

### Test Report

**P P R 1065**

Qualification of  
Screened Elbow 250A,  
12/20 kV on Easy Strip Cable  
according to  
VDE 0278 Part 6

Type: RSES

Pages: 16

Appendices: 1

Date: 23.03.94

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Signature:

Date: 23.3.94

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Date: 23. März 94

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# TEST REPORT

PPR 1065

**SUBJECT OF TEST:** Screened Elbow Cable Plug  
for 250 A 12/20 kV  
Type RSES 5225 on  
an Easy Strip Cable 50 mm<sup>2</sup> Cu

**SCOPE OF TEST:** Test according to DIN VDE 0278  
"VDE Specifications for Power Cable Accessories, with rated  
voltages U up to 30 kV ( $U_m$  up to 36 kV)" Part 1/2.91  
"Requirements and Test Procedures", and Part 6/2.91  
"Plug-in Type or Screw-Type Encapsulated Cable Connections  
above 1 kV ( $U_m > 1.1$  kV)".

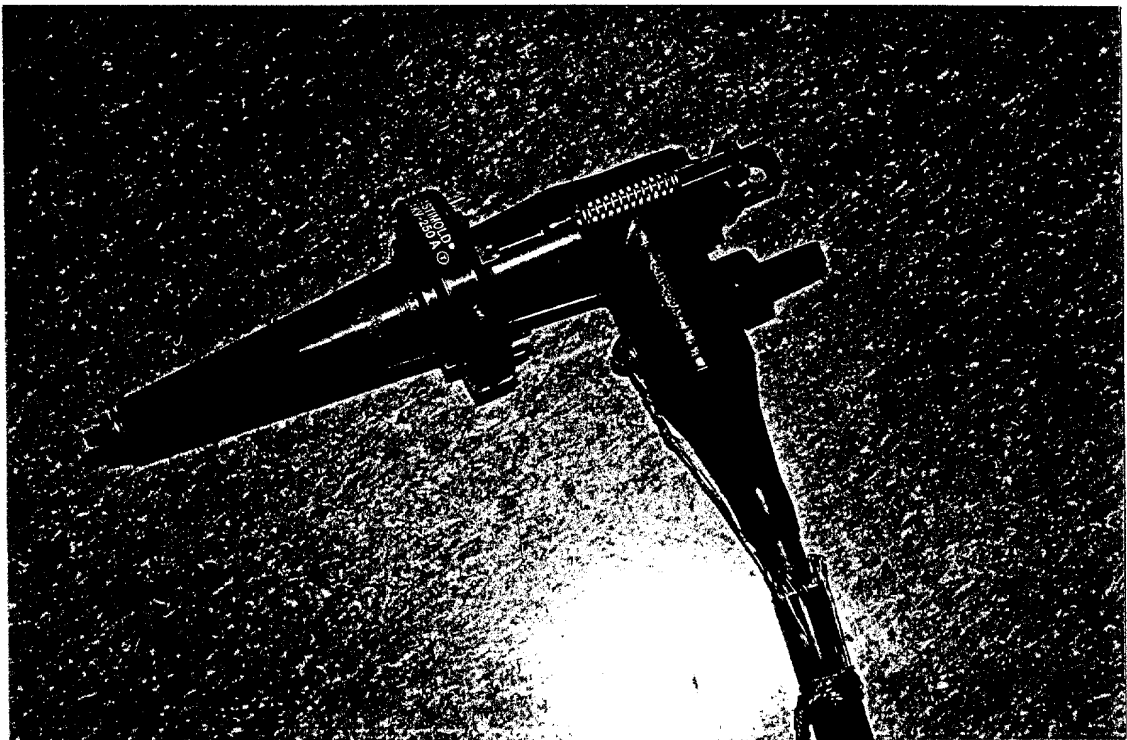


Photo of a Test Specimen

**Test Specimens:** Screened Elbow Cable Plug  
for 250 A 12/20 kV  
Type RSES 5225  
on a Easy Strip Cable

**Number:** 4

**Cable:** XKT 1 x 50 mm<sup>2</sup> Cu Easy-Strip

**Cable Length:** Approx. 2,5 m

**PREPARATION:**

The Screened Elbow Cable Plugs were installed according to the enclosed installation instruction EPP0476 Int 3/93.

The screen cut of the cable was done by round file.

## Sequence of Tests

Test	Type of Test	acc. to VDE0278 Section
1	A.C. Voltage Test 50 kV, 50 Hz, 1 min.	3.1
2	Partial Discharge Test (pC) at 24 kV	3.6
3	Nominal Impulse Voltage Withstand Test, 10 pulses each of positive and negative polarity, 125 kV	3.3
4	Continuous A.C. Voltage Test with cyclic current loads; 30 kV, 317 A, 2 load cycles	3.5
5	Test of detachability, 5 times	3.17
6	Continuous A.C. Voltage Test, same as 4, but 1 load cycle	3.5
7	Partial Discharge, same as 2	3.6
8	Continuous A.C. Voltage Test, same as 4, but 60 load cycles	3.5
9	Thermal Short-Circuit Test, 9 kA/1 sec. (6 load applications)	3.7
10	Test of detachability, 5 times	3.17
11	Continuous A.C. Voltage Test, same as 4, but 54 load cycles	3.5
12	Partial Discharge Test, same as 2	3.6
13	Tightness Test with cyclic current loads, 317 A, 9 load cycles	3.11.2 3.4
14	Continuous A.C. Voltage Test, same as 4, but 54 load cycles	3.5
15	Nominal impulse Voltage Withstand Test, same as 3	3.3
16	D.C. Voltage Test 96 kV, 30 min.	3.2
17	Leakage Current Measurement	2.2 3.14
18	D.C. Voltage Test 5 kV, 5 min.	3.16

**Test:** With the exception of tests 9, 17 and 18 all tests were carried out in Raychem EPD Laboratories, Ottobrunn, Germany.

Tests 9, 17 and 18 were performed at EPM Testfield, Munich, Germany.

## 1. A.C. Voltage Test according to Section 3.1

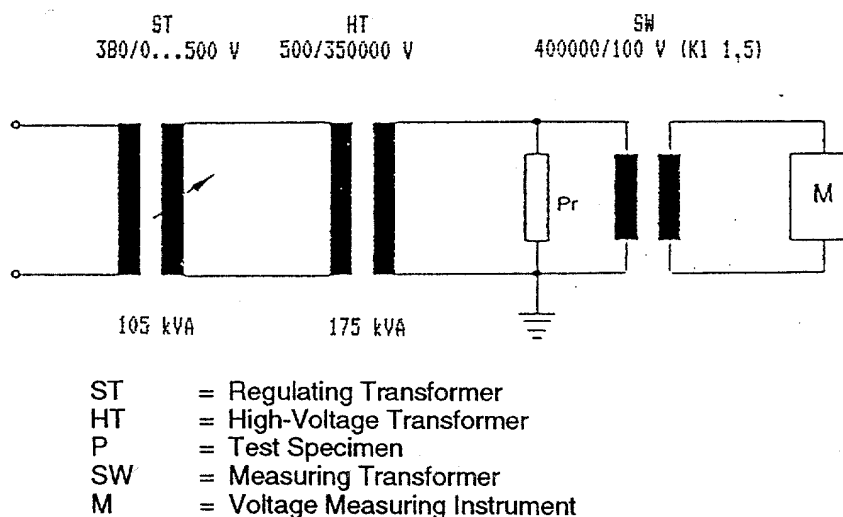
An effectively sinusoidal a.c. voltage of  $50 \text{ kV}_{\text{rms}}$ , 50 Hz was applied between the conductor and the grounded screen for 1 min.

The voltage was continuously increased within 10 seconds to the specified value and was then held constant during the required duration of the test.

relative humidity of air	atmospheric pressure	temperature
48%	1026 mbar	23°C

### Result

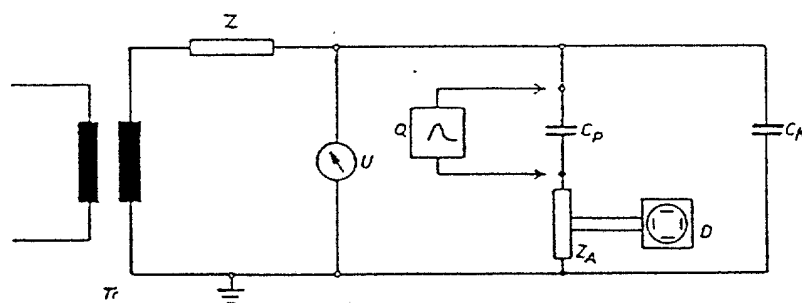
No breakdown occurred on any of the test loops.



**Fig. 2** Connection Diagram for A.C. Voltage Test

## 2. Partial Discharge Test according to Section 3.6

- a) Test connection, coupling quadripole series connected with test loops (see Fig. 3).



**Fig. 3** Connection Diagram for Partial Discharge Test

$T_r$	: High-Voltage Source
$U$	: High-Voltage Measuring System
$Z$	: Impedance
$Z_A$	: Coupling Quadripole
$C_P$	: Test Specimen
$C_K$	: Coupling Capacitor
$D$	: Detector
$Q$	: Calibrating Unit

**b) Performance of Test**

The lugs were made corona-free by using ring electrodes, and an a.c. test voltage of 28.8 kV was applied for 1 min.

Then the voltage was decreased to the a.c. test voltage  $U_{PD} = 24$  kV, and within 1 minute the maximum value of the partial discharge magnitude was measured.

relative humidity of air	atmospheric pressure	temperature
46 %	1026 mbar	24°C

**Result of Partial Discharge Test**

Test Loop No.	Partial Discharge (pC)
1	< 5
2	< 5
3	< 5
4	< 5

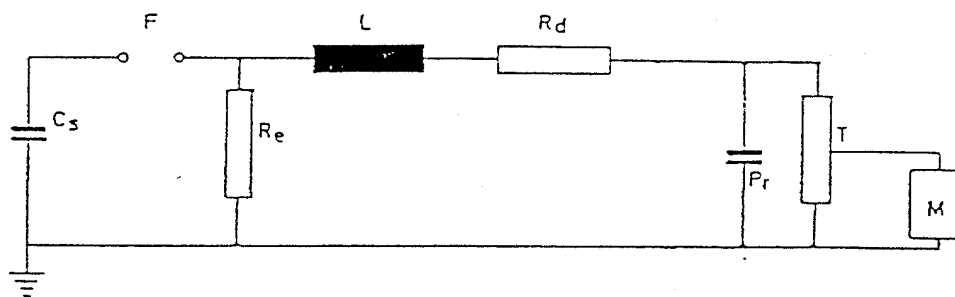
Admissible Partial Discharge Magnitude: 20 pC

### 3. Nominal Impulse Voltage Withstand Test according to Section 3.3

The test was performed with an impulse voltage of which the rise time was approx.  $1.2 \mu\text{s}$  and the half-value decay time was approx.  $50 \mu\text{s}$ .

The test loops were exposed to 10 impulses each of an impulse voltage of 125 kV of positive and negative polarity between the conductor and the grounded screen.

Subsequently the equivalent connection diagram of the impulse voltage circuit is shown (see Fig. 4).



**Fig. 4** Test with Impulse Voltage  
Schematic Equivalent Diagram of the Impulse Circuit

- $C_s$  = Impulse Capacity
- $F$  = Spark Gap Discharger
- $R_e$  = Discharge Resistor
- $L$  = Impulse Circuit Inductive Resistor
- $R_d$  = Damping Resistor
- $P_r$  = Test Specimen
- $T$  = Impulse Voltage Divider
- $M$  = Impulse Voltage Measuring Instrument



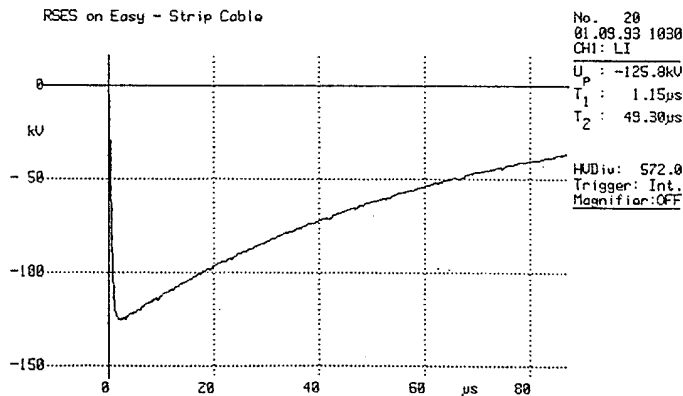
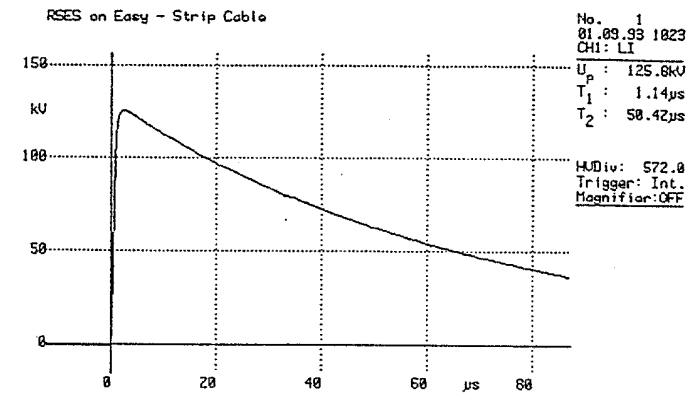
relative humidity of air	atmospheric pressure	temperature
46 %	1026 mbar	24°C

Result

No breakdown occurred on any of the test loops.

The following impulse oscillograms of the Test Loop No. 1 do not show any discrepancy from the calibration oscillogram.

The oscillograms of the Test Loops No. 2 to 4 were identical to that of Test Loop No. 1.



**4. Continuous A.C. Voltage Test with Cyclic Current Load according to Section 3.5**

The test loops, suspended free in the air, according to DIN VDE 0278 Part 1/2.91 Section 3.5a) were subjected to 2 load cycles with a continuously applied a.c. test voltage of 30 kV. Each load cycle consisted of a 5 hours' load period and a 3 hours' cooling-down period.

The current was calculated with the conversion factor 1.33 (according to DIN VDE 0278 Part 1/2.91 Table 1 Page 3 and DIN VDE 0298 Part 2 Draft 7.90 Table 12 Column 8), it amounted to 307 A at a conductor temperature of 95°C.

Ambient temperature during the load cycles: approx. 20°C.

**Result**

No breakdown occurred on any of the test loops.

**5. Test of Detachability according to Section 3.17**

The plugs were pulled out 5 times and plugged in again.

**6. Continuous A.C. Voltage Test with Cyclic Current Load according to Section 3.5**

Same as Test No. 4, but one load cycle only.

**Result**

No breakdown occurred on any of the test loops.

**7. Partial Discharge Test according to Section 3.6**

After the 3<sup>rd</sup> load cycle the Partial Discharge Test as per Test No. 2 was repeated.

relative humidity of air	atmospheric pressure	temperature
60 %	1023 mbar	22°C

**Result of Partial Discharge Test**

Test Loop No.	Partial Discharge (pC)
1	< 5
2	< 5
3	< 5
4	< 5

**8. Continuous A.C. Voltage Test with Cyclic Current Load according to Section 3.5**

Same as Test No. 4, but 60 load cycles

**Result**

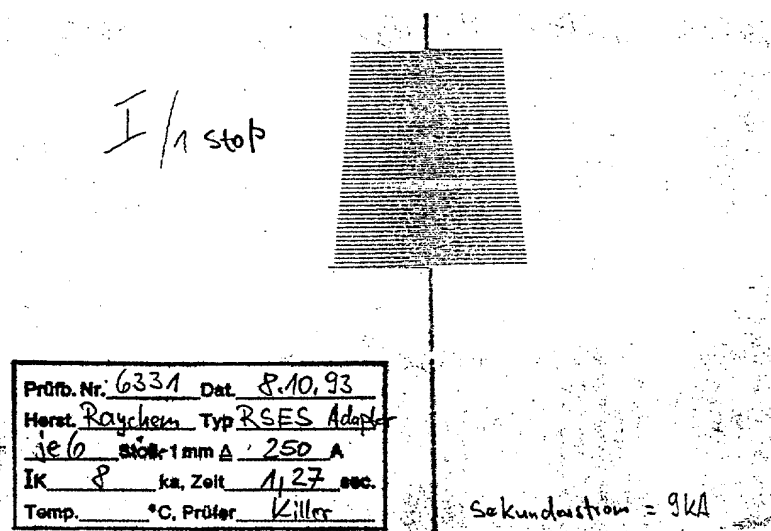
No breakdown occurred on any of the test loops.

## 9. Thermal Short Circuit Test according to Section 3.7

The thermally equivalent short circuit current during one second according to DIN VDE 0278 Part 1/2.91 Table 2 is: 8.3 kA.

This short circuit load application was repeated five times, each time after the conductor had cooled down to ambient temperature.

(Ambient temperature 20°C).



### Result

The oscillograms of the test loops No. 2 to 4 were identical to that of test loop No. 1.

A visual check did not show any deterioration on the test loops.

## 10. Test of Detachability according to Section 3.17

Same as Test No. 5.

**11. Continuous A.C. Voltage Test with Cyclic Current Load according to Section 3.5**

Same as Test No. 3, but 54 load cycles.

**Result**

No breakdown occurred on any of the test loops.

**12. Partial Discharge Test according to Section 3.6**

After the 117th load cycle the Partial Discharge Test as per Test No. 2 was repeated.

**Result of Partial Discharge Test:**

relative humidity of air	atmospheric pressure	temperature
38 %	1014 mbar	24°C

Test Loop No.	Partial Discharge (pC)
1	< 5
2	< 5
3	< 5
4	< 5

Admissible Partial Discharge Magnitude: 20 pC

**13. Tightness Test according to Section 3.11.2 with Cyclic Current Load according to Section 3.4**

The test loops were arranged in a water-filled tank in such a way that the cable plug was submerged in the water.

Arranged in this way they were exposed to 9 load cycles according to Section 3.4.

**14. Continuous AC Voltage Test with Cyclic Current Load according to Section 3.5.**

Same as test No. 3, but 54 load cycles.

**Result**

No breakdown occurred on any of the test loops.

**15. Nominal Impulse Voltage Withstand Test according to Section 3.3**

Same as Test No. 3.

relative humidity of air	atmospheric pressure	temperature
30 %	1009 mbar	23°C

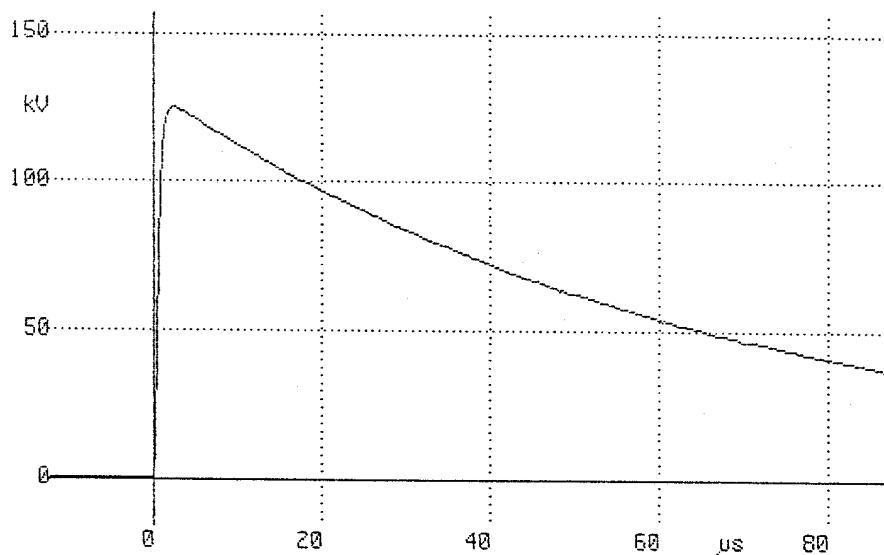
**Result**

No breakdown occurred on any of the test loops.

The following impulse oscillograms of the Test Loop No. 1 do not show any discrepancy from the calibration oscillogram.

The oscillograms of the Test Loops No. 2 to 4 were identical to that of Test Loop No. 1.

RSES on Easy - Strip Cable

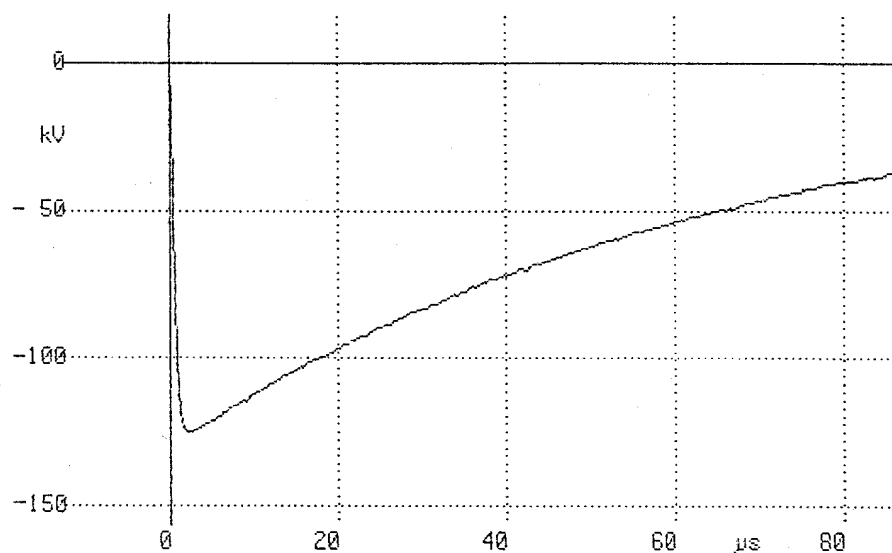


No. 1  
14.12.93 1138  
CH1: LI

$U_p$  : 125.2kV  
 $T_1$  : 1.17 $\mu s$   
 $T_2$  : 49.99 $\mu s$

HUDiv: 572.0  
Trigger: Int.  
Magnifier: OFF

RSES on Easy - Strip Cable



No. 20  
14.12.93 1146  
CH1: LI

$U_p$  : -125.2kV  
 $T_1$  : 1.13 $\mu s$   
 $T_2$  : 48.67 $\mu s$

HUDiv: 572.0  
Trigger: Int.  
Magnifier: OFF

**16. D.C. Voltage Test according to Section 3.2**

The test loops were subjected to a d.c. voltage of 96 kV for 30 minutes.  
The a.c. voltage content of the d.c. voltage amounted to approx. 3%.

**Result**

No breakdown occurred on any of the test loops.

**17. Leakage Current Measurement according to Sections 2.2 and 3.14**

An aluminium foil was attached to the cable plug, and the leakage current was measured via a resistor of 2000  $\Omega$  at an a.c. voltage of 20 kV.

**Result**

The leakage current measured was  $< 0.5$  mA.



**18. D.C. Voltage Test of an insulating loop according to DIN VDE 0278 Part 1  
Section 3.16**

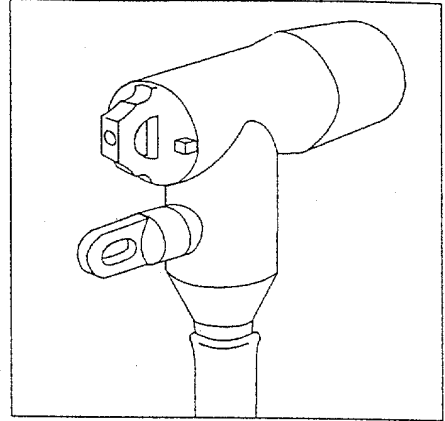
Between cable core/metal plate and screen a d.c. voltage of 5 kV was applied for 5 min.

**Result**

No breakdown nor flash-over occurred on any of the test loops.

**FINDINGS**

The Screened Elbow Cable Plugs Type RSES 5225 250 A have passed the Test according to DIN VDE 0278 Part 1 and Part 6/2.91.



**EPP 0476 INT 3/93**  
**Installation Instruction**

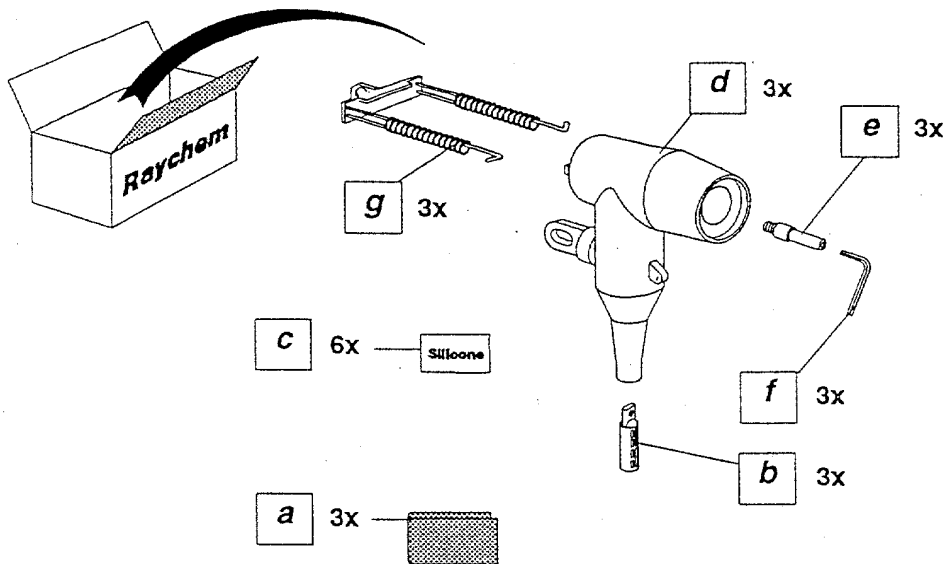
**Screened Elbows 250A  
for Single Core Polymeric  
Insulated Cable 12 to 24 kV  
Type RSES**

**Geschirmte Winkelstecker 250 A  
für geschirmte Kunststoff-  
einleiterkabel 10 und 20 kV  
ohne Bewehrung  
Typ RSES**

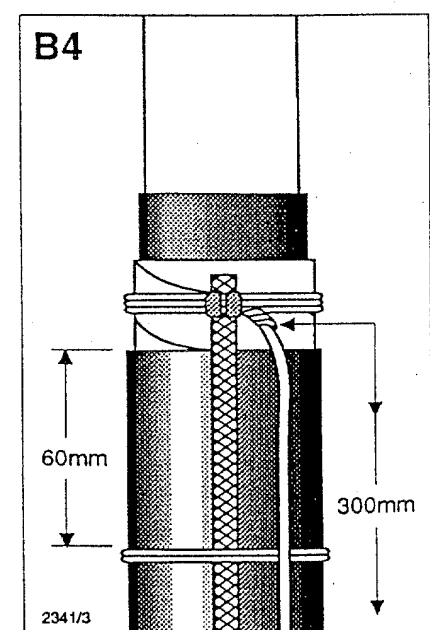
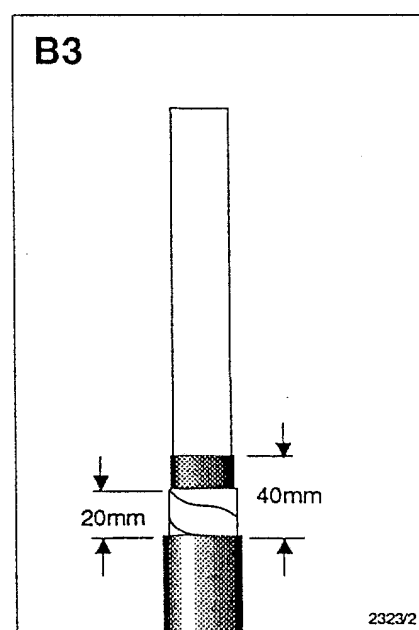
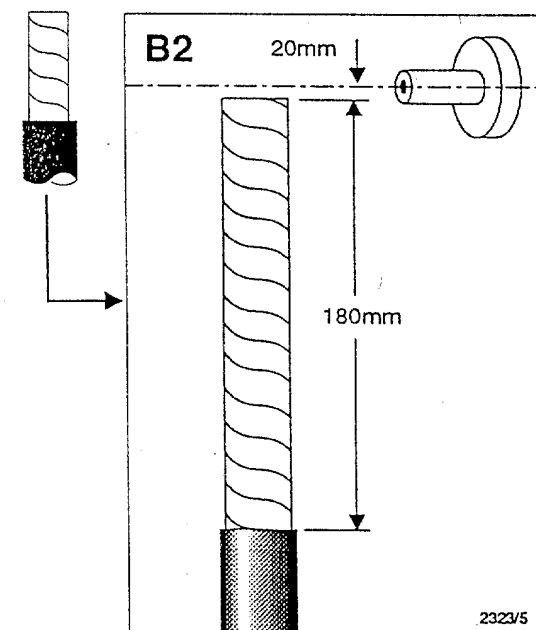
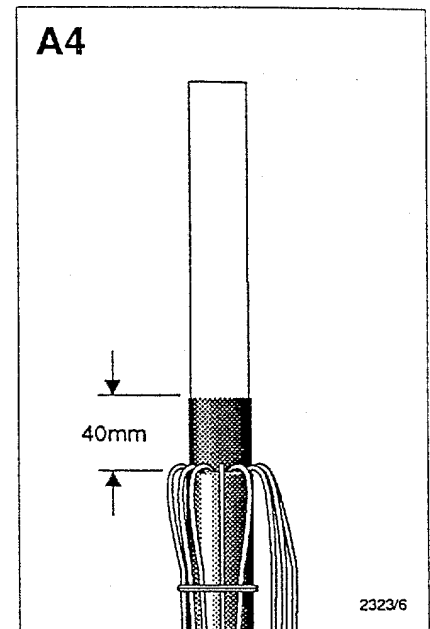
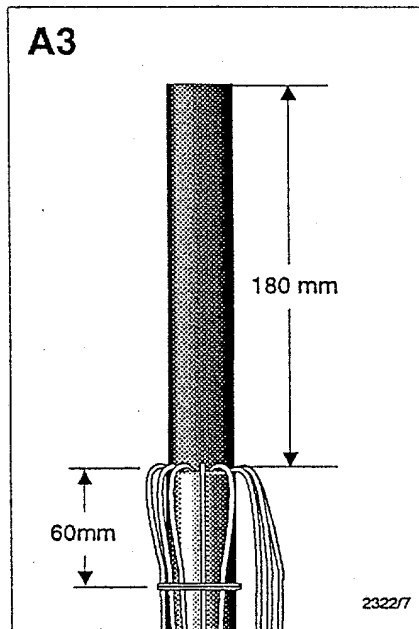
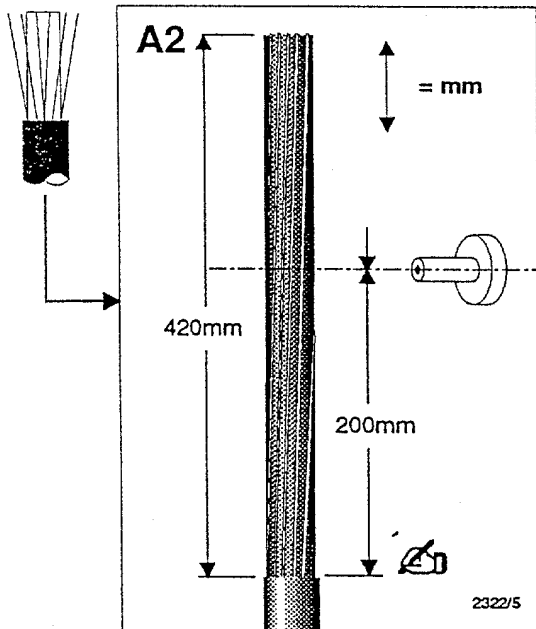
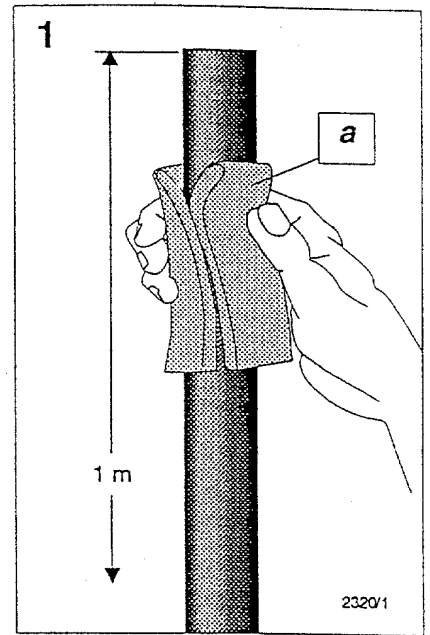
**Prise de courant équerre 250 A  
pour câble sec, unipolaire  
de 12 à 24 kV  
Typ RSES**

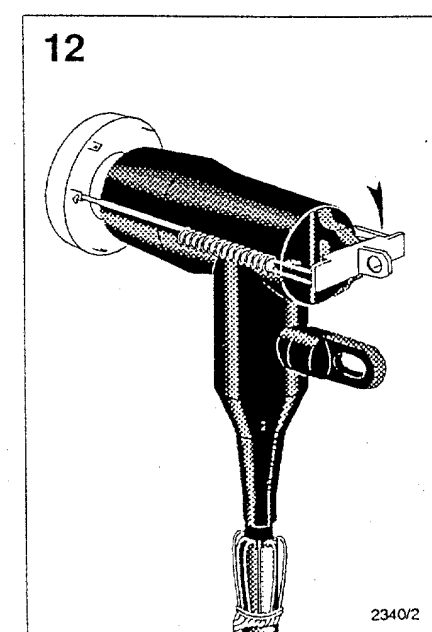
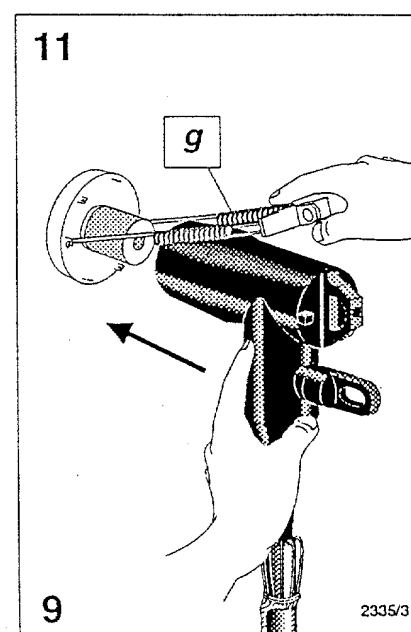
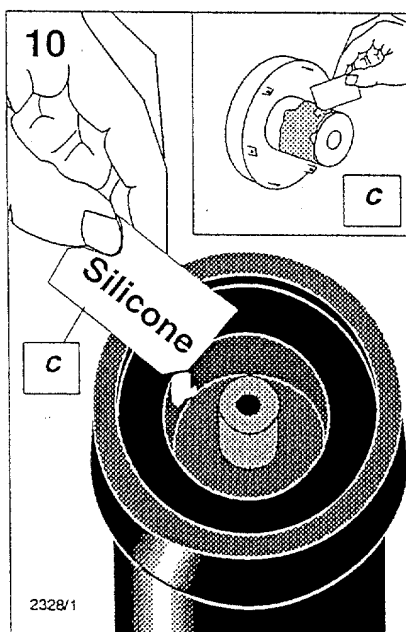
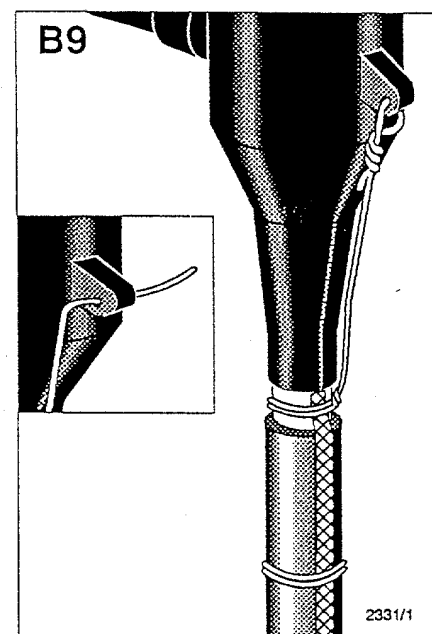
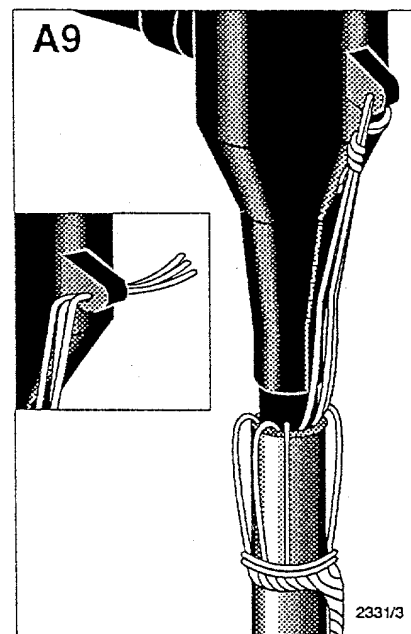
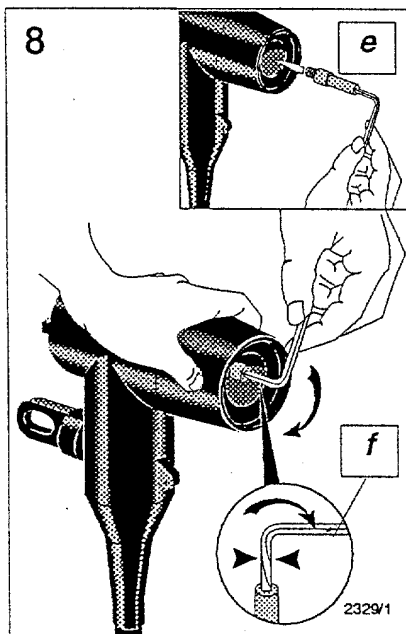
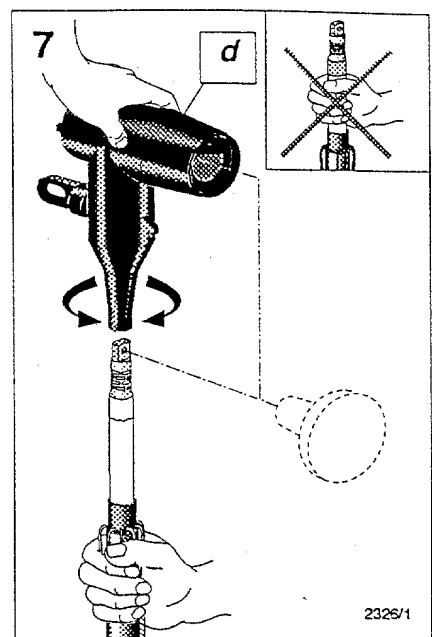
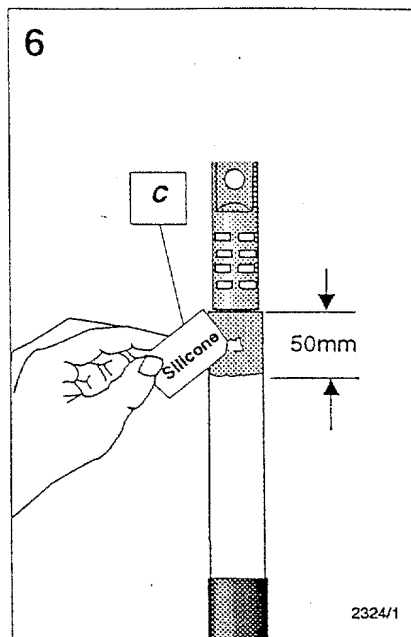
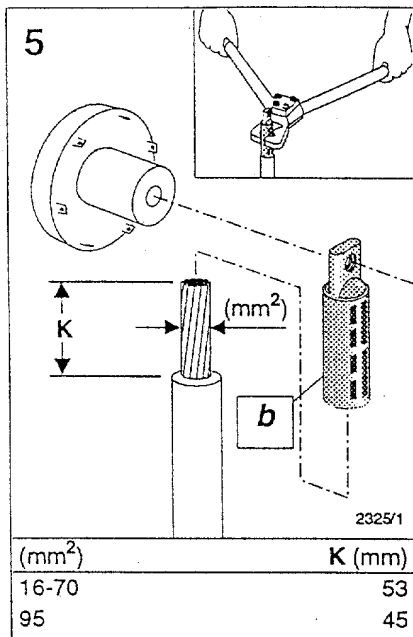
**Afgeschermdde hoekstekker 250 A  
voor monopolaire kunststofkabel  
van 12 tot 24 kV  
Typ RSES**

**Skærmede vinkeladaptorer 250 A  
med integreret feltstyring for  
1- leder PEX- kabel, 12 -24 kV  
Type: RSES**



2318/4





## Installation Instruction

### 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.

### 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 Instructions. It is possible that components or work steps have been improved since you last installed this product. Carefully read and follow the steps in the Installation Instruction.

### Installation

- 1 Clean and degrease the ends of the oversheath over a length of 1 meter with solvent (a)
- A2 **Cable with Wire Shield:** Position the cable. Mark the oversheath 200 mm below the bushing centre. Cut the cable 420 mm above the mark and remove the oversheath over this distance.
- A3 Bend the shielding wires back onto the oversheath. With the exception of 3 strands, fix the shielding wires in place 60 mm below the oversheath cut.  
Cut the cable 180 mm above the oversheath cut.
- A4 Remove the core screen to within 40 mm of the oversheath cut. The surface of the insulation should be free from all traces of conductive material.  
**Note:** Do not nick the insulation. Smooth out any irregularities.
- B2 **Cable with Tape Shield**  
Cut the cable to the required length for connection. Remove the oversheath for a distance of 180 mm.
- B3 Remove the metal tape shield to within 20 mm of the oversheath cut. Remove the core screen to within 40 mm of the oversheath cut. The surface of the insulation should be free from all traces of conductive material.  
**Note:** Do not nick the insulation. Smooth out any irregularities.
- B4 Fix the earth lead to the metal tape shield. Leave enough length on the wire binder end (approx. 300 mm) for later connection.  
Fix the earth lead to the oversheath 60 mm below the oversheath cut.
- 5 Cut back the insulation according to dimension K. Position the cable lug (b) over the conductor so that the holes in the cable lug and the bushing are lined up with each other. Install the cable lug. Clean and degrease the core insulation and the lug.
- 6 Apply silicone grease (c) generously to the end of the insulation for a distance of approximately 50 mm.
- 7 Push the elbow (d) onto the termination. The front end of the elbow should face the bushing. Line up the thread in the lug with the hole inside the adaptor.
- 8 Insert the connection pin (e) into the elbow and fasten it with the allen key (f).  
Apply enough torque until the allen key is deformed.
- A9 **Cable with wire shield:** Pick up 3 strands of the shield wires. Feed them through the feed hole on the elbow and twist them together. Gather the shield wires together to form an earth lead.
- B9 **Cable with tape shield:** Pick up the end of the wire binder and feed it through the hole of the elbow and twist the wires together.
- 10 Apply silicone grease (c) to the bushing and the inside surface of the mating adapter.
- 11 Hook the wires of the clamping device (g) into the bushing. Push the elbow onto the bushing.
- 12 Pull the clamp over the elbow and release it over the centre of the elbow. Installation completed.

Please dispose of all waste according to environmental regulations.



## Montageanleitung

### Sicherheitshinweis

Auf die Einhaltung der allgemeinen Sicherheitsregeln bei Arbeiten in isolierstoffgekapselten Hochspannungsschaltanlagen ist zu achten. Die jeweils gültigen Sicherheitshinweise erhalten Sie von Ihrem regionalen Energieversorgungsunternehmen.

### Vor Montagebeginn

Überprüfung auf richtige Zuordnung: Kabeltyp und Kabelgarnitur. Anwendungsbeschreibung auf Garniturenetikett sowie Montageanleitung helfen bei der richtigen Zuordnung. Wichtige Montageschritte oder Bauteile können sich geändert haben. Anleitung daher **v o r h e r** durchlesen und Montageschritte wie in dieser Anleitung angegeben befolgen.

### Montage

- 1 Kabelmantel auf einer Länge von 1000 mm reinigen und mit einem fettfreien Lösungsmittel (a) entfetten.
- A2 **Kabel mit Drahtabschirmung:** Kabel ausrichten und mit 220 mm Überstand zur Durchführungsmittle anpassen und zuschneiden. Kabelmantel auf einer Länge von 420 mm entfernen.
- A3 Schimdrähte (ausgenommen 3 Stück) parallel zum Kabelmantel umklappen und mit einem Drahtbund provisorisch auf dem Kabelmantel festlegen.
- A4 Feldbegrenzung bis auf 40 mm entsprechend der Zeichnung sorgfältig entfernen, sodaß die Oberfläche der freigelegten Aderisolierung frei von jeglichen leitfähigen Teilen ist.  
**Achtung:** Aderisolierung nicht einschneiden, evtl. Unebenheiten der Oberfläche sorgfältig glätten.
- B2 **Kabel mit Bandabschirmung:** Kabel ausrichten, gem. Zeichnung anpassen und ablängen. Kabelmantel auf einer Länge von 180 mm entfernen.
- B3 Bandschirm bis 20 mm vor der Kabelmantelabsetzkante entfernen. Feldbegrenzung bis 40 mm vor der Kabelmantelabsetzkante sorgfältig entfernen, sodaß die Oberfläche der freigelegten Aderisolierung frei von jeglichen leitfähigen Teilen ist.  
**Achtung:** Aderisolierung nicht einschneiden, evtl. Unebenheiten der Oberfläche sorgfältig glätten.
- B4 Erdungslitze auf Bandschirm mit Drahtbund festlegen und verlöten. Ein Ende des Drahtbundes mit mind. 300 mm Länge stehen lassen. Erdungslitze mit einem Drahtbund 60 mm vom Kabelmantelende festlegen.
- 5 Aderisolierung gem. Maß K (siehe Tabelle) entfernen. Kabelschuh (b) so montieren, daß das Auge in der Anschlußfahne und der Mittelpunkt der Durchführung aufeinander ausgerichtet sind. Kabelschuh sowie Aderisolierung reinigen und entfetten.
- 6 Oberes Ende der Aderisolierung auf einer Länge von 50 mm gleichmäßig mit Silikonfett (c) einfetten.
- 7 Winkelstecker (d) auf das Kabel schieben, wobei das Steckteil in Richtung Geräteanschlußteil zeigt. Innere Öffnung des Winkelsteckers sowie das Auge des Kabelschuhs aufeinander ausrichten.
- 8 Kontaktstift (e) in Kabelschuhaue eindrehen und mit Imbusschlüssel (f) fest anziehen, bis sich dieser verformt.
- A9 **Drahtabschirmung:**  
Drei Schimdrähte anheben und durch Erdungsauge schieben, nach unten umbiegen und verdrehen.
- B9 **Bandabschirmung:**  
Langes Ende des oberen Drahtbundes durch das Erdungsauge führen, umbiegen und verdrehen.
- 10 Außenfläche der Durchführung sowie die dazu passende Innenfläche des Winkelsteckers gleichmäßig mit Silikonfett (c) einfetten.
- 11 Haken des Haltebügels (g) an der Durchführung einhängen. Winkelstecker auf Durchführung schieben.
- 12 Haltebügel anziehen und mittig über dem Zugauge einrasten lassen. Fertig installiertes Winkelsteckersystem.

Verpackungsmaterial sowie andere Abfälle entsprechend den einschlägigen Vorschriften entsorgen.



## Montagevejledning

### Sikkerhedsadvarsel

Det er vigtigt at overholde sikkerhedsreglerne i forbindelse med arbejdet med højspændingsmateriel.

### Før påbegyndelse

Kontroller at kittet du skal anvende passer til kablet.

Check etiketten på sættet og montagevejledningens titel.

Det er muligt, at komponenter eller vejledning er forbedret siden sidste montage så derfor: Læs vejledningen omhyggeligt og følg den trin for trin. Er du i tvivl, kontakt Raychem.

- 1 Rens og affedt kabelkappeenden, ca. 1 m.
- A2 Trådskærmede Kabler**  
Anbring kablet i anlægget som vist. Fjern kabelkappen på længden 420 mm.
- A3** Bøj skærstrådene tilbage over yderkappen. Fastgør disse med en kobbertrådsbevikling 60 mm fra kabelkappekanten. Klip kablet på 180 mm fra kappekanten.
- A4** Fjern det sorte, halvledende skærmlag til 40 mm fra kabelkappekanten med det af kabelfabrikanten anbefalede værktøj. Der bør tilstræbes en skarp og lige kant. Undgå at bruge kniv, der let kan beskadige Pex-isolationen. Rens isolationen.
- B2 Metalfolieskærmede kabler**  
Anbring kablet i anlægget og klip det til den nødvendige længde. Fjern kabelkappen på længden 180 mm.
- B3** Fjern metalfolien indtil 20 mm fra kabelkappekanten. Fjern det sorte, halvledende skærmlag til 40 mm fra kabelkappekanten med det af kabelfabrikanten anbefalede værktøj.
- B4** Jordlidsen fastgøres til metalfolien. For senere tilslutning efterlades tilstrækkelig længde (ca. 300 mm) af kobberlidsen. Fastgør jordlidsen til kabelkappen 60 mm under kabelkappekanten. I stedet for lodning kan jordlidsen fastgøres med nulrefjedre EPPA 034 (bestilles separat).
- 5 Isolationen afskæres med snor til K-mål. Anbring kabelsko over lederen, således at hullet i kabelsko/gennemføring er på linie. Monter kabelsko - evt. pressegrater fjernes. Rens og affedt isolation og kabelsko.
- 6 Påfør Pex-isolationen et tykt lag silikone, på ca. 50 mm fra kanten.
- 7 Skub vinkeladaptoren ned over afslutningen. Drej adaptoren således at den lange side vender mod gennemføringen. Kabelskoens hul skal vende mod hullet i adaptoren.
- 8 Monter bolten i adaptoren og fastgør den med vedlagte unbraconøgle (sekskanthøgle). Skru bolten helt i bund, - drejningsmomentet skal være så kraftigt, at unbraconøglen deformeres som vist i det lille runde billede.
- A9 Trådskærmede kabler**  
Tre skærstråde føres gennem hullet i adaptoren, snoes (som vist) og disse føres tilbage til de resterende tråde (dette er ikke vist på billedet). Skærstrådene snoes sammen og forbindes forskriftsmæssigt til jord.
- B9 Metalfolieskærmede kabler**  
Enden af kobbertrådsbeviklingen føres gennem hullet i adaptoren og snoes (se illustration).
- 10 Påfør silikone (c) på gennemføringen og på indersiden af adaptoren.
- 11 Bøjleme hægtes fast i gennemføringen. Skub adaptoren over gennemføringen.
- 12 Træk spændbøjlen (g) over adaptoren og placer den midt på profilen bag på adaptoren. Tilslutningen er færdig.

Vi hos Raychem arbejder hele tiden på at forbedre os.

Kontakt Raychem hvis du har spørgsmål/ kommentarer i forbindelse med denne montagevejledning.

Raychem er et registreret varemærke.

Fjern alt spildemateriale. Følg miljømæssige forordninger.



## Instruction de montage

### Conseils de sécurité

Il est indispensable d'observer les règles de sécurité pour les travaux sur du matériel moyenne tension. Pour des informations précises, veuillez consulter l'organisme chargé de la sécurité du personnel.

### Avant de commencer

S'assurer que le kit que vous allez installer est correct pour le câble. Référez-vous pour cela à l'étiquette sur le kit et au titre de l'instruction de montage. La possibilité existe que les composants ou la méthode de montage ont été modifiés depuis la dernière installation du produit que vous avez faite. Lire attentivement l'instruction de montage et la suivre pas par pas.

- 1** Nettoyer et dégraisser la gaine extérieure sur approx. 1 mètre.
- A2 Câbles avec écran en fils**  
Présenter le câble. Marquer le câble 200 mm en-dessous du centre de la traversée. Couper le câble 420 mm au-dessus de la marque et enlever la gaine extérieure sur cette distance.
- A3** Replier les fils de l'écran sur la gaine extérieure et les fixer à l'exception de 3 fils 60 mm en dessous de la fin de la gaine extérieure. Couper le câble 180 mm au-dessus de la fin de la gaine extérieure.
- A4** Enlever la couche semi-conductrice jusqu'à 40 mm de la fin de la gaine extérieure. La surface de l'isolation doit être exempte de toute trace de matériel conducteur. Faites attention à ne pas endommager l'isolation.
- B2 Câbles avec écran en clinquant**  
Couper les câbles sur la longueur de connexion requise. Enlever la gaine extérieure sur 180 mm.
- B3** Enlever l'écran en clinquant jusqu'à 20 mm de la fin de la gaine extérieure. Enlever la couche semi-conductrice jusqu'à 40 mm de la fin de la gaine extérieure. La surface de l'isolation doit être exempte de toute trace de matériel conducteur. Faites attention à ne pas endommager l'isolation.
- B4** Fixer un conducteur de terre sur l'écran en clinquant. Laisser une longueur d'un fil de cuivre d'approx. 300 mm de libre pour connexion postérieure. Fixer le conducteur de terre à 60 mm de la fin de la gaine extérieure.
- 5** Enlever l'isolation selon dimension K. Positionner la cosse de telle façon sur le conducteur que les trous de la cosse et de la traversée sont alignés. Serrer la cosse. Nettoyer et dégraisser l'isolation et la cosse.
- 6** Appliquer généreusement de la graisse silicone sur les demiers 50 mm de l'isolation.
- 7** Pousser la prise de telle façon sur le câble que les trous de la cosse et de la prise sont alignés.
- 8** Insérer la tige de connexion et la serrer avec la clé livrée dans le kit. Serrer la tige jusqu'à ce que la clé soit déformée.
- A9 Câbles avec écran en fils**  
Passer les 3 fils (non fixés) de l'écran par le petit trou de la prise et torsader les extrémités.
- B9 Câbles avec écran en clinquant**  
Passer le fil de cuivre par le petit trou de la prise et torsader l'extrémité.
- 10** Appliquer de la graisse silicone sur la traversée et dans la prise.
- 11** Positionner les crochets de l'unité de fixation sur la traversée.
- 12** Pousser la prise sur la traversée.  
Serrer la prise contre la traversée. Installation terminée.

## Installatie instructie

### Veiligheidsvoorschriften

Het is essentieel de gangbare veiligheidsvoorschriften inzake hoogspanningsmaterieel te respecteren. Gelieve de verantwoordelijke organismen te contacteren voor meer inlichtingen.

### Alvorens te starten

Verzeker U ervan dat de kit die U gaat installeren passend is voor de kabel. Refereer met het etiket op de kit en de titel van de installatie instructie. De mogelijkheid bestaat dat componenten of werkwijze verbeterd zijn sinds U dit product voor het laatst installeerde. Lees zorgvuldig de installatie instructie en volg ze stapsgewijs.

- 1** Reinig en ontvet het uiteinde van de buitenmantel over 1 meter.
- A2 Kabels met draadscherm**  
Presenteer de kabel. Markeer de buitenmantel 200 mm onder het centrum van de doorvoering. Snijd de kabel 420 mm boven de markering af en verwijder de buitenmantel over deze afstand.
- A3** Plooi de draden van het scherm terug over de buitenmantel en bevestig ze met uitzondering van 3 draden 60 mm onder het uiteinde van de buitenmantel. Snijd de kabel 180 mm boven het einde van de buitenmantel af.
- A4** Verwijder de half-geleidende laag tot op 40 mm van het uiteinde van de buitenmantel. Verzeker U ervan dat er geen geleidend materiaal meer achterblijft op de isolatie. Let ervoor op de isolatie niet te beschadigen.
- B2 Kabels met bandscherm**  
Snijd de kabels af op de gewenste aansluitlengte. Verwijder 180 mm van de buitenmantel.
- B3** Verwijder het bandscherm tot op 20 mm van het uiteinde van de buitenmantel. Verwijder de half-geleidende laag tot op 40 mm van het uiteinde van de buitenmantel. Verzeker U ervan dat er geen geleidend materiaal meer achterblijft op de isolatie. Let ervoor op de isolatie niet te beschadigen.
- B4** Bevestig een aardingsgeleider op het bandscherm. Laat ongeveer 300 mm koperdraad vrij voor latere aansluiting. Bevestig de aardingsgeleider op 60 mm van het uiteinde van de buitenmantel.
- 5** Verwijder de isolatie over afmeting K. Positioneer de kabelschoen over de geleider zodanig dat de gaten van de kabelschoen en de doorvoering in 1 lijn liggen. Pers de kabelschoen. Reinig en ontvet de isolatie en de kabelschoen.
- 6** Breng overvloedig siliconenvet aan over de laatste 50 mm van de kabelisolatie.
- 7** Duw de hoekstekker over de kabel en zorg ervoor dat de gaten van de hoekstekker en de kabelschoen samenvallen.
- 8** Schroef de contactpin vast op de kabelschoen en span ze op met de bijgeleverde zeskantsleutel tot hij vervormd is.
- A9 Kabels met draadscherm**  
Steek de 3 vrije draden van het draadscherm door het oog van de hoekstekker en torsadeer de uiteinden.
- B9 Kabels met bandscherm**  
Steek het uiteinde van de koperdraad door het oog van de hoekstekker en torsadeer het uiteinde.
- 10** Breng siliconenvet aan op de doorvoerisolator en aan de binnenzijde van de hoekstekker.
- 11** Bevestig het klemstuk met zijn haken op de doorvoerisolator.
- 12** Druk de hoekstekker over de doorvoerisolator.  
Span het klemstuk op. Afgewerkte installatie.

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