

Raychem Screened, Separable Connection
System RSTI-58 800 A up to 24 kV

Raychem
from TE Connectivity

Raychem Screened, Separable Connection System RSTI-58

800 A up to 24 kV

Features

- The insulation of the connector is made of a highly modified silicone rubber characterised by high tracking resistance, elongation at break and non-flammability.
- A thin-walled screen is permanently bonded onto the insulation and protects the connection system against unintentional contact.
- The screened connector need not be removed for oversheath testing.
- The screened cable connector exceeds CENELEC HD 629.1 S2 requirements, which includes BS, VDE and other international specifications.
- Design fits 630/1250 A bushings type "C" as specified by EN50180 and EN50181.
- The compact design supports the use of double "T" connections inside standard terminal boxes.
- The wide application range covers cable cross-sections from 25 to 300 mm².
- Conductor connection with mechanical or DIN lugs.
- Easily accessible rear plug with capacitive test point.
- Few accessories required for system test, double "T" and earth connection.
- Complete kit including lugs facilitates installation and storage.

Accessories

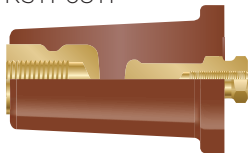
Test rod

Ref. no.:
 RSTI-68TR; Length: 310 mm
 RSTI-68TRL; Length: 460 mm
 RSTI-68TRA; Kit includes
 2 short and 1 long testrod



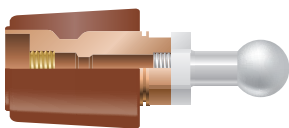
Terminating plug

Ref. no.:
 RSTI-68TP



Earthing adapter

Ref. no.:
 RSTI-68EA20; Ball diameter: 20 mm
 RSTI-68EA25; Ball diameter: 25 mm

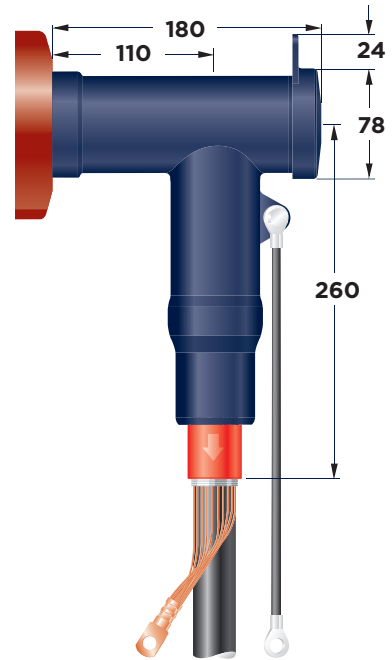


Raychem screened separable connectors RSTI-58 are designed to connect single- and three-core gasinsulated switchgear and other equipment using CENELEC bushings type "C" specified for 630/1250 A up to 24 kV. Made of a highly modified silicone rubber and protected by a thin-walled outer conductive screen connected to earth, Raychem connectors RSTI-58 are equally suited for indoor and outdoor installation. Supporting a wide application range, the design incorporates one body and two stress cone adapters to cover all cross-sections from 25 to 300 mm². The overall and cut-back dimensions are designed to take up minimum space in the terminal box. Raychem connectors RSTI-58 are equipped with a capacitive test point for determining whether the circuit is energised. This test point is protected by a conductive cap. After cable preparation and lubrication, the stress control adapter is simply slid into place, followed by the screened connector body. These two components can be installed under virtually any conditions. A separable mounting system ensures easy installation of the connector onto the bushing. All kits include high-performance multi-range mechanical or DIN compression lugs matching the design of the Raychem connector RSTI-58.

Applications

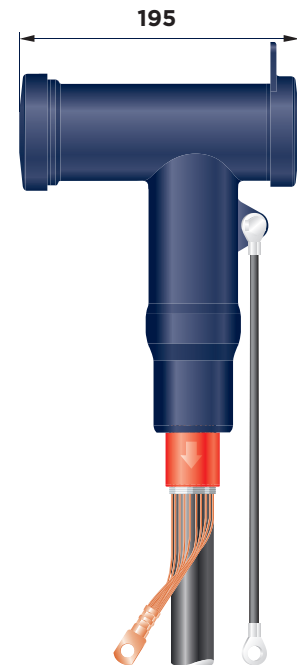
Single connection

Material requested for 3 phases:
 1 x RSTI-58xx (kit)

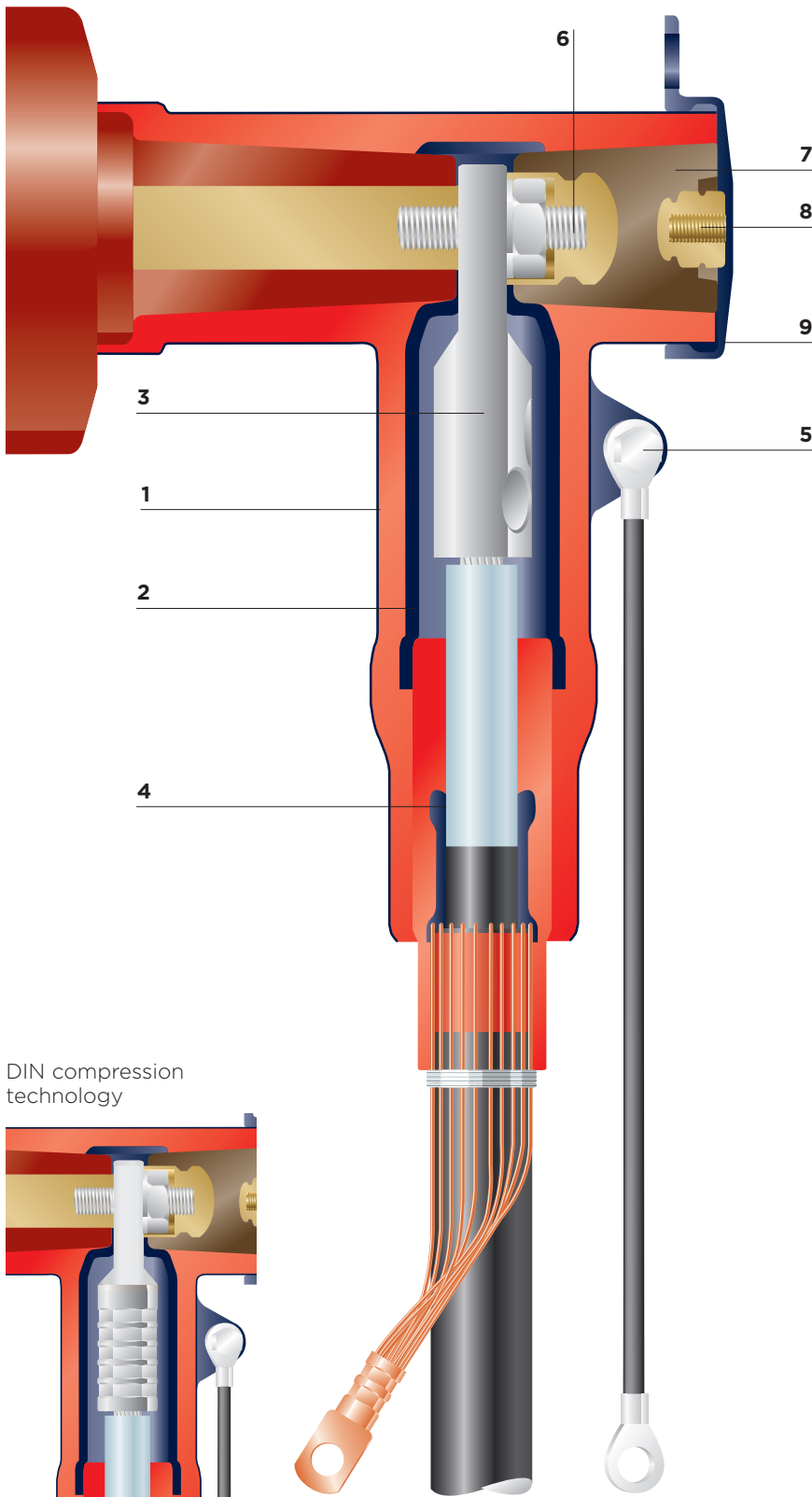


Live end seal

Material requested for 3 phases:
 1 x RSTI-58xx (kit)
 1 x RSTI-68TP (terminating plug-kit)



Design and construction



1 Screened body

A thin-walled conductive outer screen is permanently bonded to the silicone rubber insulating material of the body.

2 Inner screen

A conductive inner layer, as a faraday cage around the compression or mechanical lug, prevents corona at rated voltage.

3 Compression or mechanical lugs

Specially designed DIN (see detail below) and deep indent compression lugs, as well as mechanical lugs with shear bolts for connecting either aluminium or copper conductor cables.

4 Stress cone adapter

Relieves electrical stress at the point where the cable screen is cut. The insulated section, extending beyond the wire shielding, provides a convenient point for overshath testing.

5 Earthing eye and ground lead

Provides a connection point for earthing the screen.

6 Threaded pin

A threaded pin together with a spring washer and hex nut ensure a high-performance electrical and mechanical contact with the bushing.

7 Rear plug with test point

Removable rear plug with capacitive test point.

8 Test point

The test point is used to determine whether the circuit is energised; alternatively it can be used for phasing.

9 Conductive endcap

Electrical screen and protection of the rear end of the separable connector

Note:

All applications as shown in the brochure need to have a mechanical support, based on the requirements for dynamic short circuit.

Technical data

Cable insulation diameter range	12.7 - 34.6 mm
Connector cross-section range	25 - 300 mm ²
Maximum system voltage	24 kV
Continuous current rating	800 A
Basic impulse level	150 kV
Partial discharge at 2 U ₀	< 2 pC
AC voltage withstand, 1 min	57 kV
DC voltage withstand, 15 min	76 kV
Thermal short circuit, 1 s	54 kA
Dynamic short circuit	125 kA

The adapters meet the international CENELEC HD 629.1 S2 specification.

Selection table

Screened separable connection system with DIN compression lugs

Cross section mm ²	12 kV Diameter core insulation		Reference number Conductor material		Cross section mm ²	24 kV Diameter core insulation		Reference number Conductor material	
	min mm	max mm	Al	Cu		min mm	max mm	Al	Cu
25	12.7-	23.4	RSTI-5810	RSTI-5830	25	12.7-	23.4	RSTI-5810	RSTI-5830
35	12.7-	23.4	RSTI-5811	RSTI-5831	35	12.7-	23.4	RSTI-5811	RSTI-5831
50	12.7-	23.4	RSTI-5812	RSTI-5832	50	12.7-	23.4	RSTI-5812	RSTI-5832
70	12.7-	23.4	RSTI-5813	RSTI-5833	70	12.7-	23.4	RSTI-5813	RSTI-5833
95	12.7-	23.4	RSTI-5814	RSTI-5834	95	21.2-	34.6	RSTI-5824	RSTI-5844
120	12.7-	23.4	RSTI-5815	RSTI-5835	120	21.2-	34.6	RSTI-5825	RSTI-5845
150	21.2-	34.6	RSTI-5826	RSTI-5846	150	21.2-	34.6	RSTI-5826	RSTI-5846
185	21.2-	34.6	RSTI-5827	RSTI-5847	185	21.2-	34.6	RSTI-5827	RSTI-5847
240	21.2-	34.6	RSTI-5828	RSTI-5848	240	21.2-	34.6	RSTI-5828	RSTI-5848
300	21.2-	34.6	RSTI-5829	RSTI-5849	300	21.2-	34.6	RSTI-5829	RSTI-5849

Kits including deep indent lugs are on request

Screened separable connection system with mechanical lugs and shear bolts

Cross section mm ²	12 kV Diameter core insulation		Reference number Conductor material		Cross section mm ²	24 kV Diameter core insulation		Reference number Conductor material	
	min mm	max mm	Al or Cu			min mm	max mm	Al or Cu	
35-95	12.7-	23.4	RSTI-5851		35-70	12.7-	23.4	RSTI-5851	
95-120	12.7-	23.4	RSTI-5852		95-185	17.0-	30.1	RSTI-5853	
95-240	17.0-	30.1	RSTI-5853		95-240	21.2-	34.6	RSTI-5854	
150-240	21.2-	34.6	RSTI-5854		185-300	21.2-	34.6	RSTI-5855	
185-300	21.2-	34.6	RSTI-5855						
240-400	21.2-	34.6	RSTI-5856						

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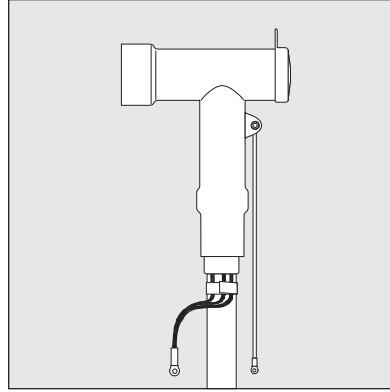
TE Energy - innovative and economical solutions for the electrical power industry: cable accessories, connectors & fittings, insulators & insulation, surge arresters, switching equipment, street lighting, power measurement and control.

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**Installation Instruction
EPP-0982-1/11**

**Raychem
Screened Separable
Connector 800 A for Bushing
Profile "C"
in Accordance to EN 50181,
and Single Core Polymeric
Insulated Cable
12 to 24 kV**

Type: RSTI-58xx

Safety Warning:

It is essential to observe the applicable safety regulations for working with high voltage equipment.

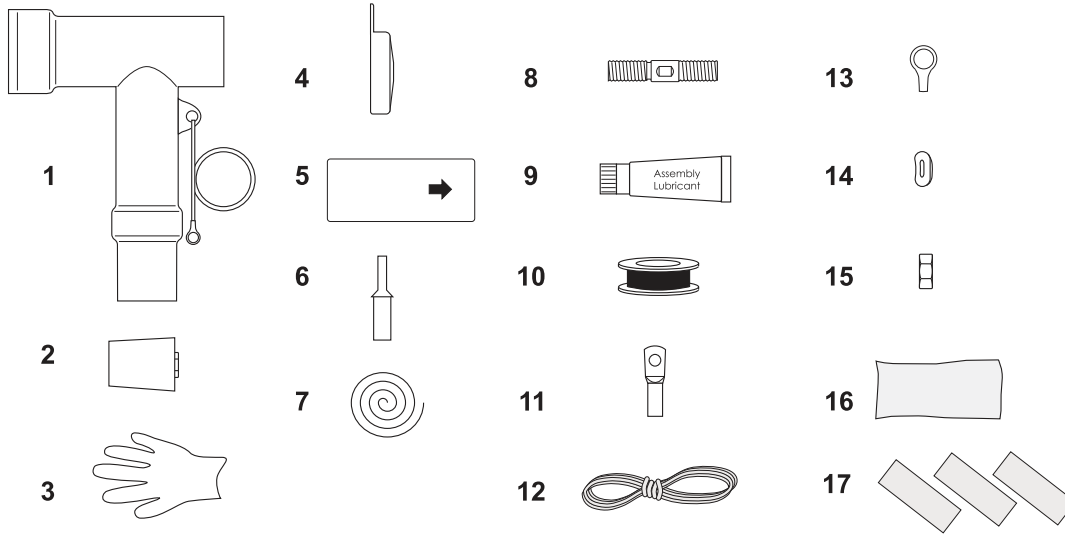
For precise safety information please contact the responsible authority.

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Before Starting

Check to ensure that the kit you are going to use fits the cable.
 Refer to the kit label and the title of the installation instruction.
 Components or working steps may have been improved since you last installed this product.
 Carefully read and follow the steps in the installation instruction.

Kit Content



1	3 x Connector body	4	3 x Covering cap	8	3 x Threaded pin M16	13	3 x Screen cable lug
2	3 x Back plug	5	3 x Stress cone	9	1 x Assembly lubricant	14	3 x Wave type washer
3	3 x Gloves	6	3 x Main cable lug	10	1 x PVC tape	15	3 x Nut M16
		7	1 x Binding wire	11	3 x Cable lug (16 + 25)	16	3 x Protective bag
				12	1 x String	17	3 x Sealing tape (grey)

Table 1

Cross Section	Ø Core Insulation 12 kV		Reference No.		Cross Section	Ø Core Insulation 24 kV		Reference No.		
	mm ²	min	max	Al		Cu	mm ²	min	max	Al
25	12.7-23.4			RSTI-5810	RSTI-5830	25	12.7-23.4		RSTI-5810	RSTI-5830
35				RSTI-5811	RSTI-5831	35			RSTI-5811	RSTI-5831
50				RSTI-5812	RSTI-5832	50			RSTI-5812	RSTI-5832
70				RSTI-5813	RSTI-5833	70			RSTI-5813	RSTI-5833
95				RSTI-5814	RSTI-5834	95			RSTI-5824	RSTI-5844
120	21.2-34.6			RSTI-5815	RSTI-5835	120	21.2-34.6		RSTI-5825	RSTI-5845
150				RSTI-5826	RSTI-5846	150			RSTI-5826	RSTI-5846
185				RSTI-5827	RSTI-5847	185			RSTI-5827	RSTI-5847
240				RSTI-5828	RSTI-5848	240			RSTI-5828	RSTI-5848
300				RSTI-5829	RSTI-5849	300			RSTI-5829	RSTI-5849
35-95	12.7-23.4			RSTI-5851		35-70	12.7-23.4		RSTI-5851	
95-120				RSTI-5852		-			-	
95-240	17.0-30.1			RSTI-5853		95-185	17.0-30.1		RSTI-5853	
150-240	21.2-34.6			RSTI-5854		95-240	21.2-34.6		RSTI-5854	
185 - 300				RSTI-5855		185-300			RSTI-5855	

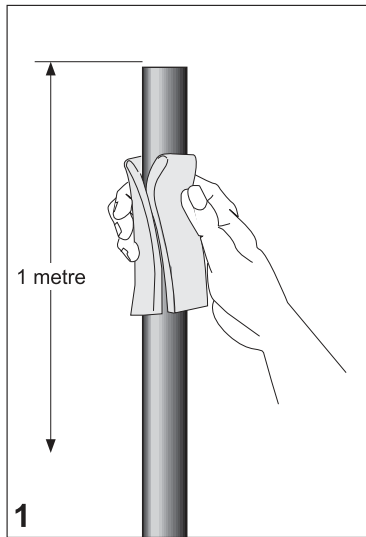
The Information contained in these installation instructions is for use only by installers trained to make electrical power installations and is intended to describe the correct method of installation for this product. However, TE Connectivity has no control over the field conditions which influence product installation.

It is the user's responsibility to determine the suitability of the installation method in the user's field conditions. TE Connectivity's only obligations are those in TE Connectivity's standard Conditions of Sale for this product and in no case will TE Connectivity be liable for any other incidental, indirect or consequential damages arising from the use or misuse of the products.

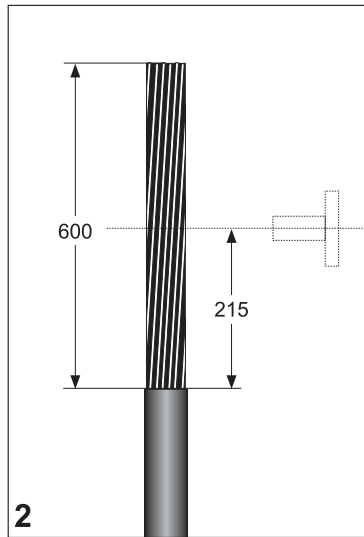
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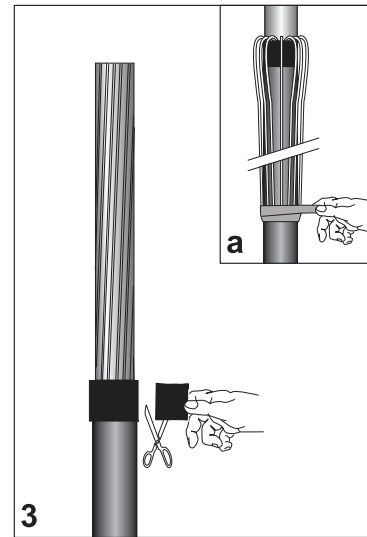
Cable Preparation



1
Clean and degrease the end of the oversheath for a length of 1 metre with solvent wipe.



2
Cable with wire shield
Position the cable with sufficient overlap to the bushing centre. Mark the oversheath 215 mm below the bushing centre. Cut the cable 600 mm above the mark and remove the oversheath over this distance. Cut off Cu-spiral screening tape flush with end of outer sheath. **Edges projecting beyond the outer sheath must be avoided**, so that the stress cone can not be damaged during push on procedure.



3
Wrap one turn of sealant tape (grey) with no overlap and slight tension around the end of the oversheath. Cut the tape and push ends together. Bend the shielding wires back onto the oversheath. Avoid crossing the individual wires. Temporarily secure the wires with a tape or wire binder.

Cut the core according to the dimension given in the drawing. Remove the core screen with appropriate screen cutting tool according to the drawing. The surface of the insulation should be free from all traces of conductive material. Compare the diameter over insulation with application range as shown in **Table 1** as well as with marking of supplied stress cone.

Application Check!

Cut back the insulation according to dimension **K** given in drawing details.

A. Hexagonal and deep indent compression lugs

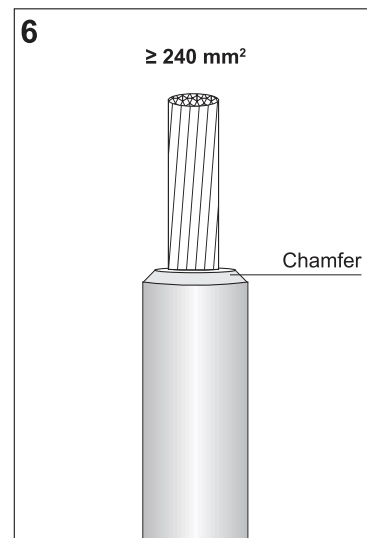
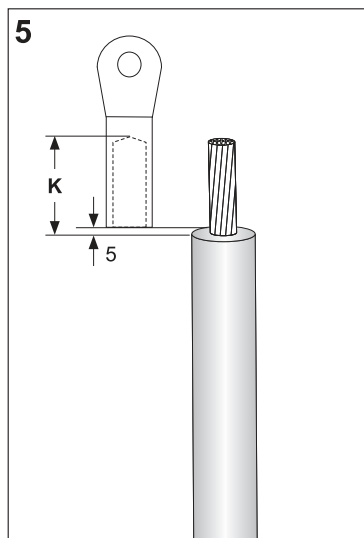
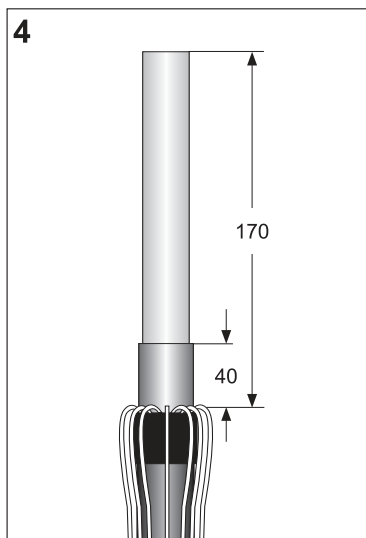
Dimension **K** must not exceed 60 mm.

B. Mechanical lugs

Dimension **K** is identical to depth of bore. Barrel butts against insulation!

Recommendation for large cross sections

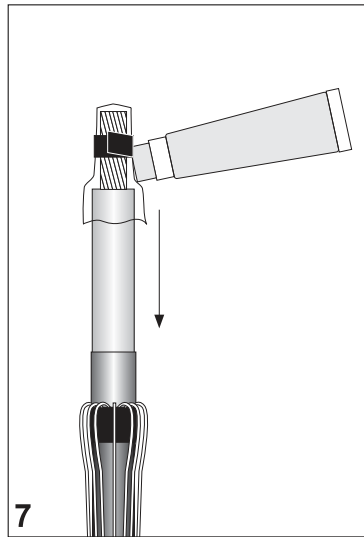
Convenient push on process of the stress cone requires chamfering of the insulation for cross section 240 mm² and above. See drawing!



Core Preparation

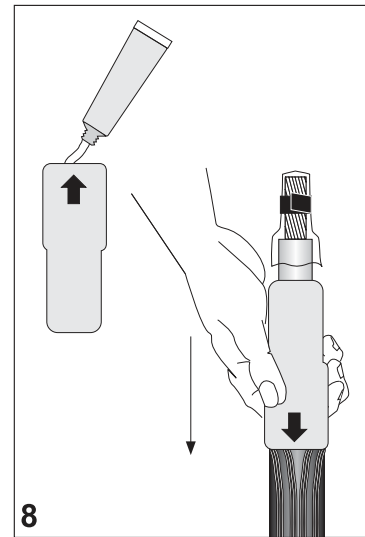
Table 2 - Use of Insert

Cross Section (Stranded mm ² (RM))	Lug Type		
	BLMC-25/95-16-800A	BLMC-95/240-16-800A	BLMC-185/300-16-800A
35	YES		-
50	YES		-
70	NO		-
95	NO	YES	-
120	-	YES	-
150	-	YES	-
185	-	NO	YES
240	-	NO	YES
300	-	-	NO



Slide the small protective bag (assembly aid) over the exposed conductor and tie it down with a PVC tape as shown in the drawing.

Gently lubricate the outer surface of the protective bag and the core insulation with a thin layer of assembly lubricant. Apply the lubricant layer with the sponge top as shown.



Apply onto the inner surface of the stress cone at the bottom end a 3 cm long sausage of assembly lubricant and spread it evenly over the inner surface. Use assembly lubricant without sponge top. Push the stress cone in one sequence with a twisting movement over the assembly aid completely onto the insulation until the inner collar of the stress cone stops at the oversheath cut back of the cable.

Note: The arrow on the stress cone should point onto the cable sheath. Remove the assembly aid from the conductor.

B. Mechanical lugs with inserts

The insert has to be used as noted in **Table 2**.

Ensure that the retention of the insert is locked into the appropriate slot in the barrel.

Install the cable lug using a lug fixture. Tighten the bolt set alternately in several equal steps until the heads shear off.

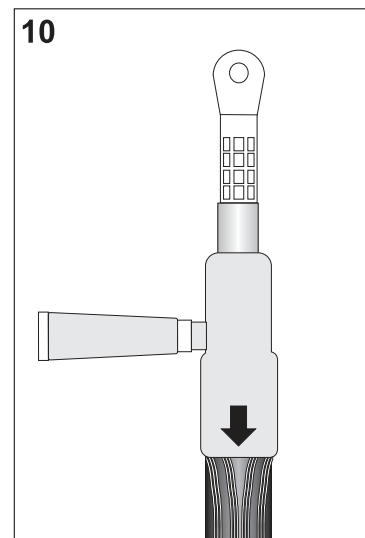
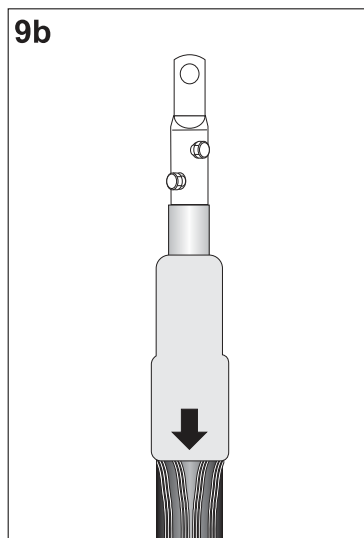
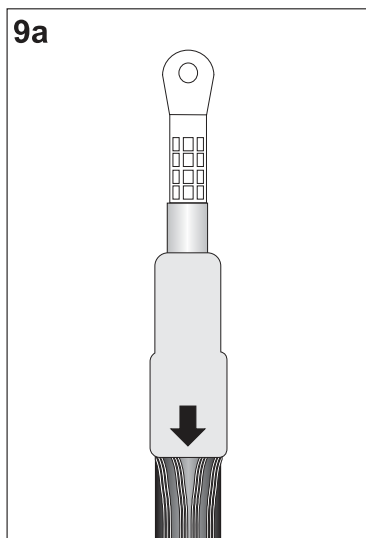
Remove any sharp edges.

Apply a thin layer of lubricant onto the outer surface of the stress cone with the sponge top.

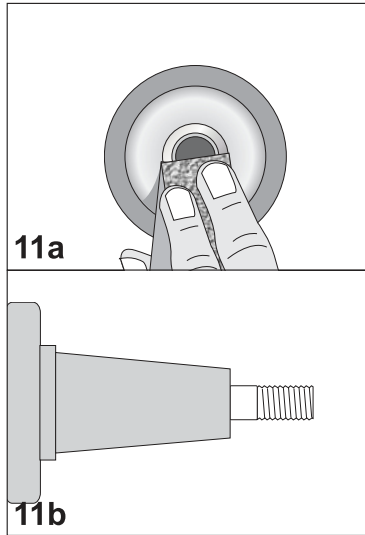
A. Compression lugs

Install the cable lug with the appropriate die and compression tool.

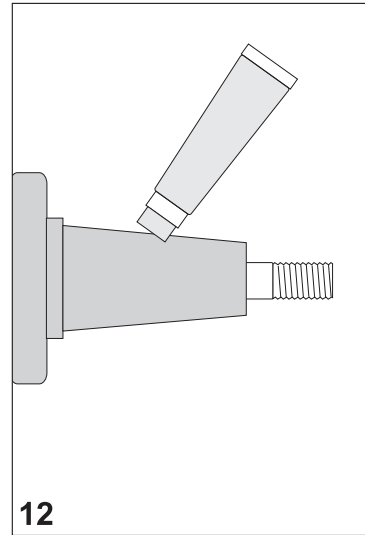
Note:
Remove any sharp edges.
Clean and degrease the lug and insulation from any excessive compression grease.



Installation of Connector Body



- a. Abrade and clean the contact ring of the bushing thread from residuals such as resin or varnish if any.
- b. Insert the threaded stud into the bushing and tighten it up with an Allen key (8 mm). Maximum torque: **35 Nm**.



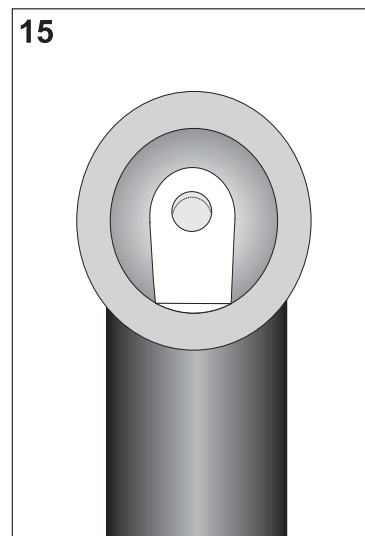
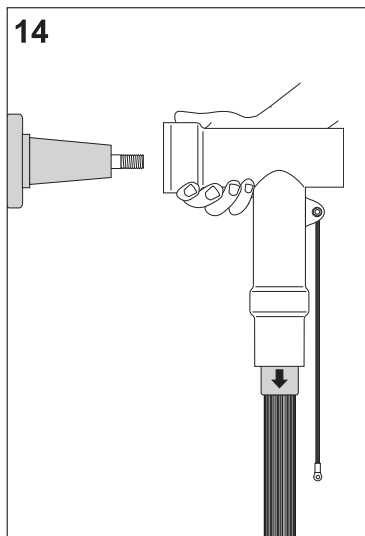
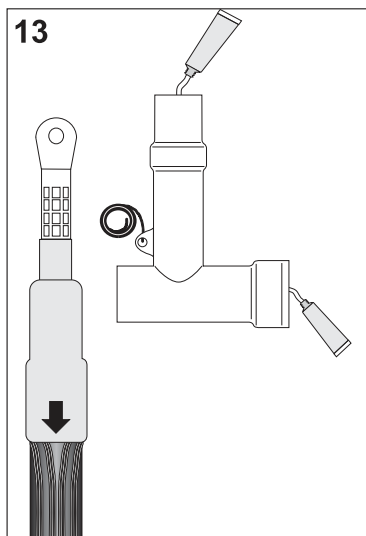
Clean the conical surface of the bushing and lubricate it with the assembly lubricant as shown.

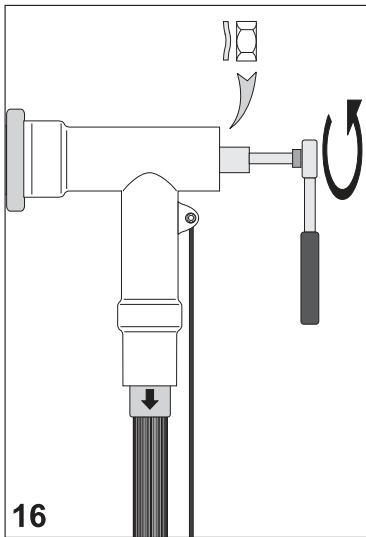
Clean and degrease the bottom and front end of the screened connector body and apply a thin layer of lubricant onto the inner surface without the sponge top as shown.

Note: Use one way glove to evenly lubricate the inner surface at a length of approximately 50 mm.

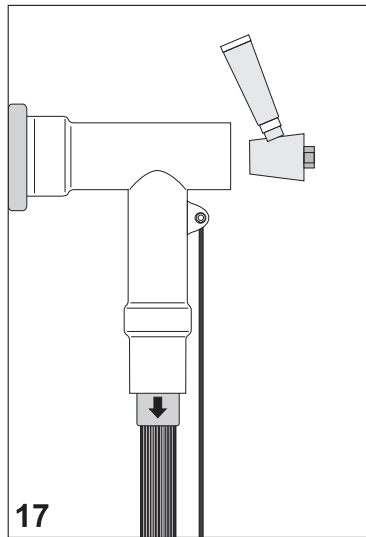
Push screened connector body with no interruption onto the stress cone and hold it. Continue **immediately** with the next step.

Align the eye of the cable lug with the threaded pin and push the screened connector onto the bushing.

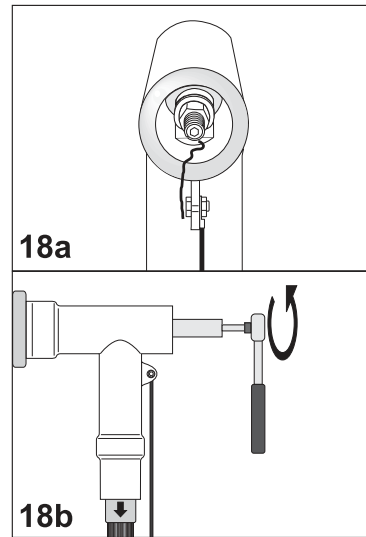




16
 Insert the spring washer and hex nut. Tighten the hex nut onto the stud with a spanner (24 mm) at a torque of **30 Nm**.



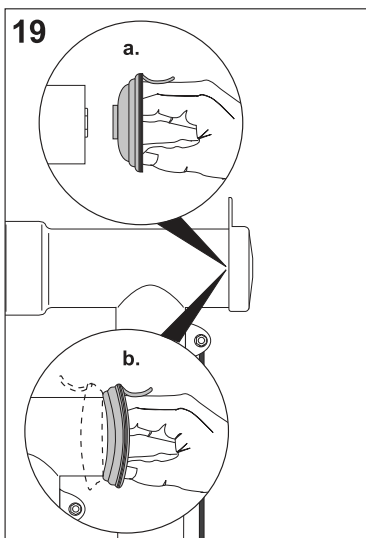
17
 Clean the inner surface of connector back end and apply a thin layer of assembly lubricant. Do the same with the conical interface of the back plug as shown.



18a
18b
 a. Place a string into the rear entry of the connector as shown.
 b. Insert the back plug and screw it into place using a spanner (19 mm) at a torque of **30 Nm**.

Remove the string prior to the last two turns.

- a. Flip-back the endcap as shown in **detail a**. Position the protruding ring onto test point.
- b. Flip the endcap into final position with your finger as shown in **detail b**.



Ensure that the grounding lead is fastened tightly.

Fix the shielding wires with a wire binder (four layers) at the end of the stress cone. Gather the wires together to form an earth lead. Install at the end of the shielding wires the connection lugs supplied in the kit.

Perform connection to ground.

Screened separable connector completed.

Please dispose of all waste according to environmental regulations.

