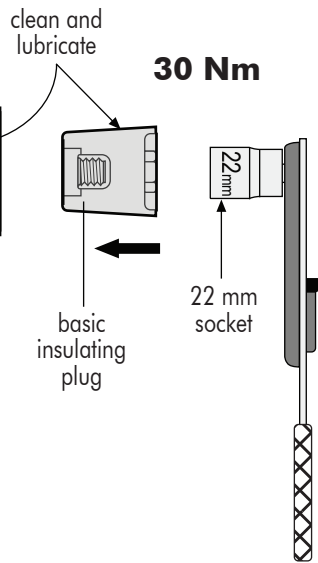
50 Nm



- 9 Insert the 430TCS clamping screw into the threaded hole of the contact rod.
- 10 Ensure the body of the surge arrester is positioned vertically and the earth terminal-side is pointing downwards.
- 11 Use torque wrench with an extension and 22 mm socket and tighten exerting **50 Nm** (5 kgm or 35 foot-pounds) of torque.
In order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts.



30 Nm

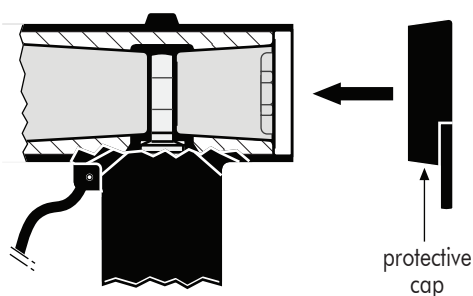


- 12 Clean and lubricate* the female interface of the tee connector and the male interface of the insulating plug.
- 13 Insert the insulating plug in the tee connector, engage the threads and hand tighten.
- 14 Tighten assembly : use torque wrench with socket of 22 and tighten exerting **30 Nm** of torque.
In order to achieve the correct applied torque ensure that there is no lubricant on the threaded parts.



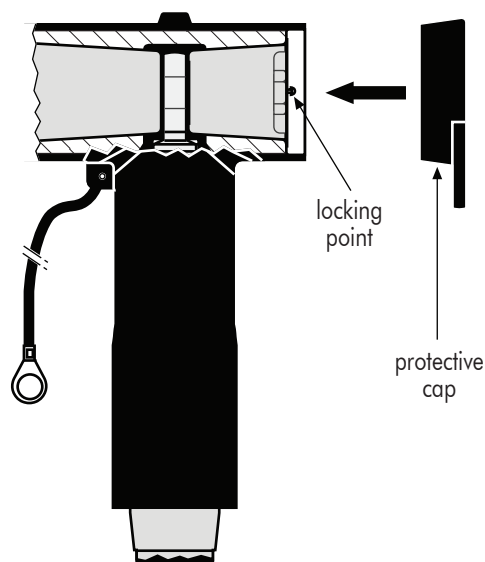
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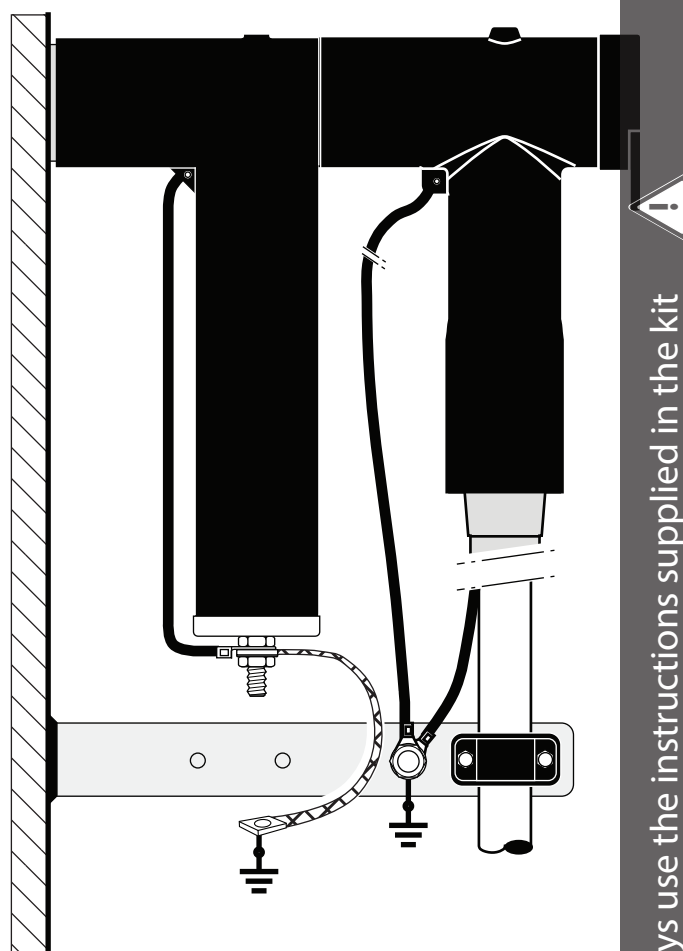
A. Installation on insulating plug without voltage detection point :

Clean inside of the cap and outside surface of connector and insulating plug. Push cap over the connector and on to the insulating plug. Slightly pull up the edge of the cap to exhaust the air during assembly. Position the cap with the pulling tab pointing downwards.



B. Installation on insulating plug with voltage detection point :

Clean inside of the cap and outside surface of connector and insulating plug. Push cap over the connector and on to the insulating plug. Slightly pull up the edge of the cap to exhaust the air during assembly and while pressing the centre of the cap on to the locking point until it snaps in place. Position the cap with the pulling tab pointing downwards.



Ensure the tee connector is earthed and connect earth braid of the surge arrester to the system earth.

NOTE :

- A connector/bushing mated combination should not be allowed to carry the full weight of the cable. Therefore clamp the cable as close as possible to the connector.
- In this setup the permanent current through the cable and the equipment bushing is limited to 630 A.

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IMPORTANT NOTES :

- Never disconnect connectors from energised equipment nor energise disconnected connectors without previously installing on their appropriate corresponding mating part.
- Do not allow hydrocarbon oils or solvents to contaminate the E.P.D.M. rubber. In the event of contamination, wipe the surface clean with a dry cloth.

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