Always ready for upgrades

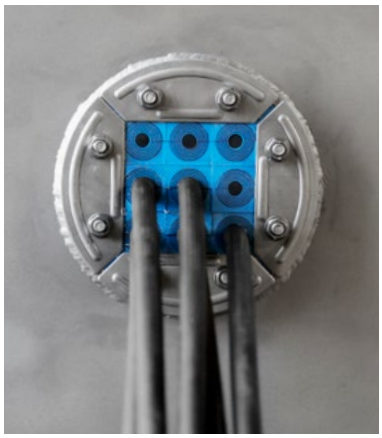
Modern shipbuilding is very much focused on quick, extensive refurbishment and parallel working methods. The design is often made at the same time as the construction work in the shipyard. Therefore, it is crucial to select the right seals that are readily available in order to be prepared for retrofit work and upgrades.

Open for any changes

Roxtec multi-cable and pipe sealing solutions are rapidly delivered locally all over the world and well-known by marine engineers and shipyard workers worldwide. The safety solutions include extremely flexible frames, seals and sleeves that can be opened, reconfigured and resealed in a very easy way. Roxtec sealing modules and rubber bodies are even adaptable to cables and pipes of different sizes.

Eliminate welding time

You can install the seals around existing cables and pipes, from the beginning of the project or whenever it may be needed. There are a range of bolted non-weld solutions allowing retrofit work and safety enhancements to be made onboard while at sea. Remember that each day out of service is a day with lost revenue.



Built-in spare capacity

You also have the option to include spare capacity from the start by installing more sealing modules than cables and pipes. The solid core of the module keeps tight until the day you want to open up the transit and add a cable or pipe for new equipment! The built-in spare capacity allows for quick and cost-efficient upgrades to new regulations during the entire lifespan of a ship's operation.

"Future included"

This feature ensures that your cargo ship can be revitalized and stay operational for years to come and that your cruise ship is ready to be rebuilt in order to accommodate new and amazing attractions. As the spare modules are already installed on the ship, you can add equipment without adding new material or costs. And you can actually do it without hot work permits or any downtime at all.

Easy pipe sealing retrofit

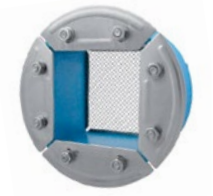
One example showing the simplicity is the Roxtec RS seal. If you are to turn a worn supply unit into an environmentally aware high-tech multi-purpose supply vessel, you only need to bring Roxtec RS in sizes 50, 75, 100 and 125 to cover pipes ranging from 8 to 98 mm. With these four sizes, you manage at least 75 percent of all pipes used. Save oceans of time and avoid weight and logistic challenges.

Few modules cover many cables

You have the same material reducing benefit when it comes to cable sealing. Do you only have a few months to retrofit an aged cruise liner, demolish most of its interior, give it a new identity and make it luxurious, attractive and profitable again? Make sure you bring Roxtec RM 20w40, 30, 40 and 60 modules. With very few standard modules, you will be able to seal cables ranging from 3.5 to 54 mm.

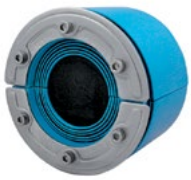
Roxtec retrofit solutions

These Roxtec solutions are especially retrofit-friendly:



Roxtec R frame
See page 63 for cables, 150 for pipes.

Roxtec RS seal
See page 69 for cables, 138 for pipes.



Roxtec RS OMD seal
See page 78 for cables, 147 for pipes.

Roxtec RS PPS seal
See page 147.

Roxtec R X frame
See page 81 for cables, 159 for pipes.

Roxtec RS X seal
See page 81 for cables, 159 for pipes.

Roxtec openable sleeve
See page 68 and 77 for cables, 146 and 155 for pipes.

Roxtec Sleev-it™ Fire penetration seal
See page 182.

Roxtec KFO frame
See page 94.

Roxtec C KFO frame
See page 96.

Roxtec ComSeal™
See page 88.

Roxtec SO frame

Roxtec SFO frame

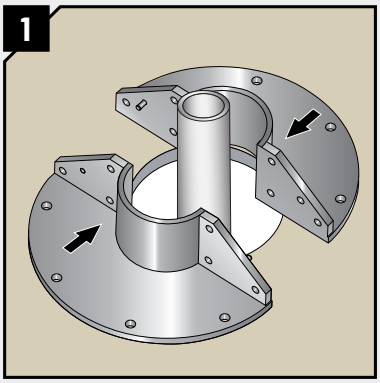
Roxtec SFOH frame

We do not further present the SO, SFO and SFOH frames in this catalogue, but they are in fact openable versions of the S frame (see page 40 for cables, 163 for pipes) and the SF frame (see page 56), respectively.

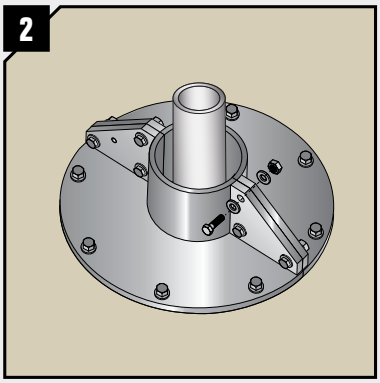
You are always welcome to send an email to info@roxtec.com or contact your Roxtec representative if you want more information or if you want to discuss possible retrofit solutions.

Retrofit sleeves and frames – examples of how it works

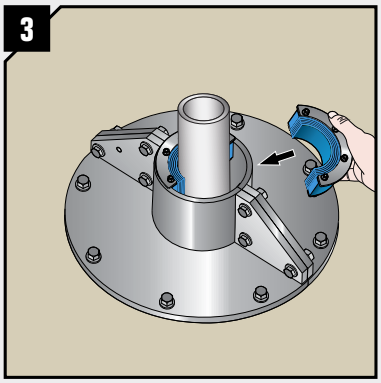
Roxtec SLFO/RI sleeve



The Roxtec SLFO/RI is an openable sleeve consisting of two identical halves which are placed round a cable or pipe to form a robust circular sleeve. It has a wide flange to cover large cut-outs in decks or bulkheads and allow the installation of pre-flanged pipes.

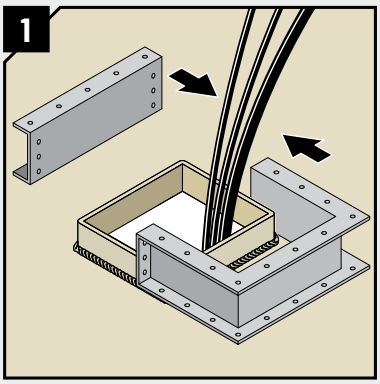


The two halves are bolted together and also directly to the steel division to form a tight seal protecting against fire, water and gas. A fitted gasket between the sleeve and the steel division assists in maintaining tightness.

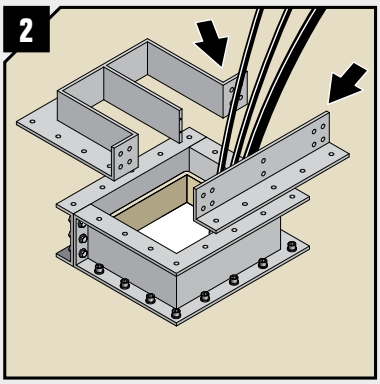


The circular sleeve is fitted with a flexible Roxtec RS seal with Multidiameter™. The cable or pipe is sealed tight by removing layers to adapt the seal to fit. The sleeve can be customized for larger sizes.

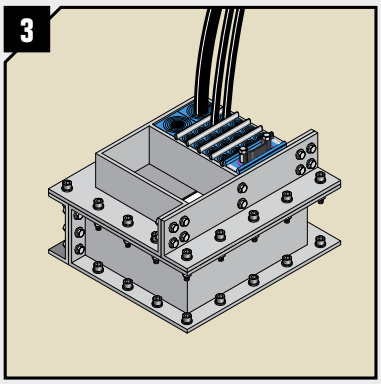
Roxtec SFOHK frame



The Roxtec SFOHK frame is a robust openable frame to be used for retrofit or around existing cables.



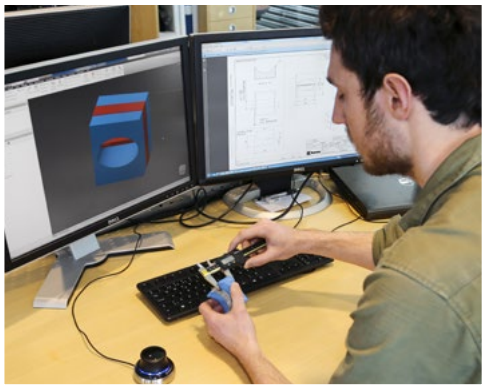
It has an openable collar to distance the transit from the steel division making it possible to use without removing the old cable transit. It perfectly solves problems such as too many cables or the change of any former solution or an entire piping system.



There is no need for welding. When bolted together, the Roxtec SFOHK frame forms a tight seal against the steel division providing protection against fire, gas and water.

Your partner in retrofit

Dedicated to first class safety, we offer everything from installation quality trainings and inspection services through to design support and customized solutions.



Our retrofit offering ranges from web-based applications for design through to inspections at shipyards. Our goal is to help you ensure that all deck and bulkhead penetrations are correctly and safely sealed. And we are eager to follow and support your project for years to come.

Experienced inspectors

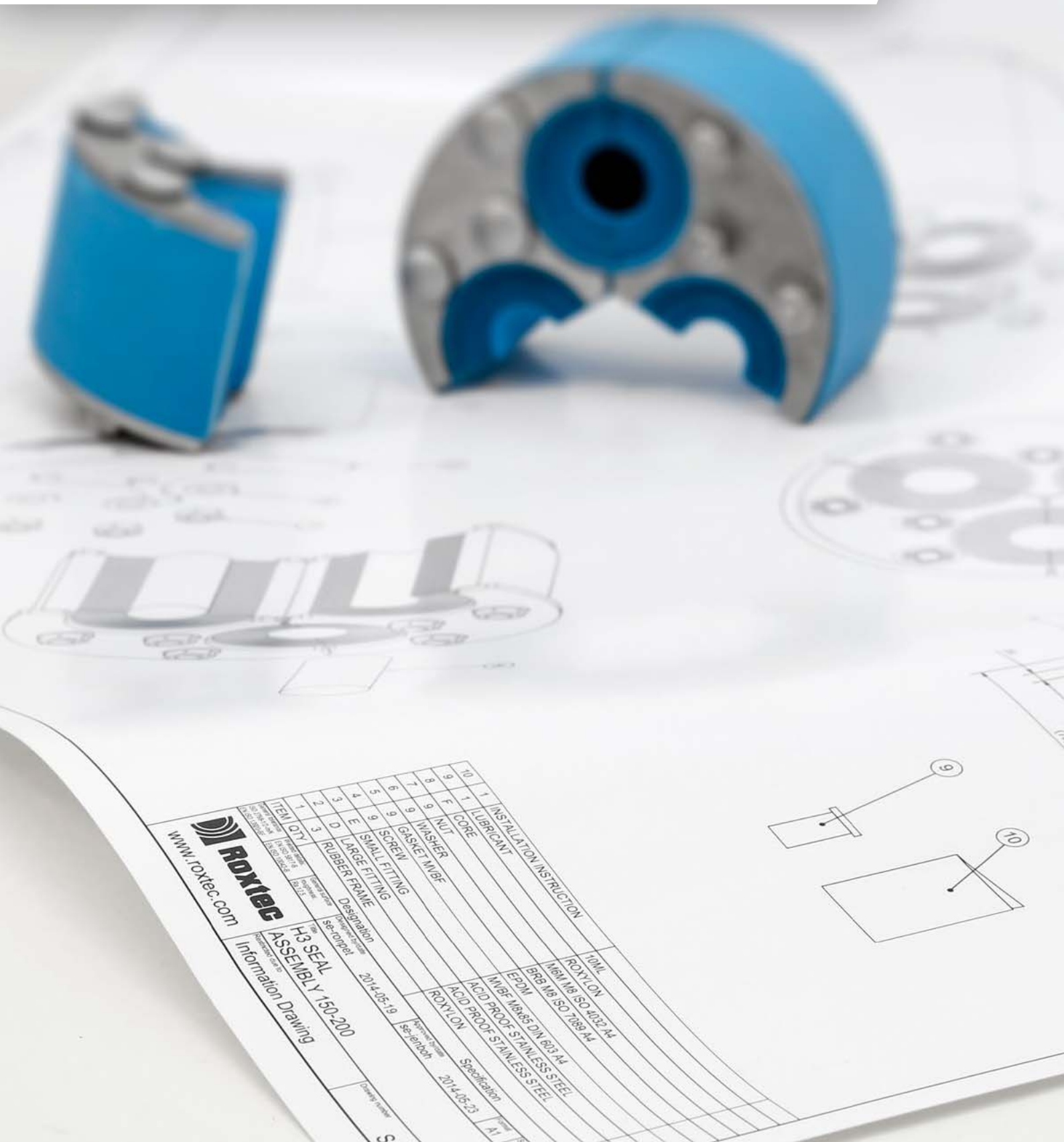
Our team of installation inspectors can go onsite to make sure that our seals are properly installed, to follow-up projects and to help you plan for upgrades. They conduct visual inspections of our transits at shipyards all over the world. The standardized inspection process results in a detailed visual inspection report, enabling you to understand the status of each one of your installed transits.

Maintenance planning

The report is used to evaluate safety concerns and also to generate a priority list if changes or corrective actions are needed. We help you keep track of your cable and pipe transits. It is, for example, a great advantage to know all facts about earlier changes when you make plans for refurbishments and future upgrades. We offer:

- Trainings
- Inspections
- Design and engineering
- Tailored solutions
- Documentation
- Built-in spare capacity
- Easy maintenance

CUSTOMIZED SOLUTIONS



Tailor-made according to your needs

We are here to solve your sealing problem – even when it requires the creation of an entirely new customized solution. We have an entire team with designers, engineers and test technicians ready to develop and test tailored cable and pipe transits according to your needs.

Covering all requirements

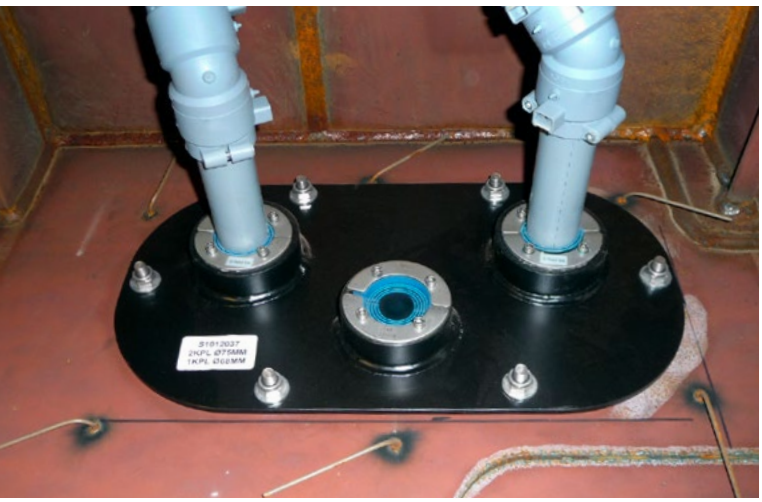
The certified Roxtec sealing system is normally the base, but we can supply it in many other dimensions than the standard ones, with special frames, other rubber materials or customized sealing modules. We have, for example, in cooperation with our customers, created solutions for insulated busway systems and service locker flanges in order to cover specific requirements.

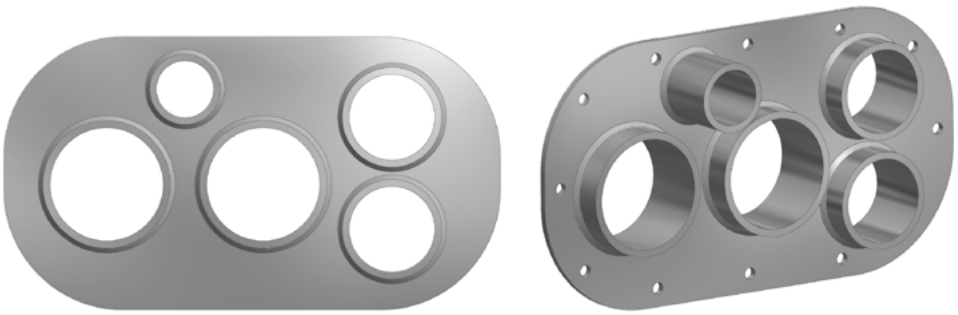
Experience in innovation

If you need a special sealing solution, you can just inform your local Roxtec representative about the specific requirements. In many cases, we have already supplied a similar sealing solution, somewhere in the world, allowing us to respond very quickly to your request.

Prefabricated multi-penetrations

Roxtec can offer prefabricated plates of any size or shape that incorporate multiple penetrations for either pipes and/or cables. The design is bespoke to customer requirements and the solution will enable the customer to make only one opening for multiple pipes or cables. This is an efficient way of preparing for applications where the same installation designs are frequently repeated.

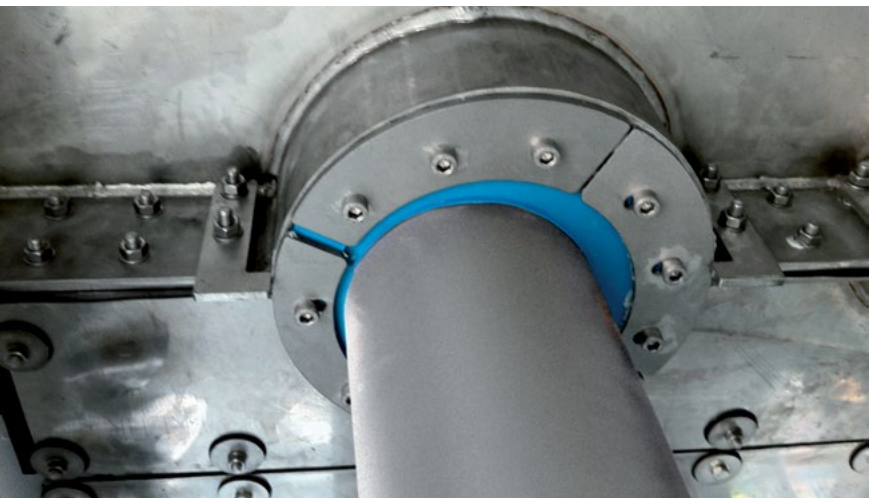


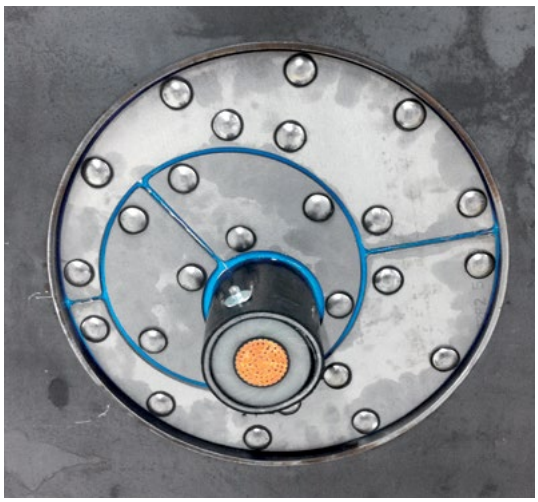


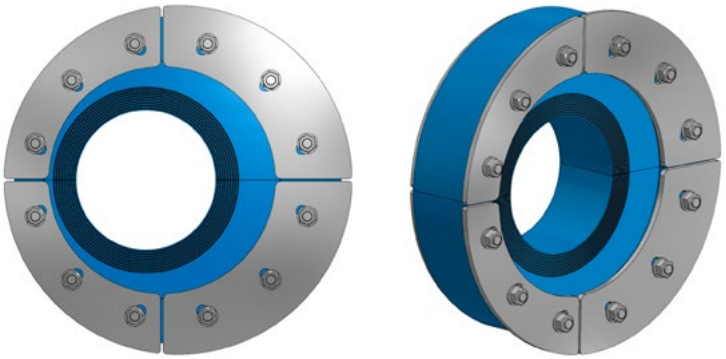
Roxtec multi-penetration plates in stainless or mild steel help you secure your pipe or cable sealing needs in advance.

Flexible off-center solutions

Roxtec customized off-center solutions are useful when cables or pipes are already fixed or too heavy to move. The solutions consist of extremely flexible round single penetration seals. They are beneficial when it is impossible to change the position of an existing pipe or a stiff already connected power cable. You just turn the seal according to the cable or pipe, and secure it in its transit position.







Roxtec off-center seals simplify installation of large, pre-terminated cables or pipes that are difficult to position.

CABLE AND PIPE MANAGEMENT

Systems for flexible fixation

Roxtec cable sealing and management systems are used worldwide. It is beneficial for you to select one experienced supplier for an entire package including both cable straps and sealing solutions.

Our innovative cable management solutions are used to ensure safety, efficiency and operational reliability. They simplify design and engineering, speed up installation work and reduce the need for stock, material and logistics in a wide range of projects.

Complete solutions

We have a long, impressive story when it comes to developing cable management products and provide systems for use in marine applications even under extreme conditions. Our products have been tested over time and cover a wide range of needs.

Roxtec cable straps

Roxtec plastic-coated metal straps help you ensure quick, easy and safe fixation of cables. The straps are mechanically strong and resistant to fire. They fulfill the technical requirements regarding regular metallic fixation of cables to the cable racks and are approved by leading classification societies.

- Available in three materials
- Available in fixed lengths or rolls
- Tightening tool with cutting function
- Damp heat test, cyclic, acc. to DIN EN 60068-2-30
- Salt fog test, acc. to rules of RMRS, edition 2012 (part IV. Technical supervision during manufacture of products – item 10.5.4.5.6)

Roxtec cable straps

Roxtec cable straps

Length		15 x 0.5 mm / 0.59 x 0.02 inch			8 x 0.3 mm / 0.31 x 0.01 inch	
		GREY	BLACK	BROWN	BLACK	BROWN
mm	inch	Steel, hot dip galvanized	Stainless steel, AISI 430 (1.4016) (A2-class)	Stainless steel, a-mag AISI 316 (1.4571) (A4-class)	Stainless steel, AISI 304 (1.4301) (A2-class)	Stainless steel, a-mag AISI 316 (1.4571) (A4-class)
200	7.87	—	—	—	GK000000260044	GK000000260429
300	11.81	GK000000101006	GK000000101102	GK000000100046	GK000000100900	GK000000200779
400	15.75	GK000000101007	GK000000101103	GK000000100048	GK000000100904	GK000000210817
500	19.68	GK000000101008	GK000000101104	GK000000100050	GK000000100906	GK000000210822
600	23.62	GK000000101009	GK000000101105	GK000000100169	GK000000100908	GK000000210824
700	27.56	GK000000101100	GK000000101106	GK000000100185	—	—
800	31.50	GK000000101101	GK000000101107	GK000000100187	—	—
900	35.43	GK000000210806	GK000000210812	GK000000210809	—	—
1000	39.37	GK000000100710	GK000000100809	GK000000100375	—	—

Rolls

	15 x 0.5 mm, 25 m, ca 1,8 kg / 0.59 x 0.02 inch, 82 ft, 3.97 lb		8 x 0.3 mm, 75 m, ca 1,9 kg / 0.31 x 0.01 inch, 246 ft, 4.19 lb	
GREY	BLACK	BROWN	BLACK	BROWN
Steel, hot dip galvanized	Stainless steel, AISI 430 (1.4016) (A2-class)	Stainless steel, a-mag AISI 316 (1.4571) (A4-class)	Stainless steel, AISI 304 (1.4301) (A2-class)	Stainless steel, a-mag AISI 316 (1.4571) (A4-class)
GK000000101001	GK000000101002	GK000000101003	GK000000101004	GK000000201251

Strap clip

	15 x 0.5 mm / 0.59 x 0.02 inch		8 x 0.3 mm / 0.31 x 0.01 inch	
GREY	BLACK	BROWN	BLACK	BROWN
Steel, hot dip galvanized	Stainless steel, AISI 304 (1.4301) (A2-class)	Stainless steel, a-mag AISI 316 (1.4571) (A4-class)	Stainless steel, AISI 304 (1.4301) (A2-class)	Stainless steel, a-mag AISI 316 (1.4571) (A4-class)
GK000000101108	GK000000101109	GK000000101200	GK000000101201	GK000000200435

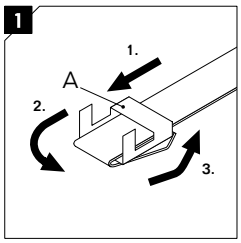
Tightening tools

Type 140

Type 142

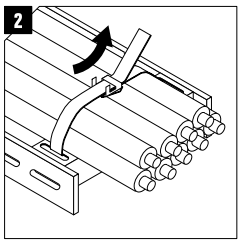
Type 140, with cutting function up to 15 mm / 0.59 inch	Type 142, without cutting function up to 8 mm / 0.31 inch
GK000000101400	GK000000101402

Installation

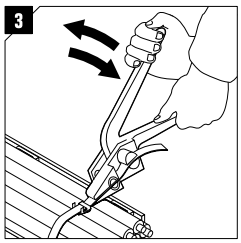


Insert strap into the strap clip. (A)*

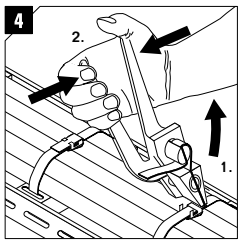
* Only when strap box is used



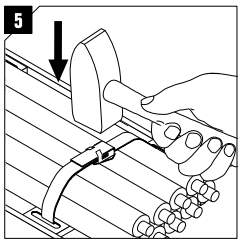
Bend the strap around the cable, through the cable tray and back through the clip.



Tighten strap by hand, apply tightening tool to the clip and tighten strap by means of the movable arm.



When it is tightened, bend the strap over the clip and cut it.



Bend the strap completely. Bend the flaps of the clip over the strap. Secure it by hitting with a hammer.

The latest version of this document is available on www.roxtec.com.

Speed up and secure your installation

We have developed a range of practical tools to simplify quick and safe onsite installations and reinstallations of Roxtec sealing solutions.

The tools are handy for anyone working with the installation of Roxtec solutions including frames, modules and wedges. Include a selection of tools in your next specifications and bills of materials in order to maximize efficiency.

Roxtec Pre-compression tool

For regular frames in all sizes. This user-friendly pre-compression tool comes in a small and a large version. Use it to compress rows of installed modules and stay-plates to make more room for the following row and the Roxtec Wedge. The tool helps keeping all items in place during installation.

Pre-compression tool, small

Pre-compression tool, large

Tool	Art. No
Pre-compression tool, small	5ICT000001269
Pre-compression tool, large	ICT0001000000

Roxtec Pre-compression eccentric tool

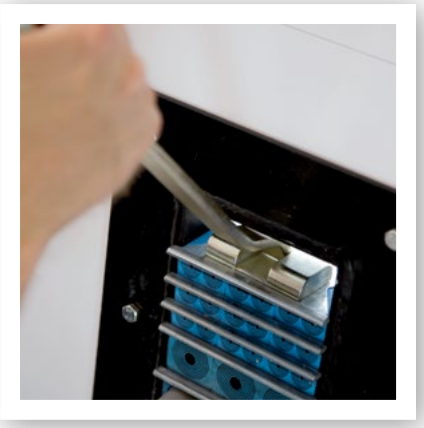
A convenient assembly tool for pre-compression. The tool has a 3/8" square drive, which fits most types of socket wrenches. When the tool is turned with a wrench, it will compress the modules and leave room for more modules and/or the wedge. It is easily handled and provides pre-compression in only a few seconds. It is available in three sizes and for both regular frames and compact frames such as Roxtec CF 8/32, Roxtec ComSeal and Roxtec C KFO.

Pre-compression eccentric tool, small

Pre-compression eccentric tool, large

Pre-compression eccentric tool, compact

Tool	Art. No
Pre-compression eccentric tool, small	ICT0001000302
Pre-compression eccentric tool, large	ICT0001000301
Pre-compression eccentric tool, compact	ICT0001000316



Roxtec Handgrip pre-compression tool

For regular frames in all sizes. The handgrip pre-compression tool simplifies quick and easy installation. With this tool, you can pre-compress the installed modules evenly while keeping them in place. This gives you more packing space to insert and install the wedge in a safe and smooth way.

Handgrip pre-compression tool

Tool	Art. No
Handgrip pre-compression tool	ICT0001000401

Roxtec Pre-compression wedge

For regular frames in all sizes. This tool is handy when you need to make room for the wedge during assembly. It fits easily into the frame and expands to almost twice its size when the bolt is tightened. Leave it for a few minutes and then loosen the bolt. The wedge returns to its original size and is easy to pull out. The modules stay compressed for a while, leaving room for the wedge to be inserted.

Pre-compression wedge 60/40

Pre-compression wedge 120

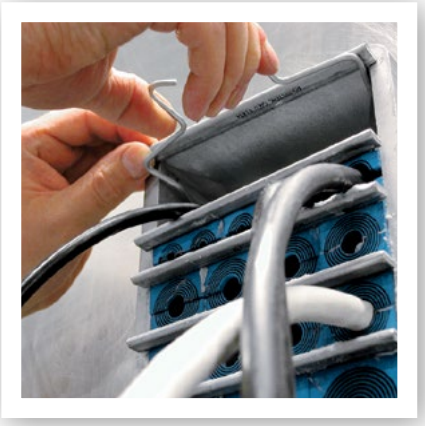
Tool	Art. No
Pre-compression wedge 60/40	5ICT000003691
Pre-compression wedge 120	ICT0001000500

Roxtec Stayplate clamps

Horizontal installations become much more convenient and faster with this tool. By fixing a stayplate holder on each stayplate edge, each finished row of modules and cables is firmly kept in position. You work with them in pairs and the modules are efficiently prevented from falling through the transit. Width 120 mm, 4.724".

Stayplate clamps

Tool	Art. No
Stayplate clamps, 2 pcs	ICT0001000100

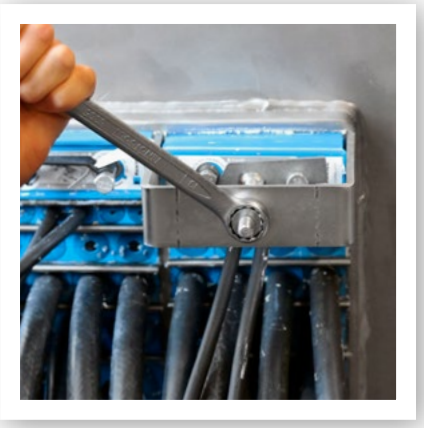


Roxtec Stayplate clip

The stayplate clip provides help during installation. Attach it below the top stayplate to keep it out of the way until it is time to put it in position on top of the last row of modules. For use with RM stayplates, width 120 mm, 4.724".

Stayplate clip

Tool	Art. No
Stayplate clip	ICT0001000200



Roxtec Wedge puller

Simplifies removal of the wedge for maintenance and retrofit work where space is limited.

Roxtec Wedge puller

Tool	Art. No
Roxtec Wedge puller	103248

Roxtec Module Adaption Indicator

Measuring tool for easier selection of sealing module. Indicates how many rubber layers to peel off to achieve perfect adaption. It also simplifies inspection.

Module Adaption Indicator

Tool	Art. No
Module Adaption Indicator	IQR2009000101

Roxtec Pressure Test Pipe

The test pipe is used for verifying a transit's integrity after installation on site. To be used with RM components in back-to-back solutions.

Pressure Test Pipe

Tool	Art. No
Pressure Test Pipe	ICT2006000130

Roxtec Welding Fixture tool

Holds the frame within tolerance during welding.

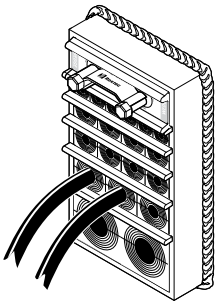
Welding Fixture tool

Tool	Art. No
Welding Fixture tool	121932

EASY INSTALLATION WITH ROXTEC

Our installations instructions are available on www.roxtec.com, and you can watch our installation movies on YouTube.

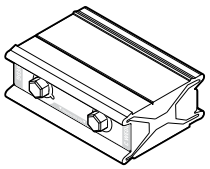
Roxtec rectangular system



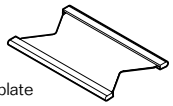
ALWAYS CHECK OUR LATEST UPDATES

You find the latest versions of our installations instructions on **www.roxtec.com**. Roxtec can and will not take responsibility for transits that are not installed according to the latest installation instructions.

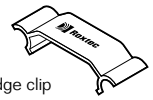
Parts



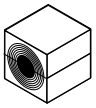
Wedge



Stayplate



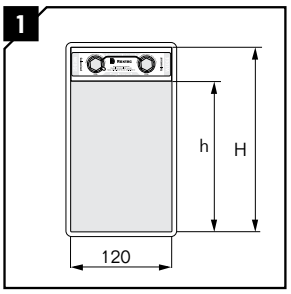
Wedge clip



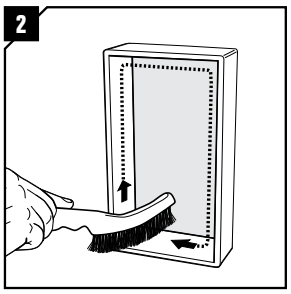
Module

Lubricant

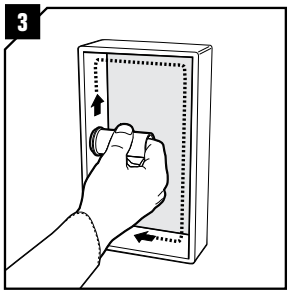
Installation

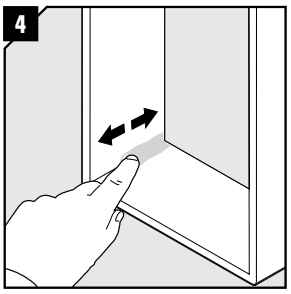


Measure your frame height (H). This corresponds to your packing height (h) according to the table. Consider your packing height when inserting the modules.

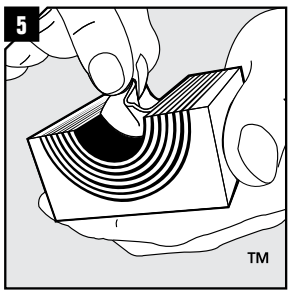


Clean the frame.

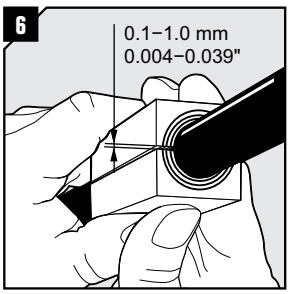




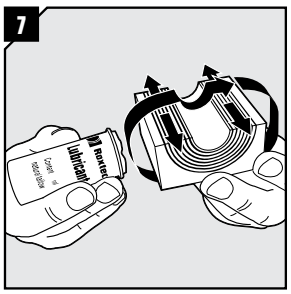
Lubricate the inside surfaces of the frame all around with Roxtec Lubricant, especially into the corners.



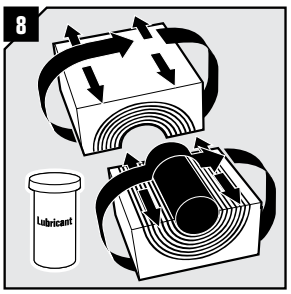
Adapt modules, which are to hold cables or pipes, by peeling off layers until you reach the gap seen in pic. 6. The number of layers may not differ by more than one between the halves.



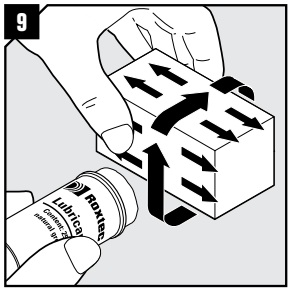
Achieve a 0.1–1.0 mm gap between the two halves when held against the cable/pipe.



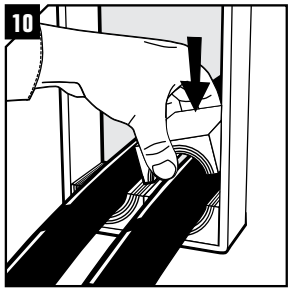
Lubricate all modules thoroughly, both the inside and the outside sealing surfaces.



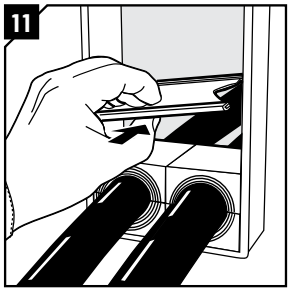
Do not remove the center cores of the spare modules.



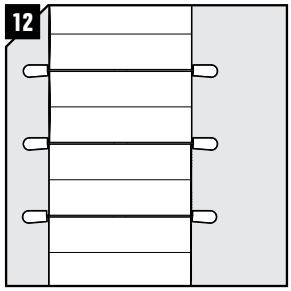
Lubricate solid modules on the sealing surfaces.



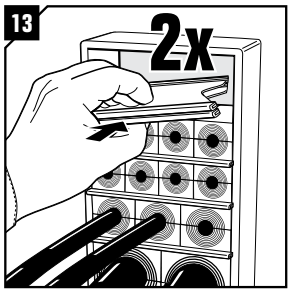
Insert the modules according to your installation plan (transit plan). Place the spare modules as close to the wedge as possible to simplify future installations.



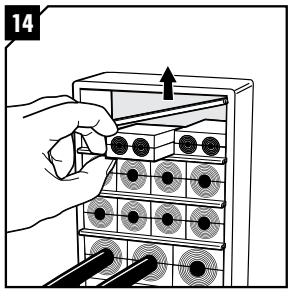
Insert a stayplate on top of every finished row of modules.



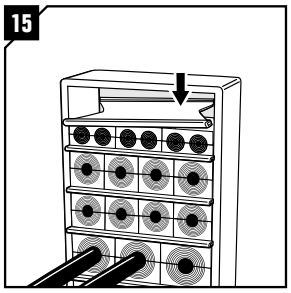
Ensure that the modules are secured within the stayplate edges.



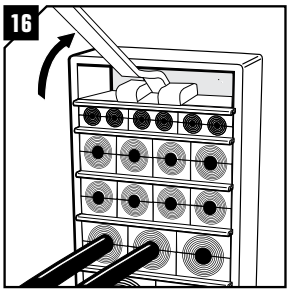
Before inserting the final row of modules, insert two stayplates.



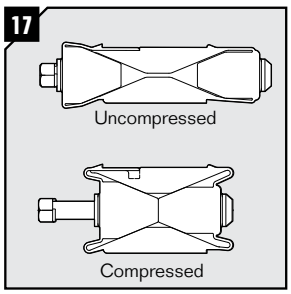
Separate the two stayplates and insert the final row of modules between the stayplates.



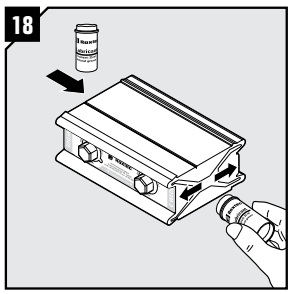
Drop the upper stayplate on top of the modules.



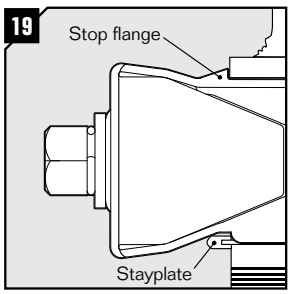
If there is not enough room for the wedge, insert the optional Roxtec pre-compression tool.



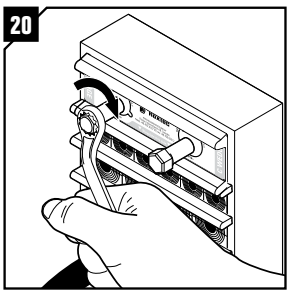
Ensure that the wedge is fully uncompressed by untightening the screws of the wedge before inserting the wedge.



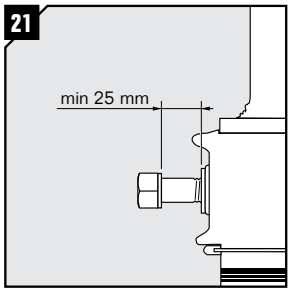
Lubricate the short sides of the wedge.



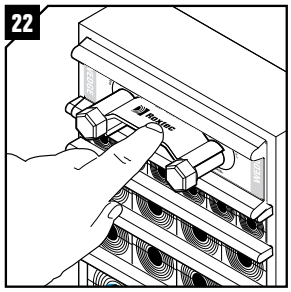
Orientate the wedge so the face marked "Stayplate this side" faces a stayplate. Insert the wedge to the stop flange. Ensure that the wedge is accommodated and secured by the stayplate.



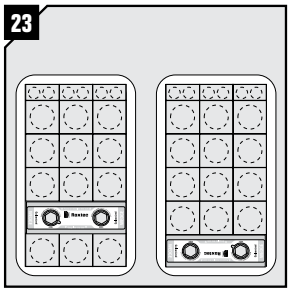
Tighten the screws alternately until full mechanical stop, approx 20 full revolutions per screw. Do not exceed 20 Nm (15 ft.lb.).



25 mm of the screws shall be exposed.

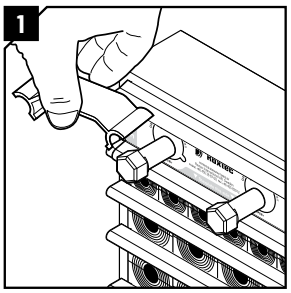


Attach the wedge clip to the wedge screws to complete the installation.

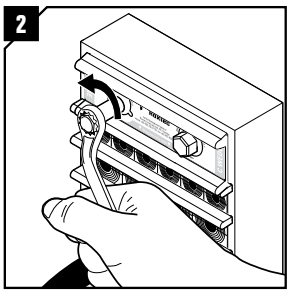


Optional wedge positions (anywhere in frame).

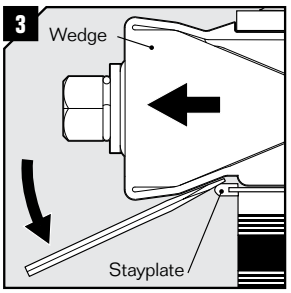
Disassembly



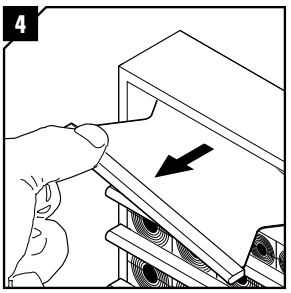
Remove the wedge clip from the wedge.



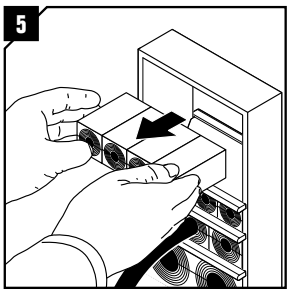
Release the compression by loosen the screws alternately to full stop. Do not exceed 20 Nm (15 ft.lb.).



Insert a flat tool between the wedge and the stayplate to simplify removal of the wedge. Roxtec special tools are available.

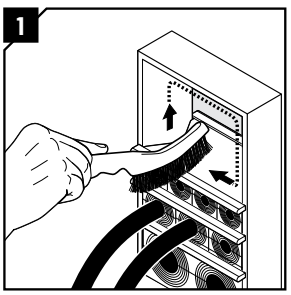


Remove the stayplate.

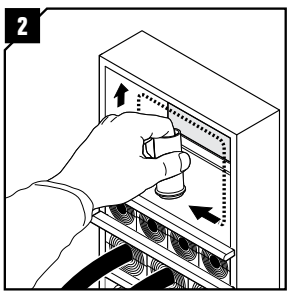


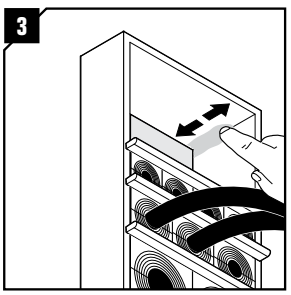
Remove the modules required. Keep the rows sorted until it is time to re-install the transit. If a module is damaged or replaced, all modules in that row must be replaced.

Re-installation



Make sure that the inside surfaces of the exposed packing space are free from dirt or dust.





Lubricate the inside surfaces all around with Roxtec Lubricant, especially into the corners.
Continue from step 5 under "Installation".

124037 Rev A/multilingual/1402/stsan

Packing space

Frame height (H)	Packing height (h)	Frame size
101	60	2
160	120	4
218	180	6
278	240	8

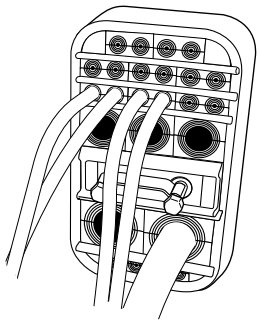
- Wait 24 hours or longer after installation before exposing the cables/pipes to strain or pressure.
- Wedge is to be used with: RM components.
- Cables shall go straight through the frame.
- Amendments to these installation instructions are available on www.roxtec.com.
- Ensure that the wedge clip is attached to the wedge bolts.

INSTALLATION VIDEO

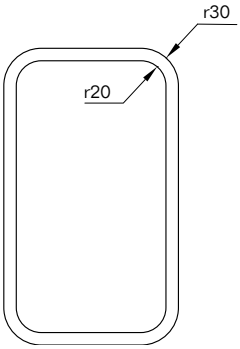
Roxtec SRC frames

ALWAYS CHECK OUR LATEST UPDATES

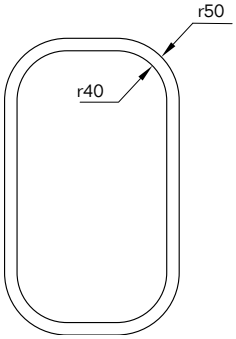
You find the latest versions of our installations instructions on **www.roxtec.com**. Roxtec can and will not take responsibility for transits that are not installed according to the latest installation instructions.



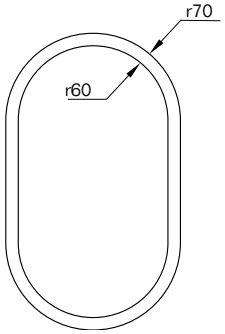
Frame types



SRC r20 frame



SRC r40 frame

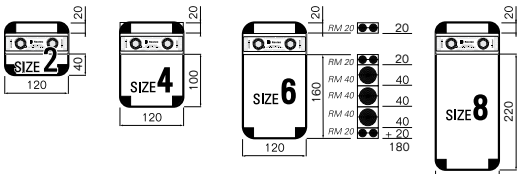


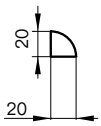
SRC r60 frame

Packing of SRC frames

You will need 4 pieces of RC modules to compensate for the corner radius.
These RC modules will have an impact on the available packing space.

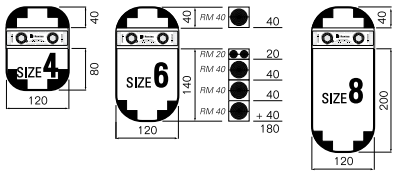
r20 frame

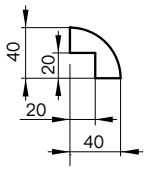




RM 20/0
RC module

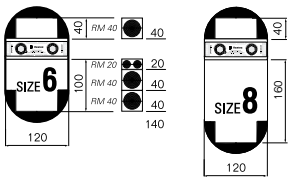
r40 frame

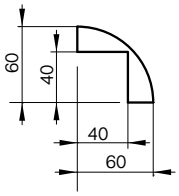




RM 40/0
RC module

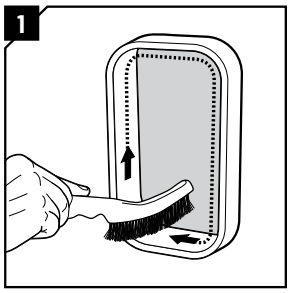
r60 frame



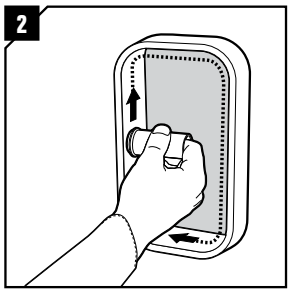


RM 60/0
RC module

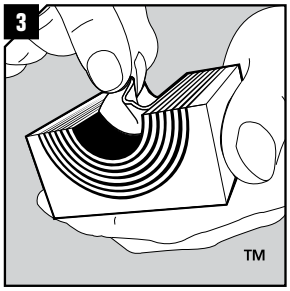
Installation



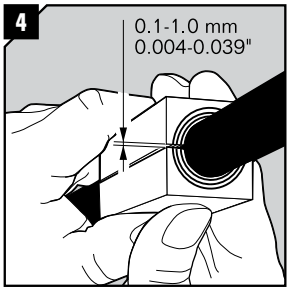
Make sure that the inside surfaces of the frame are free from dirt or dust.



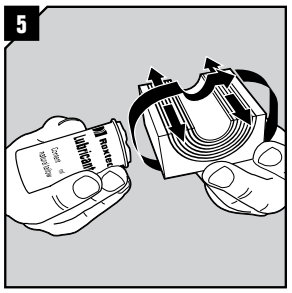
Lubricate the inside surfaces of the frame with Roxtec Lubricant.



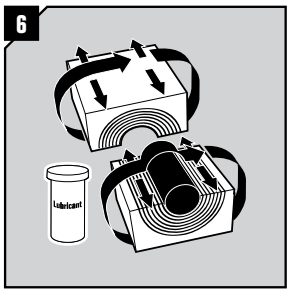
Adapt modules, which are to hold cables or pipes, by peeling off layers until you reach the gap seen in pic. 4. The halves may not differ by more than one layer.



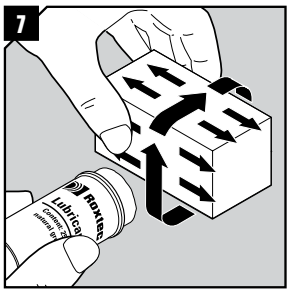
Achieve a 0.1-1.0 mm gap between the two halves when held against the cable/pipe.



Lubricate all modules for the frame thoroughly, both the inside and the outside surfaces, using Roxtec Lubricant.

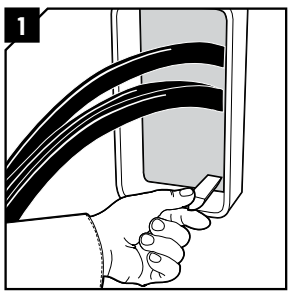


Do not remove the center cores of the spare modules.

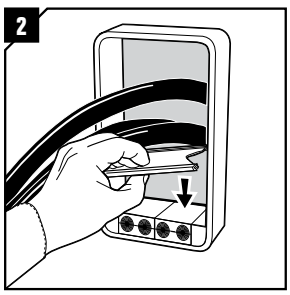


Lubricate solid modules on the sealing surfaces.

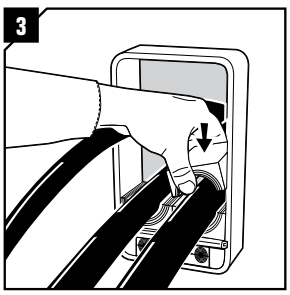
r20 installation continued



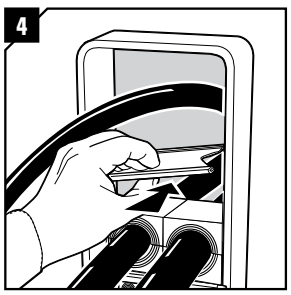
Insert the lubricated RM 20/0 RC modules in the bottom corners.



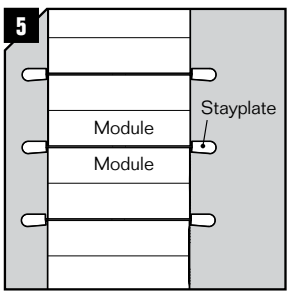
Fill the space between the corner modules with RM 20w40 or RM 20 modules and insert a stayplate on top.



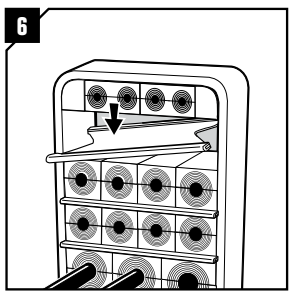
Continue to fill up the packing space of the frame according to your installation plan (transit plan). It is recommended to keep spare modules close to the wedge.



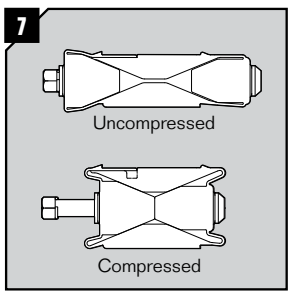
Insert a stayplate on top of every finished row of modules.



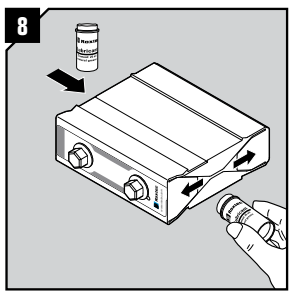
Ensure that the modules are secured within the stayplates edges.



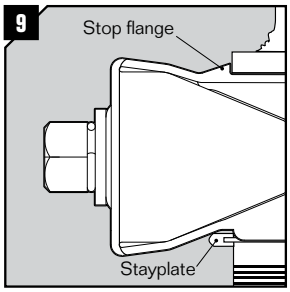
Insert the lubricated RM 20/0 RC modules in the top corners and fill with modules RM 20w40 or RM 20 modules. Install a stayplate. Make room for the wedge at desired position.



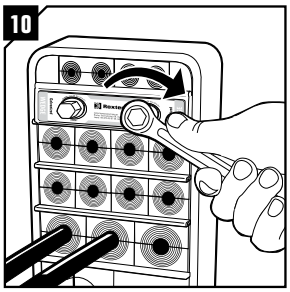
Ensure that the wedge is fully uncompressed by untightening the screws of the wedge before inserting the wedge.



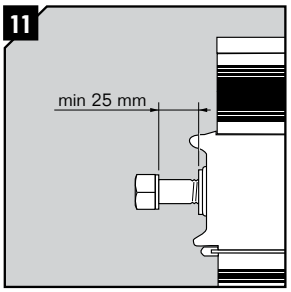
Lubricate the short sides of the wedge.



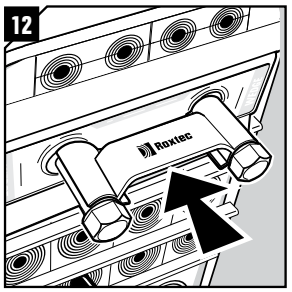
Orientate the wedge so the face marked "Stayplate this side" faces a stayplate. Insert the wedge to the stop flange. Ensure that the wedge is accommodated and secured by the stayplate.



Tighten the screws alternately until full mechanical stop, approx 20 full revolutions per screw. Do not exceed 20 Nm (15 ft.lb.).

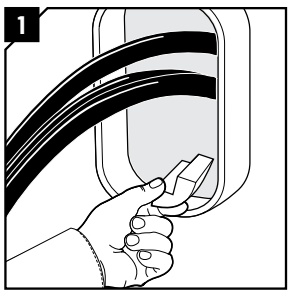


25 mm of the screws shall be exposed.

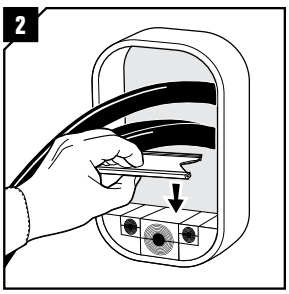


Attach the wedge Clip to the wedge screws to complete the installation.

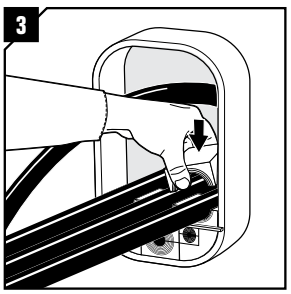
r40 installation continued



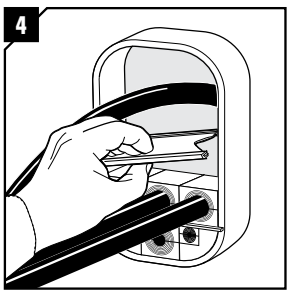
Insert the lubricated RM 40/0 RC modules in the bottom corners.



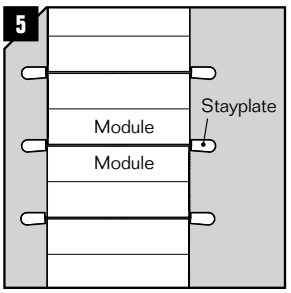
Fill the space between the corner modules with one RM 40 and two RM 20 modules and insert a stayplate on top.



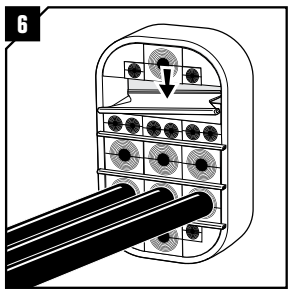
Continue to fill up the packing space of the frame according to your installation plan (transit plan). It is recommended to keep spare modules close to the wedge.



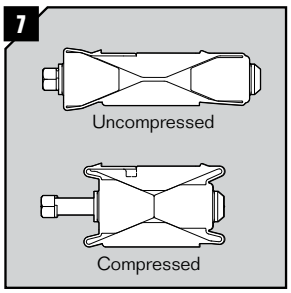
Insert a stayplate on top of every finished row of modules.



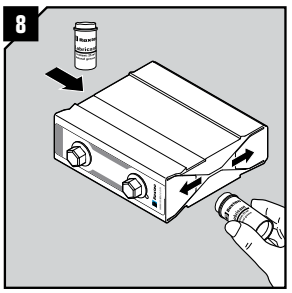
Ensure that the modules are secured within the stayplates edges.



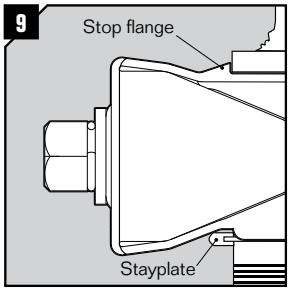
Insert the lubricated RM 40/0 RC modules in the top corners and fill with one RM 40 and two RM 20 modules. Install a stayplate. Make room for the wedge at desired position.



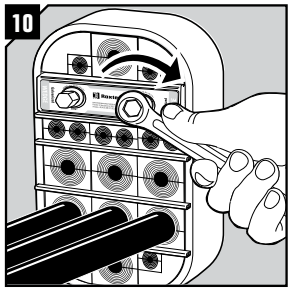
Ensure that the wedge is fully uncompressed by untightening the screws of the wedge before inserting the wedge.



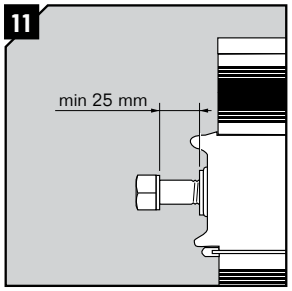
Lubricate the short sides of the wedge.



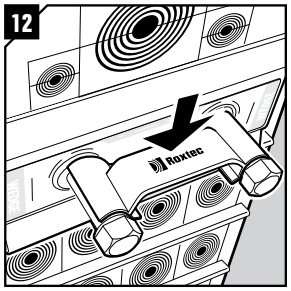
Orientate the wedge so the face marked "Stayplate this side" faces a stayplate. Insert the wedge to the stop flange. Ensure that the wedge is accommodated and secured by the stayplate.



Tighten the screws alternately until full mechanical stop, approx 20 full revolutions per screw. Do not exceed 20 Nm (15 ft.lb.).

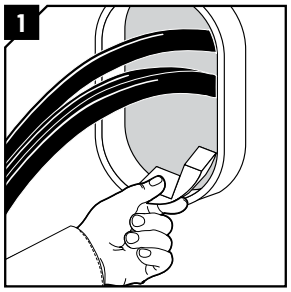


25 mm of the screws shall be exposed.

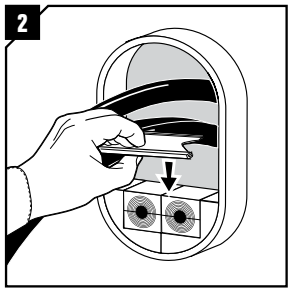


Attach the wedge Clip to the wedge screws to complete the installation.

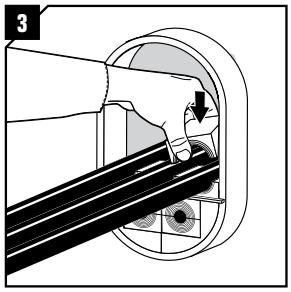
r60 installation continued



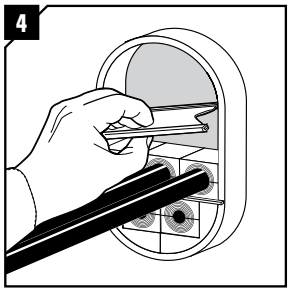
Insert the lubricated RM 60/0 RC modules in the bottom corners.



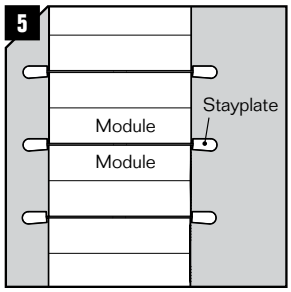
Fill the space between the corner modules with RM 40 modules and insert a stayplate on top.



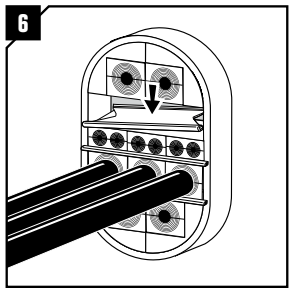
Continue to fill up the packing space of the frame according to your installation plan (transit plan). It is recommended to keep spare modules close to the wedge.



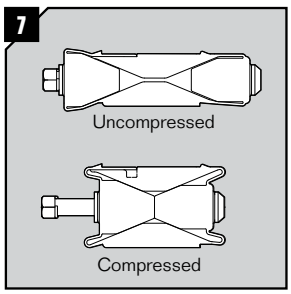
Insert a stayplate on top of every finished row of modules.



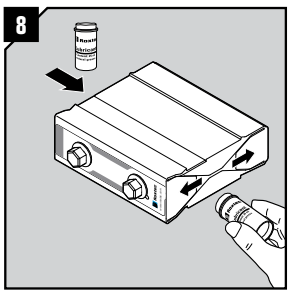
Ensure that the modules are secured within the stayplates edges.



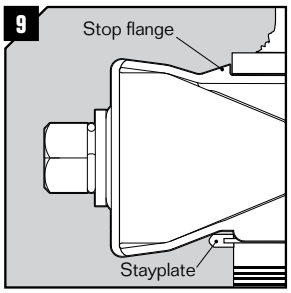
Insert the lubricated RM 60/0 RC modules in the top corners and fill with RM 40 modules. Install a stayplate. Make room for the wedge at desired position.



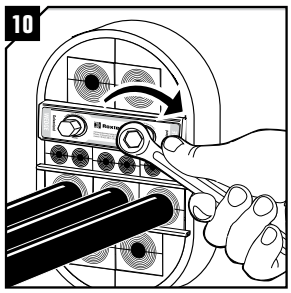
Ensure that the wedge is fully uncompressed by untightening the screws of the wedge before inserting the wedge.



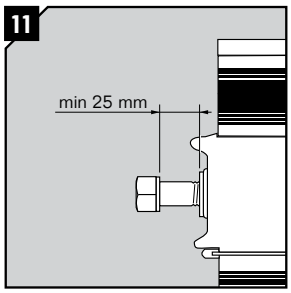
Lubricate the short sides of the wedge.



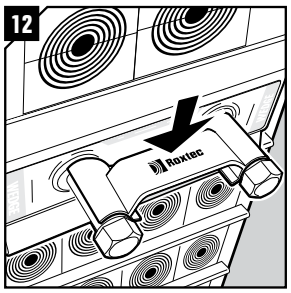
Orientate the wedge so the face marked "Stayplate this side" faces a stayplate. Insert the wedge to the stop flange. Ensure that the wedge is accommodated and secured by the stayplate.



Tighten the screws alternately until full mechanical stop, approx 20 full revolutions per screw. Do not exceed 20 Nm (15 ft.lb.).



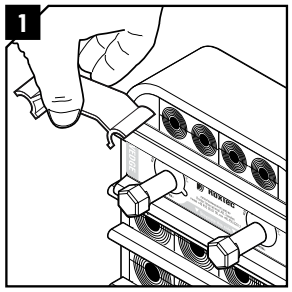
25 mm of the screws shall be exposed.



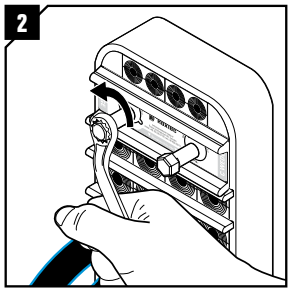
Attach the wedge Clip to the wedge screws to complete the installation.

Article number: ASS200400101 Document number: ASS200400101 version C

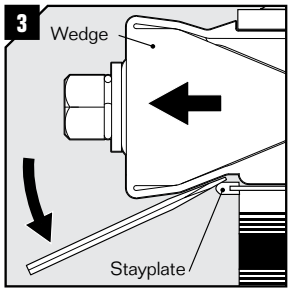
Disassembly



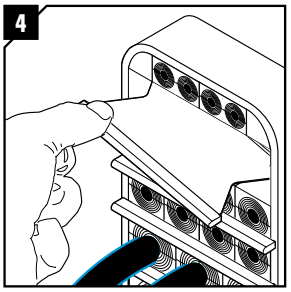
Remove the wedge clip from the wedge.



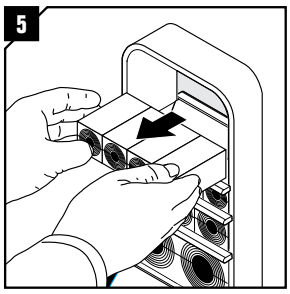
Release the compression by loosen the screws alternately to full stop. Do not exceed 20 Nm (15 ft.lb.).



Insert a flat tool between the wedge and the stayplate to simplify removal of the Wedge. Roxtec special tools are available.

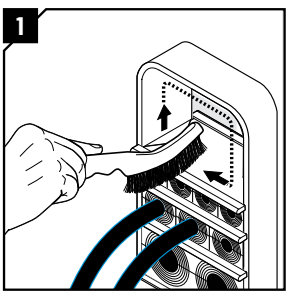


Remove the stayplate.

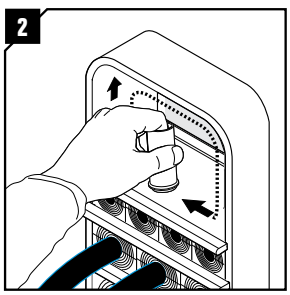


Remove the modules required. Keep the rows sorted until it´s time to re-install the transit. If a module is damaged or replaced, all modules in that row must be replaced.

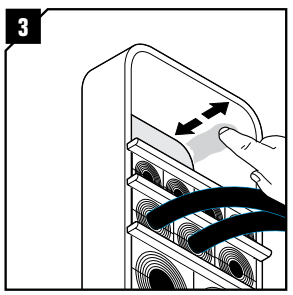
Re-installation



Make sure that the inside surfaces of the exposed packing space are free from dirt or dust.



Lubricate the inside surfaces all around with Roxtec Lubricant. Continue the re-installation from step 3, second page.



Note

- Wait 24 hours or longer after installation before exposing the cables/pipes to strain or pressure.
- Cables shall go straight through the frame.
- To be used with RM components.
- Ensure that the wedge clip is attached to the wedge bolts.
- Amendments to this installation instruction is available at www.roxtec.com.

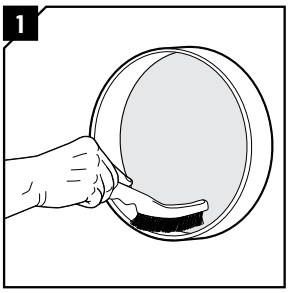
INSTALLATION VIDEO

Roxtec R frame

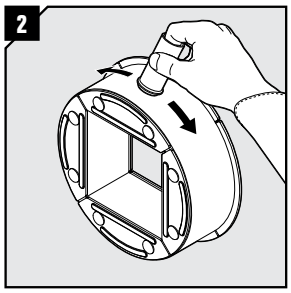
ALWAYS CHECK OUR LATEST UPDATES

You find the latest versions of our installations instructions on **www.roxtec.com**. Roxtec can and will not take responsibility for transits that are not installed according to the latest installation instructions.

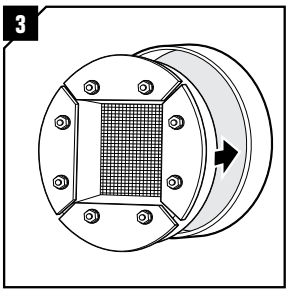
Installation



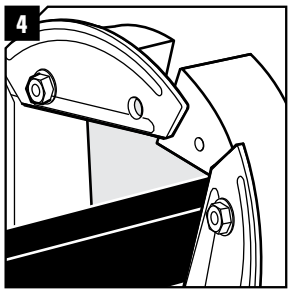
Remove any dirt from the sleeve/ hole.



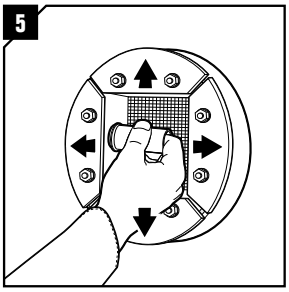
Lubricate the frame sparsely on the outside with Roxtec Lubricant.



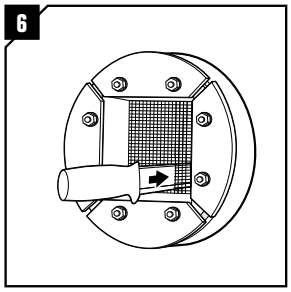
Insert the frame into the sleeve/ hole. Please see table "Aperture dimensions".



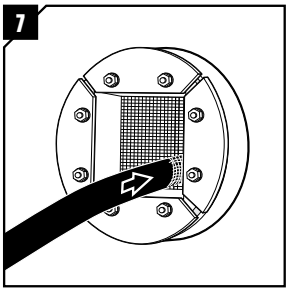
If pipes/cables are pre-routed, an R frame can be cut open with a sharp tool. Cut the longside open between screws.
For R100, cut between screw and corner.



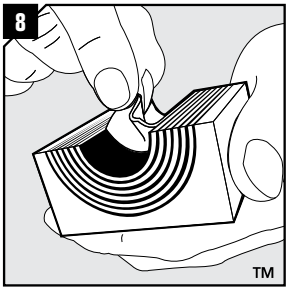
Push the front fittings to the sides. Lubricate the inside of the frame thoroughly, especially into the corners.



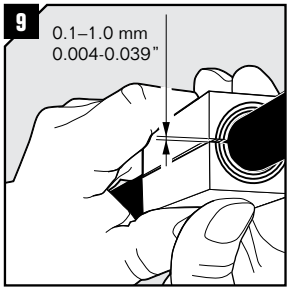
If the frame is provided with a net, cut or bend the net with a sharp tool, or your fingers, to enable cables/pipes to pass through at their position in the frame.



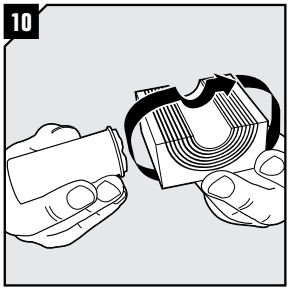
Pull the cables through. Please see note on reverse page.



Adapt modules which are to seal cables or pipes by peeling off layers until you reach the gap seen in pic. 9. The halves may not differ by more than one layer.



Achieve a 0.1-1.0 mm gap between the two halves when held against the cable/pipe.



Lubricate all modules for the frame thoroughly, both the inside and the outside surfaces.

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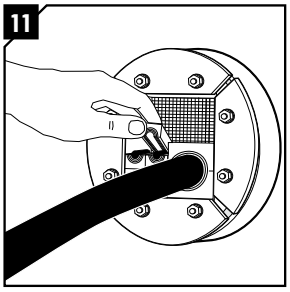
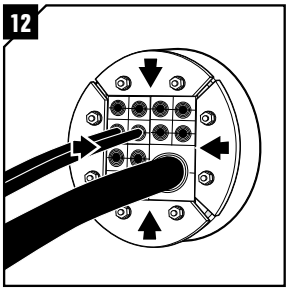
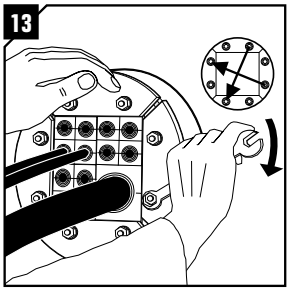


Insert the modules and cables/ pipes according to your installation plan (transit plan).



Push the front fittings back towards the center.



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

Torque settings

Type:	Rec. torque* (Nm)
R 70-R 127	6-7
R 150-R 200	9-11

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

Aperture dimensions

Type:	Aperture Ø (mm)	Clearance depth (mm)	Packing space (mm)
R 70	70-71	75	40 x 40
R 75	75-76	75	40 x 40
R 100	100-102	80	60 x 60
R 125	125-127	75	80 x 80
R 127	127-129	75	80 x 80
R 150	150-152	75	90 x 90
R 200	200-202	75	120 x 120

Disassembly

Reverse order

Note

- For optimum reliability, wait 24 hours or longer after installation before exposing the cables/pipes to strain or pressure.
- To be used with: RM modules.
- Cables/pipes shall be parallel to the sleevehole.
- Cable/pipe with a considerable weight needs to be supported to prevent damage or subsidence to the seal.

INSTALLATION VIDEO

Roxtec RS seal

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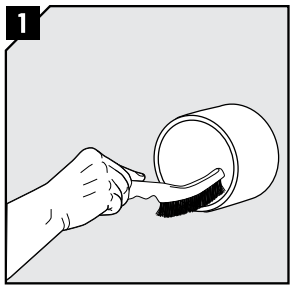
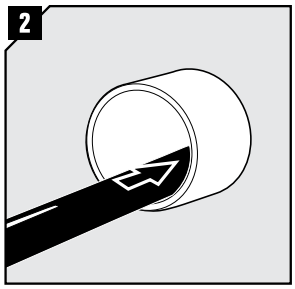
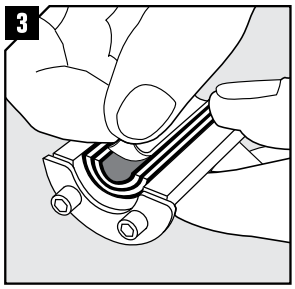
Installation Roxtec RS 25-200



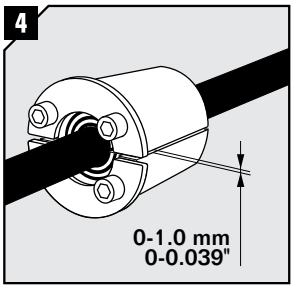
Remove any dirt from the sleeve/ hole.



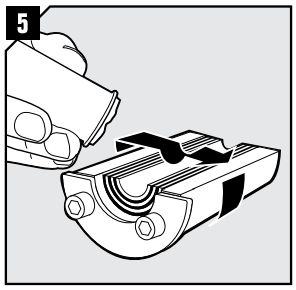
Pull the cable/pipe through. Please see note and table for aperture dimensions.



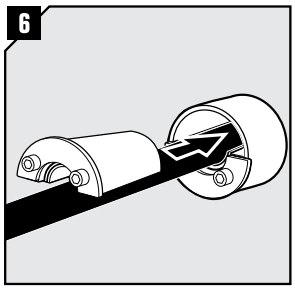
Adapt the seal to the cable/pipe by peeling off layers from the halves until you reach the gap seen in pic.4. The halves may not differ by more than one layer.



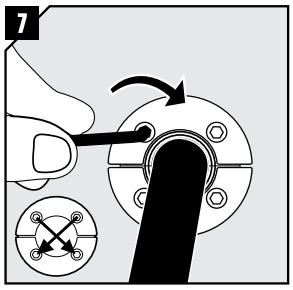
Try to achieve a 0-1.0 mm gap between the two halves when held against the cable/pipe.



Lubricate thoroughly on the inside surfaces and sparsely on the outside of the seal with Roxtec Lubricant.



Insert the halves into the sleeve.



Tighten the screws crosswise. The seal will compress and seal the transit. Please see fig. 1 and 2 for reference.

Tightening torque

Size: RS	Approx. torque* (Nm)
25 - 31	1
43 - 100	4
125 - 200	7

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

Fig. 1

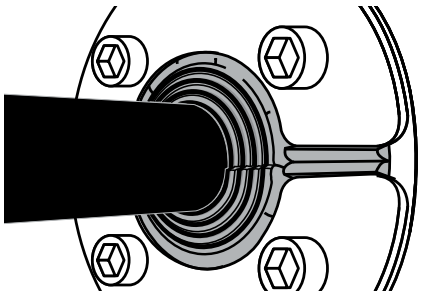
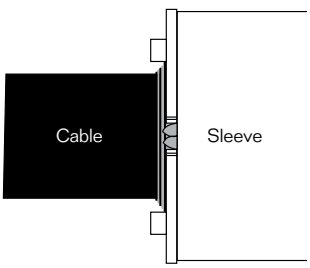


Fig. 2



The seal is compressed when rubber expands over the front fittings and the layers bulge outwards.

Aperture dimensions

Type:	Aperture Ø (mm)	Clearance depth (mm)
RS 25	25-26	45
RS 31	31-32	45
RS 43	43-45	83
RS 50	50-52	83
RS 68	68-70	83
RS 75	75-77	83
RS 100	100-102	83
RS 125	125-127	83
RS 150	150-152	83
RS 175	175-177	83
RS 200	200-203	83

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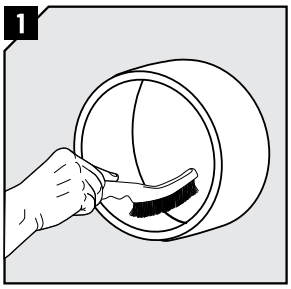
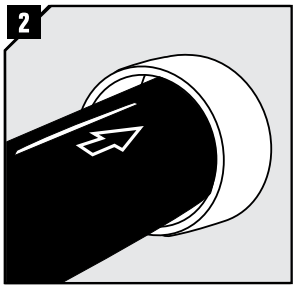
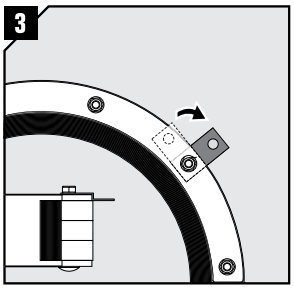
Installation Roxtec RS 225-644



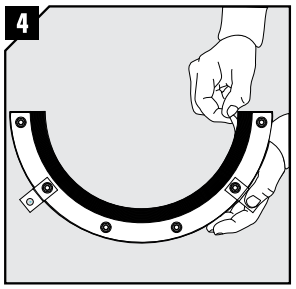
Remove any dirt from the sleeve/ hole.



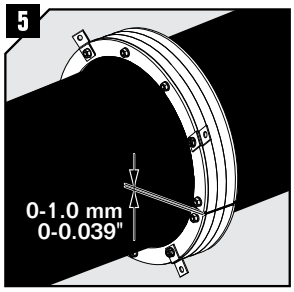
Pull the cable/pipe through. Please see note and table for aperture dimensions.



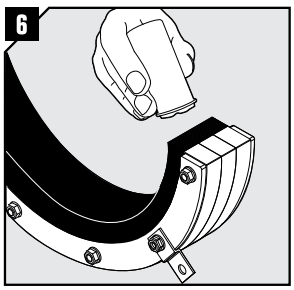
Fold out all stop flanges. Make sure that they are secured by the fittings.



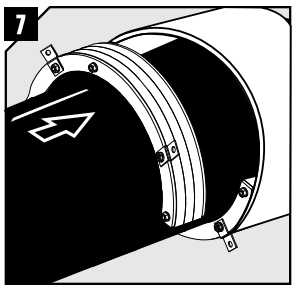
Adapt the seal to the cable/pipe by peeling off layers from the halves until you reach the gap seen in pic.5. The halves may not differ by more than one layer.



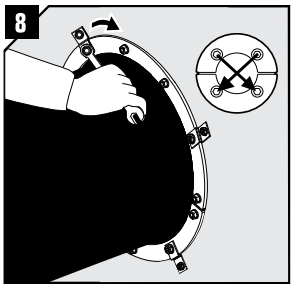
Try to achieve a 0-1.0 mm gap between the two halves when held against the cable/pipe.



Lubricate thoroughly on the inside surfaces and sparsely on the outside of the seal with Roxtec Lubricant.



Insert the halves into the sleeve.



Tighten the bolts crosswise. The seal will compress and seal the transit. Please see table for approx. torque.

Aperture dimensions

Type:	Aperture Ø (mm)	Clearance depth (mm)	Type:	Aperture Ø (mm)	Clearance depth (mm)
RS 225	225-228	75	RS 450	450-453	75
RS 250	250-253	75	RS 500	500-503	75
RS 300	300-303	75	RS 550	550-553	75
RS 350	350-353	75	RS 600	600-603	75
RS 400	400-403	75	RS 644	644-647	75

Tightening torque

Size: RS	Approx. torque* (Nm)
225 - 400	17
450 - 644	35

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

Disassembly

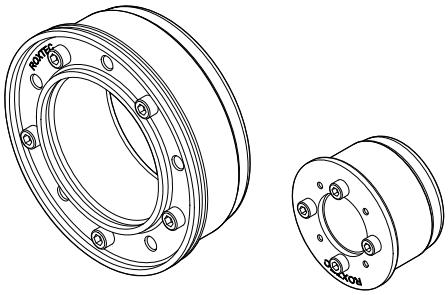
Reverse order

Note

- Cable/pipe shall be routed perpendicularly to the sleeve or hole.
- Cable/pipe of considerable weight must be supported by surrounding structure or equipment to prevent damage or subsidence to the seal.
- Wait 24 hours or longer after installation before exposing the cables/pipes to strain or pressure.

INSTALLATION VIDEO

Roxtec SPM™ seal



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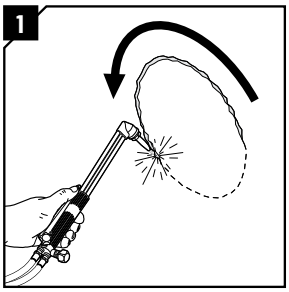
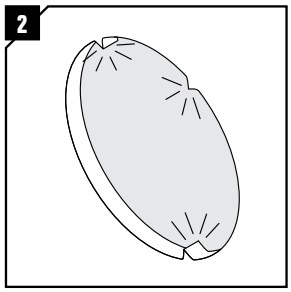
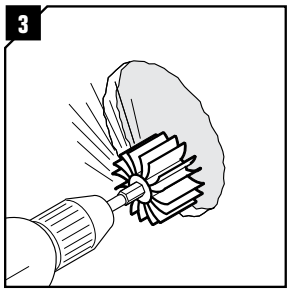
Aperture

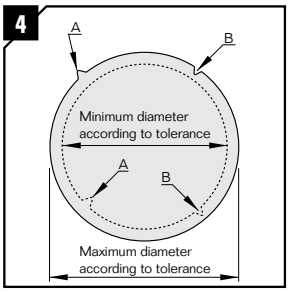


Make an aperture according to the table.

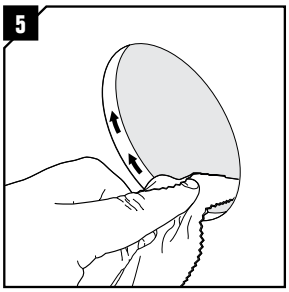


Remove all sharp edges to avoid damage to the rubber of the seal.





Irregularities are acceptable within the aperture tolerance.
A: Non-acceptable irregularity.
B: Acceptable irregularity.



Make sure the aperture is free from dirt and dust.

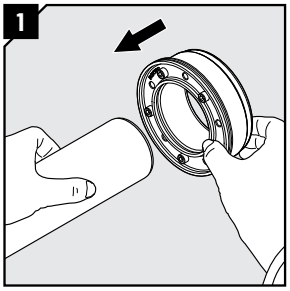
Aperture dimension and pipe range

Thickness of the structure must be between 6 mm and 15 mm.

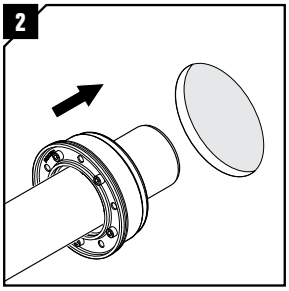
SPM seal	Pipe diameter range (mm)	Aperture diameter (mm)	Aperture diameter tolerance + - (mm)	Maximum tightening torque (Nm)
41	12-16	43	2	2
54	19-23	55.5	2	2
59	24-28	60.5	2	3
62	27-31	63.5	2	3
69	32-36	70.5	2	3
81	41.4-45.4	83	2	3
87	47-51	89	2	3
92	52-56	94	2	3
103	56.2-61.1	105	2	7
119	72.2-76.9	121	2	7
138	88-92	140	2	7
157	107-111	159	2	7
168	113-117	170	2	10
196	138.5-143	198	2	10
226	167-171	228	2	10
279	218-222	281	2	10

Article number: 153048 Document number: DOC-0000116 version A

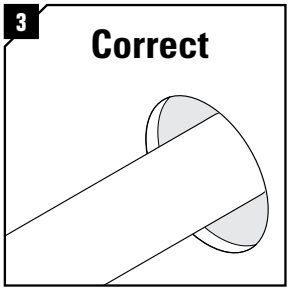
Installation

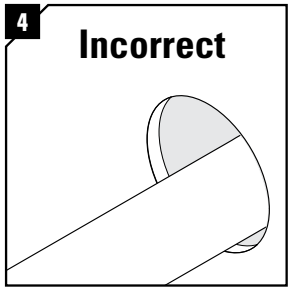


Slide the pipe through the seal.

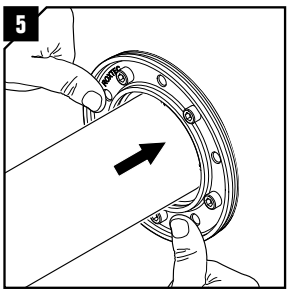


Insert the pipe and seal in the aperture.

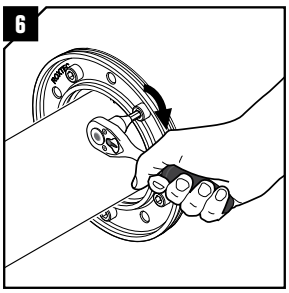


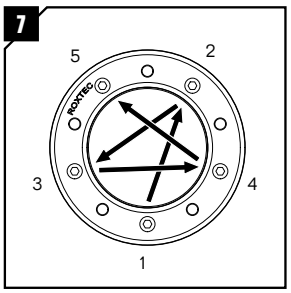


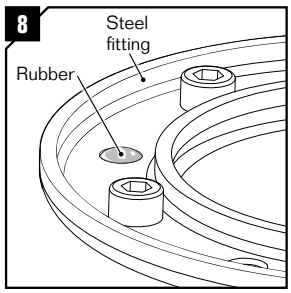
Ensure that the pipe is centrally positioned in the aperture.



Make sure the seal is properly fitted against the inside of the opening.

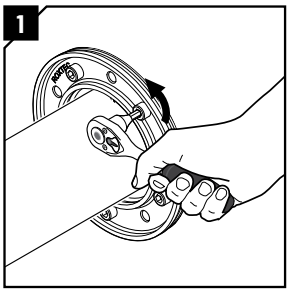


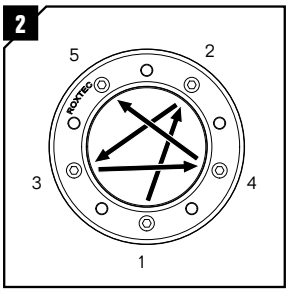




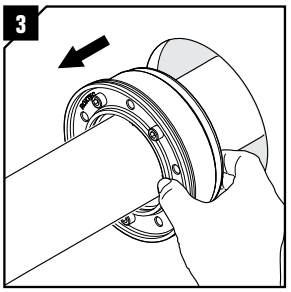
Tighten the bolts crosswise in small steps. Full compression is achieved when the rubber is flush or slightly raised from the steel casing. Do not exceed the maximum torque according to the table on previous page.

Disassembly





Untighten the bolts crosswise in quarter turn increments.



Remove the seal from the opening.

VIDEO

Roxtec RS PPS back-to-back seal

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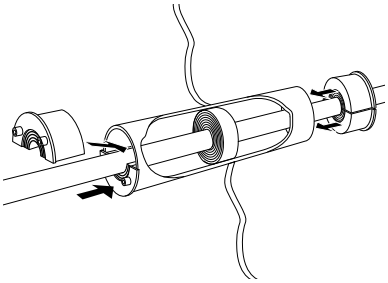


Fig 1: Water tightness or fire rated resistance

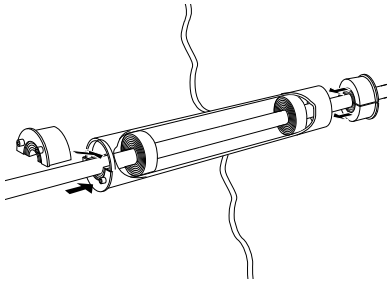
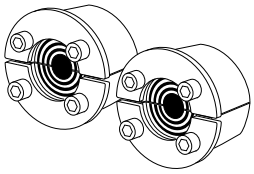
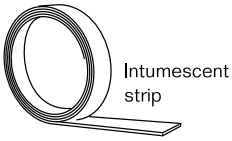
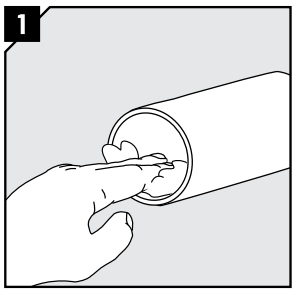


Fig 2: Sustained water tightness after fire exposure

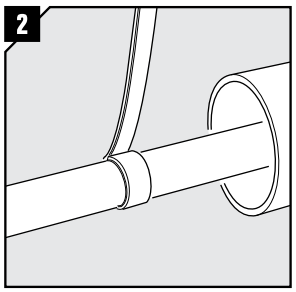




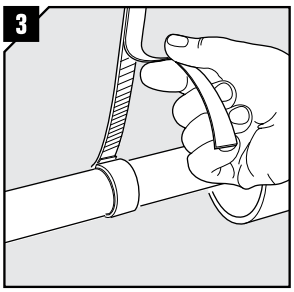
Roxtec Plastic Pipe Seal installation



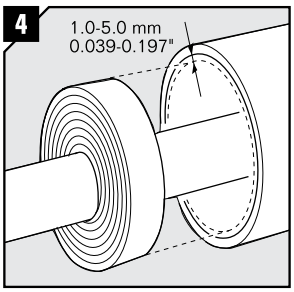
Remove any dirt inside the sleeve and pull the pipe through.



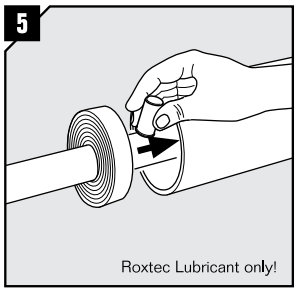
Wrap the intumescent strip once around the pipe without removing the protective tape. This will make it slide better into the sleeve later.



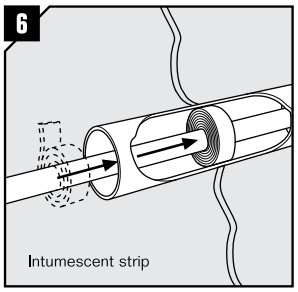
Break the protective tape from the strip and remove it.



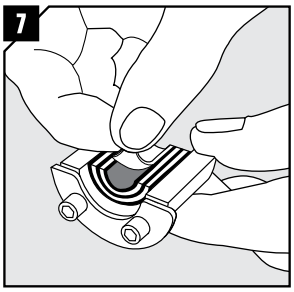
Continue to wrap the strip onto the pipe until there is 1.0-5.0 mm free space left between the strip and sleeve.



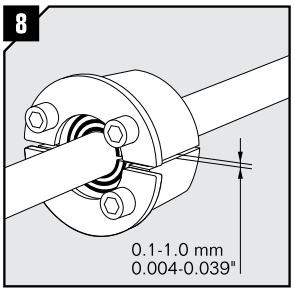
Tip: Lubricate the pipe with Roxtec Lubricant to ease the sliding.



Move/slide the strip into the sleeve and as close to the center as possible. For sustained water tightness after fire exposure applications place one intumescent strip as close as possible to each RS seal according to fig. 2.

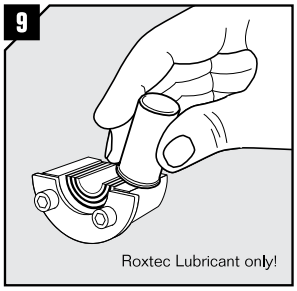


Adapt the seal to the pipe by peeling off layers from the halves until you reach the gap seen in pic.8. The halves may not differ by more than one layer.

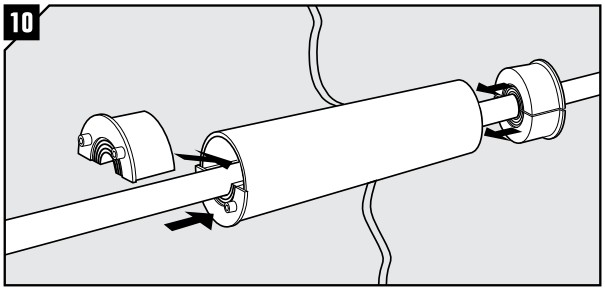


Try to achieve a 0.1-1.0 mm gap between the two halves when held against the pipe.

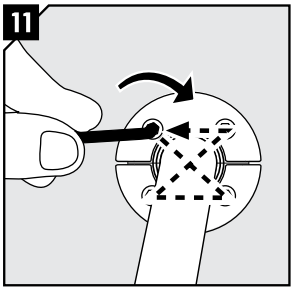
ASS2005002901 ver_2.4/EN/1410/stsan



Lubricate thoroughly on the inside surfaces and sparsely on the outside of the seal.



Insert the halves one by one into the sleeve. Make sure the intumescent material stays in the center of the sleeve. For installations having sustained water tightness after fire exposure make sure that the intumescent strips are as close to the RS seals as possible according to fig. 2 at previous page.



Tighten the screws crosswise. The seal will compress and seal the transit. See table below for recommended torque. See fig. 3 and 4 for reference.

Disassembly

Reverse order

Fig. 3

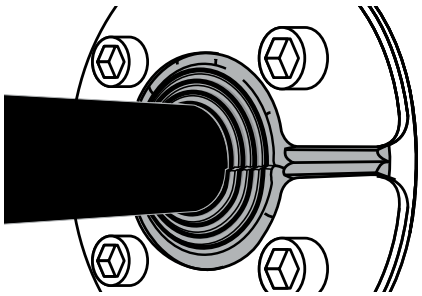
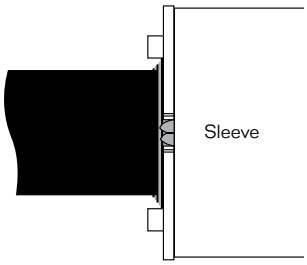


Fig. 4



The seal is compressed when rubber expands over the front fittings and the layers bulge outwards.

Tightening torque

Size: RS PPS	Approx. torque* (Nm)
31	1
43 - 100	4
125 - 200	7
225 - 400	17

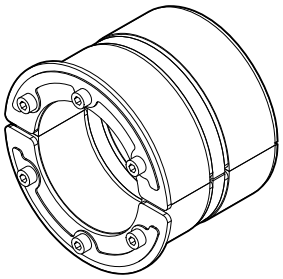
* The tightening torque depends on several things, e.g. cable or pipe size, amount of used lubricant, sleeve size or material in the cable sheet, etc.

Note

- Wait 24 hours or longer after installation before exposing the pipe to strain or pressure.
- Pipes shall go straight through the frame.
- Sustained water tightness after fire exposure applications requires a longer sleeve.

INSTALLATION VIDEO

Roxtec RS PPS/S single-side seal



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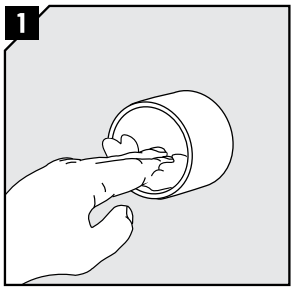
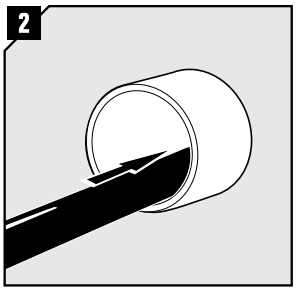
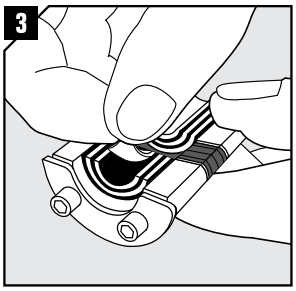
Installation



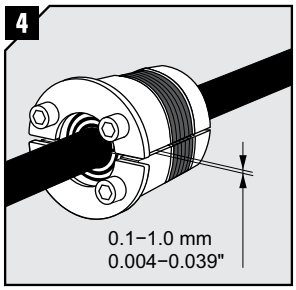
Remove any dirt in the sleeve.



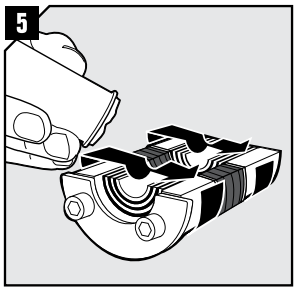
Pull the plastic pipe through.



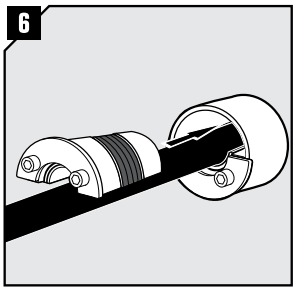
Adapt the seal to the pipe by peeling off layers from the halves until you reach the gap seen in pic.4. The halves may not differ by more than one layer.



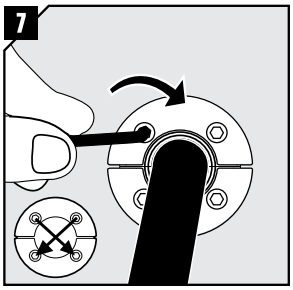
Try to achieve a 0.1-1.0 mm gap between the two halves when held against the pipe.



Lubricate thoroughly on the inside and sparsely on the outside of the rubber surfaces of the seal with Roxtec Lubricant. No need to apply lubricant to the grey intumescent material.



Insert the halves, one by one, into the sleeve.



Tighten the screws crosswise. This will compress and seal the RS PPS/S. See table for approx. torque. See fig. 1 and 2 for reference.

Tightening torque

Size: RS PPS/S	Approx. torque* (Nm)
25 - 31	1
43 - 100	4
125 - 150	7

* The tightening torque depends on several things, e.g cable or pipe size, amount of used lubricant, sleeve size or material in the cable sheath.

Fig. 1

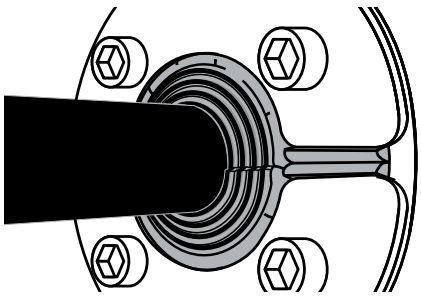
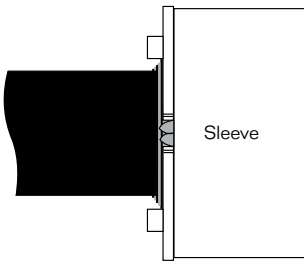


Fig. 2

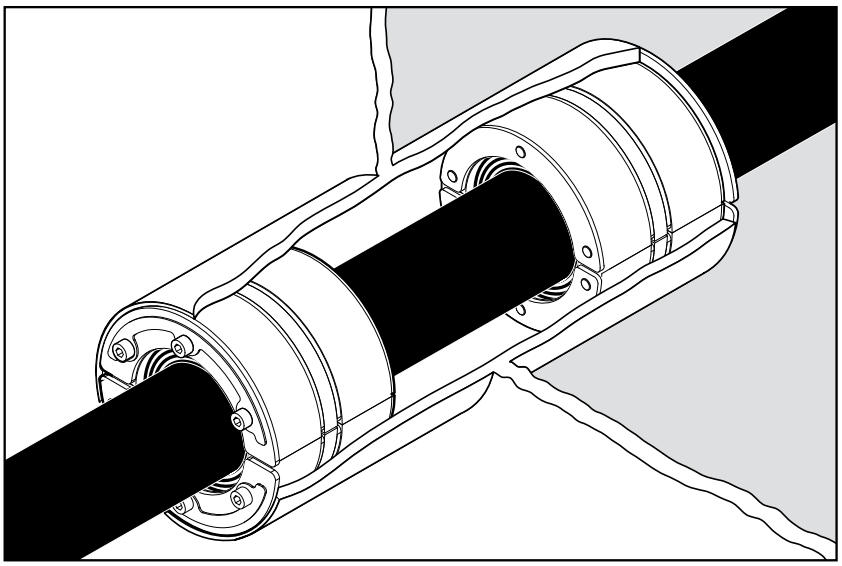


The seal is compressed when rubber expands over the front fittings and the layers bulge outwards.

ASS2007006501 ver_2.5/EN/1410/stsan

Sustained water tightness after fire exposure

RS PPS/S Seals mounted back to back in a longer sleeve



Disassembly

Reverse order

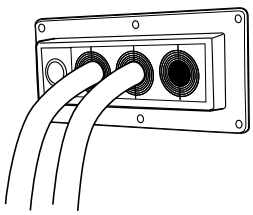
Aperture dimensions

Type:	Aperture Ø (mm)	Clearance depth (mm)
RS 25 PPS/S	25-26	45
RS 31 PPS/S	31-32	45
RS 43 PPS/S	43-45	83
RS 50 PPS/S	50-52	83
RS 68 PPS/S	68-70	83
RS 75 PPS/S	75-77	83
RS 100 PPS/S	100-102	83
RS 125 PPS/S	125-127	83
RS 150 PPS/S	150-152	83

Note

- Wait 24 hours or longer after installation before exposing the pipe to strain or pressure.
- Install pipes straight through the seal.
- Sustained water tightness after fire exposure applications requires a longer sleeve.

Roxtec ComSeal™



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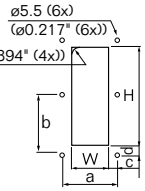
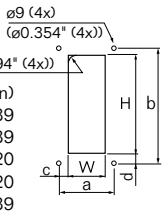
Aperture dimensions

ComSeal™ 10



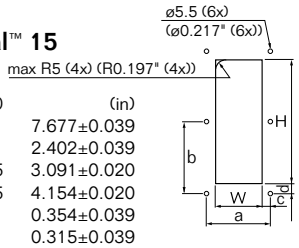
	(mm)	(in)
H	149±1	5.866±0.039
W	56±1	2.205±0.039
a	68.5±0.5	2.697±0.020
b	80.5±0.5	3.170±0.020
c	6.25±1	0.246±0.039
d	6±1	0.236±0.039

ComSeal™ 12



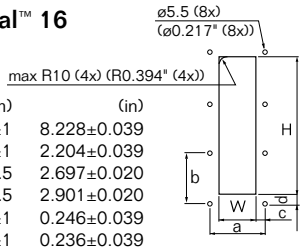
	(mm)	(in)
H	169±1	6.654±0.039
W	56±1	2.205±0.039
a	62±0.5	2.441±0.020
b	193±0.5	7.598±0.020
c	3±1	0.118±0.039
d	12±1	0.472±0.039

ComSeal™ 15



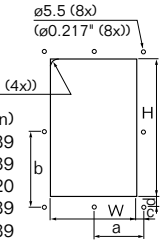
	(mm)	(in)
H	195±1	7.677±0.039
W	61±1	2.402±0.039
a	78.5±0.5	3.091±0.020
b	105.5±0.5	4.154±0.020
c	9±1	0.354±0.039
d	8±1	0.315±0.039

ComSeal™ 16



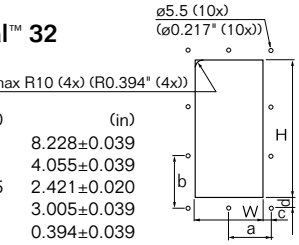
	(mm)	(in)
H	209±1	8.228±0.039
W	56±1	2.204±0.039
a	68.5±0.5	2.697±0.020
b	73.7±0.5	2.901±0.020
c	6.25±1	0.246±0.039
d	6±1	0.236±0.039

ComSeal™ 30



	(mm)	(in)
H	195±1	7.677±0.039
W	120±1	4.724±0.039
a	71.5±0.5	2.815±0.020
b	109.5±1	4.311±0.039
c	11±1	0.433±0.039
d	12±1	0.472±0.039

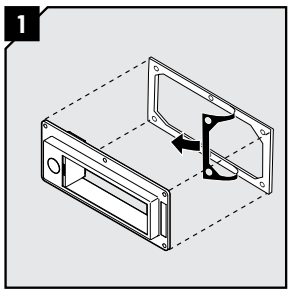
ComSeal™ 32



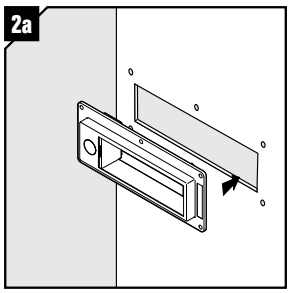
	(mm)	(in)
H	209±1	8.228±0.039
W	103±1	4.055±0.039
a	61.5±0.5	2.421±0.020
b	76.3±1	3.005±0.039
c	10±1	0.394±0.039
d	10±1	0.394±0.039

Cut a rectangular opening for the frame, according to the tables above. For Roxtec ComSeal™ 12 cut a rectangular opening according to FL 21 or the table above.
Use a counter flange with Roxtec ComSeal™ 12 (article no. 2CV0001020219) if the wall structure is thinner than 2 mm.

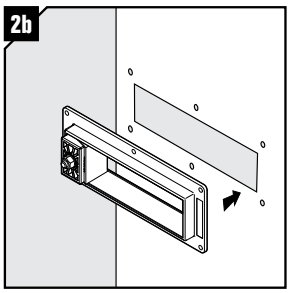
Installation



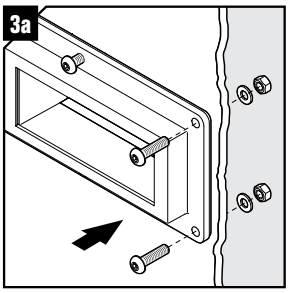
Remove the protective foil from the gasket. Decide which side of the flange that is to face the wall/ structure and fasten the gasket on it.



Insert the frame in the opening with gasket side towards the wall/ structure.

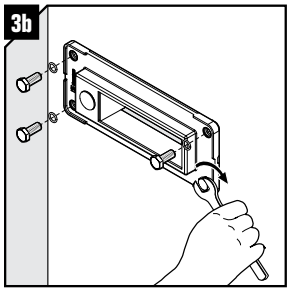


Alternatively, insert it with the other side of the flange and gasket facing the wall/structure.

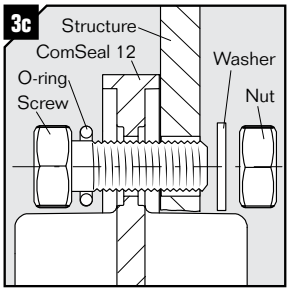


Attach the frame firmly, using the enclosed screws, washers and nuts.

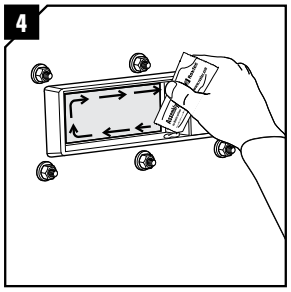
Article number: ASS20100000801 Document number: ASS20100000801 version E



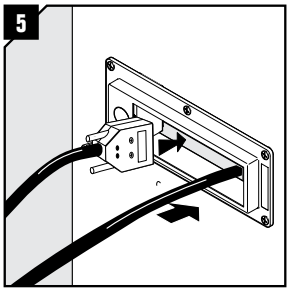
For ComSeal 12, attach the frame firmly, using the enclosed screws, nuts, o-rings and washers.



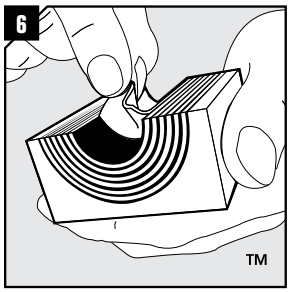
For ComSeal 12, make sure that the o-ring is mounted under the bolt head.



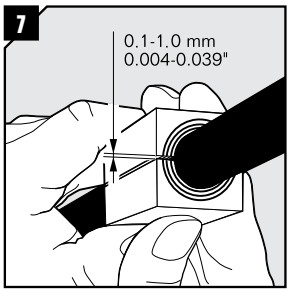
Lubricate the inside surfaces of the frame with Roxtec Assembly Gel, especially in the corners.



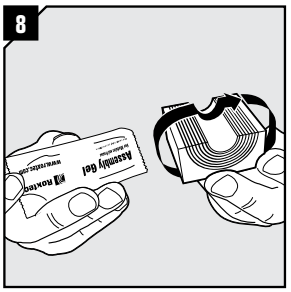
Insert the cables through the frame.



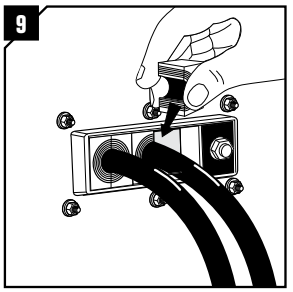
Adapt the modules, which are to hold cables or pipes. Peel off layers until you achieve the gap seen in pic. 7. The halves may not differ by more than one layer.



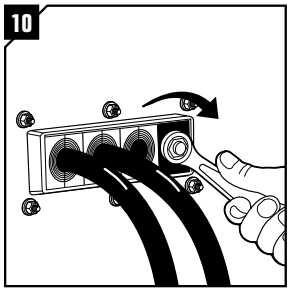
Achieve a 0.1-1.0 mm gap between the two module halves when held against the cable/pipe.



Lubricate all modules thoroughly, both on the inside and the outside surfaces, before installation.



Insert the modules from the back of the frame opening and according to the installation plan (Packing plan). If possible, start with the largest modules.



Tighten the compression unit firmly to seal the frame. Maximum 10 Nm (7.38 ft. lb). A good indication is when the assembly gel is squeezed out between the modules.

Disassembly

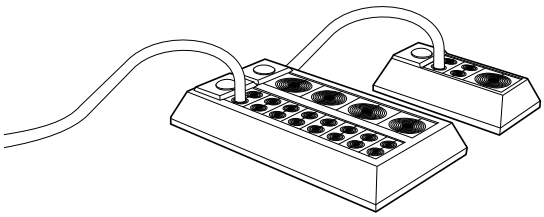
Reverse order.

Note

- For optimum reliability, wait 24 hours or longer after installation before exposing the cables/pipes to strain or pressure.
- To be used together with CM modules.
- To simplify installation of Roxtec ComSeal™ 30 and 32, it is recommended to fill both openings before tightening the compression units.
- Cables shall go straight through the frame.

INSTALLATION VIDEO

Roxtec CF 8, CF 32 frames



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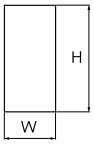
Aperture dimensions

CF 8

Hole dimensions in cabinet:

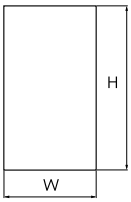


	(mm)	(in)
H	127±0.5	5.000±0.02
W	61±0.5	2.402±0.02

Max wall/cabinet thickness: 4 mm (0.157")

CF 32

Hole dimensions in cabinet:

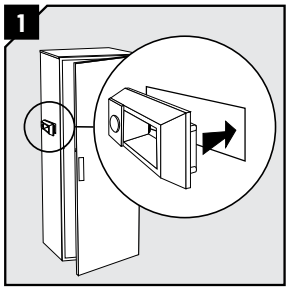


	(mm)	(in)
H	216±0.5	8.504±0.02
W	110±0.5	4.331±0.02

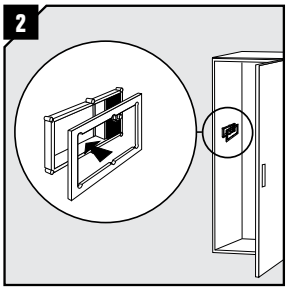
Max wall/cabinet thickness: 4 mm (0.157")

Cut a rectangular opening in the cabinet according to above tables.

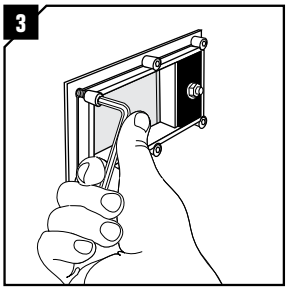
Installation



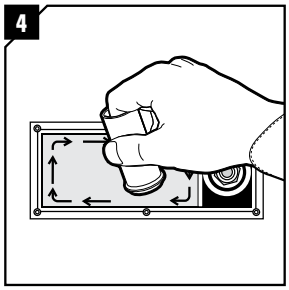
Insert the CF frame from the outside of the cabinet.



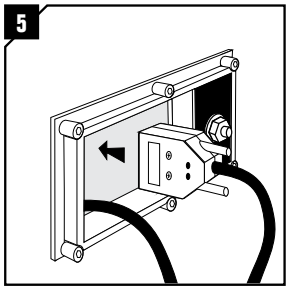
Insert the counter frame from the inside of the cabinet.



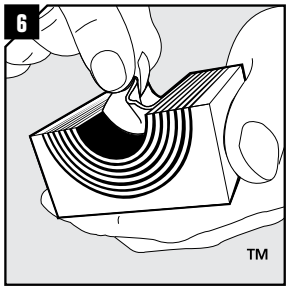
Fasten the hexagon nuts on the backside.



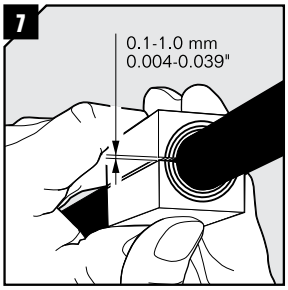
Lubricate the inside surfaces of the frame with Roxtec Lubricant, especially into the corners.



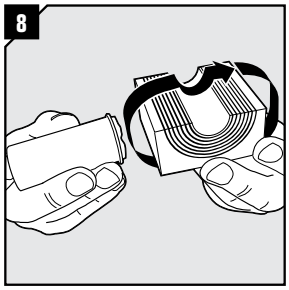
Insert the cables/pipes through the frame.



Adapt modules which are to hold cables or pipes by peeling off layers until you reach the gap seen in pic. 7. The halves may not differ by more than one layer.

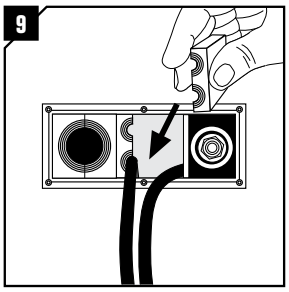


Achieve a 0.1-1.0 mm gap between the two halves when held against the cable/pipe.

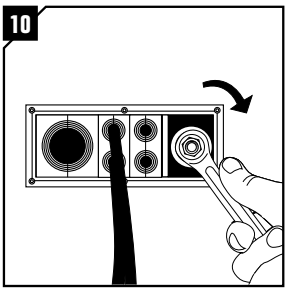


Lubricate all modules for the frame thoroughly, both the inside and the outside surfaces.

Article number: ASS200500330 1
Document number: ASS200500330 1 version B



Insert the modules according to your installation plan (transit plan). Start with the largest modules.



Tighten the compression unit to seal the frame. Recommended torque 8-12 Nm.

Disassembly

Reverse order

Note

- For optimum reliability, wait 24 hours or longer after installation before exposing the cables/pipes to strain or pressure.
- To be used with: CM components.
- Cables shall go straight through the frame.

INSTALLATION VIDEO

Roxtec Sleev-it™ Fire penetration seal

ALWAYS CHECK OUR LATEST UPDATES

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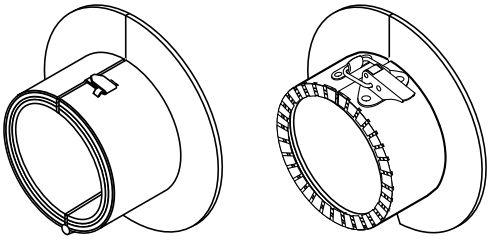
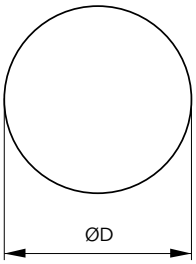


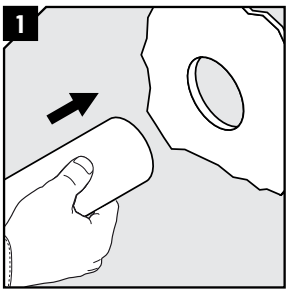
Aperture dimensions

Type:	Pipe outer diam Ø (mm)	Recommended aperture ØD (mm)	Art. no
SLEEV-IT FC - MAR16M	16	22 +/-4	106239
SLEEV-IT FC - MAR20M	20	26 +/-4	106245
SLEEV-IT FC - MAR25M	25	31 +/-4	106247
SLEEV-IT FC - MAR32M	32	38 +/-4	106249
SLEEV-IT FC - MAR40M	40	46 +/-4	106251
SLEEV-IT FC - MAR50M (1.5")	48.3	54 +/-4	106253
SLEEV-IT FC - MAR60M (2")	60.3	66 +/-4	106255
SLEEV-IT FC - MAR63M	63	69 +/-4	106257
SLEEV-IT FC - MAR66M	66	72 +/-4	117916
SLEEV-IT FC - MAR75M	75	81 +/-4	106259
SLEEV-IT FC - MAR82M	82	88 +/-4	117919
SLEEV-IT FC - MAR90M (3")	88.9	95 +/-4	106261
SLEEV-IT FC - MAR110M	110	116 +/-4	106263
SLEEV-IT FC - MAR115M (4")	114.3	120 +/-4	106265
SLEEV-IT FC - MAR125M	125	131 +/-4	106267
SLEEV-IT FC - MAR140M	140	146 +/-4	106269
SLEEV-IT FC - MAR160M	160	166 +/-4	106271
SLEEV-IT FC - MAR169M (6")	168.3	174 +/-4	106273
SLEEV-IT FC - MAR200M	200	206 +/-4	106275
SLEEV-IT FC - MAR219M (8")	219.1	225 +/-4	106278
SLEEV-IT FC - MAR225M	225	231 +/-4	106280

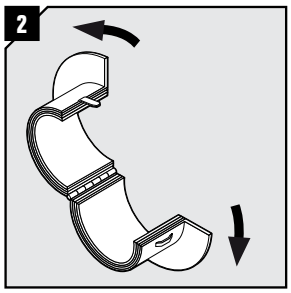


Installation

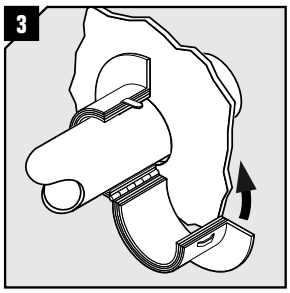
Pre-routed pipe.



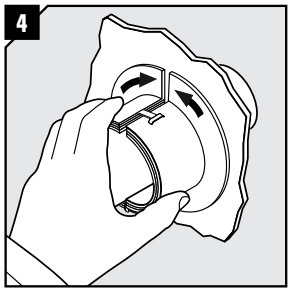
Route the pipe through the aperture.



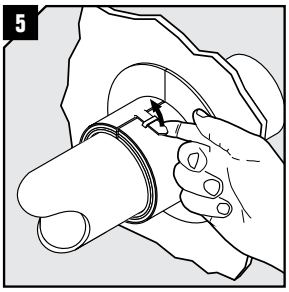
Open the fire penetration seal.



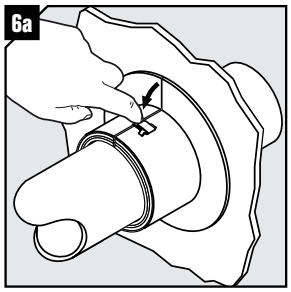
Apply the fire penetration seal onto the pipe.



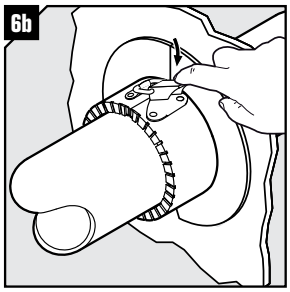
Close the fire penetration seal.



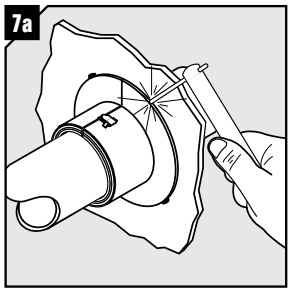
Lock the fire penetration seal by pulling the tab over.



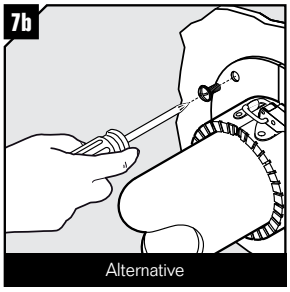
Fire penetration seal locked (for smaller sizes).



Push down the lever to lock the fastener (for larger sizes).



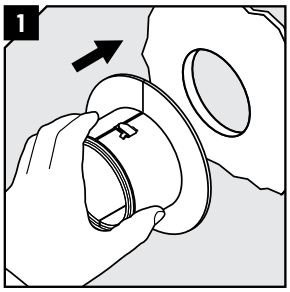
Tack weld the fire penetration seal to the structure. Minimum 4 positions.



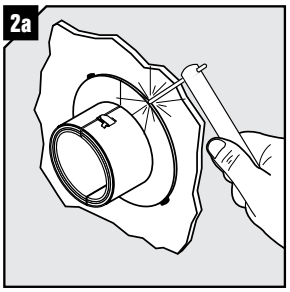
Drill holes in the flange and bolt the fire penetration seal to the structure. Minimum 4 positions.

Installation

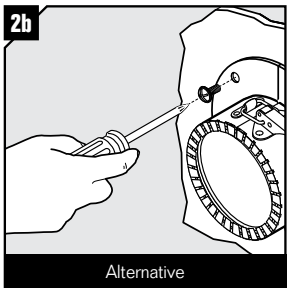
Non pre-routed pipe.



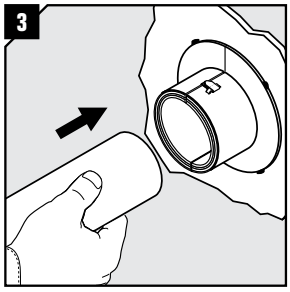
Locate and align the closed and locked fire penetration seal with the aperture.



Tack weld the fire penetration seal to the structure. Minimum 4 positions.



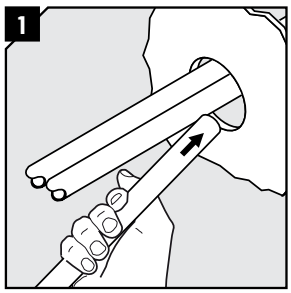
Drill holes in the flange and bolt the fire penetration seal to the structure. Minimum 4 positions.



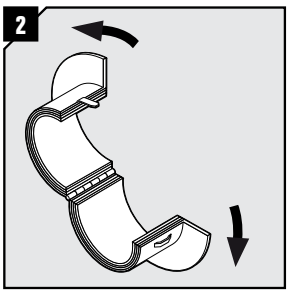
Route the pipe through the aperture and fire penetration seal.

Installation

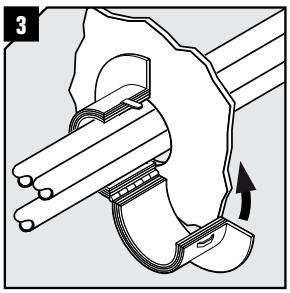
Pre-routed multiple pipes.



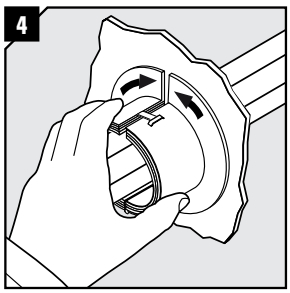
Route the pipes through the aperture.



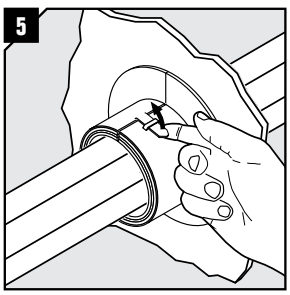
Open the fire penetration seal.



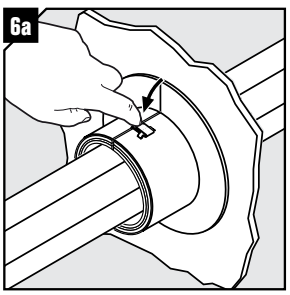
Apply the fire penetration seal onto the pipes.



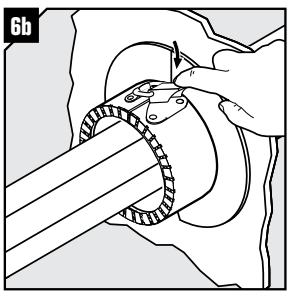
Lock the fire penetration seal.



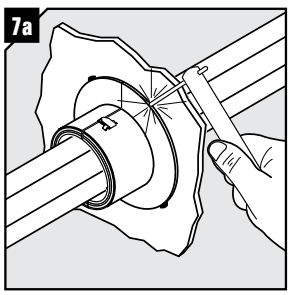
Lock the fire penetration seal by pulling the tab over.



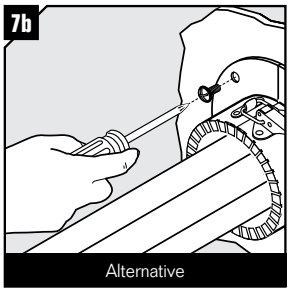
Fire penetration seal locked (for smaller sizes).



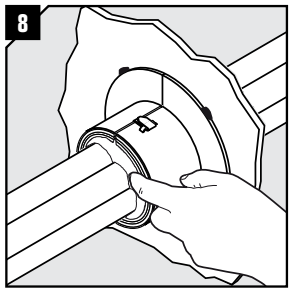
Fire penetration seal locked (for larger sizes).



Tack weld the fire penetration seal to the structure. Minimum 4 positions.



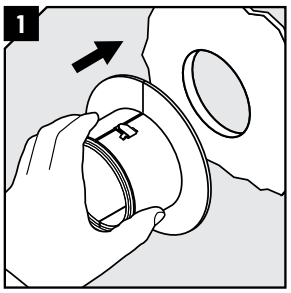
Drill holes in the flange and bolt the fire penetration seal to the structure. Minimum 4 positions.



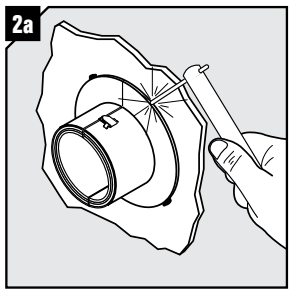
Fill the void between the pipes and the inside of the fire penetration seal with Roxtec smoke seal putty. Smooth the surface of the putty.

Installation

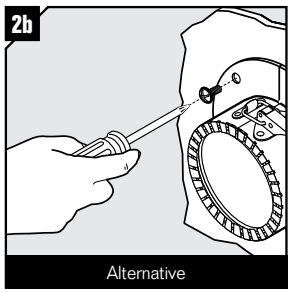
Non pre-routed multiple pipes.



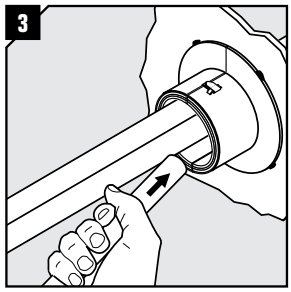
Locate and align the closed and locked fire penetration seal with the aperture.



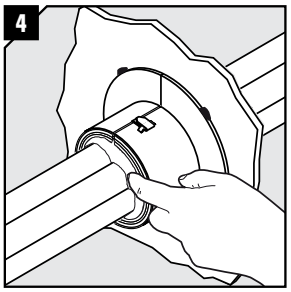
Tack weld the fire penetration seal to the structure. Minimum 4 positions.



Drill holes in the flange and bolt the fire penetration seal to the structure. Minimum 4 positions.



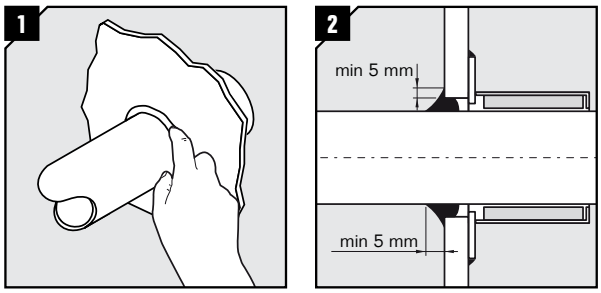
Route the pipes through the aperture and fire penetration seal.



Fill the void between the pipes and the inside of the fire penetration seal with Roxtec smoke seal putty. Smooth the surface of the putty.

Option 1

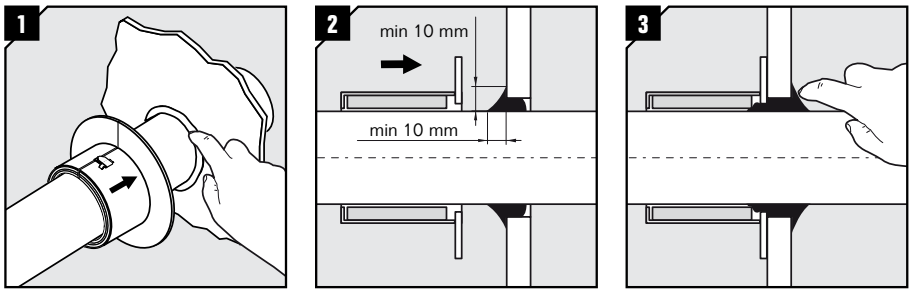
For smoke-tight applications. Sealant from non fire penetration sealing side.



Apply Roxtec sealant into the annular gap between the plastic pipe and the structure.
Arrange a chamfered filling extending at least 5 mm along the plastic pipe and at least 5 mm onto the structure.

Option 2

For smoke-tight applications. Sealant before installing fire penetration seal.



Apply Roxtec sealant into the annular gap between the plastic pipe and the structure.
Arrange a chamfered filling extending at least 10 mm along the plastic pipe and with an offset at least 10 mm towards/onto the structure.

After finalized installation of the fire penetration seal, the excessive pressed-out Roxtec sealant is smoothed out on the non fire penetration sealing side, filling the annular gap around the plastic pipe and the structure.

Disassembly

Reverse order

Note

- Please see type approval certificates for detailed application information.

INSTALLATION VIDEO

Roxtec Sleev-it™ Waterproof penetration seal

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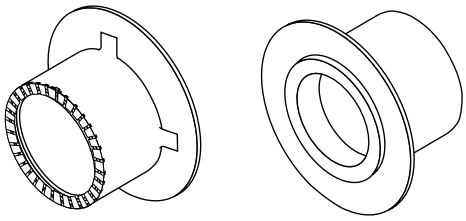
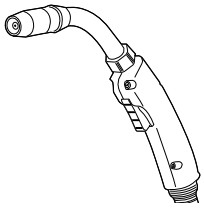


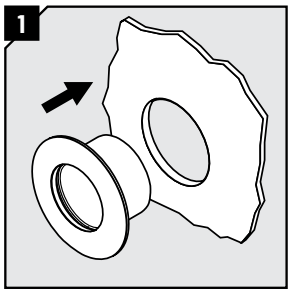
Tools needed

Spray bottle
with soapy water

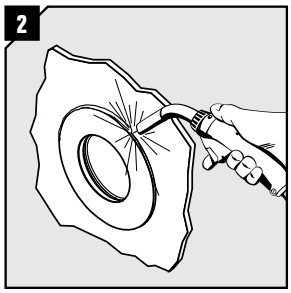


GMAW welder

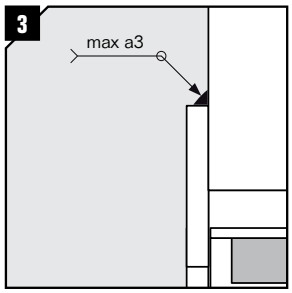
Installation



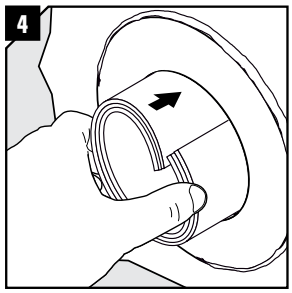
Insert the Roxtec Sleev-it Waterproof penetration seal into the aperture.



Remove the rubber grommet from the flange. Tight weld the flange to the structure using the GMAW-process.

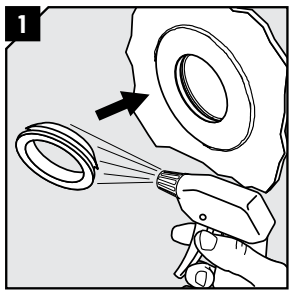


Make a waterproof weld using GMAW to reduce the heat input.

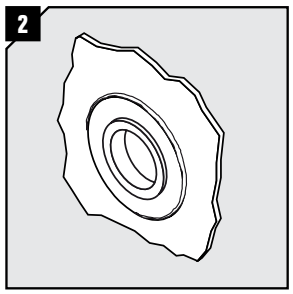


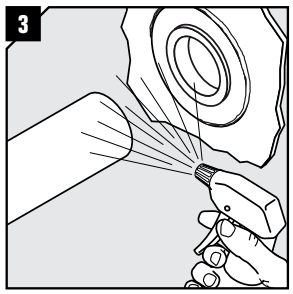
If the intumescent material is supplied separately, insert it after the sleeve has cooled down. Ensure that the intumescent material fits properly into the sleeve.

Routing the pipe, alternative 1

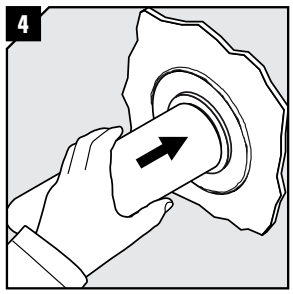


Lubricate the grommet and sleeve with soap water and insert the rubber grommet.





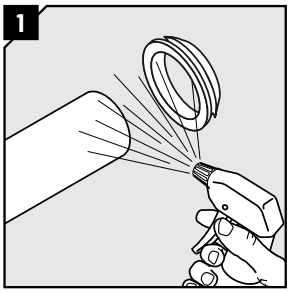
Lubricate the pipe and the rubber grommet thoroughly with soap water.



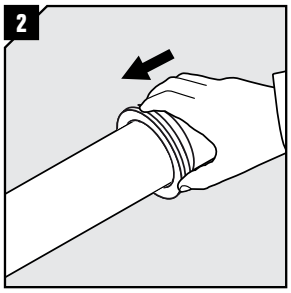
Gently route the pipe through the seal from the grommet side.

Article number: ASS201200120 1
Document number: ASS201200120 1 version C

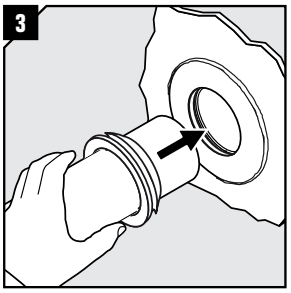
Routing the pipe, alternative 2



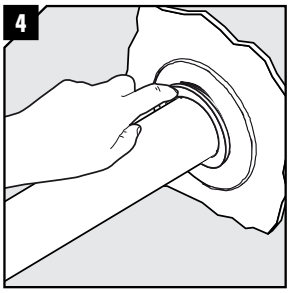
Lubricate the pipe and the rubber grommet thoroughly with soap water.



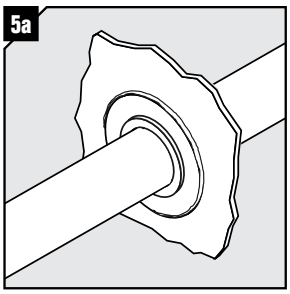
Mount the rubber grommet onto the pipe.

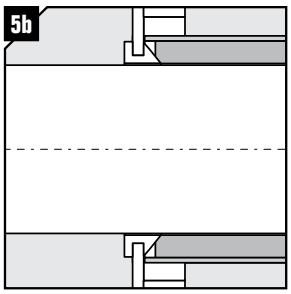


Gently route the pipe through the sleeve.



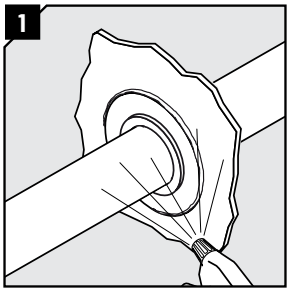
Lubricate the grommet with soap water. Insert the grommet into the sleeve.



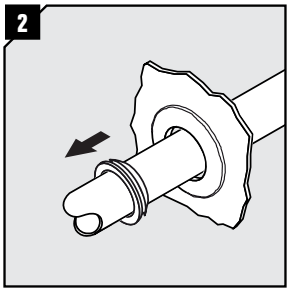


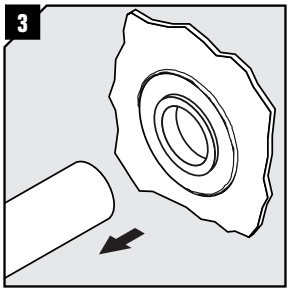
Make sure the grommet is properly inserted and secured in the sleeve.

Disassembly



Lubricate the pipe and slide of the grommet





Alternatively remove the pipe.

Note

- Please see type approval certificates for detailed application information.

INSTALLATION VIDEO

Roxtec Sleev-it™ Transition collar

ALWAYS CHECK OUR LATEST UPDATES

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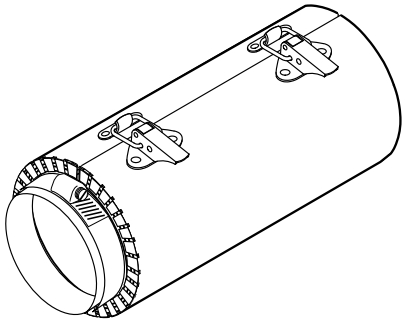
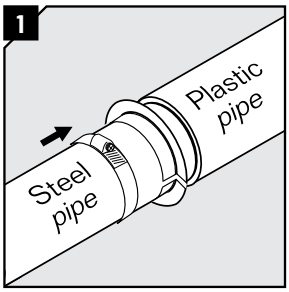
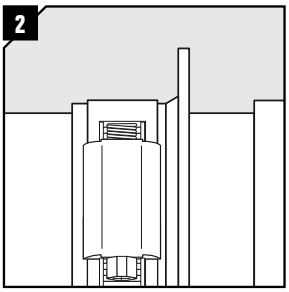
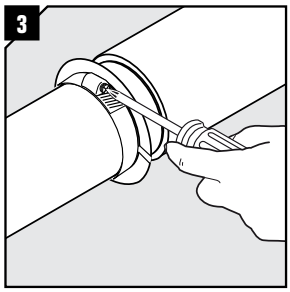


Installation

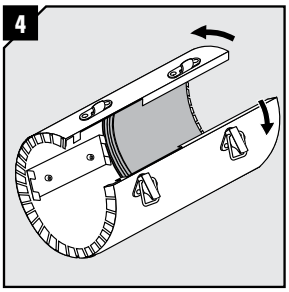


Position hanging bracket on steel pipe close to plastic pipe with clearance accommodating transition collar slot.

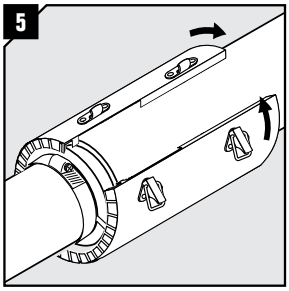




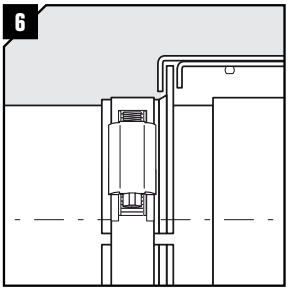
Tighten the jubilee clip to secure the hanging bracket.



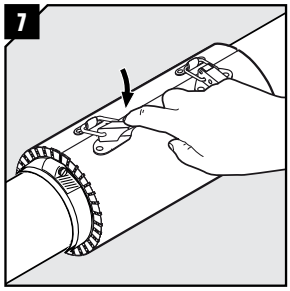
Open the transition collar.



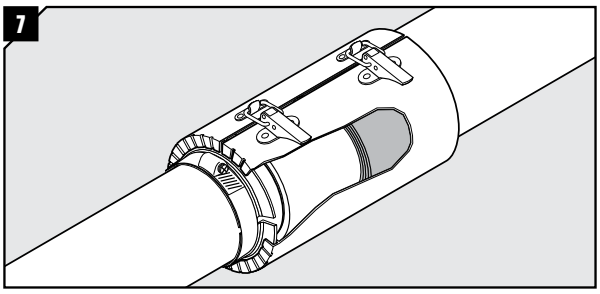
Install the transition collar onto the hanging bracket. Make sure that the intumescent material is on the plastic pipe, not on the steel pipe.



Make sure that the transition between the plastic pipe and the metal pipe is situated as shown in the picture.



Close the transition collar.



This cross-section view shows the finalized installation.

ASS20120011 01 ver_1.0/GB/1208/stsan

Disassembly

Reverse order

Note

- Also applicable for bell housing type of plastic pipe joint
- Please see type approval certificates for detailed application information

INSTALLATION VIDEO

Trainings and inspections

High safety standards require correctly installed and easily inspected products. Installation training for local contractors and post-installation inspections are part of our full line of service.

Product installation training

Whenever you want and wherever you operate, we provide product installation training through our staff. We are there to support and train electrical installers in the field in order to ensure that all installations meet certification requirements. Just call us for more information.

Inspection services

We provide extra safety values by offering onsite inspections. As experts within cable and pipe sealing, we can check the products after the installation, verify the actual installation, and, if necessary, recommend or perform measures. This helps you eliminate any inspection failures.

- Reduce installation time and labor costs
- Ensure quality installation
- Make sure your installers are trained
- Installation instructions available
- Online instruction videos available

Installation checkpoints, rectangular frames

ALWAYS CHECK OUR LATEST UPDATES

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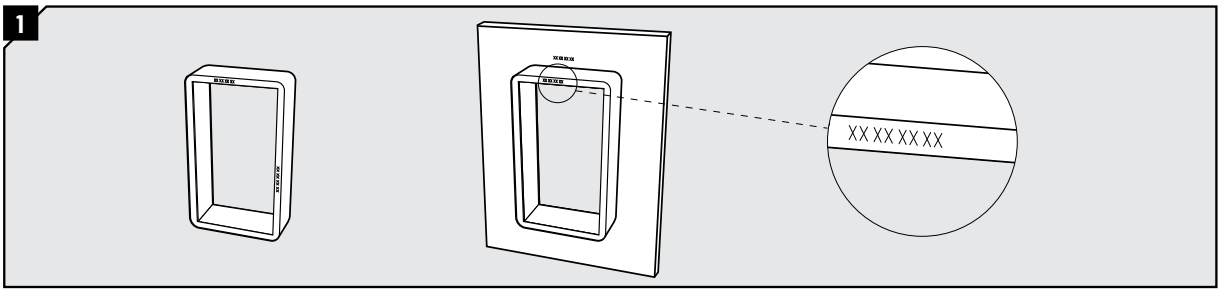
This list of installation checkpoints can be used to visually assess a Roxtec cable/pipe transit sealing system installation. The check is performed to visually verify the correctness of an installation, not a commissioning or functional inspection. The verifications shall be performed and evaluated with the understanding that not all installation errors can be visually detected, even if it is a great help in the quality assurance work. The installation check is limited to those areas and sections of the installation to which reasonable access is both available and permitted at the date of checking. The scope of these installation checkpoints is limited to the transit (frame, modules, stayplates and wedge). Consequently, it does not cover the attachment of the transit to the structure in question, e.g. insulation required, nor the correctness, quality or routing of cables/pipes. If possible perform the installation check from both sides of the transit.

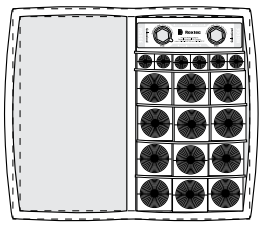
Checkpoints

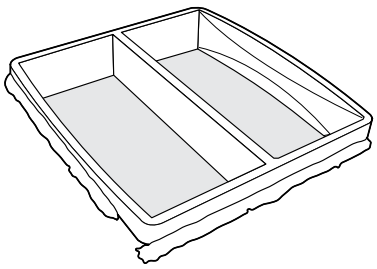
1



Original Roxtec frame are identified by Roxtec marking or frame serial number marking. Frames have the marking or label on the front face.

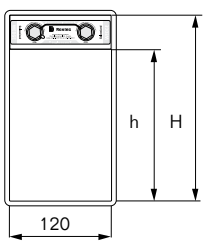
2





Check that the transit and packing system have no mechanical damages, including surface protection, if any. For welding, see Roxtec welding guidelines.

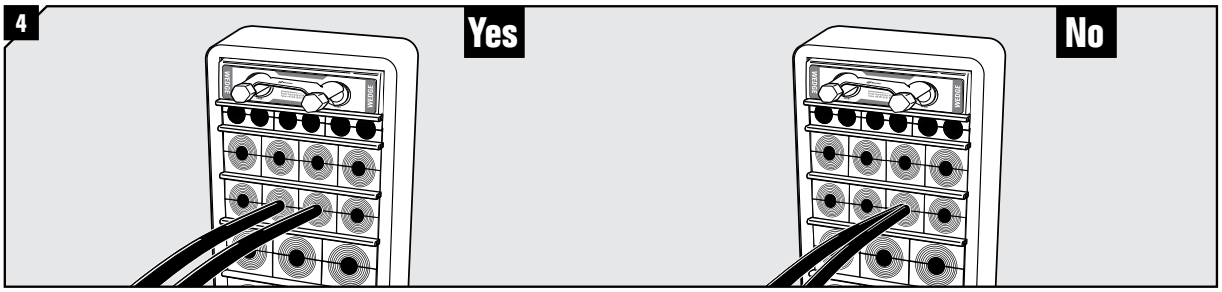
3



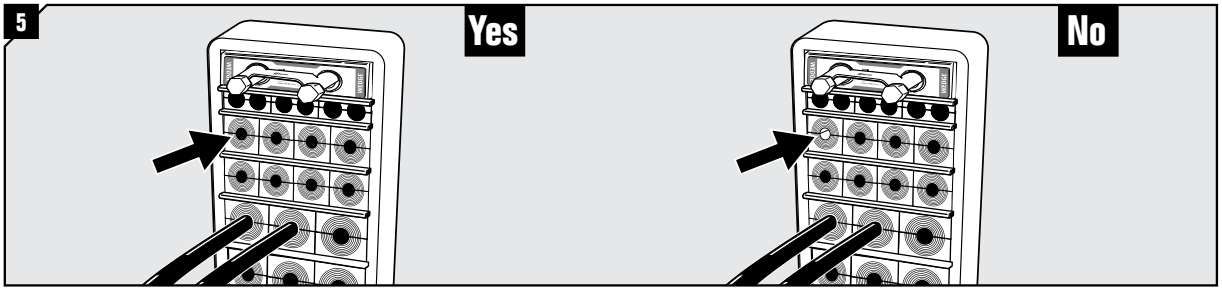
Packing space

Frame height (H)	Packing height (h)	Frame size
101	60	2
160	120	4
218	180	6
278	240	8

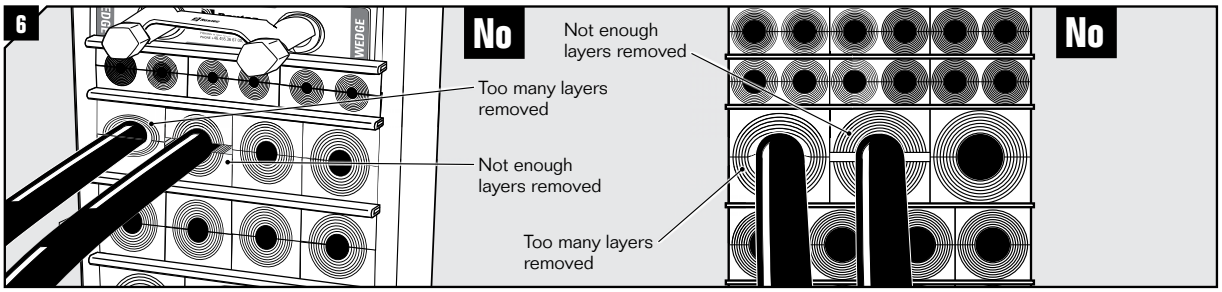
Verify the correct utilization of the entire packing space.



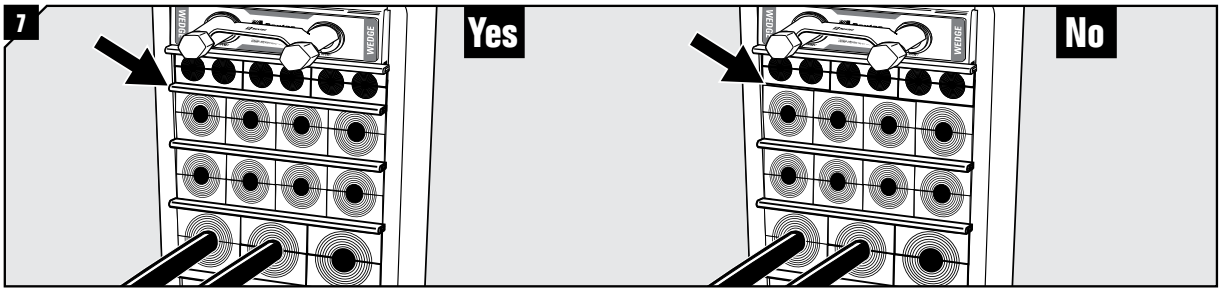
Check that only one cable/pipe passes through each module or opening in a module.



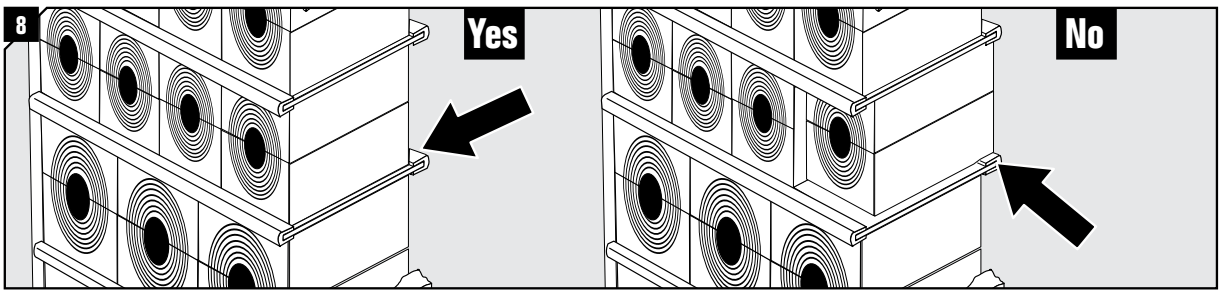
Check that there are no center cores missing.



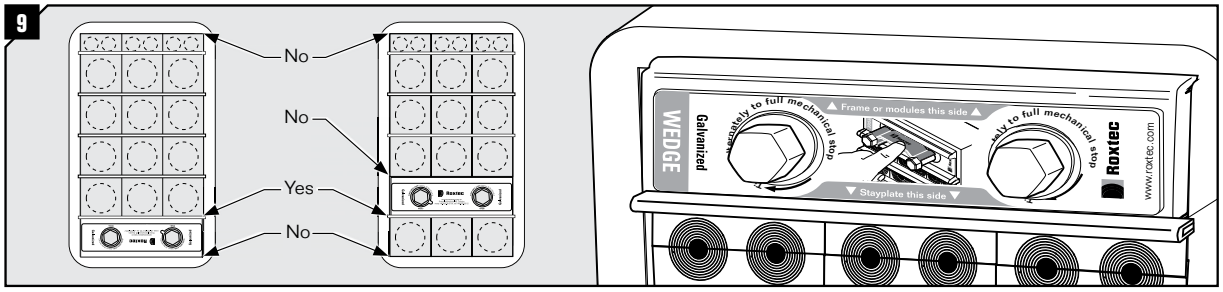
Check that there is no visible gap between cable/pipe and modules after compression. Maximum one layer difference between halves of the same module.



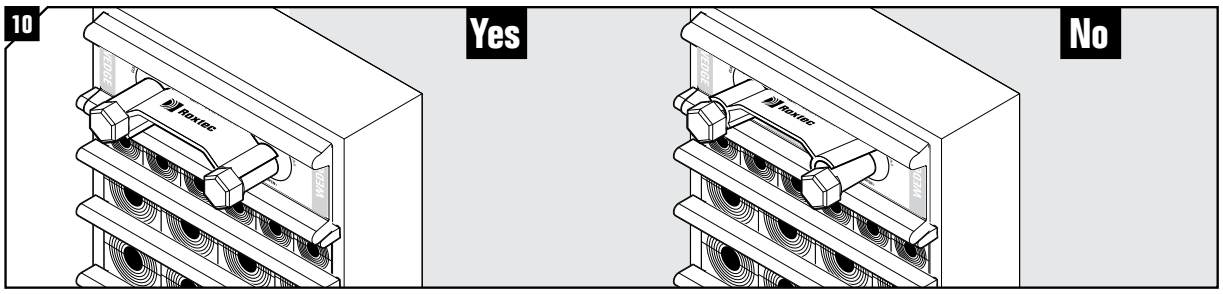
Check that each consecutive row of modules is divided by a stayplate.



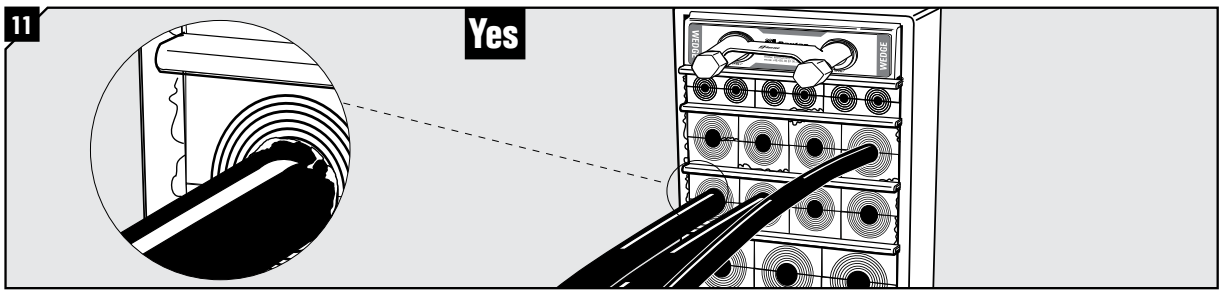
Check that all modules are installed between the edges of the stayplates.



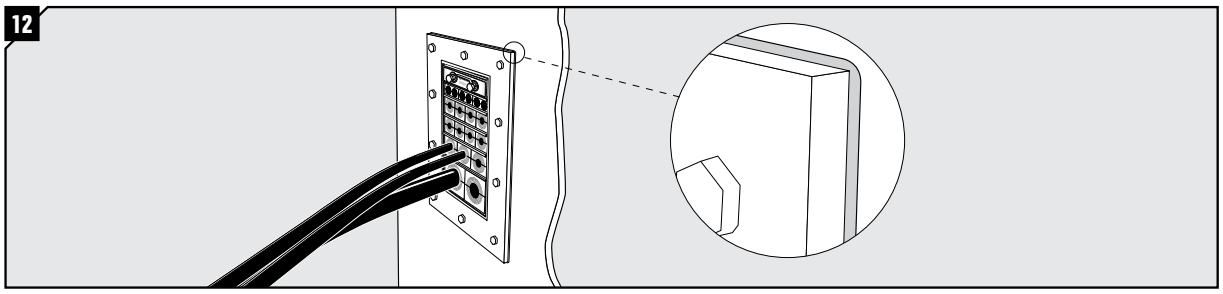
Verify that there is no stayplate installed between modules and the frame or between the wedge and the frame. Verify the correct orientation of the wedge according to the label on the wedge front side or printed text on the upper and lower faces of the unit.



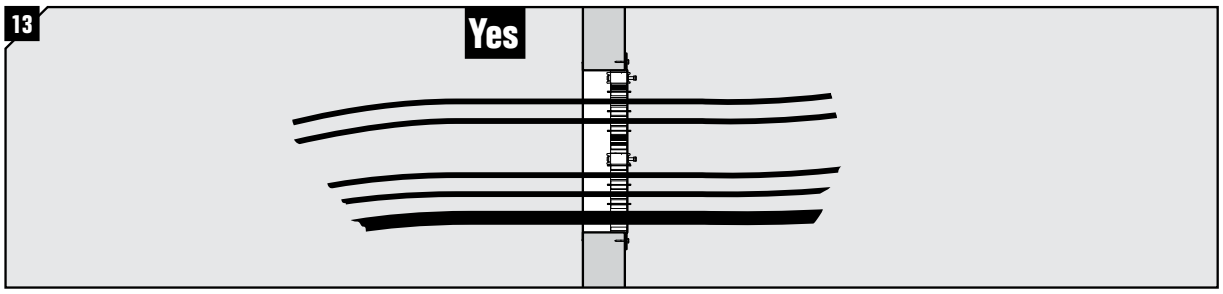
Check that the wedge is fully tightened by verifying that the wedge clip is installed and fits behind the bolt heads.



Check that the frame and the modules have been lubricated. Excess lubricant shall be visible directly after installation.



Make sure that bolted frame types are sealed to the structure and that all attachment points are used.



Make sure that cables go straight through the frame.

ASS201100430 1 ver_1.1/EN/1522/stsan

Note

- If possible, take an overlook at the other side of the transit.
- Check additional installations according to certification requirements, e.g. insulation.

Installation checklist, rectangular frames

ALWAYS CHECK OUR LATEST UPDATES

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For disclaimer and instructions of use, see Installation checkpoints rectangular frames ASS2011004301.

Project/object:

Date:

Transit name:

Full name:

Frame type:

Company:

Opening:

Signature:

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
A1	A2	A3	A4	A5	A6	A7	A8	A9	A10

Check-point	Activity	OK	Not OK
1	Verify original Roxtec frame by marking.		
2	Check for mechanical damages.		
3	Verify the utilization of the packing space.		
4	Check that only one cable/pipe passes through each module.		
5	Check that there is no center cores missing.		
6	Check that there are no visible gap between cable/pipe and module halves.		
7	Check that each consecutive row is divided by a stayplate.		
8	All modules are within the edges of the stayplates.		
9	Verify that there is no stayplate installed next to the frame.		
10	Check that the wedge is fully tightened.		
11	Make sure the frame and the modules have been lubricated.		
12	Check for gaskets and attachment bolts, if applicable.		
13	Check additional installations, if applicable. Make sure that cables go straight through the frame.		

Notes:

ASS2011005101 ver_2.0/EN/1524/thoge

Installation checkpoints, round frames

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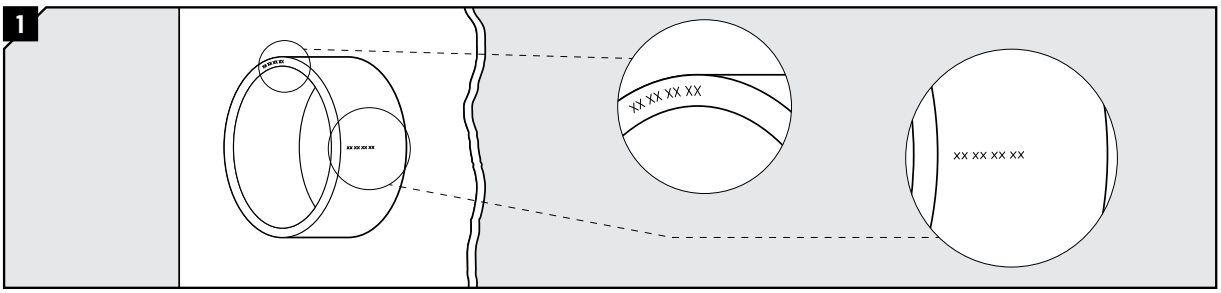
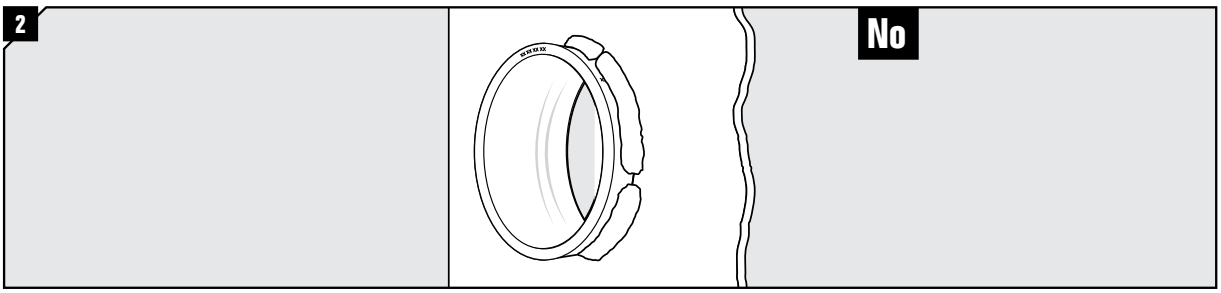
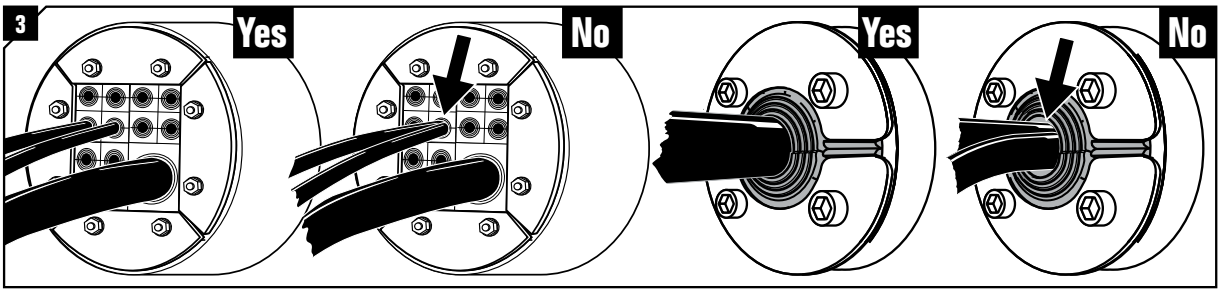
Checkpoints



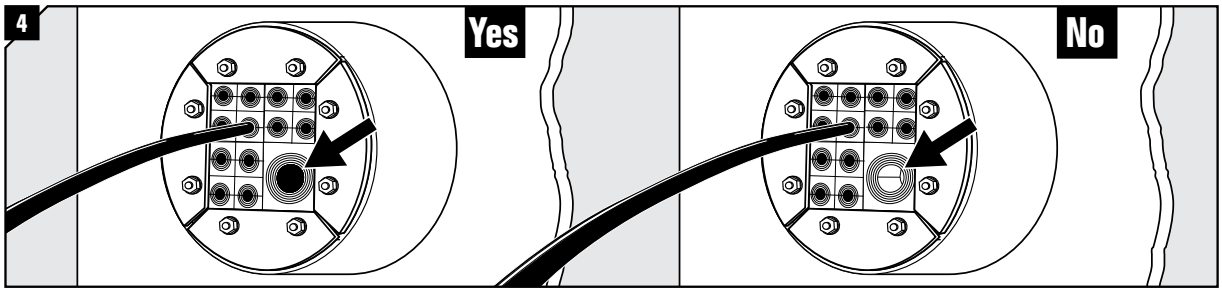
Original Roxtec sleeves are identified by Roxtec marking, serial number marking or label. Sleeves can have marking on the front face or the side.



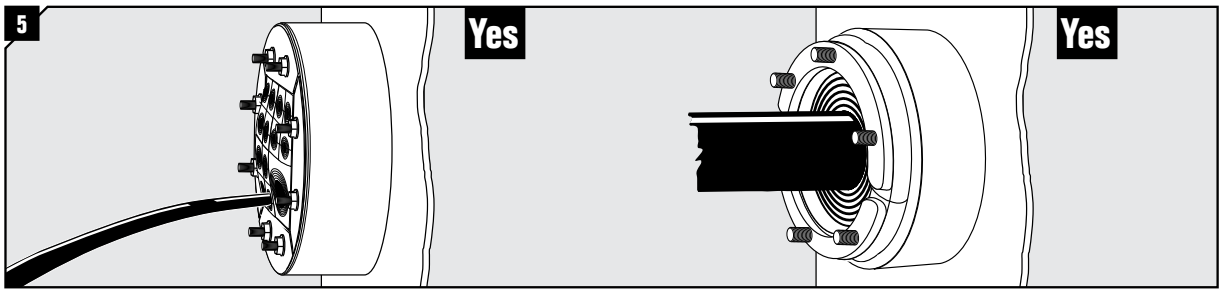
Check that the transit and packing system have no mechanical damages, including surface protection, if any. For welding, see Roxtec welding guidelines.



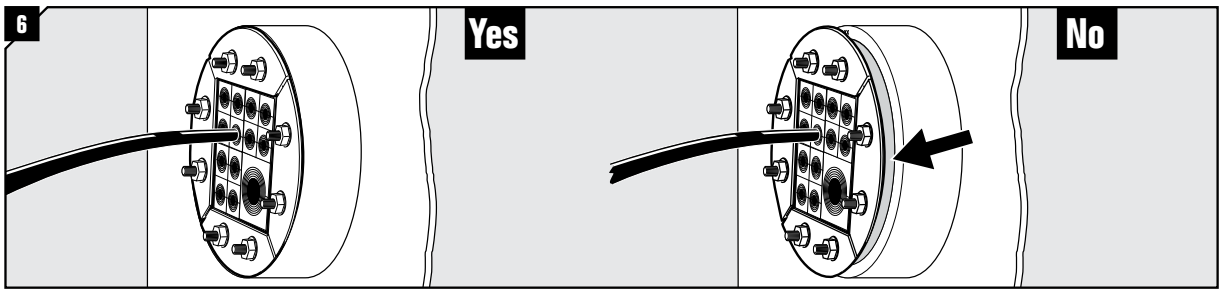
Check that only one cable/pipe passes through each module or opening in a module.



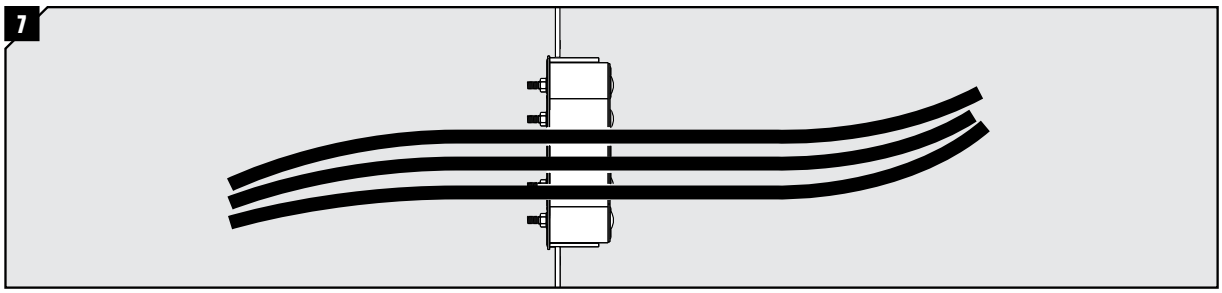
Check that there are no center cores missing.



Check that all bolts are tightened similarly.

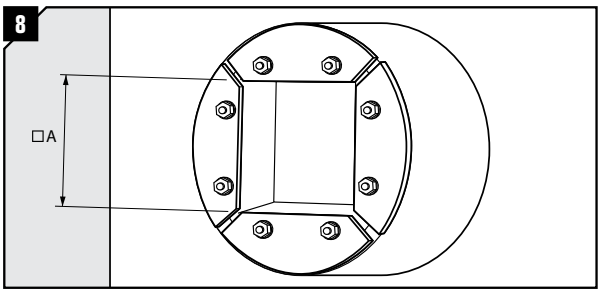


Verify that the frame is pushed in all the way to the sleeve.



Make sure that cables go straight through the frame.

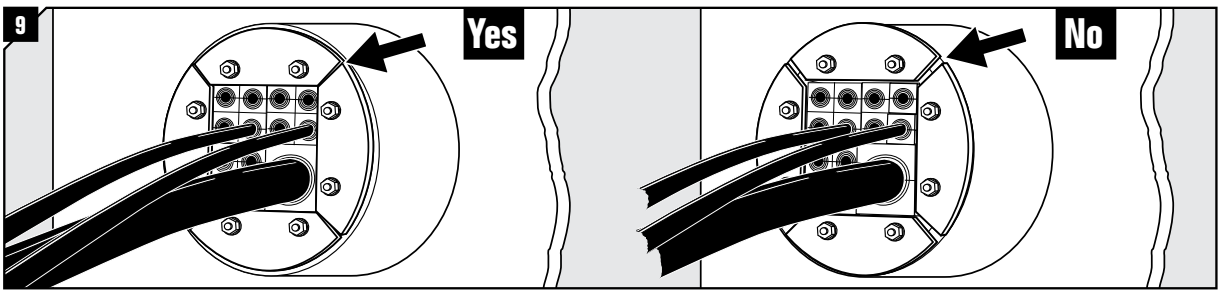
R Frames



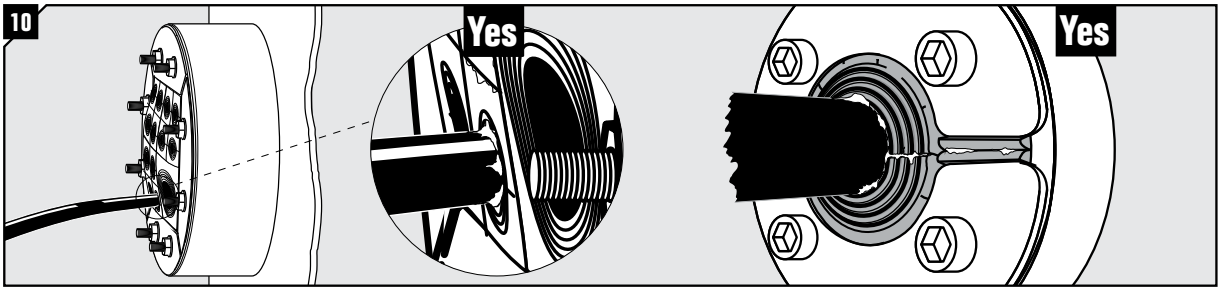
Roxtec R frame packing space

Frame	Packing space
R70/75	□A=40mm
R100	□A=60mm
R125/127	□A=80mm
R150	□A=90mm
R200	□A=120mm

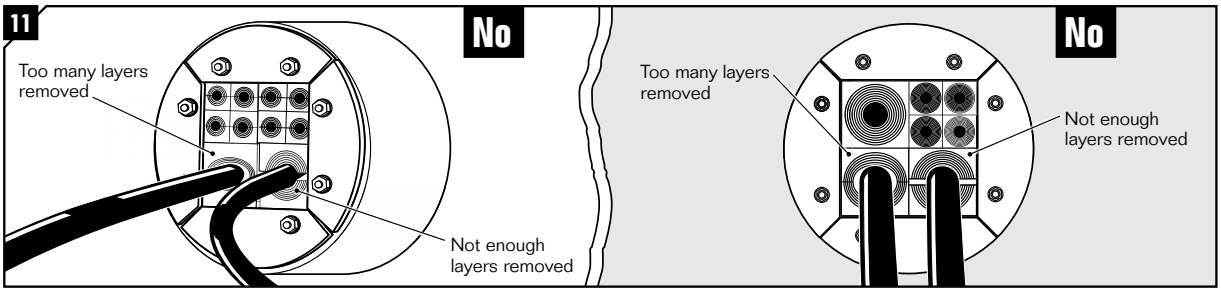
Verify the correct utilization of the entire packing space (R frames).



Make sure that the front fittings are positioned so that the modules are retained.



Check the compression by verifying that the bolts are tightened similarly and that excessive lubricant is visible directly after installation.



Check that there is no visible gap between cable/pipe and module halves. Maximum one layer difference between halves of the same module. Check that front fitting still holds the modules retained after bolts are tightened.

ASS20110004401 ver_1.1/EN/1524/thoge

Note

- If possible, take an overlook at the other side of the transit.
- Check additional installations according to certification requirements, e.g. insulation.

Installation checklist, round frames

ALWAYS CHECK OUR LATEST UPDATES

You find the latest versions of our installations instructions on **www.roxtec.com**. Roxtec can and will not take responsibility for transits that are not installed according to the latest installation instructions.

For disclaimer and instructions of use, see Installation checkpoints round frames ASS2011004401.

Project/object:

Date:

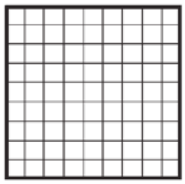
Transit name:

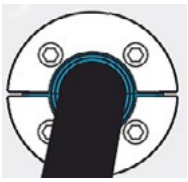
Full name:

Frame type:

Company:

Opening:





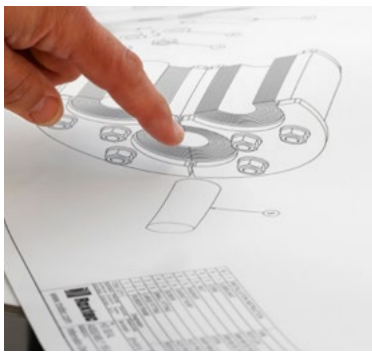
Signature:

Check-point	Activity	OK	Not OK
1	Verify original Roxtec sleeve by marking.		
2	Check for mechanical damages.		
3	Check that only one cable/pipe passes through each module.		
4	Check that there are no center cores missing.		
5	Check that all bolts are tightened similarly.		
6	Verify that the frame is pushed in all the way to the sleeve.		
7	Make sure the cables go straight through the frame.		
8	Verify the correct utilization of the entire packing space.		
9	Make sure the front fittings are positioned.		
10	Check the compression.		
11	Check that there is no visible gap between cable/pipe and modules.		

Notes:

ASS2011005201 ver_2.0/EN/1524/thoge

PRACTICAL USER GUIDELINES



S frame, aperture dimensions for welded installations

Frame	Height tolerance ± 1 mm, ±0.039" 1 opening in width (mm)	(in)	>1 opening in width (mm)	(in)	Width tolerance ± 1 mm ± 0.039" x1	x2	x3	x4	x5	x6	x7	x8	x9	x10
S 1	123	4.843			82 3.228									
S 2	123	4.843	123	4.409										
S 2+2	234	9.213	244	9.606	143 5.630	273 10.748	404 15.906	534 21.024	665 26.181	795 31.299	926 36.457	1056 41.575	1187 46.732	1317 51.850
S 2+2+2	345	13.583	365	14.370										
S 3	182	7.165			82 3.228									
S 4	182	7.165	182	7.165										
S 4+4	351	13.819	361	14.213	143 5.630	273 10.748	404 15.906	534 21.024	665 26.181	795 31.299	926 36.457	1056 41.575	1187 46.732	1317 51.850
S 4+4+4	521	20.512	541	21.299										
S 5	240	9.449			82 3.228									
S 6	240	9.449	240	9.449										
S 6+6	468	18.425	478	18.819	143 5.630	273 10.748	404 15.906	534 21.024	665 26.181	795 31.299	926 36.457	1056 41.575	1187 46.732	1317 51.850
S 6+6+6	696	27.402	716	28.189										
S 8	300	11.811	300	11.811										
S 8+8	588	23.150	598	23.543	143 5.630	273 10.748	404 15.906	534 21.024	665 26.181	795 31.299	926 36.457	1056 41.575	1187 46.732	1317 51.850
S 8+8+8	876	34.488	896	35.276										

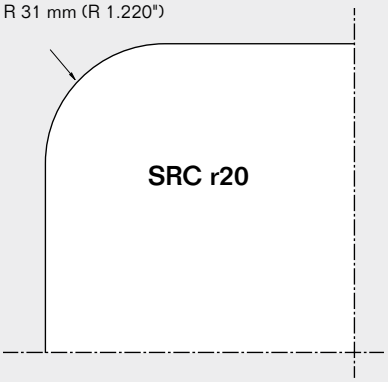
Theoretically recommended dimensions

SRC frame, aperture dimensions for welded installations

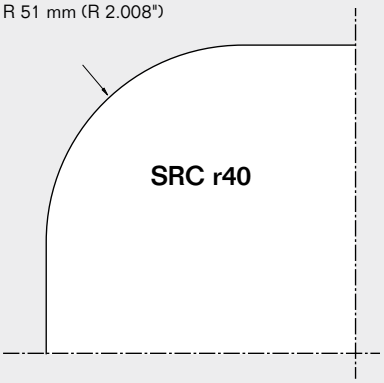
Frame	Height tolerance ± 1 mm, ±0.039" 1 opening in width (mm)	(in)	>1 opening in width (mm)	(in)	Width tolerance ± 1 mm ± 0.039" x1	x2	x3	x4	x5	x6	x7	x8	x9	x10	Radius ± 1 mm ± 0.039"
SRC r20															
2	123	4.843	123	4.843											
2+2	234	9.213	244	9.606	143 5.630	273 10.748	404 15.906	534 21.024	665 26.181	795 31.299	926 36.457	1056 41.575	1187 46.732	1317 51.850	31 1.220
2+2+2	345	13.583	365	14.370											
4	182	7.165	182	7.165											
4+4	351	13.819	361	14.213	143 5.630	273 10.748	404 15.906	534 21.024	665 26.181	795 31.299	926 36.457	1056 41.575	1187 46.732	1317 51.850	31 1.220
4+4+4	521	20.512	541	21.299											
6	240	9.449	240	9.449											
6+6	468	18.425	478	18.819	143 5.630	273 10.748	404 15.906	534 21.024	665 26.181	795 31.299	926 36.457	1056 41.575	1187 46.732	1317 51.850	31 1.220
6+6+6	696	27.402	716	28.189											
8	300	11.811	300	11.811											
8+8	588	23.150	598	23.543	143 5.630	273 10.748	404 15.906	534 21.024	665 26.181	795 31.299	926 36.457	1056 41.575	1187 46.732	1317 51.850	31 1.220
8+8+8	876	34.488	896	35.276											
SRC r40															
4	182	7.165	182	7.165											
4+4	351	13.819	361	14.213	143 5.630	273 10.748	404 15.906	534 21.024	665 26.181	795 31.299	926 36.457	1056 41.575	1187 46.732	1317 51.850	51 2.008
4+4+4	521	20.512	541	21.299											
6	240	9.449	240	9.449											
6+6	468	18.425	478	18.819	143 5.630	273 10.748	404 15.906	534 21.024	665 26.181	795 31.299	926 36.457	1056 41.575	1187 46.732	1317 51.850	51 2.008
6+6+6	696	27.402	716	28.189											
8	300	11.811	300	11.811											
8+8	588	23.150	598	23.543	143 5.630	273 10.748	404 15.906	534 21.024	665 26.181	795 31.299	926 36.457	1056 41.575	1187 46.732	1317 51.850	51 2.008
8+8+8	876	34.488	896	35.276											

Theoretically recommended dimensions

R 31 mm (R 1.220")



R 51 mm (R 2.008")

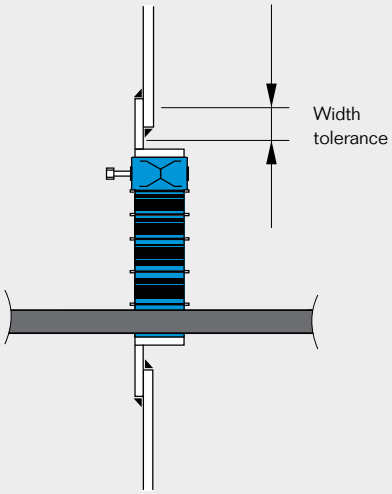


SF frame, aperture dimensions for welded installations

Frame	Height tolerance ± 15 mm, ±0.591" 1 opening in width (mm)	(in)	>1 opening in width (mm)	(in)	Width tolerance ± 15 mm ± 0.591" x1	x2	x3	x4	x5	x6	x7	x8	x9	x10
SF 2	181	7.126	181	7.126										
SF 2+2	292	11.496	302	11.890	201 7.913	332 13.071	462 18.189	593 23.346	723 28.465	854 33.622	984 38.740	1115 43.898	1245 49.016	1376 54.173
SF 2+2+2	403	15.866	423	16.654										
SF 4	240	9.449	240	9.449										
SF 4+4	409	16.102	419	16.496	201 7.913	332 13.071	462 18.189	593 23.346	723 28.465	854 33.622	984 38.740	1115 43.898	1245 49.016	1376 54.173
SF 4+4+4	579	22.795	599	23.583										
SF 6	298	11.732	298	11.732										
SF 6+6	526	20.709	536	21.102	201 7.913	332 13.071	462 18.189	593 23.346	723 28.465	854 33.622	984 38.740	1115 43.898	1245 49.016	1376 54.173
SF 6+6+6	755	29.724	775	30.512										
SF 8	358	14.094	358	14.094										
SF 8+8	646	25.433	656	25.827	201 7.913	332 13.071	462 18.189	593 23.346	723 28.465	854 33.622	984 38.740	1115 43.898	1245 49.016	1376 54.173
SF 8+8+8	935	36.811	955	37.598										

Theoretically recommended dimensions

SF frame, welding guidelines



Aperture dimensions are centered on the flange. In corrosive environments care should be taken to reduce the risk of crevice corrosion between the overlapping sheet metal parts. To reduce this risk we recommend butt welded frame installations in structures in these environments.

Information for the welding responsible

This guideline is a help for the welding responsible to produce their own welding procedure specification (WPS).

All welds shall be gas-tight, 4 bar Helium.

Welders qualified acc. to:
AWS d1.1 latest edition
EN 287-1 / ISO 9606-1 2013
ISO 9606-2:2004
or other authorized system

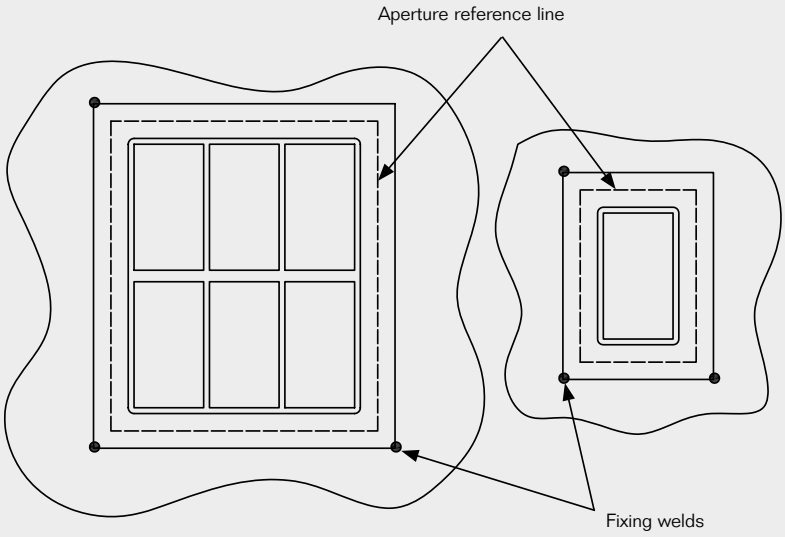
Welding method:
Shielded metal arc welding (SMAW)
Flux core arc welding (FCAW)
Gas tungsten arc welding (GTAW)

Welding consumables:
To be chosen according to the materials that shall be welded together. Shall be handled and treated acc. to instructions from manufacturer of consumables.

Mild steel and stainless steel:
Welding acc. to EN-ISO 5817 min class C

Aluminum:
Welding acc. to EN-ISO 10042 min class C

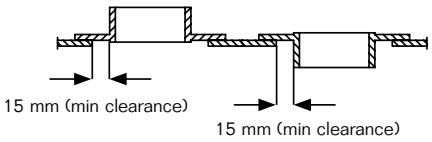
SF frame, welding guidelines

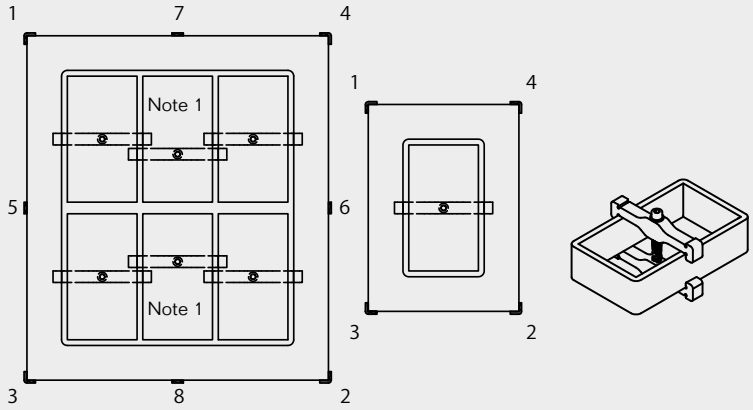


1. Fixing and buttering

The frame can be centered or fixed in a corner of the aperture at any depth.

Example of welding position





2. Tack weld

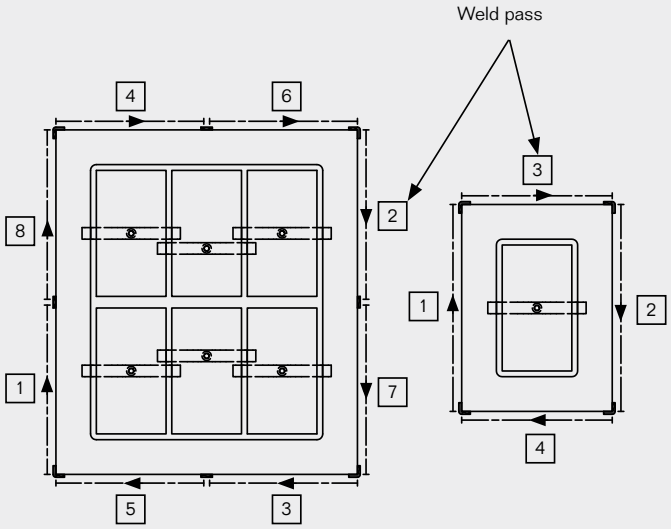
Keep the frame in tolerance using a clamp during the whole tacking and welding process. Do not remove the clamp until the frame has a temperature below 50°C.

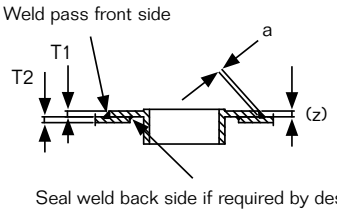
Apply a tack weld in the corners. Also apply a tack weld as close to the center of every flange as possible in combination frames. Adjust the amount of tack welds depending on frame size.

Note 1
Clamps are required at all side openings and in the middle of a x3 combination frame.

According to drawing S1001155, rev H.
For latest version please visit roxtec.com

SF frame, welding guidelines





Heat input (kJ/mm) = $\frac{\text{Voltage (U) x current (A) x 60}}{\text{Welding speed (mm/min)x1000x efficiency}}$

Efficiency
SMAW=1.0
GMAW/FCAW=0,8
GTAW=0.6

Weld sizes				Max heat input (kJ/mm)		
T1 (Frame)	T2 (Deck or bulkhead)	Fillet weld size (max)	Seal weld size (max)	Mild steel	Stainless steel	Aluminium
10	<=6	a4 (z5)	a3 (z4)	1,3	1,1	2,5
10	>6	a5 (z7)	a3 (z4)	1,5	1,1	2,5

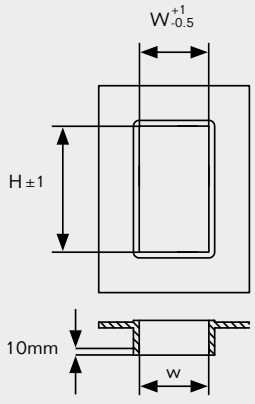
3. Fillet weld

Start by welding the seal weld on the back-side. Grind off the tack welds on the front side before applying the fillet weld.

The interpass temperature shall not exceed 150°C for stainless steel and 250°C for mild steel or aluminum.

Weld run should not exceed 300mm/weld pass.

Note: the seal weld is for corrosion protection and not mandatory.



Tolerances after welding

Size	H	W
1	101	60
2	101	120
3	159,5	60
4	159,5	120
5	218	60
6	218	120
7	278	60
8	278	120

4. Measurement

Measure 10 mm into the frame depth on both sides in accordance with the table. Measurements can be made at frame temperatures below 50°C.

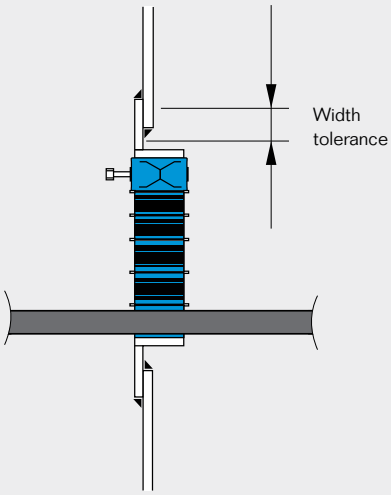
According to drawing S1001155, rev H.
For latest version please visit roxtec.com

G frame, aperture dimensions for welded installations

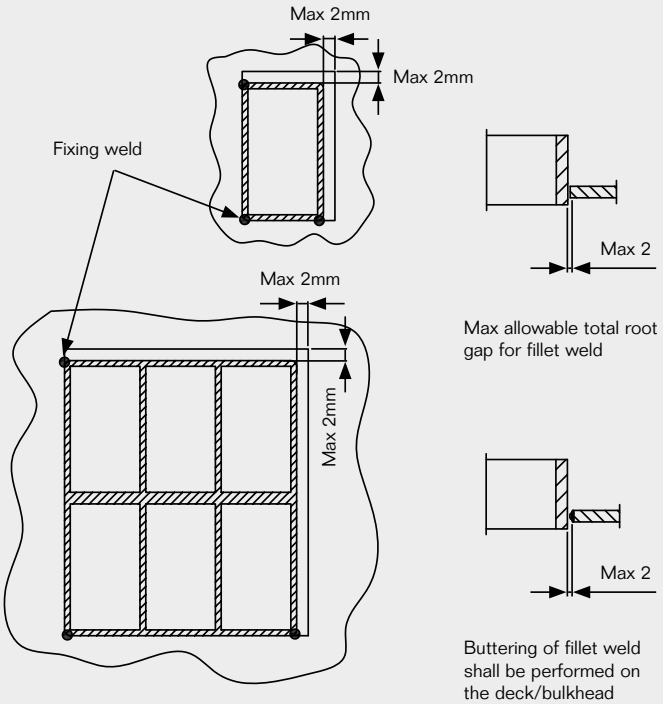
	Height tolerance ± 15 mm, ±0.591"		Width tolerance ± 15 mm ± 0.591"									
Frame	(mm)	(in)	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10
G 2	173	6.811	188 7.402	318 12.520	449 17.677	579 22.795	710 27.953	840 33.071	971 38.228	1101 43.346	1232 48.504	1362 53.622
G 2+2	284	11.181										
G 2+2+2	395	15.551										
G 4	232	9.134	188 7.402	318 12.520	449 17.677	579 22.795	710 27.953	840 33.071	971 38.228	1101 43.346	1232 48.504	1362 53.622
G 4+4	401	15.787										
G 4+4+4	571	22.480										
G 6	290	11.417	188 7.402	318 12.520	449 17.677	579 22.795	710 27.953	840 33.071	971 38.228	1101 43.346	1232 48.504	1362 53.622
G 6+6	518	20.394										
G 6+6+6	746	29.370										
G 8	350	13.780	188 7.402	318 12.520	449 17.677	579 22.795	710 27.953	840 33.071	971 38.228	1101 43.346	1232 48.504	1362 53.622
G 8+8	638	25.118										
G 8+8+8	926	36.457										

G frame, welding guidelines

Aperture dimensions are centered on the flange. In corrosive environments care should be taken to reduce the risk of crevice corrosion between the overlapping sheet metal parts. To reduce this risk we recommend butt welded frame installations in structures in these environments.



S, SRC, SK, SBTB frames, welding guidelines

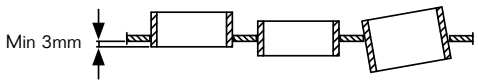


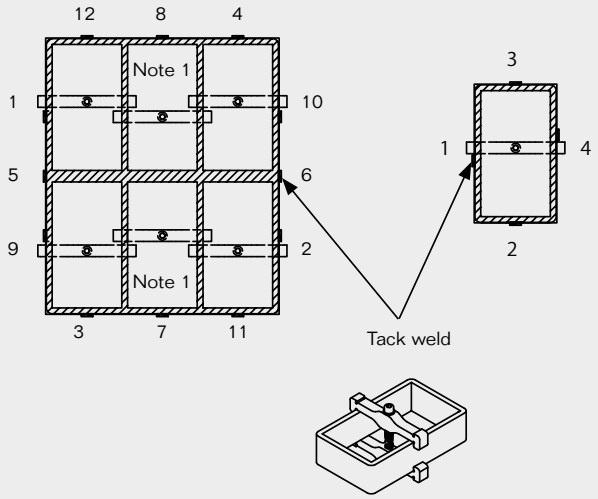
1. Fixing and buttering

The frame can be centered or fixed in a corner of the aperture at any depth.

The maximum allowed total root gap is 2 mm to prevent heat deflection.

Example of positioning





2. Tack weld

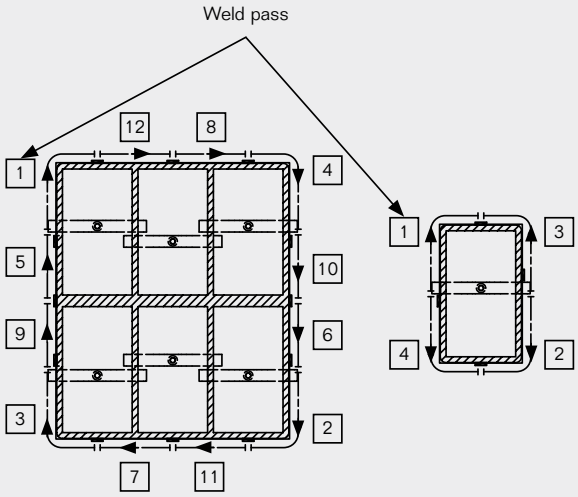
Keep the frame in tolerance using a clamp during the whole tacking and welding process. Do not remove the clamp until the frame has a temperature below 50°C.

Apply a tack weld as close to the center of every opening as possible.

Note 1
Clamps are required at all side openings and in the middle of a x3 combination frame.

According to drawing S1000703, rev P.
For latest version please visit roxtec.com

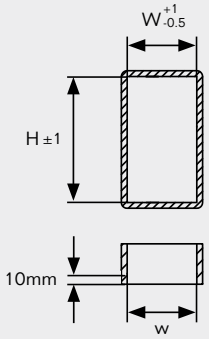
S, SRC, SK, SBTB frames, welding guidelines



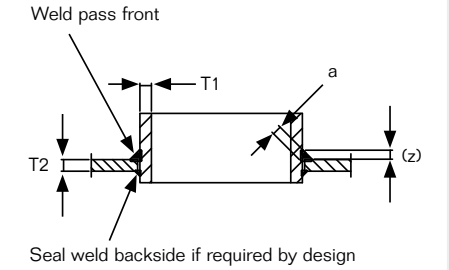
Heat input (kJ/mm) = $\frac{\text{Voltage (U) x Current (A) x 60}}{\text{Welding speed (mm/min)x1000x Efficiency}}$

Efficiency
SMAW=1.0
GMAW/FCAW=0,8
GTAW=0.6

Weld sizes				Max heat input (kJ/mm)		
T1 (Frame)	T2 (Deck or bulkhead)	Fillet weld size (max)	Seal weld size (max)	Mild steel	Stainless steel	Aluminum
10	<=6	a4 (z5)	a3 (z4)	1,3	1,1	2,5
10	>6	a5 (z7)	a3 (z4)	1,5	1,1	2,5



Tolerances after welding		
Size	H	W
1	101	60
2	101	120
3	159,5	60
4	159,5	120
5	218	60
6	218	120
7	278	60
8	278	120



3. Fillet weld

Start by welding the seal weld on the backside. Grind off the tack welds on the front side before applying the fillet weld.

The interpass temperature shall not exceed 150°C for stainless steel and 250°C for mild steel or aluminum.

Weld run should not exceed 200 mm/weld pass for mild steel and aluminum and 150 mm for stainless steel.

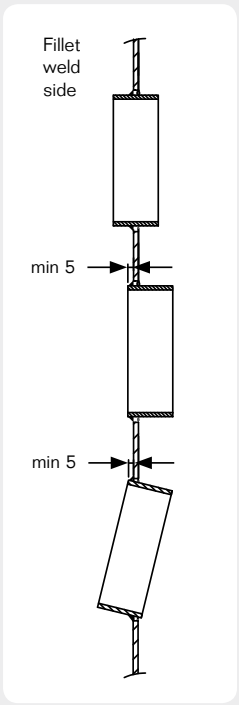
Note: the seal weld is for corrosion protection and not mandatory.

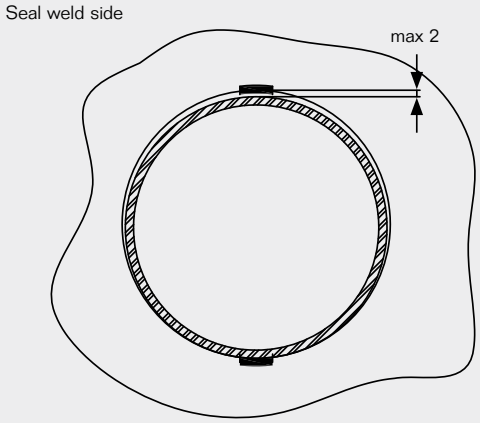
4. Measurement

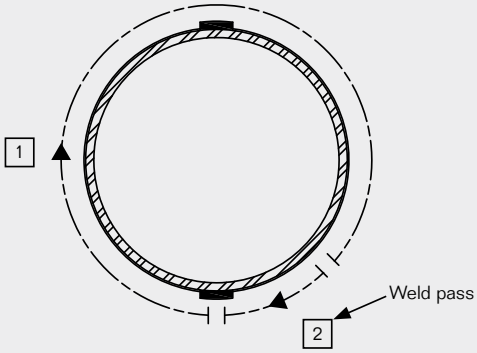
Measure 10 mm into the frame depth in accordance with the table on both sides. Measurements are to be made at frame temperatures below 50°C.

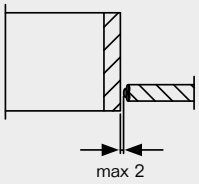
According to drawing S1000703, rev P.
For latest version please visit roxtec.com

Sleeves, welding guidelines







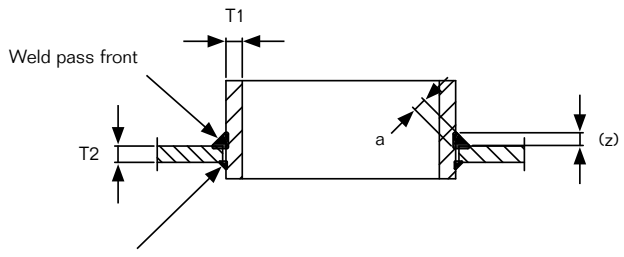


Buttering of fillet weld shall be performed on the deck/bulkhead

Heat input (kJ/mm) = $\frac{\text{Voltage (U) x Current (A) x 60}}{\text{Welding speed (mm/min)x1000x Efficiency}}$

Efficiency
SMAW=1.0
GMAW/FCAW=0,8
GTAW=0.6

Weld sizes			Max heat input (kJ/mm)		
Sleeve size	Fillet weld size (max)	Seal weld size (max)	Mild steel	Stainless steel	Aluminum
23-644	a4 (z5)	a3 (z4)	1,3	1,1	2,5



Seal weld backside if required by design

1. Tacking and buttering

The sleeve can be centered or fixed at one side of the aperture at any depth.

The maximum allowed total root gap is 2 mm to prevent heat deflection. Buttering of fillet weld shall be performed on the deck/bulkhead.

2. Fillet weld

Start by welding the seal weld on the backside. Grind off the tack welds on the front side before applying the fillet weld.

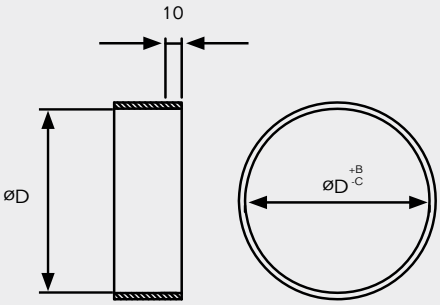
The interpass temperature shall not exceed 150°C for stainless steel and 250°C for mild steel or aluminum.

Weld run should not exceed 300 mm/weld pass.

Note: the seal weld is for corrosion protection and not mandatory.

According to drawing S1005870, rev I.
For latest version please visit roxtec.com

Sleeves, welding guidelines



3. Measurement

Measure 10 mm into the sleeve depth on both sides in accordance with the table.

Sleeve dimensions

SLR / SLRS	D (mm)	B (mm)	C (mm)
23	23	1	0
25	25	1	0
31	31	2	0
43	43	2	0
50	50	2	0
68	68	2	0
70	70	2	0
75	75	2	0
100	100	2	0
125	125	2	0
150	150	2	0
175	175	2	0
200	200	3	0
225	225	3	0
250	250	3	0
300	300	3	0
350	350	3	0
400	400	3	0
450	450	3	0
500	500	3	0
550	550	3	0
600	600	3	0
644	644	3	0

According to drawing S1005870, rev I.
For latest version please visit roxtec.com

SF frame, aperture dimensions for bolted installations

Frame	Height tolerance ± 5 mm, ±0.197" 1 opening in width (mm)	1 opening in width (in)	>1 opening in width (mm)	>1 opening in width (in)	Width tolerance ± 5 mm 0.197" x1	x2	x3	x4	x5	x6	x7	x8	x9	x10
SF 2	141	5.551	141	5.551	161 6.339	291 11.457	422 16.614	552 21.732	683 26.890	813 32.008	944 37.165	1074 42.283	1205 47.441	1335 52.559
SF 2+2	252	9.921	262	10.315										
SF 2+2+2	363	14.291	383	15.079										
SF 4	200	7.874	200	7.874	161 6.339	291 11.457	422 16.614	552 21.732	683 26.890	813 32.008	944 37.165	1074 42.283	1205 47.441	1335 52.559
SF 4+4	369	14.528	379	14.921										
SF 4+4+4	539	21.220	559	22.008										
SF 6	258	10.157	258	10.157	161 6.339	291 11.457	422 16.614	552 21.732	683 26.890	813 32.008	944 37.165	1074 42.283	1205 47.441	1335 52.559
SF 6+6	486	19.134	496	19.528										
SF 6+6+6	714	28.110	734	28.898										
SF 8	318	12.520	318	12.520	161 6.339	291 11.457	422 16.614	552 21.732	683 26.890	813 32.008	944 37.165	1074 42.283	1205 47.441	1335 52.559
SF 8+8	606	23.858	616	24.252										
SF 8+8+8	894	35.197	914	35.984										

Theoretically recommended dimensions

For marine applications, special rules may apply for bolted installations. Please check with the classification society.

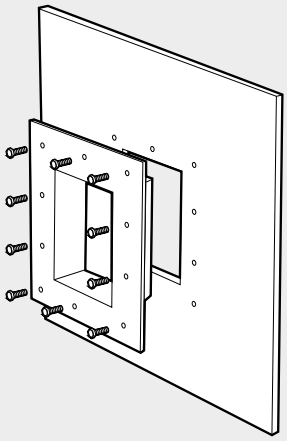
GHM frame, aperture dimensions for bolted installations

	Height tolerance ± 5 mm, ±0.197"		Width tolerance ± 5 mm ± 0.197"									
Frame	(mm)	(in)	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10
GHM 2	128	5.039										
GHM 2+2	241	9.488	148 5.827	278 10.945	409 16.102	539 21.220	670 26.378	800 31.496	931 36.654	1061 41.772	1192 46.929	1322 52.047
GHM 2+2+2	350	13.780										
GHM 4	187	7.362										
GHM 4+4	358	14.094	148 5.827	278 10.945	409 16.102	539 21.220	670 26.378	800 31.496	931 36.654	1061 41.772	1192 46.929	1322 52.047
GHM 4+4+4	530	20.866										
GHM 6	245	9.646										
GHM 6+6	473	18.622	148 5.827	278 10.945	409 16.102	539 21.220	670 26.378	800 31.496	931 36.654	1061 41.772	1192 46.929	1322 52.047
GHM 6+6+6	705	27.756										

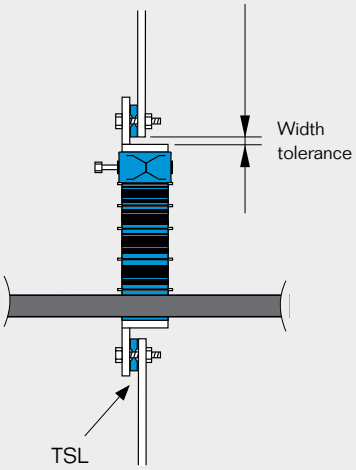
Theoretically recommended dimensions

For marine applications, special rules may apply for bolted applications. Please check with the classification society.

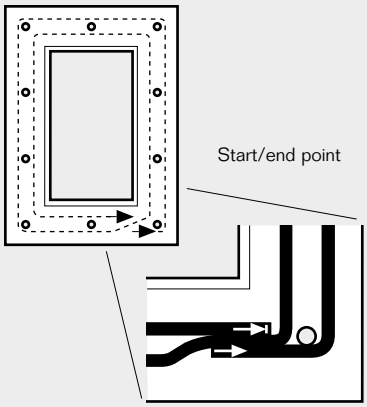
SF and GHM frame, bolting guidelines



The frame should be fixed to the wall with screws. The screws should be tightened to a torque corresponding to the type and quality grade of the chosen screw. For fast and easy installations, self-tapping drilling screws can be used. Remember to secure that the screws are sealed, to avoid leakage through the thread.

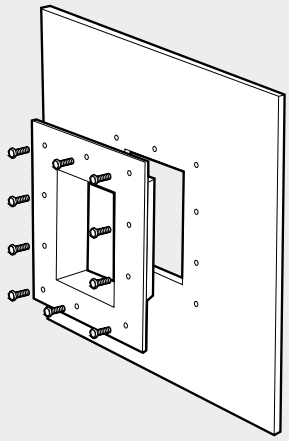


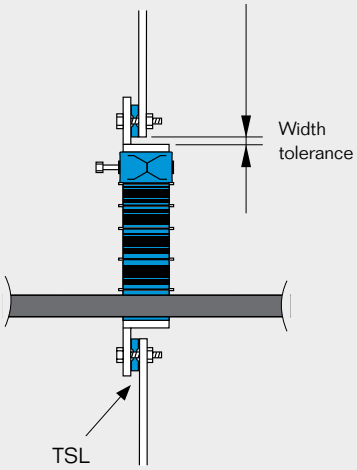
For installations exposed to pressure, a seal must be fitted between the frame and the construction. We recommend the use of our TSL 15x6 sealing strip. Other seals such as a compound is another alternative.

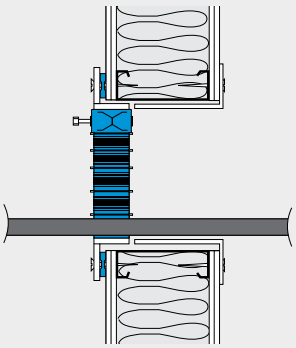


When using TSL 15x6, the sealing strip should be applied on the flange side facing the bulkhead or deck.

G frame, bolting guidelines

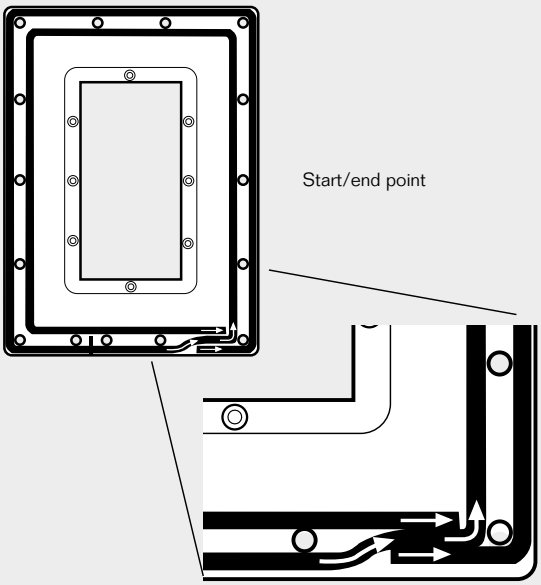






We recommend the use of our TSL 15x6 alternatively a sealing compound between the frame and the wall. Fixing arrangements, choice of fasteners and gasket/ sealing must be adapted to the type of structure where the frame is installed. For fragile structures, we can supply special frames with wider flanges to reduce the risk of breaking the wall surface while installing with expandable bolts.

KFO/C KFO frames with flange, assembly

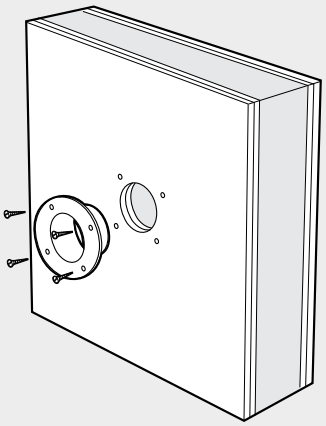


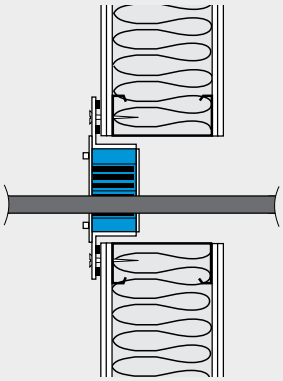
The TSL 15x6 sealing strip is applied on the flange side facing the wall.

Sleeves with flange, aperture dimensions for bolting

Frame/seal	Hole dim. for sleeve Ø (mm)	Ø (in)	Minimum clearance depth (mm)	(in)
R 70	95	3.740	60	2.362
R 75	95	3.740	60	2.362
R 100	125	4.921	60	2.362
R 125	150	5.906	60	2.362
R 127	150	5.906	60	2.362
R 150	180	7.087	60	2.362
R 200	230	9.055	60	2.362
RS 25	45	1.772	40	1.575
RS 31	50	1.969	40	1.575
RS 43	65	2.559	70	2.756
RS 50	70	2.756	70	2.756
RS 68	85	3.346	70	2.756
RS 75	95	3.740	70	2.756
RS 100	125	4.921	70	2.756
RS 125	150	5.906	70	2.756
RS 150	180	7.087	70	2.756
RS 175	190	7.480	60	2.362
RS 200	235	9.252	60	2.362
RS 225	260	10.236	60	2.362
RS 250	285	11.220	60	2.362
RS 300	335	13.189	60	2.362
RS 350	385	15.157	60	2.362
RS 400	435	17.126	60	2.362
RS 450	485	19.094	60	2.362
RS 500	535	21.063	60	2.362
RS 550	585	23.031	60	2.362
RS 600	635	24.999	60	2.362
RS 644	680	26.772	60	2.362

Sleeves, bolting guidelines





Cut a hole in the partition. Position the sleeve inside the hole with only the flange protruding. Attach the bolts as shown.

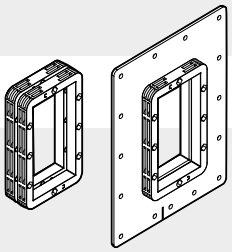
Insulation – important information

Installing and ensuring performance of Roxtec sealing solutions sometimes require the use of insulation.
As Roxtec holds a large number of certificates covering A, B and H class divisions as well as jet fire arrangements, the use of insulation varies not only depending on division but also on what type of services that penetrate the systems, such as cables, plastic pipes or metal pipes. Roxtec holds certificates towards several different classification societies, so the actual project is also a relevant factor when considering insulation arrangements.

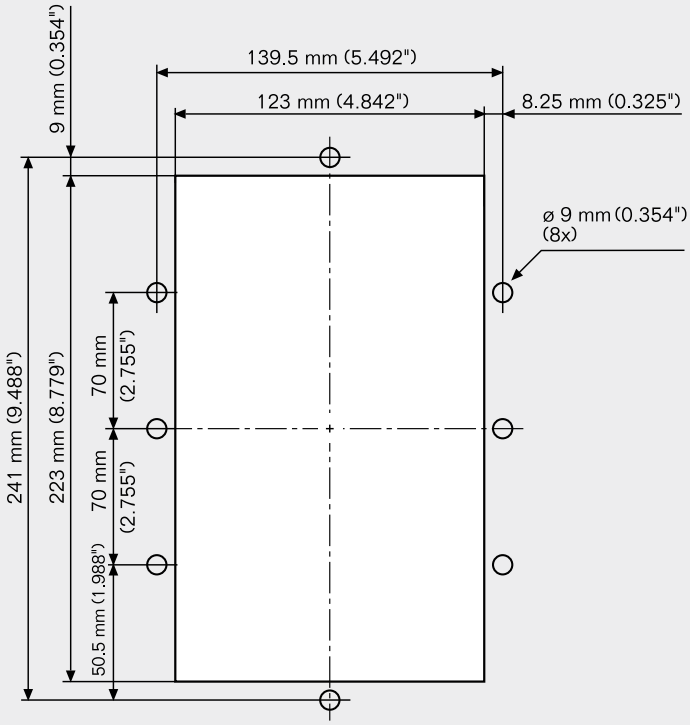
Latest updates online

Roxtec continuously strives towards having the most effective setup to secure performance. Through our extensive testing this is a constantly ongoing work. In order to ensure that you get the latest updated certified installation arrangements, please visit **www.roxtec.com** or contact your local Roxtec representative for detailed information.

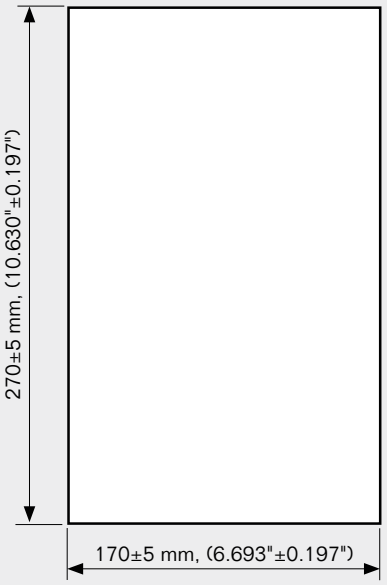
KFO/KFO frame with flange, holecut



KFO

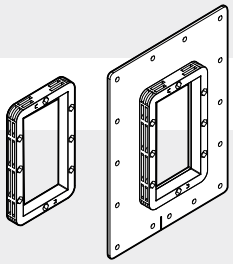


KFO 6x1 with flange

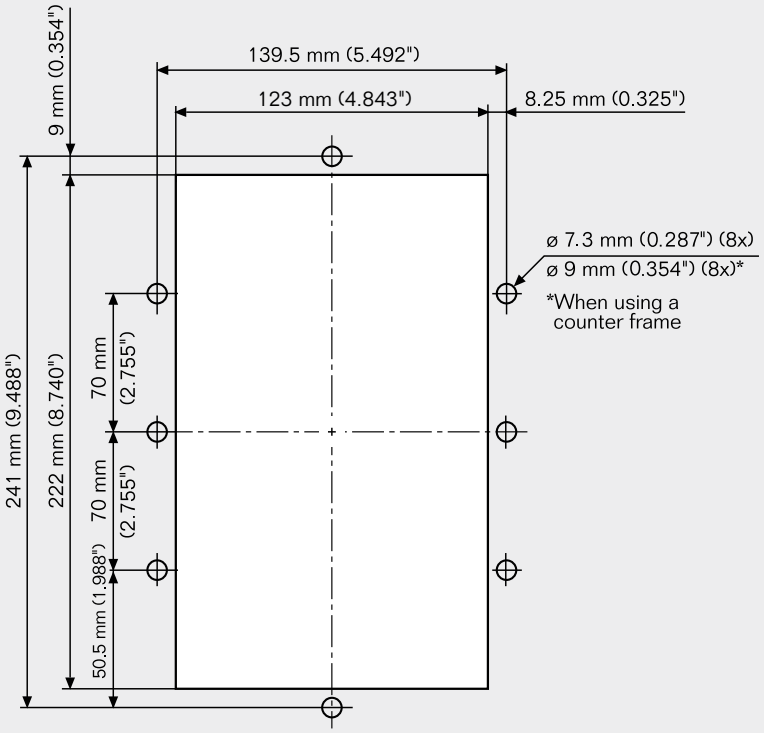


Not scale 1:1

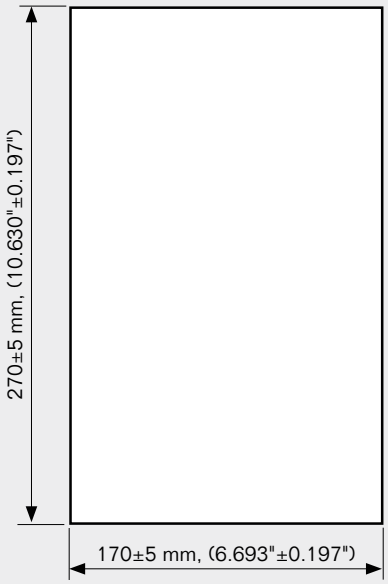
C KFO/C KFO frame with flange, holecut



C KFO

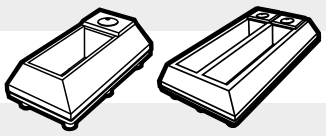


C KFO 6x1 with flange

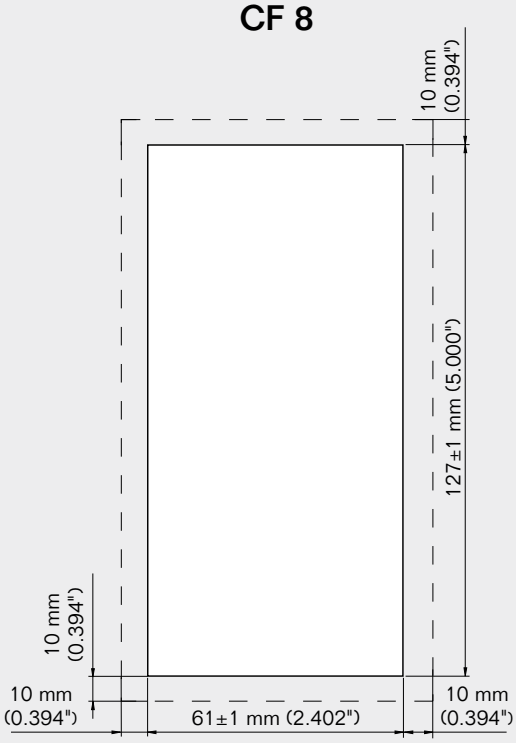


Not scale 1:1

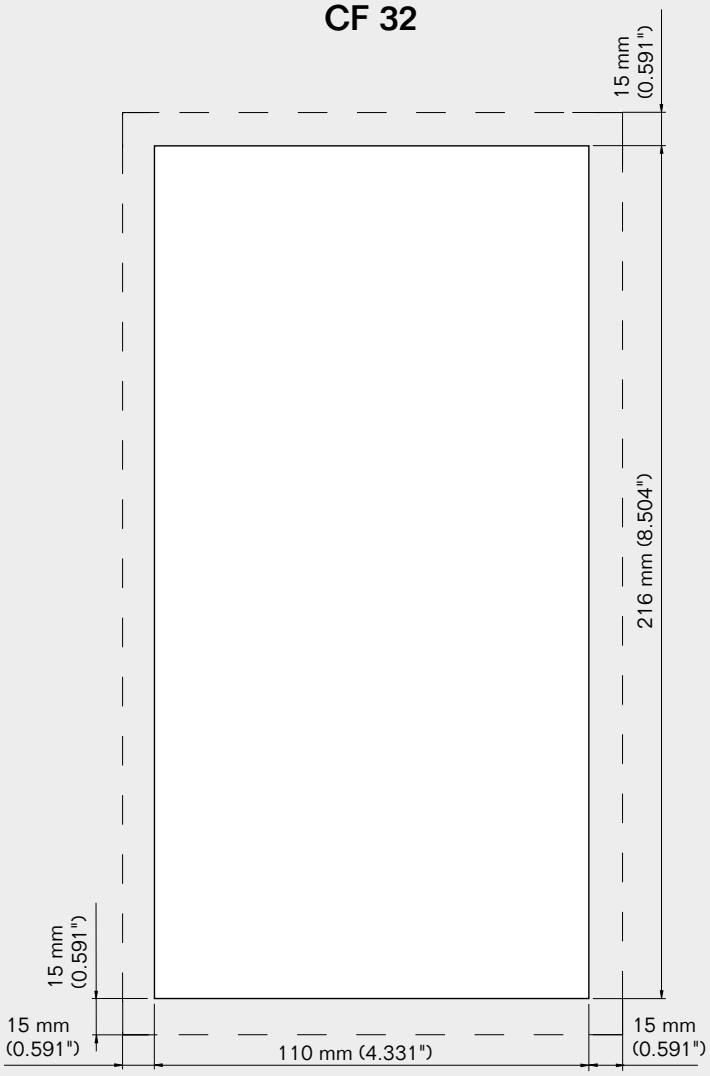
CF 8 and CF 32 frames, holecut



CF 8



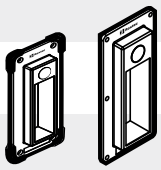
CF 32



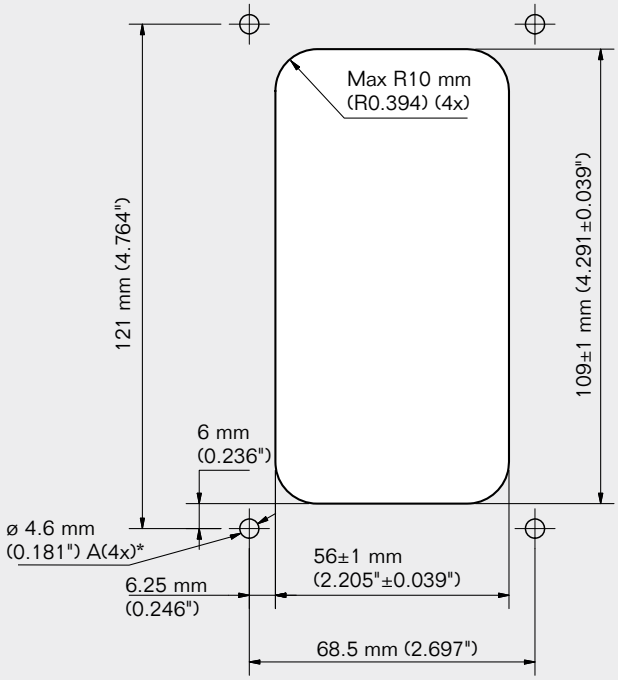
Area that must be unpainted (conductive) for EMC installations.

Not scale 1:1

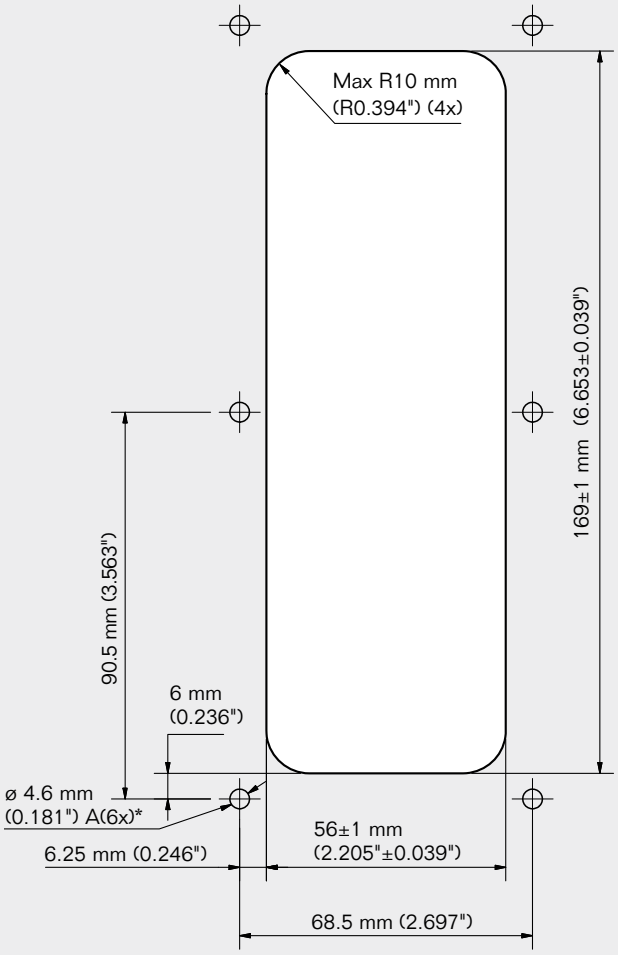
ComSeal™ LW 6, LW 12 frames, holecut



ComSeal™ LW 6



ComSeal™ LW 12

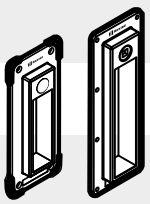


Roxtec ComSeal™ LW 12 fits FL 21 knock-out (holecut).

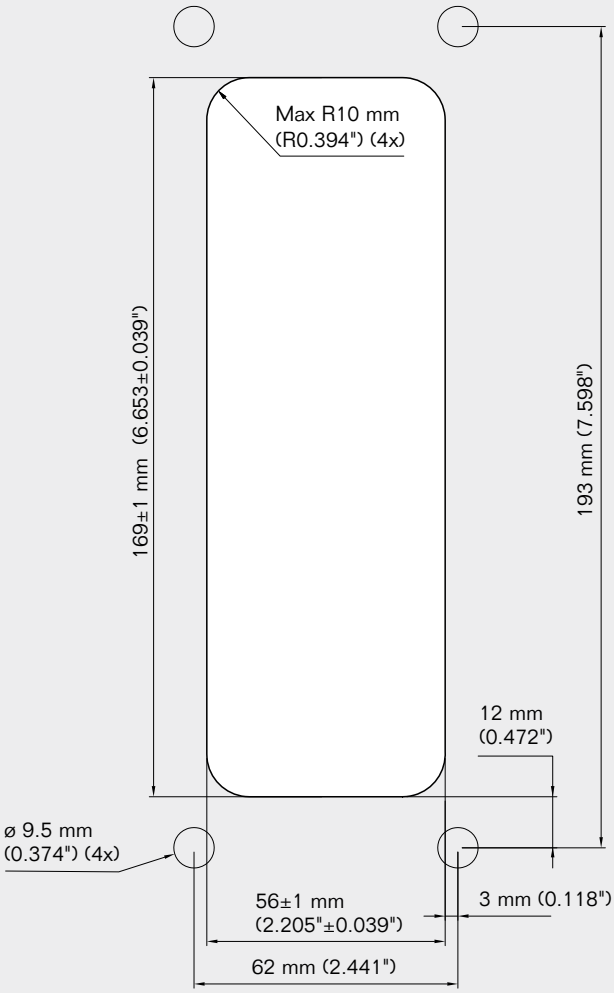
* ø 5.5 (7/32"). Drill bit size when using nuts.

Not scale 1:1

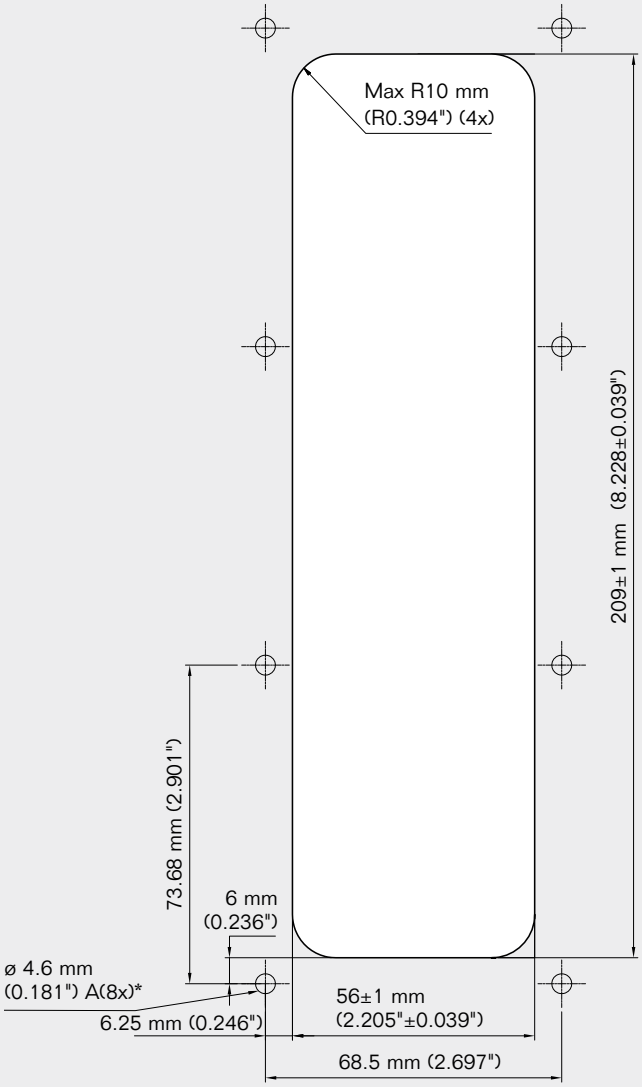
ComSeal™ LW 12 FL 21, LW 16 frames, holecut



ComSeal™ LW 12 FL 21

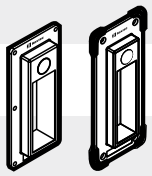


ComSeal™ LW 16

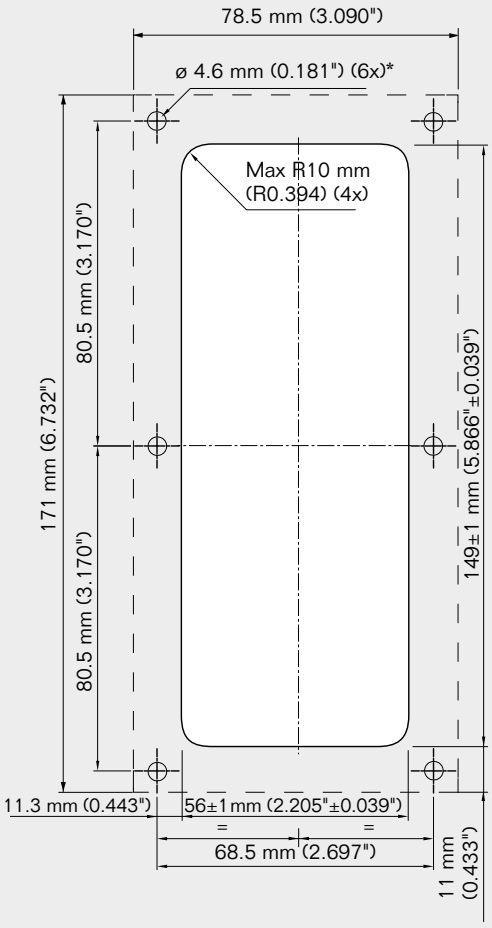


Not scale 1:1

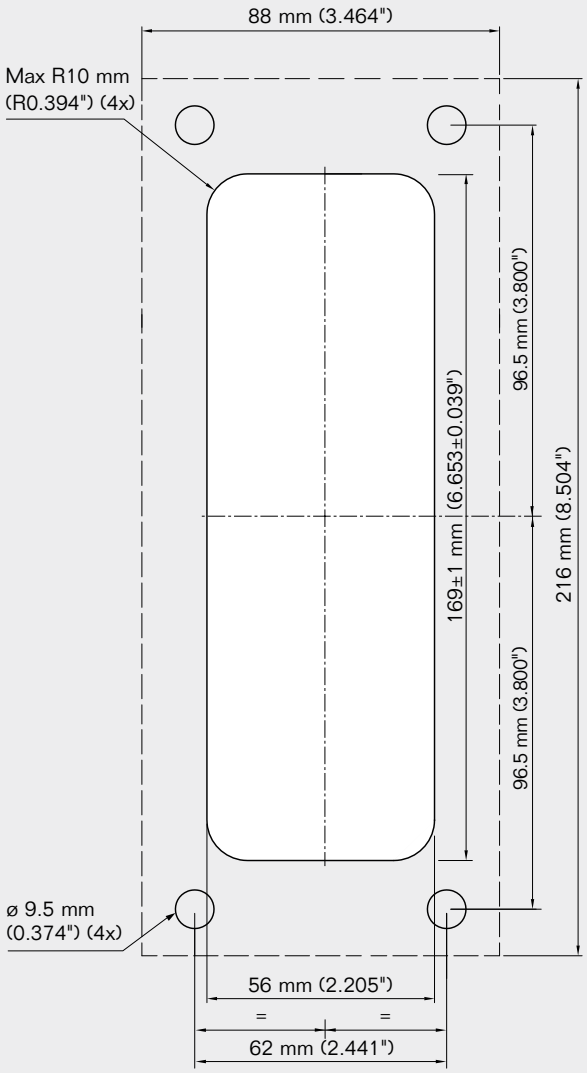
ComSeal™ 10, 12 frames, holecut



ComSeal™ 10



ComSeal™ 12



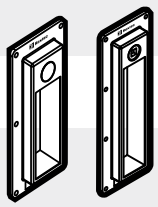
Area that must be unpainted (conductive) for EMC installations.

* ø 5.5 (7/32"). Drill bit size when using nuts.

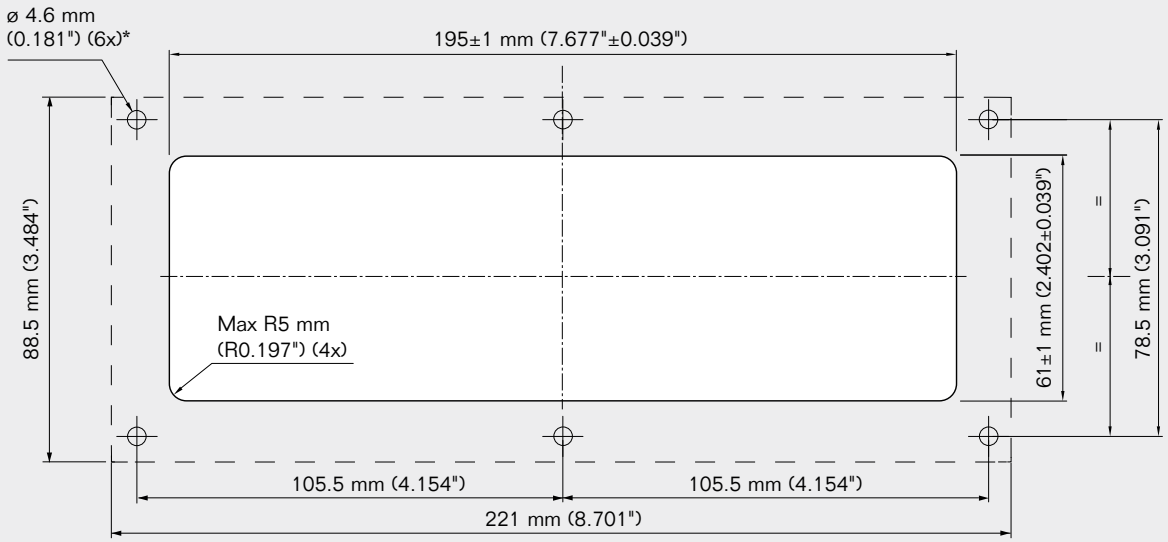
Roxtec ComSeal™ LW 12 fits FL 21 knock-out (holecut).

Not scale 1:1

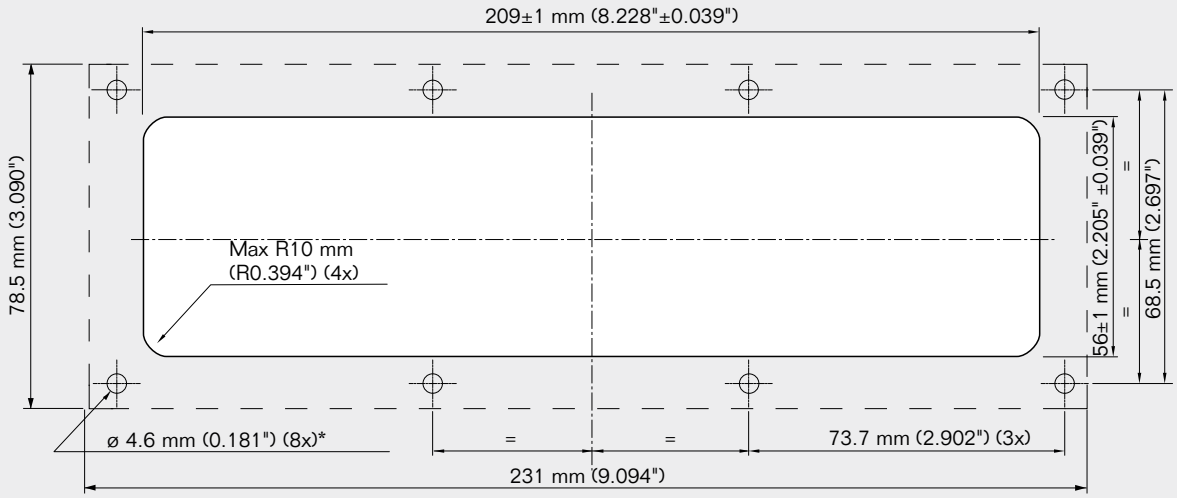
ComSeal™ 15, 16 frames, holecut



ComSeal™ 15



ComSeal™ 16

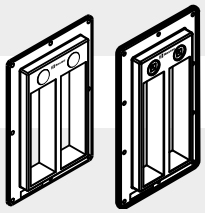


Area that must be unpainted (conductive) for EMC installations.

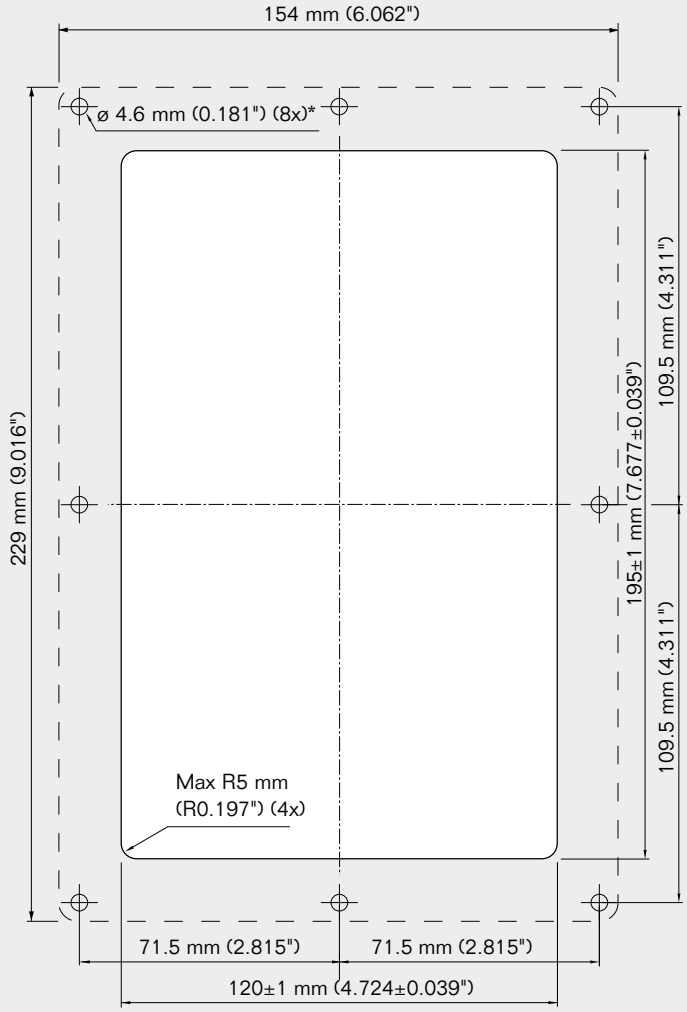
* ø 5.5 (7/32"). Drill bit size when using nuts.

Not scale 1:1

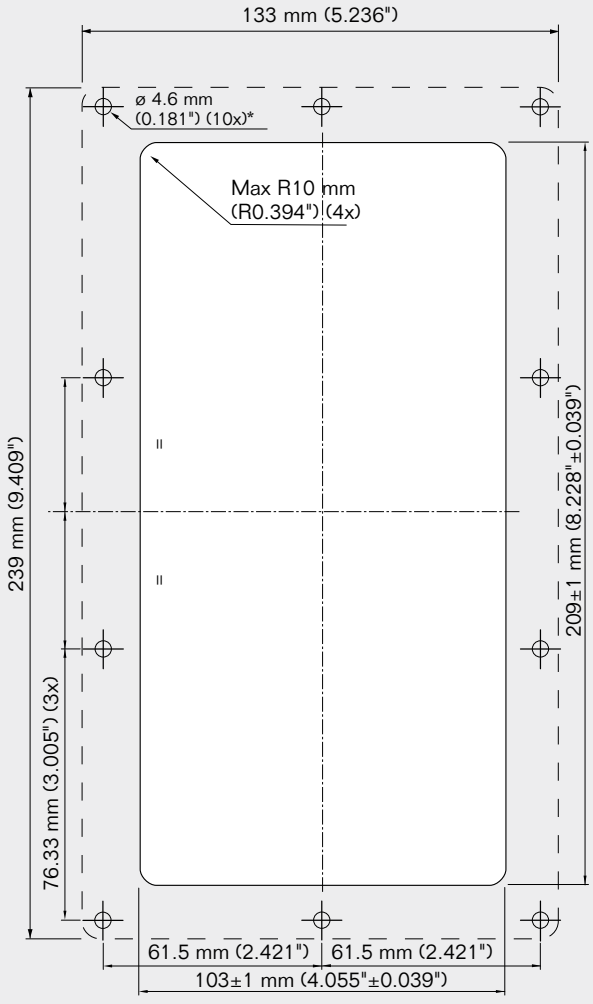
ComSeal™ 30, 32 frames, holecut



ComSeal™ 30



ComSeal™ 32

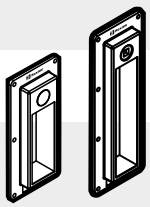


Area that must be unpainted (conductive) for EMC installations.

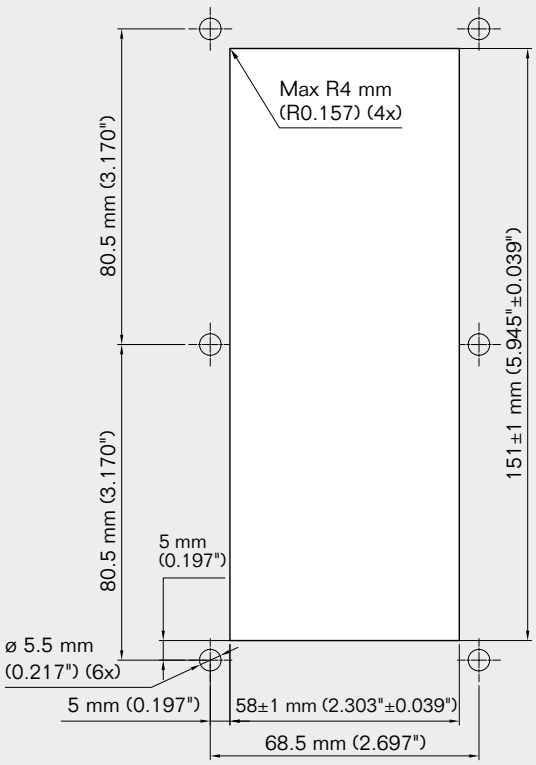
* ø 5.5 (7/32"). Drill bit size when using nuts.

Not scale 1:1

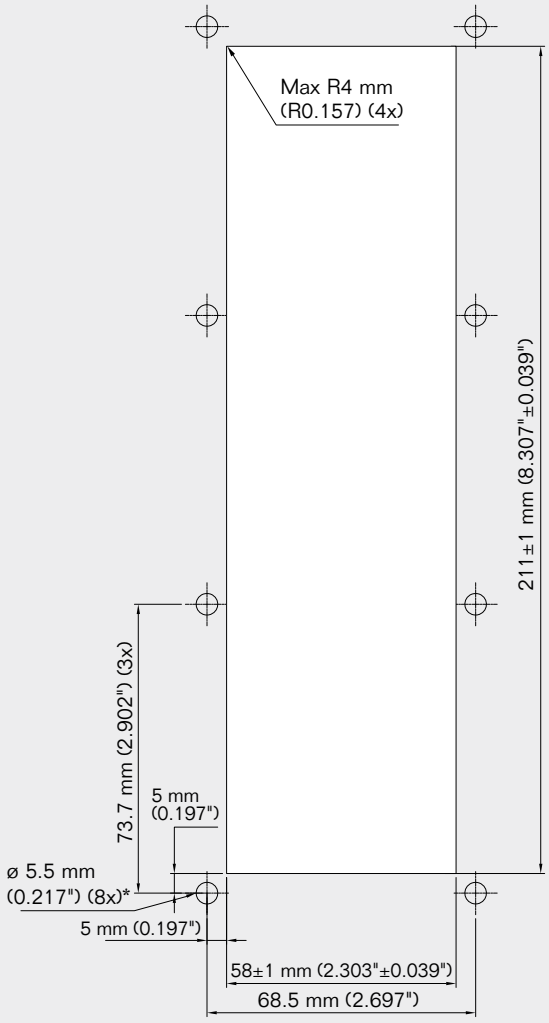
ComSeal™ 10 AISI 316, 16 AISI 316 frames, holecut



ComSeal™ 10 AISI 316

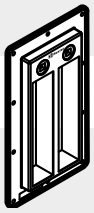


ComSeal™ 16 AISI 316

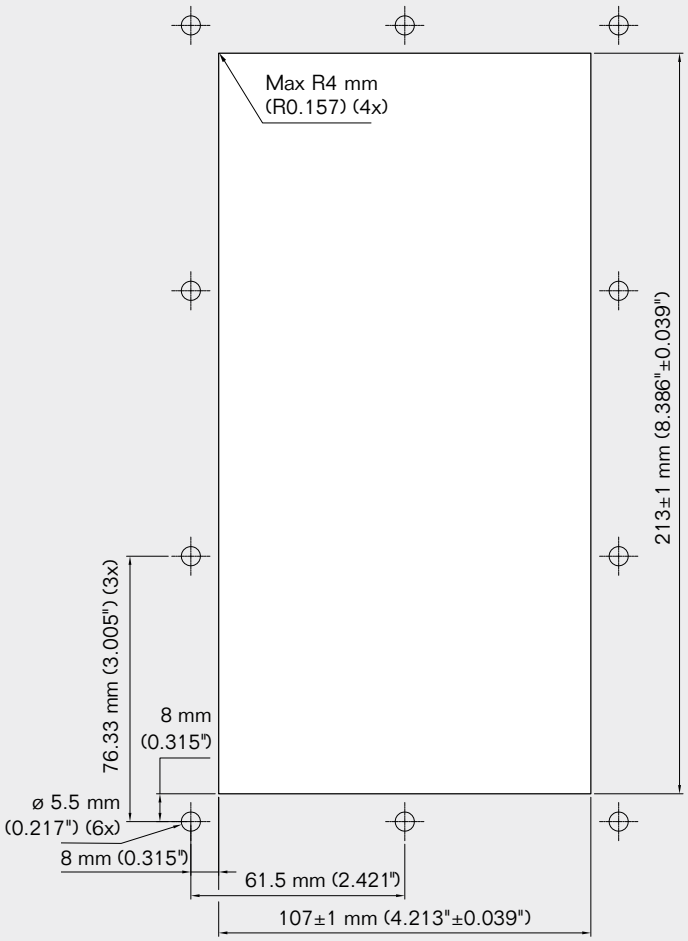


Not scale 1:1

ComSeal™ 32 AISI 316 frame, holecut



ComSeal™ 32 AISI 316



Not scale 1:1

DISCLAIMER
"The Roxtec cable entry sealing system ("the Roxtec system") is a modularbased 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.

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Roxtec International AB
Box 540, SE-371 23 Karlskrona, SWEDEN
PHONE +46 455 36 67 00, FAX +46 455 820 12
EMAIL info@roxtec.com, www.roxtec.com