Applicable Products

Product name	Product code
IX40G-A-10P-JC(7.0)	CL0251-0109-0-00
IX40G-A-10P-JC(7.0)(01)	CL0251-0109-0-01
IX40G-B-10P-JC(7.0)	CL0251-0111-0-00
IX40G-B-10P-JC(7.0)(01)	CL0251-0111-0-01

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	COUNT	DESCRIPTION OF REVISIONS	DESIGNED	CHECKED	DATE
△0					

TITLE

IX40G INLINE JACK ASSEMBLY INSTRUCTIONS

HRS HIROSE ELECTRIC CO., LTD.

APPROVED	MN. KENJO	20221003
CHECKED	KI. KAGOTANI	20221003
CHARGED	TS. ITO	20220930
WRITTEN	TS. ITO	20220930

TECHNICAL SPECIFICATION | ETAD-E3234-00 | △0 | 1/12

ix Industrial Soldering Jack Cable Assembly Instructions

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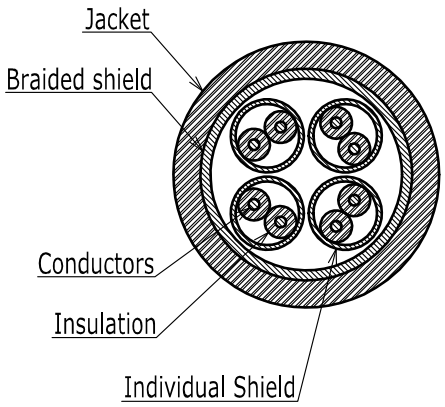
1. Scope of Applications

This manual specifies cable assembly procedures of the IX40G Jack Series.

2. Applicable Products

・IX40G-※-10P-JC(7.0)※

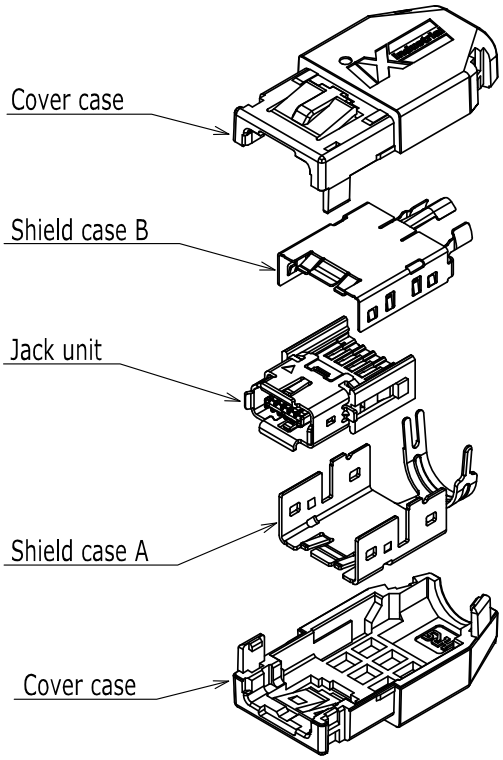
Items	Specifications
Conductors Size	AWG # 28-22
Insulation Outer Diameter	ø 1.55 mm Max
Braided Shield	Tin Plated
Outer Jacket Diameter	ø 6.3 -7.2 mm



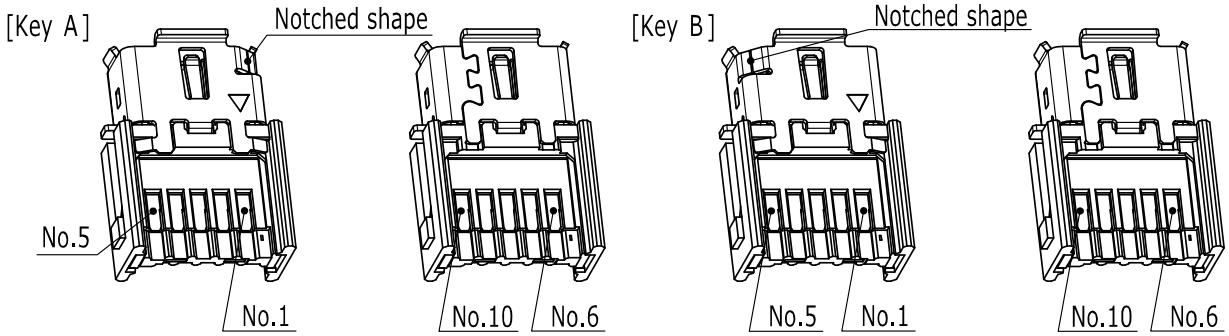
3. Applicable Cable

Please refer to the following pages.

4. Component Names



5. Plug Unit Contact Number Assignment



6. Wire arrangement for each contact

[Key A] In case of 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 for non-Ethernet applications.

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7. Required components and tools

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

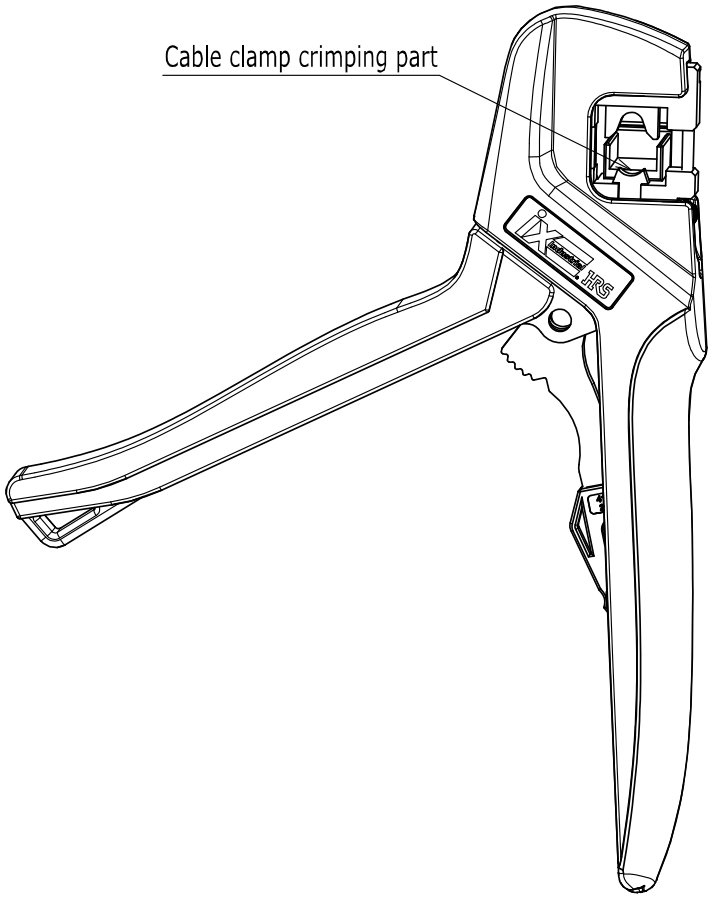
- Cable length (finished length L + 17mm length inside the plug per end)
- Copper tape (4mm to 5mm width)
- Hand tool for crimping cable clamp (HT803/IX40G-10P-JC70)
- Calipers or Rulers (For cable termination length measurement)
- Cutters (For stripping cable jacket)
- Scissors (For cutting braided shield)
- Wire stripper (For curring core wires)

8. Hand tools

Crimp cable clamp by using the hand tool as illustrated below.

Tool Name	Tool Code
HT803/IX40G-10P-JC70	CL0902-2228-0-00

Please refer to instruction manual (※TAD-P0418-00) for tool handling.

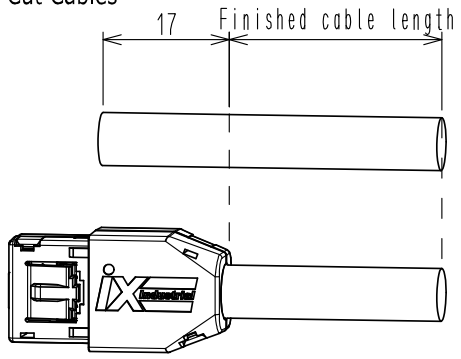


※HT803/IX40G-10P-JC70 is exclusively for the IX40G-*-10P-JC(7.0) Series.
It cannot be used to assemble other Series.

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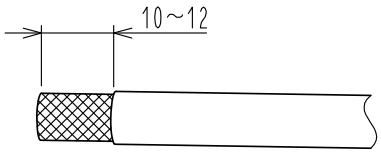
9. Cable termination

① Cut Cables



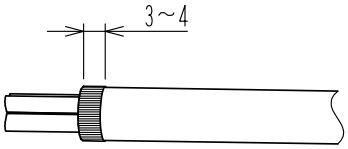
Cut cables.
Necessary cable length =
finished cable length + excess length
(17mm from the cover case to the cable end)

② Strip Jacket



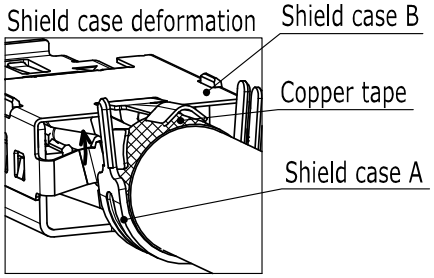
Strip cable jacket 10mm - 12mm from cable edge.

③ Braided Shield Processing



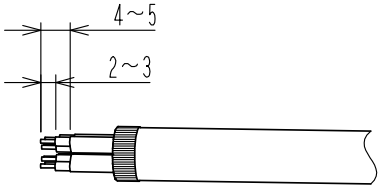
Pull the braided shield back over the Jacket, unravel braided shield wires and cut 3mm - 4mm long.

※3mm-4mm is recommended. In step 12, "Crimp Cable Clamp", the shield case clamp can be used to crimp the braided shield together with the cable. After completing the assembly in step 13, please ensure the braided shield does not come out from the edge of the cover case and adjust accordingly if it does.



※Please evenly unravel the braided shield wires. There will be variance in the cable thickness after wrapping the copper tape if the braided shield is gathered together. This may result in shield case B deformation from interference with the copper tape during the assembly process of the shield case A and shield case B as described below.

④ Cut Tape/Other materials/Individual Shield

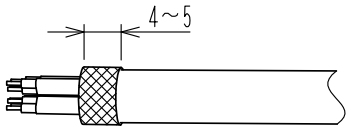


If there is tape, other materials inside or an individual shield, use nippers, etc. to cut them to a length of 4mm-5mm long from the top of the conductor. Use a wire stripper to strip insulation to 2mm-3mm long from the top of the conductor.

※Be careful not to damage the insulation while cutting.

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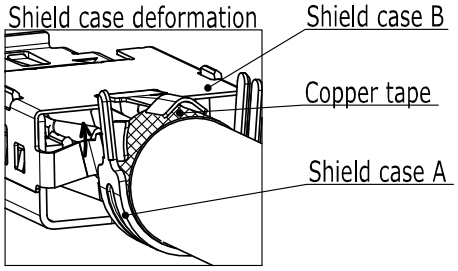
⑤ Wrap Copper Tape



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.

※4mm-5mm is recommended. In step 12 "Crimp Cable Clamp", the shield case clamp can be used to crimp the braided shield together with the cable. After completing the assembly in step 13, please ensure the braided shield does not come out from the edge of the cover case and adjust accordingly if it does.

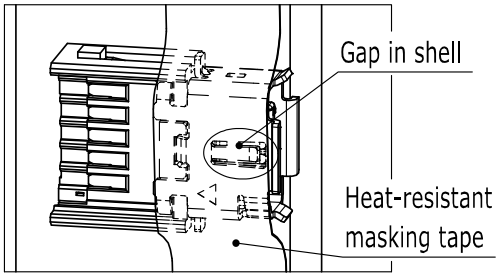
※Please wrap the copper tape between 1 and 2 turns. The wrapped part of the cable's diameter should be between Φ6.4mm to 7.4mm.



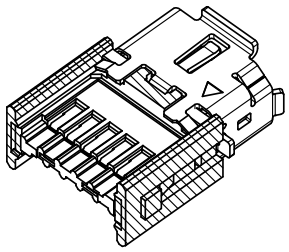
※Wrap the tape tightly otherwise shield case B deformation from interference with the copper tape may occur during the assembly process of the shield case A and shield case B as described below.

1 0. Solder wire to jack unit

① Protect connector while soldering



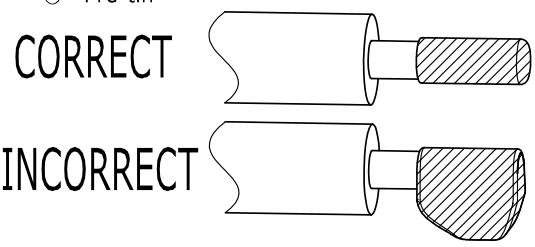
To protect jack unit and to prevent flux from getting inside, attach heat-resistant masking tape on jack unit where it can be easily touched by iron tip.



It is recommended to perform soldering with the soldering iron in the right hand, and the tape in left hand (for right-handed people).
Work in the direction illustrated on the left.

※Especially for the molding area with hatched lines, be sure it is not deformed by heat, because it will interfere with other components if deformed. Make sure that the soldering iron tip does not touch other areas of the mold resulting in deformation.

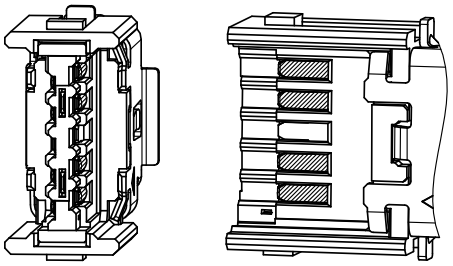
② Pre-tin



Pre-tin wire conductor and jack unit with following conditions.

Soldering iron tip temperature : 360℃ Max
Heating time : 5 seconds Max

※Lightly tin the tip of the wire, do not apply excessive solder on it. Only pre-tin the jack unit for required number of conductors.

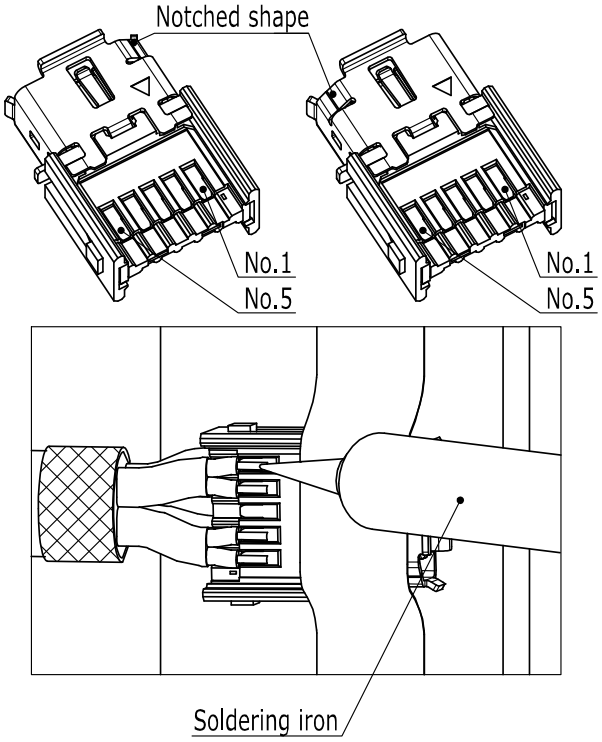


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③ Soldering

[key A] [key B]



Terminate pre-tinned wire to jack unit.

※Double check the wire assignment before soldering.

Be sure the soldering tip of iron does not touch the molded parts.
Solder with following conditions.

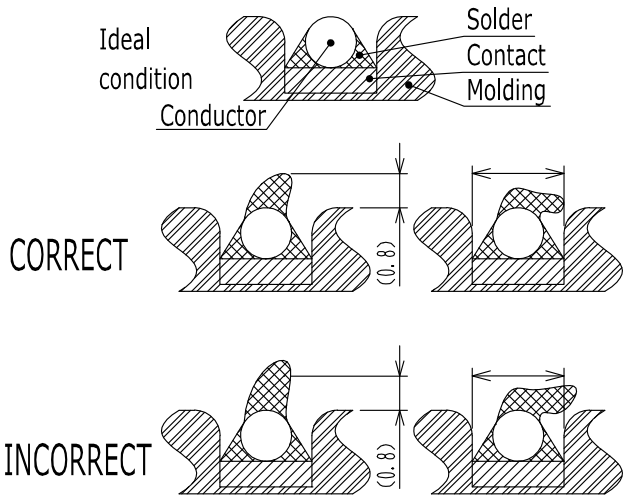
Soldering iron tip temperature : 360℃ Max
Heating time : 5 seconds Max

Bridges between the contacts may occur if the soldering amount is in excess. Consider adjusting the soldering amount to enable termination with pre-tinned soldering amount only.
You may lightly tin the tip of the soldering iron before soldering pre-tinned parts, this will make the termination easier.

※Please perform the soldering in the shortest possible time, because wire insulation melts easily with heat.

※When finished, check that there is no bridge between adjacent contacts because reassembly is not possible after the shield shells have been attached.

④ Soldering range



When finished check that no more solder than necessary has been applied.

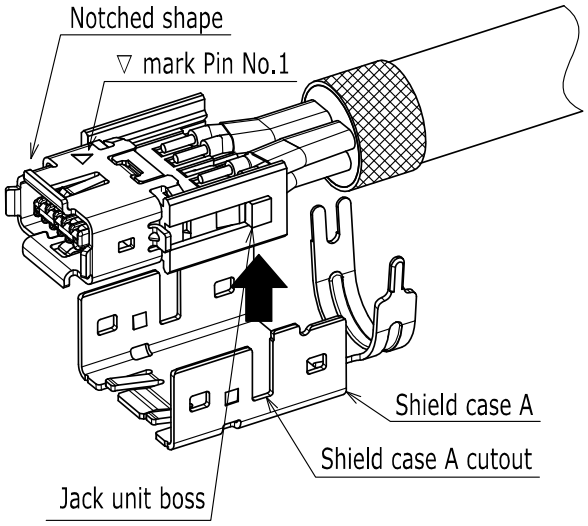
Height: 0.8mm max from molding.
Width : within the range between the inner sidewall of the molding.

※The above confirmation items are for reference when soldering. Depending on the solder conditions, there is a possibility of short circuit to the shield or adjacent terminals. Please cover the soldered area with insulating tape or conduct a withstanding voltage test as necessary.

11. Shield case A and shield case B assembly

① Shield case A assembly

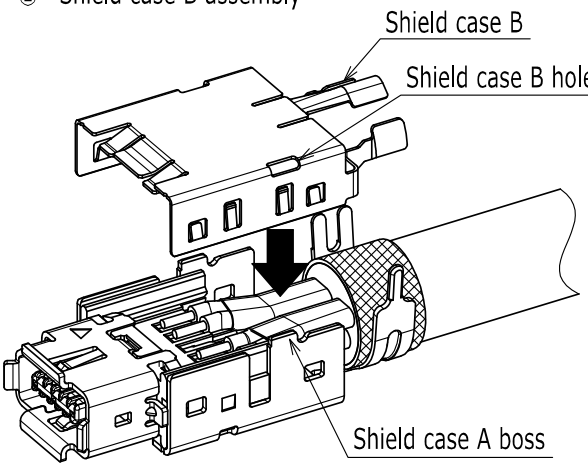
Assemble shield case A onto jack unit which a cable soldered.



Insert shield case A from the underside of the jack unit.
Align a jack unit boss and shield case A cutout.

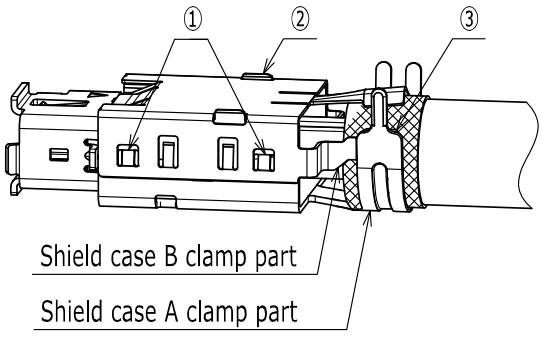
※The direction of insertion is optional. It doesn't matter if the No. 1 pin ▽ mark is on the bottom side.

② Shield case B assembly



Assemble the shield case B to Jack unit.

Insert shield case B to Jack unit from upper side.
Align shield case A boss and shield case B hole.



Please check the 3 points below after assembly completion.

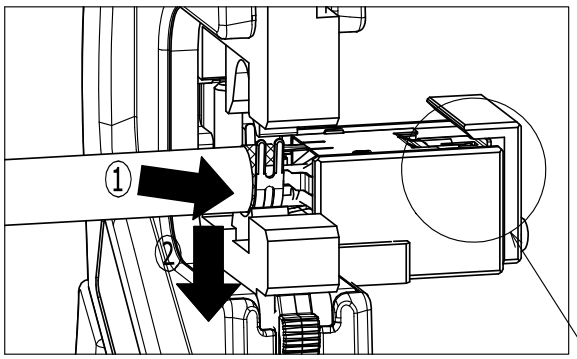
①All hooks of shield case B must be engaged to shield case A holes.

②Shield case A boss must be out of shield case B hole.

③Shield case B clamp part must be in sheild case A clamp part.

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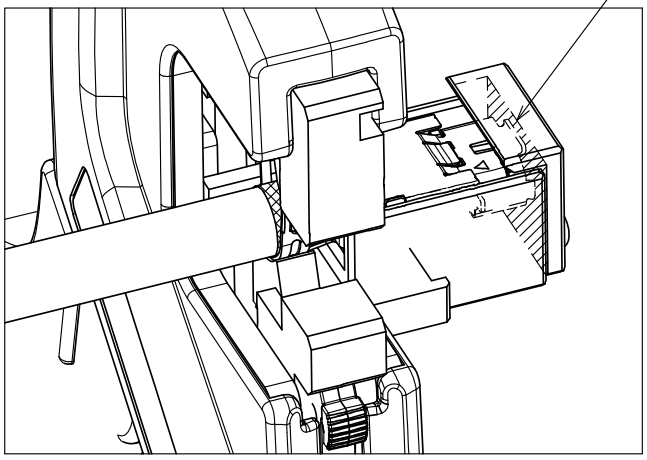
12. Crimp Cable Clamp



Crimp the cable with shield case A clamp. Insert inner unit (the jack unit assembled with shield case A and shield case B) at a slight diagonal to avoid interference. Slightly lower the inner unit when the tip touches the crimping guide of the tool.

Place inner unit head onto crimping die of the hand tool.

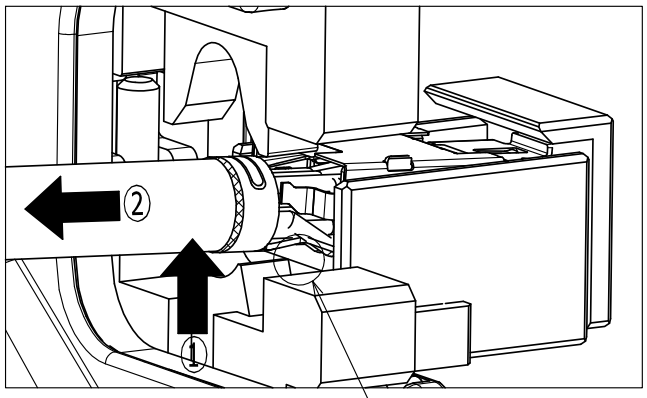
Inner unit touches the crimping die of the tool.



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

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

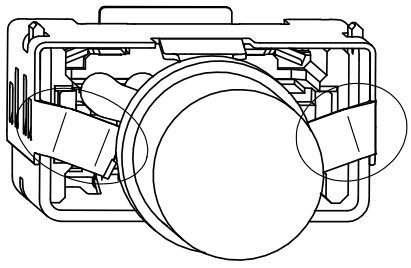
Recommended crimp strength in cable axial direction : 60N or above



※The cable cannot be pulled out in a straight direction if it is caught in the hand tool after crimping, please lift the cable up before taking it out.

Be careful not to damage the connector during cable removal.

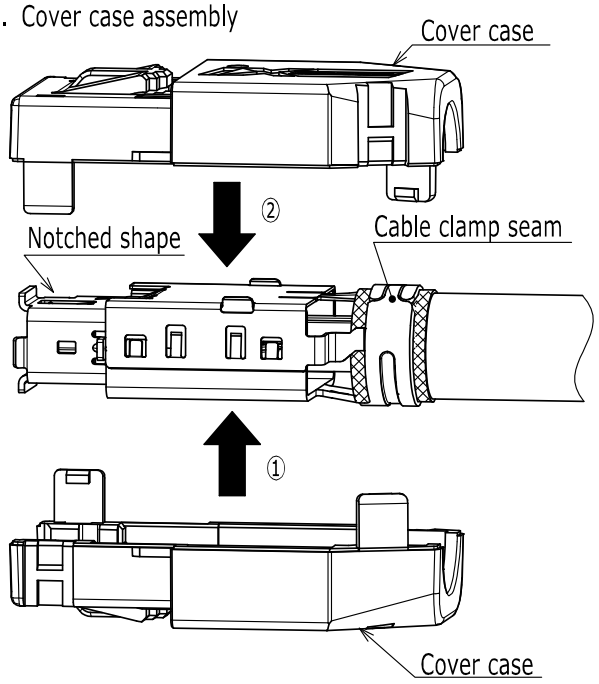
Lift up the cable to prevent it from being caught then take out.



After crimping, shield case B clamp part is as shown in the figure.

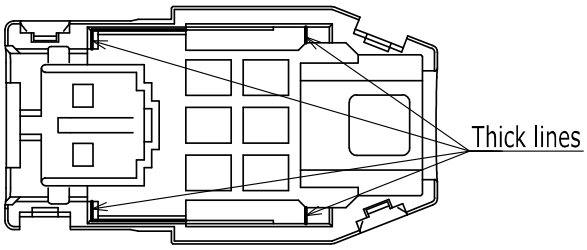
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13. Cover case assembly



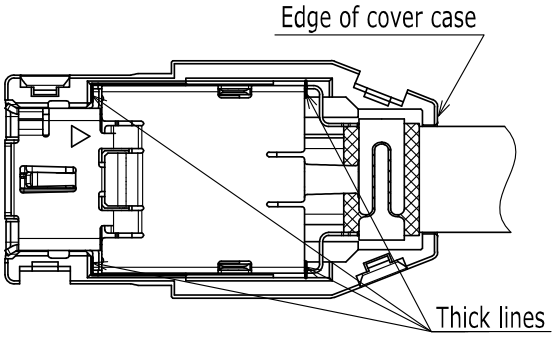
Assemble the cover case.
Position so that the cable clamp seam and the notched shape on the jack are facing upward as shown in the left diagram.
Install the bottom cover case first followed by the top cover case.

※The figure features the A key, but the notched shape should be facing upward for all key types.



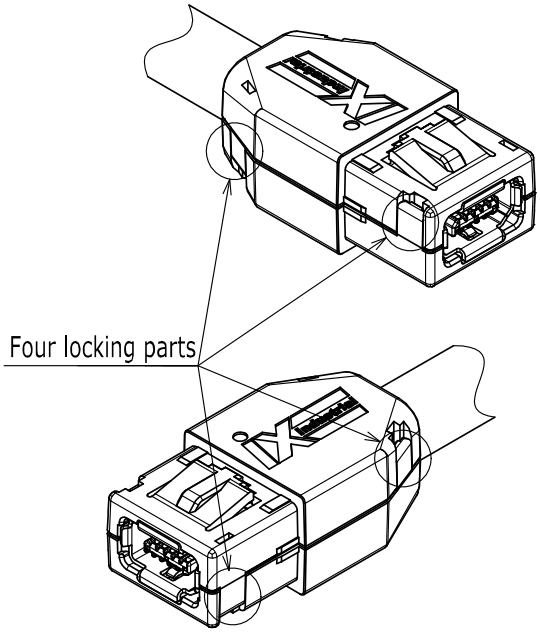
Fit the case by aligning the thick lines as shown in the left figure.

※Confirm to ensure the copper tape and the braided shield do not come out from the edge of the cover case.



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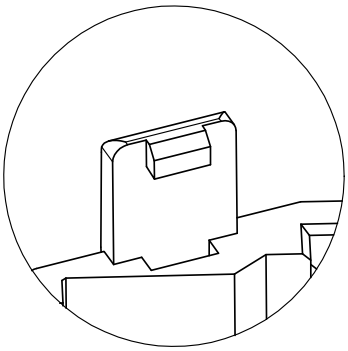
14. Cover Case Reusage



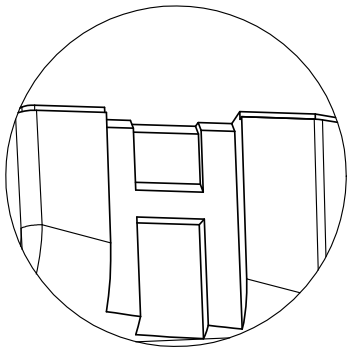
When reusing the cover case check that there are no scratches, chips or deformation on the latches and recesses of the four locking parts of the cover case.
Afterwards assemble in accordance with "13. Cover case assembly".

※The cover case cannot be reused if the latches or recesses are scratched, chipped or have turned white.
※If one of the engaging parts has been deformed it cannot be reused even if returned to the original position because it loses the springiness.

Latch



Recess



15. Wiring Precautions

・Depending on sheath thickness, it may not be possible to crimp the braided shield together with the cable at the shield case clamp.
Handling Method
When processing the braided shield, the braided shield and cable can be crimped together by setting the folded amount of the braided shield to be longer than the recommended 3-4mm. (See page 4,③.)
※Adjust the length so that braided shield and copper tape do not project from the cover case.

・This product is not washable.

This document is subject to change without notice.
Please check and download the latest version from the Hirose website.

Concluded

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16. Revision history

Rev No.	Content of revision	Prepared by	Checked by	Approved by	Date
0	The first edition	TS.ITO	KI.KAGOTANI	MN.KENJO	2022/10/3

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