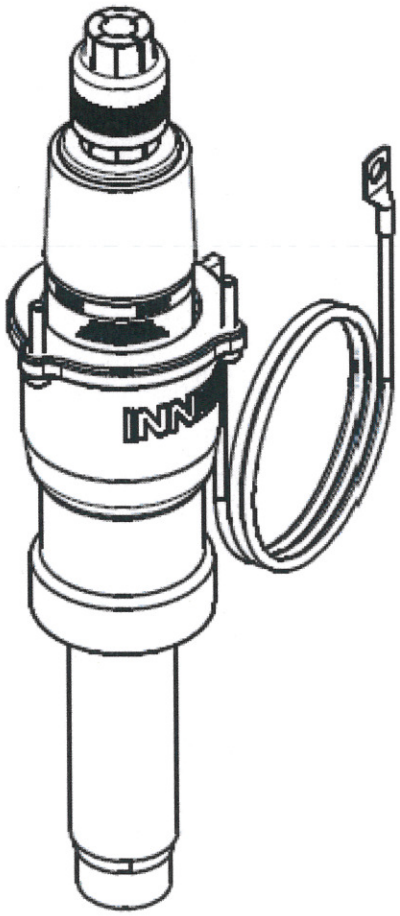
INSTALLATION INSTRUCTION FOR INNEX CABLE CONNECTORS SIZE 3 FOR EXTRUDED CABLE WITH A COPPER WIRE SCREEN

INNEX SYSTEM

CONNECTOR

TECHNICAL DATA	
TYPE	IC 1250A
NOMINAL OPERATING CURRENT	1250 A
MAXIMUM SYSTEM VOLTAGE (U_m):	42 kV
BASIC IMPULSE LEVEL (BIL)	200 kV
SCREEN TYPE	COPPER WIRE

ONLY FOR SEMICONDUCTING BONDING CABLE



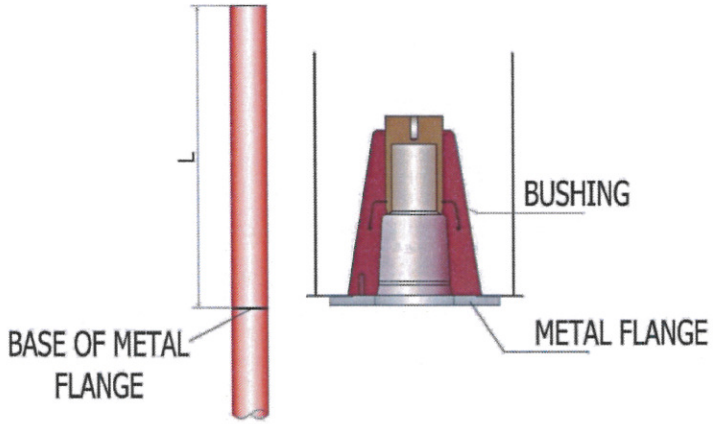
Rev.	Date	Check	Approved	Description
00	19/10/10	D.M.	D.M.	Issue

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	INSTALLATION INSTRUCTION	☐
R	1	SEMI-CONDUCTIVE TAPE	☐

1. CABLE REFERENCE

1.1. Train the cable as near as possible to its final position, line up the base of the metallic flange with the cable and make a reference line on the cable (see diagram below).

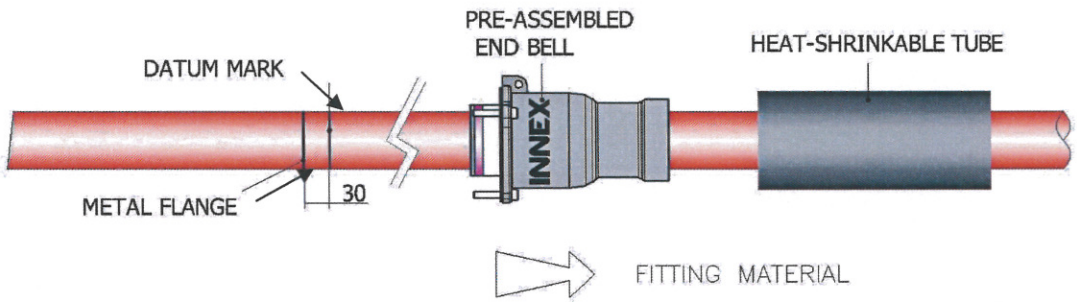


PLEASE NOTE: DISTANCE L MUST BE A MINIMUM OF 600mm IN ORDER FOR THE COPPER WIRE SCREEN TO SHOW BELOW THE HEATSHRINK TUBE ONCE THE INSTALLATION IS COMPLETE.

2. PARKING COMPONENTS

2.1. From the reference line previously applied on the cable, apply another reference line 30mm away from the cable end. This will be the Datum Mark for the installation of the connector (see diagram below).

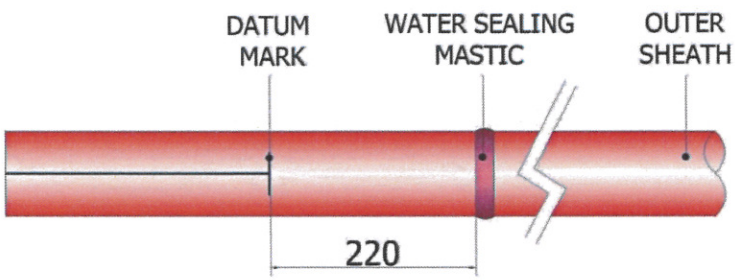
2.2. Clean the outer sheath for a length of 1 m and park the heat-shrinkable tube and the pre-assembled end bell onto the cable as shown below.



3. PREPARATION OF CABLE

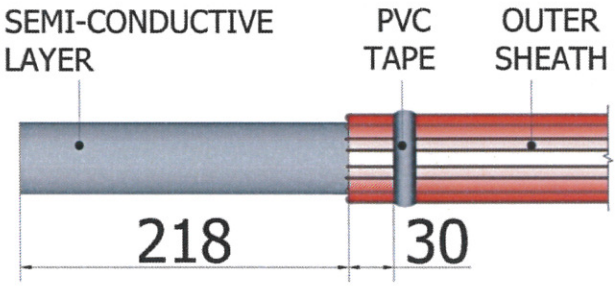
3.1. Apply a layer of water sealing mastic 220 mm from the Datum mark as shown below.

3.2. Remove the outer sheath up to the Datum Mark as shown below.



4. POSITIONING OF THE COPPER WIRE SCREEN

4.1. Bend the screen wires back one by one and place them neatly side by side on the outer sheath.
4.2. Hold them in place on the outer sheath by applying PVC tape 30 mm from the end of outer sheath.
4.3. Cut off the cable leaving 218 mm from the end of the cable to the edge of the outer sheath as shown below.

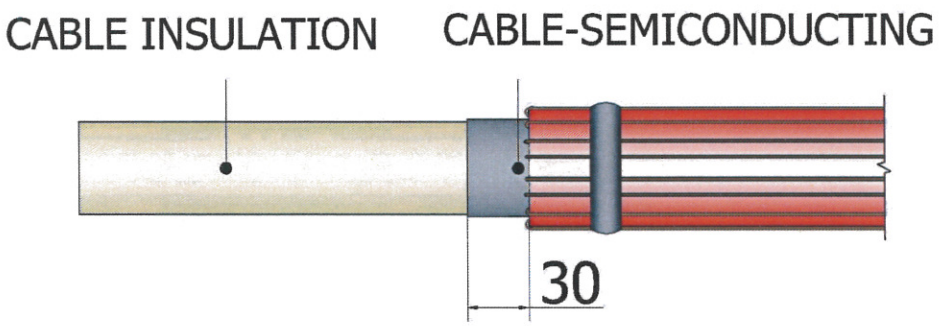


5. REMOVING THE SEMI-CONDUCTIVE INSULATION SCREEN

5.1. Remove the semi-conductive insulation screen up to 30 mm from the edge of the outer sheath.

IT IS VERY IMPORTANT THAT THE INSULATION IS NOT MARKED OR DAMAGED WHEN REMOVING THE INSULATION SCREEN

5.2. Remove any traces of conductive residue from the core insulation.

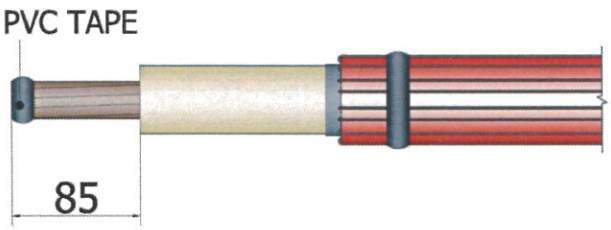


6. REMOVE THE CABLE INSULATION

6.1. Remove the insulation and the conductor screen 85 mm from the cable end as shown below.

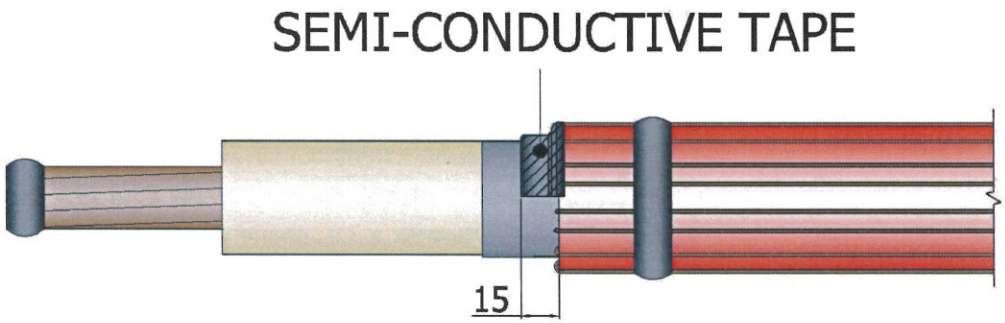
IT IS ESSENTIAL THAT THE CABLE INSULATION IS CUT 90 DEGREES TO THE CONDUCTOR IN ORDER TO OBTAIN A SQUARE END ON THE INSULATION.

6.2. Wrap PVC tape around the end of the conductor to protect the stress cone during installation as shown below.



7. ASSEMBLY OF THE SEALING END

7.1. Stretch a length of semi-conductive tape to obtain approx 1/3 of original width, and apply to the painted area. Start 15mm from the semi-conductive screen cut and wrap towards the outer sheath applying a 50% overlap.

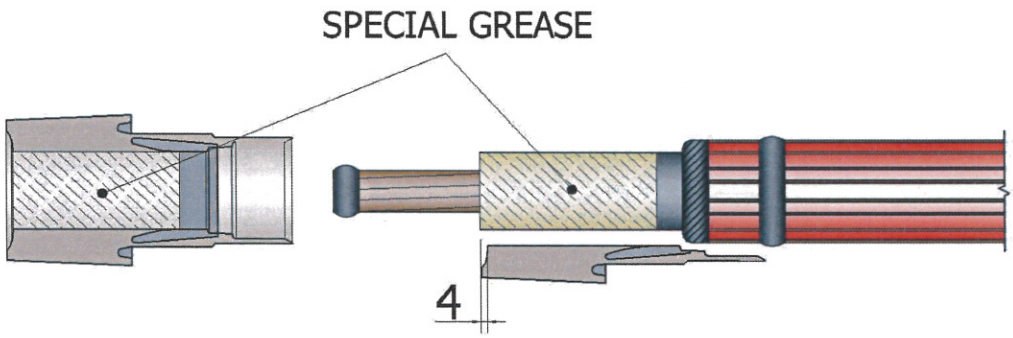


8. ASSEMBLY OF THE SEALING END

8.1. Thoroughly clean the cable insulation and the stress cone (inside and outside) using the paper tissue supplied, moistened with cable cleaning solvent.

8.2. Using the plastic gloves supplied, lightly lubricate the cable insulation and the bore of the stress cone to facilitate installation.

IT IS VERY IMPORTANT TO USE ONLY A PART OF THE SPECIAL GREASE SUPPLIED, AS THE REST WILL BE USED TO LUBRICATE THE BORE OF BUSHING AND THE OUTSIDE SURFACE OF THE STRESS CONE LATER IN THE INSTALLATION.



9. ASSEMBLY THE CONTACT

9.1. Push the stress cone, smoothly and without twisting, onto the cable until at least 4mm of insulation is protruding above the installed stress cone.

9.2. Remove any excess of special grease and also the PVC tapes applied to the end of the conductor previously.

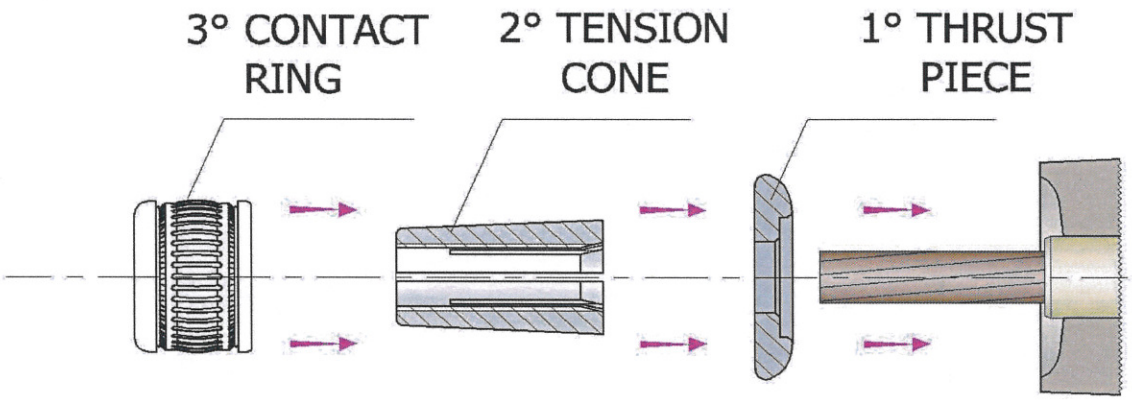
9.3. Slide the thrust piece onto the cable conductor.

PLEASE NOTE: THE ROUND SURFACE OF THRUST PIECE IS PERFECTLY SHAPED WITH THE END OF STRESS CONE.

9.4. Slide the tension cone onto the conductor until it meets the thrust piece.

VERIFY THAT THE CABLE CONDUCTOR DOES NOT PROTRUDE THE END OF THE TENSION CONE.

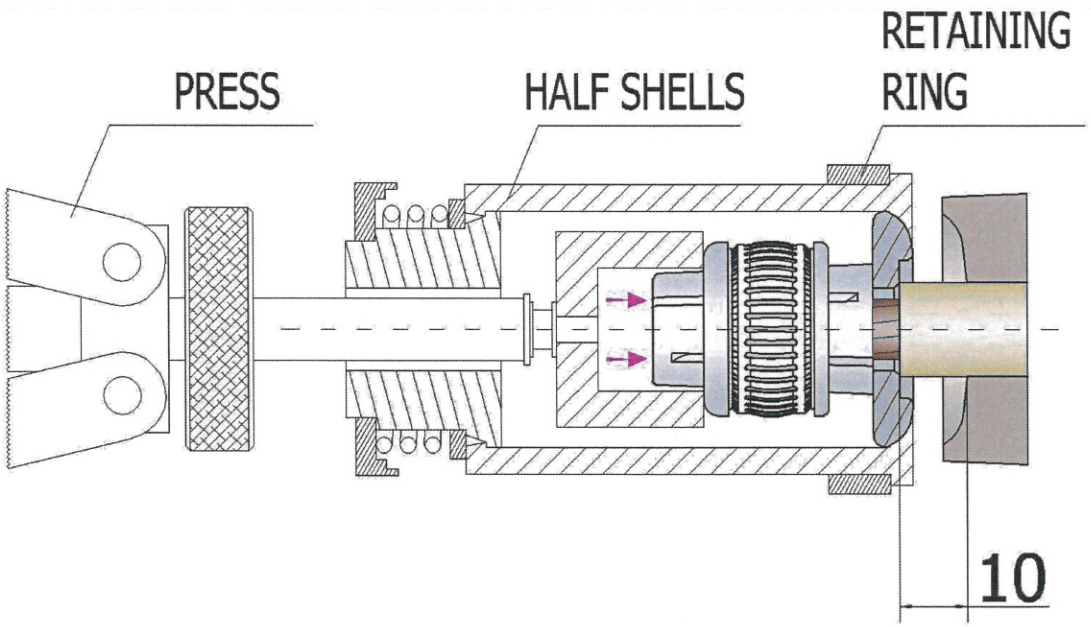
9.5. Slide the contact ring as far as possible onto the tension cone by hand.



10. COMPRESSION CONTACT

10.1. Without twisting, push the stress cone further down the outer sheath in order to obtain sufficient enough space (approx 10 mm) to fit the hydraulic compression tool behind the thrust piece.

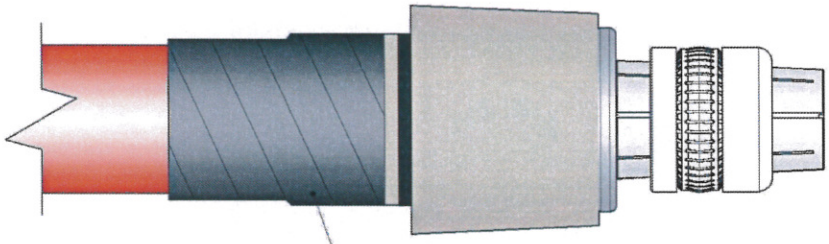
10.2. After the compression operation, push the stress cone, again without twisting, back towards the thrust piece until the stress cone and the thrust piece meet.



11. TAPING

11.1. Apply one layer of self amalgamating tape with a 50% overlap while stretching the tape to reduce the width by 50% approx (see diagram below).

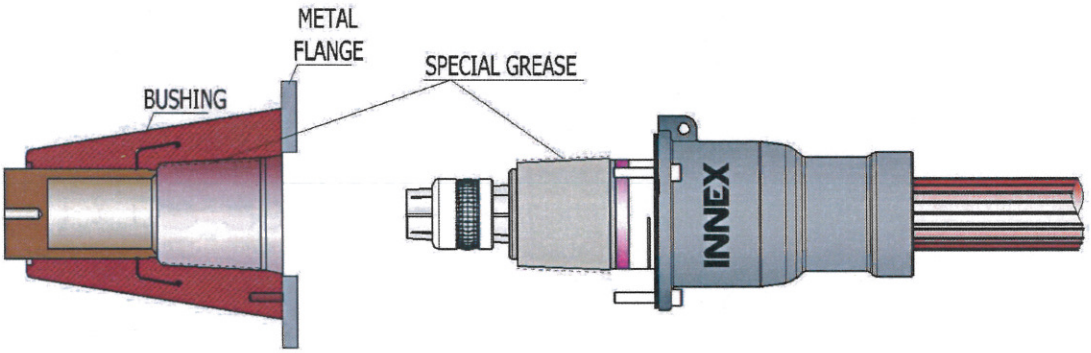
IMPORTANT: THE OVERALL DIAMETER ACROSS THE TAPED AREA MUST BE LESS THAN 72 mm.



Apply a layer of self amalgamating tape.
After taping the overall diameter of the
taped area should not exceed 72mm

12. SPECIAL GREASE APPLICATION

12.1. If a voltage tap is fitted, take it out of the bottom of the pre-assembled bell and lay down the outer sheath.
12.2. Push the pre-assembled bell up the cable until it meets the stress cone (see diagram below).
12.3. Clean the bushing and the stress cone with cable cleaning solvent and lubricate the two components with the special grease supplied (see diagram below).

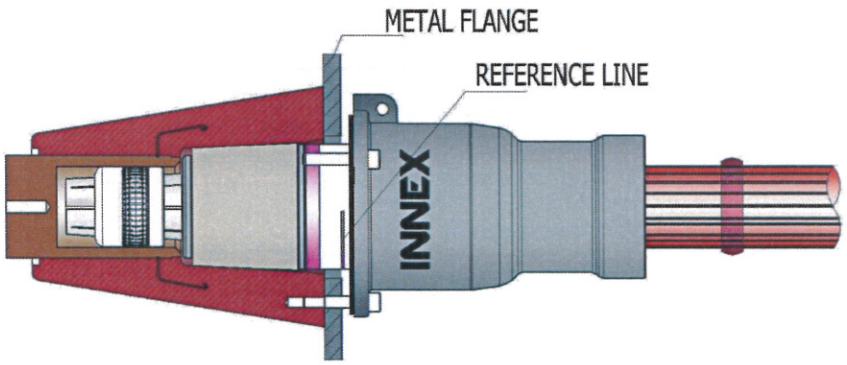


13. FIXING OPERATION

13.1. Insert the separable connector into the bushing. Make sure that the reference line on the plastic inner sleeve of the end bell is parallel with the metal flange.

ENSURE THE FIXING SCREWS ON THE PRE-ASSEMBLED END BELL ARE LINED UP WITH THE THREADED HOLES OF THE BUSHING WELL.

13.2. Tighten the fixing screws alternately in stages up to complete clamping (approx 15Nm).
13.3. If fitted, fix the voltage tap in place on the outer sheath with PVC tape.



14. END BELL SEALING

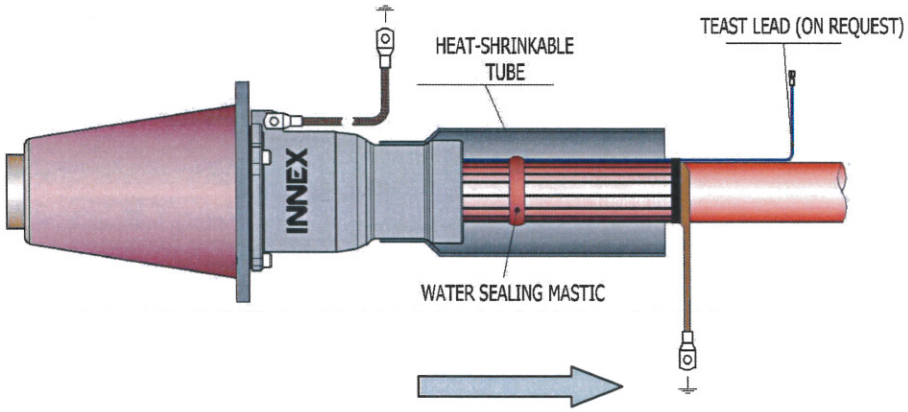
14.1. Position the heat shrinkable tube, previously fitted on the cable, on the preassembled end bell at the point shown below.

14.2. Using a gentle flame, shrink the sleeve down uniformly and without ripples. YOU MUST START FROM THE END BELL AND SHRINK DOWN THE CABLE – DO NOT SHRINK ON THE CABLE FIRST AND WORK TOWARDS THE END BELL.

DO NOT START THE HEATSHRINK PROCESS UNLESS THE SEPARABLE CONNECTOR HAS BEEN SCREWED INTO THE BUSHING WELL.

14.3. Collect the screen wires that are protruding from the bottom of the heatshrink tube and wrap together or braid.

14.4. Cut off the end of the screen wires to ensure they are all of the same length. Connect the supplied earthing lug to the end of the screen wires using a suitable crimping tool and connect to system earth.

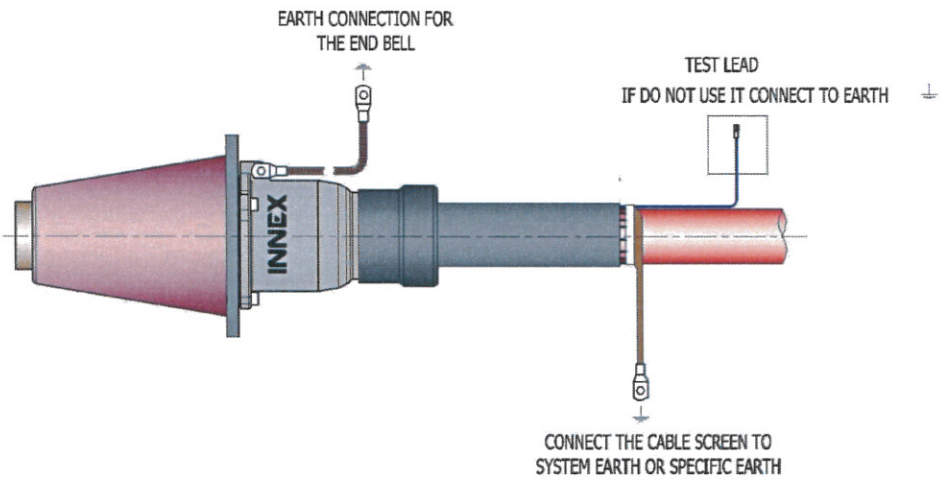


15. CONNECTOR EARTHING

15.1. Connect the supplied earth lead to the preassembled end bell as shown above and connect to system earth.

IMPORTANT: THE EARTH LEAD MUST AT ALL TIMES BE CONNECTED TO EARTH.

15.2. If fitted and the voltage tap is not in use connect to earth.



16. DISCONNECTING OPERATION

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. 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 OPERATIONS.