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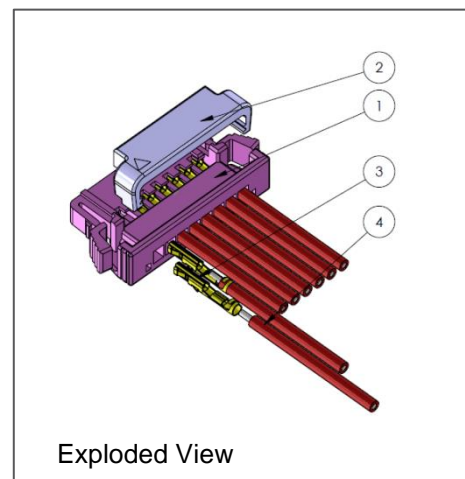
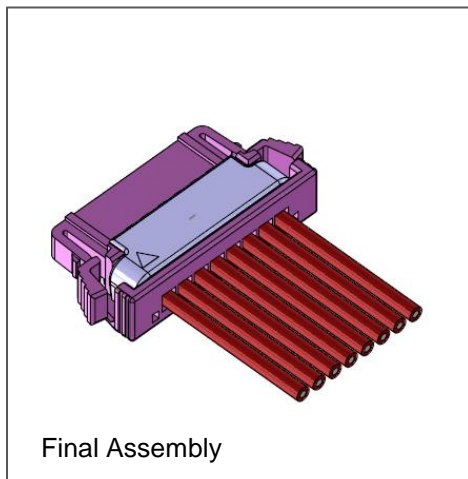
Commissioned by: -

Prepared by: Ken Seng

This specification comprises pages: 12

**This specification specifies the procedure for the assembly of the iBridge Ultra female connector and cables** when the Housing and Retainer (secondary lock) is packed in bulk separately.

## 1. Part Description & Component Details



Item #	Description
1	Female Housing
2	Retainer
3	Female Contact
4	Cable

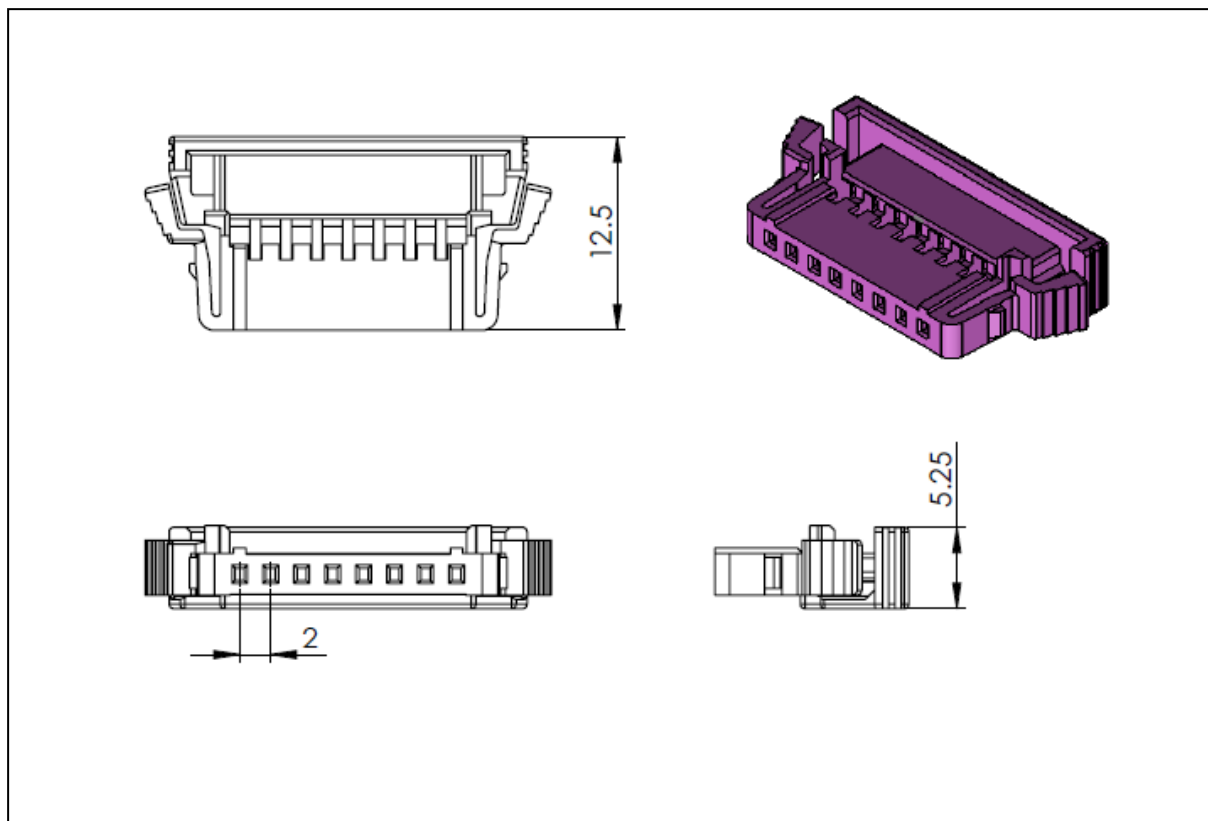
### 1.1 Female Housing & Retainer

Position	Housing Part No	Retainer part No
2	119971	119981
3	119972	119982
4	119973	119983
5	119974	119984
6	119975	119985
8	119976	119986
10	119977	119987
12	119978	119988

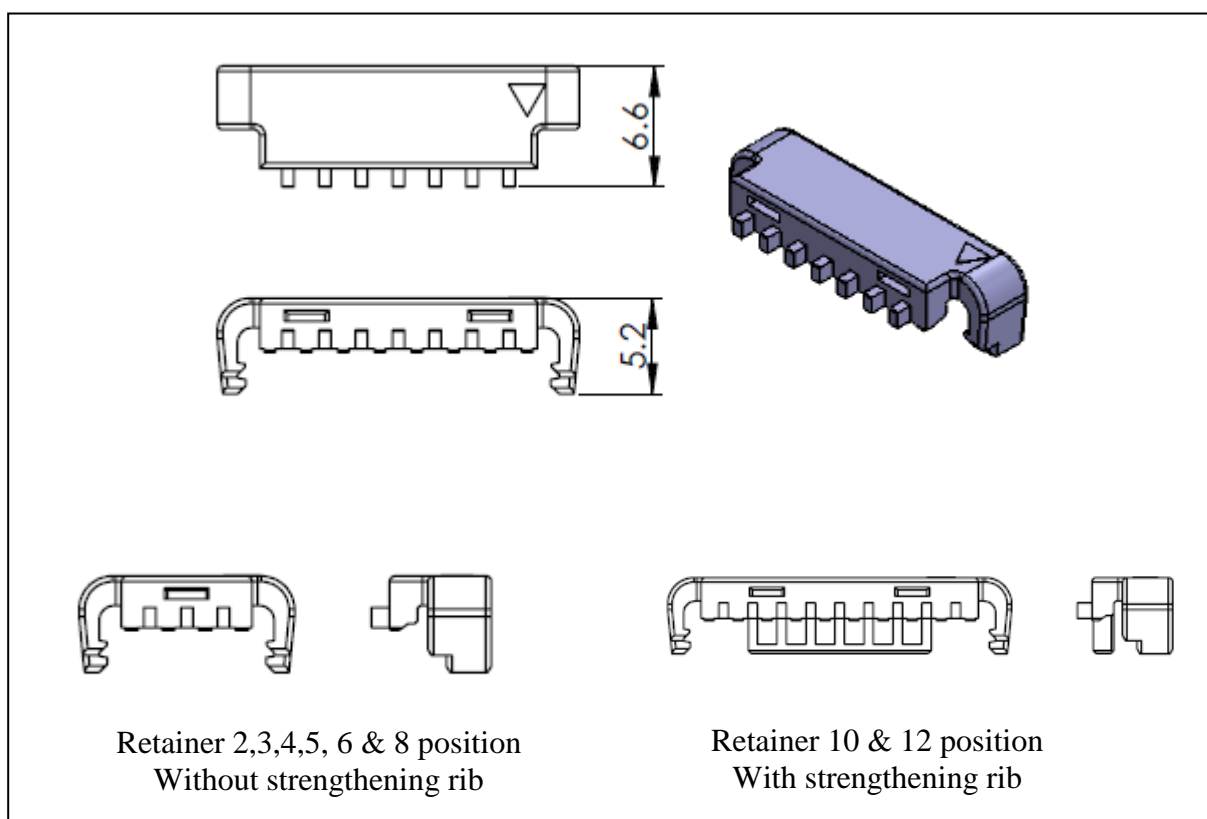
The Housing and the Retainer are packaged separately in bulk



## 1.1.1 iBridge Ultra Female Housing

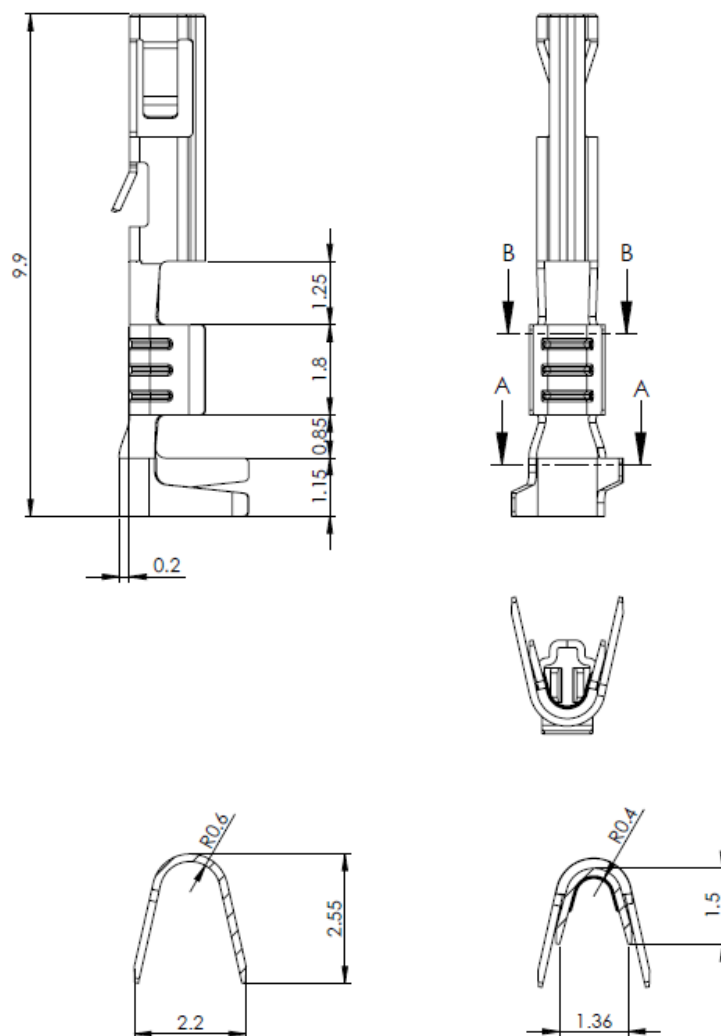


## 1.1.2 iBridge Ultra Retainer



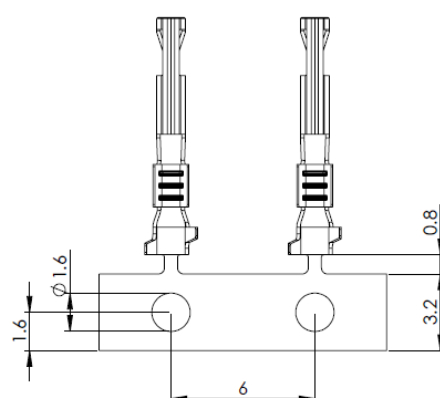


## 1.1.3 Female Contact,



SECTION A-A

SECTION B-B



Carrier Layout

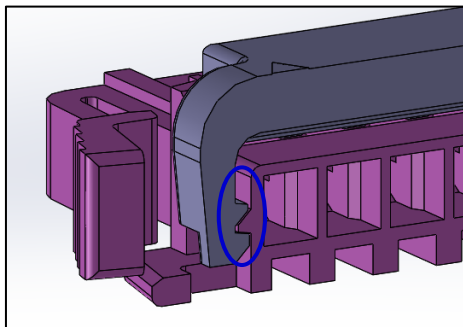
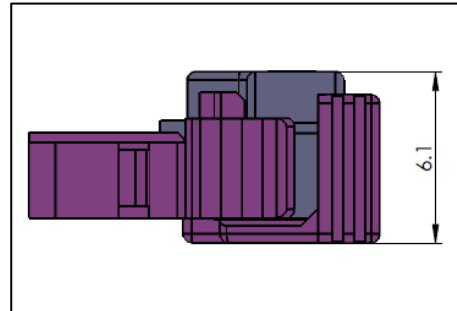
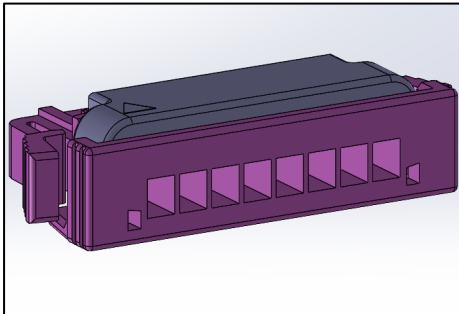


## 2. Component Preparation

### 2.1 Housing & Retainer

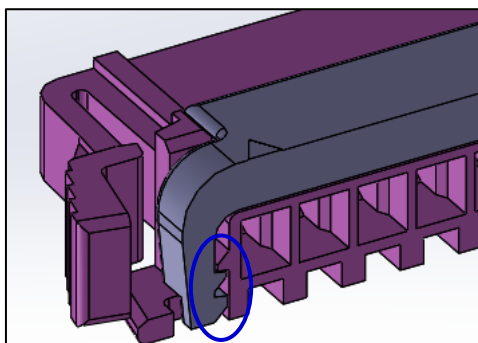
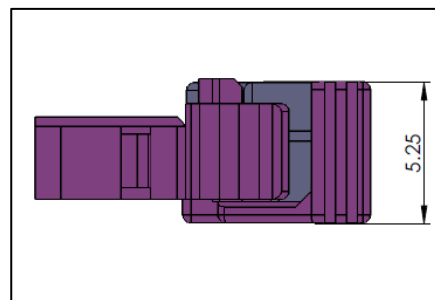
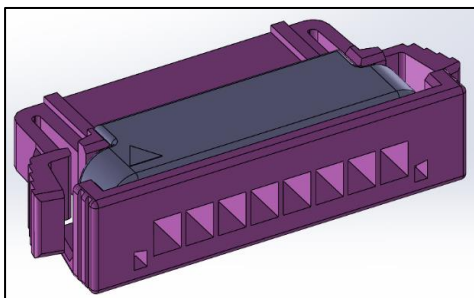
2.1.1 The Retainer could be locked into the Housing in two positions. In the pre-locked condition & full locked condition

#### *Pre-locked condition*



Retainer latch position in pre-locked condition

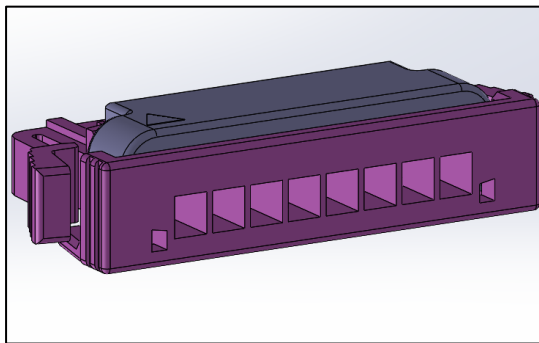
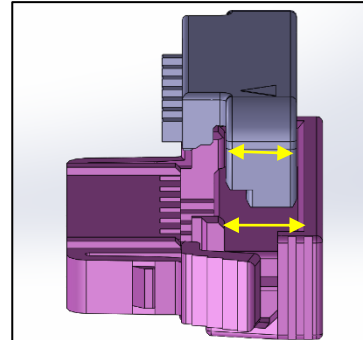
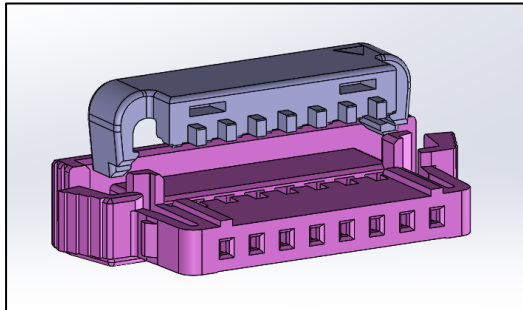
#### **Full locked condition**



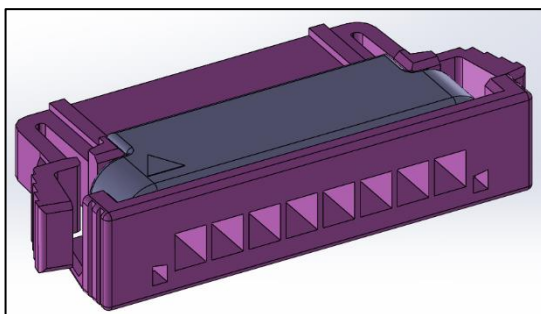
Retainer latch position in full locked condition



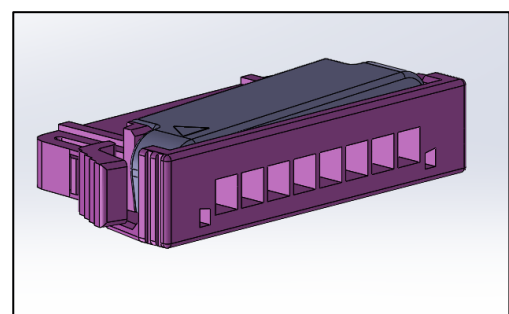
2.1.2 Assemble the Retainer as shown below to the **pre-lock condition**. Do not press the Retainer fully.



2.1.3 Errors in pressing to pre-lock condition



Pressed to full lock condition

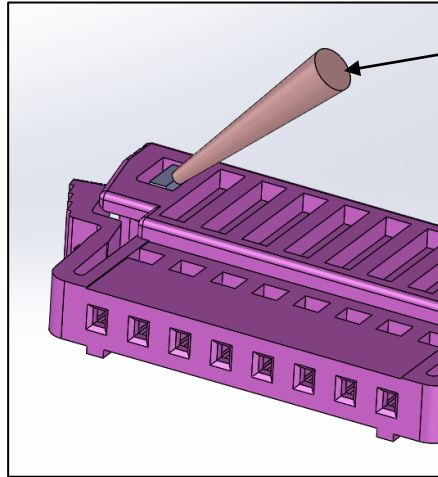


Pressed one side to full locked condition





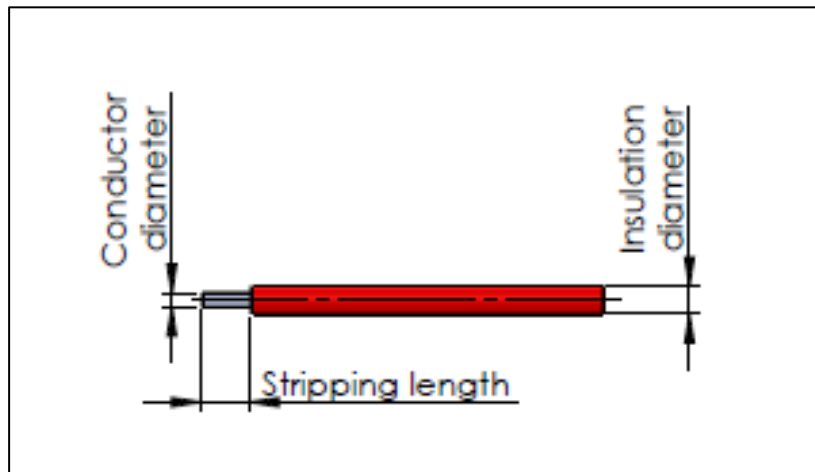
- 2.1.4 In case the Retainer is pressed to full locked condition before inserting the contact, use a small soft tool to deflect the latch of the Retainer through the Housing window and push down it to the pre-lock condition. Please check for any damages on the Retainer. Replace the Retainer if required.



Soft tool with 1.0 -1.3mm diameter round cross section recommended.

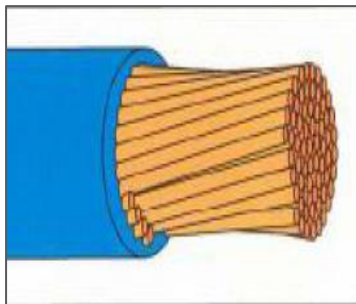
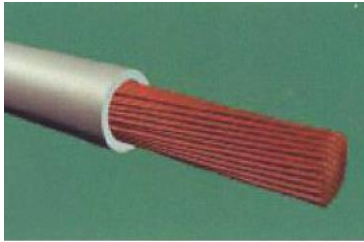
## 2.2 Cable

AWG 22 ( $\approx 0.35\text{mm}^2$ ) & AWG 24 ( $\approx 0.22\text{mm}^2$ ) discrete cables can be crimped with the female contacts. The insulation diameter of the cable cannot be more than 1.6mm. The recommended cable stripping length is 2.8mm.

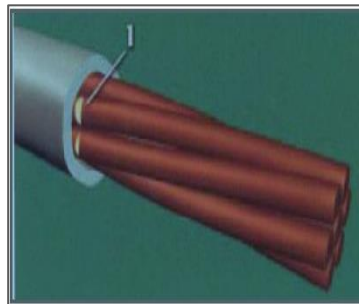




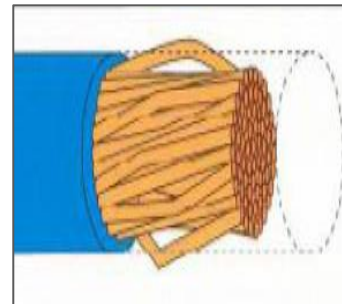
- Common defects in cable preparation



Strand damage



Strand damage

Wire separation  
(Bird caging)

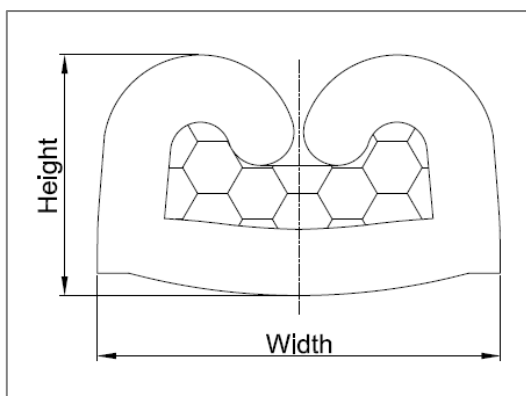
## 2.3 Crimping

2.3.1 Crimping should meet requirements as per USCAR-21

Cable pull out force

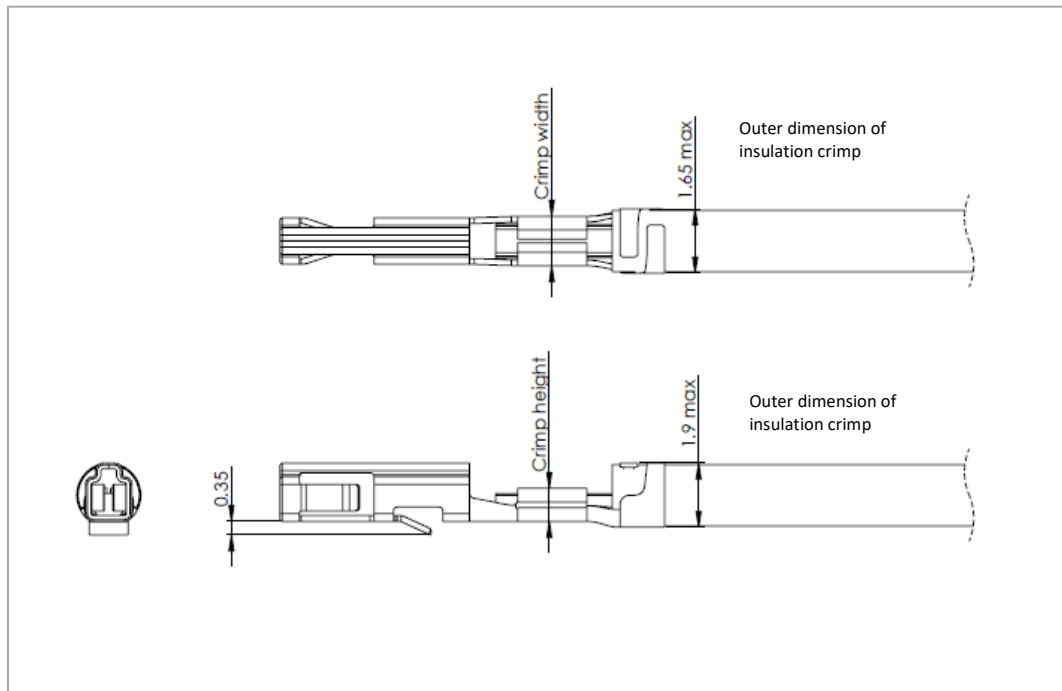
1. AWG 22: 50 N min (USCAR-21)
2. AWG 24: 28 N min (IEC 60512-16-4)

Recommended crimping dimensions

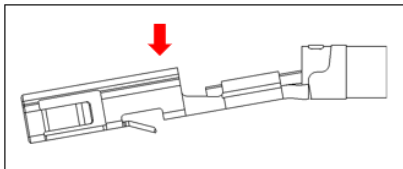


Crimping Dimensions	Conductor	
	AWG 22	AWG 24
Crimping Height	0.70 ±0.05	0.63 ±0.05
Crimping Width	1.22 ±0.03	1.22 ±0.03

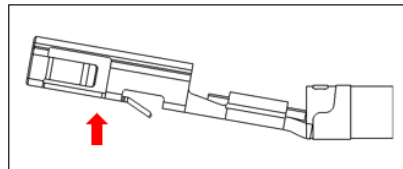




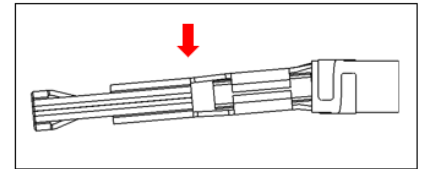
2.3.2 Common defects on crimping. Discard the crimped contact if it is damaged.



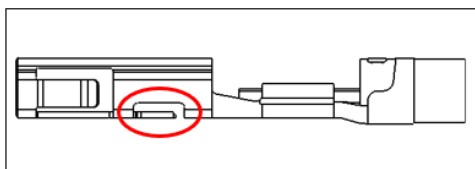
Terminal bent down



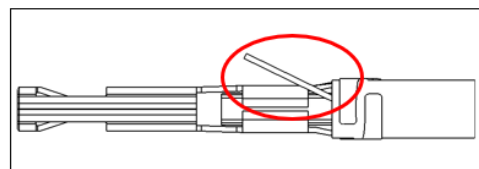
Terminal bent up



Terminal bent sideways



Primary lock lance deformed

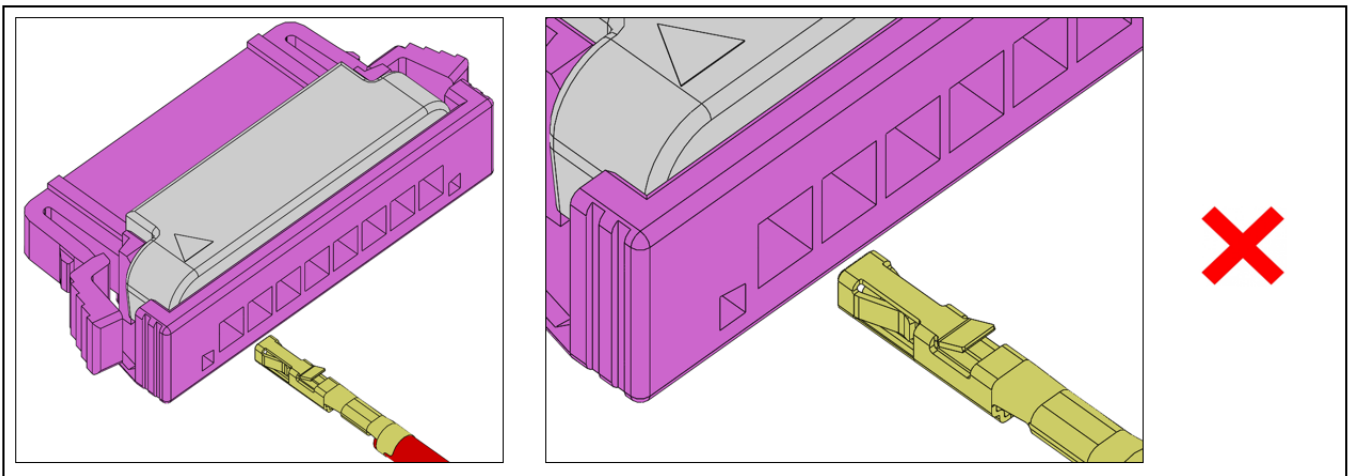
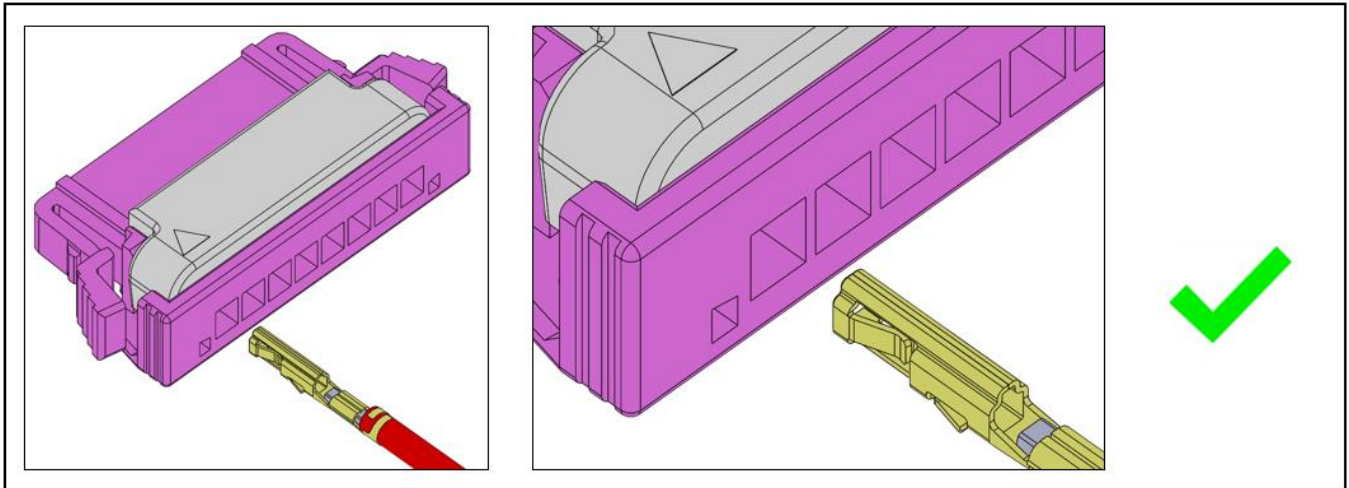


Uncrimped conductor

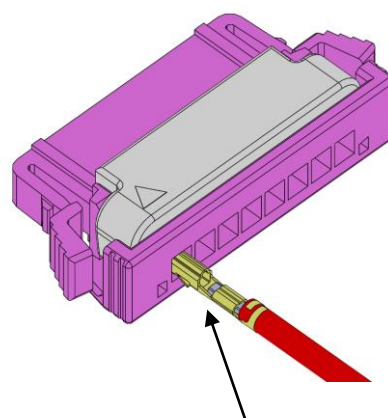
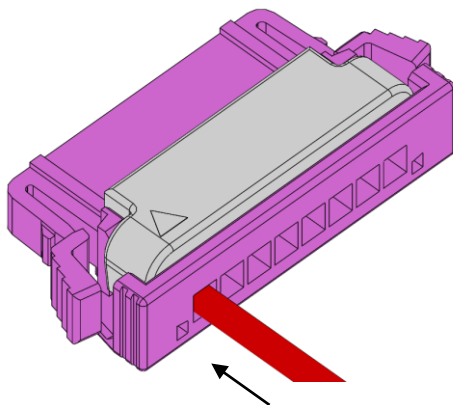


### 3. Cable Assembly

#### 3.1 Check the orientation of the contacts



#### 3.2 Insert the cable straight into the Housing

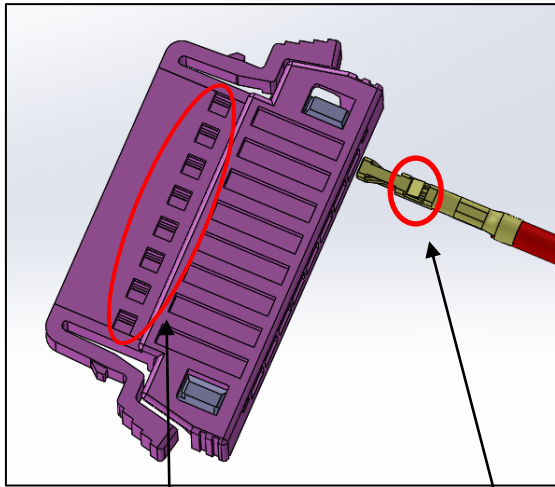


#### 3.3 Push the contact into the Housing all the way.

The crimped contact should be in-line to the Housing cavity for easy insertion

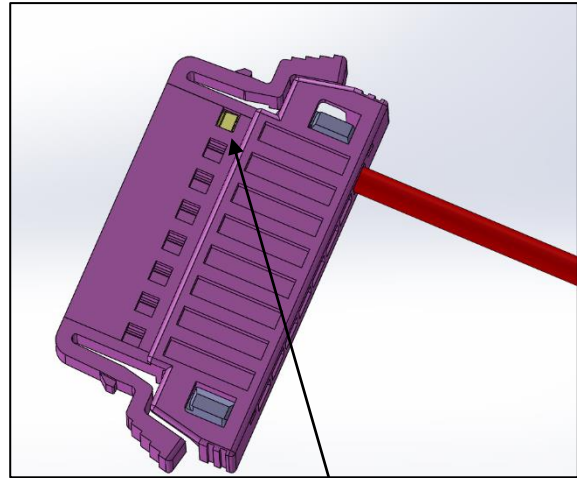
#### 3.4 Check that the Contact Primary lock lance is properly engaged.



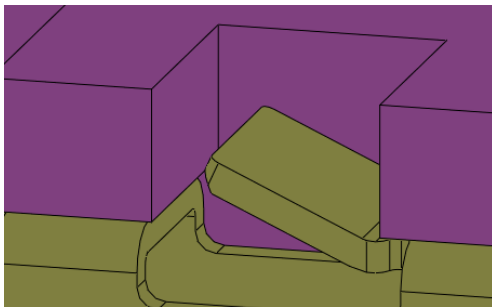


Holes for Contact lance engagement

Contact lance



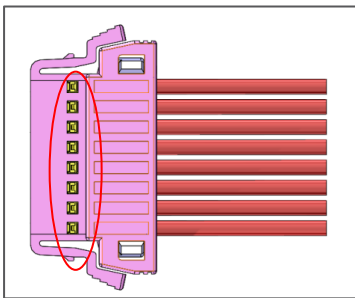
Contact Lance engaged



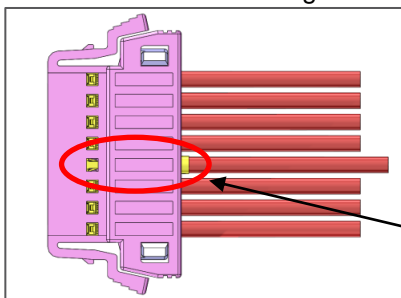
Ensure the contact lance is properly locked in the housing slot and not deformed.

3.5 Continue to assemble all the contacts in a similar way

3.6 Before pressing the Retainer down to activate the secondary lock feature, make sure the contacts are properly inserted in the correct position as shown below

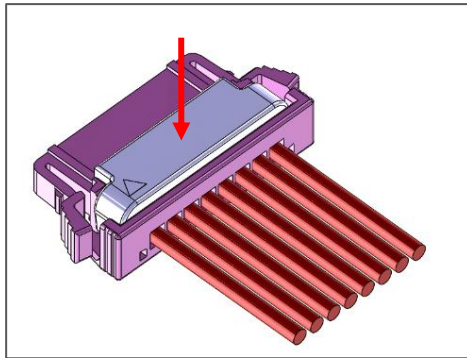


3.7 The Retainer should not be pressed down if any of the contacts are inserted wrongly or not fully inserted as shown in the figure below.



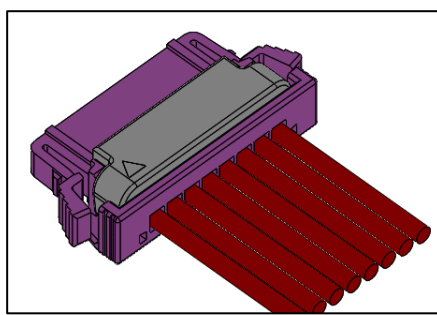
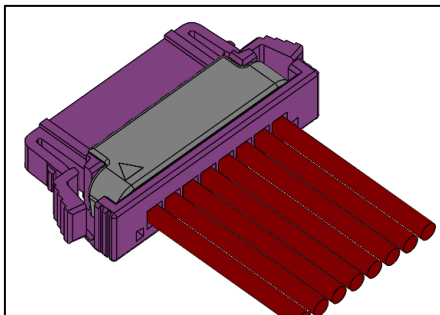
3.8 Once all the contacts are properly inserted in the correct position, press down the Retainer to activate Secondary lock feature.



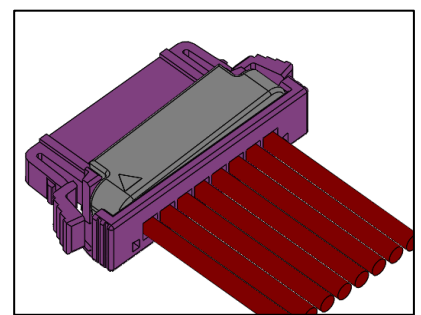


#### 4. Assembled part

##### 4.1 Full locked conditions



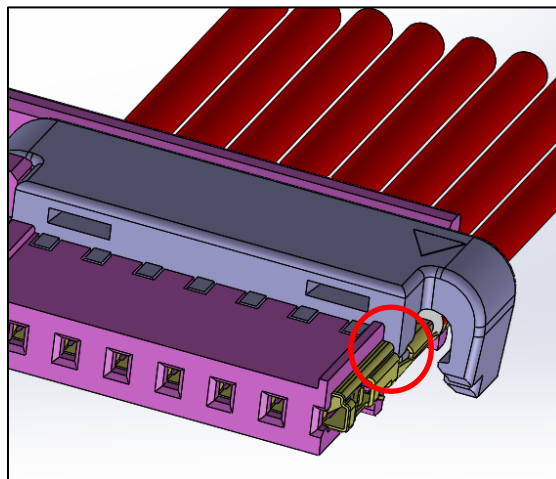
Not pressed



Pressed one side only

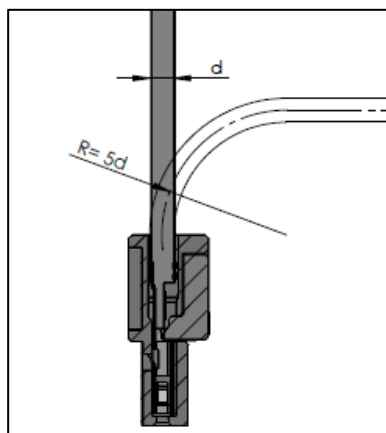


4.2 When the Retainer is fully pressed it will lock the contact in position.



4.3 For the laying of the cable above the female connector, the recommended bending radius is 5 times the cable diameter.





#### 4.4 Final Assembly Dimensions

