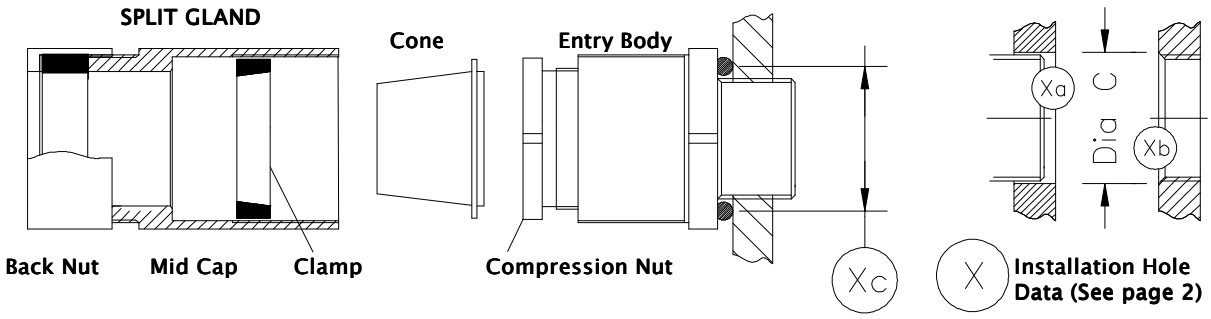
Peppers Cable Glands Ltd. Stanhope Road Camberley GU15 3BT UK

CR-**** Cable Glands featuring CROCLOCK® – ASSEMBLY INSTRUCTIONS FOR SAFE USE

Brief Description
The Peppers CR-**** type cable gland featuring Croclock® universal armour clamping is for outdoor use in the appropriate Hazardous Areas with circular armoured, unarmoured, braided and screened cable. It gives environmental protection to IP68 and Deluge. A variant giving electrical continuity to a lead sheath is available. A termination suitable for EMC protection can be made using armoured cables with this gland.

Warning
PLEASE STUDY CAREFULLY BOTH PAGES OF THESE INSTRUCTIONS BEFORE INSTALLATION. These glands should not be used in any application other than those mentioned here or in our Data Sheets, unless Peppers states in writing that the product is suitable for such application. Peppers can take no responsibility for any damage, injury or other consequential loss caused where the glands are not installed or used according to these instructions. This leaflet is not intended to advise on the selection of cable glands. Further guidance can be found in the standards listed overleaf.

STEP-BY-STEP FITTING INSTRUCTIONS



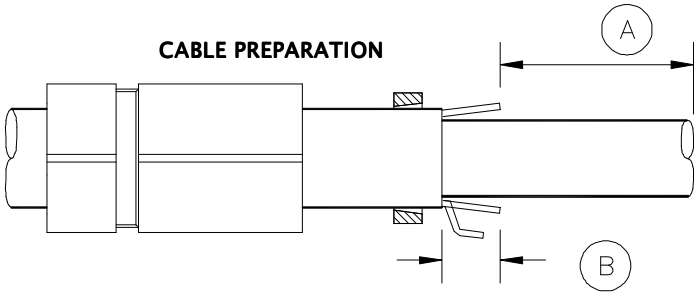
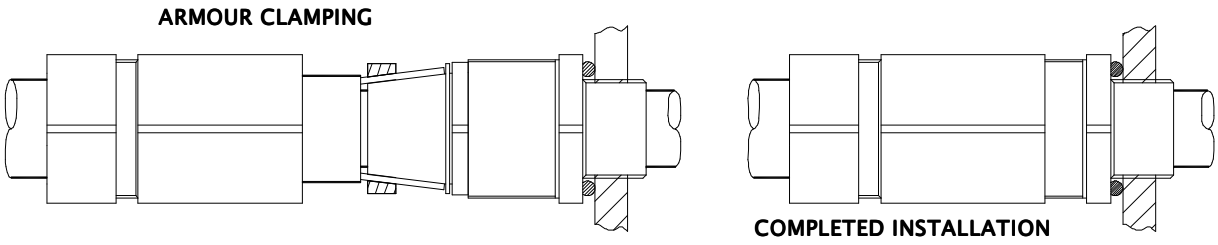


TABLE 1	
Gland Size	B Armour length
16 –25	20mm
32 – 40	30mm
50S – 75	32mm
80 – 100	50mm



STEP-BY-STEP FITTING INSTRUCTIONS

1 Split gland as shown
2 Fit Entry Body. Hand-tighten, then using wrench tighten a further ½ turn. DO NOT EXCEED MAX TORQUE FOR ENCLOSURE
3 Slide Back Nut, Mid Cap and Clamp onto cable as shown
4 PREPARE CABLE
A Strip outer jacket and armour length to suit installation. **For lead sheathed cable** the lead sheath must pass through the Continuity Washer when installation is complete (When fitted, the Continuity Washer is trapped under the Compression Nut)
B Expose armour. For approximate lengths see Table 1 column B. Where sheath sizes are near minimum, form armour to facilitate clamping as shown.
5 Slide Cone onto inner sheath and under armour. Slide Clamp onto exposed armour
6 **For lead sheathed cable -** Unscrew the Compression Nut, remove the Continuity Washer and replace the Nut. **For all cables** Insert cable through Entry Body.
7 To clamp armour/braid onto Cone, hand-tighten Mid Cap to Entry Body, then using wrench tighten a further 1 turn.
8 Loosen off Mid Cap to visually check armour is securely locked. **For lead sheathed cable -** Replace Continuity Washer and Nut. Reinsert cable. **For all cables** Tighten Compression Nut so that seal makes full contact with cable sheath, then tighten 2½ extra turns (up to 3½ turns for minimum cable). Re-tighten Mid Cap.
9 Hold Mid Cap with wrench and tighten Back Nut onto cable. Ensure seal makes full contact with cable, then tighten Back Nut 1 extra turn.

X INSTALLATION HOLE DATA (See page 2).
Xa Diameter for clearance holes (NOT Ex d).
Xb Diameter of countersink for threaded holes (Ex d).
Xc Diameter of O-ring seat.

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Cable Sizes and Armour Acceptance (mm)

X Hole data		Gland	Inner Sheath		Outer Sheath		Reduced Bore		Armour Acceptance Ranges			
Dia Xc	Dia Xa/Xb	Size	Min	Max	Min	Max	Min	Max	Wire Armour		Tape Armour	
22.2	20.5	**16**	3.4	8.4	9.0	13.5	6.7	10.3	0.15	1.25	0.15	0.35
22.2	20.5	**20S**	7.2	11.7	11.5	16.0	9.4	12.5	0.15	1.25	0.15	0.35
22.2	20.5	**20**	9.4	14.0	15.5	21.1	12.0	17.6	0.15	1.25	0.15	0.5
27.9	25.5	**25**	13.5	20.0	20.3	27.4	16.8	23.9	0.15	1.6	0.15	0.5
35.5	32.5	**32**	19.5	26.3	26.7	34.0	23.2	30.5	0.15	2.0	0.15	0.55
43.5	40.5	**40**	23.0	32.2	33.0	40.6	28.6	36.2	0.2	2.0	0.2	0.6
53.5	50.5	**50S**	28.1	38.2	39.4	46.7	34.8	42.4	0.3	2.5	0.5	0.8
53.5	50.5	**50**	33.1	44.1	45.7	53.2	41.1	48.5	0.3	2.5	0.5	0.8
66.5	63.5	**63S**	39.2	50.1	52.1	59.5	47.5	54.8	0.3	2.5	0.5	0.8
66.5	63.5	**63**	46.7	56.0	58.4	65.8	53.8	61.2	0.3	2.5	0.5	0.8
78.5	75.5	**75S**	52.1	62.0	64.8	72.2	60.2	68.0	0.3	2.5	0.5	1.0
78.5	75.5	**75**	58.0	68.0	71.1	78.0	66.5	73.4	0.3	2.5	0.5	1.0
83.5	80.5	**80**	62.2	72.0	77.0	84.0	N/A	N/A	0.45	3.15	0.5	1.0
83.5	80.5	**80H**	62.2	72.0	79.6	90.0	N/A	N/A	0.45	3.15	0.5	1.0
88.5	85.5	**85**	69.0	78.0	79.6	90.0	75.0	85.4	0.45	3.15	0.5	1.0
93.5	90.5	**90**	74.0	84.0	88.0	96.0	N/A	N/A	0.45	3.15	0.5	1.0
93.5	90.5	**90H**	74.0	84.0	92.0	102.0	N/A	N/A	0.45	3.15	0.5	1.0
103.5	100.5	**100**	82.0	90.0	92.0	102.0	87.4	97.4	0.45	3.15	0.5	1.0

Installation Guidance

Point	Advice
1	♦ BS EN 60079-10 Classification of Hazardous Areas ♦ BS EN 60079-14 Electrical Installations in hazardous areas (other than mines) ♦ BS 6121, Part 5 Selection, Installation and Maintenance of Cable Glands ♦ IEC 61241-0:2004 and IEC 61241-1:2004 Ignitable dust – Protection by enclosure
2	Installation should only be carried out by a competent electrician, skilled in cable gland installation.
3	NO INSTALLATION SHOULD BE CARRIED OUT UNDER LIVE CONDITIONS.
4	To maintain Ingress Protection ratings above IP54, use IP washers or O-rings for parallel threads. For taper threads use thread sealant. Also see page 1 diagram and Hole Data above.
5	To ensure the stated IP rating is maintained, at the point of interface the surface of the enclosure should be flat, free from debris and rigid with the hole drilled straight and to an appropriate diameter.
6	Where an earth contact is required the surface of the enclosure should be sufficiently flat and rigid. With painted enclosures a serrated star washer should be fitted to break through the paint and make a satisfactory earth contact.
7	Once installed do not dismantle except for occasional inspection. The gland is not serviceable and spare parts are not supplied.
8	Parts are not interchangeable with any other design. If manufacturers' parts are mixed, certification will be invalidated.

Limitations on Usage. Be sure your installation complies with the following:-

Feature	Comment				
Enclosure entry thread	The female thread in the enclosure must comply with clause 5.3 of IEC/EN 60079-1. Do not damage threads on assembly. Check that the number of fully engaged threads is at least 5.				
Cable construction	CR-**** glands should only be used with substantially round and compact cables with extruded bedding (i.e. effectively filled cables).				
Installation conditions	**Gas Group?**	**Internal Ignition Source?**	**Enclosure Volume?**	**Which Zone?**	**Use Type CR-**** Gland?**
	IIC	NO	2 litres or less	Zone 1 or 2	YES
	IIB, IIA, II	NO	Any	Zone 1 or 2	YES
	IIB, IIA, II	YES	Any	Zone 2	YES
	IIB, IIA, II	YES	2 litres or less	Zone 1	YES

Interpretation of Markings. Markings on the outside of this gland carry the following meanings:
Cable Gland Type & Size CR-a-b-R-ccc-ddd-IP68-nn

a = Seal Type **1** = Neoprene (black) **2** = Neoprene with Continuity washer for lead sheathed cable **3** = Silicone (white or red)
b = Main component material **B** = brass **S** = stainless steel
R = Optional reduced bore outer seal (red silicone)
ccc = Gland size **IP68** = Ingress Protection code
ddd = Entry thread type and size **nn** = year of manufacture

Protection Concept and Gas Groups: Ex d IIC / Ex e II / Ex tD A21 IP68 / Ex nR II

Certificate Numbers: (ATEX) **BAS 01ATEX2271X / SIRA 09ATEX1221X** (CSA) **1356011**
(IEC) **IECEx SIR 07.0099X** (GOST-R) **РОСС GB.ГБ06.B00853**

ATEX Markings ⟨Ex⟩ II 2/3 GD

GOST-R Approval: ExdIICU / ExeIIU / ExnRIIU
CSA Approval: Exd IIC / Exe II / CL I Div 2 Gr ABCD, CL II Gr EFG, CL III Type 4X

Special Conditions for Safe Use

(1) These glands must not be used with Exd IIC enclosures with a volume greater than 2 litres.
(2) These glands must not be used with enclosures where the temperature at the point of mounting exceeds -20°C to +85°C using neoprene seals, or –60° to +180°C using silicone seals.
(3) Where the glands are used with unarmoured, braided or screened cables, they must be used on fixed installations, and the cable must be clamped near the gland to avoid pulling and twisting.
(4) Where sealing and retention is required by gripping cable sheaths, with armour/screen/braid being clamped inside the terminating equipment, the glands must only be used on fixed installations, and the cable must be clamped near the gland to avoid pulling and twisting.
(5) These glands are certified with one specific size of flameproof sealing ring per gland size as supplied.
(6) The interfaces between the male thread of the products and an 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.