

1. Scope of Application

This specification covers the wiring procedures for LF receptacles.

2.  Caution

① Do not scratch or deform the terminals.

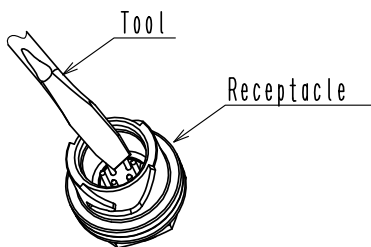
If scratched or deformed,

- Deterioration of contact resistance
- Poor joints
- If the shell is board-mounted, there is a possibility that it may not be attached to the board.

② Do not deform the shell by applying strong force.

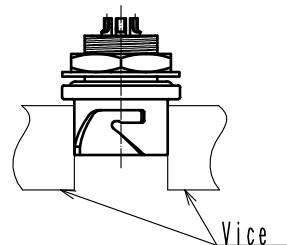
If the shell is deformed, it may not be able to be engaged.

① Case of occurrence






Insertion of tools or other objects into the connector mating surface may bend or damage the terminals.

② Case of occurrence

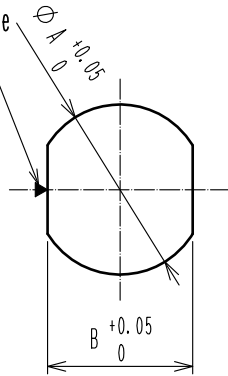


For wiring work, When tightening the connectors with a vise or the like to secure them, they may be deformed. Tightening the connector too strongly with a vise or similar tool may deform the connector and cause it to fail to engage. If the connectors are tightened too strongly with a vise or similar tool to secure them during wiring, they may deform and fail to engage.

	COUNT	DESCRIPTION OF REVISIONS	DESIGNED	CHECKED	DATE
					
TITLE			 HIROSE ELECTRIC CO., LTD. APPROVED TP. KOMATSU 20240123 CHECKED EJ. KUNII 20240122 CHARGED SY. KONDO 20240119 WRITTEN SY. KONDO 20240119		
LF Receptacle Connector Harness Assembly Instructions					
TECHNICAL SPECIFICATION					
ETAD-C0526-00					
				1	7

3. Enclosure mounting method

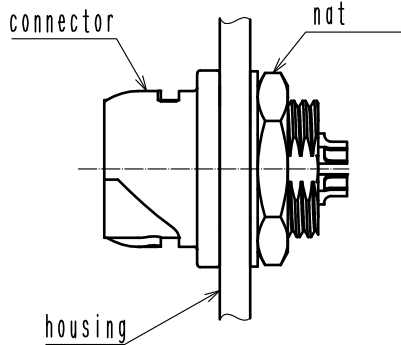
Interlocking guide position



Enclosure mounting holes

Type	Shell Size	Compatible Connectors	ϕA	B	Panel thickness
Front mount	LF07	LF07WBR-##	9.05	8.1	0.7~2.0
	LF10	LF10WBR-##	11.05	10.2	
	LF13	LF13WBR-##	14.05	13.1	
Back mounted	LF07	LF07WBRB-##	11.05	10.5	0.7~4.0
	LF10	LF10WBRB-##	14.05	13.1	0.7~2.0
	LF13	LF13WBRB-##	17.05	16.1	0.7~4.8

Install the connector so that the mounting guide fits into part A of the mounting hole.
Mount the connector so that the mounting guide fits into part A of the mounting hole.



Recommended tightening torque

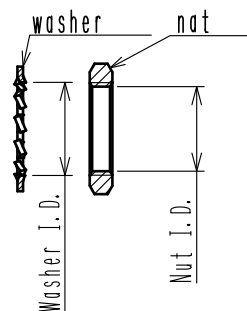
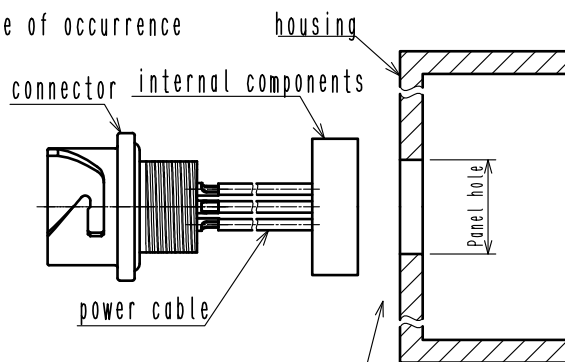
Type	Shell Size	Compatible Connectors	Tightening torque (N/m)
Front mount	LF07	LF07WBR-##	1.5~2
	LF10	LF10WBR-##	1.5~2
	LF13	LF13WBR-##	2~2.5
Back mounted	LF07	LF07WBRB-##	1.5~2
	LF10	LF10WBRB-##	2~2.5
	LF13	LF13WBRB-##	2~3

After inserting the connector into the panel hole, tighten the nut to the recommended tightening torque. To prevent loosening, apply Loctite 243 or equivalent product manufactured by Henkel Japan Co.

Caution

Front-mounted products are designed to install connectors from the outside of the enclosure. Therefore, if connections to internal components are made first, installation may not be possible.

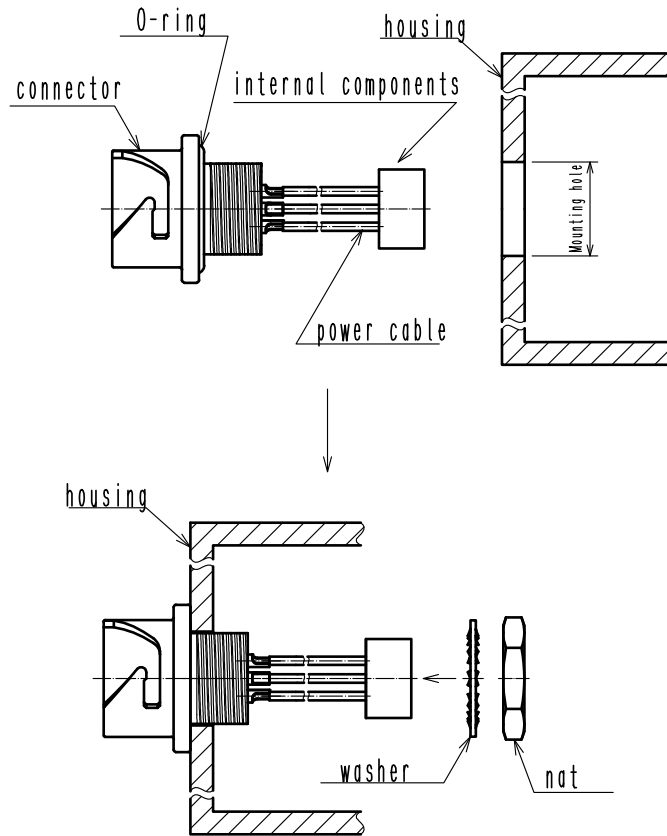
case of occurrence



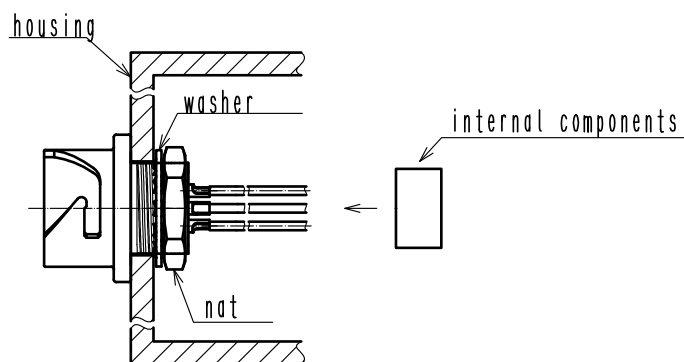
If the connected component is larger than the inside diameter of the panel hole, nut, or washer, it will not fit through the panel hole.

When attaching a double-ended harness product to an enclosure, use internal components that are sized to fit through the mounting holes, washers, and nuts. Use internal components that are large enough to fit through the mounting holes, washers, and nuts. (Figure a)
Or, solder only the wires and connect them to the internal components after the connectors have been installed in the enclosure. (Figure a) or solder the wires only and make the connections to the internal components after the connector is installed in the housing. (Figure b)

(Figure a)



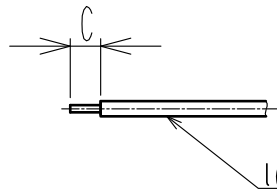
(Figure b)



4. Work procedure

Work procedure

1



Perform terminal treatment of the lead wire sheath according to the dimensions shown in Table-1.
(Note 1) Be careful not to damage the lead wire sheath or core wire when performing the terminal treatment.

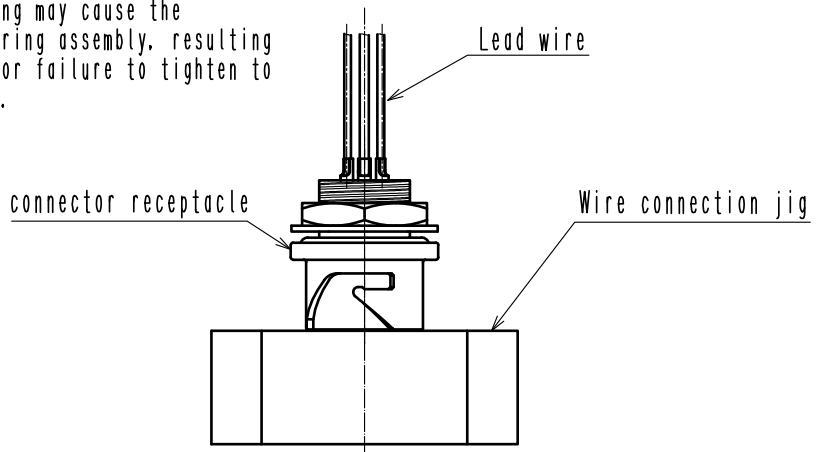
Table-1

Wiring system	Shell Size	Number of core	C
solder	LF07	3	2.5 ± 0.5
		6	2 ± 0.5
	LF10	4	3 ± 0.5
		12	2 ± 0.5
	LF13	20	2 ± 0.5
11		3 ± 0.5 (No. A~D) 2 ± 0.5 (No. 1~7)	
crimping	LF10	12	1.5~2
	LF13	20	1.5~2

(Solder type)

Caution

The jig should be securely fastened so that it will not move even with the torque required to assemble the connector. Insufficient fastening may cause the connector to tilt during assembly, resulting in connector damage or failure to tighten to the specified torque.



2

Table-2

Shell Size	Compatible Connectors	serial number	HRS No.
LF07	LF07WBR-##	LF07BJ-T01	CL0150-0233-3-00
	LF07WBRB-##		
LF10	LF10WBR-##	LF10BJ-T01	CL0150-0236-1-0
	LF10WBRB-##		
LF13	LF13WBR-##	LF13BJ-T01	CL0150-0238-7-00
	LF13WBRB-##		

After the receptacle is mounted on the soldering jig and pre-soldered, solder the receptacle for 3 to 4 seconds at a soldering iron tip temperature of $350 \pm 10^\circ\text{C}$. Solder the receptacle to the soldering jig for 3 to 4 seconds at a soldering iron tip temperature of $350 \pm 10^\circ\text{C}$.

(Note 1) When soldering wires, make sure that there is no solder paste, tempura solder, etc. Also, make sure that the solder is fully fused at the solder joint between the wire and the terminal.

Caution

Soldering conditions must be strictly observed. Failure to do so may cause melting of insulation or disconnection of terminals.

Work Procedure

(Crimp type)

Crimp crimp terminals to insulated wires. C/H and other crimp quality standards, C/H and other crimp quality standards are shown in the Crimping Conditions Table.

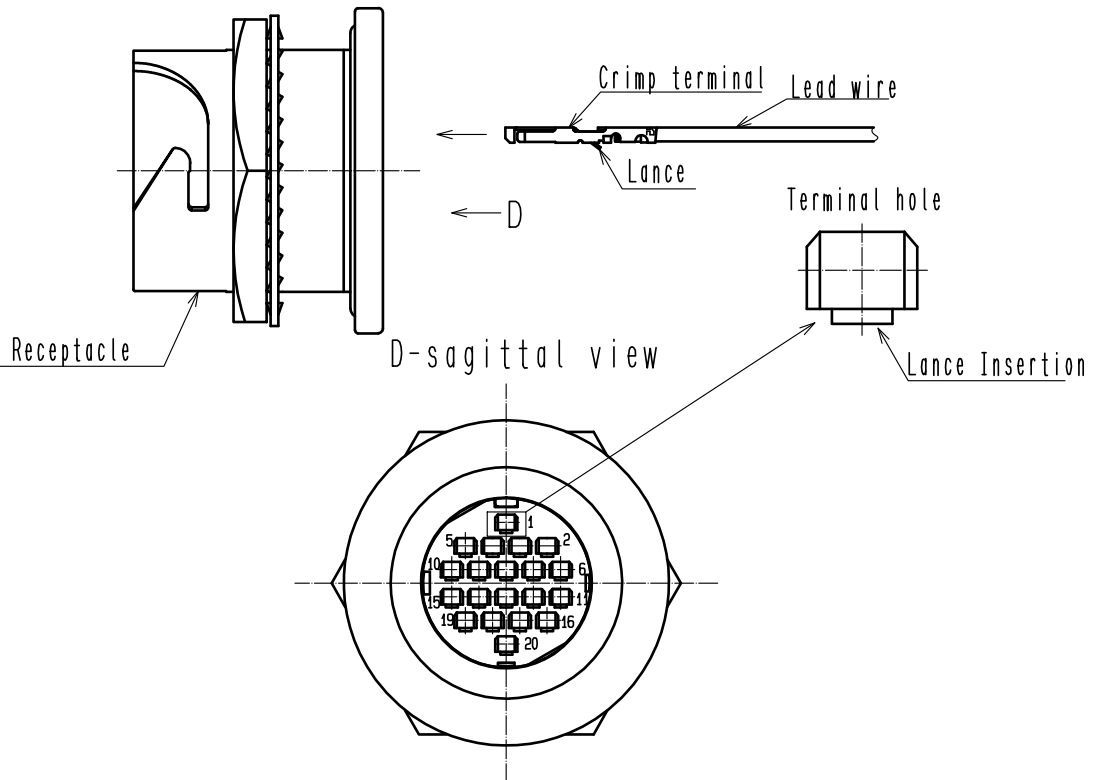
Applicable tools

Type	Tool name	Part No.
Manual	Manual crimping tool	HT802/HR12-SC-1
Automatic	Automatic crimping machine body	CM-105C
	Applicator	AP105-HR12-1



Caution

When crimping with a manual tool, the crimp may be hard or difficult to work with. However, please make sure to crimp securely. If the crimping is not done securely, electrical connection problems may occur.



After crimping the lead wire with a compatible crimp terminal using the applicable tool, insert the crimp terminal into the terminal hole of the receptacle in relation to the position where the lance of the crimp terminal comes to the lance insertion portion of the receptacle. Insert the crimp terminal in the position where the lance of the crimp terminal is aligned with the lance insertion part of the receptacle's terminal hole. Insert the crimp terminal by aligning the orientation of the lance with the mounting guide (convex shape) as a landmark.

After insertion, pull the lead wire lightly (2-3N) to confirm that the terminal is secured.



Caution

- Be careful not to deform the terminals during insertion.
Deformed terminals may cause poor contact or terminal disconnection.
- If the orientation of the housing terminal holes and terminals do not match during insertion, the terminals may be damaged.
- If the terminal is pushed in too far during insertion, it may damage the housing.
If the terminal is pushed in too far during insertion, it may break the housing and the terminal may pop out of the mating surface.
- If the cable is soft, it may be difficult to insert the terminals.
In this case, insert the terminal by holding the part of the cable closest to the terminal.
- If the lead wire is pulled strongly after insertion, the terminal and housing may be damaged. After insertion, be careful not to pull too hard on the lead wire, as this may damage the terminal and housing.

Work procedure

(Crimp type)

How to use the terminal extraction jig

If you have inserted a crimped terminal into the wrong terminal hole,
Use the terminal extraction jig to remove the terminal from the connector.

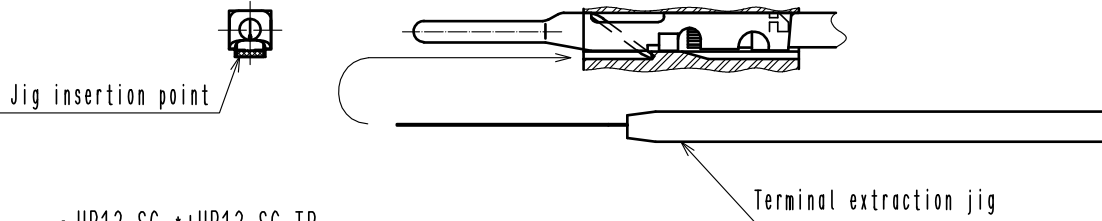
Applicable tools

Terminal extraction jig	Applicable terminals
RP6-SC-TP	HR10-PC-*
HR12-SC-TP	HR12-SC-*

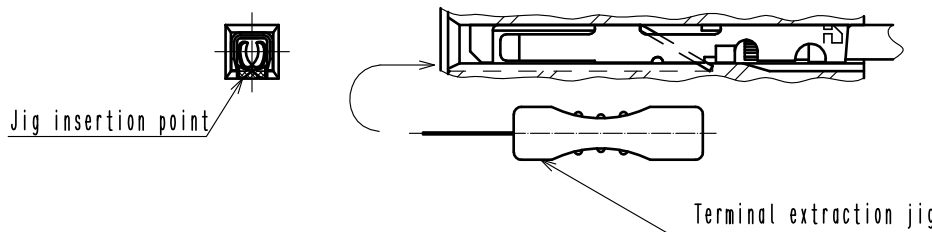
How to use

(1) Insert the tip of the terminal extraction jig into the jig insertion point of the terminal hole.

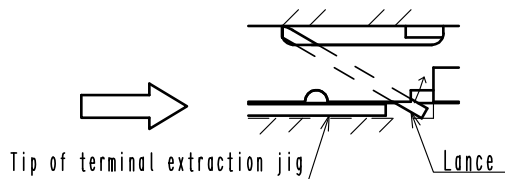
• HR10-PC-*+RP6-SC-TP



• HR12-SC-*+HR12-SC-TP



(2) Insert the jig and push down the lance.



If the terminal is pulled toward the cable,
The lance may not be pushed down.
If the lance is difficult to push down, terminal
to the connector side. If it is difficult to push
down the lance, push the terminal into the connector
side and push the extraction jig into the connector
side.

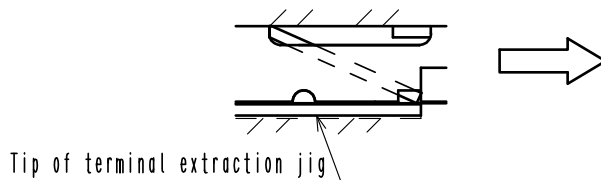


Caution

With the lance not lowered, The lance may be deformed if you
try to pull out the terminals when the lance is not lowered.

If the lance is not lowered and you try to pull out the terminals, the lance may be deformed.

(3) With the lance pushed down, pull out the terminals.

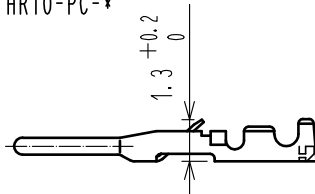


Caution

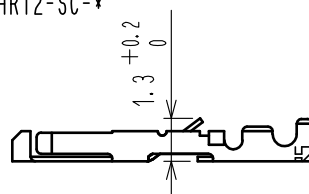
Reinsertion of terminals and housings is limited to one time.

When reinserting a terminal removed from the housing, correct the height of the lance as shown in the figure below.

HR10-PC-*



HR12-SC-*



Work procedure



Caution

Precautions after wiring (common to solder type and crimp type)

Lead wires connected to the connector should be slackened.

If the lead wires are fixed in a strongly pulled condition, there is a risk of solder cracks or damage to the connector due to the load placed on it.

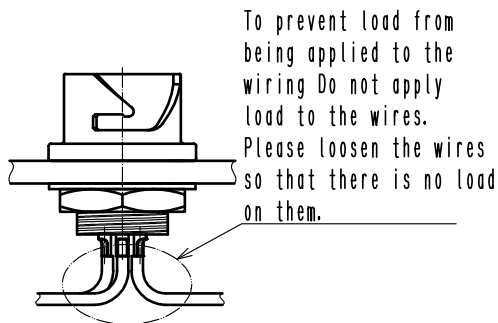
If the lead wires are secured in a strongly pulled condition, there is a risk of solder cracks or damage to the connector due to the load applied to it.

Also, do not secure the entire wire with heat shrink tubing or the like.

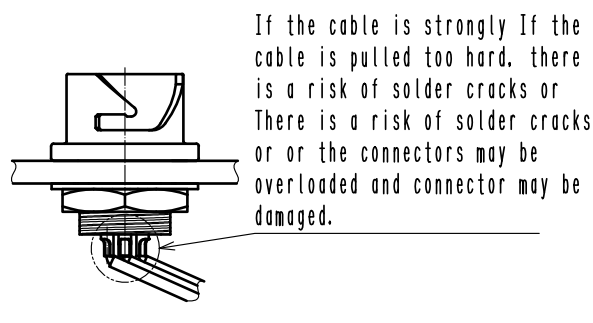
The tension may be greater than expected and the connector may be damaged.

Similarly, when bundling wires using insulocks, etc., be sure to secure them at a sufficient distance so that no load is placed on the wires.

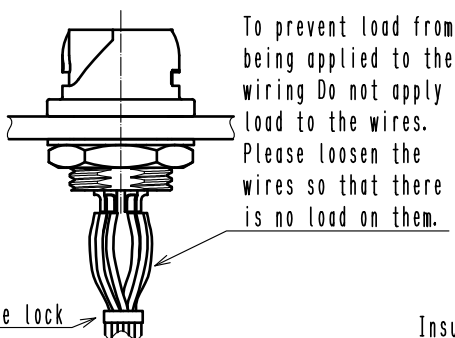
2



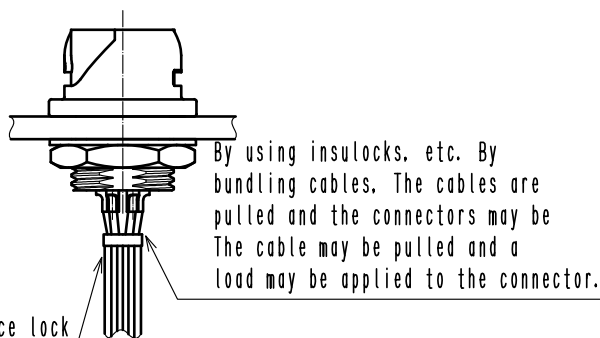
To prevent load from being applied to the wiring Do not apply load to the wires. Please loosen the wires so that there is no load on them.



If the cable is strongly pulled too hard, there is a risk of solder cracks or the connectors may be overloaded and connector may be damaged.



To prevent load from being applied to the wiring Do not apply load to the wires. Please loosen the wires so that there is no load on them.

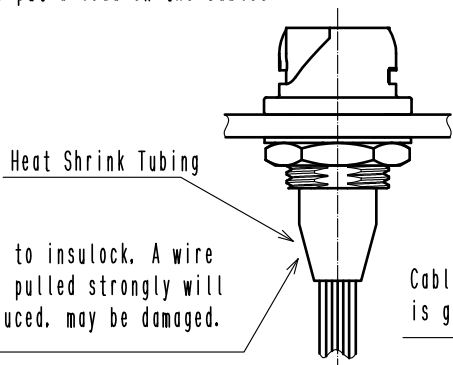


By using insulocks, etc. By bundling cables. The cables are pulled and the connectors may be overloaded. The cable may be pulled and a load may be applied to the connector.

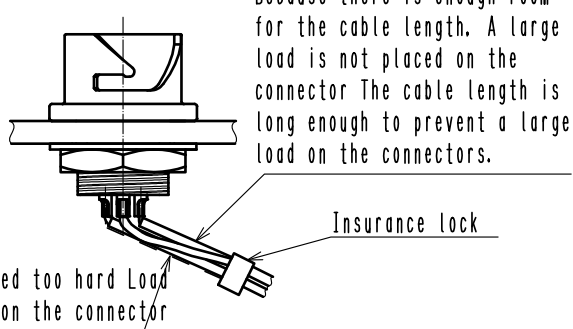
Insurance lock

Insurance lock

When using insulocks, etc. Bundle the cables at a sufficient distance from each other so that they are not overloaded. Bundle the cables at a sufficient distance from each other so as not to put a load on the cables.



Heat Shrink Tubing
Similar to insulock. A wire that is pulled strongly will be damaged.



Because there is enough room for the cable length. A large load is not placed on the connector. The cable length is long enough to prevent a large load on the connectors.
Insurance lock
Cable is pulled too hard Load is generated on the connector

When wires bundled with insulock, etc. are bent Bending a wire bundled with an insulock or the like concentrates the force on a portion of the wire and may damage the wire. If you bend a wire bundled with insulock, etc., it may be damaged.