
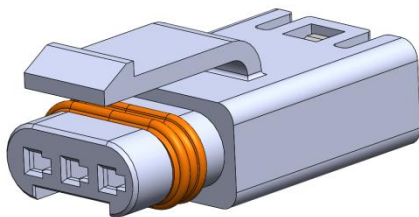


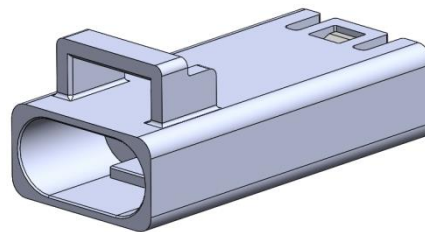
|   |  |  |                          |
|---|--|--|--------------------------|
| NUMBER<br><b>S6147C</b>                                       | CATEGORY<br><b>Application Specification</b> |  |                          |
| TITLE<br>FLH Series<br>Mini Sealed Connectors<br>2.5 mm pitch |  | ISSUED BY<br>Shan Mugan  | REVISION<br>1.5          |
|   |  | APPROVED BY<br>Adrian Green  | DATE<br>January 24, 2019 |
|   |  | CLASSIFICATION<br>Unrestricted   |                          |

## 1. Overview

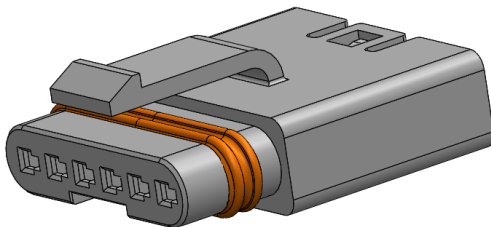
This Application Specification covers the application requirements for the mini sealed 2.5 mm pitch connectors. The pin and socket connector housings come with all the seals in place, without the contacts assembled. The wires are crimped to the contacts as needed and inserted into the housing. The connectors are sealed in the mated condition.



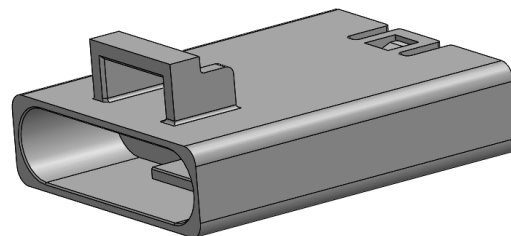
**2 or 3 Socket Connector**



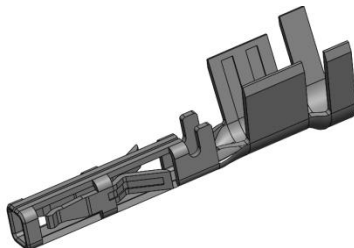
**2 or 3 Pin Connector**



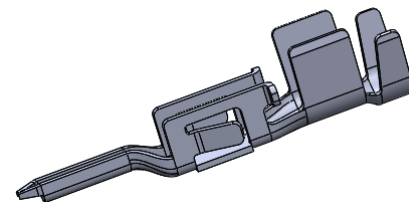
**4 or 6 Socket Connector**



**4 or 6 Pin Connector**




**Socket Contact**



**Pin Contact**

## 2. Drawing Numbers

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|   |  |  |                          |
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P-FLH-PX1-00      Pin housing assembly  
 P-FLH-SX1-00      Socket housing assembly  
 P-FLH-PC136-XXX   Pin contact  
 P-FLH-SC136-XXX   Socket contact

### 3. Product Specification Number

S6145C – FLH Mini sealed connectors 2.5 mm pitch

### 4. Wire

Wire Specification (Suggested)

UL Type: AWM 11028; 105°C 600V

UL Type: AWM 1007/1569; 80°C /105°C 300V


UL Type: AWM 1061; 80°C 300V

Wire outer diameter range 1.5 – 1.8 mm (AWG #22 – #18)

#### Strip wire length

When wire is stripped, do not damage or cut off wire conductors.

Recommended strip wire length  $L \approx 3.1 \pm 0.10$  mm

|   |  |  |                          |
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## 5. Crimping

### 5.1 Crimp height and width to be controlled based on different wire sizes

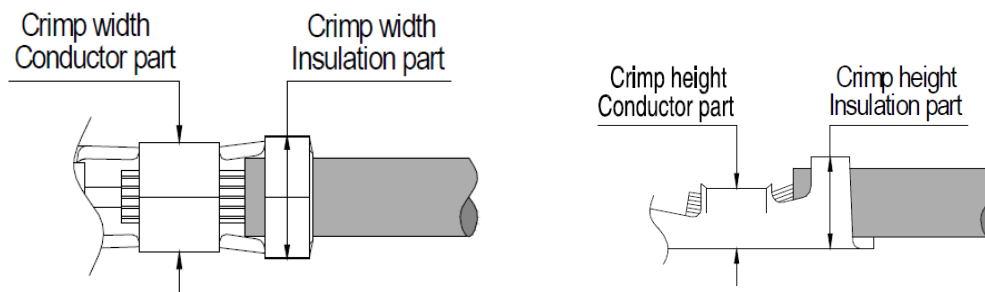



Table of crimp width and height in mm, for reference only

| Wire size | Crimp width mm $\pm 0.15$ mm |                 | Crimp height mm $\pm 0.15$ mm |                 |
|-----------|------------------------------|-----------------|-------------------------------|-----------------|
|           | Conductor part               | Insulation part | Conductor part                | Insulation part |
| AWG # 18  | 1.65                         | 1.90            | 1.35                          | 1.20            |
| AWG # 20  | 1.50                         | 1.75            | 1.25                          | 1.15            |
| AWG # 22  | 1.40                         | 1.65            | 1.20                          | 1.10            |

### 5.2 Tensile strength of crimped part

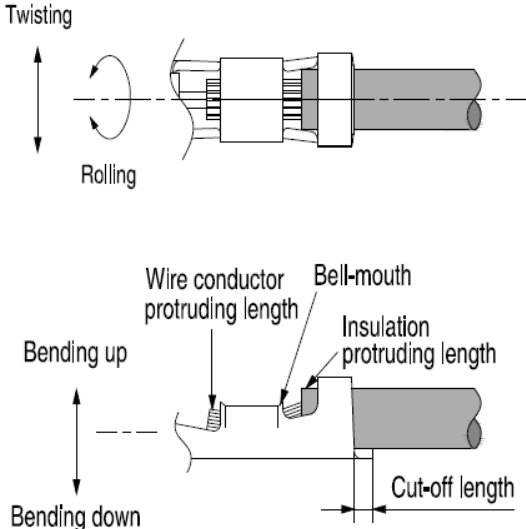
Pull test to be done to meet the following pull test of crimped joint

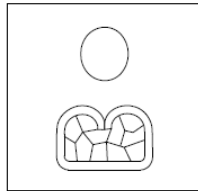
| Wire size | Minimum pull out force |             |
|-----------|------------------------|-------------|
|           | Pounds (lbs)           | Newtons (N) |
| AWG # 18  | 20                     | 89          |
| AWG # 20  | 13                     | 57.9        |
| AWG # 22  | 8                      | 35.6        |

|   |  |  |                          |
|---|--|--|--------------------------|
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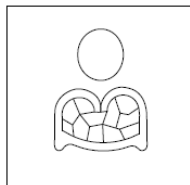
### 5.3 Crimp visual inspection

The following table may be used as a guide line

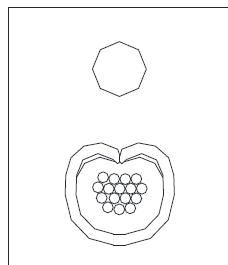
|  |              |                    |
|--|--------------|--------------------|
|  |              | For reference only |
|  | Bending up   | 3° max             |
|  | Bending down |                    |
|  | Twisting     |                    |
|  | Rolling      |                    |
|  |              |                    |




or



Good Crimp section at the conductor

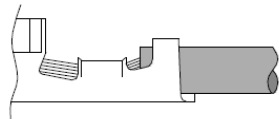


Good crimp section at the insulation

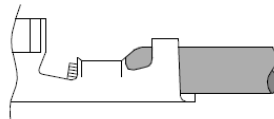
|   |  |  |                          |
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## 5.4 Examples of defective crimping

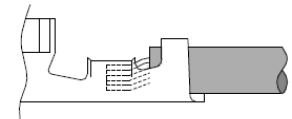
The following defects should be avoided



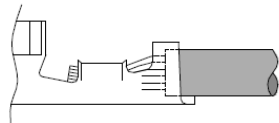
Wire conductor protruding length is long.



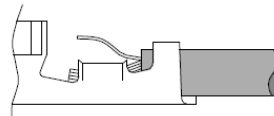
Wire barrel bites Wire insulation.



Wire conductor protruding length is short.

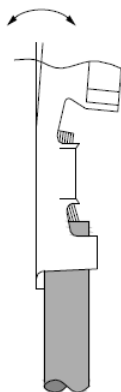


Wire insulation is not crimped sufficiently.

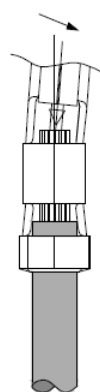


Wire conductor comes off.

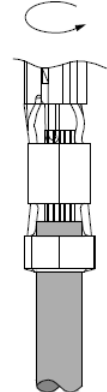
Bending up (Bending down)




Twisting



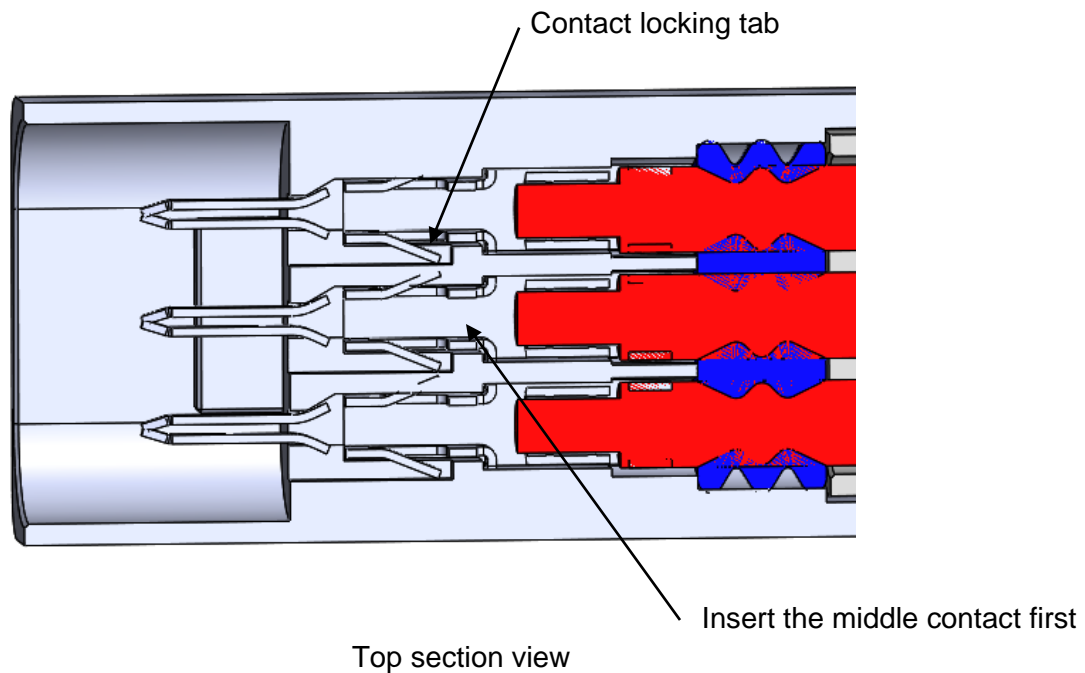
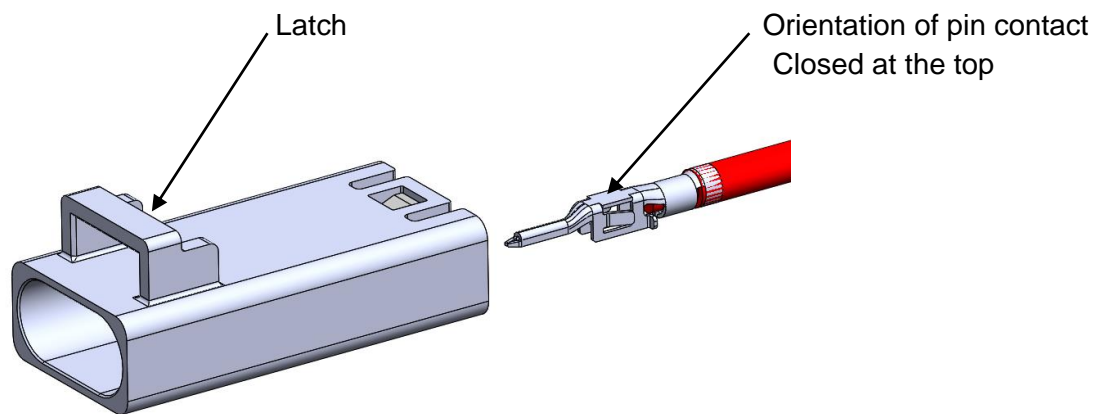
Rolling




|   |  |  |                          |
|---|--|--|--------------------------|
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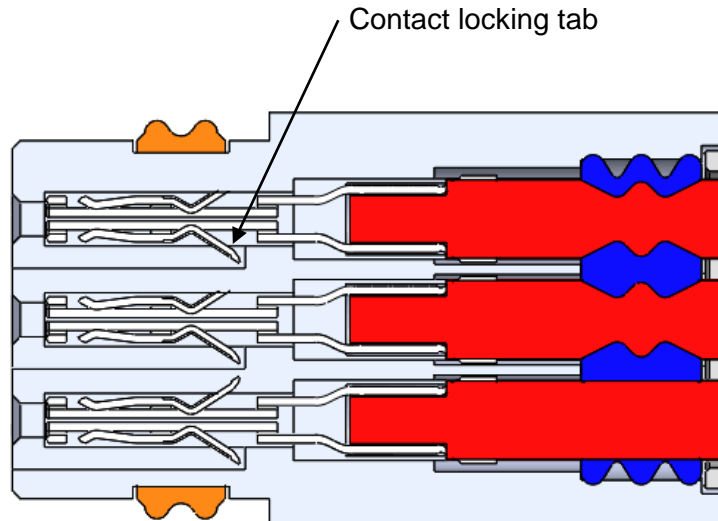
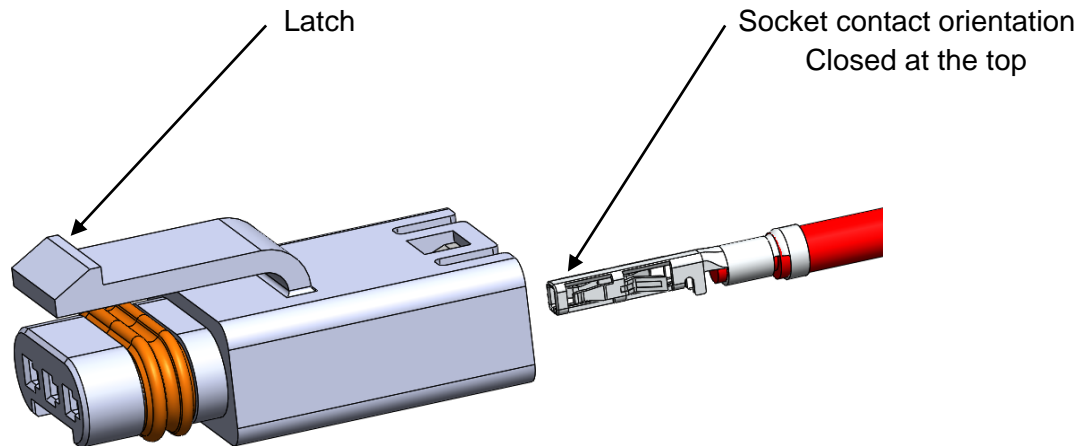
## 6. Alignment and Assembly Process

### Pin Connector




|   |  |  |                          |
|---|--|--|--------------------------|
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### Socket Connector

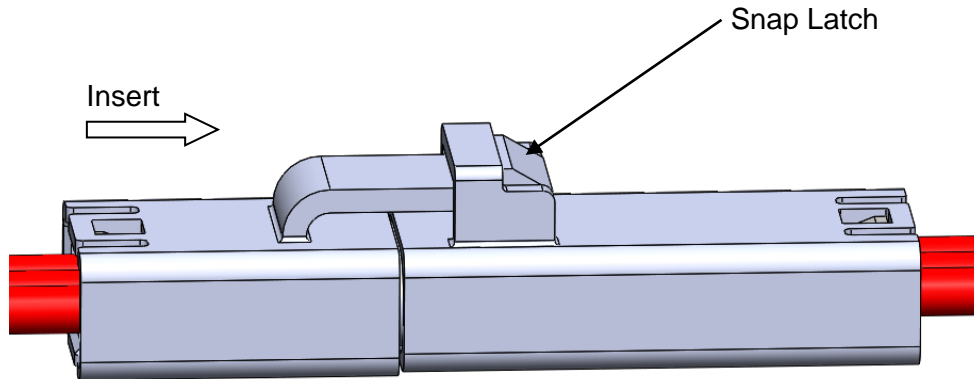


Top section view

|   |  |  |                          |
|---|--|--|--------------------------|
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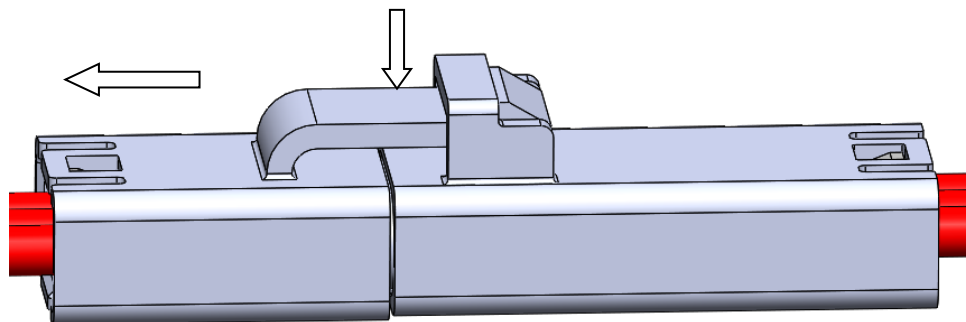
## 7. Mating and Unmating Connectors

### Mating




### Unmating

Push down the latch and pull at the same time





|   |  |  |                          |
|---|--|--|--------------------------|
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## 8. Applicator Tools

### 1- For low volume

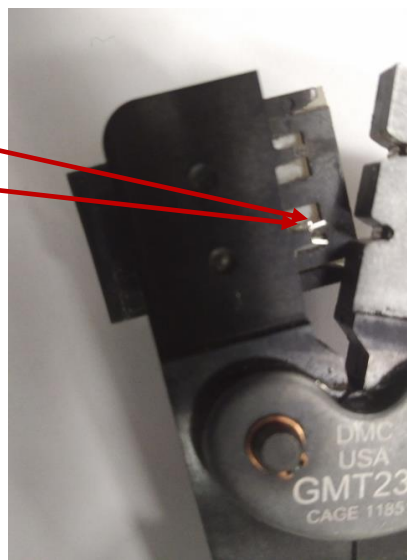
**Hand Tool:** Amphenol part number FLH-CT-0-01

Ratchet crimp tool will ensure that the crimping is complete before releases the handle

Crimp position for

AWG #22 - #18

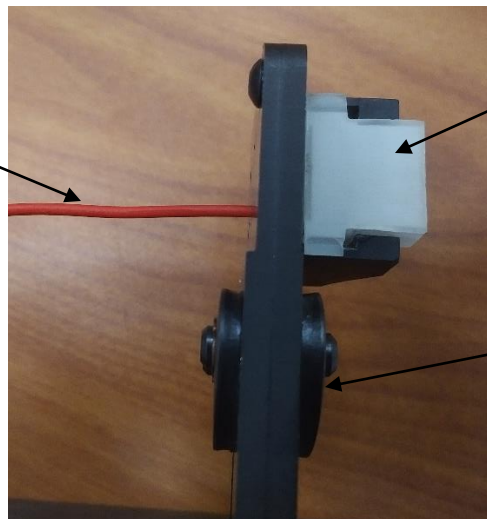
Crimp Contact




Wire

Contact locating block

Crimping tool



|   |  |  |                          |
|---|--|--|--------------------------|
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## 2- For higher volume

**Semi Automated Machine:** Amphenol Part number FLH-CT-0-02

Please contact Amphenol for more details.



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