

CR-S*F / CR-S*M Conduit Stopper Box – ASSEMBLY INSTRUCTIONS

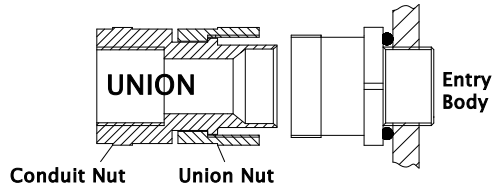
Brief Description

The Peppers CR-S*F and CR-S*M type Conduit Stopper Box is for outdoor use in the appropriate Hazardous Areas with conductors carried in conduit, providing a flameproof barrier entry into enclosures and as a line bushing for terminating flying leads or for the direct inter-connection of associated enclosures. It gives environmental protection to IP66, IP68 (100 metres for 7 days) and Deluge.

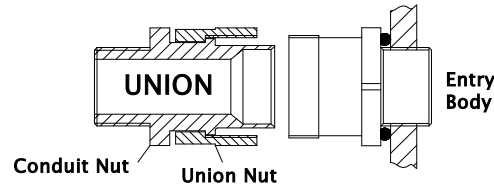
Warning
Please read these instructions carefully. These products should not be used in applications except as detailed here or in our datasheets, unless confirmed in writing by Peppers. Peppers take no responsibility for any damage, injury or other consequential loss caused where products are not installed or used according to these instructions. This leaflet is not intended to advise on the selection of product. Further guidance can be found in the standards listed overleaf or the prevailing code of practice. The compound used within this cable gland has application limitations and may be adversely affected by some solvent vapours. If such vapours are likely to be present when the cable gland is in service, necessary precautions should be taken. Peppers Technical Datasheet can be downloaded from our website for further guidance. Prior to use the compound should be stored in its original packaging in a dry area at temperatures between 5°C and 21°C.

STEP-BY-STEP FITTING INSTRUCTIONS

SPLIT STOPPER BOX - CR-S*F Type

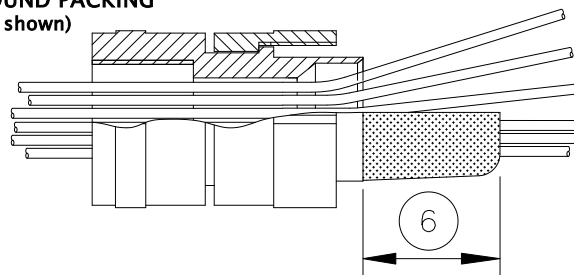


SPLIT STOPPER BOX - CR-S*M Type

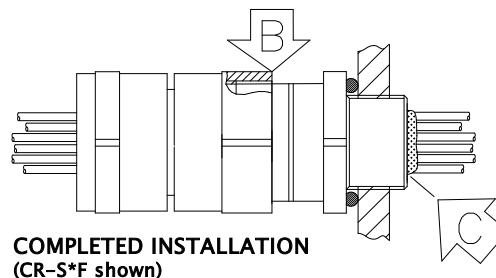
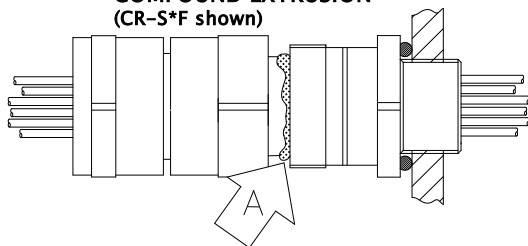


STOPPER BOX SIZE	COMPOUND LENGTH
20 – 25	40mm
32 – 40	45mm
50S – 75	50mm
80 – 100	60mm

COMPOUND PACKING (CR-S*F shown)



COMPOUND EXTRUSION (CR-S*F shown)



COMPLETED INSTALLATION (CR-S*F shown)

STEP-BY-STEP FITTING INSTRUCTIONS

- 1 Split Stopper Box as shown. **Warning.** The entry body of this cable gland is coated with a releasing agent to ensure the compound form can be inspected after curing. The entry body should not be treated with any lubricant or be exposed to any solvents. The internal bore of the entry body must not be damaged. Any handling during the course of normal installation will not effect the operation of the releasing agent.
- 2 Fit Entry Body, allowing for any installation accessories, and fully engage the thread into the equipment. Hand-tighten, then suitably secure with a wrench.
- 3 For CR-S*F glands apply suitable seal / sealant to conduit threads to maintain ingress protection. Screw Union onto conduit. For both CR-S*F and CR-S*M glands - prepare the conductors to suit the installation and pass through the union assembly.

HEALTH AND SAFETY WARNING The resin used in the compound can cause eye and skin irritation. For your personal protection, wear the gloves supplied whilst in contact with the compound. **A COMPREHENSIVE SAFETY DATA SHEET IS AVAILABLE FOR DOWNLOAD FROM OUR WEBSITE.**

- 4 Check compound has not passed its "Use By" date. It has a work life of about 30 minutes at 16-27°C (60-80°F), during which time it can be worked and shaped before it begins to cure. Full cure takes 24 hours at 16-27°C (60-80°F). Lower temperatures will give a longer cure time. E.g. at 3°C (37°F) full cure takes about seven days. It is recommended to mix the putty and pack the fitting at 20°C (68°F). Minimum mixing/packing temperature is 10°C. Minimum curing temperature is 3°C.
- 5 Trim any hardened pieces from ends of stick. Mix the compound by rolling, folding and breaking. Ease mixing by cutting large sticks in half. Fully mixed compound has a uniform yellow colour with no streaks See Figure 1 for correctly mixed compound.
- 6 Support the conduit/union assembly. Starting at the middle, pack small amounts of rolled-out compound between the cores. Work outwards until all gaps are filled. Bundle the cores with cord or tape (see figure 2) so they are not disturbed. Wrap compound around the outside of the core bundle, then locate the compound & cores into the Union cup. Ensure that the cup is completely filled. Build up compound around the outside of the cores, with a slight taper and to approximate compound length shown in diagram and Table 1 column 6. Where cable has large quantity of cores ensure they are bundled near to the gland entry thread.
- 7 Pass cores through & push compound into Entry Body until Union cup engages. Remove squeezed out compound at arrow A. Screw Union Nut 7 full turns onto Entry Body (arrow B).
- 8 Clean off excess compound from Entry Body to allow withdrawal when cured (arrow C). Cores may be disturbed after 1 hour. Leave to cure for at least 4 hours when working at 21° C.
- 9 To release and pull back the joint for inspection, unscrew Union Nut. Using a wrench on the Conduit Nut, back and forth whilst pulling the rear assembly away from the entry body. This will release the compound from the entry body. Do not over rotate as this may damage cable conductors. Pull the Conduit Nut and compound out for inspection. The compound should appear as in Figure 3 with no gaps, holes or cracks.
- 10 To re-make the joint on a CR-S*F gland installation hold Conduit Nut and hand-tighten Union Nut. Then refer to table below and tighten using wrench to the given amount. To re-make the joint on a CR-S*M gland installation screw the Union Nut into 2nd enclosure/equipment. Hand-tighten, then suitably secure with a wrench. Hold Conduit Nut and hand-tighten Union Nut. Then refer to table below and tighten using wrench to the given amount.
- 11 The equipment should not be energised until the compound has been left to cure for at least 4 hours when working at 21° C. See chart 'Energising Time vs. Temperature' for further guidance.

CR-S*F / CR-S*M Conduit Stopper Box – ASSEMBLY INSTRUCTIONS

Figure 1



Figure 2

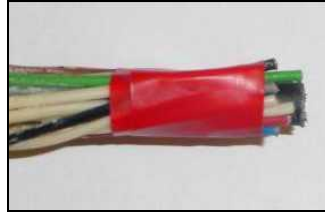
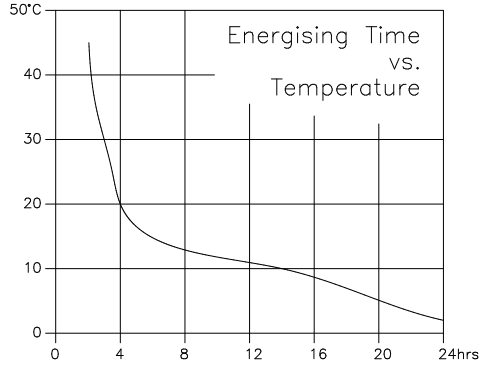


Figure 3



Tightening information (Instruction 10), and permitted cores

Stopper Box Size	Tighten Union Nut using wrench up to	Max Diameter over Cores	Max No of Cores
20	½-turn	12.5	40
25	½-turn	17.8	60
32	½-turn	23.5	80
40	½-turn	28.8	130
50	½-turn	39.4	400
63	½-turn	50.0	425
75	½-turn	60.8	425
80	¾-turn	64.4	425
85	¾-turn	69.8	425
90	¾-turn	75.1	425
100	¾-turn	80.5	425



Installation Guidance

Point	Advice
1	EN/IEC 60079-10 EN/IEC 60079-14 Canadian Electrical Code (CSA C22.1)
2	Installation should only be carried out by a competent electrician, skilled in cable gland installation.
3	Comprehensive details of the compliance standards can be found on the product certificates which are available for download from our website
4	NO INSTALLATION SHOULD BE CARRIED OUT UNDER LIVE CONDITIONS.
5	Threaded entries: the product can be installed directly into threaded entries. Threaded entries should comply with clause 5.3 of IEC/EN 60079-1 and have a lead-in chamfer to allow for full engagement of the threads and to facilitate correct ingress sealing. For Ex d applications a minimum of 5 fully engaged parallel threads is required. Metric threads are supplied with an o-ring and will maintain IP66 and IP68. Other parallel entry threads will maintain an IP rating of IP64. A sealing washer should be used to maintain all IP ratings greater than IP64. Any thread sealant used should be non-hardening and comply with the prevailing code of practice.
6	To maintain the Ingress Protection rating of the product, the entry hole must be perpendicular to the surface of the enclosure. The surface should be sufficiently flat and rigid to make the IP joint. The surface must be clean and dry. It is the users/installers responsibility to ensure that the interface between the enclosure and cable gland is suitably sealed for the required application.
7	Whilst Peppers products with tapered threads, when installed into a threaded entry, have been tested to maintain IP66 without any additional sealant, due to the differing gauging tolerances associated with the use of tapered threads it is recommended to use a non-hardening thread sealant if an IP rating higher than IP64 is required. Any sealant used should comply with the prevailing code of practice.
8	Once installed do not dismantle except for routine inspection. An inspection should be conducted as per IEC/EN 60079-17. After inspection the gland should be re-assembled as instructed, ensuring the mid cap and back nut are correctly tightened to ensure the cable is secure.
9	The o-ring that is fitted to the outer diameter of the union cup (visible on figure 3) is to prevent compound from extruding inside the gland during the assembly process. It has no other function and does not contribute to the protection concept or ingress protection rating of the cable gland.
10	If required an anti-seize lubricant may be used to aid assembly and routine inspection. The lubricant should comply with the prevailing code of practice and care should be taken to ensure no lubricant comes into contact with the cable gland seals as this may impair performance.

Approvals and Certification

Approval	Certificate Number	Protection Concept / Type
ATEX	Sira 03ATEX1479X	Ex II 1D 2G Ex d I Mb / Ex d IIC Gb / Ex e I Mb / Ex e IIC Gb / Ex ta IIIC Da
	Sira 09ATEX4124X	Ex II 3G Ex nR IIC Gc
IECEX	IECEX SIR 07.0098X	Ex d I Mb / Ex d IIC Gb / Ex e I Mb / Ex e IIC Gb / Ex nR IIC Gc / Ex ta IIIC Da
CSA - Canada	1356011	Ex d IIC / Ex e II / CL I Div 2 Gr ABCD / CL II Gr EFG / CL III Type 4X
EAC	RU C-GB. Г506.B.00098	Ex d IIC / Ex d IICU / Ex e IIC / Ex e IICU / Ex nRII
UKRAINE	UA.TR.047.C.0408-13	Ex d IIC X / Ex e II X
INMETRO	NCC 13.2188 X	Ex d I Mb / Ex d IIC Gb / Ex e I Mb / Ex e IIC Gb / Ex ta IIIC Da / Ex nR IIC Gc
NEPSI	GYJ111309X	Ex d IIC / Ex e II
CCoE / PESO	P365300/4 & P365300/10	Ex d IIC Gb (Zone 1) / Ex e IIC Gb (Zone 2) / Ex nR IIC Gc (Zone 2)
Korea (KCS)	15-GA4BO-0665X / 15-GA4BO-0666X	Ex d IIC / Ex e II
ABS	14-LD463991A-1	Specified ABS Rules – See certificate
Lloyds Maritime	10/00056(E1)	Ex d I Mb / Ex d IIC Gb / Ex e I Mb / Ex e IIC Gb / Ex nR IIC Gc / Ex ta IIIC Da
Russian Maritime	14.02755.315	Ex d I Mb / Ex d IIC Gb / Ex e I Mb / Ex e IIC Gb / Ex ta IIIC Da

Interpretation of Markings. Markings on the outside of this gland carry the following meanings:

Cable Gland Type & Size CR-S-a-b-ccc-ddd-eee-nn; where: -

a =	Main component material B = brass S = stainless steel	ddd =	Entry thread type and size
b =	Back End Configuration F = female M = male	eee =	Back End Connection Thread type and size
ccc =	Gland size	nn =	Year of manufacture

Special Conditions for Safe Use

- The cable glands/stopper boxes shall not be used in enclosures where the temperature, at the point of entry/mounting, is outside of the range -60°C to +135°C.
- The ingress Protection rating that is required to ensure compliance with the standards used in this certificate was determined by testing the devices fitted into a representative enclosure having a smooth flat mounting surface. In practice, the interface between the male thread of the glands and their associated enclosure cannot be defined, therefore, it is the user's responsibility to ensure that the appropriate Ingress Protection level is maintained at these interfaces.
- The parallel threaded entry component threads will be suitably sealed using a method that is applicable to the associated equipment to which the gland will be attached. This will be in accordance with the relevant installation code of practice and will ensure that any ingress protection and restricted breathing sealing requirements are maintained.
- The threaded entry component threads without interface o-ring seals installed in an explosive dust atmosphere, within threaded entries, shall only be fitted into enclosures that have either:
 - parallel entries that will ensure that a minimum of 5 full threads of contact will be maintained, this is in accordance with clause 5.1.2 of IEC 60079-31:2013,
 - tapered entries that will ensure that a minimum of 3 ½ full threads of contact will be maintained, this is in accordance with clause 5.1.2 of IEC 60079-31:2013.