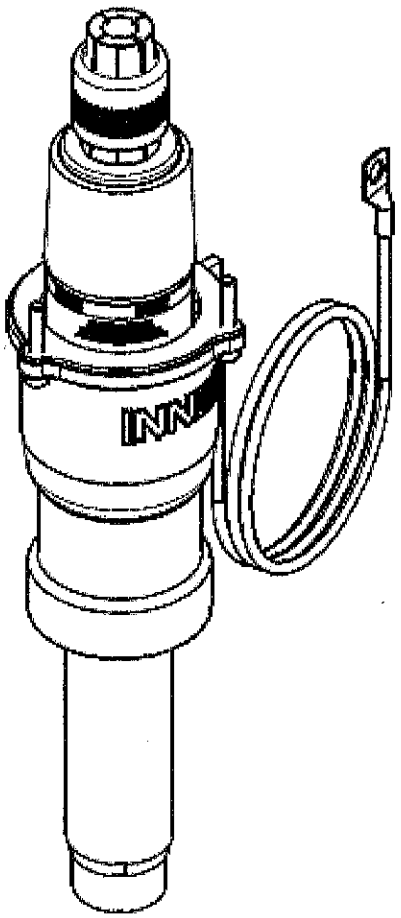
S.r.l.

JOINTING INSTRUCTION FOR
INNEX CABLE CONNECTORS SIZE 3
FOR EXTRUDED CABLE WITH COPPER TAPE SCREEN

INNEX SYSTEM

CONNECTOR

DATA SHEET		
TYPE	IC 1250A	IC 1250Y
NOMINAL OPERATING CURRENT	1250 A	1250 A
MAXIMUM SYSTEM VOLTAGE (U_m):	42 kV	52 kV
BASIC IMPULSE LEVEL (BIL)	200 kV	250 kV
SHEATH TYPE	TAPES	



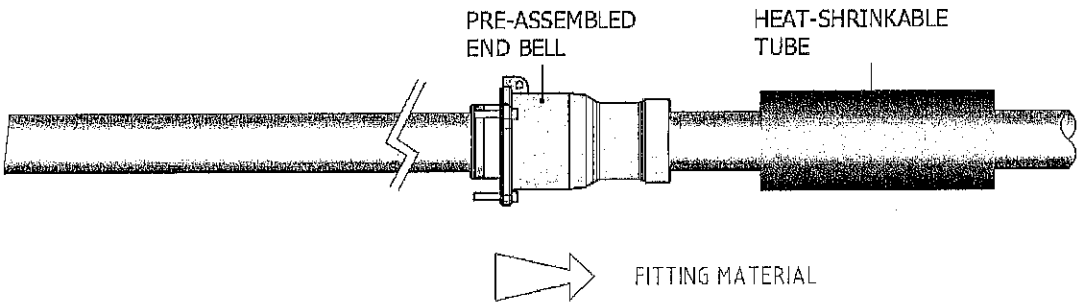
Rev.	Date	Check	Approved	Description
01	09/12/09	D.M.	D.M.	Modificato layout grafico
00	23/06/09	D.M.	D.M.	Issue

1. CHECK LIST

ITEM	Q.TY	DESCRIPTION	☑
A	1	PREASSEMBLED ALUMINIUM END BELL: - n° 1 aluminium end bell. - n° 1 spring. - n° 1 thermoplastic tube. - n° 1 gasket. - n° 3 screw. - n° 1 ring. - n° 1 test lead (on request).	☐
B	1	CONTACT RING	☐
C	1	STRESS CONTROL CONE	☐
D	1	HEAT SHRINKABLE TUBE	☐
E	1	SELF-AMALGAMATING TAPE	☐
F	1	TENSION CONE	☐
G	1	EARTH CONNECTOR	☐
H	1	THRUST PIECE	☐
I	1	SPECIAL LUBRICANT GREASE	☐
L	1	OXIDE TAPE	☐
M	1	PVC TAPE	☐
N	2	PAIR OF POLYTHENE GLOVES	☐
O	2	PAPER TISSIUE	☐
P	1	EARTH CONNECTION: - n° 1 end connector for M12screw. - n° 1 end connector for M8 screw - l=1000mm of copper braid (cross section of 16 mmq) - n° 1 screw M8x30 UNI 5739 - n° 1 washer 8.4x17 UNI 6592 - n° 1 nut M8 DIN 934 - n° 1 elastic washer 8.4x17	☐
Q	1	400 mm OF COPPER BRAID (25 SQMM)	☐
R	1	SEMICONDUCTING VARNISH	☐
S	1	ROLL SPRING	☐
T	1	SEMICONDUCTING TAPE	☐
U	1	JOINTING INSTRUCTION	☐

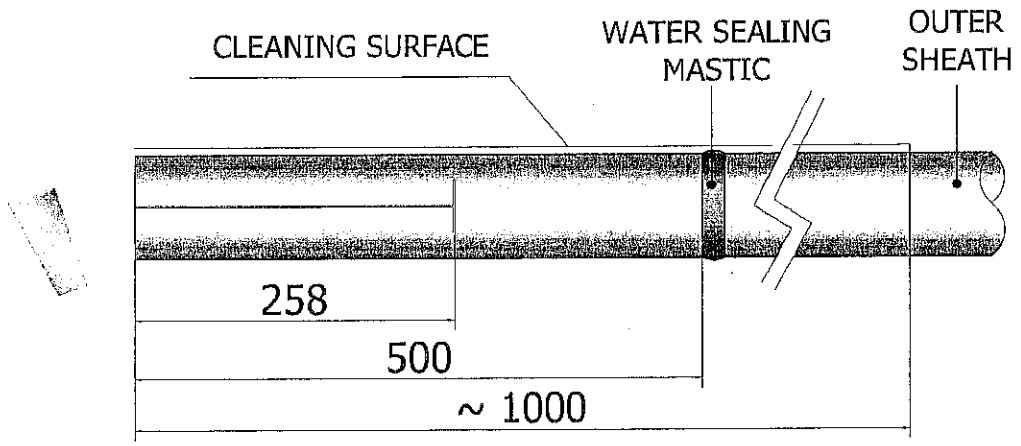
1. FITTING MATERIAL

1.1. Set the cable as near as possible to its final position.
1.2. Parking the heat-shrinkable tube end the pre-assembled end bell onto the cable.



2. PREPARATION OF CABLE

2.1. Cut the cable end in order to obtain an perpendicular surface.
2.2. Clean the outer sheath for a length of 1 m.
2.3. Apply a layer of water sealing mastic to 500 mm from the cable end.

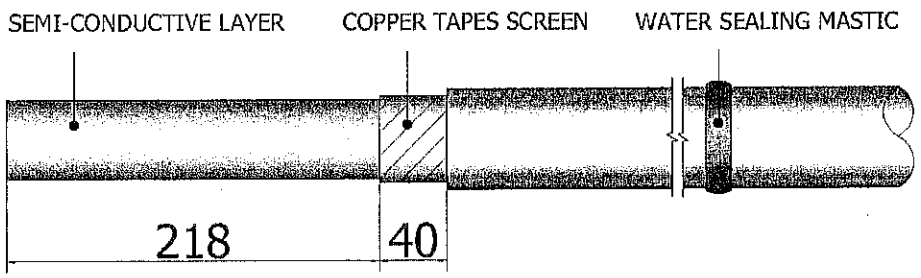


3. REMOVING THE COPPER TAPE SCREEN

3.1. From the cable end to the distance of 258mm remove the outer sheath.

TAKING GREAT CARE TO NOT DAMAGE THE UNDERNEATH EXTRUDED SEMICONDUCTING SCREEN

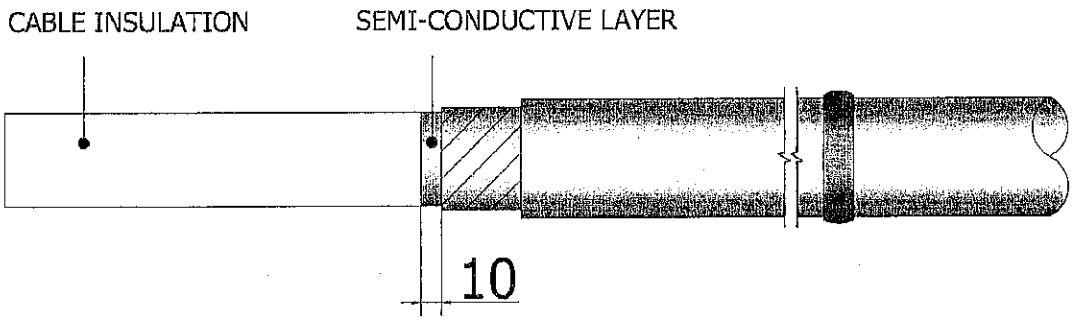
3.2. Cut off the copper tapes in order to expose them of 40mm to the outer sheath.



4. REMOVING THE SEMICONDUCTING INSULATION SCREEN

4.1. Remove the semiconducting insulation screen up to 10 mm from the copper tapes cable screen cut.

IT IS VERY IMPORTANT THAT THE INSULATION IS NOT MARKER OR DAMEGED WHEN REMOVING THR INSULATION SCREEN

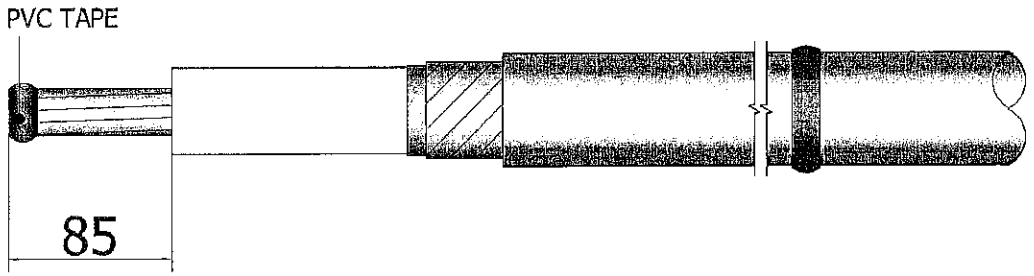


5. PREPARATION OF CABLE CONDUCTOR

5.1. Remove the insulation and the conductor screen at 85 mm from the cable end.

IT IS ESSENTIAL THAT THE CABLE INSULATION BE CUTTED PERPENDUICULARY IN ORDER TO OPTAIN A GOOD SURFACE FOR THE THRUST PIECE

5.2. Place a PVC tapes around the end of the conductor to protect the stress control cone during the jointing operation.



6. PREPARATION OF THE SEMICONDUCTING INSULATION SCREEN

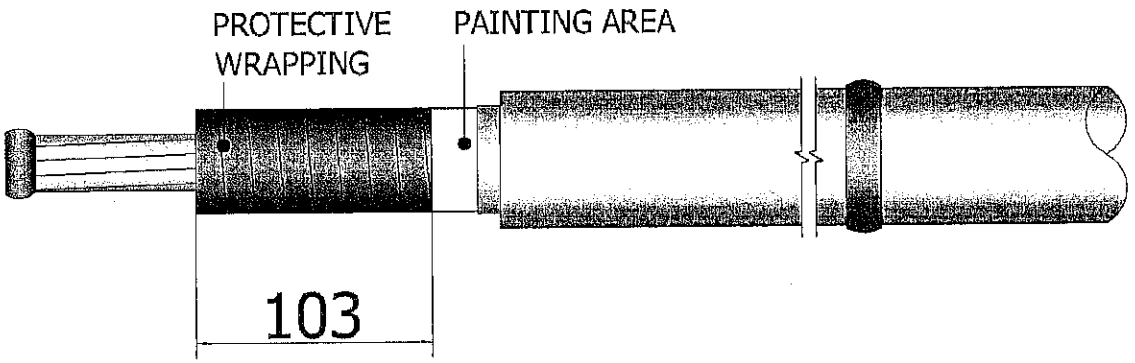
6.1. From the cable insulation end to the semiconducting insulation screen cut remove any possible residual semiconducting part by oxide tape in order to achieve a perfectly smooth, polished surface.

6.2. Apply the PVC with adhesive side facing outward in order to obtain a protective wrapping. Begin to the cable insulation end for a length of 103 mm.

6.3. Apply an additional conducting layer with graphite on the cable insulation area exposed.

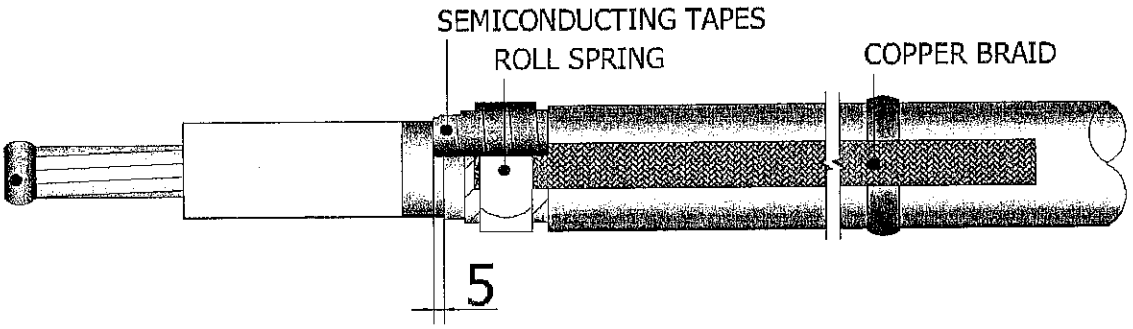
OBSERVE OVERALL DIMENSION OF 30 mm APPROX OF REMAINING SEMICONDUCTING LAYER

6.4. Remove the PVC tapes, previously wrapping.



7. SCREEN CONNECTION

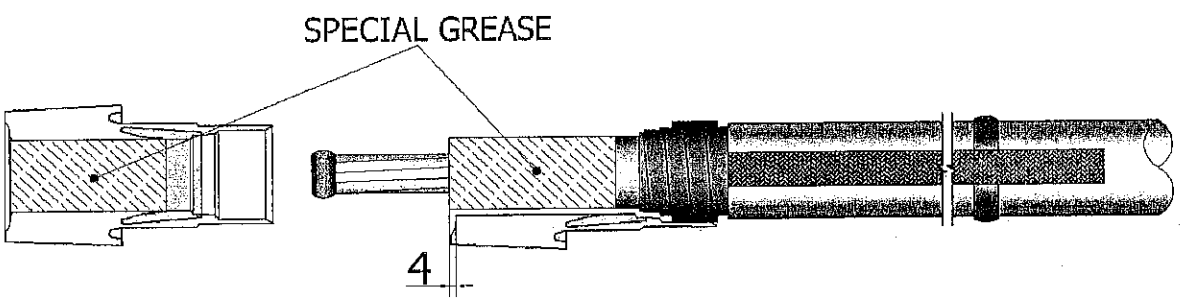
7.1. Position the end of the copper braid on the metal tape screen.
7.2. Wrap the roll spring twice over the earth braid in the direction of the metal tape screen wrap.
7.3. Fold the earth braid back over the roll spring.
7.4. Wrap the rest of the roll spring around the earth braid.
7.5. Stretch length of semiconducting tape by approx. 1/3 and apply it begin to the semiconducting insulation screen cut for 5 mm wide and apply back up to the outer sheath.



8. FITTING THE STRESS CONE

8.1. Accurately clean the cable insulation and the stress control (inside and outside) using a paper tissue supplied, moistened with approved solvent.
8.2. By the polythene gloves supplied, lubricate the cable insulation and the bore of the stress control to facilitate the fitting one.

IT IS VERY IMPORTANT TO USE ONLY A PART OF SPECIAL GREASE SUPPLIED, BECAUSE IT WILL USE AFTER TO LUBRICATE THE BORE OF BUSHING AND THE OUTSIDE SURFACE OF STRESS CONTROL.



9. ASSEMBLY THE CONTACT

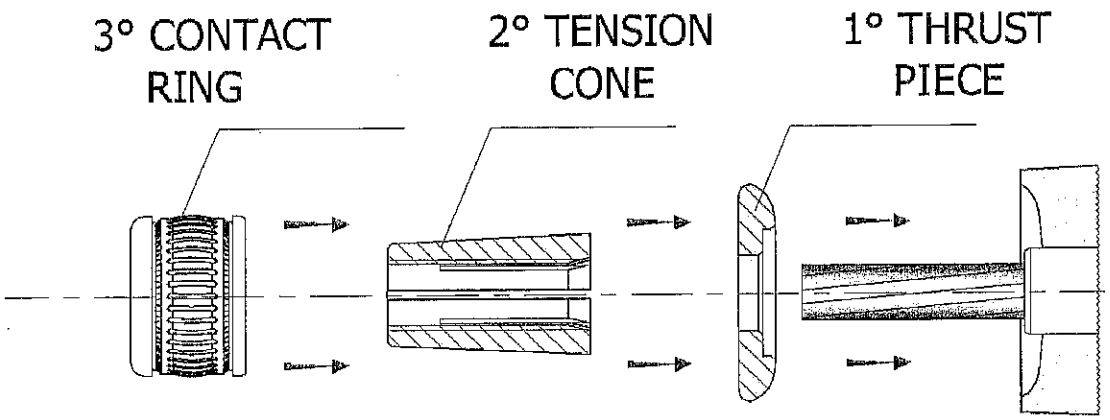
9.1. Push the stress control, smoothly and without twisting, onto the cable up to the insulation expose of 4 mm to the bore of stress control.
9.2. Remove any excess of special grease and also the PVC tapes applied before.
9.3. Slide the thrust piece onto the cable conductor.

IMPORTANT: THE ROUND SURFACE OF THRUST PIECE IS PERFECTLY SHAPED WITH THE END OF STRESS CONTROL.

9.4. Slide on the cable conductor the tension cone.

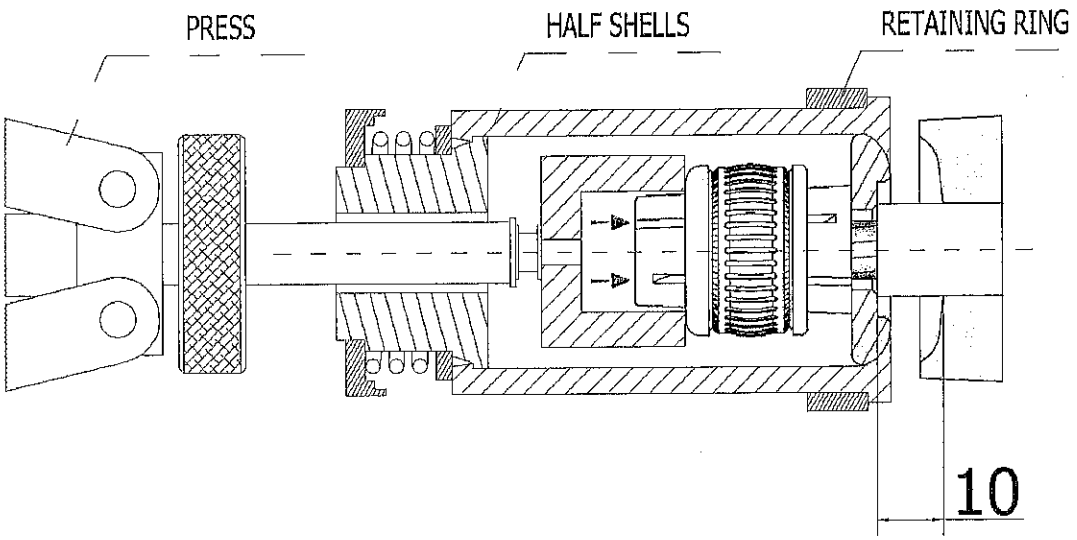
VERIFY THAT THE CABLE CONDUCTOR DOES NOT PROTUDE OF THE TENSION CONE.

9.5. Slide the contact ring onto the tension cone and fix it.



10. CONTACT PRESS OPERATIONS

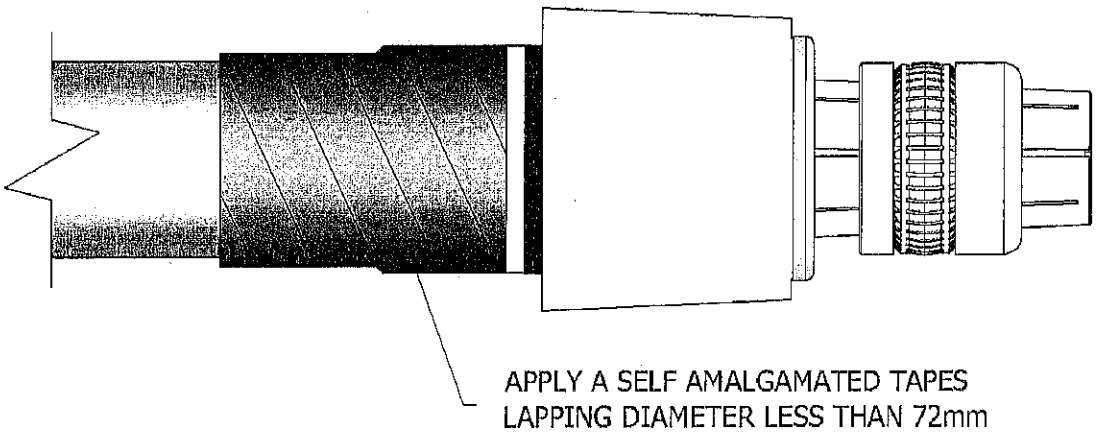
10.1. Push the stress control to the outer sheath side in order to obtain a sufficient space (about 10 mm) between the thrust piece and the die to place the press.
10.2. After the compression operation, made with the special tool, push the stress cone to the thrust piece.



11. STRESS CONE TAPING

11.1. Apply a layer of self amalgamated tape with a 50% overlapped and stretch the tape to reduce width to ½ of the original one

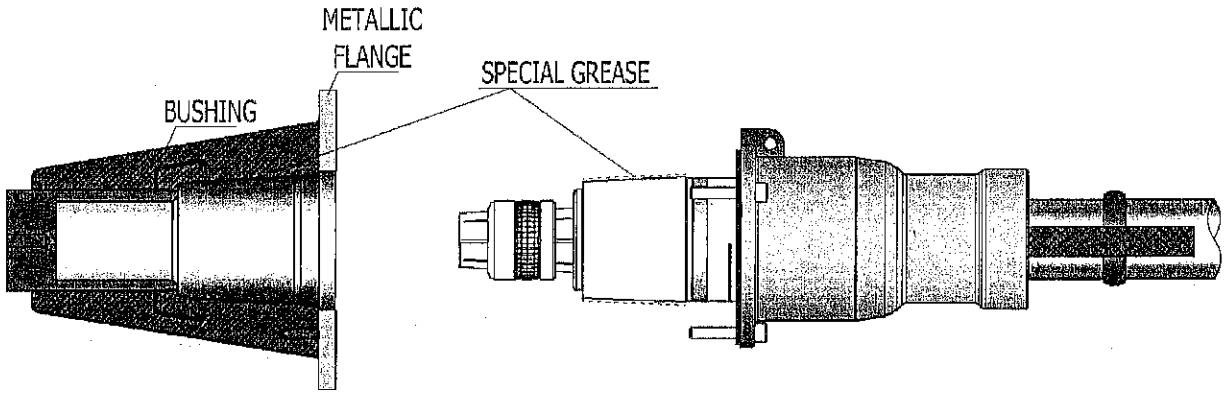
IMPORTANT: THE LAPPING DIAMETER MUST BE LESS THAN 72 mm AND DO NOT COVER THE SEMICONDUCTING AREA



12. FITTING THE CONNECTOR

12.1. Fix the preassembled end bell to the stress control cone and in the meantime tight the test lead (if requested).

12.2. Clean the bushing as well as the stress control cone with clearing agent and lubricant the two components with the special grease supplied.

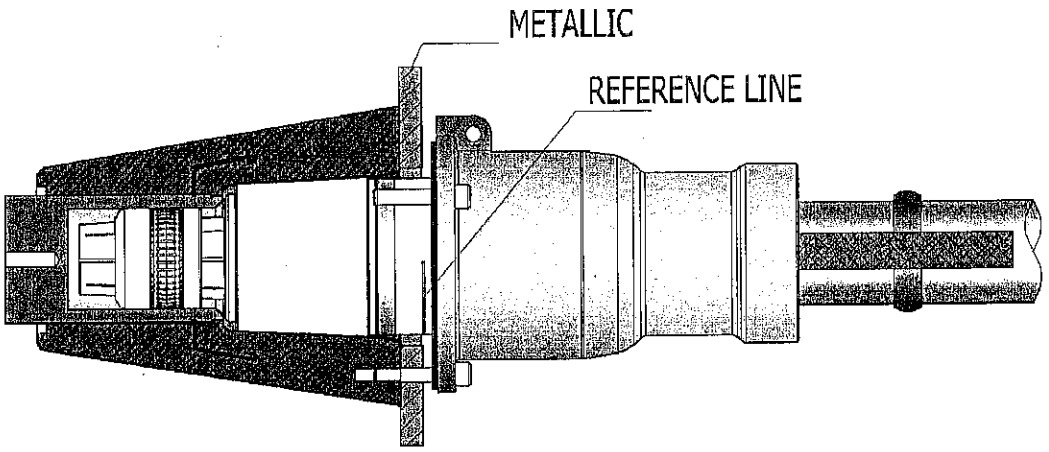


13. FIXING OPERATION

13.1. Insert the separable connector into the bushing. Make sure that the reference line made on the thermoplastic is parallel with the connection flange.

VERIFY THAT THE THREE SCREWS ARE ON THE SAME AXIS OF THE BUSHING THREAD HOLES.

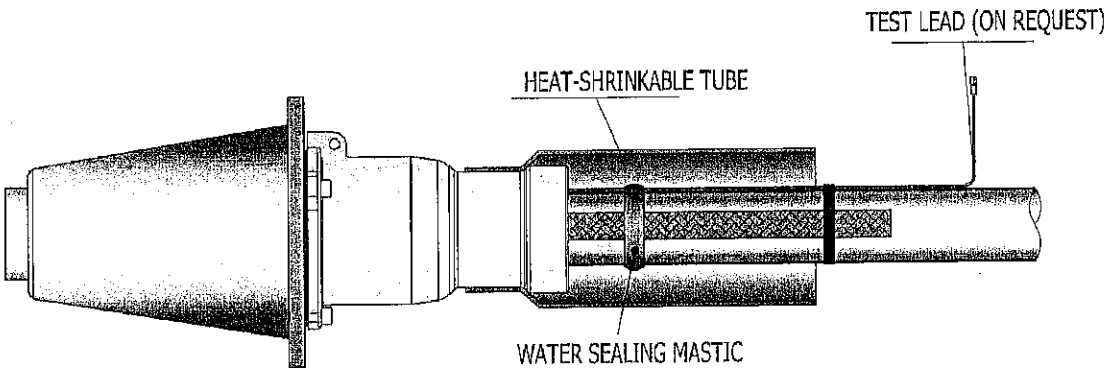
13.2. Tighten the fixing screws alternatively (approx 15 Nm) up to complete clamping.



14. END BELL SEALING

14.1. Fix the copper braid onto the cable.
14.2. If requested, fix the test lead with PVC tape.
14.3. Apply a layer of sealing mastic on the same point applied before.
14.4. Position the heat shrinkable tube, previously fitted on the cable, on the preassembled end bell.
14.5. Using a gently flame, shrink the sleeve down until they are uniformly shrunk down without buckles.

DO NOT START THE SHRINKING-ON PROCESS UNLESS THE SEPARABLE CONNECTOR HAS BEEN PLUGGED IN AND SCREWED ON.

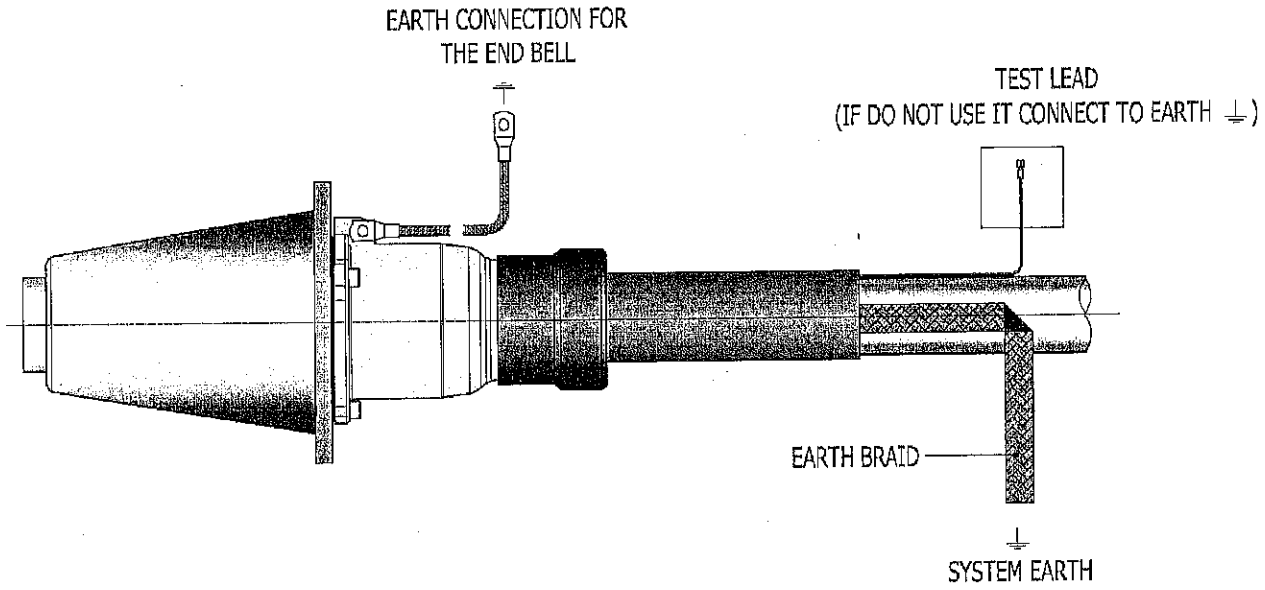


15. ON SERVICE

15.1. Connect the bonding lead to the preassembled end bell by its earthing lug

VERIFY THAT THE PREASSEMBLED END BELL ARE ALWAYS CONNECTED TO EARTH THROUGT THE BONDING LEAD

15.2. Connect the copper braid to the system earth.
15.3. If request, connect the test lead on the switchgear to the voltage presence indicator.



16. DISCONNECTING OPERATION WITH TOOL.

16.1. Verify the absence of Voltage.

16.2. Disconnect the bonding lead, fix on the preassembled end bell, and unscrew the three fixing screws.

16.3. Fix the special tool on the fixing cable crossbar.

16.4. Position the tool in order to obtain the maximum operation length.

16.5. Perform the operation to complete the disconnection.

17. DISCONNECTING OPERATION WITHOUT TOOL.

17.1. Verify the absence of Voltage.

17.2. Disconnect the bonding lead, fix on the preassembled end bell, and unscrew the three fixing screws.

17.3. Grab the cable and apply a longitudinal constant force in order to extract the separable connector.

DURING THIS OPERATION DO NOT MAKE ANY LATERAL OR TORSIONAL CABLE MOVEMENT. DO NOT USE THE PREASSEMBLED END BELL TO DO THAT OPERATION.

18. RECONNECTION OPERATION

18.1. Verify the absence of Voltage.

18.2. Clean the bushing as well as the stress control cone with clearing agent and lubricant the two components with the special grease supplied

18.3. Insert the separable connector into the bushing. Make sure that the reference line made on the thermoplastic is parallel with the connection flange.

VERIFY THAT THE THREE SCREWS ARE ON THE SAME AXIS OF THE BUSHING THREAD HOLES.

18.4. Tighten the fixing screws alternatively (approx 15 Nm) up to complete clamping.