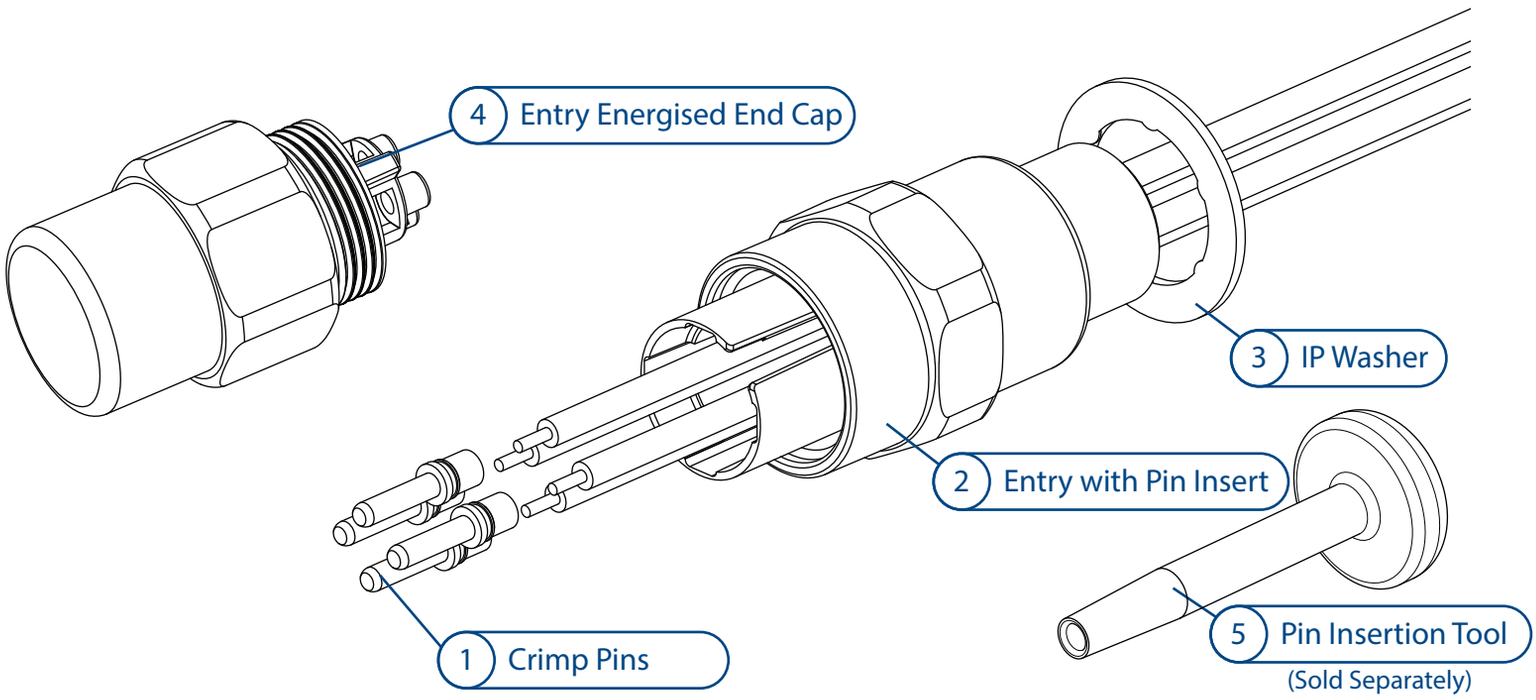
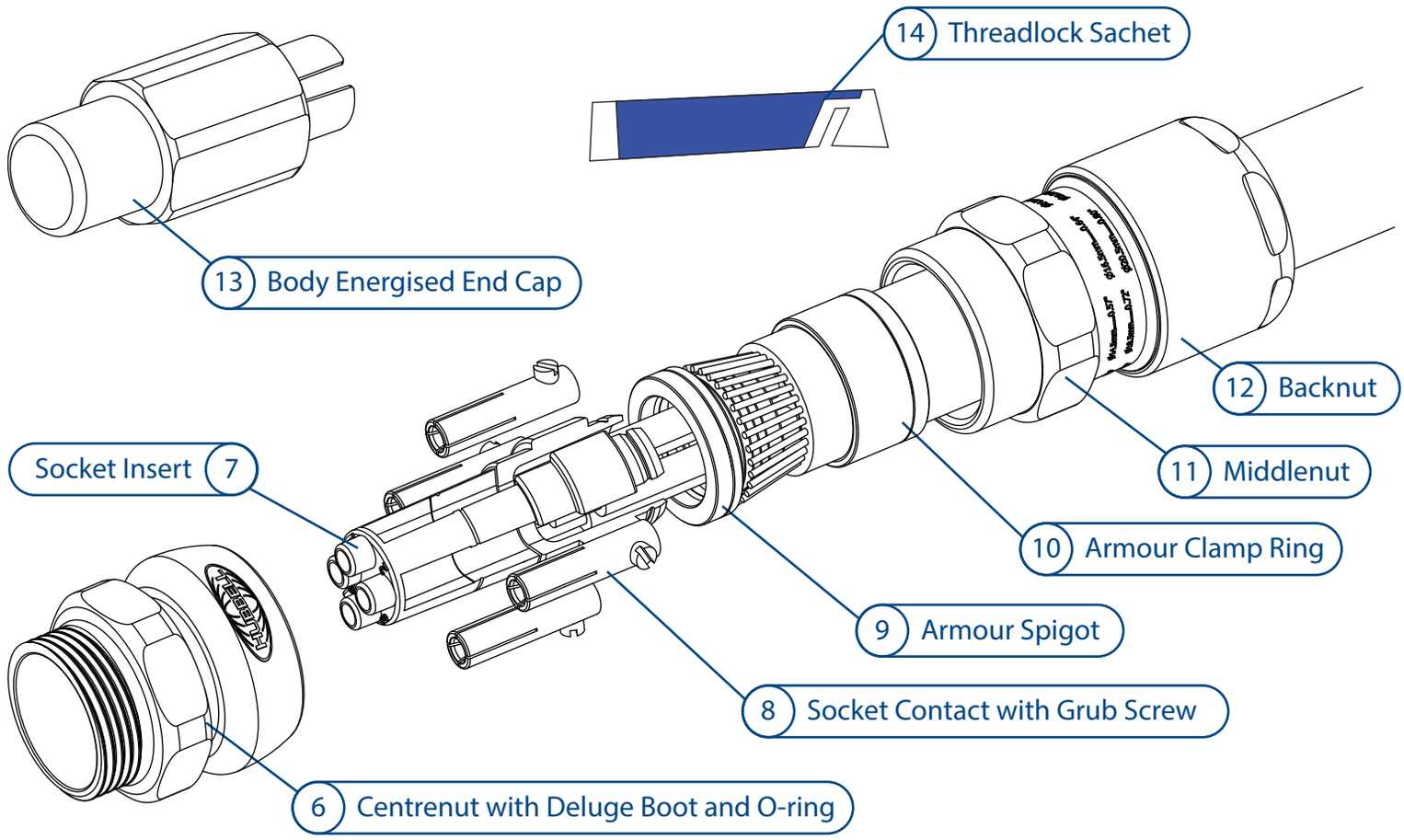
Component Parts - 501/RCG Entry



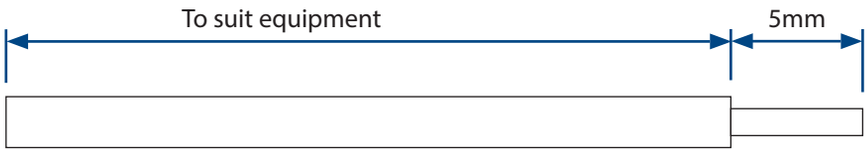
Component Parts - 501/RCG Body



Part A: Installing 501/RCG Entry

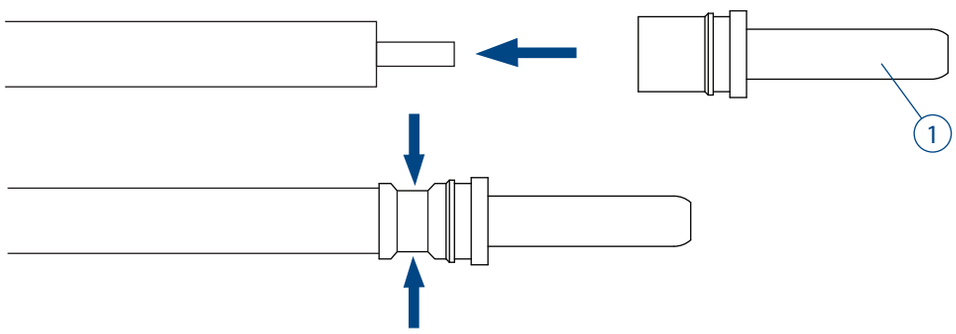
STEP A1: Prepare Conductors

Take the correct conductors for the application. Cut conductors to length to suit the application.
Strip the conductor to expose 5mm length of core as shown.
IMPORTANT: At this stage the conductors should NOT be wired up to the equipment.



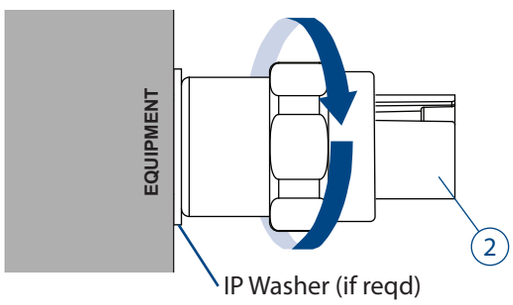
STEP A2: Crimp contacts to conductors

See technical information for recommended crimp tool.
Set crimp tool to appropriate setting for pin contact crimp size. Proceed to crimp the pins (1) to the conductors, ensuring that the insulation is tight to the crimp side of the pin contact.



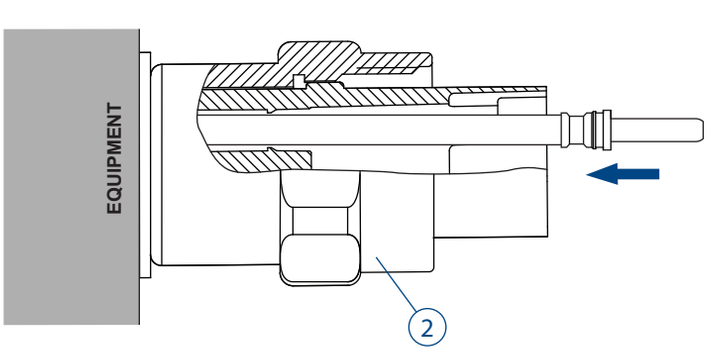
STEP A3: Fit entry to equipment

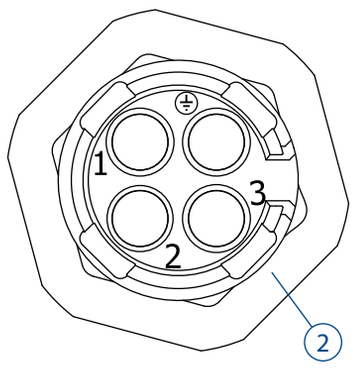
The 501/RCG Entry may be mounted to either a plain hole in a thinwall enclosure or a threaded hole in a thick wall enclosure.
Fit the entry (2) to the enclosure, using the IP washer (3) and locknut supplied with the product if required.
The product is also supplied with an optional earth tag which should also be fitted if required.



STEP A4: Feed conductors into entry

Observe the contact position numbering moulded into the entry insert (2).
Feed conductors through the appropriate holes in the entry.



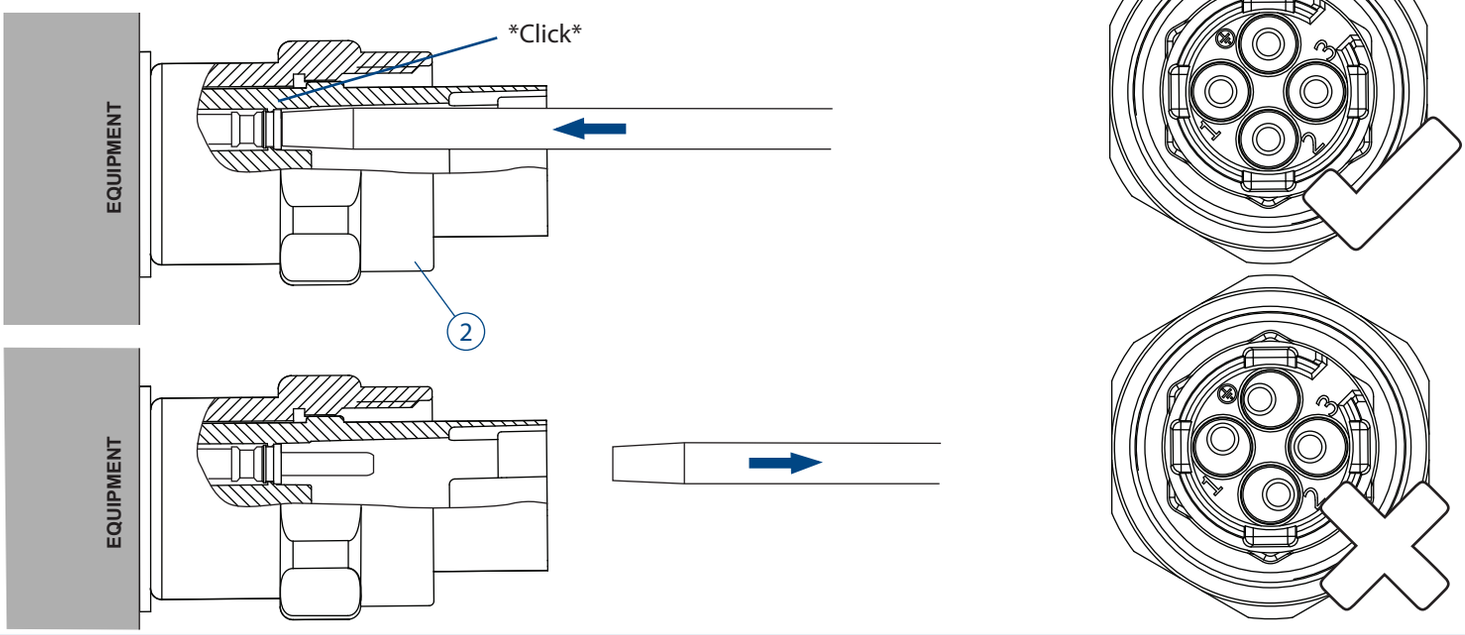


TIP: Depending on the enquipment, it may be preferable to load the contacts into the entry moulding prior to installing into enclosure. This method is also acceptable. In this case follow steps in this order: A1, A2, A4, A5, A3, A6

STEP A5: Fit crimped conductors into entry

Using the insertion tool supplied with the product, push the pin contact into the entry (2) until it clicks into place. Repeat for all contacts. Inspect contacts to ensure they are straight - if needed adjust with the insertion tool.

NOTE: The ground contact sits higher than the signal positions as it is designed to mate first/break last.



STEP A6: Complete wiring of conductors

Installation of the 501/RCG Entry to the equipment is now complete. Proceed to terminate the conductors inside the equipment as required.

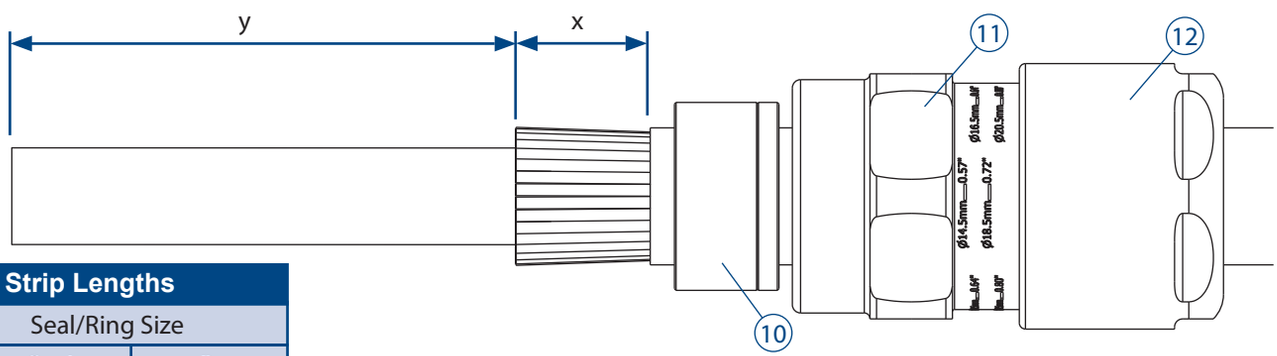
Once installation is complete, the 501/RCG Entry may be terminated in one of the following ways:

-Fit transit cap for environmental protection
- Fit Entry Energised End Cap which may allow product to be energised (See Part D)
- Mate Entry with 501/RCG Body (See Part C)

Part B: Terminating 501/RCG Body

STEP B1: Prepare Cable

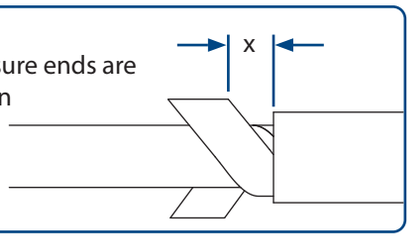
Slide backnut (12), middlenut (11) and armour clamp ring (10) onto cable.
Confirm orientation of armour clamp ring is correct (see table below).
Cut cable length, strip outer sheath and cut armour. Use lengths as shown in table below.



Strip Lengths		
Dim	Seal/Ring Size	
	Os-A	B
x	20mm	25mm
y	50mm min	

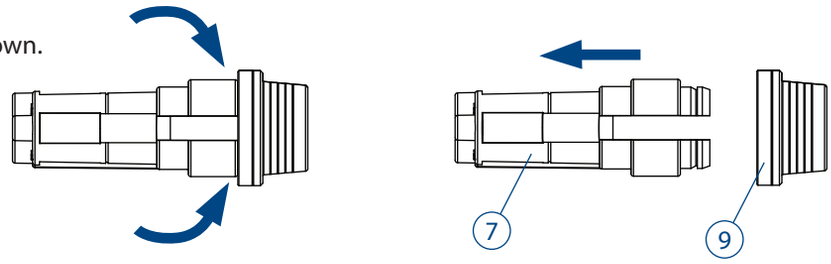
Tape Armour

After tape is spread, ensure ends are trimmed at 90° as shown

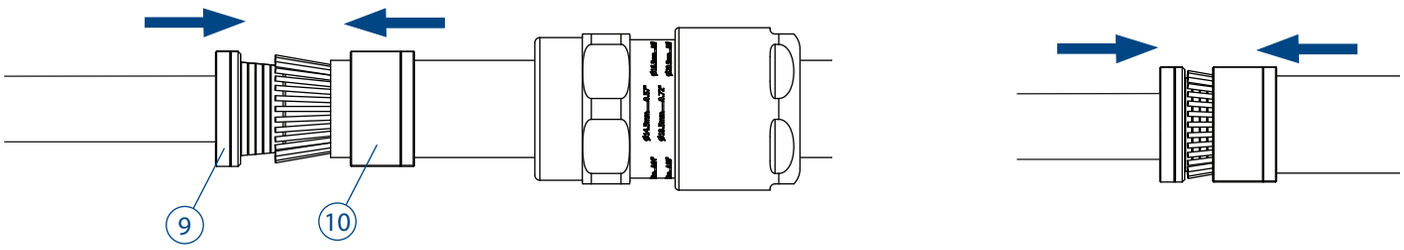


Armour Clamp Ring Orientation		
Gland Size	Orientation	
	Equipment Side	Equipment Side
Os-A	0.8 - 1.25mm	0 - 0.8mm
B	1.25 - 1.6mm	0 - 0.7mm

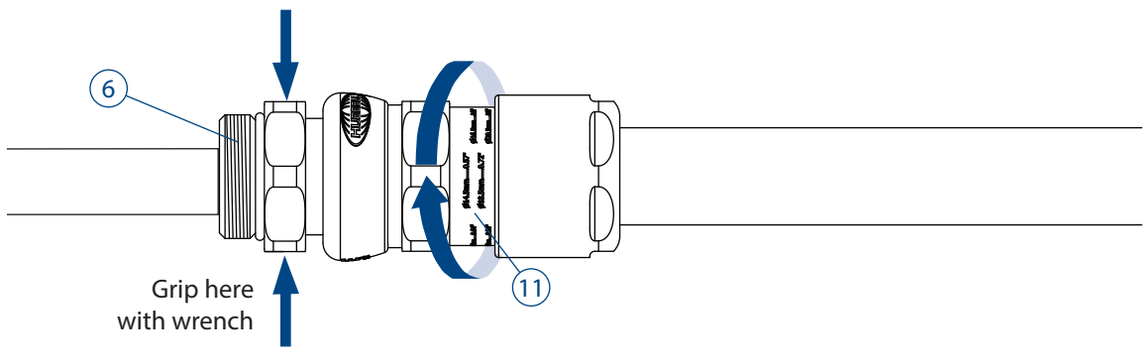
STEP B2: Remove socket insert (7) from spigot (9)
Squeeze base of insert (7) and remove from the spigot (9) as shown.



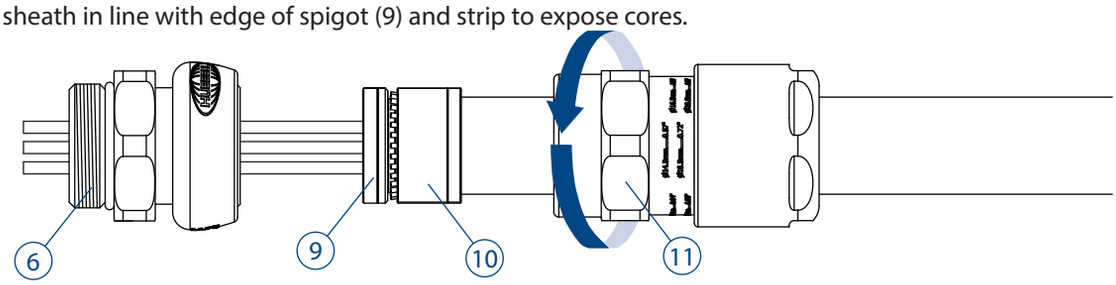
STEP B3: Slide spigot (9) onto cable
Push spigot shoulder up to armour/braid. Slide clamping ring (10) up to the armour/braid by hand



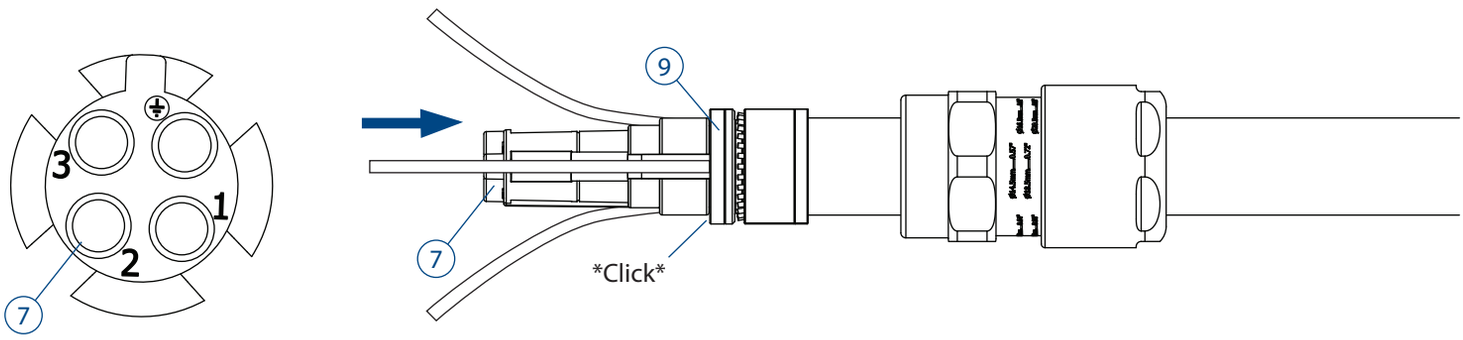
STEP B4: Clamp Armour/Braid
Slide centrenut (6) over cable until it meets the spigot. Slide middlenut (11) up to centrenut and hand tighten.
Grip the centrenut (6) with a spanner/wrench. Use a second spanner/wrench to tighten half to three quarters of a turn.



STEP B5: Inspect Armour/Braid
Unscrew the middlenut (11). The armour clamp ring (10) should now be locked in place.
Visually inspect that the armour/braid has been successfully clamped between the spigot (9) and the armour clamp ring (10). If clamping is not satisfactory, repeat step B4.
Cut inner sheath in line with edge of spigot (9) and strip to expose cores.



STEP B6: Fit socket insert
Take socket insert (7) and review numbering on tip. Feed cable cores through the correct slot in the socket insert. Slide the socket insert (7) down to the spigot (9) until it clicks in place.

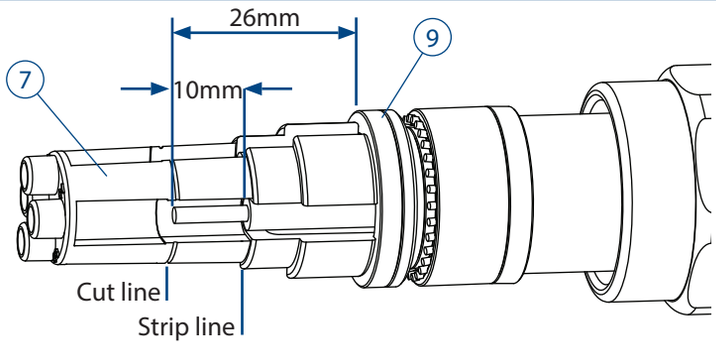


STEP B7: Cut conductors to length and strip

Cut conductor to 26mm from top of spigot. Use the groove indicator in the insert as a visual aid. The conductor should not extend past this cut line. Strip conductor back past the insert shoulder which indicates the strip line (approx 10mm).

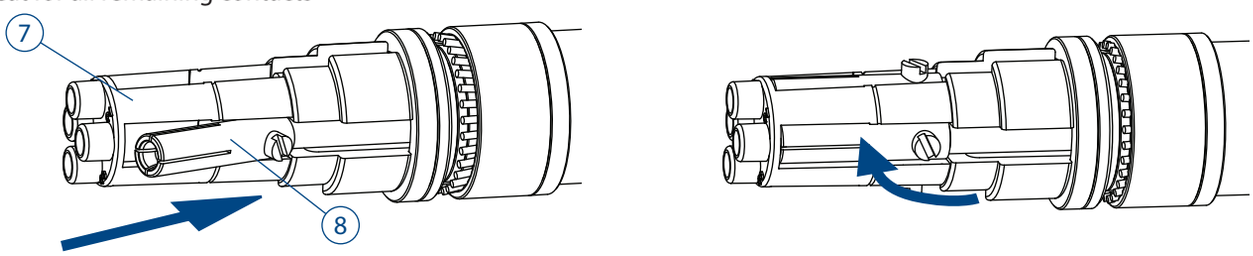
The socket insert (7) may be removed from the spigot (9) to assist cable stripping process then re installed as shown in step B2.

TIP: Use a pen to mark cores in situ then remove insert to aid conductor strip process.



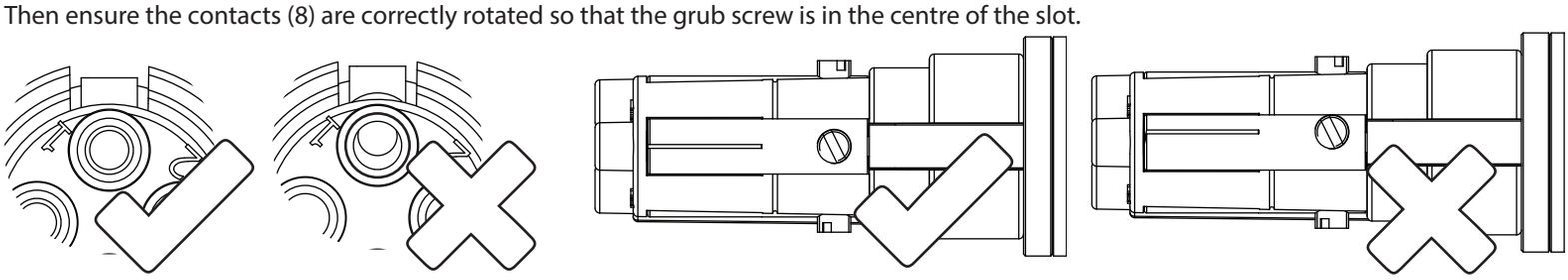
STEP B8: Fit contacts to cable conductors

Take the first contact (8), slide over the conductor and press into slot in the insert (7). The contact (8) will now be retained in the insert (7). Repeat for all remaining contacts



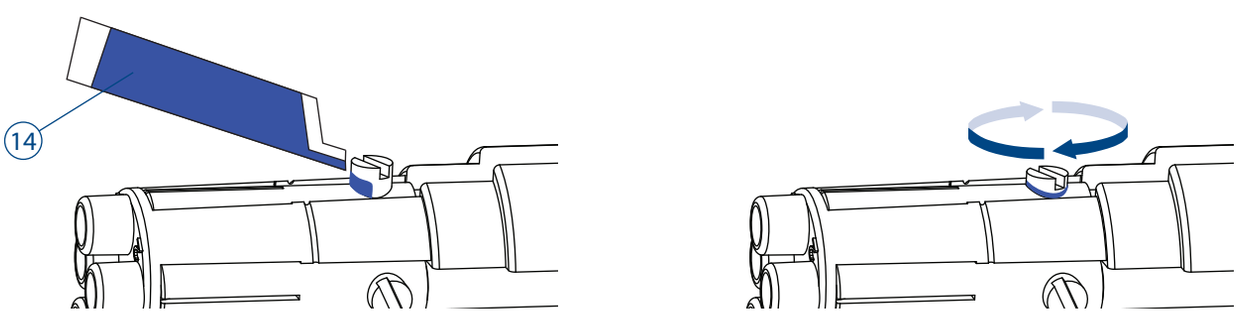
STEP B9: Check alignment of contacts

Firstly confirm all contacts (8) are concentric to the openings in the tip of the insert.
Then ensure the contacts (8) are correctly rotated so that the grub screw is in the centre of the slot.



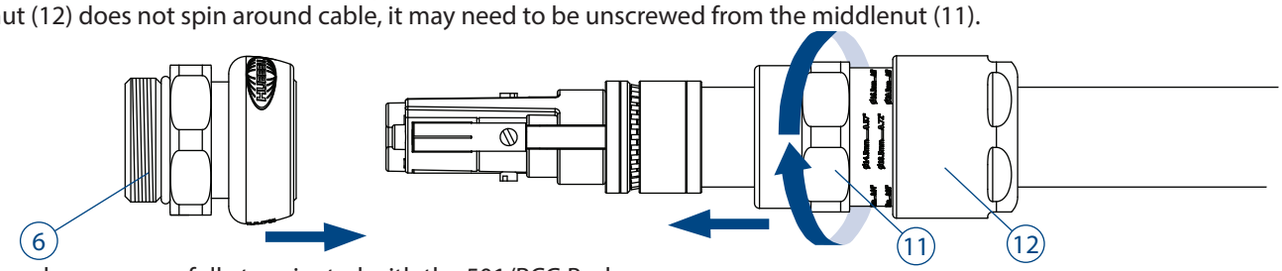
STEP B10: Apply threadlock and tighten grubscrews

Take the threadlock sachet (14) supplied with the product and tear open. Dispense a drop of threadlock onto the exposed thread of one contact grub screw. Tighten the grubscrew with a small screwdriver. Recommended torque is 0.75Nm. Wipe away any excess. Repeat for all contacts.



STEP B11: Install middlenut (11) to centrenut (6)

Screw the centrenut (6) loosely onto the middlenut (11). Do not yet tighten.
IMPORTANT: Ensure that the metalwork can still spin around the cable and insert assembly.
TIP: If the backnut (12) does not spin around cable, it may need to be unscrewed from the middlenut (11).



The cable has now been successfully terminated with the 501/RCG Body.
The 501/RCG Body may now either be connected to a 501/RCG Entry (see Part C) or blanked off with an energised end cap (see Part E).

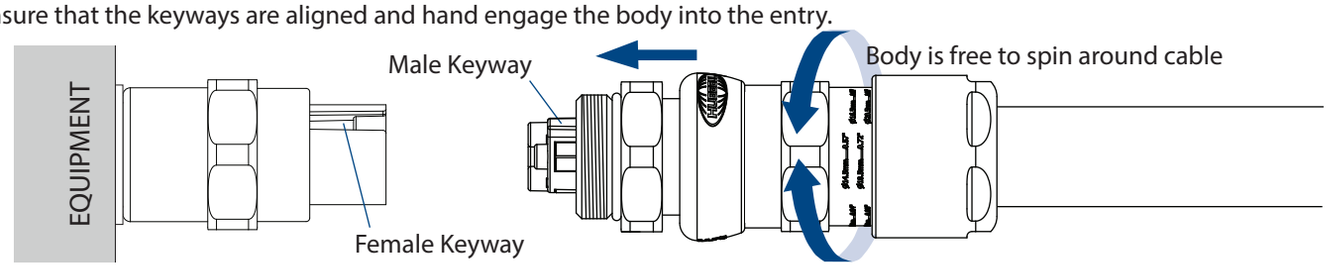
Part C: Connecting 501/RCG Entry to Body

STEP C1: Remove any end caps

Transit caps should be pulled off the products by hand.
Metallic energised end caps must be uninstalled by reversing the steps described in Part D (Entries) and Part E (Bodies).
IMPORTANT: System must be de-energised before any metallic end caps are removed.

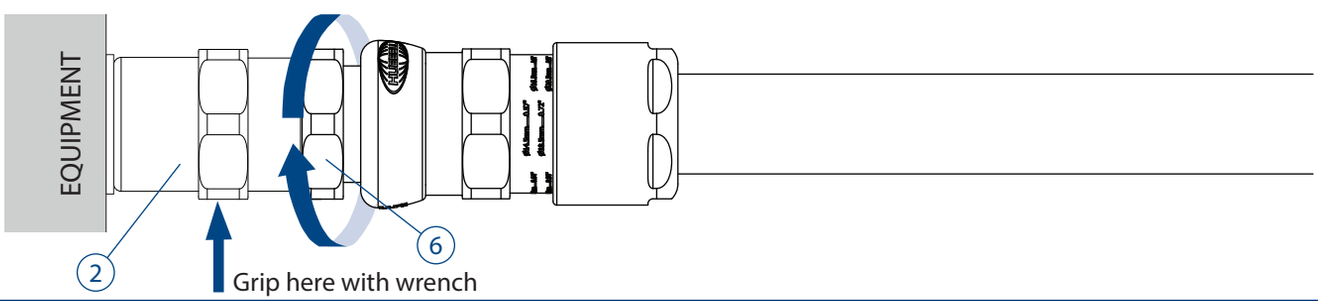
STEP C2: Engage entry and body

Ensure that the metallic outer components of the body portion can rotate freely around the cable. If needed further loosen the middlenut and backnut. Ensure that the keyways are aligned and hand engage the body into the entry.



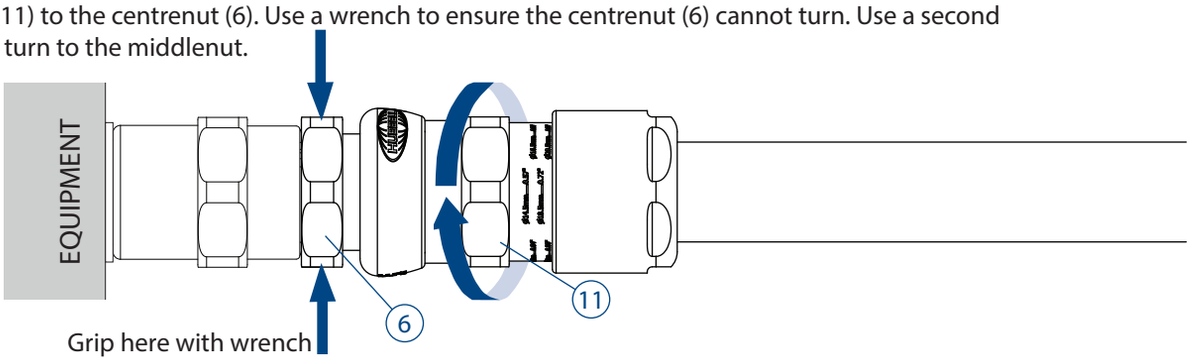
STEP C3: Tighten Centrenut (6)

Hand tighten the centrenut (6) into the entry (2). Use a wrench to ensure the entry (2) cannot turn. Use a second wrench to tighten the centrenut (6) until it is wrench tight.



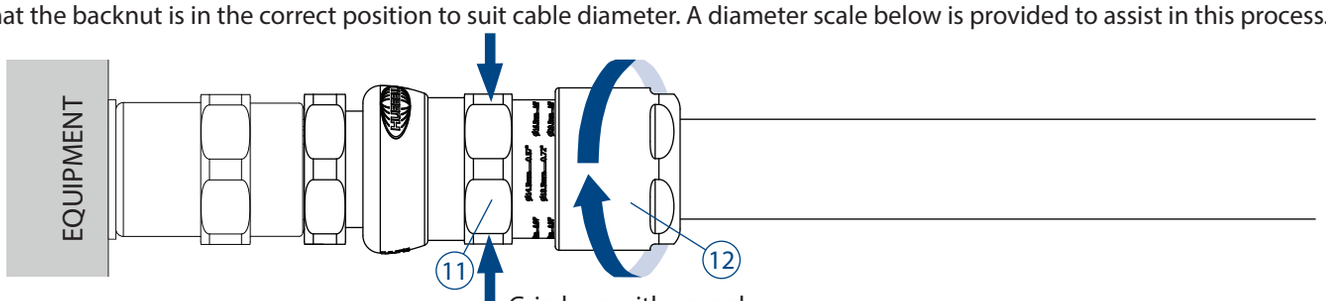
STEP C4: Tighten Middlenut (11)

Hand tighten the middlenut (11) to the centrenut (6). Use a wrench to ensure the centrenut (6) cannot turn. Use a second wrench to apply a further 1/4 turn to the middlenut.



STEP C5: Install backnut (12)

Tighten the backnut (12) by hand until a seal is formed around the cable. Use a wrench/spanner to grip the middlenut (11). While preventing the middlenut (11) turning, use a second wrench to apply one further full turn to the backnut (12). Use the middlenut guide as an indication that the backnut is in the correct position to suit cable diameter. A diameter scale below is provided to assist in this process.



Images for illustration purposes only.
Product supplied may differ from that shown.

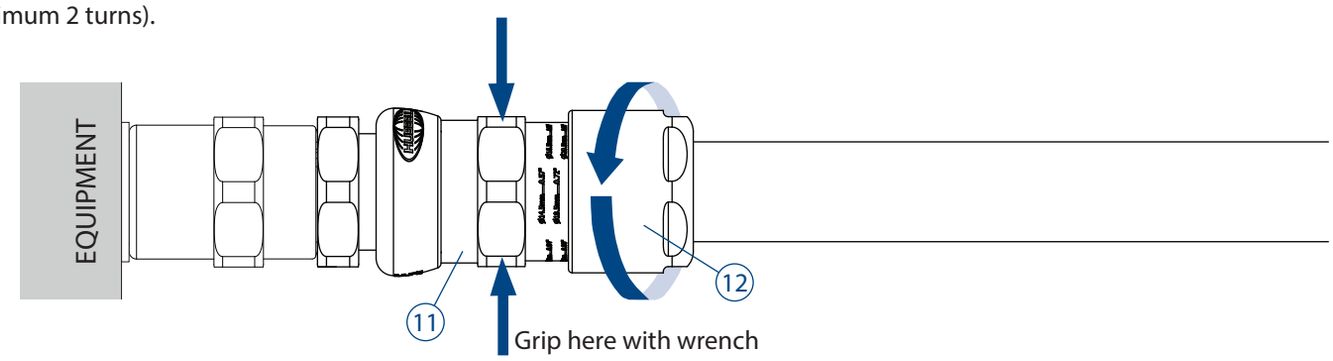
Diameter Scale (mm)
Correct when printed A4 Booklet Style

Part D: Decoupling 501/RCG Entry From Body

WARNING: DO NOT DECOUPLE WHEN ENERGISED. SYSTEM MUST BE DE-ENERGISED WHEN COMMENCING THIS PROCEDURE
CAUTION: DO NOT UNDO CENTRENUT (6) UNTIL PRODUCT IS DECOUPLED. UNDOING THE CENTRENUT WHILST ENGAGED RISKS DAMAGE TO THE PRODUCT.

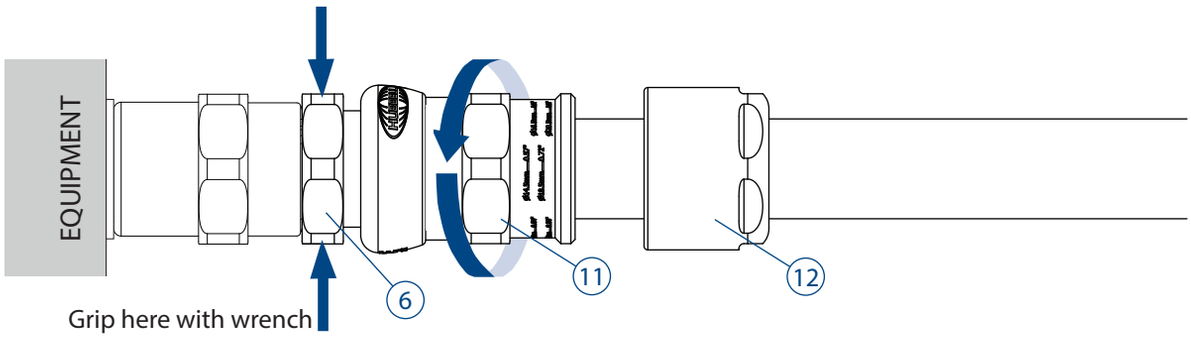
STEP D1: Loosen Backnut (12)

Grip the middlenut (11) with a wrench, ensuring it cannot turn. Use a second wrench to undo the backnut (12) until loose (minimum 2 turns).



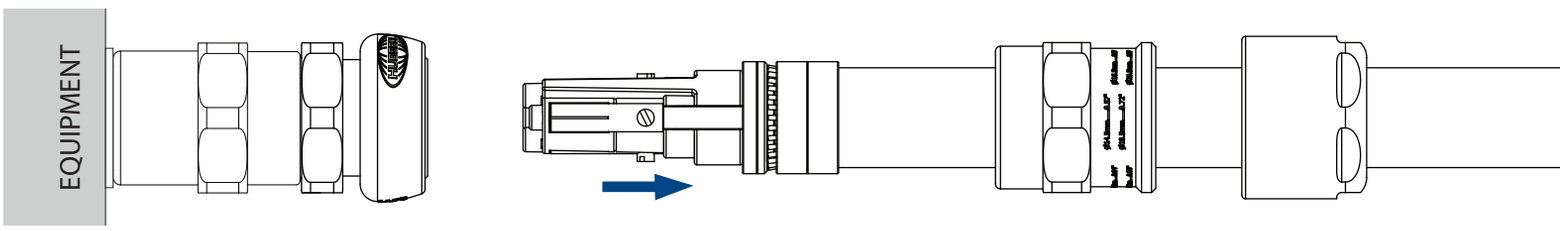
STEP D2: Loosen Middlenut (11)

Grip the centrenut (6) with a wrench, ensuring it cannot turn. Use a second wrench to undo the middlenut (11) and slide middlenut (11) and backnut (12) down the cable.



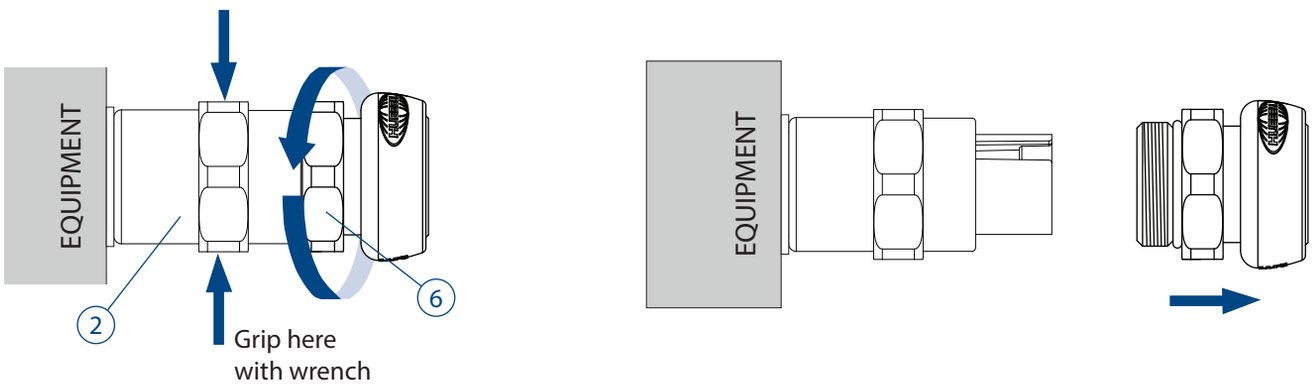
STEP D3: Disconnect Body from Entry

Once the middlenut (11) is undone, the body will slide out from the entry.



STEP D4: Remove Centrenut (6)

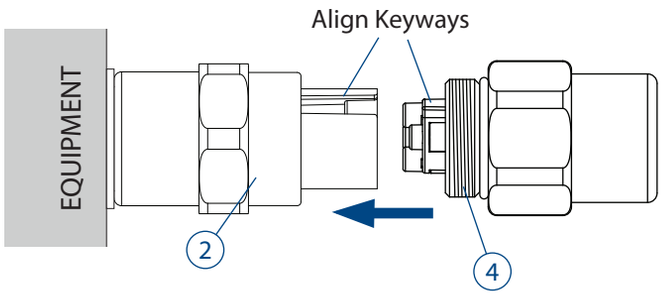
Grip the entry (2) with a wrench, ensuring it cannot turn. Use a second wrench to undo the centrenut (6) and remove. Entry (2) may now be fitted with an alternative 501/RCG Body or capped.

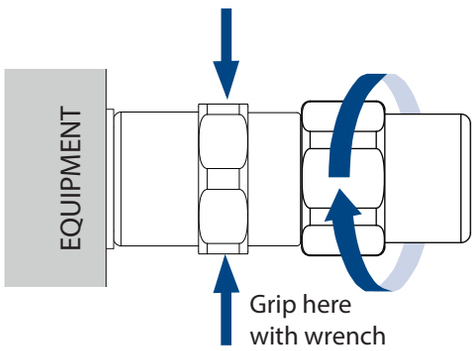


Part E: Installing Entry Energised End Cap (4)

STEP E1: Cap entry with energised end cap (4)

Ensure keyways are aligned and engage end cap (4) to entry (2) by hand. Hand tighten the end cap.
Using a wrench to ensure that the entry cannot turn, use a second wrench to ensure the end cap is wrench tight.
It is now permitted to energise the equipment.

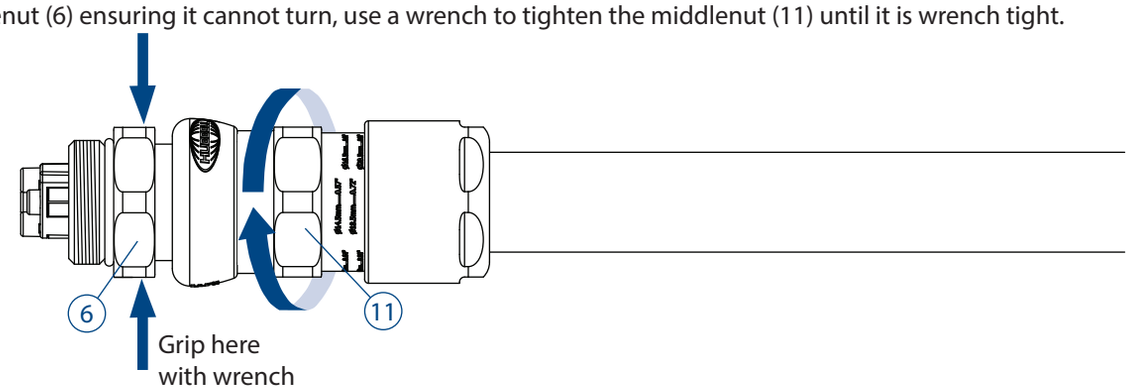




Part F: Installing Body Energised End Cap

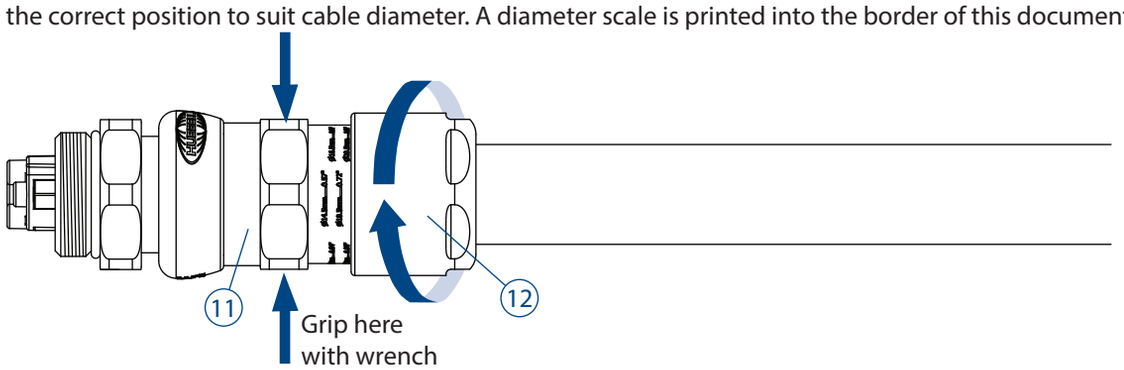
STEP F1: Tighten Middlenut (11)

Gripping the centrenut (6) ensuring it cannot turn, use a wrench to tighten the middlenut (11) until it is wrench tight.



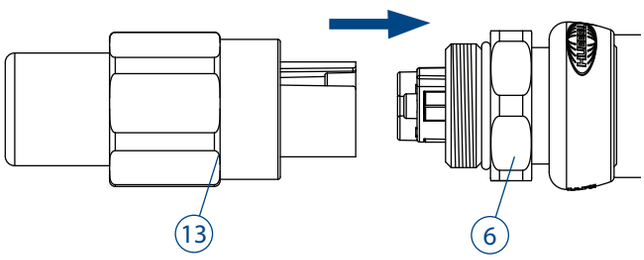
STEP F2: Install and inspect backnut (12)

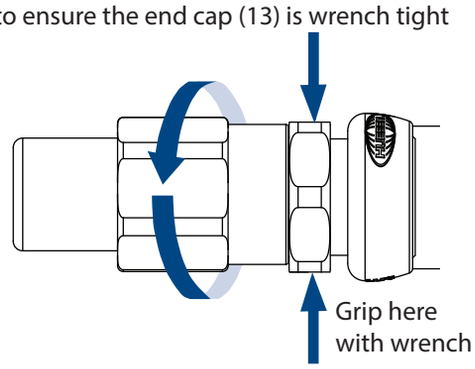
Tighten the backnut (12) until a seal is formed around the cable. Use a wrench/spanner to grip the middlenut (11). While preventing the middlenut (11) turning, use a second wrench to apply one further full turn to the backnut (12). Use the middlenut guide as an indication that the backnut is in the correct position to suit cable diameter. A diameter scale is printed into the border of this document to assist in this process.



STEP F3: Install Body Energised End Cap (13)

Ensure keyways are aligned and engage body to end cap (13) by hand. Hold the centrenut (6) and hand tighten the end cap (13).
Using a wrench to ensure that the centrenut (6) cannot turn, use a second wrench to ensure the end cap (13) is wrench tight





Technical Information
501/RCG

TECHNICAL DATA

Product Type: 501/RCG
Equipment Type: Group II Hazardous Area
Ingress Protection: IP66, IP67
Operating Temp: -60°C to +60°C
Conductor Sizes: 0.75mm^2 - 6mm^2
Max Conductor Dia: Entry Side: Ø4.75mm
Body Side: Ø5.50mm

INSTALLATION NOTES

1. WARNING: Do not connect or disconnect when Energised.
2. Product must be installed by a suitably trained and competent individual.
3. Installer must check material compatability with enclosure and environment.
4. Sealing face surface must be smooth and free from damage
5. Internal earth provided through internal armour clamping arrangement. For external earth, earth tag should be fitted.

SPECIAL CONDITIONS OF USE

1. Do not disconnect product when energized.
2. Entry and Body sections of the product may remain un-connected only when secured by a blanking threaded cap. The cap shall not be opened when the product is energized and a hazardous atmosphere is present.
3. The socket grub screws shall be tighten and secured by thread locking compound.
4. Product may not be left uncoupled in a hazardous areas and shall be capped when not used.
5. Product Ambients:
   - For T6/T80°C applications, the upper ambient temperature shall not exceed +60°C.
   - For T5/T95°C applications, the upper ambient temperature shall not exceed +50°C

CRIMP TOOL

The 501/RCG crimped contacts are designed for use with either radial Hex, Radial 4 jaw or radial 6 jaw crimping tools.
Hawke International recommend the use of Astro Tool 615708. These can be purchased from Hawke International as separate items.
Instructions for use can be found on the Hawke website.

ELECTRICAL SPECIFICATION:

Voltage Rating: 300Vac; 212Vdc
Ampage and T-Class:

T-Classes and Ampage		
Conductor Size	T6 +60°C	T5 +50°C
0.75mm^2 1.5mm^2	5A	5A
2.5mm^2	10A	16A
4mm^2	12A	18A
6mm^2	20A	30A

Other conductor sizes between the sizes of 0.75mm^2 - 6mm^2 may be used.
If the conductor size is not stated in the table above, the max ampage is restricted to the closest size rounded down.
E.g. 3mm^2 conductor size would be limited to 10A if used in a T6 classification.

CERTIFICATION DETAILS

Ex II 2 GD Ex eb IIC T6/T5* Gb, Ex tb IIIC T80°C/95°C* Db
ATEX: CML 20ATEX3217X IECEx: IECEx CML 20.0137X

1Ex e IIC T6/T5* Gb X, Ex tb IIIC T80°C/T90°C* Db X
EAC: RU C-GB.HA91.B.00207/21

*Temperature Class is dependent on the ampage applied and conductor size. See table above for details.

Additional Approvals

UKCA: CML 21UKEX3073X Inmetro: IEx 21.0011X

TORQUE VALUES

All torque values below were generated on metallic mandrels. For cable, it is recommended that the assembly instructions are followed.

Torque Figures N/m				
Seal Size	Os	O	A	B
Backnut Torque	12	12	20	30

501/RCG BODY SELECTION TABLE

Body Size	Seal/Ring Size	Cable Acceptance Details					Entry Thread	Max Hexagon Dimensions	
		Inner Sheath	Outer Sheath		Steel Wire Armour/ Tape/Braid				
		Max.	Min.	Max.	Orientation 1	Orientation 2		Across Flats	Across Corners
4-pin	Os	8.1	5.5	12.0	0.8/1.25	0/0.8	M20	24.0	26.5
	O	11.4	9.5	16.0	0.8/1.25	0/0.8		24.0	26.5
	A	14.3	12.5	20.5	0.8/1.25	0/0.8		30.0	32.5
6-pin	O	11.4	9.5	16.0	0.8/1.25	0/0.8	M25	24.0	26.5
	A	14.3	12.5	20.5	0.8/1.25	0/0.8		30.0	32.5
	B	19.7	16.9	26.0	1.25/1.6	0/0.7		36.0	39.5

Declaration of Conformity In Accordance With European Directive 2014/34/EU and UK Directive S.I. 2016/1107
Provisions of the Directive fulfilled by the Equipment: Ex II 2 GD Ex eb IIC T6/T5 Gb, Ex tb IIIC T80°C/95°C Db
Harmonised Standards used: EN 60079-0:2018, EN60079-7:2015+A1:2018, EN60079-31:2014

Notified Body for EU-Type Examination: CML B.V. 2776 Amsterdam, NLD
EU-type Examination Certificate: CML20ATEX3217
EU Notified Body for Production: 0598

Approved Body for UK-Type Examination: CML 2503 Chester, UK
UK-type Examination Certificate: CML21UKEX3073X
UK Approved Body for Production: 1180

On behalf of the aforementioned company, I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the listed directives.

A. Reid
Technical Manager

www.ehawke.com
UK Office
Oxford Street West,
Ashton-Under-Lyne,
Lancashire. OL7 0NA. UK
Sales: +44 (0) 161 830 6698
Technical: +44 (0) 161 830 6697
Fax: +44 (0) 161 830 6648
E-mail: sales@ehawke.com