

ix Industrial[®] IDC Plug Cable Assembly Instructions.

1. Scope of Applications

This manual specifies cable assembly procedures of the ix Industrial[®] plug series with IDC termination

2. Applicable Products

0945 181 2561 - ix Industrial type A

IDC AWG 26 - 28

0945 181 9001 - ix Industrial type B

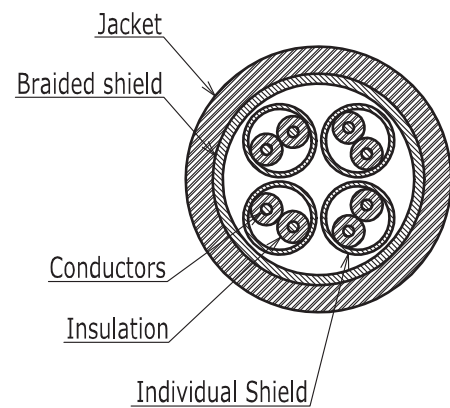
IDC AWG 26 - 28

Items		Specifications
Conductors	Size	AWG26~28
	Number	7 Stranded wires
	Material	Annealed copper wire
Insulation Outer Diameter		$\Phi 0.95 \sim 1.05 \text{mm}$
Braided Shield		Tin Plated
Outer Jacket Diameter		$\Phi 6.3 \sim 7.2 \text{mm}$

0945 181 2562 - ix Industrial type A IDC AWG 24

0945 181 9002 - ix Industrial type B IDC AWG 24

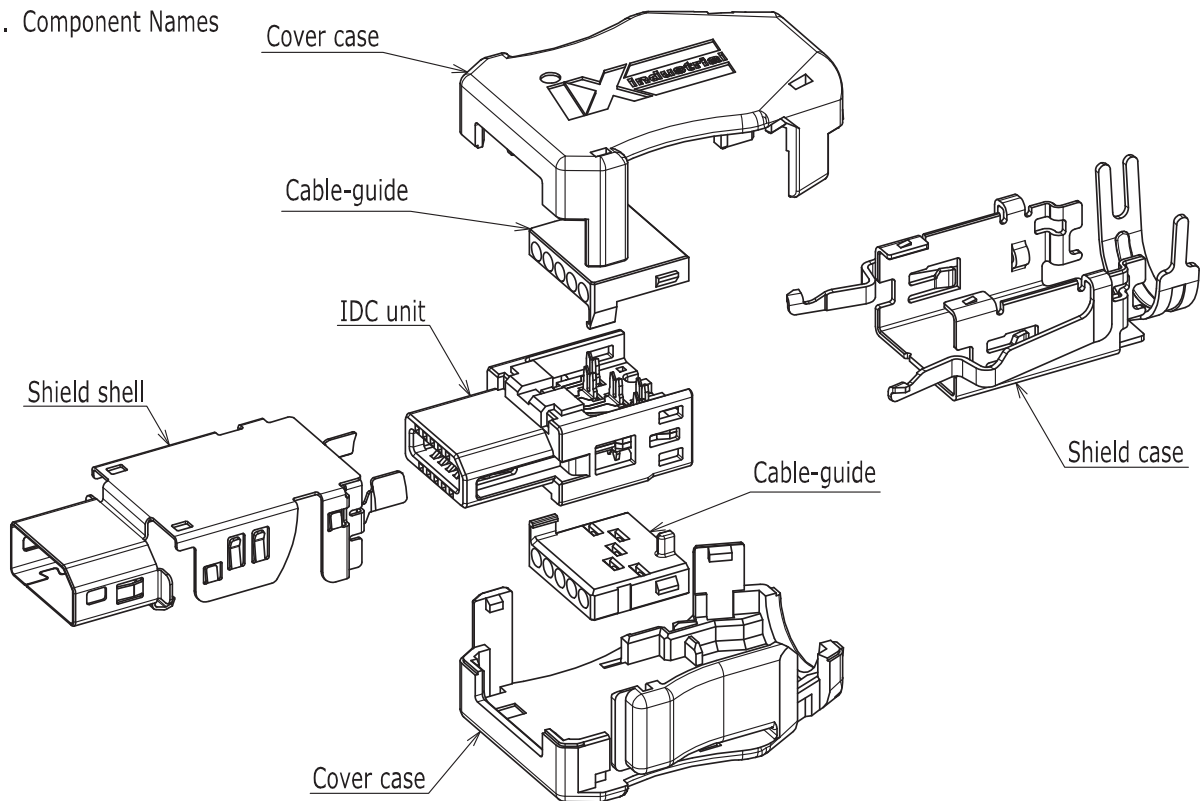
Items		Specifications
Conductors	Size	AWG24
	Number	7 Stranded wires
	Material	Annealed copper wire
Insulation Outer Diameter		$\Phi 1.1 \sim 1.25 \text{mm}$
Braided Shield		Tin Plated
Outer Jacket Diameter		$\Phi 6.3 \sim 7.2 \text{mm}$



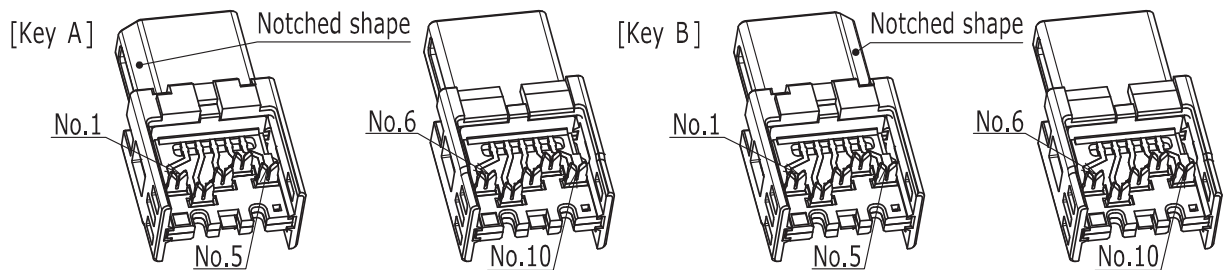
3. Operation Procedures

Please refer to next pages.

4. Component Names



5. Contact number assignment of IDC unit



6. Wire arrangement for each contact

[Key A] In case of the Ethernet applications

Conductor number	Signal		Wiring color of the TIA cable	
	10/100 Mbit/s	1/10 Gbit/s	TIA/EIA-568-A	TIA/EIA-568-B
1	TX+	BI_DA+	White/Green	White/Orange
2	TX-	BI_DA-	Green	Orange
3	N.C	N.C	N.C	N.C
4	N.C	BI_DC+	Blue	Blue
5	N.C	BI_DC-	White/Blue	White/Blue
6	RX+	BI_DB+	White/Orange	White/Green
7	RX-	BI_DB-	Orange	Green
8	N.C	N.C	N.C	N.C
9	N.C	BI_DD+	White/Brown	White/Brown
10	N.C	BI_DD-	Brown	Brown

[key B] There is no contact assignment except for the Ethernet applications

7. Required components and tools

The required component and tool examples for the cable assembly are given below.

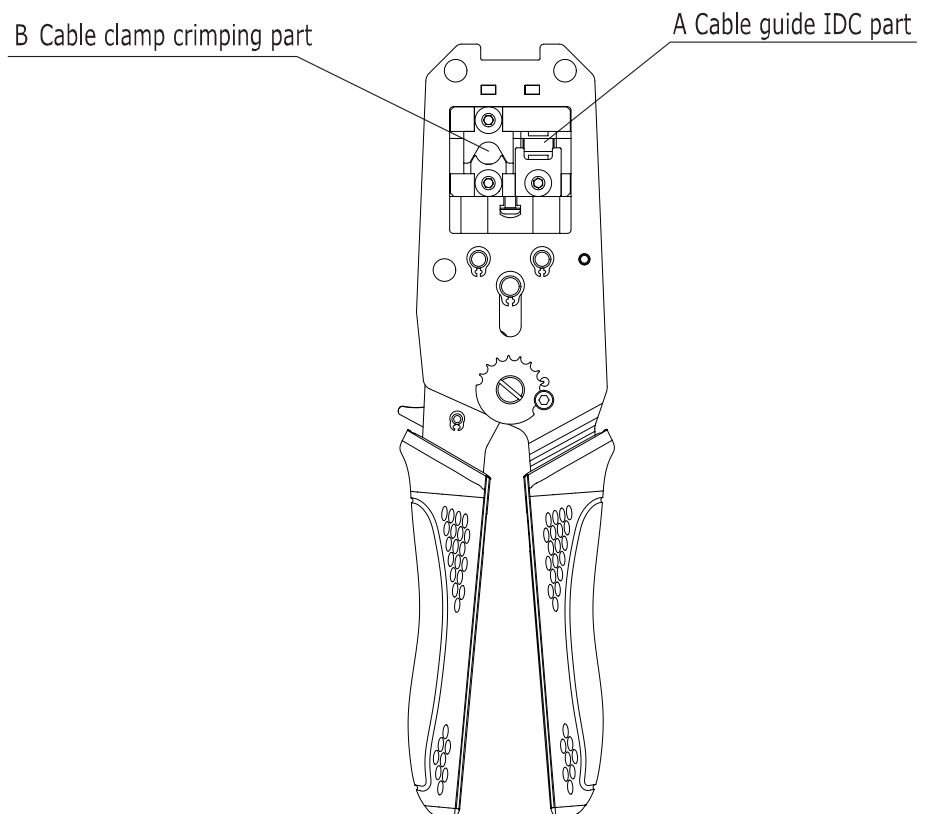
- Cable length (finished length L + 30mm length inside the plug per end)
- Copper tapes (4mm to 5mm width)
- IDC/Crimp Hand tools (0945 800 0181)
- Calipers or Rulers (For cable termination length measurement)
- Cutters (For stripping cable jacket)
- Cable Scissors (For cutting braided shield) p/n 09 45 800 0004
- Side cutter (For cutting core wires) p/n 09 45 800 0005

8. Hand tools

Use the hand tools shown below. Use part A cable guide for IDC termination, part B for cable clamp crimping.

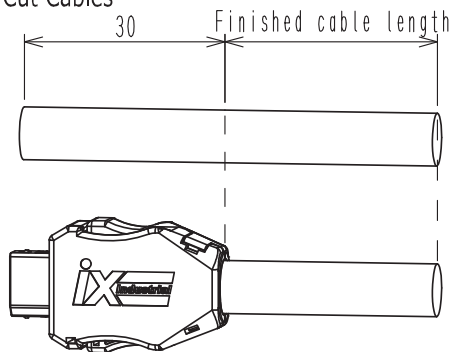
Tool Name	Tool Code
ix Industrial Tool	0945 800 0181

Please refer to instruction manual 0945 800 0181 99.xx for tool handling.



9. Cable termination

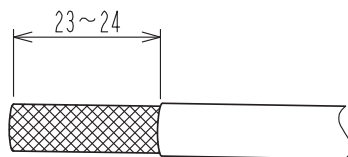
① Cut Cables



Cut cables.

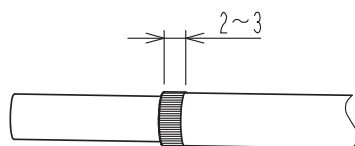
Necessary cable length =
finished cable length + excess length
(30mm from the cover case to the cable end)

② Strip Jacket

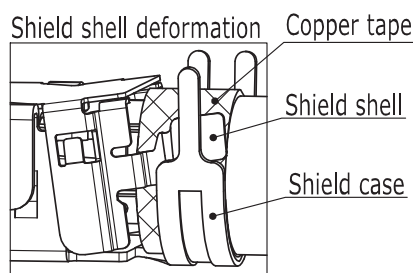


Strip cable jacket to 23mm - 24mm from cable edge.

③ Braided Shield Processing

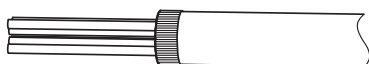


Pull the braided shield back over the Jacket,
unravel braided shield wires and cut to 2mm - 3mm long.



※Please evenly unravel the braided shield wires.
It will have variance in cable thickness
after wrapping the copper tape if the braided
shield has gathered together.
And this will cause the shield shell deformation
by interference with the copper
tape in the assembly process of the shield
case and the shield shell described below.

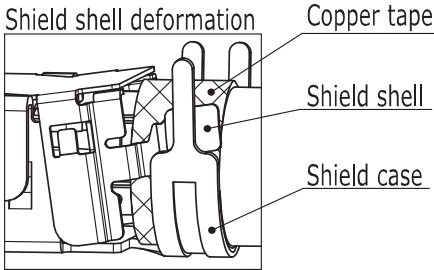
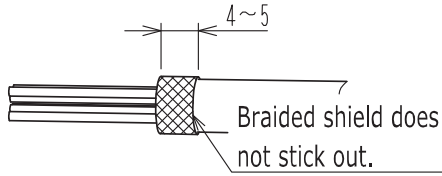
④ Cut Tape/Other materials/Individual Shield



If there are tape, other materials inside or individual shield,
use nipper to cut off and to expose the insulation.

※Be careful not to damage the insulation while cutting.

⑤ Wrap Copper Tape



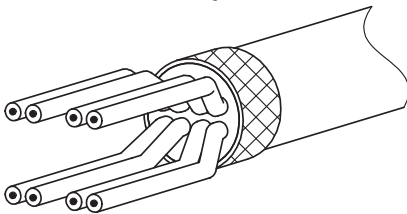
Pull the braided shield back over the jacket and wrap the copper tape free from folds on it. Use copper tape with 4mm - 5mm width to prevent the braided shield sticking out.

※The copper tape length shall be approximately 4cm, wrap the tape between 1 and 2 rotations.

※Wrap the tape tightly otherwise it will cause the shield shell deformation by interference in between the assembly process of the shield case and the shield shell described below.

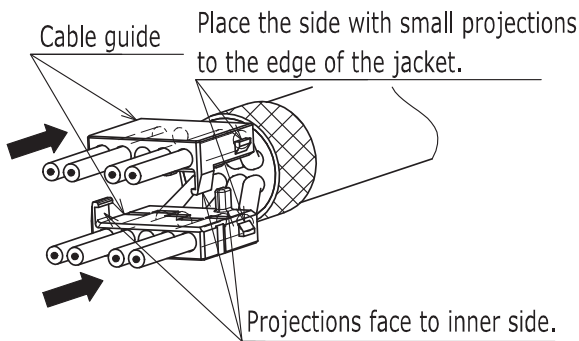
1 0 . IDC termination to the IDC unit.

① Core wire arrangement



Arrange the wires in two rows with four wires in each row for easy insertion to cable guide.

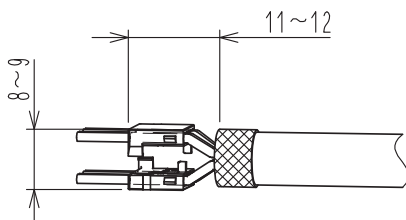
② Core wire insertion to cable guide



Insert core wire to cable guide. Refer to the illustration for the cable guide directions.

Confirm all the core wires passed through the cable guide.

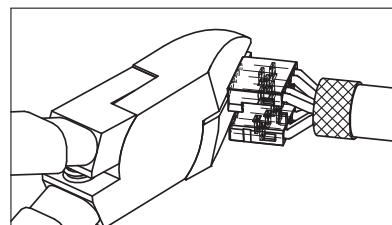
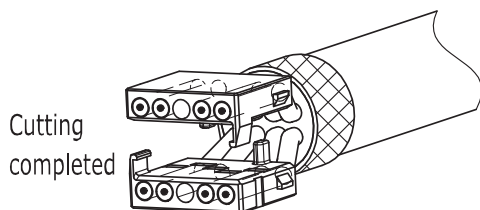
③ Cut excess length



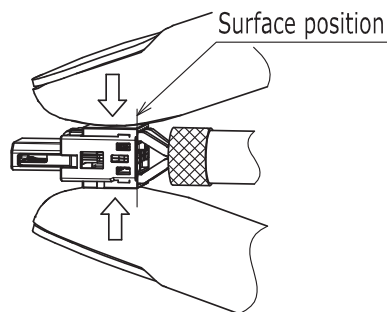
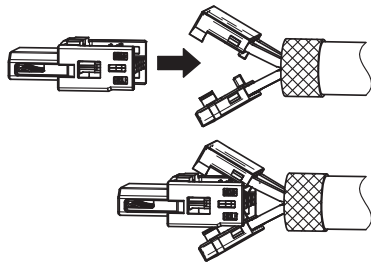
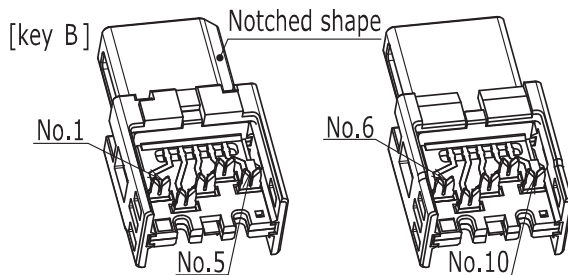
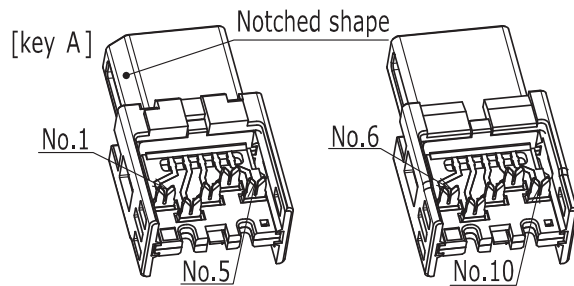
Set the distance between cable guide to 8mm - 9mm.

Adjust cable guide position to 11mm - 12mm from the edge of the jacket to the edge of the cable guide.

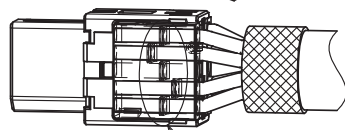
Cut excess wires along cable guide edge to ensure the tip position of the cable guide and the wire is aligned.



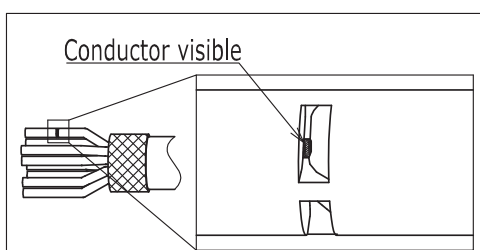
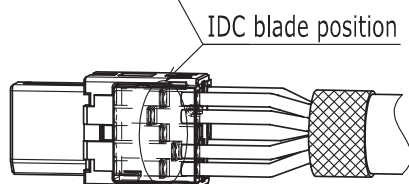
④ Temporary cable guide insertion to the IDC unit.



CORRECT



INCORRECT



Set the cable guide incorporating wires to the IDC unit.

※The cable guide can be inserted to the IDC unit in either direction. Recheck the contact assignment sequence and temporarily insert to IDC unit.

Open the cable guide for easy insertion to the IDC unit.

※The wire does not slip off while opening the cable guide.

The cable guide pinches the IDC unit, align the edge position of the cable guide and the IDC unit, push with fingers for temporary insertion while checking no wires are slipping off. Push down with fingers until the wire hits the IDC blade.

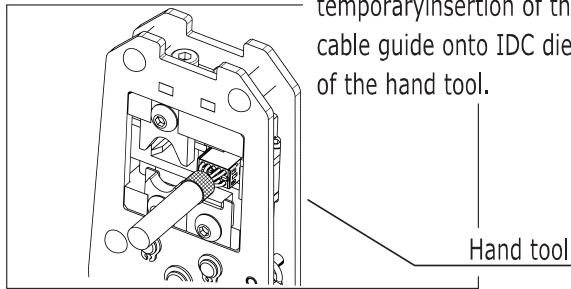
※After temporary insertion, check the cable guide does not come off even when the finger is released.

※Check the wire does not slip off from the IDC blade while insertion.

※Confirm the core wire appearance if the cable guide slipped off from the IDC unit after temporary insertion, it is applicable to re-insert the cable guide if the blade cut does not reach the conductor.

⑤ Insulation displacement with hand tools

Set the IDC unit incorporating temporary insertion of the cable guide onto IDC die of the hand tool.

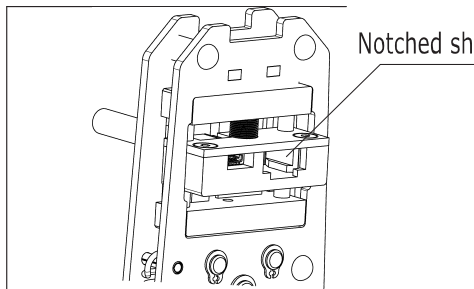


Perform the insulation displacement by using part A of the hand tool. Set the IDC unit incorporating the temporary insertion of the cable guide to the hand tool with the notched shape facing up. Align the position and set the IDC unit onto the IDC die of the hand tool vertically.

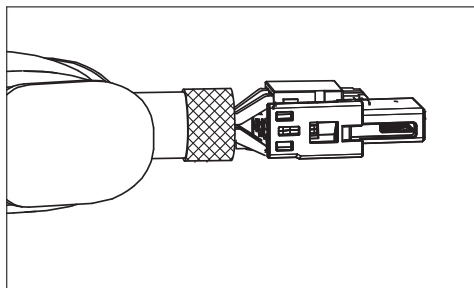
※Recheck whether the core wire has slipped off before insulation displacement.

※The IDC unit incorporating temporary insertion of the cable guide is not set in an inclining direction.

Notched shape faces up.



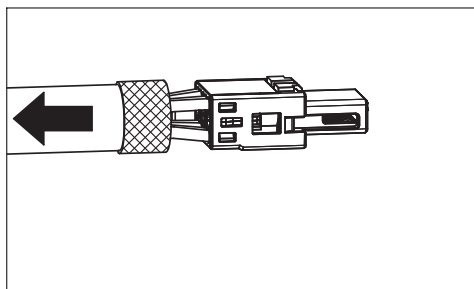
Before IDC



After successfully setting up the hand tool, hold the hand tool while forcing the cable towards the IDC unit in order to avoid the wire slipping off from the cable guide, and perform IDC termination.

Press the handle further down after it is completely closed, ratchet of the hand tool is released and plug unit (IDC unit incorporating the IDC cable guide) is able to be removed.

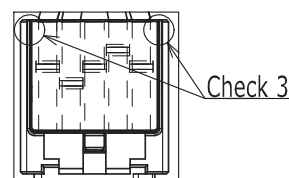
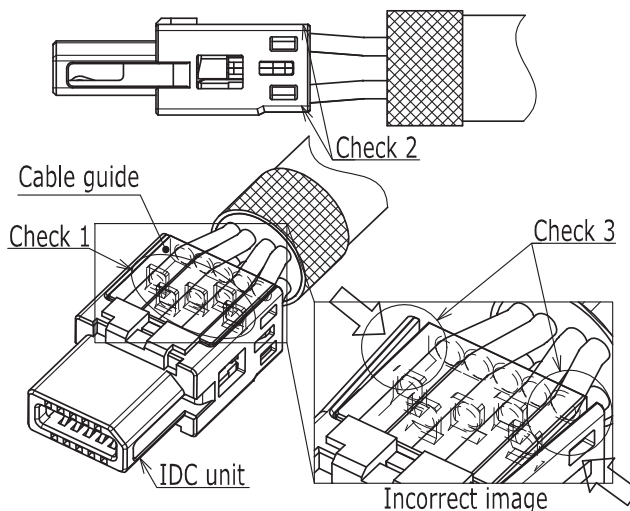
After IDC



Remove plug out of the hand tool.

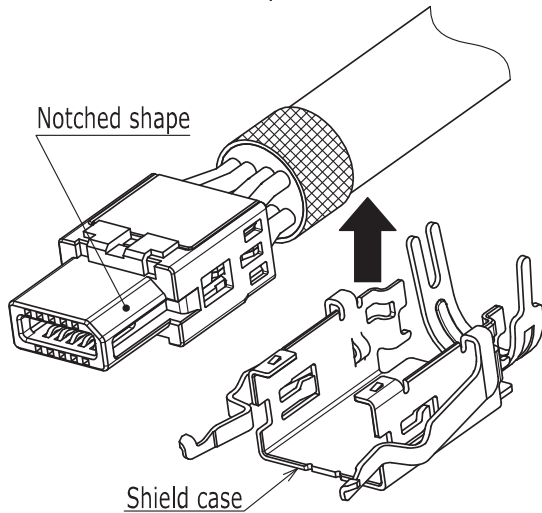
Please check the 3 points below after IDC completion.

1. The core wire does not come off from the IDC blade.
2. Same height of the IDC unit and the cable guide after IDC termination.
3. There is no gap between the IDC unit and the cable guide.



1 1. Shield case and shield shell assembly

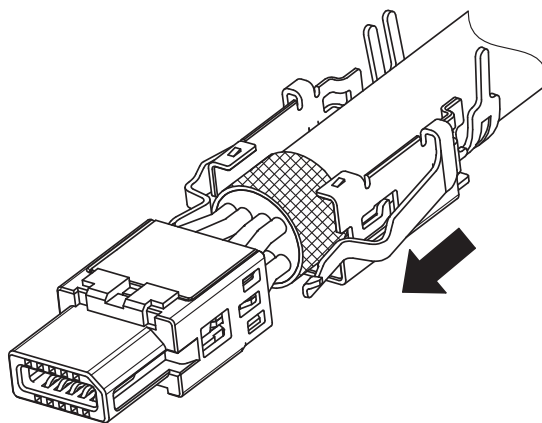
① Shield case assembly



Assemble shield case on to plug unit incorporating IDC cable.

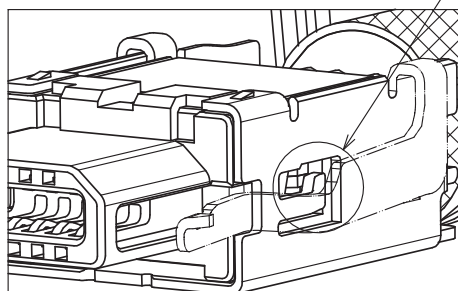
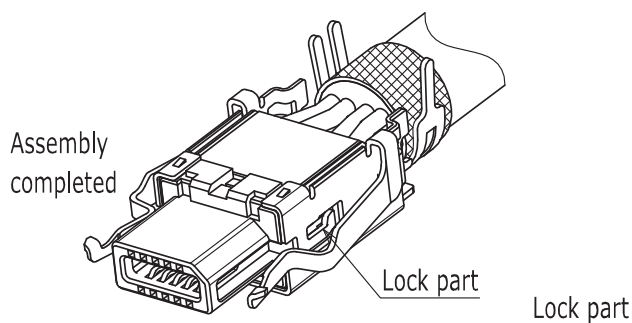
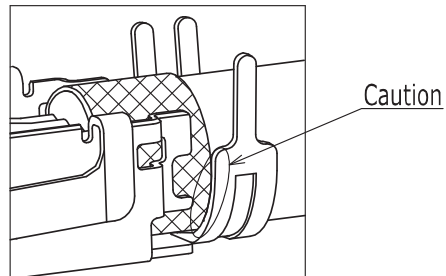
Fit the shield case on to the lower side of the cable.

※The notched shape of the plug unit faces upward against the shield case shown in the figure.



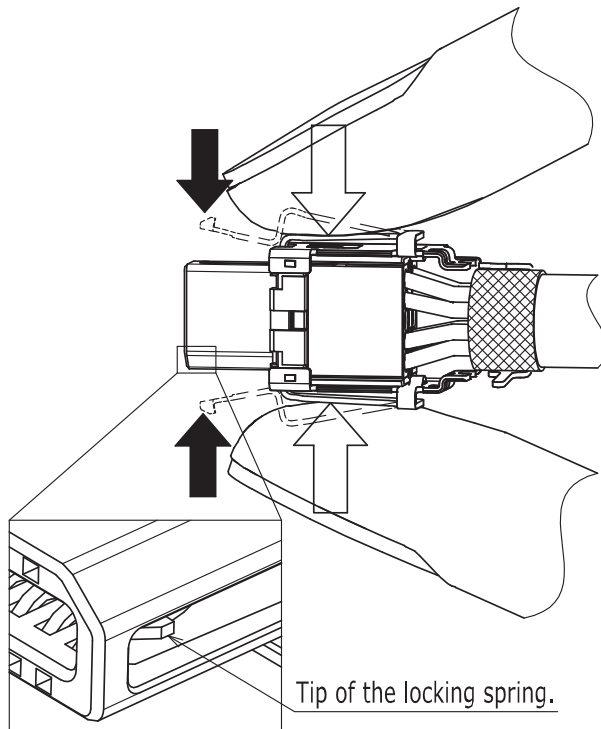
Slide the shield case in place until you hear the plug unit making a click sound.

※Be careful that the copper tape does not get turned up with interference between the clamp portion.



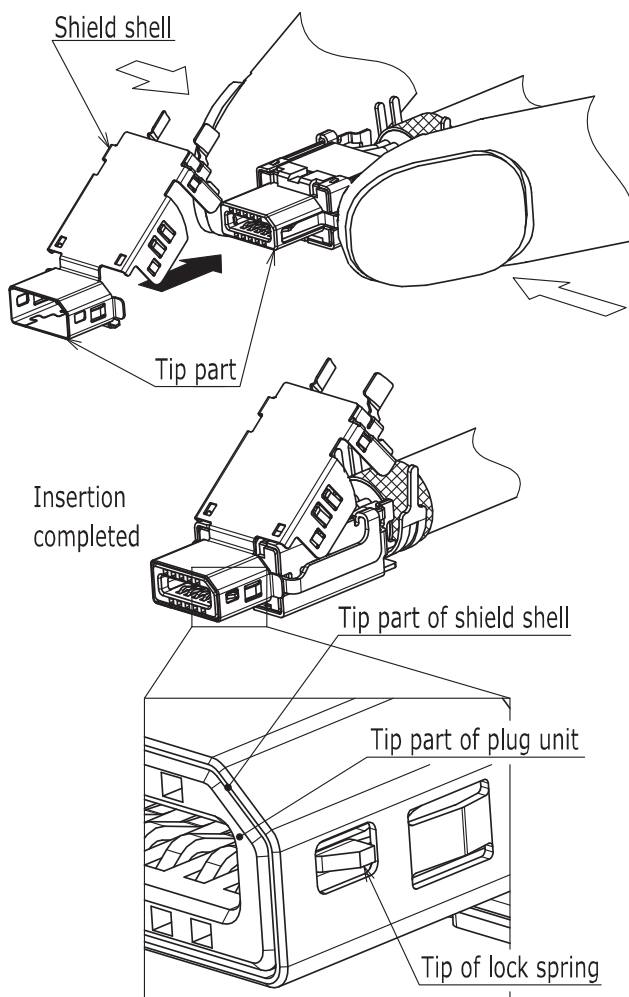
Check to ensure both sides are locked after assembly completion.

② Shield shell assembly



Assemble shield shell on to the plug unit incorporating the shield case.

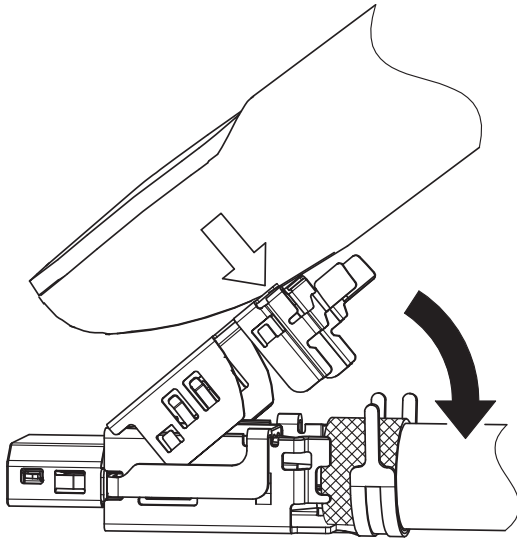
While assembling shield shell, push the spring in place to keep the tip of the spring inside the plug unit as shown in the figure.



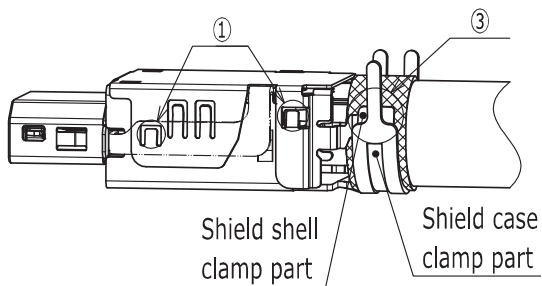
Insert the shield shell in the direction of the arrow while pushing in the spring.

Release pushing-in of the locking spring after tip parts of the plug unit and the shield shell are aligned.

※After insertion completion, confirm the tip of locking spring is projecting from the shield shell opening, and tip parts of the plug unit and shield shell are aligned.

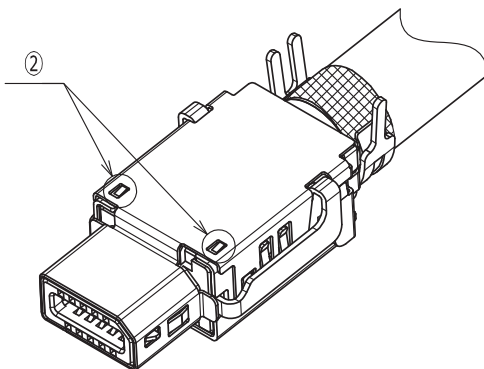


Push down shield shell in direction shown in the figure, and fit the shield shell clamp in the shield case in place.

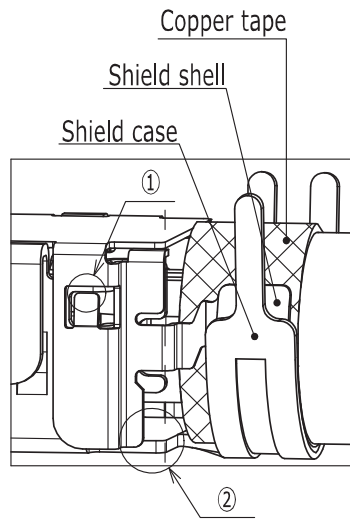


Please check the 3 points below after assembly completion.

- ① The engaged parts of the shield shell and the shield case are engaged with each other.
- ② The projection of the shield case is caught in the opening of the shield shell.
- ③ The clamp of the shield shell is placed behind the clamp of the shield case.



CORRECT

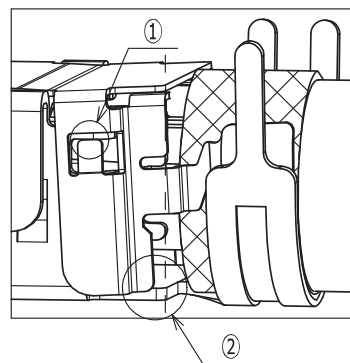


While inserting the shield shell, it may deform depending on the condition of cable and copper tape if they are hitting each other.

① Locked

② Shield shell does not jump out from shield case.

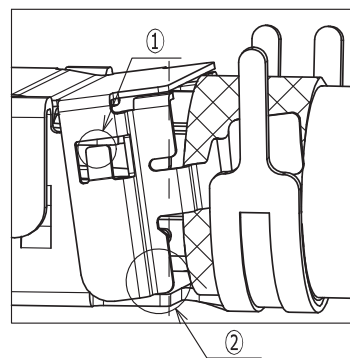
CORRECT



① Locked

② Shield shell does not jump out from shield case.

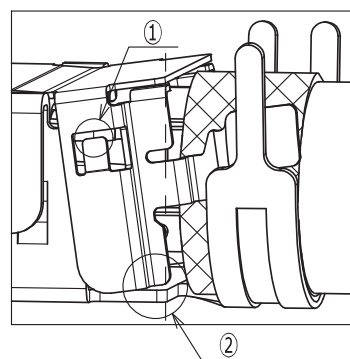
INCORRECT



① Unlocked

② Shield shell jumps out from shield case.

INCORRECT

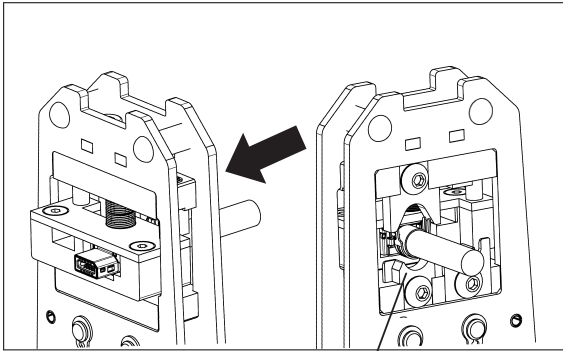


① Unlocked

② Shield shell jumps out from shield case.

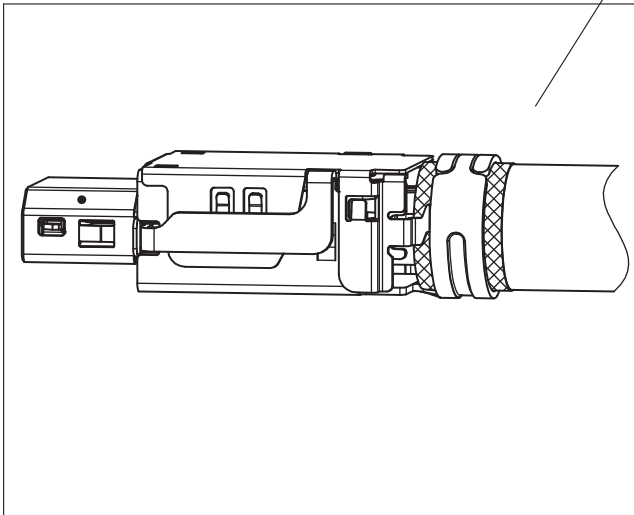
※ It is applicable to use by pushing back the shield case ensuring shield shell does not jump out from shield case.

1 2. Crimp Cable Clamp



Shield case clamp is available different sizes for variant cable diameters.

Inner unit touches the crimping die of the tool.



Crimp the cable with shield case clamp at position B of the ix Industrial assembly tool.

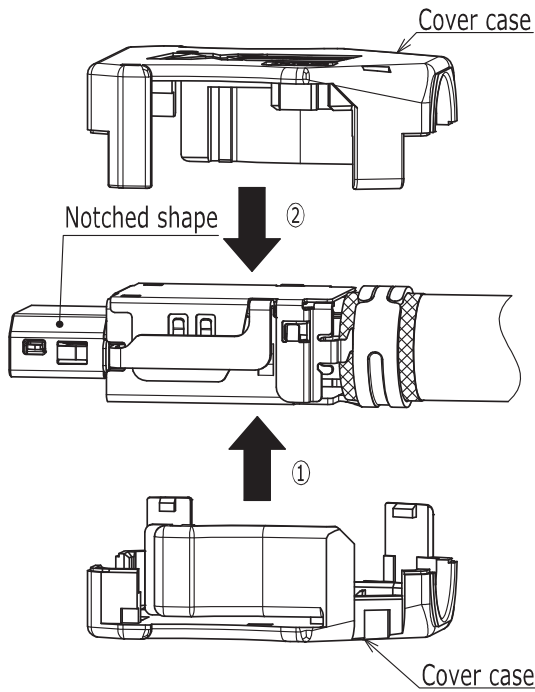
Use the correct cable crimping inserts depending on the cable diameter.

※After setting is completed, check the inner unit touches the crimping die of the tool.

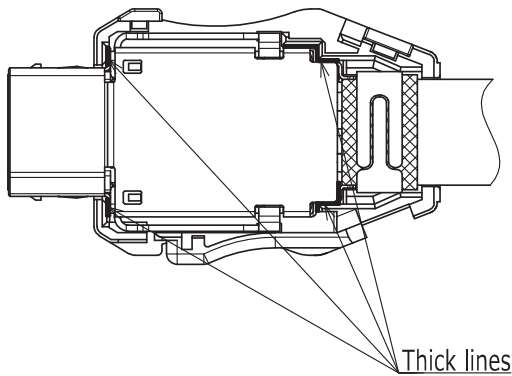
After correct setting is confirmed, squeeze handles while pushing the cable in insertion direction.

Recommended crimp strength in cable axial direction : 60N or above

1 3 . Cover case assembly

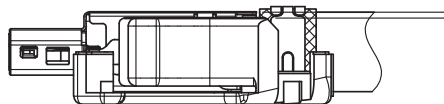


To fit cover case.
Fit the cover case in the order shown in the left figure.
Fit the lower side first then the upper side.



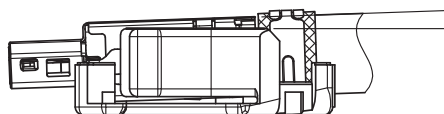
Fit the case by aligning thick lines as shown in the left figure.

CORRECT



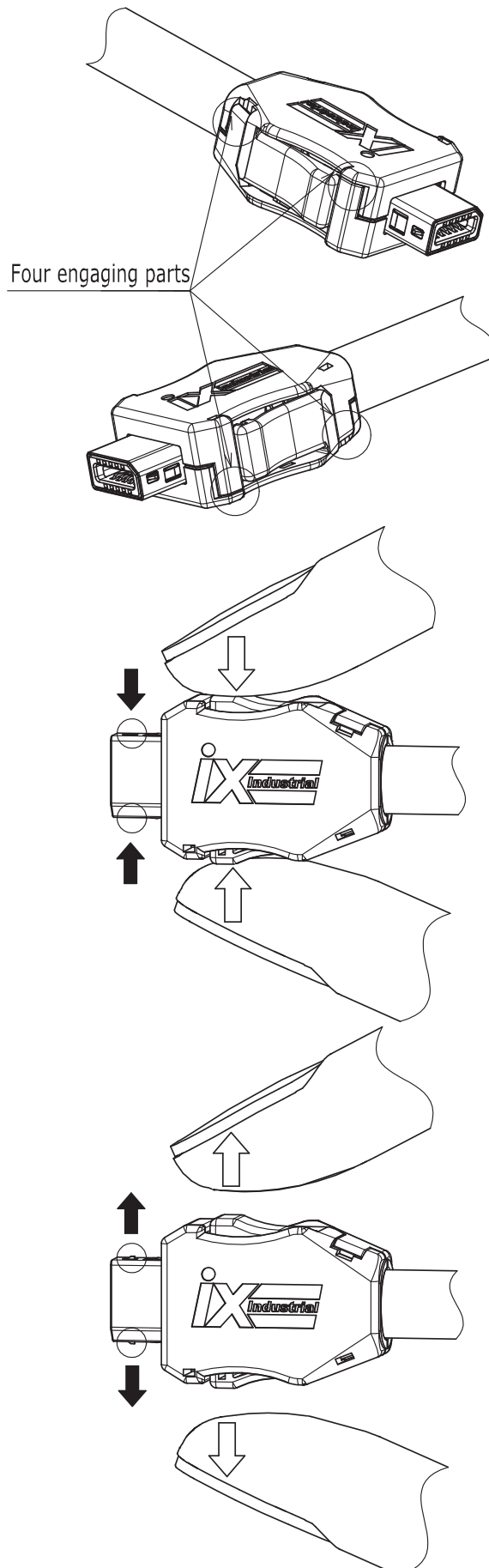
Confirm to ensure the cover case and the inner unit are assembled in parallel after one side is completed.

INCORRECT



The shield shell may not be properly assembled if one side is lifted up.

※Push back shield shell if it jumps out from shield case.



There are four engaging parts on the cover case.
Ensure all the engaging parts are completely engaged.

※Confirm to ensure outlines of cover case are
aligned in place.

After cover case assembly completion,
confirm the top of the lock disappears
when pushed down into the locking spring, and the
top of the lock returns back after finger is released.

Concluded