1. SUBJECT:

This Application Specification covers application guidelines for the MICRO-FIT 3.00 mm (.118 inch) center line (pitch) wire to board, wire to wire connector system with tin and gold plating terminated with combinations of 18 to 30 AWG stranded copper wire using crimp technology.

2. PURPOSE:

Instructions to use the product correctly.

3. REFERENCE:

See the appropriate sales drawings for information on specific part numbers and materials.

4. DEFINITIO

SERIES NUMBER	DEFINITION
HT30001F	Female crimp terminal
HT30001M	Male crimp terminal
H30001F	Receptacle Housing,Dual Row
H3001F	Receptacle Housing,Single Row
H30001M	Plug Housing,Dual Row
H3001M	Plug Housing,Single Row
A30001	Header assembly,Dual Row
A3001	Header assembly,Single Row

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5. PROCEDURE:

Appearance:

- Parts conform to class "B" requirements of cosmetic specification PS-45499-002 except where noted on the sales drawings.
- There is no influence in the product performance though the black spots or bubbles etc. might be confirmed to the plastic part of this product and the shade might be different (discoloration by aged due to aging etc.).
- There is no influence of product performance with difference in color shades of receptacles and headers.

Connector Application

a) This connector system is designed to mate gold plating to gold plating OR tin plating to tin plating. Never cross mate tin plated parts to gold plated parts.
b) This connector system is not designed for current sharing (i.e., splitting one current load across multiple circuits)
c) Connectors are not to be mated or unmated while circuits are live except per the current interrupt rating listed in product specification: PS-A30001, H30001M
d) UL rating only maintained when used with HJ Bright application tooling.
e) The product was tested and qualified with HJ Bright application tooling.

Package

- The parts should remain in the original HJ Bright packaging until ready for use to prevent damage.

Chemical Exposure

- Do not store terminals or header assemblies near any chemicals listed below as they may cause corrosion in the terminal contacts.
  Alkalis Ammonia Citrates Phosphates Citrates
  Sulfur Compounds Amines Carbonates
  Nitrites Sulfur Nitrites Tartrates

Crimped Terminal Extraction

- Female terminal extraction tool: See HJ Bright part# H30001T instructions online on website. Do not reuse terminals that have been removed with the extraction tool. The receptacle housing can be reused if it was not damaged.

Minimum wire bend, cable tie or twist location

CKT SIZE		Dim T Min
	2-6	**0.50”(12.7mm)**
7	**8**	**0.70”(19.1mm)**
10	**12**	**1.00”(25.40mm)**
14	**16**	**1.25”(31.75mm)**
18	**20**	**1.50”(38.09mm)**

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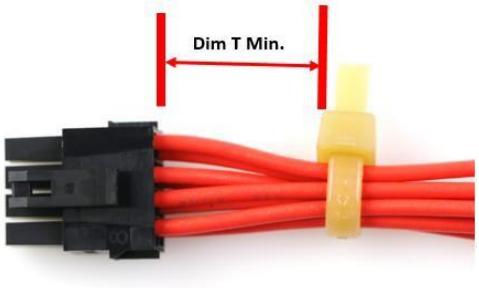

- The “T” dimension defines a “free” length of wire, or a length of wire that is not subject to significant bias by external factors such as a wire tie, wire twisting, or other means of bending or deforming of the wires that reposition them from their natural relaxed state or location where they enter the housing. This dimension is a general recommendation and may need to be adjusted for different wire gauges and wire type and insulation thickness and insulation material.
- Wires are to be dressed in such a manner to allow the terminals to float freely in the receptacle pocket.

Connector Testing

- Do not use Micro fit connectors as test parts, they are not intended to be used with repeated mating. Follow durability cycles as listed in PS-A30001, PS-H30001.

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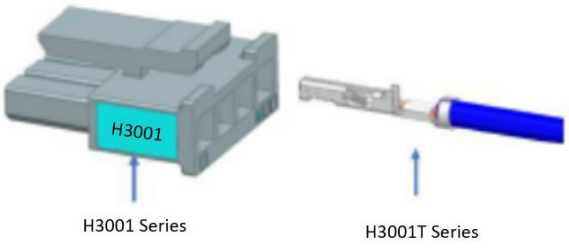
Crimped Terminal Insertion

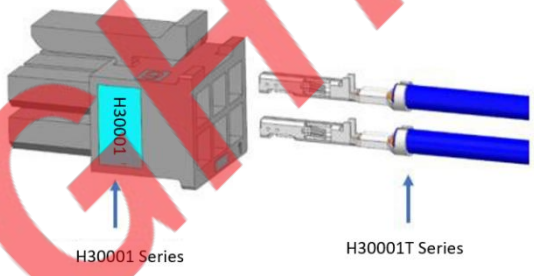
Standard Version

SERIES NUMBER	DEFINITION
HT30001F	Female crimp terminal
HT30001M	Male crimp terminal
H30001F	Receptacle Housing,Dual Row
H3001F	Receptacle Housing,Single Row
H30001M	Plug Housing,Dual Row
H3001M	Plug Housing,Single Row

- Terminals are inserted in same orientation for top and bottom row. Details refer to below pictures.
- Ensure terminals are fully seated and locked during terminal insertion to the housing.



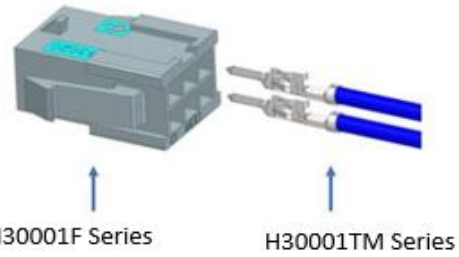
Single Row Receptacle –
Terminal position into the housing



Dual Row Receptacle –
Terminal position into the housi



Single Row Plug –



Dual Row Plug –

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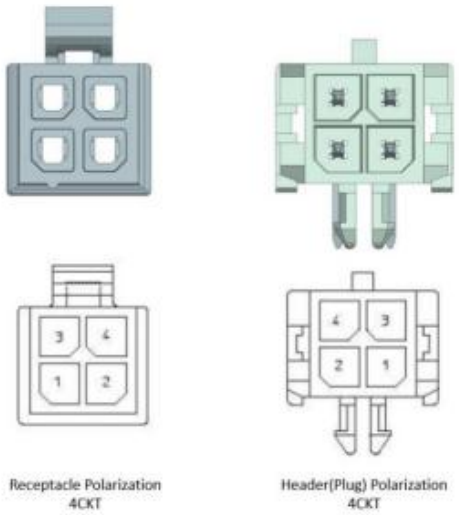
Connector Mating Process:

1. Align connector polarization keying features on both the Receptacle and Header (Plug) connector assemblies.

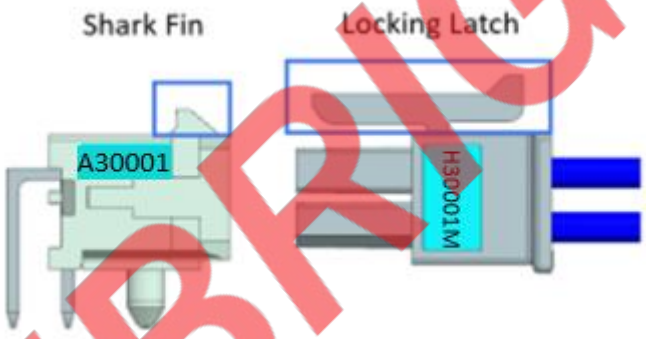
Below pictures shows 4 circuits as example. Please refer Product Specification for more circuit polarization

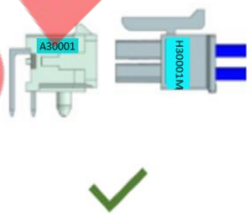
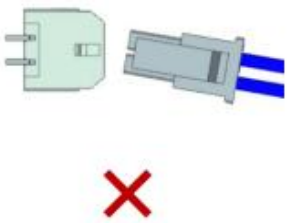
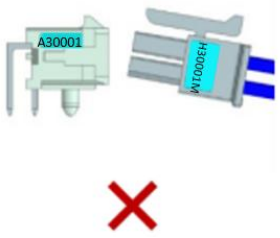


2. Per-Mating

Ensure the Receptacle connector locking latch aligns with the shark fin on the Header (Plug) connector.

And avoid tilting between Receptacle and Header (Plug)



pre mat ing	correct		Incorrect	
				

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REVISION DESCRIPTION				MICRO FIT APPLICATION SPEC			
CHANGE NO.	8321445						
REVISED BY	ZIXUAQ	DATE	2024/08/20	DOC TYPE	DOC TYPE DESCRIPTION	DOC PART	SERIES
REV APPR BY	XQZHANG	DATE	2025/11/21	PS	APPLICATION SPECIFICATION WORD	000	30001
INITIAL RELEASE				CUSTOMER	DOCUMENT NUMBER	REVISION	SHEET
INITIAL DRWN	ZIXUAQ	DATE	2024/02/05		A30001	A1	5 OF 11
INITIAL APPR	XQZHANG	DATE	2024/06/05				

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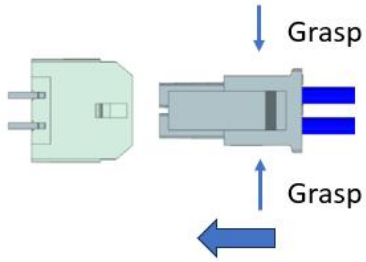
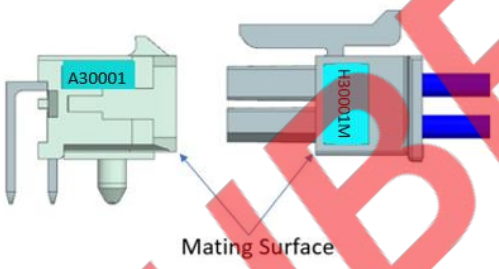
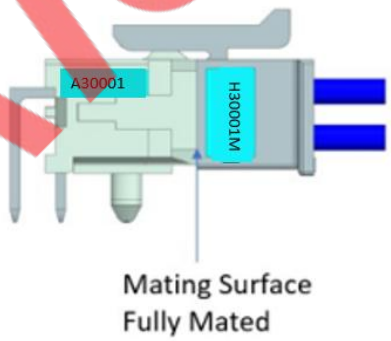
3. During mating and Post-mating

a) Begin the mating procedure by sliding the Receptacle and Header (Plug) connector assemblies together and press firmly until fully mated.

b) When mating, please do not push positive lock of receptacle housing. It prevents the lock part of correct movement, and it might damage by being applied excessive load or might leave half-mating.

c) Please push receptacle housing and insert it straightly until they touch each other. If you cannot insert smoothly, please insert again after confirming if there is no transformation of terminal and receptacle housing etc.

During mating		Grasp both sides of Receptacle and push into the Header (Plug),Not touch cable as possible as you can. Generally, 'Click' sound can be header during push.
Post-mating		

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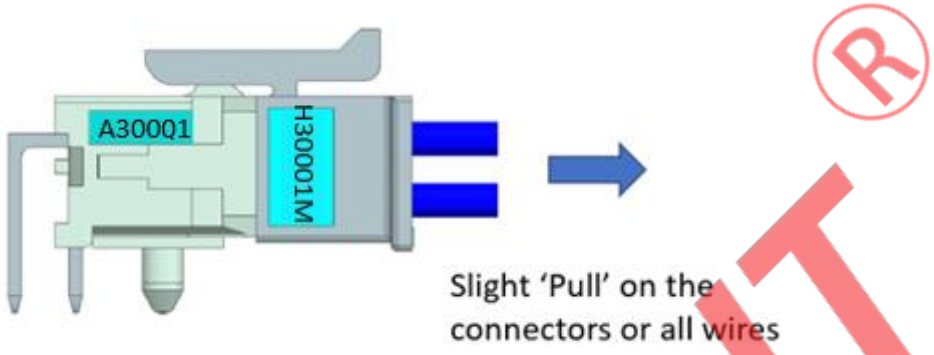
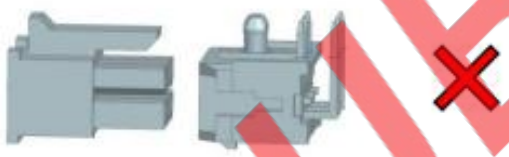
4. Inspection

a) After insertion, please confirm not to come off connectors lightly (about 2～3 N). When pulling wires, you should not to apply the force to particular wire.

b) Additionally, please confirm visually that the lock release position of receptacle housing returns to original position. If not, it might be incompletion mating. Please withdraw the connector according to un-mating instructions and check the terminals that have transformation.



- Note: Do not attempt to mate wrong polarization parts. This can cause physical failure (Cracks/stubbing/ excessive mating -unmating force) of the parts. Such parts must not be

	**Incorrect Rotate 90-degree mating:** The Polarization feature resists the mating. However, with excessive force, the parts will mate, causing the header housing to
	**Incorrect Rotate 180-degree mating:** The Polarization feature resists the mating. However, with excessive force, the parts will mate, causing the header housing to
	**Correct mating:** The connector halves are correctly mated within the mate force limits specified in the Product Specification.

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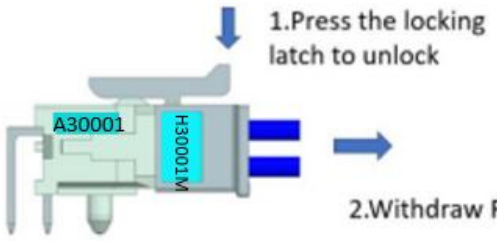
Connector Un-Mating Process:

1. During un-mating

Please hold wires all together lightly. After releasing lock completely by attaching fingers to the lock and pushing bar for releasing lock using flat part of finger, please withdraw receptacle housing slowly, axially and straightly. Please avoid withdrawing them with an angle and roughly. That might cause damage to connector.

During un-mating	

Note:

a) Please do not withdraw with holding only a few particular wires. As excessive force is applied to particular terminals, the connector might be damaged, or a terminal might come off.

b) When withdrawing, please release the lock completely. This product has the structure of connector coming off prevention that depends on positive lock. If you pull off it by force, without the lock releases incompletely, the connector might damage.

Inspection wire after mating

- If you plan on pulling around wires inside machine, please take measures to prevent force from applying to connectors directly, such as allowing wires to have enough flexibility. (Fig.O)
- When pulling wires around inside actual machine, please do not use under the condition that wires are bent excessively or tension is added. That might be reason for terminal to be pulled out because force is added to terminal crimping zone or terminal insertion portion of receptacle by wire tension. Especially, please prevent force from being applied to only a few particular wires. (Fig.X)
- If force is added to one particular wire, wire(crimp terminal) might be pulled off.
- Wire routing inside customer's device needs to avoid excessive stress. Please avoid pulling them toward more than two directions. (Fig.X)

If you plan on special wiring inside customer's device, please contact us before using. (FigX.)

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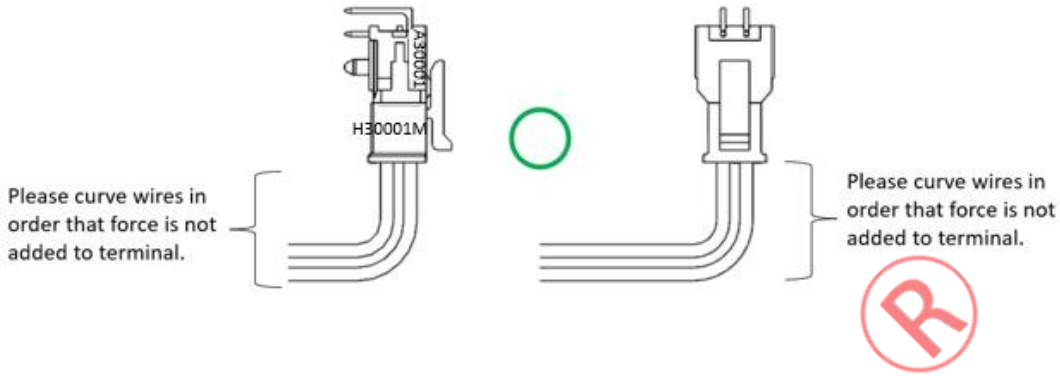

Fig O. Condition wires are curved



Fig X. Condition wires are bent excessively, or tension is added.

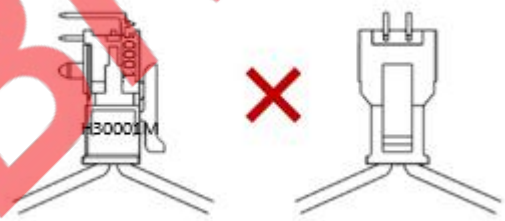

Fig X. Wiring toward more than 2 directions.

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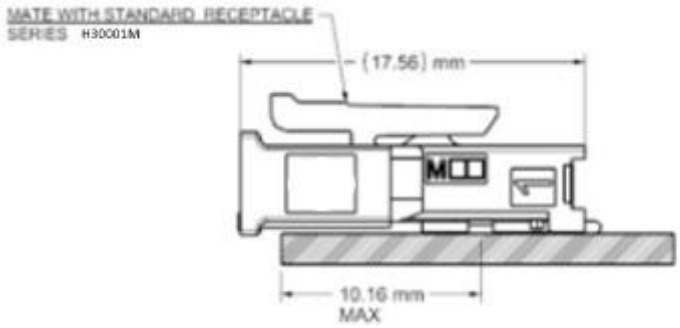
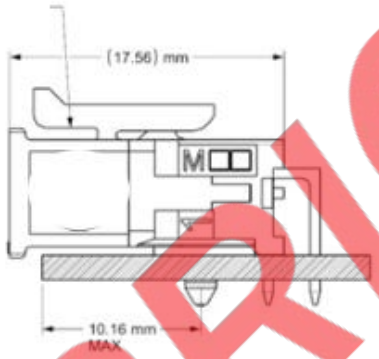
Header location on the PCB

- Please refer the below picture for the distance between PCB edge and header retention structure (retention peg, clip or solder nail share the same distance, the picture use solder nail and retention peg as example).



A3001 Series mate with standard receptacle H3001M

Mate with standard receptacle A30001 series



A30001 series mate with standard receptacle H30001M

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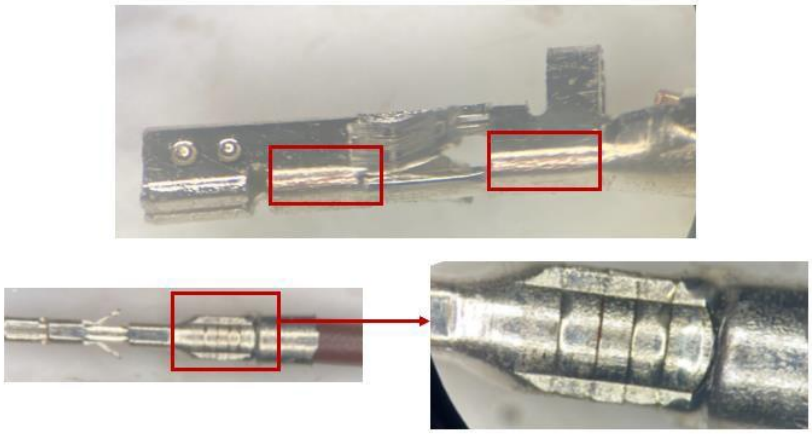
Crimp Terminal Appearance

- Forming marks on female terminal are normal. These are due to stretching of the plating during the forming process and are superficial cracks on the plating surface. Refer to cosmetic specification PS- HT30001-002.



Forming Mark

Crimp Terminal Handling

- Due to exposed terminal interface, keep crimp terminals on prepackaged reel until they are crimped onto wires. Do not precut and bulk pack terminals due to risk of damaging the contact interface. Store and handle crimped terminals so the interface does not make contact with other terminals or foreign objects. If terminal interface is damaged, please discard prior to assembly.

Crimping

- For acceptable crimp tools and specifications see application tooling section on HJ Bright.com listed for each terminal part number.
- Use with multi strand wire only. Single strand wire should not be used.
- This female crimp terminal is designed for single wire crimping only, no double wire crimping is allowed.
- Use only HJ Bright specified crimp tooling, refer to HJ Bright.com for acceptable crimp tooling. Crimped terminals must also meet HJ Bright crimp specifications. Using crimp tooling/specifications other than specified voids any product warranties and will negatively impact mechanical and electrical performance.

Header Appearance

- Discoloration in the bandolier carrier area of the pin is inherent to the plating process and is due to the masking effect of the carrier. This discoloration is in a non-functional area of the pin and will not affect the performance of the header assembly. Refer to cosmetic specification PS-A30001-002.

Solder Process Temperatures

- Wave Solder: 260°C Max
- Reflow Solder: 260°C Max

Reflow Soldering Profile

See AS-30001-53

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