

General information

Installation and maintenance:

For European member countries of GENELEC, shall standard EN 60079-14 and EN 60079-17 be considered.

For countries members of IECEx shall standard IEC 60079-14 and IEC 60079-17 be considered.

For other countries shall applicable national regulation be considered.

The products fulfill the following standards:

EN 60079-0:2012, EN 60079-31:2009

IEC 60079-0:2011, IEC 60079-31:2008



Installation instructions
Roxtec R EMC Ex

Products



Thorne & Derrick
+44 (0) 191 410 4292
www.powerandcables.com

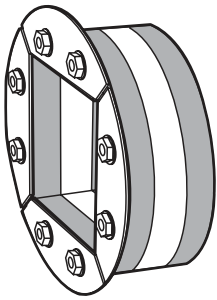


Fig. 1:
Roxtec R EMC Ex

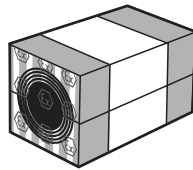


Fig. 2:
Roxtec RM ES Ex

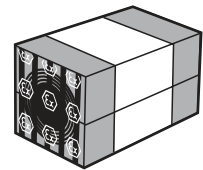


Fig. 3:
Roxtec RM PE Ex

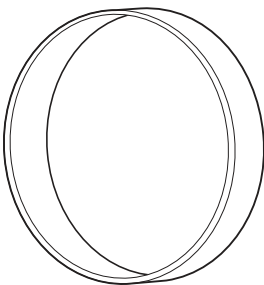


Fig. 4:
Roxtec SLR sleeve
for welding

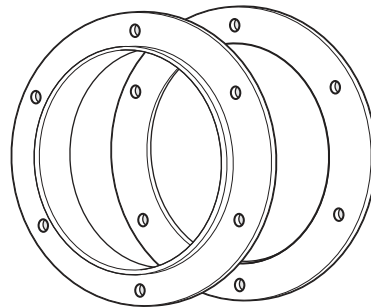


Fig. 5:
Roxtec SLFR sleeve and
gasket for bolting

Aperture dimensions

Sleeve for welding

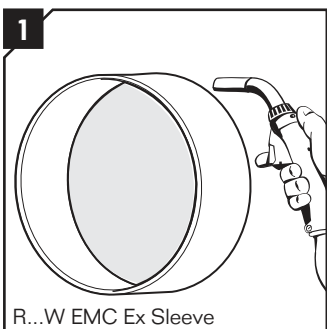
Sleeve size	Recommended aperture dimensions	
	Ø (mm)	Ø (in)
70	85	3.346
75	91	3.583
100	116	4.567
125	142	5.591
127	142	5.591
150	166	6.535
200	216	8.504

Aperture dimensions

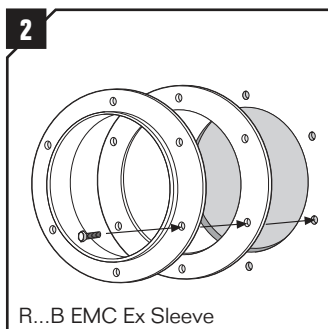
Sleeve for bolting

Sleeve size	Recommended aperture dimensions	
	Ø (mm)	Ø (in)
70	87	3.425
75	93	3.661
100	118	4.646
125	144	5.669
127	144	5.669
150	168	6.614
200	218	8.583

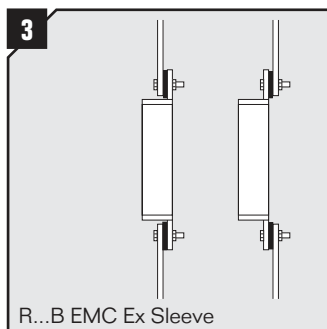
Installation of Roxtec EMC Ex frame



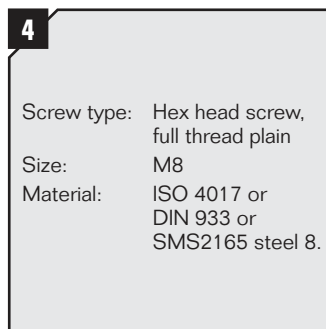
Weld the sleeve to the cabinet/wall (suggestion for welding instructions available).



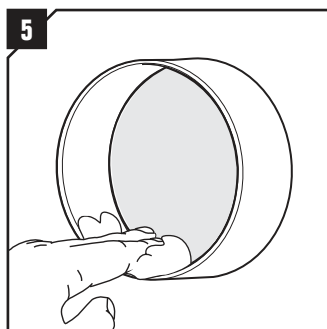
Sleeve for bolting. Use the sleeve as template for the drilling of the screw holes. Drill $\varnothing = 8.5$ mm.



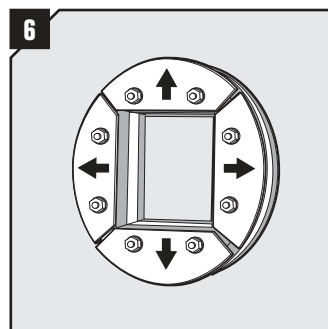
Attach the frame to the cabinet/wall using bolts and nuts. The rubber gasket shall be placed between frame and cabinet/wall.



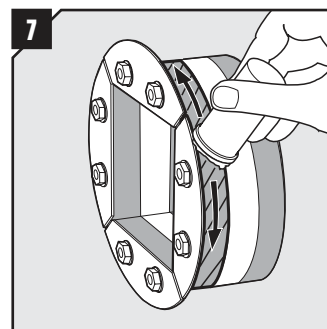
Minimum quality.



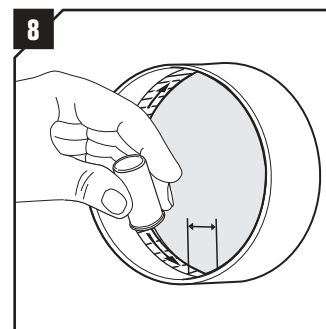
Clean the sleeve to ensure good electric conductivity.



Push the front fittings to the sides.

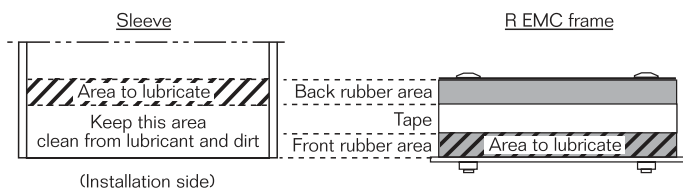


Lubricate sparsely the front rubber area of the seal. (See fig. 6).

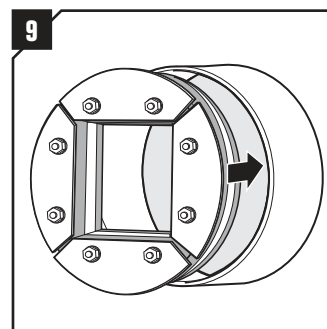


Lubricate sparsely inside the sleeve the area that corresponds to the back rubber area. (See fig. 6)

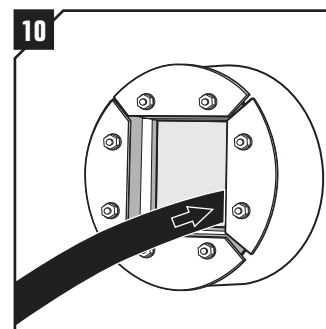
Fig. 6



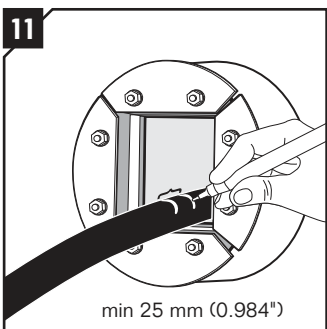
Avoid getting lubricant on the tape by lubricating the sleeve and R EMC frame according to fig. 6.



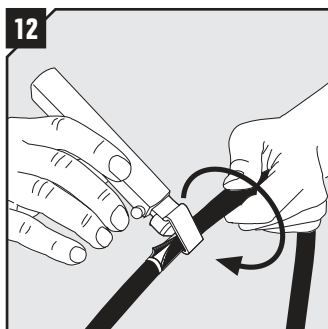
Remove the protection tape and insert the frame into the opening.



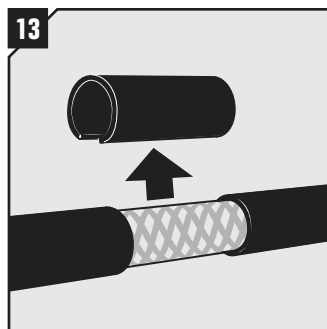
Insert the cables into the frame. Keep the tape clean from dirt or lubricant.



Mark where the outer jacket is to be removed to fit the tape position. (See fig. 7 and fig. 8).

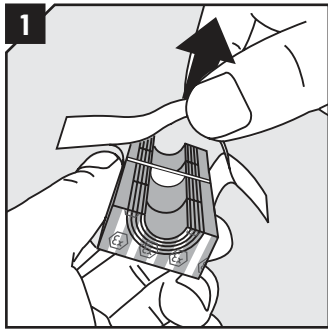


Cut the outer jacket with a tool of your choice. Make sure not to damage the cable screen.

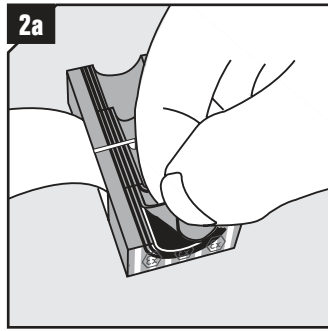


Remove the outer jacket. Make sure cable screen is clean.

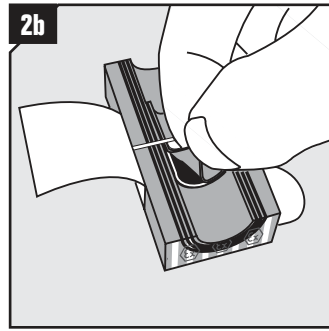
Installation Rextec RM ES Ex modules



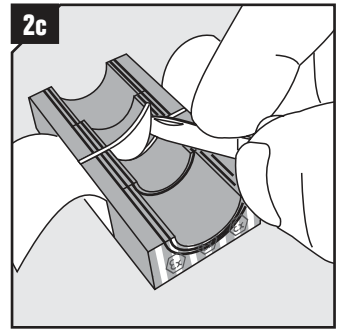
Remove the protection paper from the modules and fold back the tape.



Adapt outer layers to cable, (fig 7:A).



Adapt inner layers to cable screen, (fig 7:B).



Adapt vertical screen to cable screen, (fig 7:C).

Fig. 7

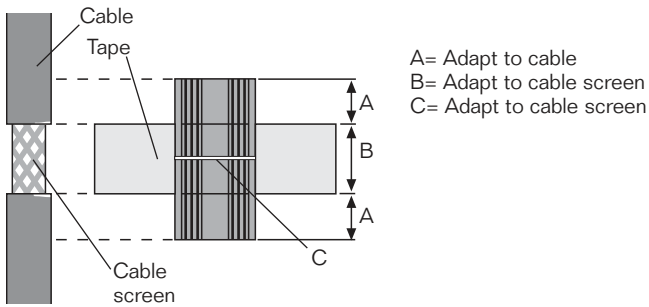
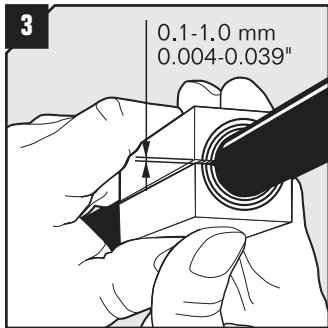
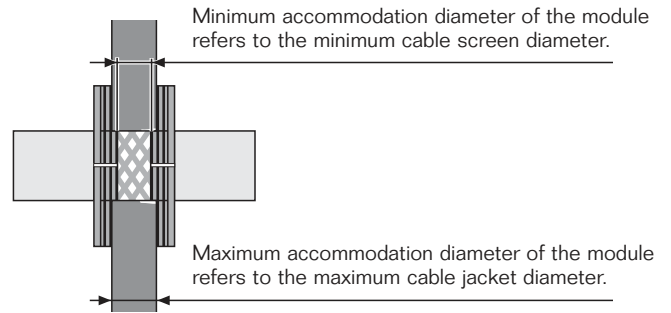
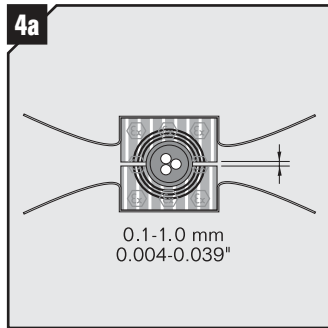


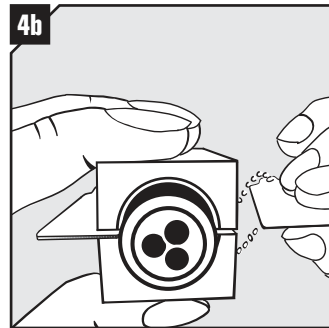
Fig. 8



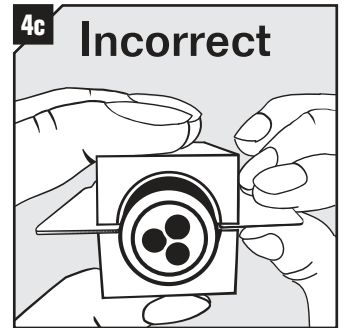
Test with a cable. Achieve a gap of 0.1-1.0 mm between the module halves. If not, repeat 2a-c. The halves may not differ by more than one layer. Make sure the screen is in good contact with the module.



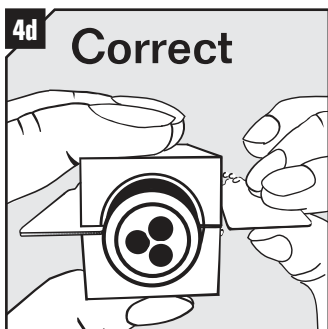
When checking without the gauges there shall be a gap of 0.1-1.0 mm (0.004"-0.039"). If not, repeat 2a-c. The halves may not differ by more than one layer. Make sure the screen is in good contact with the module.



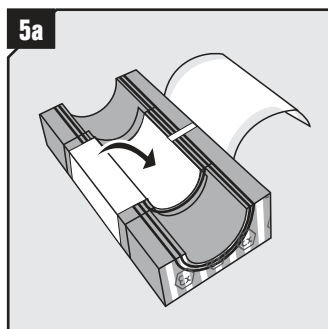
Measure the gap with the Ex Gap Gauge by holding blade one in one gap and checking the other with blade two.



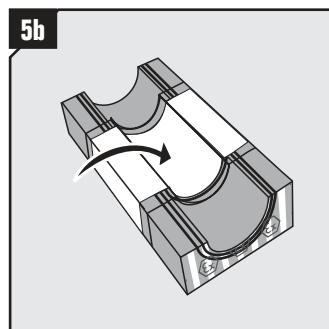
If the gap is too big, the gauge will slip in easily.



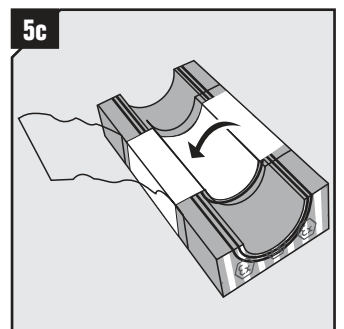
If the gap is correct, there will be no room for blade two.



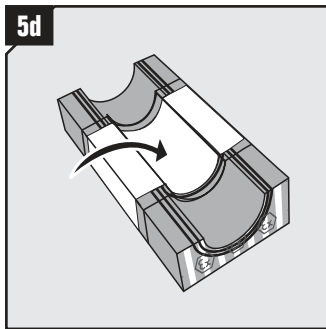
Fold the adhesive tape tightly inside the module half from one side along the inner layers.



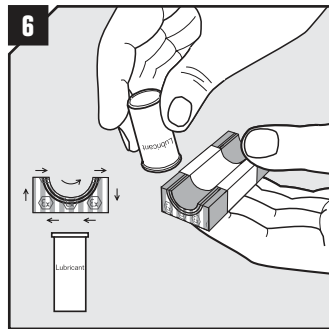
Lift the plastic film from the folded side.



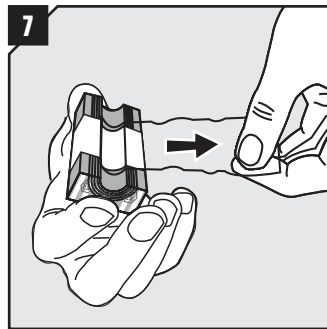
Fold the tape on the other side tightly inside the module half. Make sure there are no air-pockets.



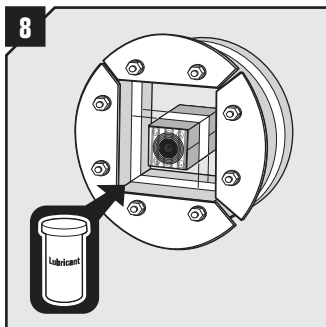
Fold the plastic film back inside the module half.



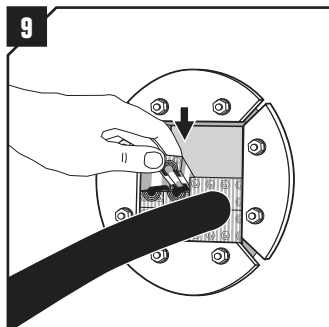
Lubricate all modules sparsely with Roxtec Lubricant, on inside and outside rubber surfaces only. Do not lubricate the plastic film.



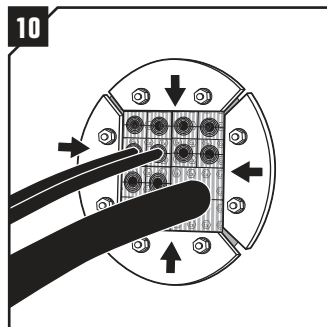
Remove the plastic film! Keep the tape clean. **Note:** Plastic and paper must be removed on spares and solid modules.



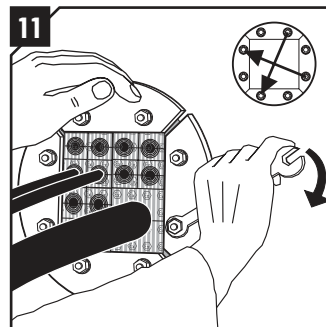
Lubricate the frame and the corners on the areas that will be in contact with the rubber of the modules. Do not lubricate the areas that will be in contact with the tape.



Insert the modules around the cables according to your installation plan (transit plan).



Push the front fittings back towards the center.



Tighten the nuts crosswise. The frame will compress until it is sealed. Please see recommended max torque in the table.

Type:	Rec. max torque* (Nm)
R 70 - R 127 Ex	7
R 150 - R 200 Ex	10

* The recommended max torque depends on several things, e.g. cable or pipe size, amount of lubricant used, sleeve size or material in the cable sheet, etc.

Adaptable Roxtec RM ES Ex modules

Module	Number of cables/pipes	For cable/pipe diameter a-b (mm)	
		a-b	a-b
with core			
RM 15 ES Ex	1	0+3.0-11.0	0+ 0.118-0.433
RM 15w40 ES Ex	3	0+3.5-10.5	0+ 0.138-0.413
RM 20 ES Ex	1	0+4.0-14.5	0+ 0.157-0.571
RM 20w40 ES Ex	2	0+3.5-16.5	0+ 0.138-0.650
RM 30 ES Ex	1	0+10.0-25.0	0+ 0.394-0.984
RM 40 ES Ex	1	0+21.5-34.5	0+ 0.846-1.358
RM 40 10-32 ES Ex	1	0+9.5-32.5	0+ 0.374-1.280
RM 60 ES Ex	1	0+28.0-54.0	0+ 1.102-2.126
RM 60 24-54 ES Ex	1	0+24.0-54.0	0+ 0.945-2.126
RM 80 ES Ex	1	0+48.0-71.0	0+1.890-2.795
RM 90 ES Ex	1	0+48.0-71.0	0+ 1.890-2.795
RM 120 ES Ex	1	0+67.5-99.0	0+ 2.657-3.898
without core			
RM 60 ES Ex woc	1	28.0-54.0	1.102-2.216
RM 80 ES Ex woc	1	48.0-71.0	1.890-2.795
RM 90 ES Ex woc	1	48.0-71.0	1.890-2.795
RM 120 ES Ex woc	1	67.5-99.0	2.657-3.898

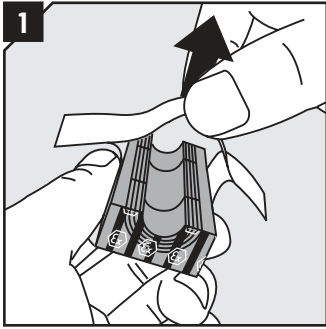
Solid compensation modules ES Ex

Module
RM 5/0x24 ES Ex
RM 10/0x12 ES Ex
RM 15/0 ES Ex
RM 20/0 ES Ex
RM 30/0 ES Ex
RM 40/0 ES Ex
RM 60/0 ES Ex

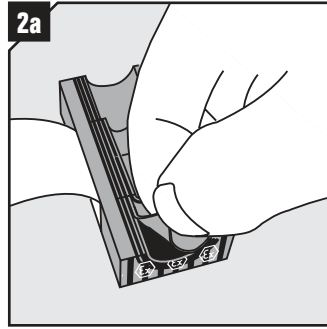
Disassembly

Reverse order.

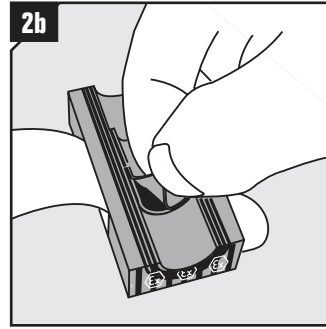
Installation Roxtec RM PE Ex modules



Remove the protection paper from the modules and fold back the tape.



Adapt layers to fit outer jacket. (Fig 9:A).



Adapt layers to fit cable screen. (Fig 9:B).

Fig. 9

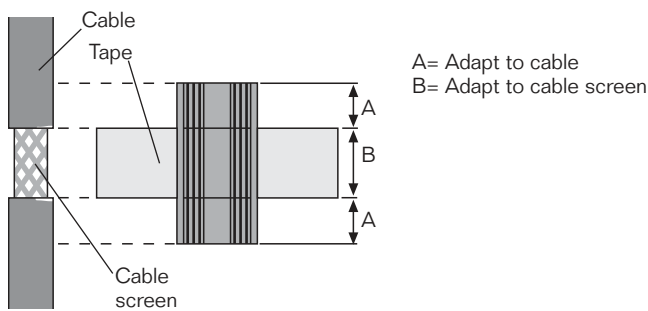
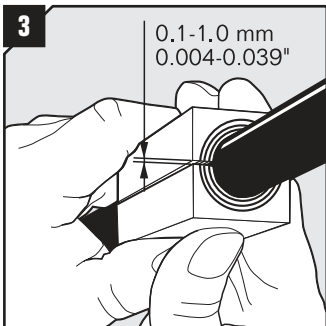
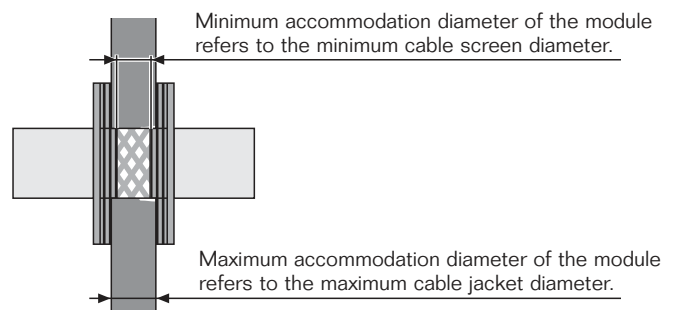
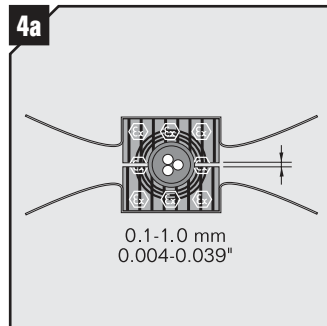


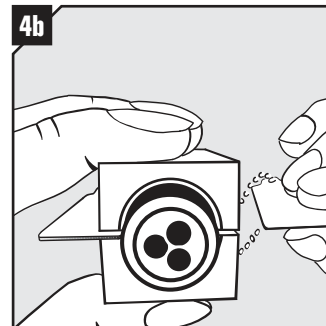
Fig. 10



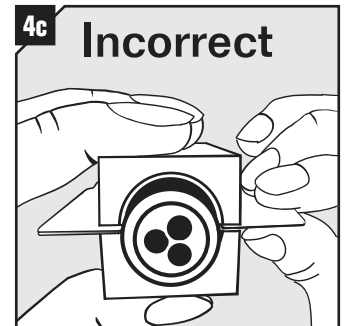
Test with a cable. Achieve a gap of 0.1-1.0 mm between the module halves. If not, repeat 2a-b. The halves may not differ by more than one layer. Make sure the screen is in good contact with the module.



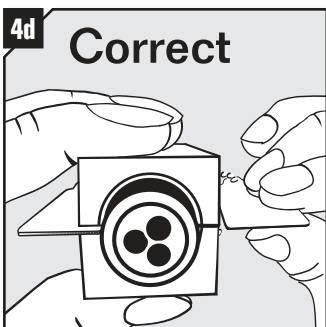
When checking without the gauges there shall be a gap of 0.1-1.0 mm (0.004"-0.039"). If not, repeat 2a-b. The halves may not differ by more than one layer. Make sure the screen is in good contact with the module.



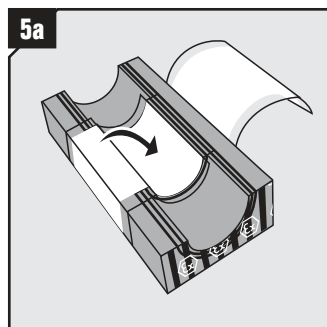
Measure the gap with the Ex Gap Gauge by holding blade one in one gap and checking the other with blade two.



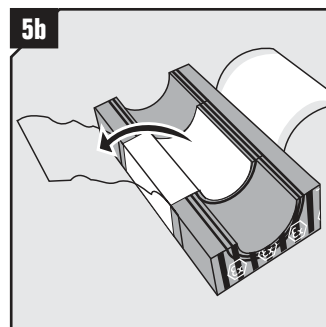
If the gap is too big, the gauge will slip in easily.



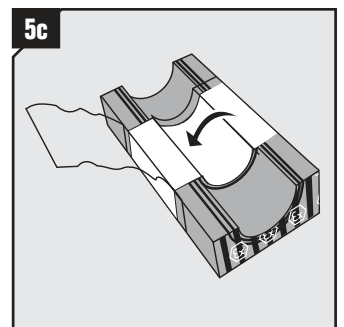
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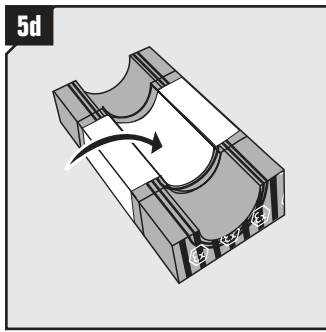
Fold the adhesive tape tightly inside the module half from one side along the inner layers.



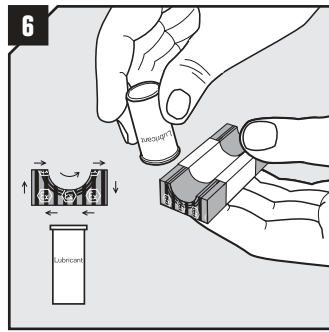
Lift the plastic film from the folded side.



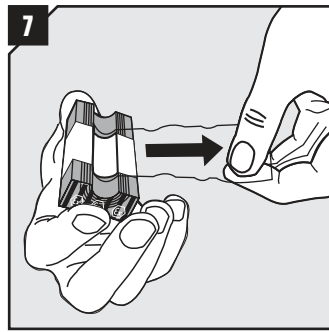
Fold the tape on the other side tightly inside the module half. Make sure there are no air-pockets.



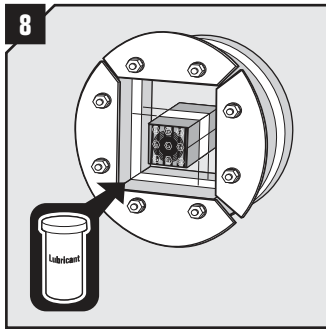
Fold the plastic film back inside the module half.



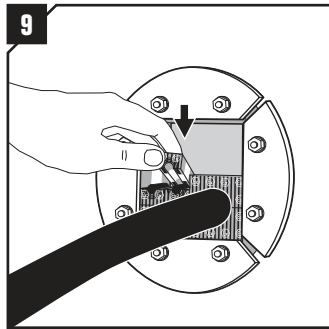
Lubricate all modules sparsely with Rextec Lubricant on inside and outside rubber surfaces only. Do not lubricate the film.



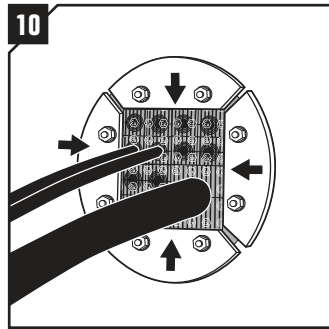
Remove plastic film! Keep the tape clean. **Note:** Plastic and paper must be removed on spares and solid modules.



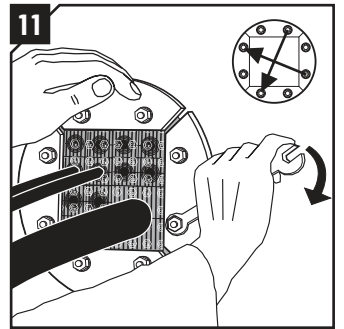
Lubricate the frame and the corners on the areas that will be in contact with the rubber of the modules. Do not lubricate the areas that will be in contact with the tape.



Insert the modules around the cables according to your installation plan (transit plan).



Push the front fittings back towards the center.



Tighten the nuts crosswise. The frame will compress until it is sealed. Please see recommended max torque in the table.

Type:	Rec. max torque* (Nm)
R 70 - R 127 Ex	7
R 150 - R 200 Ex	10

* The recommended max torque depends on several things, e.g. cable or pipe size, amount of lubricant used, sleeve size or material in the cable sheet, etc.

Adaptable Rextec RM PE Ex modules

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RM 20w40 PE Ex	2	0+3.5-16.5	0+ 0.138-0.650
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Solid compensation modules PE Ex

Module
RM 5/0x24 PE Ex
RM 10/0x12 PE Ex
RM 15/0 PE Ex
RM 20/0 PE Ex
RM 30/0 PE Ex
RM 40/0 PE Ex
RM 60/0 PE Ex

Disassembly

Reverse order.

Note

- An incorrectly adapted module shall be replaced (layers shall not be reused).
- Cables/pipes shall go straight through the frame.
- Temperature range -60 to +80 °C.
- Permitted Roxtec modules: RM PE Ex and RM ES Ex type.
- You find EC Type examination certificate at www.roxtec.com, or contact your local Roxtec supplier.

The following conditions for safe use (apparatus certified cable transit device) and schedule of limitations (U-marked component certified cable transit device) shall be considered according to the ATEX EC Type Examination certificates and the IECEx Certificates of Conformity:

- 1 For maintaining the explosion protection, the installation instructions that accompany the products shall be considered.
- 2 Only cable for fixed installation is permitted for the cable entry.
- 3 For optimum reliability wait 24 hours or longer after installation before exposing the cables/pipes to strain or pressure.
- 4 For cable transit device certified as an Ex component and marked with the symbol U (cable transit device of type R...W), compliance with applicable requirements not covered by sub-clauses stated below, shall be verified. This includes mechanical test (if applicable) and test of degree of protection IP, which shall be carried out on the frame of the cable entry (excluding modules and compression unit) after it has been mounted on the enclosure of the apparatus subject to test and certification.

IEC 60079-0:2011

1, 2, 3, 4.2, 4.3, 5.2 (with respect of temperature limits), 6.1, 6.2, 7.1.1, 7.1.2.3, 7.2.1, 7.2.2, 7.5, 8.1, 8.3, 8.4, 13.1, 13.2, 13.4, 13.5, 16.3, 24, 25, 26.1, 26.2 (with respect of internal ingress protection), 26.4.1.1, 26.4.1.2, 26.4.1.2.2, 26.4.2, 26.4.4, 26.4.5.1 (with respect of internal ingress protection), 26.4.5.2, 26.7.1, 26.7.2, 26.8, 26.9, 29.1, 29.2, 29.4, 29.5, 29.9, 30.1, A.1, A.2.1, A.2.3, A.2.4.1, A.2.5, A.2.6, A.2.7, A.3.1.1, A.3.1.4, A.3.1.5, A.3.2.2, A.3.3, A.3.4 (with respect of internal ingress protection), A.4.1, A.4.2 and B.1.

EN 60079-0:2012

ZA

IEC 60079-31:2008

1, 2, 3, 4, 4.1, 5.2.1, 6.1.1 (with respect of internal ingress protection) and 7.

EN 60079-31:2009

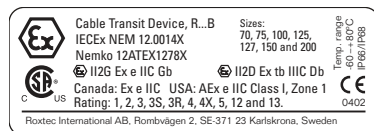
ZA

Frame label:

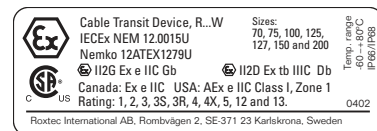
Year of
manufacture



R...B Ex (Bolting)



R...W Ex (Welding)



Attestation of Conformity for Components

We, Roxtec International AB, declare under sole responsibility that the products to which this declaration relates is in accordance with the provisions of the directive 94/9/EC and is in conformity with the following harmonized standards: EN 60079-0:2012, EN 60079-7:2007, EN 60079-31:2009

Cable Transit Device:


G...W, S...S, S0...S, SRC, SK, S BTB, S...WM, SF...W, R...W, RO...W,

RS...W, B...C-Ex

EC-type Examination Certificate:

Nemko 12ATEX1279U

Marking:

CE 0402  II 2G Ex e IIC Gb

CE 0402  II 2D Ex tb IIIC Db

Certificate issued by:

SP Sveriges Tekniska Forskningsinstitut

Box 857,

501 15 BORÅS

Karlskrona 2015-04-20

Roxtec International AB

Box 540

371 23 Karlskrona

Jörgen Åkesson
Explosion Protection Manager



Declaration of Conformity



We, Roxtec International AB, declare under sole responsibility that the products to which this declaration relates is in accordance with the provisions of the directive 94/9/EC and is in conformity with the following harmonized standards: EN 60079-0:2012, EN 60079-7:2007, EN 60079-31:2009

Cable Transit Device:

CF 16, CF 8/32, G, G BG, SF, SF BG, R...B, RO...B, RS...B, B...B,

C RS T-Ex

EC Type Examination Certificate:

Nemko 12ATEX1278X

Cable Transit Device:


G...W, S...S, S0...S, S...WM, SRC, SK, S BTB, SF...W, R...W, RO...W,


RS...W, B...C-Ex

EC Type Examination Certificate:

Nemko 12ATEX1279U

Marking:

CE 0402  II 2G Ex e IIC Gb

CE 0402  II 2D Ex tb IIIC Db

Certificate issued by:

SP Sveriges Tekniska Forskningsinstitut

Box 857,

501 15 BORÅS

Karlskrona 2015-04-20

Roxtec International AB

Box 540

371 23 Karlskrona

Jörgen Åkesson
Explosion Protection Manager




**THORNE &
DERRICK
INTERNATIONAL**

Thorne & Derrick
+44 (0) 191 410 4292
www.powerandcables.com



DISCLAIMER

"The Roxtec cable entry sealing system ("the Roxtec system") is a modular-based system of sealing products consisting of different components. Each and every one of the components is necessary for the best performance of the Roxtec system. The Roxtec system has been certified to resist a number of different hazards. Any such certification, and the ability of the Roxtec system to resist such hazards, is dependent on all components that are installed as a part of the Roxtec system. Thus, the certification is not valid and does not apply unless all components installed as part of the Roxtec system are manufactured by or under license from Roxtec ("authorized manufacturer"). Roxtec gives no performance guarantee with respect to the Roxtec system, unless (I) all components installed as part of the Roxtec system are manufactured by an authorized manufacturer and (II) the purchaser is in compliance with (a), and (b), below.

(a) During storage, the Roxtec system or part thereof, shall be kept indoors in its original packaging at room temperature.

(b) Installation shall be carried out in accordance with Roxtec installation instructions in effect from time to time.

The product information provided by Roxtec does not release the purchaser of the

Roxtec system, or part thereof, from the obligation to independently determine the suitability of the products for the intended process, installation and/or use. Roxtec gives no guarantee for the Roxtec system or any part thereof and assumes no liability for any loss or damage whatsoever, whether direct, indirect, consequential, loss of profit or otherwise, occurred or caused by the Roxtec systems or installations containing components not manufactured by an authorized manufacturer and/or occurred or caused by the use of the Roxtec system in a manner or for an application other than for which the Roxtec system was designed or intended.

Roxtec expressly excludes any implied warranties of merchantability and fitness for a particular purpose and all other express or implied representations and warranties provided by statute or common law. User determines suitability of the Roxtec system for intended use and assumes all risk and liability in connection therewith. In no event shall Roxtec be liable for indirect, consequential, punitive, special, exemplary or incidental damages or losses."