1. Scope

This specification documents describes the harnessing procedure for the HR10 receptacle.

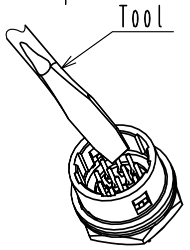
2. ⚠ Caution

①Do not damage or deform the terminals.
Scratches or deformation may cause the following:
- Decreased contact resistance
- Poor mating
- Mounting failure in the case of board-mount types.

②Do not deform the locking spring.
Deforming the locking springs may result in connector mating failure.

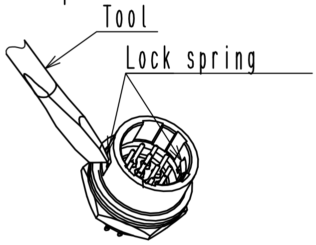
③Do not deform the shell by applying strong force.
Deforming the shell may result in connector mating failure.

①Example of Problem Occurrence



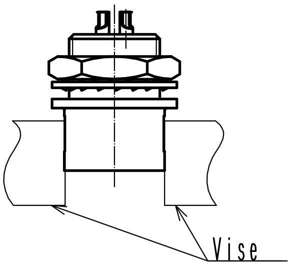
Insertion of tools or other objects into the connector mating surface may bend or damage the terminals.

②Example of Problem Occurrence



Deformation of the locking springs may result in connector mating failure.

③Example of Problem Occurrence



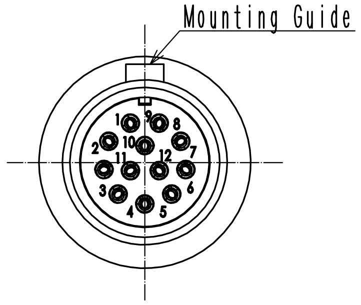
Firmly tightening and securing the connector with a vise when harnessing may result in deformation and connector mating failure.

	COUNT	DESCRIPTION OF REVISIONS	DESIGNED	CHECKED	DATE
0					

TITLE: HR10 Receptacle Connector Harness Assembly Instructions	HRS HIROSE ELECTRIC CO., LTD.		
	APPROVED	TP. KOMATSU	20220411
	CHECKED	HY. KOBAYASHI	20220408
	CHARGED	WR. AJIRO	20220408
	WRITTEN	WR. AJIRO	20220408
TECHNICAL SPECIFICATION	ETAD-C0491-00	0	1/6

3. Panel mounting method

Receptacle wiring side



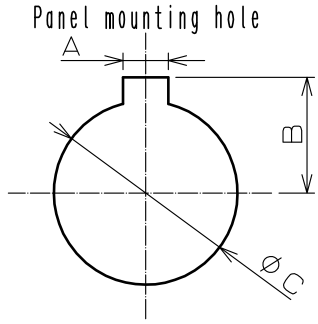
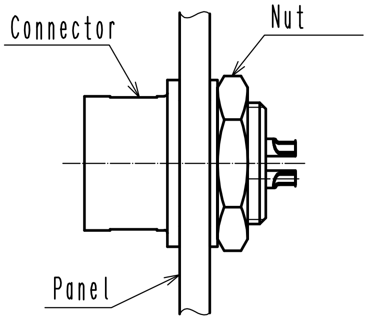


Diagram symbol	Shell size		
	7 size	10 size	13 size
A	1.6$^{+0.1}_{0}$	2.6$^{+0.1}_{0}$	
B	5.1$^{+0.1}_{0}$	6.6$^{+0.1}_{0}$	8.6$^{+0.1}_{0}$
φC	8.1$^{+0.1}_{0}$	11.1$^{+0.1}_{0}$	14.1$^{+0.1}_{0}$

Install the connector so that
the mounting guide fits into the mounting hole.



Recommended tightening torque

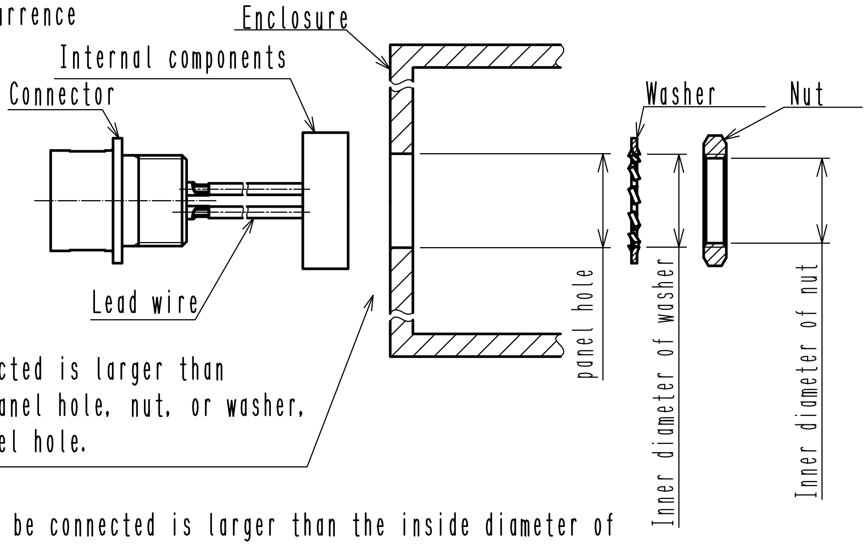
7 size	1.5N・m
10 size	2N・m
13 size	2.5N・m

After inserting the connector into the panel hole,
tighten the nut with the recommended tightening torque.
Loosening should be prevented by applying Loctite 243 or equivalent from Henkel Japan Ltd.
to the threads. If higher strength is required, apply Loctite 263 or equivalent.
Using the product when the threads are loose may result in damage to the termination portion.
When deciding whether to omit the use of Loctite due to the operating environment,
please consult with the end product manufacturer and harness manufacture before making a decision.

⚠ Caution

This product is designed to be installed from the outside of the panel.
Therefore, connecting to the internal components first may make installation impossible.

Example of Problem Occurrence



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

If the internal component to be connected is larger than the inside diameter of
the panel hole, washer, or nut, the internal component will not fit through
and the connector cannot be attached to the panel.
When soldering the wires to the connectors prior to panel installation,
use an internal component that will fit through the panel hole
or solder on the wires and connect the internal components
after the connector is installed on the panel.

4. Harnessing procedure

Harnessing Steps

1

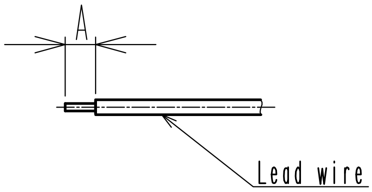


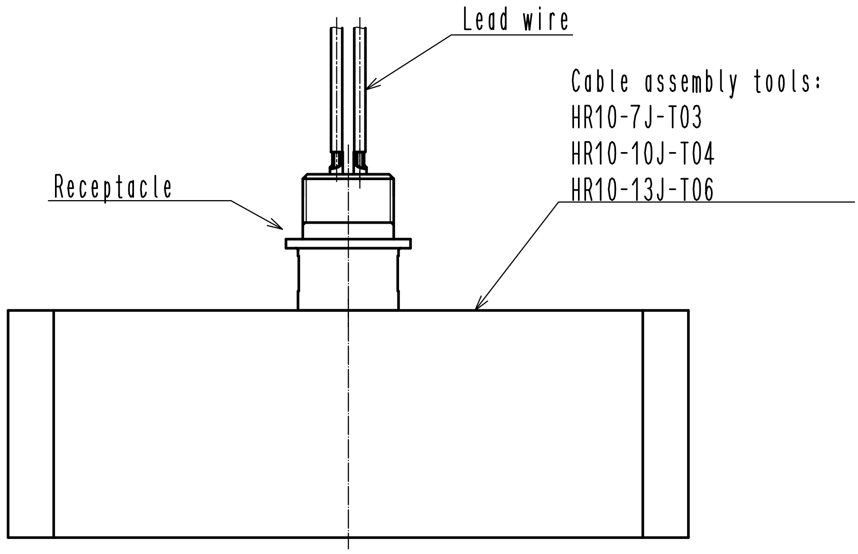
Table 1.

	A
Solder type	$2^{\ 0}_{-0.5}$ mm
Crimp type	$2^{\ 0}_{-0.5}$ mm

Strip the lead wire based on the dimensions shown in table 1.
Note: Be careful not to damage the lead wire jacket
or core wire when stripping the end.

2

(Solder type)



After attaching the receptacle to the cable assembly tool, perform soldering
for 2 to 3 seconds with the soldering iron tip at a temperature of 350±10℃.
Also check to make sure the solder joint is adequately fused between the lead wires
and solder cup.

⚠Caution

Please strictly adhere to the soldering conditions.
Failure to do so may result in insulator melting or contacts coming off.
Creating cold solder joints or solder joints with air holes
may cause poor pressure resistance, so please avoid.

Harnessing Steps

2

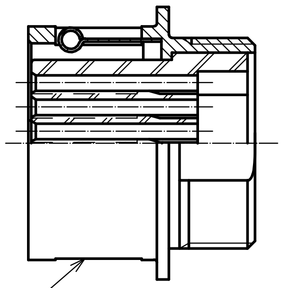
(Crimp type)

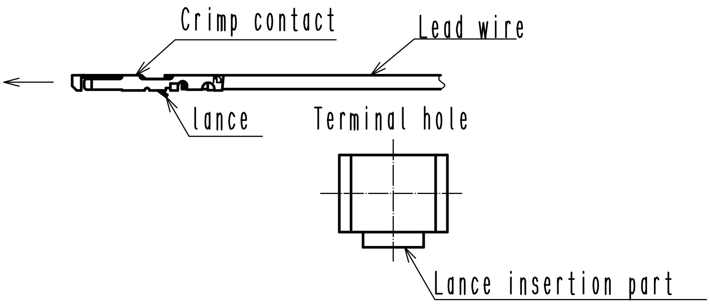
Table of Applicable Tools

Type	Name	Part number
Manual	Manual contact crimping tool	HT802/HR12-SC-1
Automatic	Press	CM-105C
	Applicator	AP105-HR12-1

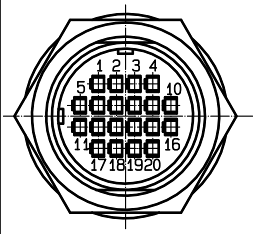
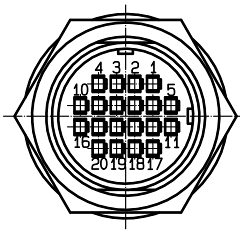
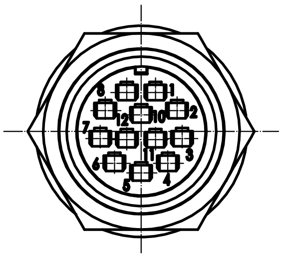
Following the instructions enclosed with the applicable tool, crimp the contacts to the wires. Verify the crimp height and configuration per the Crimp Condition Table .

⚠ Caution
When crimping with a hand tool, crimping may be hard or difficult to complete, but please crimp fully. Failure to crimp fully may result in electrical connection problems.





After crimping the lead wires with a compatible crimp terminal using the applicable tool, insert the crimp terminal into a position where the crimp terminal lance comes into contact with the lance insertion part of the receptacle terminal hole.
The lance insertion part of the receptacle terminal part is shown in the table below when viewed from the direction from which the terminal No. can be read.

Compatible products	HR10A-13*-20PC(**)	HR10A-13*-20SC(**)	Other, HR10A crimp type
Appearance example			
Lance insertion part	Left	Right	UP

Verify whether the terminal is fully inserted by slightly pulling on the wire (pull force of 3 N max.).

⚠ Caution
- When inserting the terminals make sure not to deform them. Deformed terminals may cause poor contact or disconnection.
- If the orientation of the housing terminal holes and terminals do not match during insertion, the terminals will be destroyed.
- Do NOT push the terminals too far in during insertion as it may damage the housing and cause the terminals to protrude from the mating surface.
- If the cable is soft, it may be difficult to insert the contacts. In this case, insert the contacts by holding the part near the cable terminals.
- Note that pulling hard on the lead wire after insertion will damage the terminal and housing.

Harnessing Steps

3

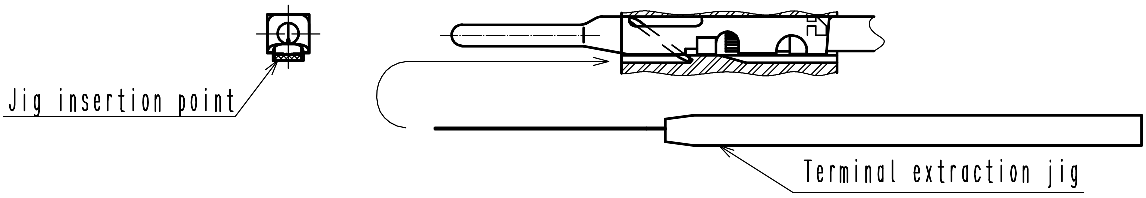
(Crimp type)
How to use the terminal extraction jig
If you insert the crimp terminal into the wrong terminal hole,
use a terminal extraction jig to remove
the terminal from the connector.

Tools

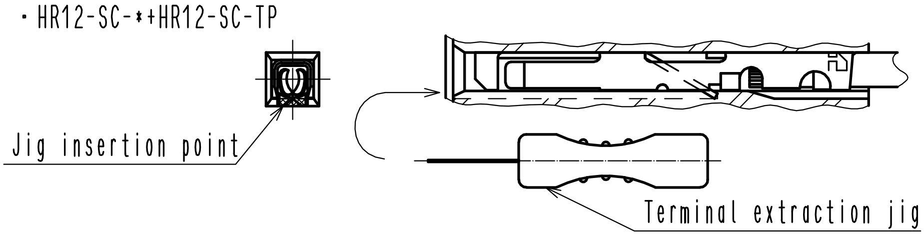
Extractor	Applicable terminal
RP6-SC-TP	HR10-PC-*
HR12-SC-TP	HR12-SC-*

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

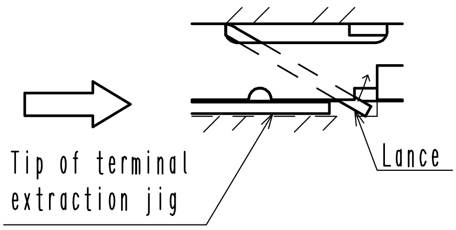
・HR10-PC-*+RP6-SC-TP



・HR12-SC-*+HR12-SC-TP



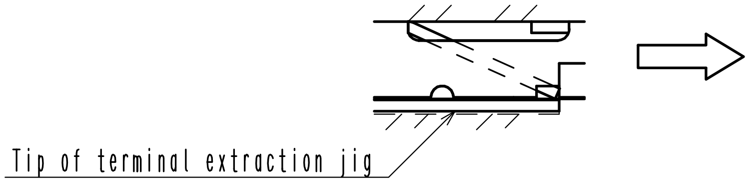
(2)Insert the extractor and push down on the lance.



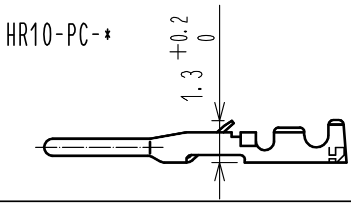
If you pull the terminal towards the cable,
it may not be possible to push the lance down.
If the lance is difficult to push down,
push the extraction jig
in while pushing the terminals towards the connector.

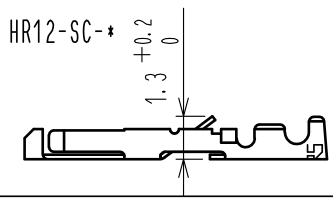
Caution
If you try to pull out the terminal without lowering the lance, the lance may be deformed.

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



Caution
Reinsertion of the terminals and housing is limited to one time.
When reinserting a terminal removed from the housing,
set the lance height as shown in the below diagram.





4

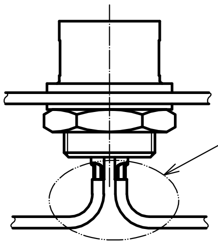
⚠ Caution

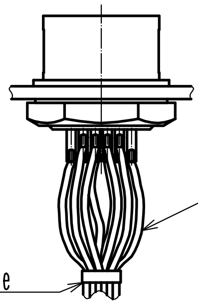
Precautions after wiring (Same for both the solder type and crimp type)

①Lead wires connected to the connector should be slackened.
If the lead wire is secured while in a tightly pulled state,
there is a risk of solder cracking or connector damage.

②Do not secure the entire wire with a heat shrink tube, etc.
The connector may be damaged due to higher than expected tension.

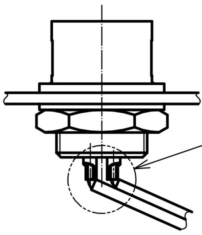
③When bundling the wires with cable ties or other means,
secure the wires with sufficient spacing so that the wires are not overstressed.
Keep the cables bundled with cable ties in a deflected state.
The connectors may be damaged due to higher than expected tension.



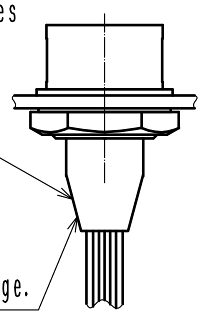


When using cable ties maintain sufficient spacing
so that so that the cables are not overstressed.

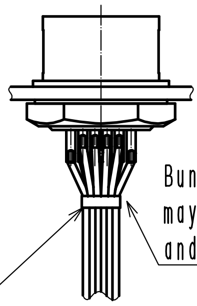
Caution ① Defect examples



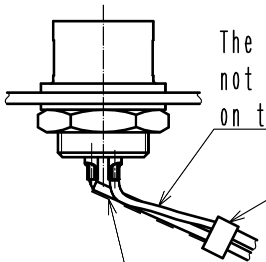
Caution ② Defect examples



Caution ③ Defect examples



Caution ③ Defect examples



Bending wires that have been bundled
using a cable tie, etc. may result in
a concentration of force on the wires,
resulting in damage.