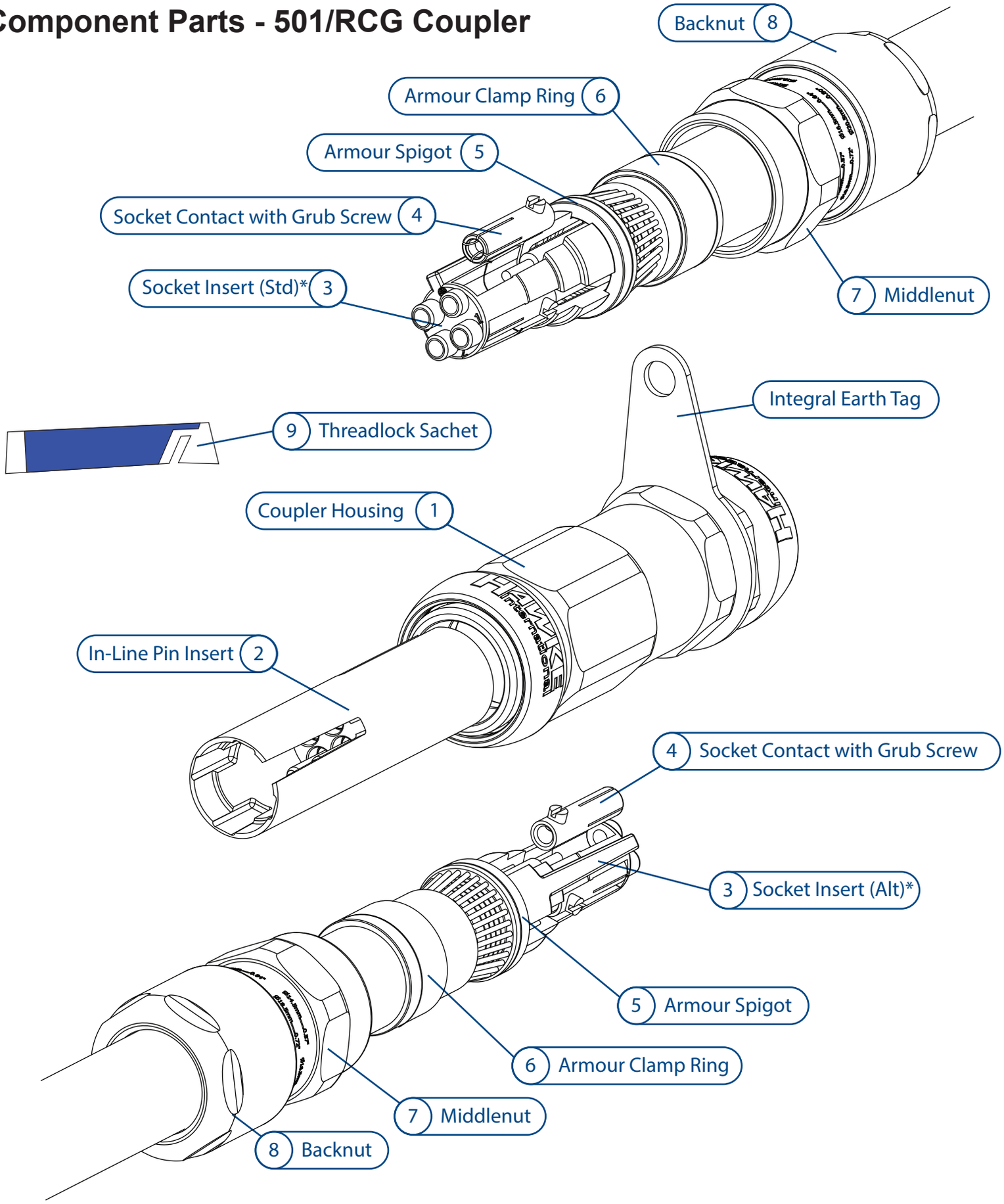
501/RCG Coupler

Component Parts - 501/RCG Coupler

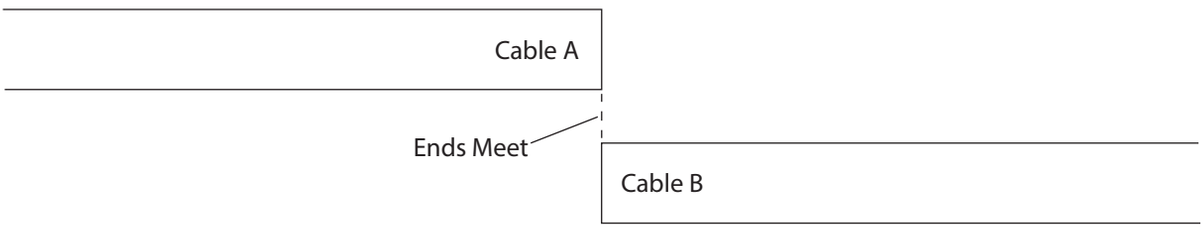


* Supplied socket inserts are coloured black (standard) or natural (alternative). Parts are dimensionally identical but the pin numbering is inverted to ensure correct through numbering.

Part A: Installing 501/RCG Coupler

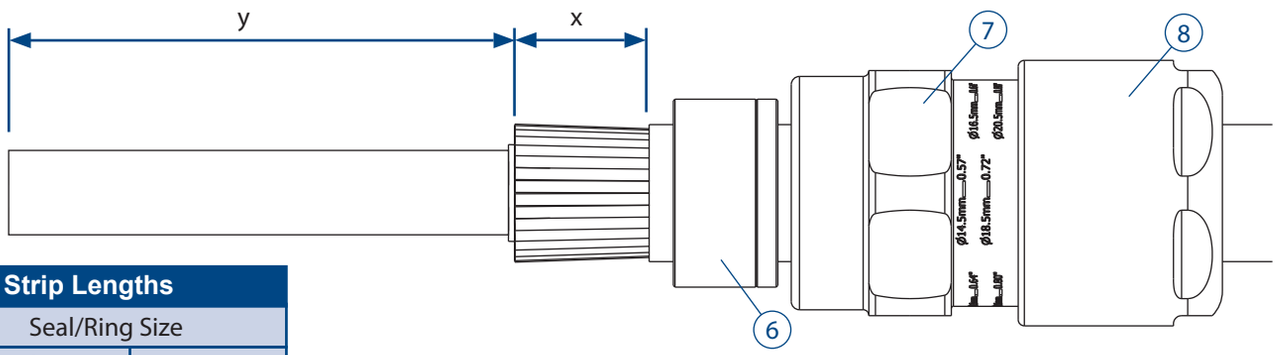
STEP A1: Confirm Cable Lengths

The 501/RCG Coupler is an inline enclosure used to terminate two ends of cable together.
Confirm the cables are long enough by ensuring that as a minimum the ends meet.



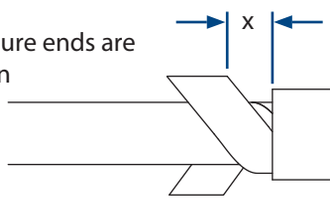
STEP A2: Prepare Cable A

Slide backnut (8), middlenut (7) and armour clamp ring (6) onto cable A.
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	

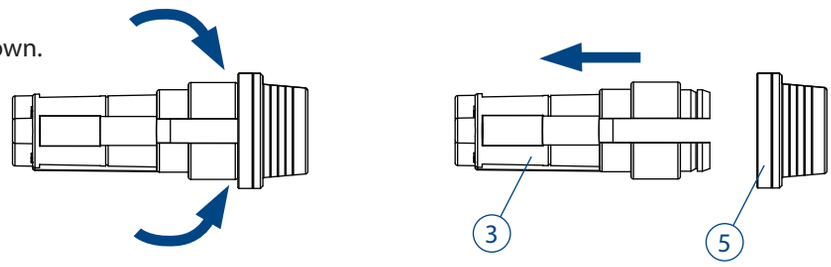
Tape Armour
After tape is spread, ensure ends are trimmed at 90° as shown



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

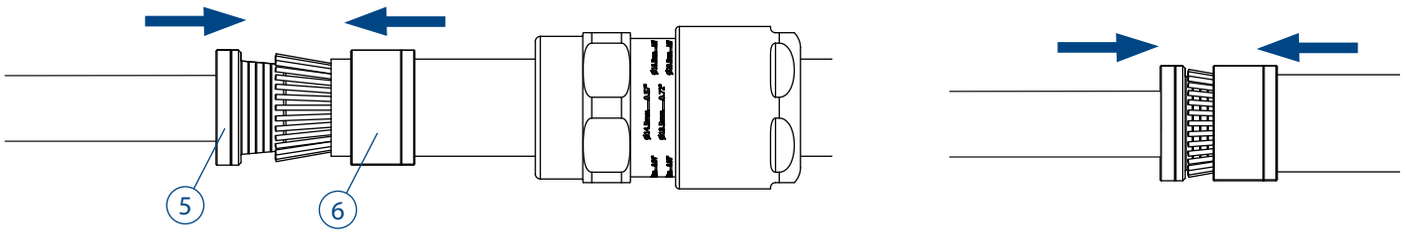
STEP A3: Remove socket insert (3) from spigot (5)

Squeeze base of insert (3) and remove from the spigot (5) as shown.



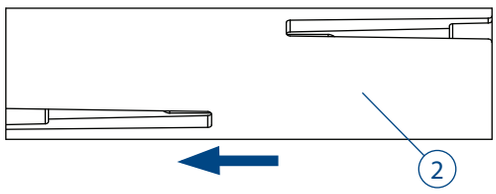
STEP A4: Slide spigot (5) onto cable

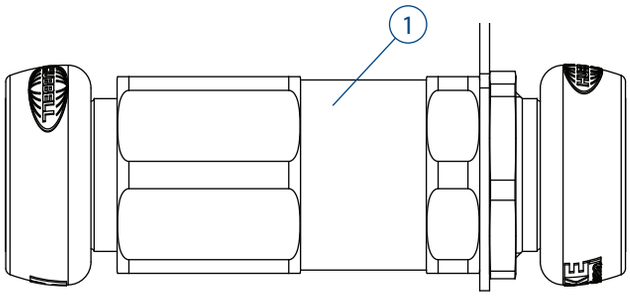
Push spigot shoulder up to armour/braid. Slide clamping ring (6) up to the armour/braid by hand



STEP A5: Remove Insert (2) From Coupler Housing (1)

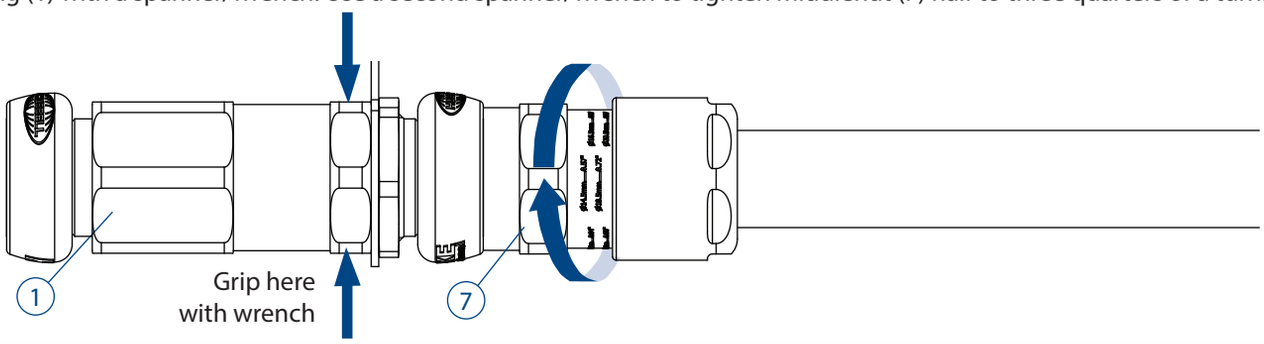
Slide insert (2) out from Coupler Housing (1) and put to one side.





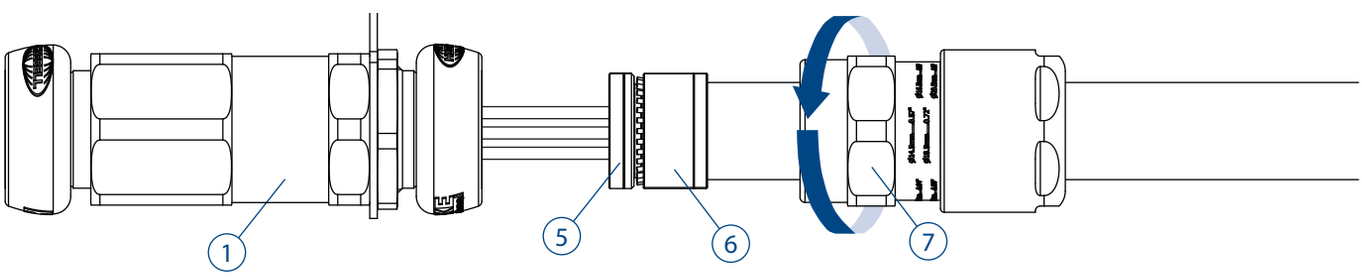
STEP A6: Clamp Armour/Braid

Slide coupler housing (1) over cable until it meets the spigot. Slide middlenut (7) up to coupler housing and hand tighten.
Grip the coupler housing (1) with a spanner/wrench. Use a second spanner/wrench to tighten middlenut (7) half to three quarters of a turn.



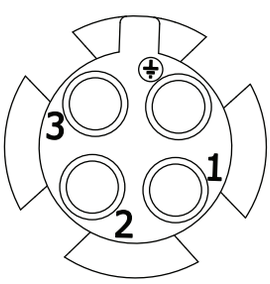
STEP A7: Inspect Armour/Braid

Unscrew the middlenut (7). The armour clamp ring (6) should now be locked in place.
Visually inspect that the armour/braid has been successfully clamped between the spigot (5) and the armour clamp ring (6). If clamping is not satisfactory, repeat step 6.
Cut inner sheath in line with edge of spigot (5) and strip to expose cores.

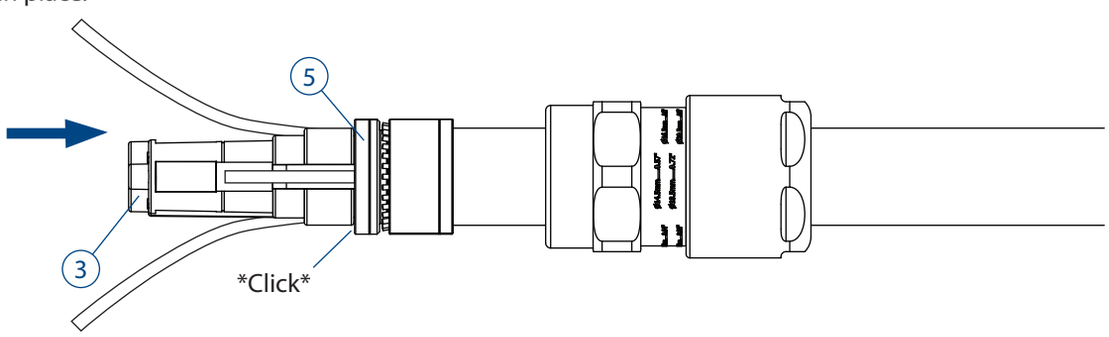


STEP A8: Fit socket insert

Take socket insert (3) and review numbering on tip. Feed cable cores through the correct slot in the socket insert. Slide the socket insert (3) down to the spigot (5) until it clicks in place.



Std insert as shown
Alt insert positions 1 & 3 reversed

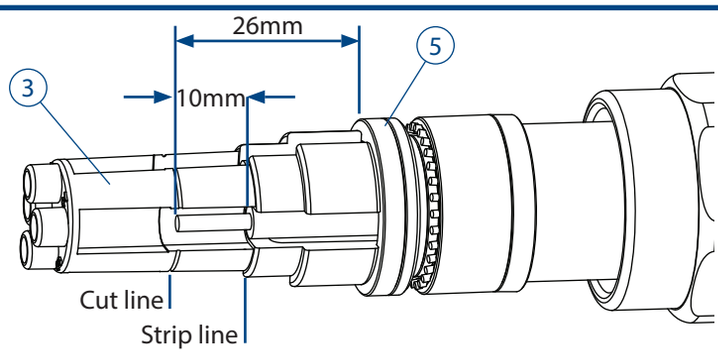


STEP A9: Cut conductors to length and strip

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.

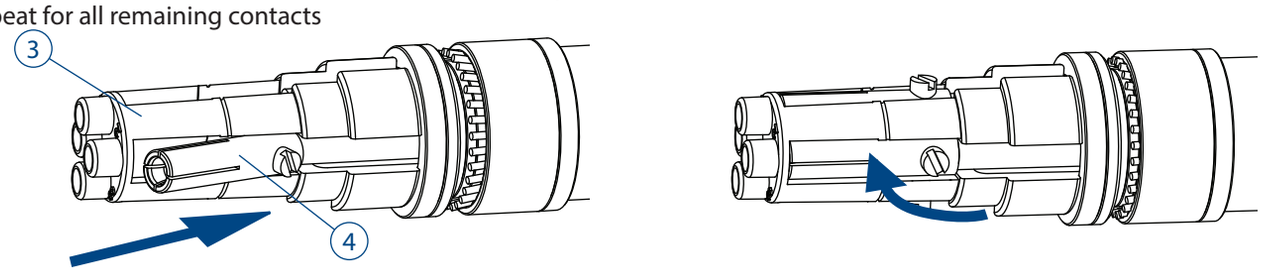
TIP: Use a pen to mark cores in situ then remove insert to aid conductor strip process.

The socket insert (3) may be removed from the spigot (5) to assist cable stripping process then re installed as shown in step 3.



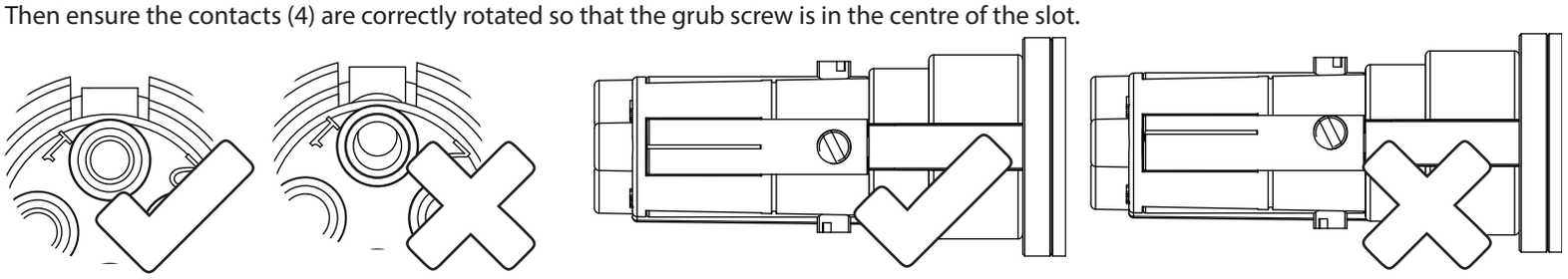
STEP A10: Fit contacts to cable conductors

Take the first contact (4), slide over the conductor and press into slot in the insert (3). The contact (4) will now be retained in the insert (3). Repeat for all remaining contacts



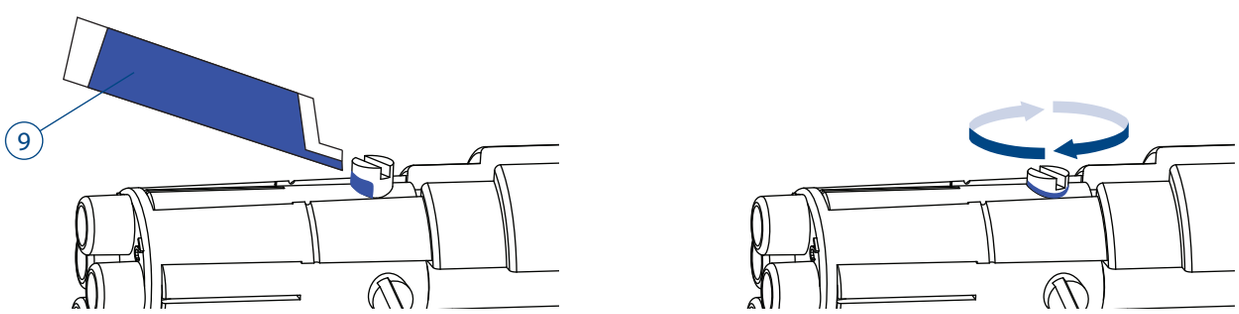
STEP A11: Check alignment of contacts

Firstly confirm all contacts (4) are concentric to the openings in the tip of the insert.
Then ensure the contacts (4) are correctly rotated so that the grub screw is in the centre of the slot.



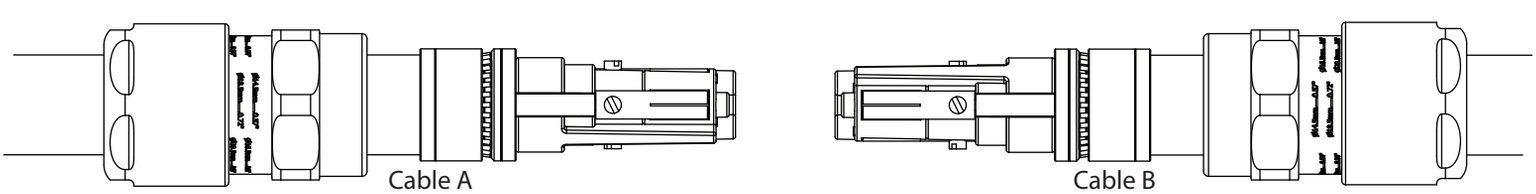
STEP A12: Apply threadlock and tighten grubscrews

Take the threadlock sachet (9) 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.



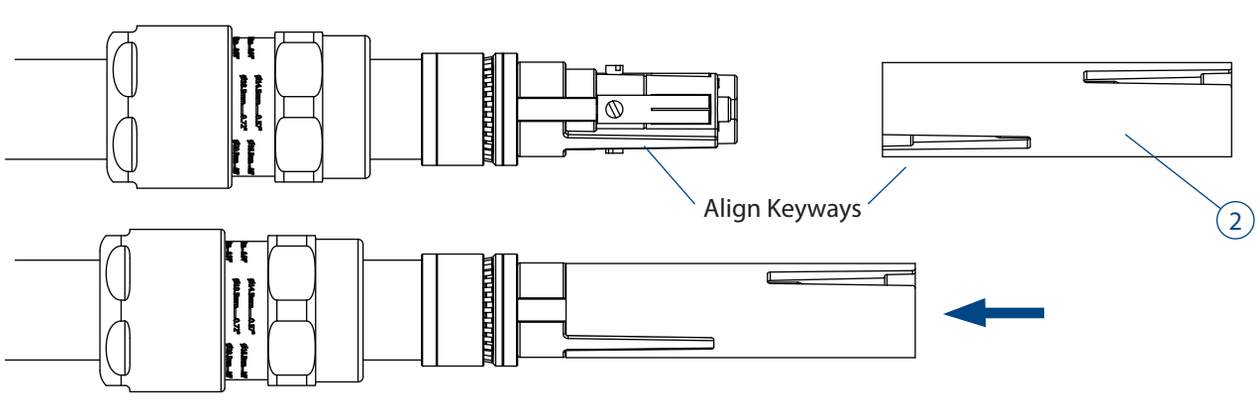
STEP A13: Repeat process for Cable B

The body portion of the product is now terminated onto cable A. Repeat steps A2-A12 for cable B.
Now the body portion is terminated onto both cables and is ready for coupling.



STEP A14: Plug insert into one of the terminated cables

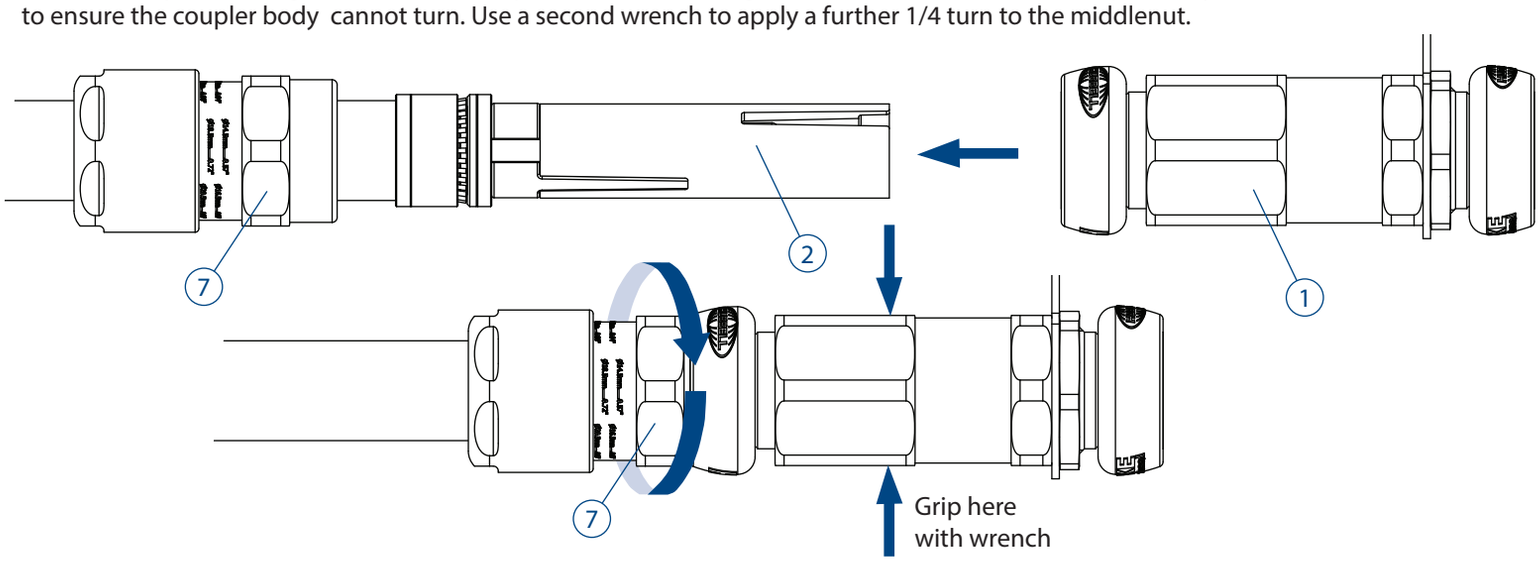
Align the keyways and slide the in-line pin insert (2) over the body portion until the contacts engage.



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

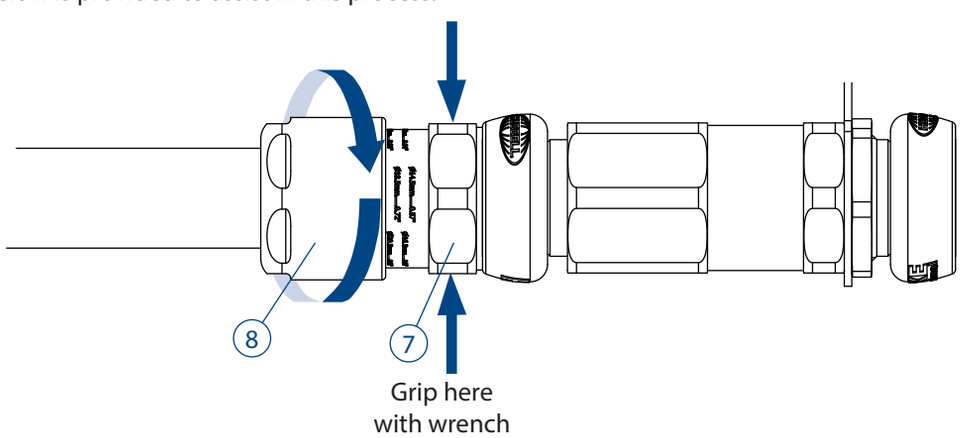
STEP A15: Tighten Middlenut (7)

Slide the coupler housing (1) over the in-line pin insert (2). Hand tighten the middlenut into the coupler body. Use a wrench to ensure the coupler body cannot turn. Use a second wrench to apply a further 1/4 turn to the middlenut.



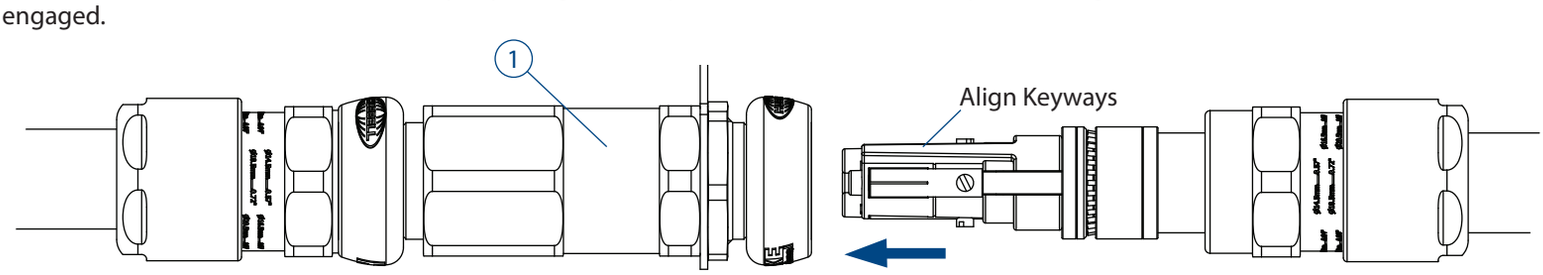
STEP A16: Install backnut (8)

Tighten the backnut (8) by hand until a seal is formed around the cable. Use a wrench/spanner to grip the middlenut (7). While preventing the middlenut (7) turning, use a second wrench to apply one further full turn to the backnut (8). 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.



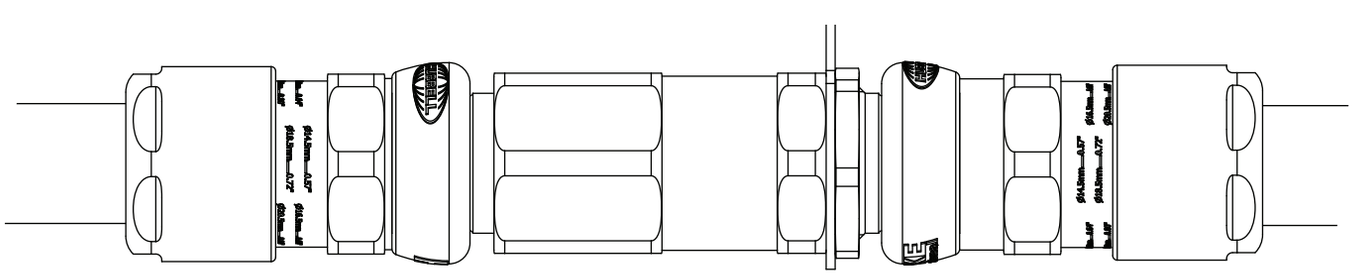
STEP A17: Engage second body into coupler housing (1)

Take second terminated cable. Ensure keyway is aligned and push second cable into coupler housing (1) until contacts are engaged.



STEP A18: Install Middlenut and Backnut

Repeat steps A15 & A16 for cable B. The installation of the 501/RCG Coupler is now complete.



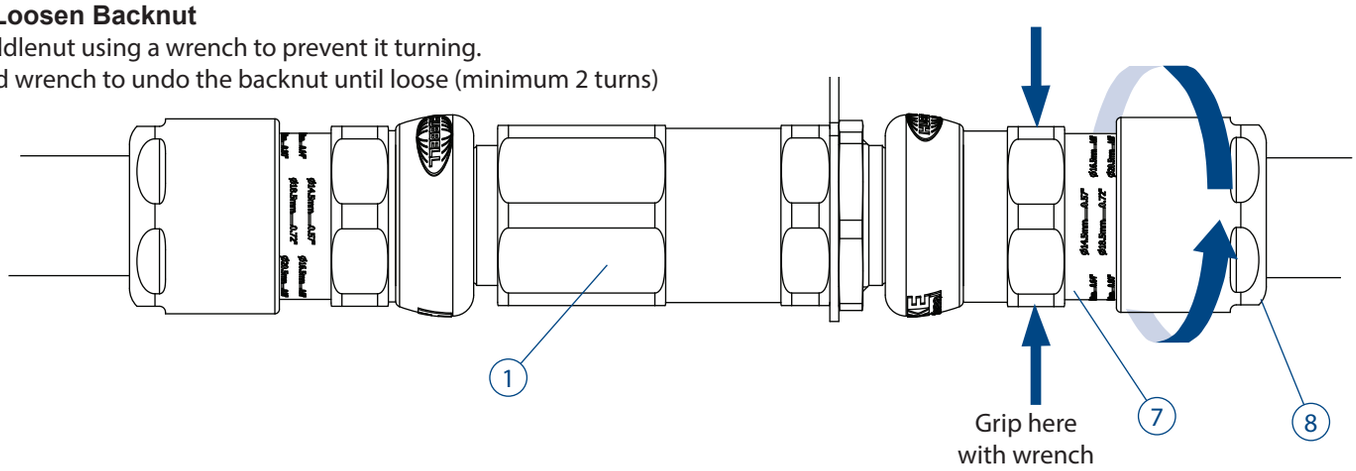
Images for illustration purposes only.
Product supplied may differ from that shown.

Part B: Decoupling 501/RCG Coupler

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

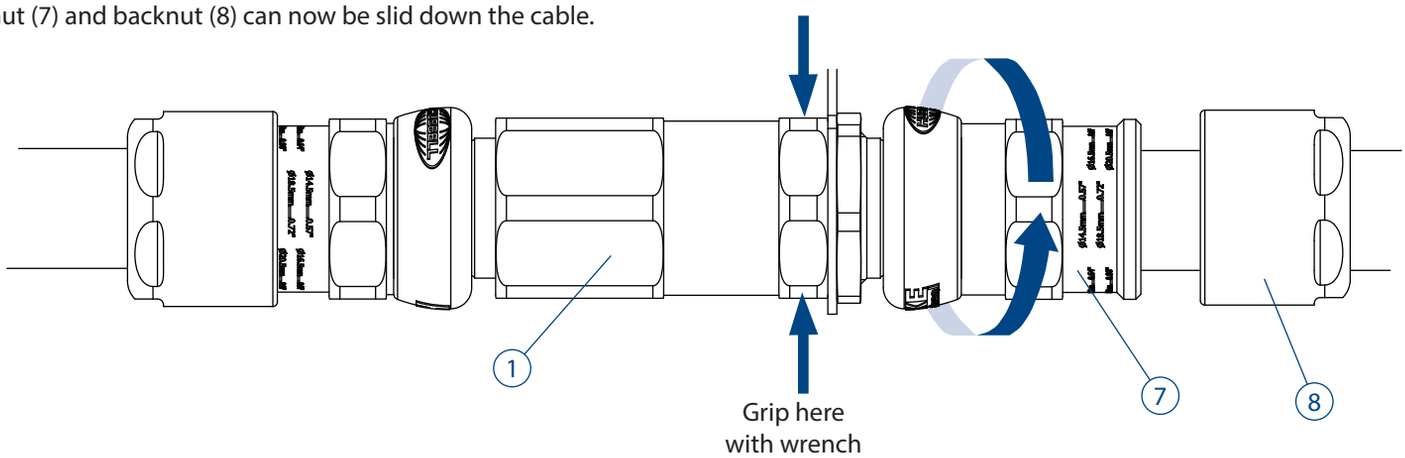
STEP B1: Loosen Backnut

Grip the middlenut using a wrench to prevent it turning.
Use a second wrench to undo the backnut until loose (minimum 2 turns)



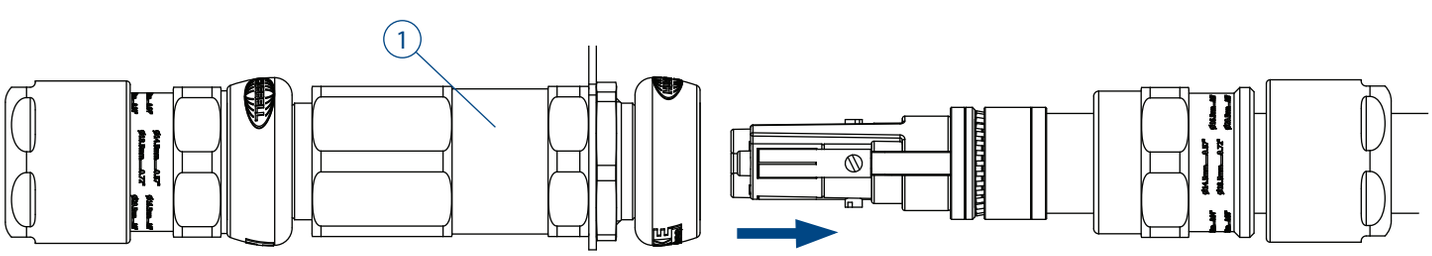
STEP B2: Undo Middlenut (7)

Grip the coupler housing (1) using a wrench to prevent it turning. Use a second wrench to undo the middlenut (7) until loose.
The middlenut (7) and backnut (8) can now be slid down the cable.



STEP B3: Slide body out from housing

The body portion may now be pulled out from the coupler housing (1) and decoupling is complete.



Technical Information
501/RCG Coupler

TECHNICAL DATA

Product Type: 501/RCG Coupler
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: 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. Internal earth provided through internal armour clamping arrangement. For external earth provided through supplied earth tag.

SPECIAL CONDITIONS OF USE

1. Do not disconnect product when energised.
2. The socket grub screws shall be tighten and secured by thread locking compound
3. When a coupler is fitted with an adapter, a suitable cable gland shall be fitted
4. Product may not be left uncoupled in a hazardous areas
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

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

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	10A
4mm^2	12A	18A
6mm^2	20A	30A (4pin) 25A (6pin)

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

Ⓔx 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

501/RCG COUPLER SELECTION TABLE

Body Size	Seal/Ring Size	Cable Acceptance Details					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	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	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: Ⓔx 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 Notified 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