YESC Kaizen 0.64 System Sealed (Cable Seal) and 28P ABS Connector User's Manual

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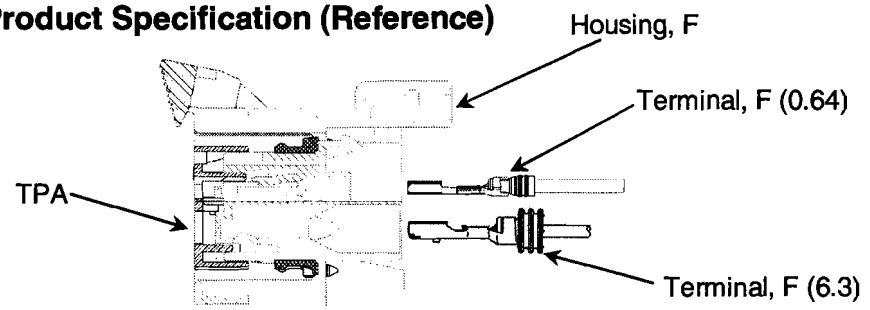
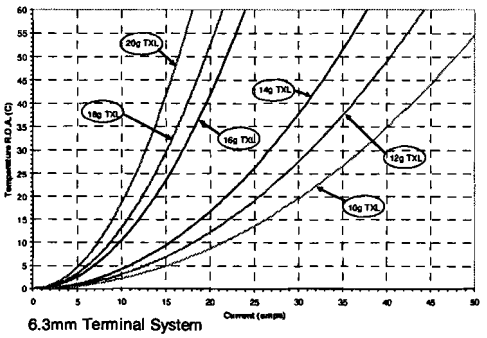
1. Product Specification (Reference)

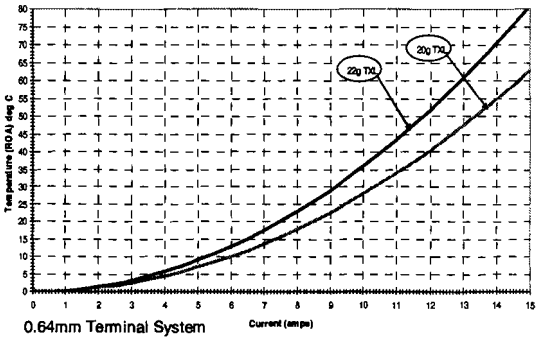


Material	Connector	PBT, 15%GF
	Fem. Terminal-0.64	Copper Alloy (Sn Plate)
	Fem. Terminal-6.3	Copper Alloy (Sn Plate)
Operating Temperature Range (Sealed)		-40C ~ 125C, 145C max temp (USCAR Class 3)
Current Capacity		See Current Rating Curve
Voltage Drop		20milli-ohms max (crimp-to-crimp)
Isolation Resistance		500VDC, 20M-ohms
Dielectric Resistance		1000VAC (1 minute)
Applicable Wire Size (Conductor) – 0.64		22-18awg TXL, 20awg GXL
Applicable Wire Size (Conductor) – 6.3		20-10awg TXL, 20-12awg GXL
Applicable Wire O.D. – 0.64		1.50mm ~ 2.40mm
Applicable Wire O.D. – 6.3		1.40mm ~ 4.05mm
Sealing Performance (Air-Leak)		48KPa (Pre-Heat Soak), 28KPa (Post Heat Soak)
Terminal-to-Connector Retention		75N Minimum
Connector-to-Connector Insertion		75N Maximum (as applied to lever)
Connector-to-Connector Retention		110N Minimum

Current Rating Curve (Reference Only) - Data based on single circuit/open air evaluation, and should be used for reference purposes only. Appropriate de-rating should be considered based on specific application requirements.



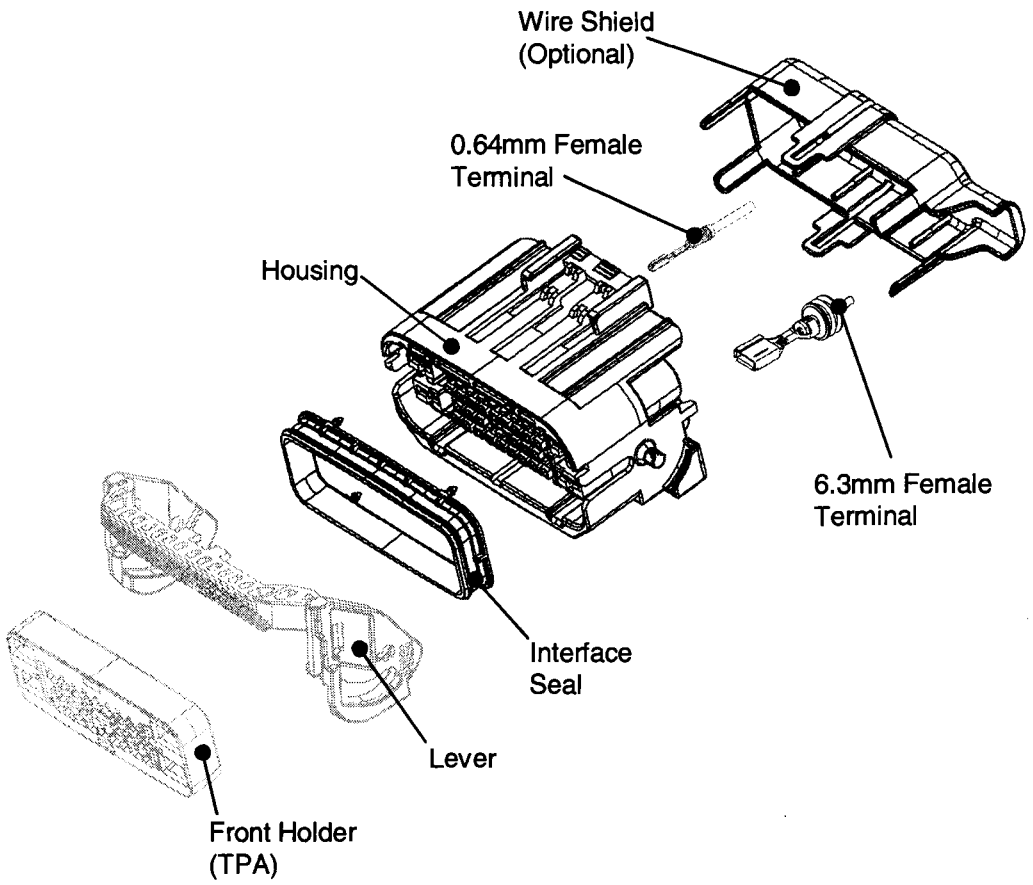
6.3mm Terminal System



0.64mm Terminal System

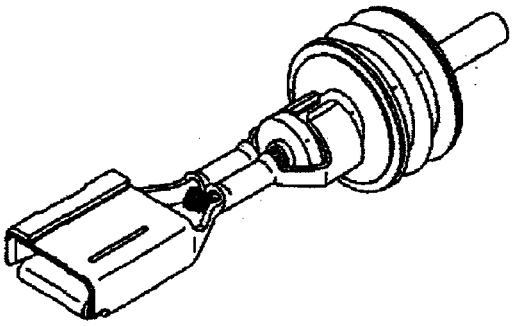
2. Associated Components

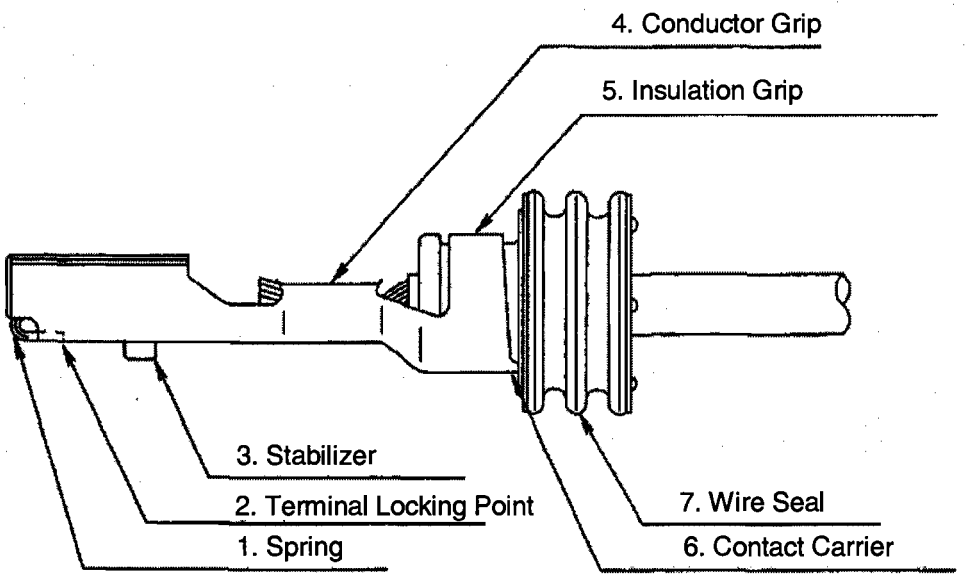
2.1. Female Connector (Sealed)



3. Components: Shape and Function

3.1. 6.3mm Female Terminal

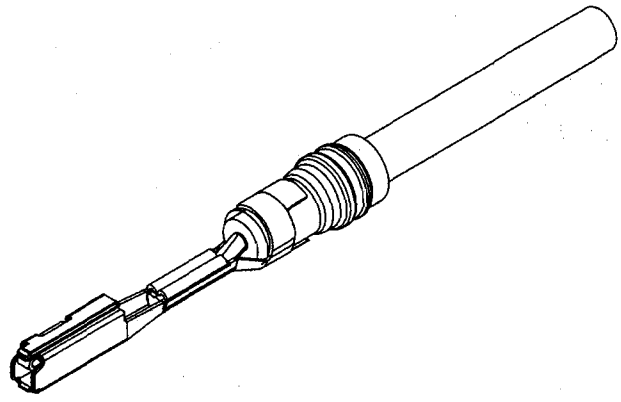


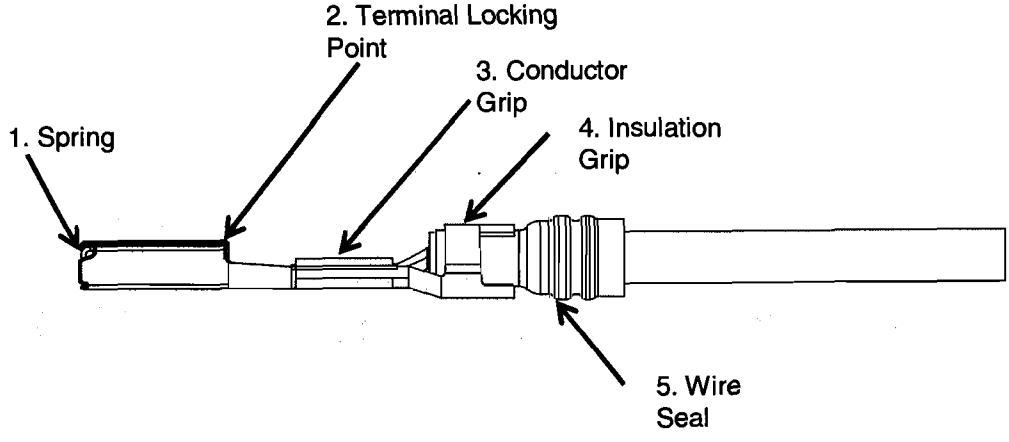


#	Feature Name	Function
1	Spring	Contact w ith male terminal
2	Terminal Locking point	Lock w ith female housing
3	Stabilizer	Prevent improper terminal insertion to housing (w rong orientation)
4	Conductor Grip	Conductor crimping
5	Insulation grip	Insulation crimping
6	Contact carrier	Joint of chained terminal
7	Wire Seal	Sealing betw een w ire and housing

3. Components: Shape and Function (Continued)

3.2. 0.64mm Female Terminal

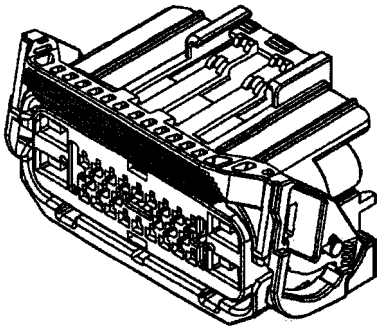


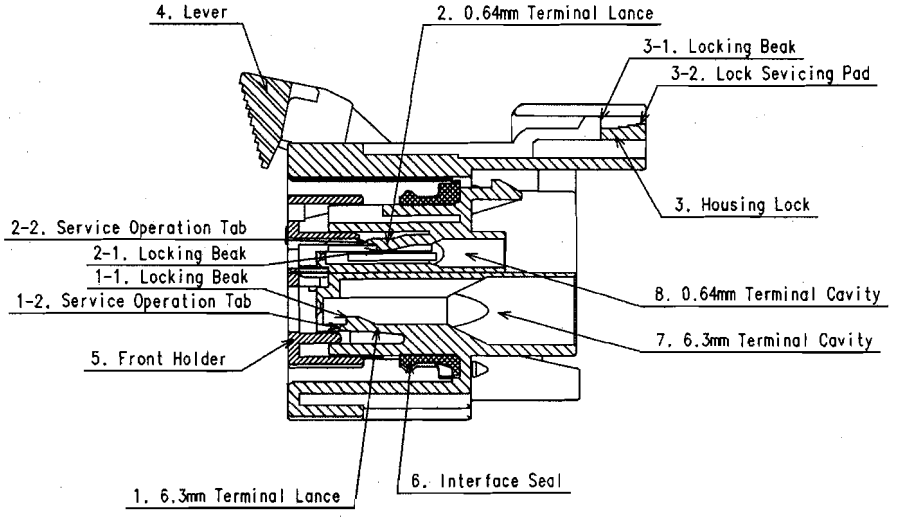


#	Feature Name	Function
1	Spring	Contact with male terminal
2	Terminal Locking Point	Lock with female housing
3	Conductor Grip	Conductor crimping
4	Insulation Grip	Insulation crimping
5	Wire Seal	Sealing Between wire and housing

3. Components: Shape and Function (Continued)

3.3. Female Connector Assembly





No.	Feature name			Function
1	6.3mm Lance	1-1	Locking Beak	Lock w ith female terminal
		1-2	Service Operation Tab	Beak releasing operation
2	0.64mm Lance	2-1	Locking Beak	Lock w ith female terminal
		2-2	Service Operation Tab	Beak releasing operation
3	Housing Lock	3-1	Locking Beak	Lock lever in place
		3-2	Lock Servicing Pad	Release housing lock
4	Lever			Aid in mating to interface
5	Front Holder			Detection of terminal incomplete-insertion
6	Interface Seal			Sealing betw een interface and female housi
7	6.3mm Terminal Cavity			Accommodate the 6.3mm terminal
8	0.64mm Terminal Cavity			Accommodate the 0.64mm terminal

4. Handling of Components

4.1. Receiving Inspection Items

The following items should be inspected upon receipt of the parts:

1. Terminal
    a. Appropriate Part Number
    b. Parts are free of foreign objects, cracks, deformation, burr, rust, unclean parts, peeling or any other apparent abnormalities.
    c. Parts display no apparent discoloration and/or oxidation.
    d. Entangled or loosening terminals from reel.

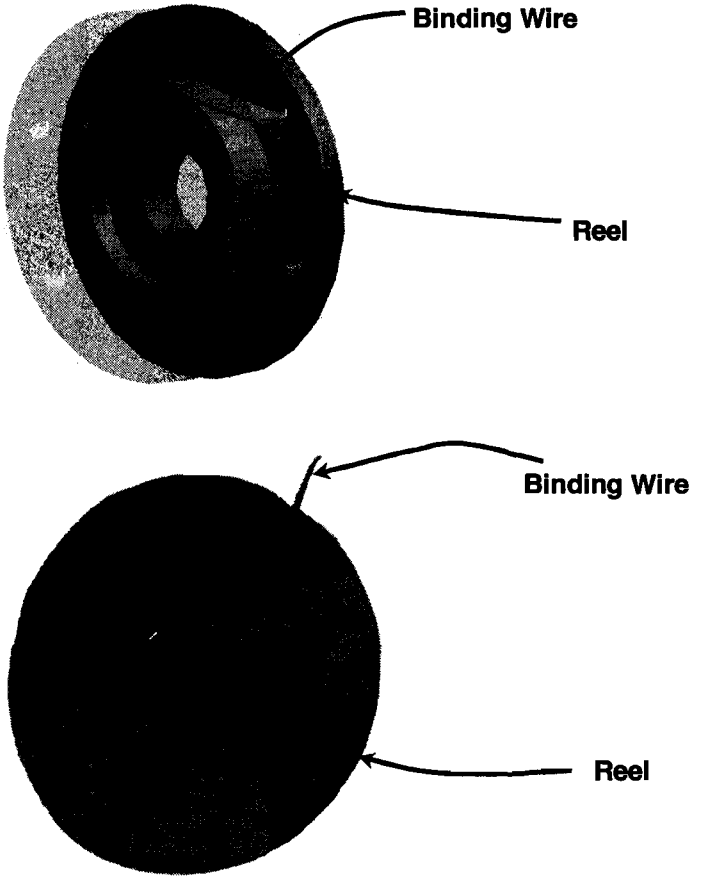
2. Other Associated Parts
    a. Appropriate Part Number
    b. Parts are free of foreign objects, cracks, deformation, or other apparent abnormalities (sink marks, short shots, etc.)

4. Handling of Components (Continued)

4.2. Transportation/Storage/Handling Precautions

The following recommendations should be followed to avoid potential deformation or damage of the product at the W/H assembly plant:

1. Terminal Specific
    a. Partially used terminal reels should have the carrier strip secured to prevent loosening, unwinding, or entanglement of the terminal product. Utilization of a 'binding wire' or some other form of stopper which would perform a similar function is recommended.

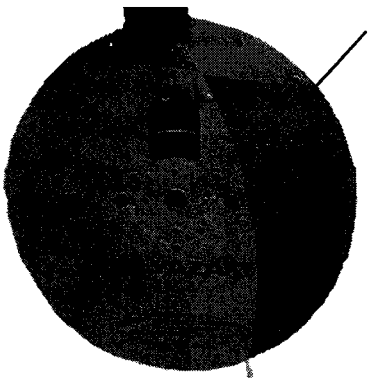


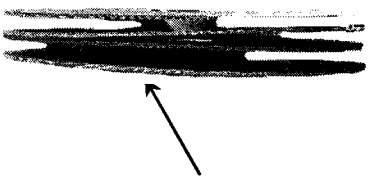
4. Handling of Components (Continued)

4.2. Transportation/Storage/Handling Precautions (Continued)

b. Terminal reels should be handled / stored in such a manner that damage to the terminal product is avoided. See below illustration. Parts wound on paper/cardboard reels may require additional care.

Recommended Practice





Maximum recommended stack height: 2 reels

Poor Practice

3 Reels stacked: not recommended

Vertical storage not recommended

4. Handling of Components (continued)

4.2. Transportation/Storage/Handling Precautions (Continued)

a. Transportation
- Paper-made reels should be handled with care to prevent damage
- Packaging configuration should prevent the impact on the components during transportation
- Care shall be taken not to deform or damage the components during packing.
- Care should be taken to avoid any harsh impact by dropping

b. Storage
- Terminals (reels) should be stored in the box in which they were shipped. Specifically, parts should be protected from water, oil, dust, and poisonous gas. Do not store in an unprotected condition.
- Terminals (reels) should be stored indoors, away from direct sunlight.
- Terminals (reels) should be stored in an area void of high temperature and humidity.

2. Female sub-assembly (including interface seal, TPA, matte seal, matte seal cover, and lever), wire seal, cavity plug, and wire shield

a. Transportation
- Packaging configuration should prevent the impact on the components during transportation.
- Care shall be taken not to deform or damage the components during packing.
- Care should be taken to avoid any harsh impact by dropping.

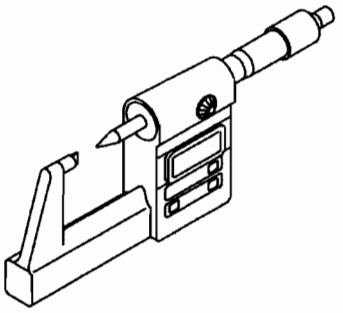
b. Storage
- Parts should be stored in the box or the plastic bag in which they were shipped. Specifically, parts should be protected from water, oil, dust, and poisonous gas. Do not store in an unprotected condition.
- Pars should be indoors, away from direct sunlight.
- Parts should be stored in an area void of high temperature and humidity

5. Terminal Crimping Specification

5.1. Measurement Equipment for Crimp Height and Width

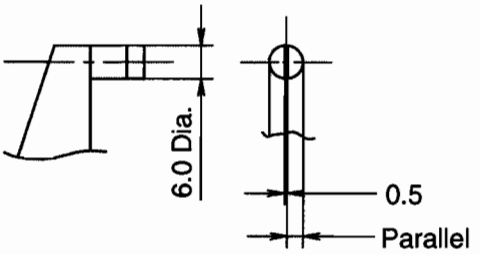
a. A stand-mounted micrometer should be used for evaluation of the CH and CW dimensions on terminated product.

b. Recommended micrometer anvil and spindles are shown below.

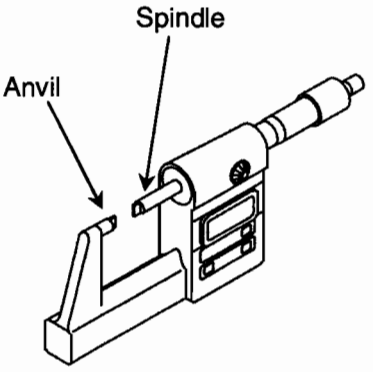


Spindle A

(Conductor Crimp Height)



Anvil / Spindle B Dimensions

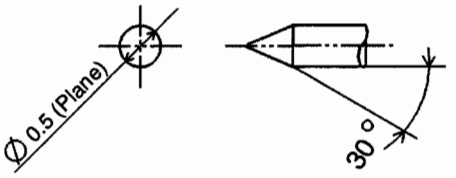


Spindle B

(Conductor Crimp Width

Insulation Crimp Height

Insulation Crimp Width)



Spindle A Dimensions

5. Terminal Crimping Specification (Continued)

5.2. 6.3mm Female Terminal

5.2.1. Crimping Standards

The below crimp specifications have been determined based on Yazaki defined Punch / Anvil Tooling Geometries. These specifications should be considered reference, in that actual performance results may vary based on specific application set-up and/or processing parameters.

The user of this product is responsible for:

1. Validation of crimp performance.
2. Establishment of crimping specifications for wire sizes not listed below.

Crimping information based on SAE TXL wire

Terminal Part Number (Applicable Seal)	Reference			Conductor		Insulation	
	Wire Size	Cond. Area	Wire O.D.	CH (+/-0.05)	CW (+/-0.1)	CH (+/0.1)	CW (+/-0.1)
7116-4140-02 (7158-3081-50)	20awg / 0.5sqmm	0.508~ 0.5812	1.40~2.30	1.3	2.6	4.5	4.55
	18awg / 0.8sqmm	0.760~ 0.83	1.40~2.30	1.4	2.6	4.7	4.55
	16awg / 1.0sqmm	1.12~ 1.267	1.40~2.30	1.55	2.6	4.8	4.55
7116-4141-02 (7158-3082-90)	14awg / 2.0sqmm	1.85~ 2.006	2.10~3.0	1.8	3.05	5.2	5.25
7116-4142-02 (7158-3083)	12awg / 3.0sqmm	2.91~ 3.163	3.0~3.8	2.05	3.65	5.8	6.15
7116-4143-02 (7158-3084-40)	10awg / 5.0sqmm	4.65~ 5.066	3.8~4.05	2.25	4.2	6.6	6.7

Wire Strip Length: 5.0 ~ 5.5

Bell-mouth Front: 0.00 ~ 0.30

Bell-Mouth Rear: 0.30 ~ 0.80

Cut-off Tab: 0.30 max.

Other:

All Dimensions: mm

Bend Up: 3 degrees max

Bend Down: 1 degrees max.

Roll/Twist: 1 degree max

Please reference the Handling Manual for YESC 6.3 System Sealed (YPES-15-300) for information regarding the 6.3mm Female Terminal

5. Terminal Crimping Specification (Continued)

5.3. 0.64mm Female Terminal

5.3.1. Crimping Standards

The below crimp specifications have been determined based on Yazaki defined Punch / Anvil Tooling Geometries. These specifications should be considered reference, in that actual performance results may vary based on specific application set-up and/or processing parameters.

The user of this product is responsible for:

1. Validation of crimp performance.
2. Establishment of crimping specifications for wire sizes not listed below.

Terminal Part Number (Applicable Seal)	Reference			Conductor		Insulation	
	Wire Size	Cond. Area	Wire O.D.	CH (+/-0.05)	CW (+/-0.05)	CH (+/0.05)	CW (+/-0.15)
7116-3703-02 (7158-3504-80)	22awg / 0.35sqmm	0.324~ 0.3643	1.50~1.90	0.85	1.40	2.50	3.05
	20awg / 0.5sqmm	0.508~ 0.5812	1.50~1.90	0.95	1.40	2.65	3.05
7116-3703-02 (7158-3505-40)	20awg / 0.5sqmm	0.508~ 0.5812	1.90~2.40	0.95	1.40	2.90	2.85
7116-3704-02 (7158-3505-40)	18awg / 0.8sqmm	0.760~ 0.83	1.90~2.40	1.10	1.60	2.75	3.00

Wire Strip Length: 5.75 ~ 6.25
Bell-mouth Front: 0.00 ~ 0.30
Bell-Mouth Rear: 0.30 ~ 0.80
Cut-off Tab: 0.30 max.
Other:
All Dimensions: mm

Bend Up: 2 degrees max
Bend Down: 2 degrees max.
Roll/Twist: 1 degree max

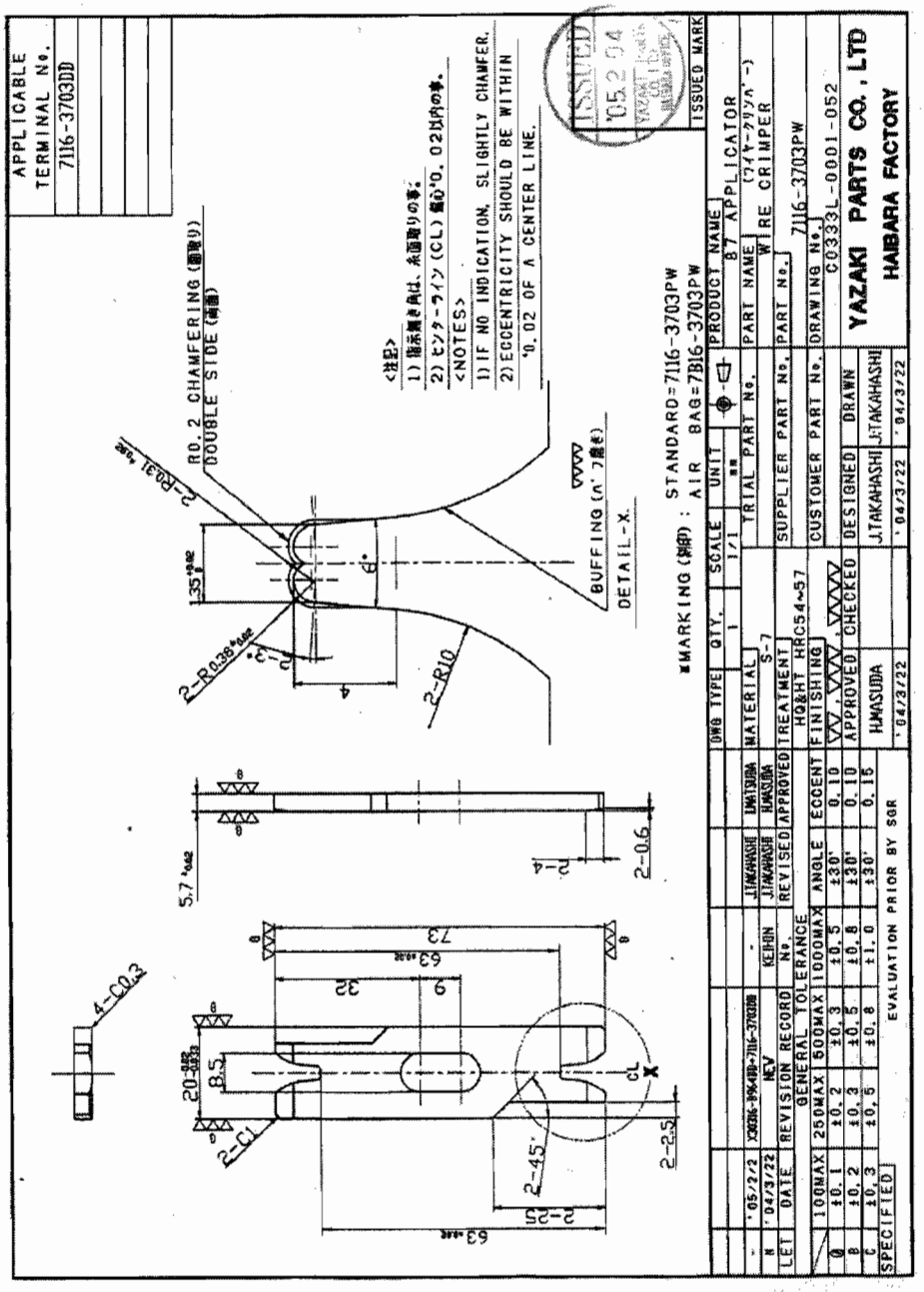
5.3.2. Crimp Tool Geometry

The crimp tool geometry shown on the following pages is representative of the tooling used for determination of the recommended crimp specifications shown in Section 5.1.

5. Terminal Crimping Specification (Continued)

5.3. 0.64mm Female Terminal (Continued)

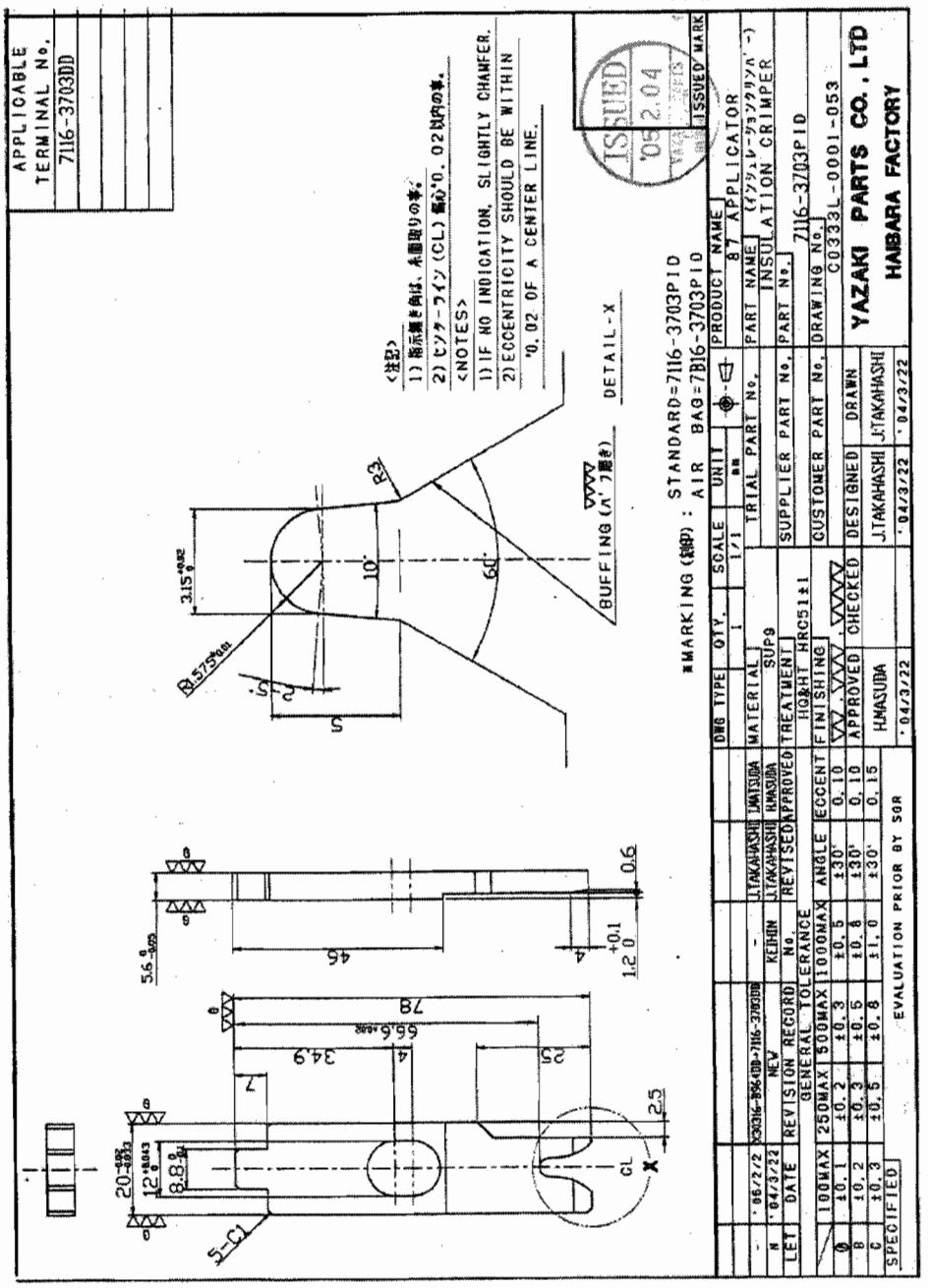
5.3.2. Crimp Tool Geometry (Continued)



5. Terminal Crimping Specification (Continued)

5.3. 0.64mm Female Terminal (Continued)

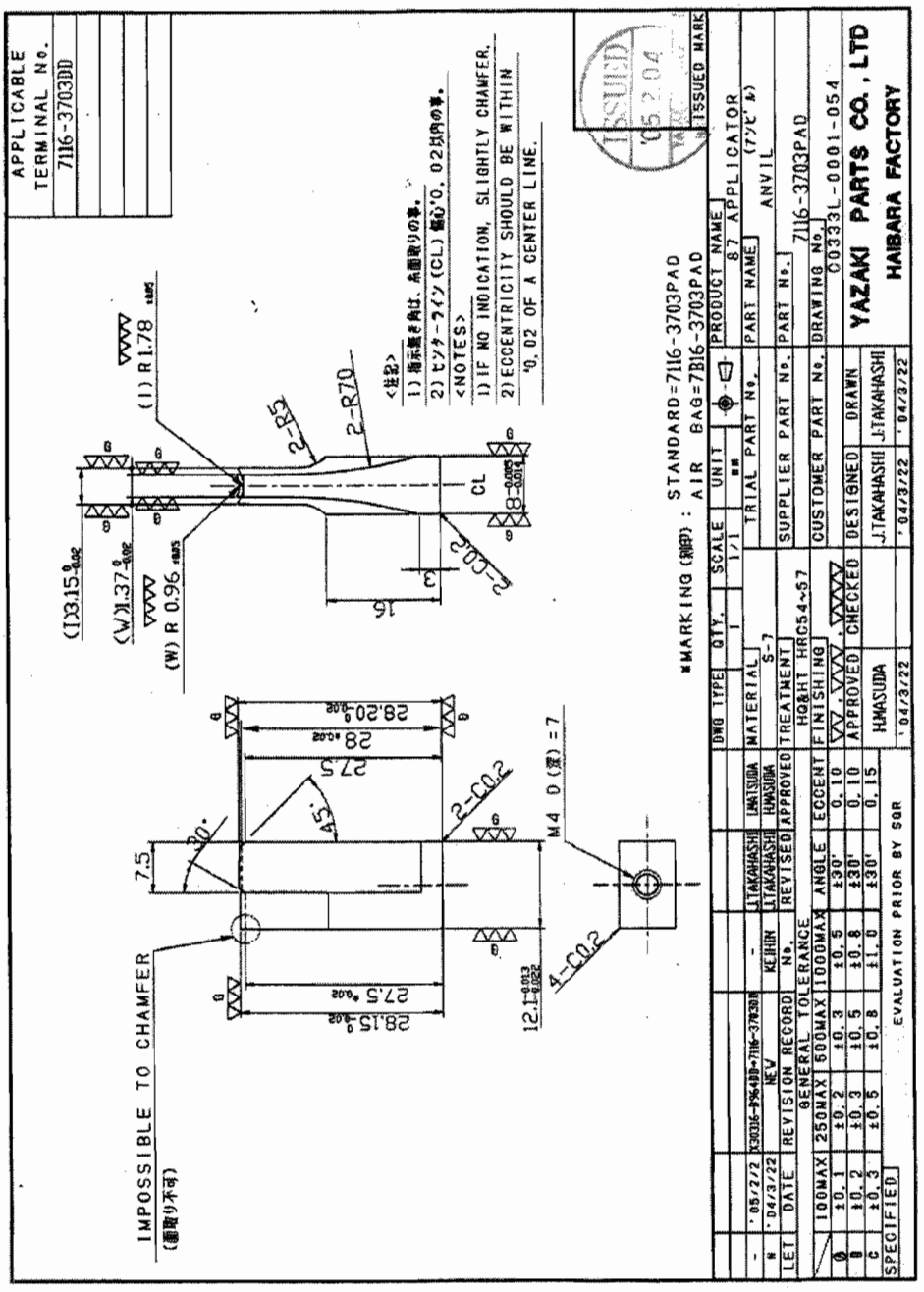
5.3.2. Crimp Tool Geometry (Continued)



5. Terminal Crimping Specification (Continued)

5.3. 0.64mm Female Terminal (Continued)

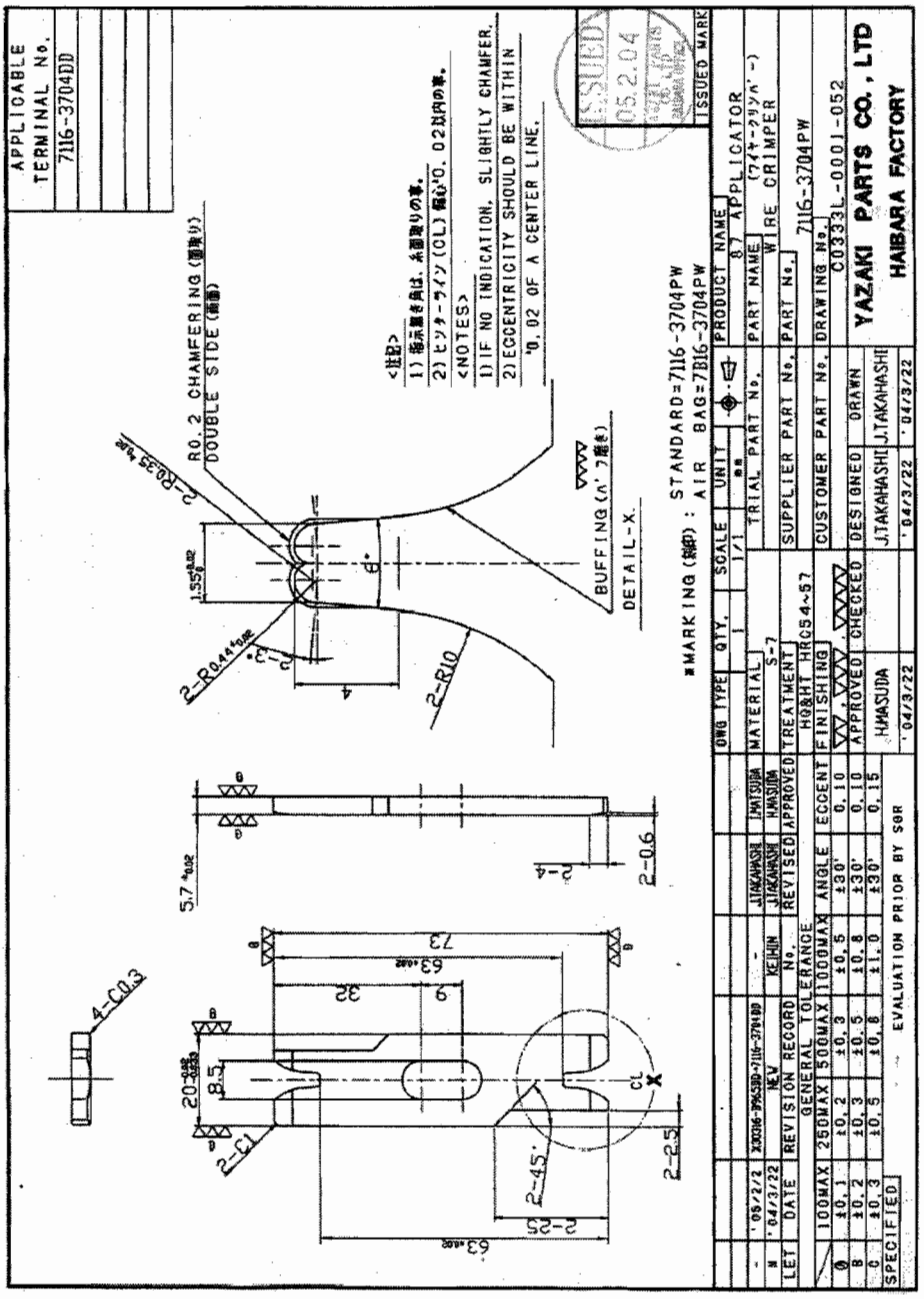
5.3.2. Crimp Tool Geometry (Continued)



5. Terminal Crimping Specification (Continued)

5.3. 0.64mm Female Terminal (Continued)

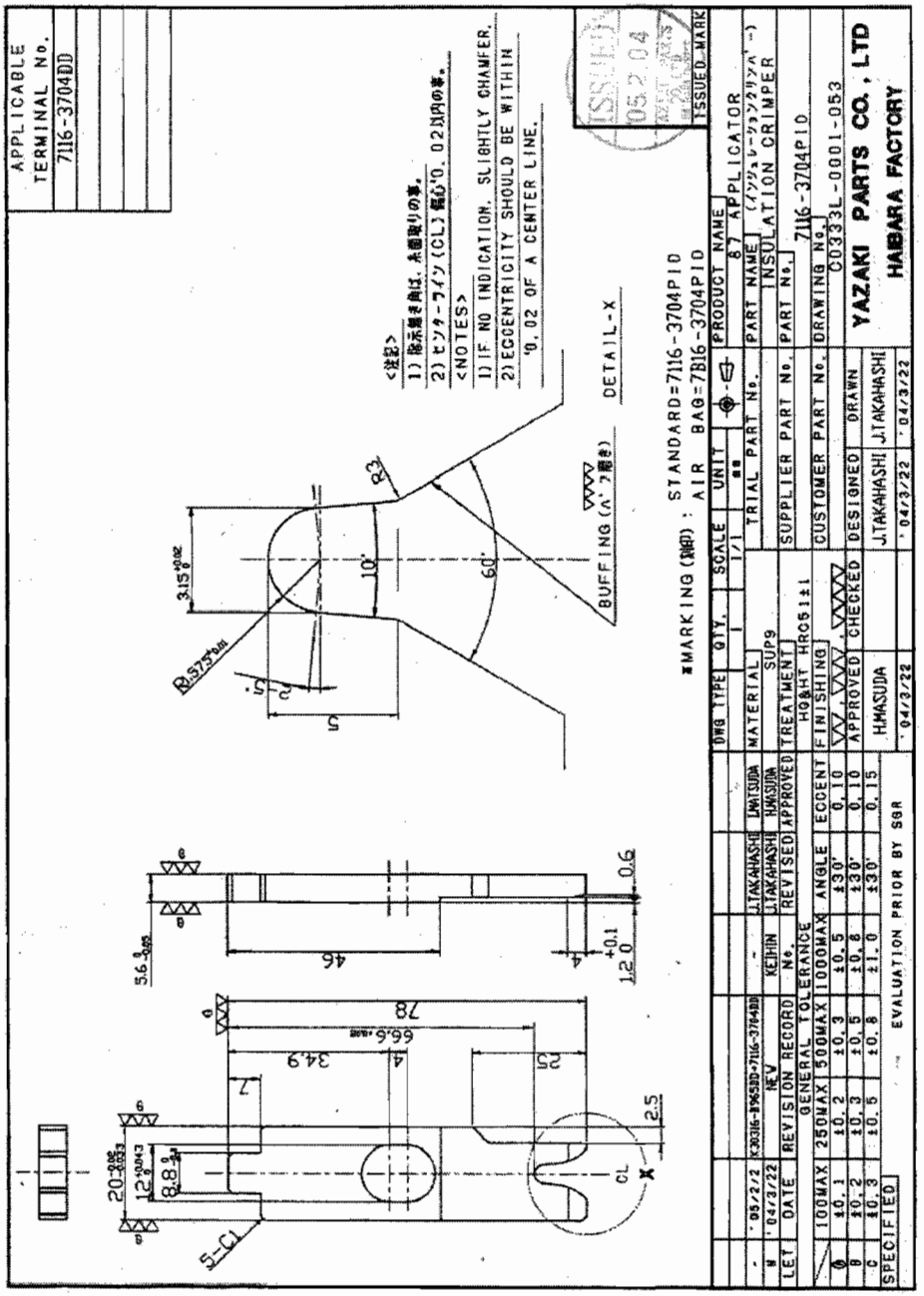
5.3.2. Crimp Tool Geometry (Continued)



5. Terminal Crimping Specification (Continued)

5.3. 0.64mm Female Terminal (Continued)

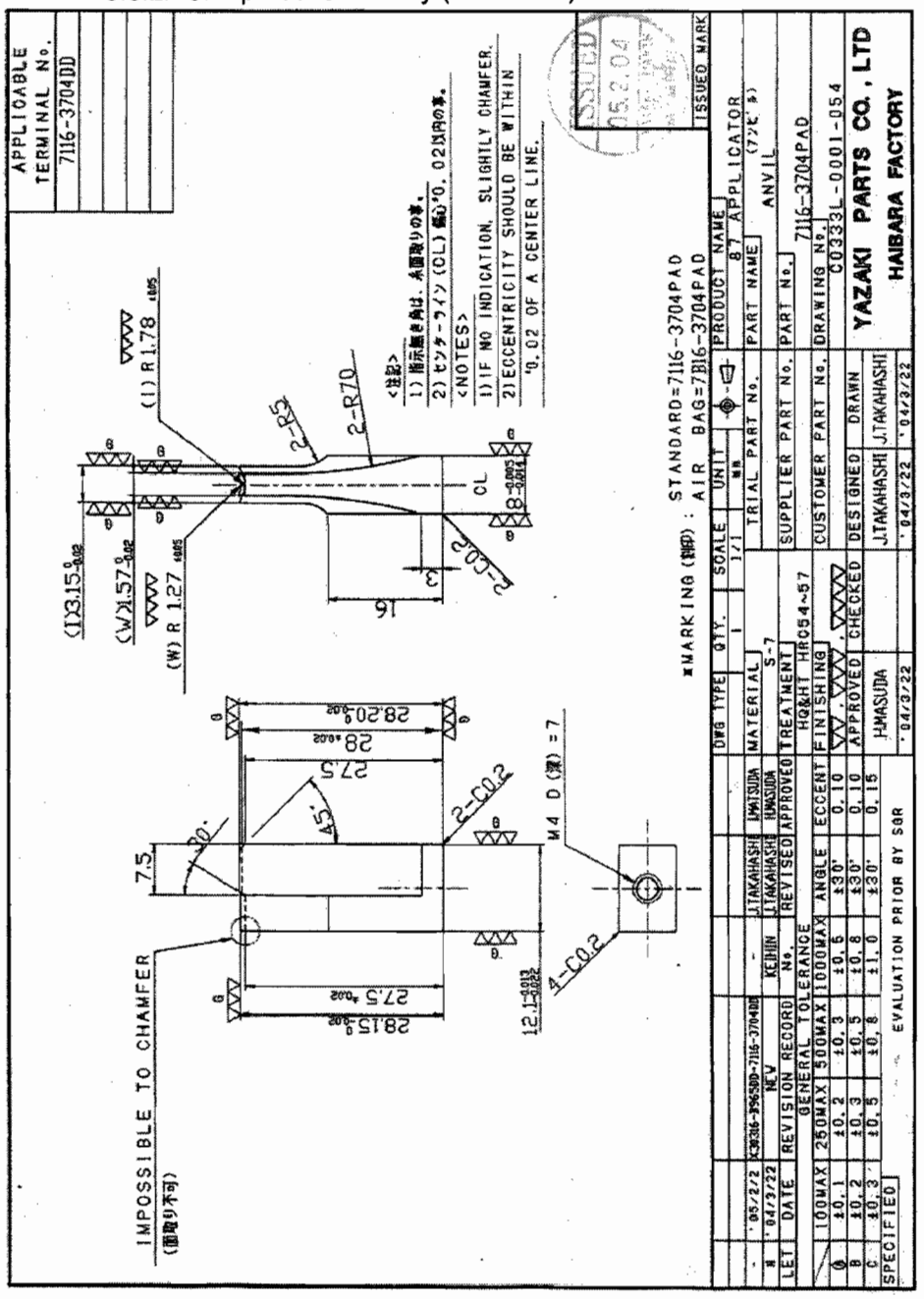
5.3.2. Crimp Tool Geometry (Continued)



5. Terminal Crimping Specification (Continued)

5.3. 0.64mm Female Terminal (Continued)

5.3.2. Crimp Tool Geometry (Continued)

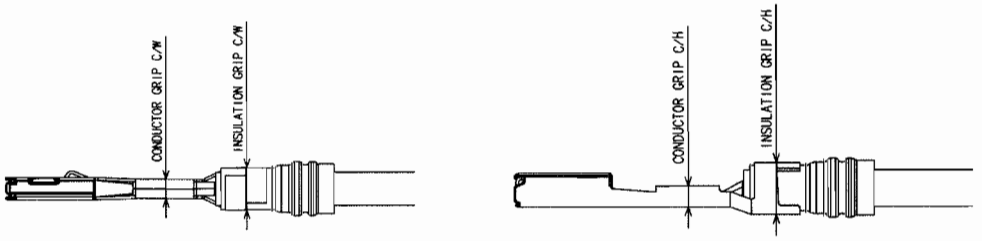


5. Terminal Crimping Specification (Continued)

5.3. 0.64mm Female Terminal (Continued)

5.3.3. Measurement method for crimp height and width

Measure the center of crimp height and width of both conductor grip and insulation grip.

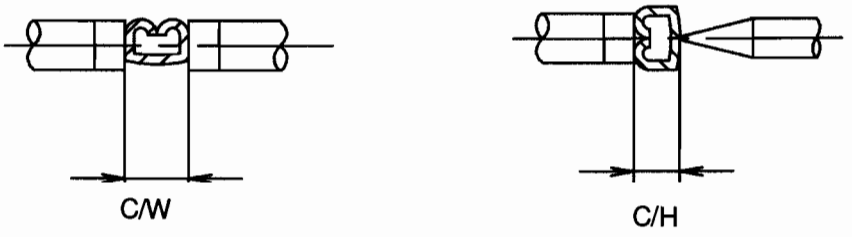


<Precaution>

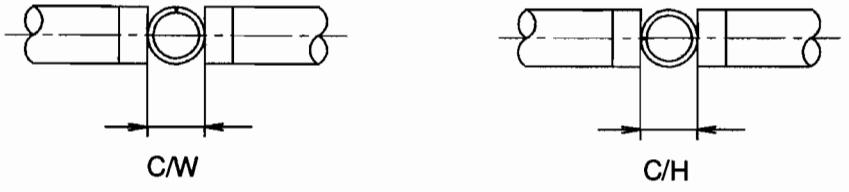
Do not measure C/H at the position where there is a difference in level.

C/H: Crimp height
C/W: Crimp width

Conductor grip: Use a micrometer and measure as shown in the illustration below.



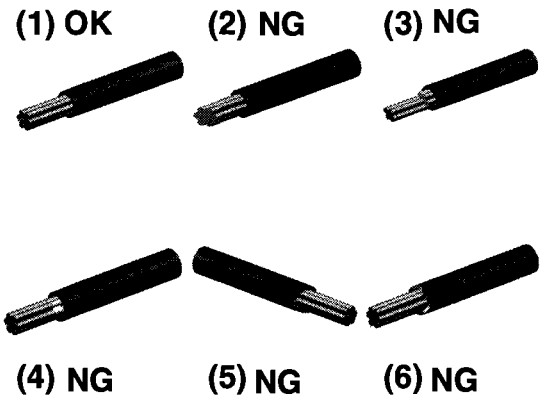
Insulation grip: Use a micrometer and measure as shown in the illustration below.



5. Terminal Crimping Specification (Continued)

5.3. 0.64mm Female Terminal (Continued)

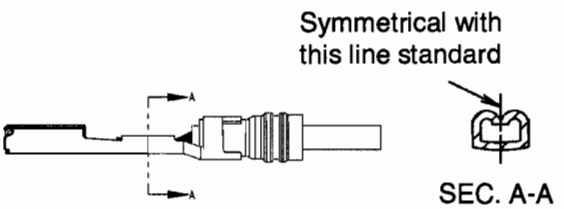
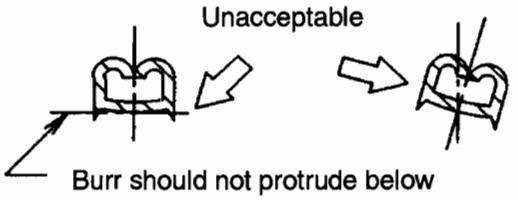
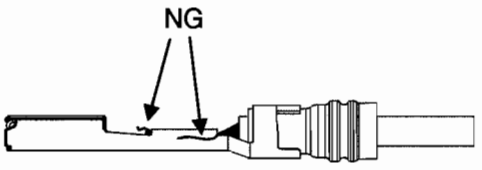
5.3.4. Crimped Product Appearance Evaluation

Attribute	Evaluation Item	
Wire	Improper / uneven cutting of conductor and/or insulation	 (1). Proper Cut (2). Improper Cut Conductor -Diagonal cut conductor (3). Improper Cut Conductor -Cut Strand(s) (4). Improper Cut Conductor -Damaged Strand(s) (5). Improper Cut Insulation -Diagonal Cut Insulation (6). Improper Cut Insulation -Damaged Insulation

5. Terminal Crimping Specification (Continued)

5.3. 0.64mm female Terminal (Continued)

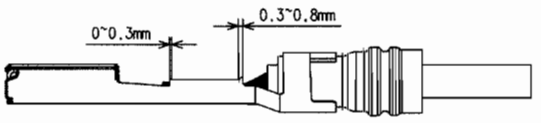
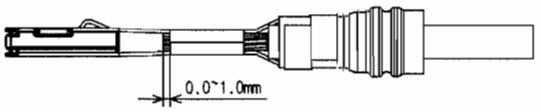
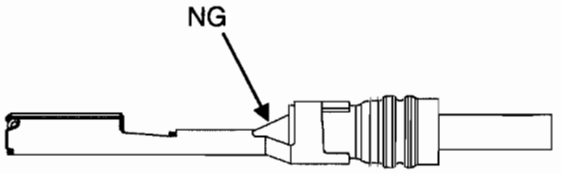
5.3.4. Crimped Product Appearance Evaluation (Continued)

Attribute	Evaluation Item	
Conductor Crimp	Normal crimping condition	
	Burr and Twist	
	Conductor fray	

5. Terminal Crimping Specification (Continued)

5.3. 0.64mm Female Terminal (Continued)

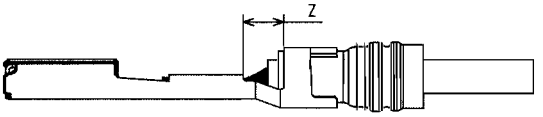
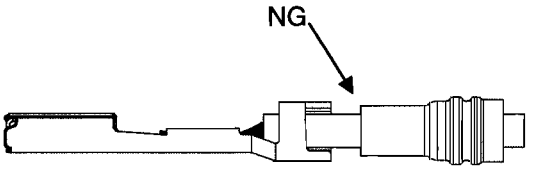
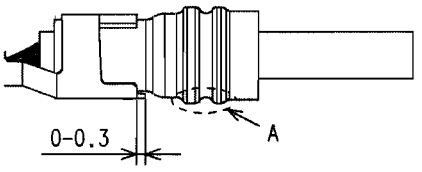
5.3.4. Crimped Product Appearance Evaluation (Continued)

Attribute	Evaluation Item	
Conductor Crimp	Bell-mouth	
	Top length of conductor	
	Insulation crimped by Conductor barrel	

5. Terminal Crimping Specification (Continued)

5.3. 0.64mm Female Terminal (Continued)

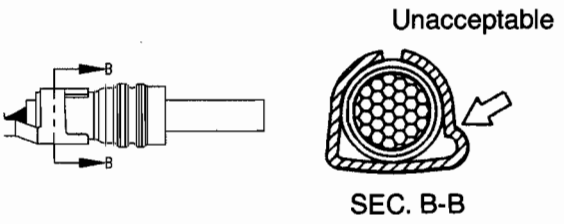
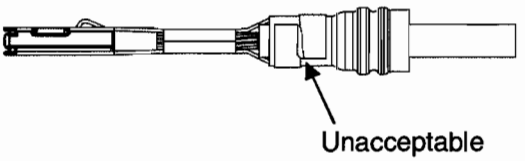
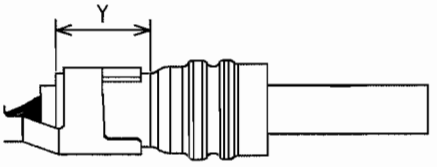
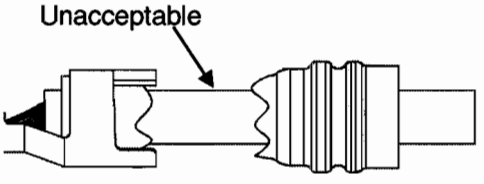
5.3.4. Crimped Product Appearance Evaluation (Continued)

Insulation Grip	Normal crimping condition	 Confirm that the wire seal lip remains in the dimension 'Z' between the wire barrel and the insulation.
	Wire seal disengage from insulation barrel	
	Cutting tab	 Confirm that the area 'A' is free of any flaws or cuts.

5. Terminal Crimping Specification (Continued)

5.3. 0.64mm Female Terminal (Continued)

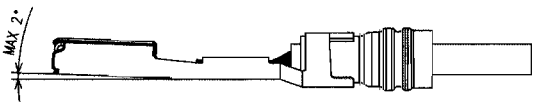
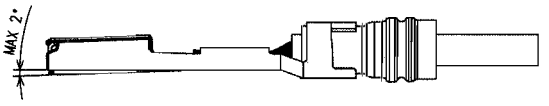
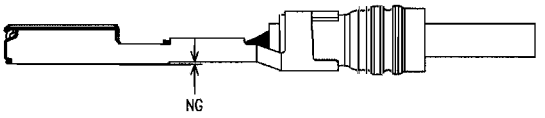
5.3.4. Crimped Product Appearance Evaluation (Continued)

Attribute	Evaluation Item	
Insulation Grip	Buckling	
	Wire Seal Pinched by Insulation Barrel	
	Wire Seal Position	 Confirm that the insulation barrel remains within the dimension "Y".
	Wire seal Scratch or Cut	 No scratch or cut is acceptable.

5. Terminal Crimping Specification (Continued)

5.3. 0.64mm Female Terminal (continued)

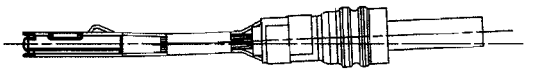
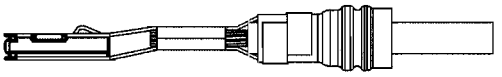
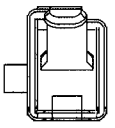
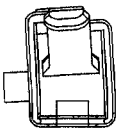
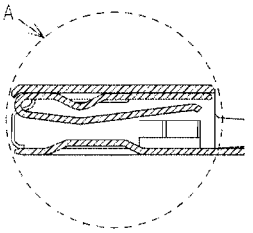
5.3.4. Crimped Product Appearance Evaluation (Continued)

Attribute	Evaluation Item	
Terminal Body Deformation	Bend-Up	
	Bend-Down	
	Step on the conductor grip	

5. Terminal Crimping Specification (Continued)

5.3. 0.64mm Female Terminal (Continued)

5.3.4. Crimped Product Appearance Evaluation (Continued)

Attribute	Evaluation Item	
Terminal Body Deformation	Twist	 Terminals with any deformation detected by visual inspection are unacceptable
	Inappropriate Terminal Feeding	Unacceptable 
	Box Deformation	 Normal Condition  Unacceptable
	Deformation of the area 'A'	 Any deformation in area 'A' is unacceptable

6. Handling of Terminated Wire Leads

To prevent damage to the terminals on the crimped wire leads, the following precautions are recommended:

a. When terminated wires are bundled, the number of wires bundled together should be less than 100. Bundles should be bound with elastic bands to prevent separation. If more than 100 wires are bundled together, they may become entangled with each other, deformation or damage may occur, or handling may become difficult due to the weight.

b. Do not tap on the tips of the terminals when they are bundled.

c. The terminated wires should be covered with a plastic bag to protect them from dust.

d. Wire bundles should be bound with elastic bands to prevent separation and potential entanglement of terminals.

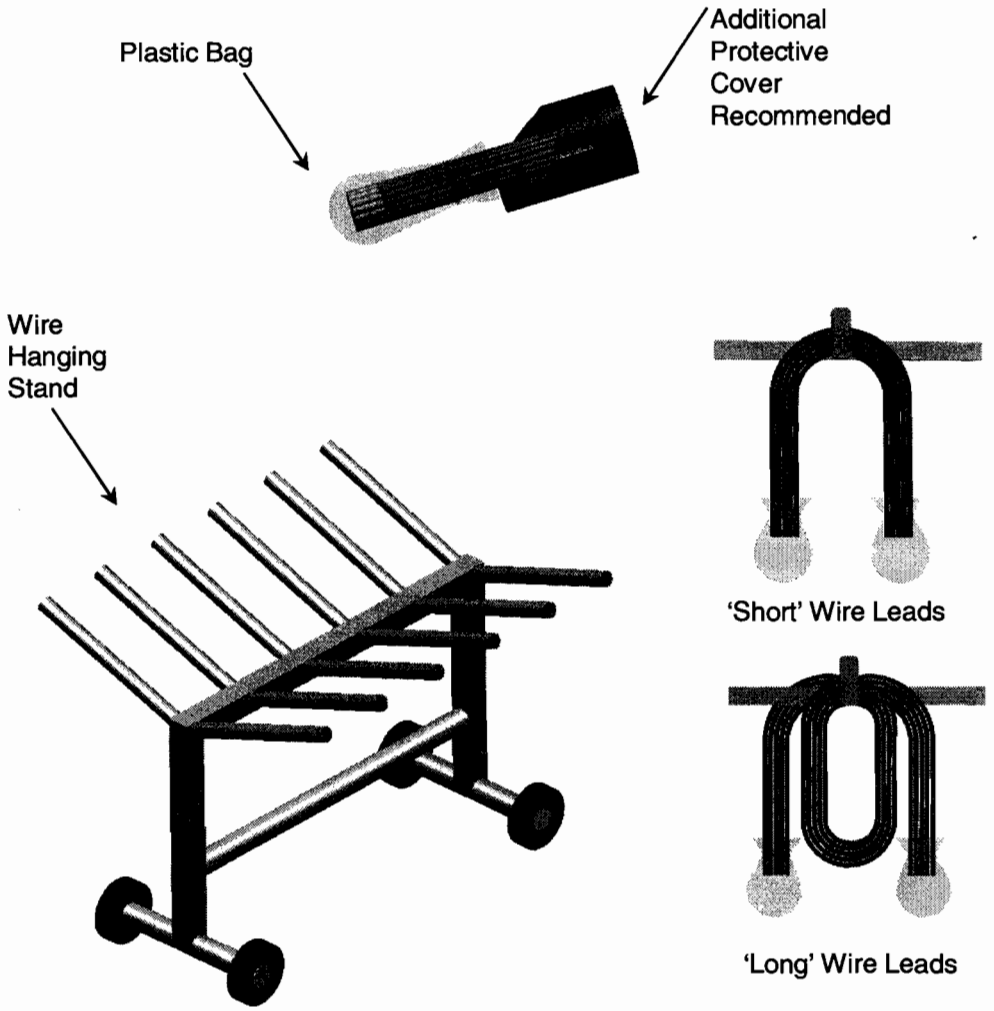
e. During transportation and storage, use a protective cover over the plastic bag to provide further protection until right before insertion into the housing. Immediate insertion of the terminated wire into the housing is strongly recommended because it can be easily deformed or damaged.

f. The terminated wires should be transported by a wire hanging stand or a covered container

g. Do not throw the terminated wires during transportation

6. Handling of Terminated Wire Leads (Continued)

Figure A
(Recommended Crimped Wire Lead Handling Illustration)



7. Connector Assembly

7.1. Female Terminal Installation to Connector

1.) Confirm the TPA is in the pre-set position. If the TPA is not in the pre-set condition, move the TPA to pre-set position before terminal insertion. (see 8.3).

2.) Confirm there is no deformation or damage to the wire seals or terminals

3.) Place the terminal and the housing as shown in Figure 7-1A below. Insert the terminal into the housing. An audible 'clicking' sound indicates that the terminal is fully locked to the housing

4.) Pull the wire lightly to confirm a secure lock.

5.) Confirm that the rear end of wire seal is inserted into the cavity

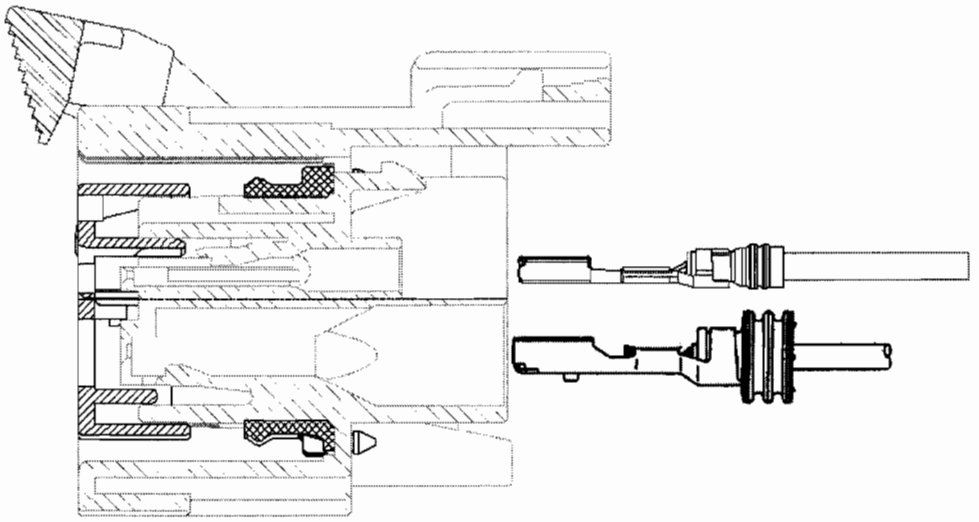


Figure 7-1A

7. Connector Assembly

7.1. Female Terminal Installation to Connector (Continued)

Note: The 0.64 terminal has a cable seal which consists of two sealing ribs followed by a "skirt" to prevent water from pooling on the back of the seal. While the skirt may protrude from the back of the cavity, both sealing ribs must be in contact with the sealing surface of the cavity as shown in Figure 7-1B, below.

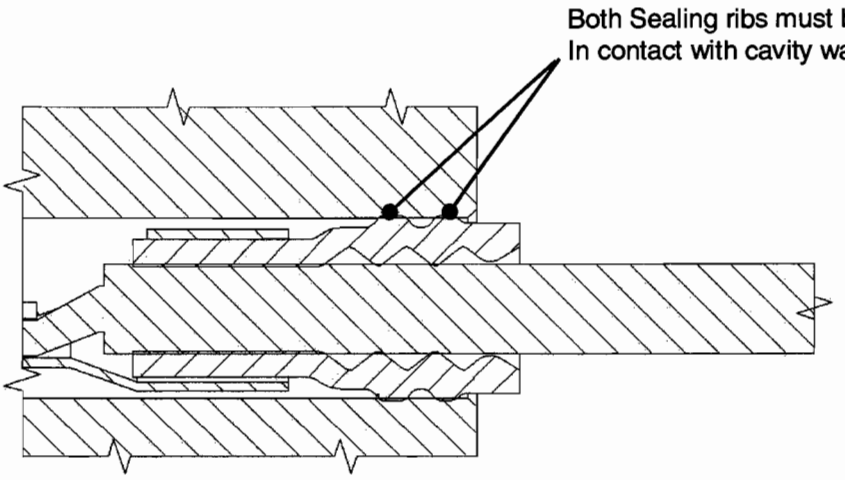


Figure 7-1B

7. Connector Assembly (Continued)

7.2. Female TPA full-lock operation

1) After terminal insertion, push the front holder in the direction of arrow '1' shown in Figure 7-2A below.
2) Confirm that the TPA is securely locked.

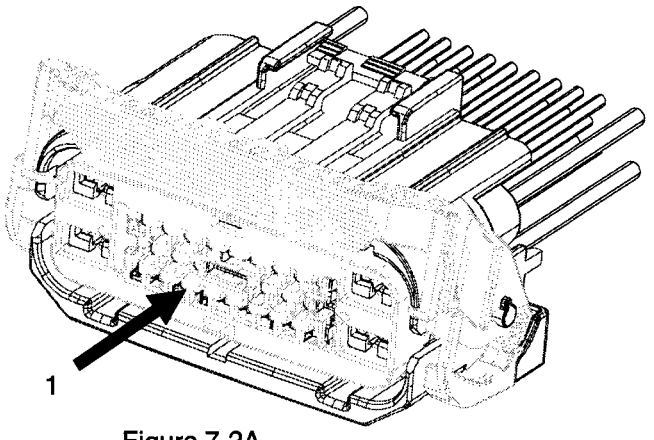
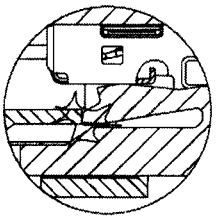


Figure 7-2A

- Care shall be taken not to deform the housing.
- Replace any damaged or deformed housing with a new one
- If the TPA cannot be fully-locked to the housing, one of the following conditions exists:
  - The terminal is not fully inserted into the cavity (Terminal incomplete-insertion). See figure 7-2b.
  - The terminal is inserted in the wrong orientation (Terminal improper-insertion).

If the TPA as improperly inserted by force, replace it with new parts.



Unacceptable

Terminal incomplete-insertion

Figure 7-2B

7. Connector Assembly (Continued)

7.3. Wire Shield Assembly

1.) Move the wire shield in the direction of the arrow shown in Figure 7-3A until an audible 'click' is heard. Confirm that both top and bottom locks shown in Figure 7-3B have engaged. (The wire shield can be routed as shown or 180 deg. from the direction shown.)

2.) Once the wire shield is in place, a tie strap can be used to secure the wires as shown in Figure 7-3C.

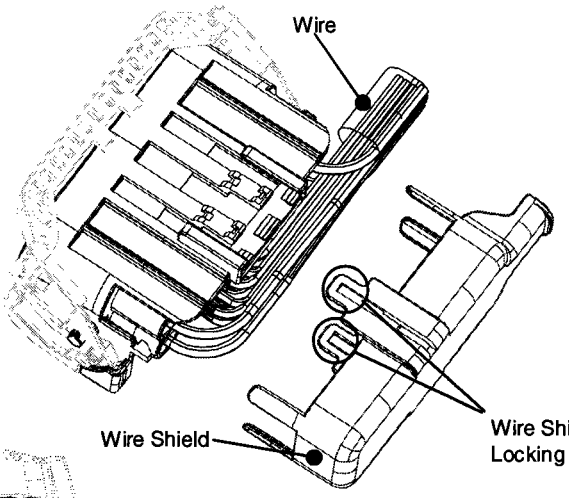


Figure 7-3A

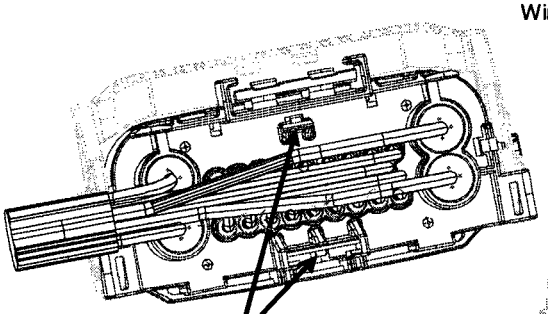


Figure 7-3B

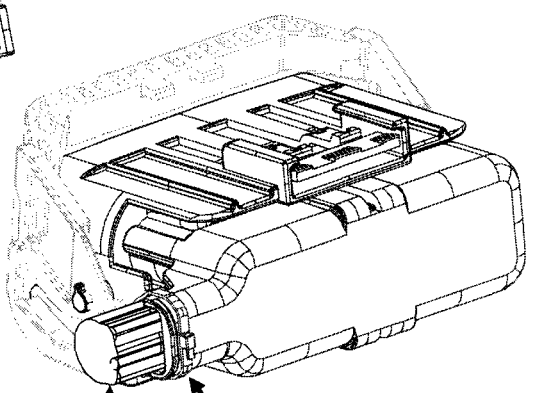
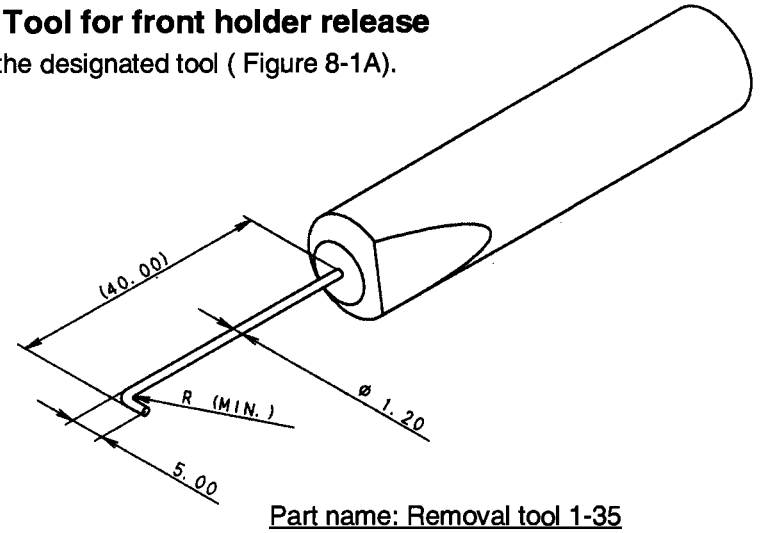


Figure 7-3C

8. Connector Servicing

8.1. Tool for front holder release

Use the designated tool (Figure 8-1A).



Part name: Removal tool 1-35

Figure 8-1A

8.2. Terminal removal tools

Use the designated tool for 6.3mm terminal (see Figure 8-2A).

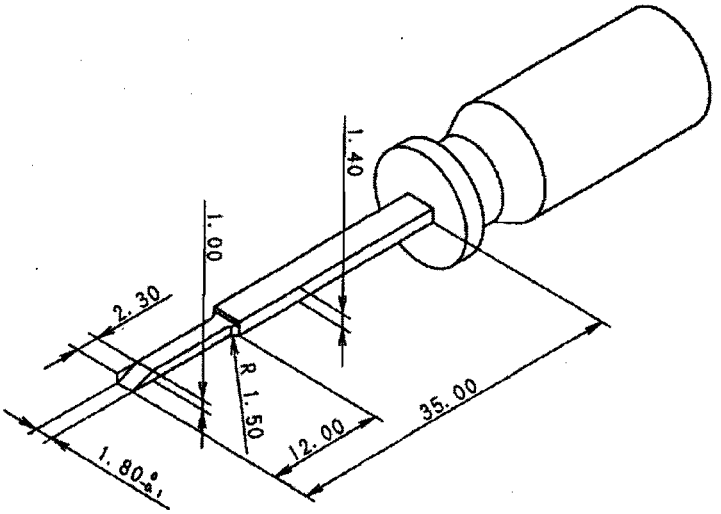


Figure 8-2A

8. Connector Servicing (Continued)

8.2. Terminal Removal Tools (Continued)

Tools necessary to service the 0.64 Terminals are currently available in the GM Service Kit.

a. Terminal Removal Tools; 3 Options

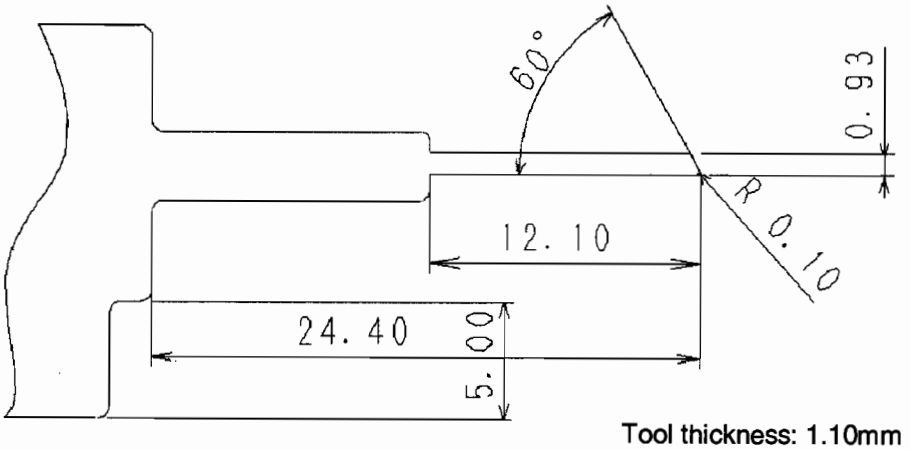
i. GM identified removal tool in GM service kit.
Part Number J-38125-215

ii. Other removal tool with the identified tip geometry

iii. Completely remove TPA and use any small size pick to service terminal.

i. GM identified tool; Part No. J-38125-215

ii. Required tip geometry

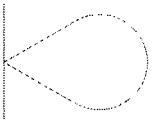


Tool thickness: 1.10mm

8. Connector Servicing (Continued)

8.3. Female Front Holder Release

1. Put a hook tool in one of the areas marked with a 'teardrop' (see Figure 8-3A).
2. Pull the hook tool in the direction of arrow '1' (see Figure 8-3B).
3. Move the hook tool to the other area marked with a 'tear drop' and repeat step 2.
4. Confirm that the TPA is in pre-set position.
5. For complete TPA removal, put the hook tool in the slot in the top middle of the TPA as shown in Figure 8-3C and pull in the direction of arrow '2'. Move hook tool to the bottom slot and pull in the direction of arrow '2' again. Repeat until the TPA is removed.



TEARDROP

Figure 8-3A

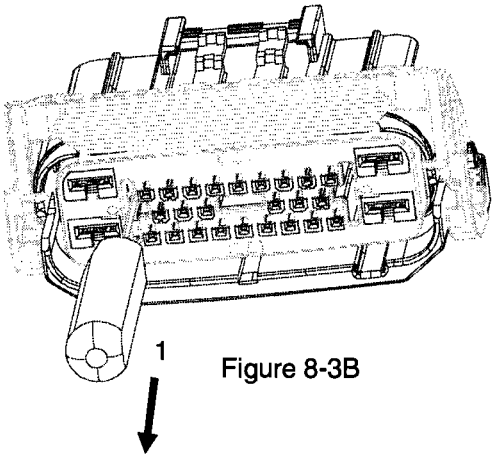


Figure 8-3B

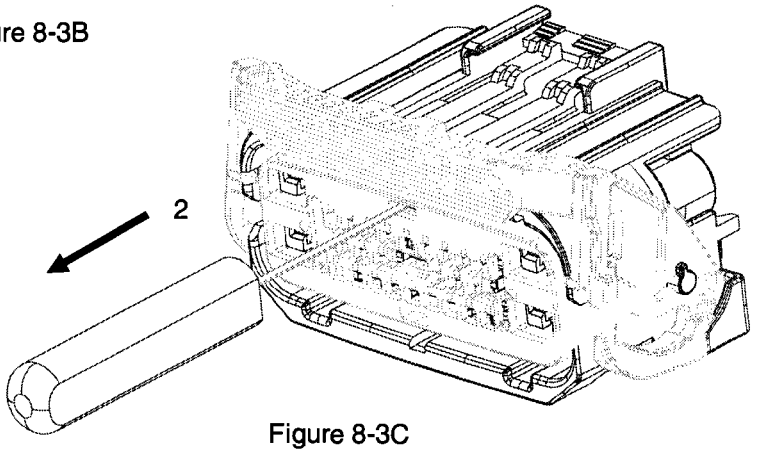


Figure 8-3C

<Precautions>
-Care shall be taken not to deform the housing
-Replace any damaged or deformed components with new ones

8. Connector Servicing (Continued)

8.4. Female Terminal Removal

6.3mm Female Terminal

1. Confirm the TPA is in the pre-set position.
2. Place the terminal removal tool (see 8.2.) along the terminal removal tool guide surface (TPA for 6.3mm terminal).
3. Push the wire in the direction of arrow 1, and insert the tool straight in the direction of arrow 2 as shown in Figure 8-4A.
4. Rotate the tool up in the direction of arrow 3 to release the housing lance and pull the wire lightly in the direction of arrow 4 to remove the terminal from the cavity (see Figure 8-4B).

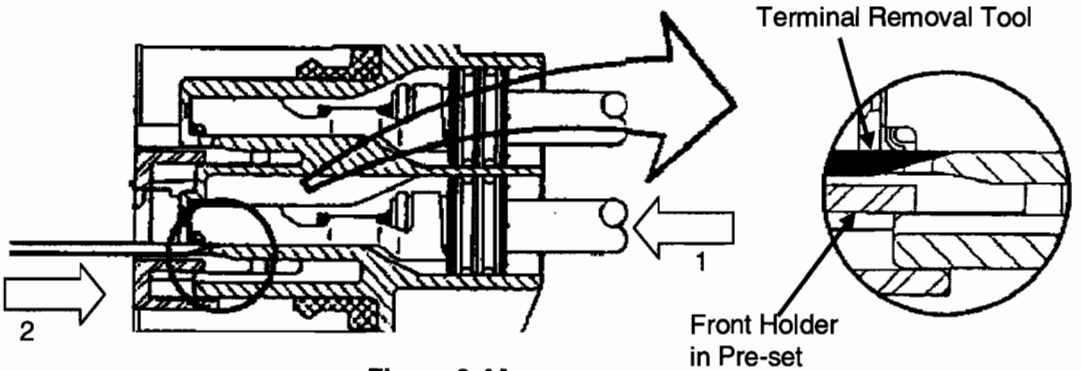


Figure 8-4A

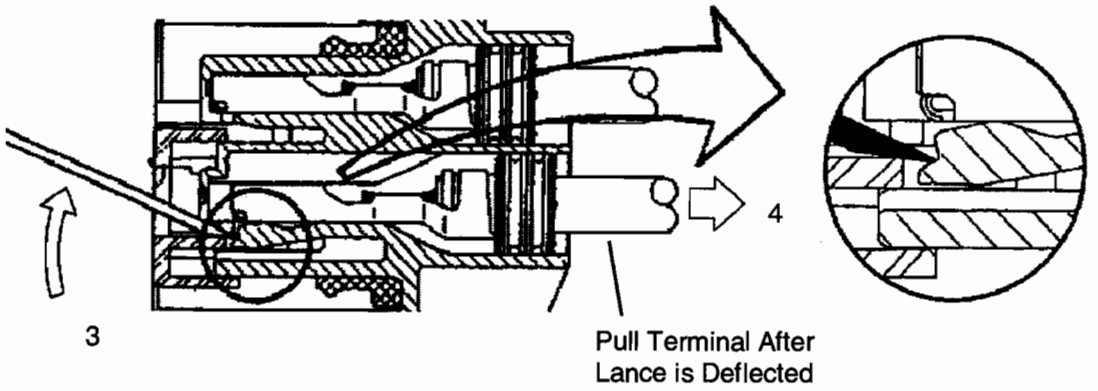


Figure 8-4B

8. Connector Servicing (Continued)

8.4. Female Terminal Removal (Continued)

0.64mm Female Terminal

1. Place the terminal removal tool along the terminal removal tool guide surface (TPA for 0.64mm terminal).
2. Push the wire in the direction of arrow 1 (similar to Figure 8-4A), and insert the tool straight in the direction of arrow 2 as shown in Figure 8-4C below to release the housing lance.
3. Holding it in this condition, pull the wire lightly to the direction of the arrow 4, and remove the terminal from the cavity (similar to Figure 8-4B).
4. Holding it in this condition, pull the wire lightly to the direction of the arrow 4 and remove the terminal from the cavity (similar to Figure 8-4B).

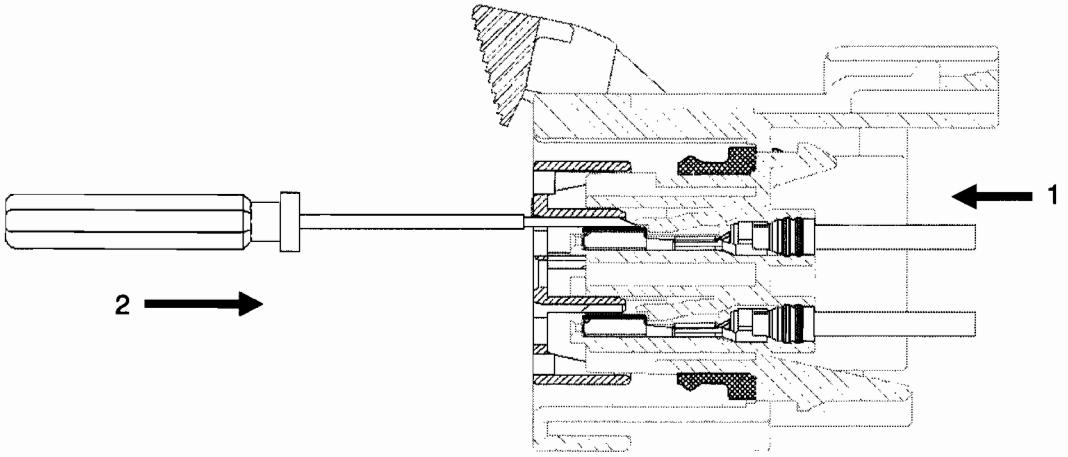


Figure 8-4C

<Precautions>

-The terminal removal operation should be performed by trained personnel only. Probing of the terminal/cavity by technicians not familiar with the removal process could result in damage to the terminal and/or connector.

-When the terminal cannot be removed easily, repeat the above operation for terminal removal.

-Insert the removal tool straight, and do not push too much. This may cause damage of the lance.

-Care shall be taken not to deform component parts. Replace any damaged or deformed component parts with new ones.

8. Connector Servicing (Continued)

8.5. Wire Shield Servicing

1. Insert a service tool (such as a small screwdriver) into the service access window shown in Figure 8-5A.
2. Push tool between wire shield lock and the lock on the connector as shown in Figure 8-5B until wire shield lock clears the ramp on the connector.
3. Repeat on second wire shield lock (see Figure 8-5C) until shield can be pulled off.

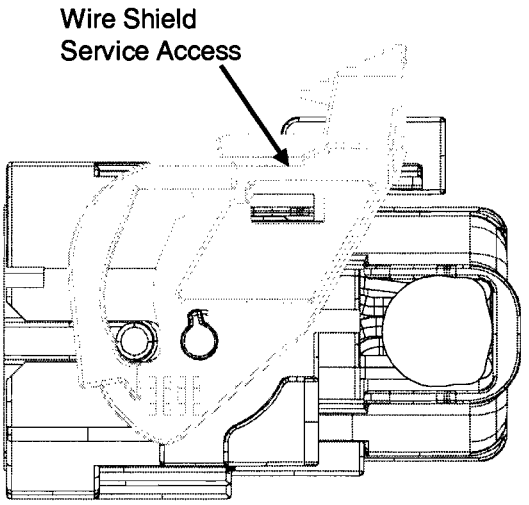


Figure 8-5A

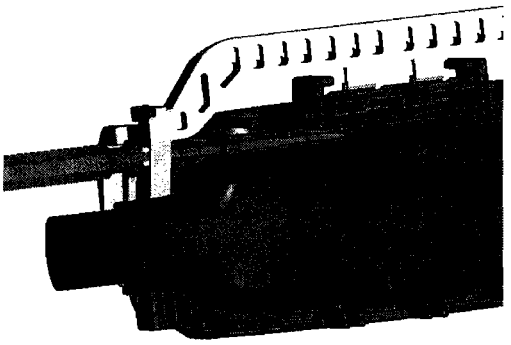


Figure 8-5B

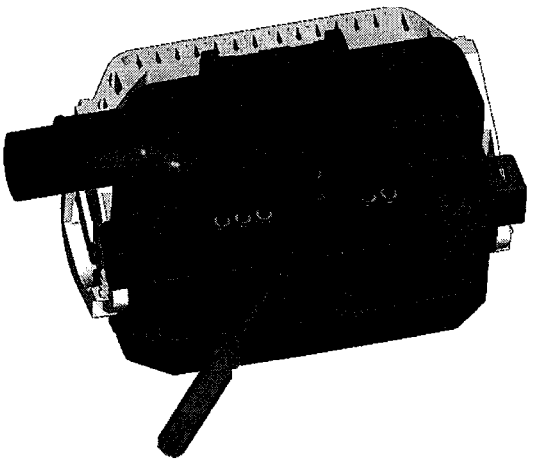
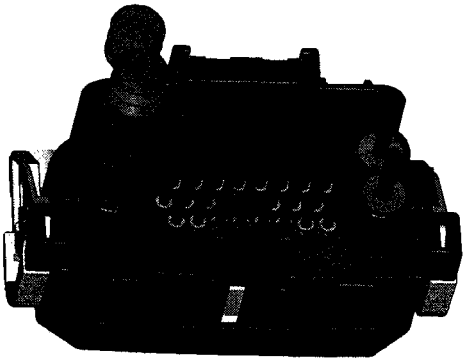


Figure 8-5C

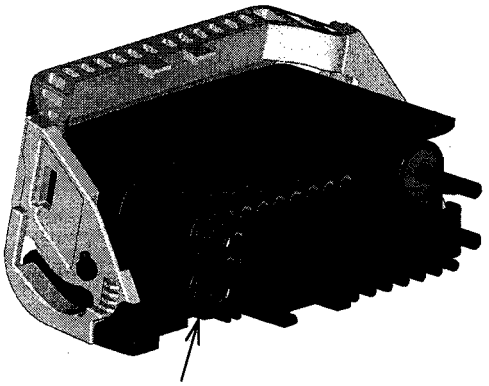
9. Unused Cavity Precautions

9.1. **Dummy Plug** Insertion and Removal

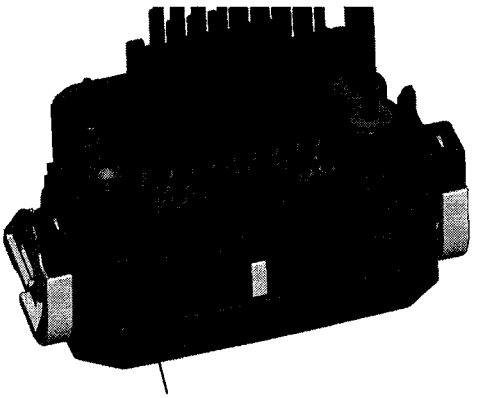
1. Insert a dummy plug into every cavity in which a terminal will not be inserted.



2. Confirm that the rear end of dummy plug is not protruding from the cavity

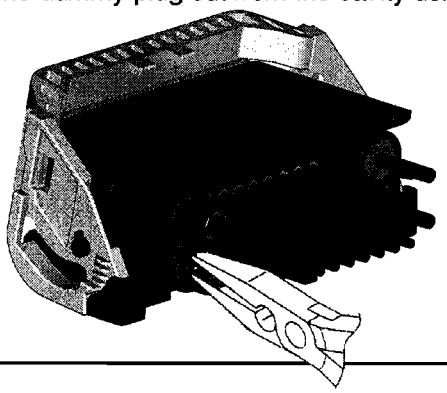


Acceptable



Unacceptable

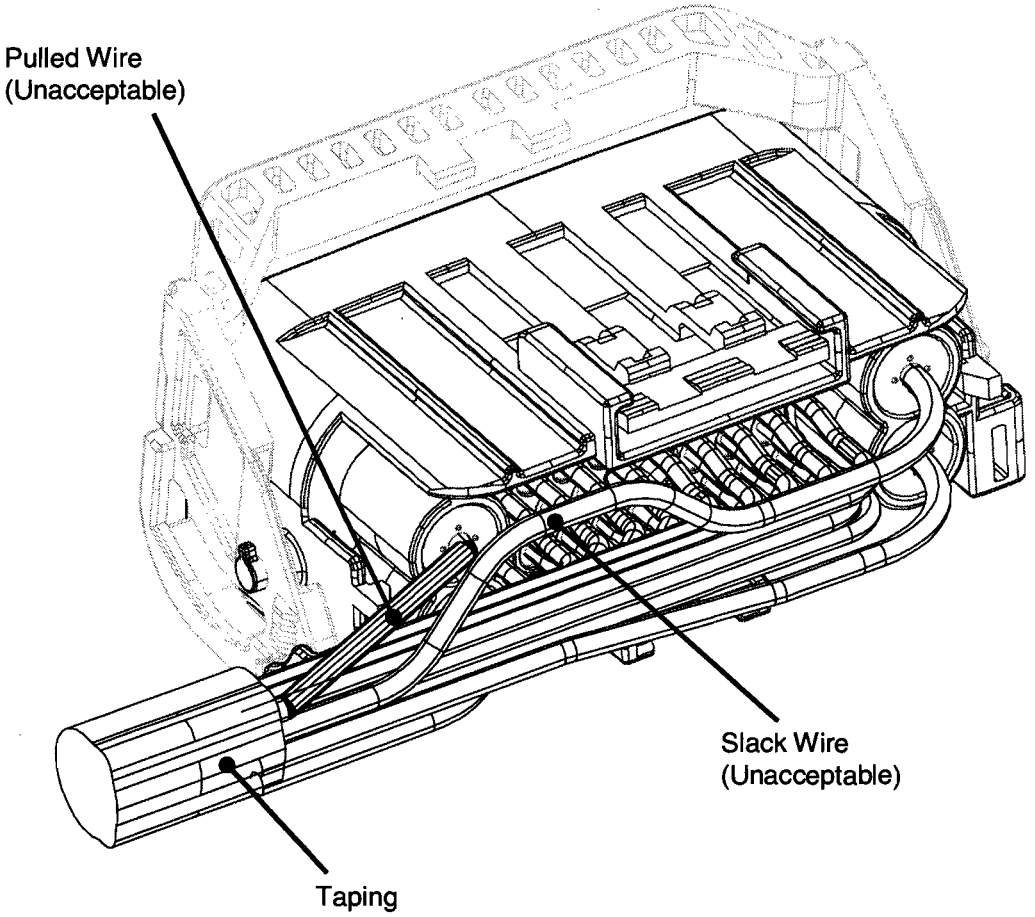
3. Dummy plug removal
   Pull the dummy plug out from the cavity using fingers or a pair of pliers



10. Wire Harness Assembly

10.1. Precautions during W/H Assembly

1. Avoid tangling the leads which could cause the terminals to become deformed and / or damaged.
2. Cut Leads of inadequate length should be discarded rather than forced into the connector. 'Stretching ' of the circuit could result in wire strand breakage and / or housing / terminal damage.
3. If ultrasonic welding is used in the termination process of the wire lead, it is the user's responsibility to assure no adverse affects result to the terminal and/or connector performance.
4. Wires which will be taped should be of similar length. Taping of leads with different lengths could result in concentration of force on the shortest wire, resulting in the potential for terminal-pull-out.



10. Wire Harness Assembly (Continued)

10.1 Precautions During Continuity Detection – 6.3mm Terminal

1. Jigs used for wire routing and/or continuity inspection should be of equal precision to that of the mating component. Use of fixtures with greater tolerance variability than the mating component could result in damage to the connector and/or terminal.
2. Spring loaded pogo-pins should be used for continuity detection. Recommended spring strength = 0.2N at 1mm deflection.
3. As shown in the Figures 10-1A and 10-1B below, there is a space where a test probe can be inserted. The continuity inspection shall be conducted by inserting the probe in this space.
4. Parts with visible damage or deformation should be replaced without regard for the severity of the non-conformance.

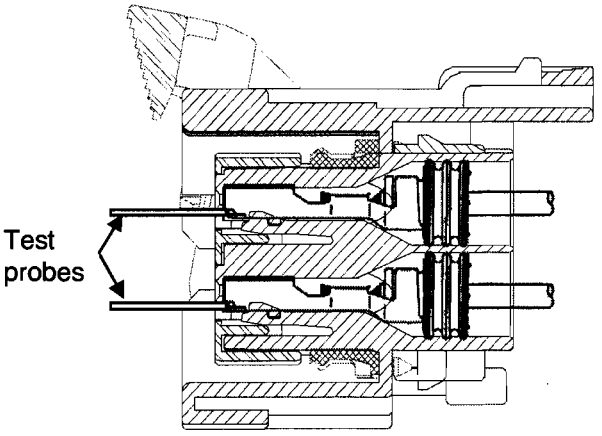


Figure 10-1A

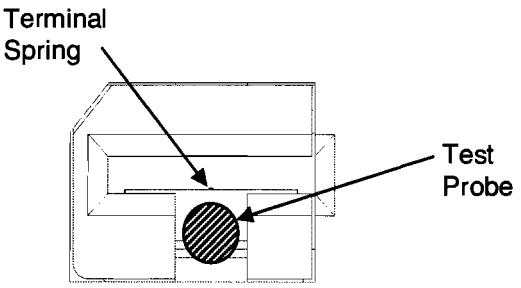


Figure 10-1B

10. Wire Harness Assembly (Continued)

10.2 Precautions During Continuity Detection – 0.64mm Terminal

1. As shown in the Figures 10-2A and 10-2B below, there is a space where a test probe can be inserted. The continuity inspection shall be conducted by inserting the probe in this space.
2. Parts with visible damage or deformation should be replaced without regard for the severity of the non-conformance.

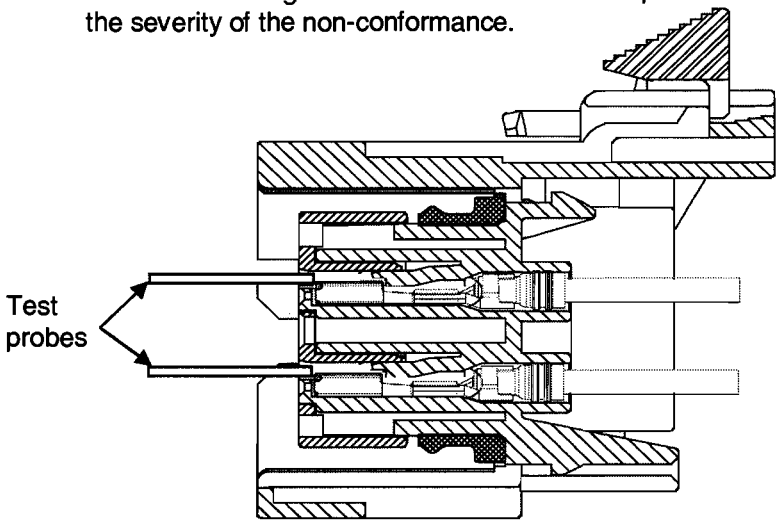
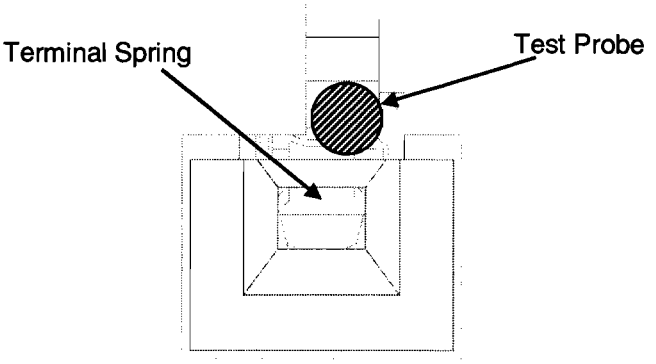


Figure 10-2A



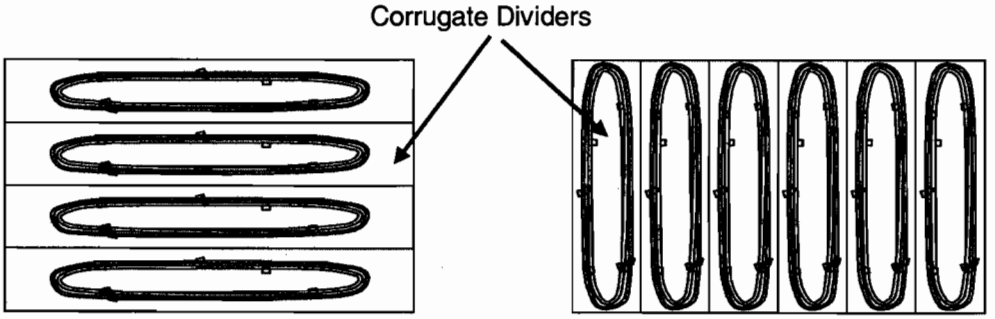
0.64mm Cavity Detail

Figure 10-2B

11. Wire Harness Packaging / Shipping

As with many plastic parts, the connector may be damaged/deformed if excessive external forces are applied to the connector during transportation and/or storage. To assure damage does not occur, it is recommended that the following items be considered when determining the Wire Harness packaging specification:

1. When layering the individual Wire Harnesses in the shipping carton, it is a recommended that corrugate layer dividers, vertical dividers, internal supports, and/or partitions be used to assure the weight of the Wire Harnesses is equally distributed.

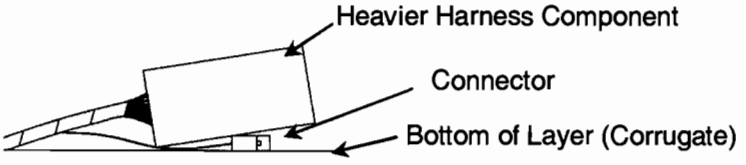


Horizontal Corrugate Dividers

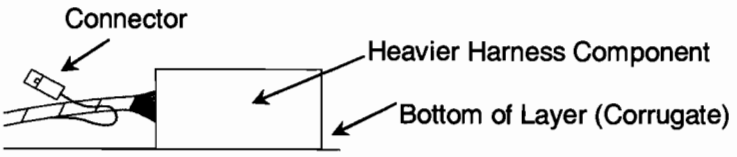
Vertical Corrugate Dividers

2. Junction block, relay box, protectors, brackets, and any heavy and/or bulky item must be placed on the bottom of the carton or the divider to prevent weight of such item from being applied to the connector as shown below.

Unacceptable Practice

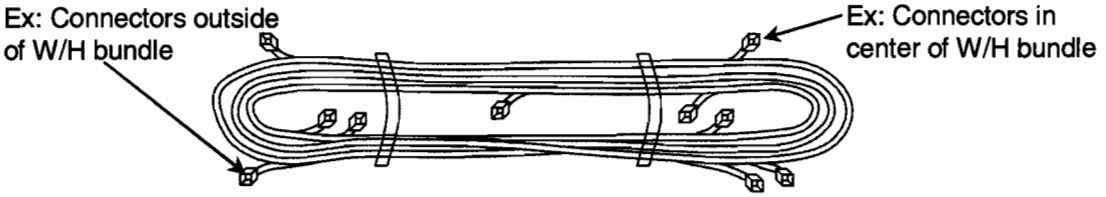


Acceptable Practice

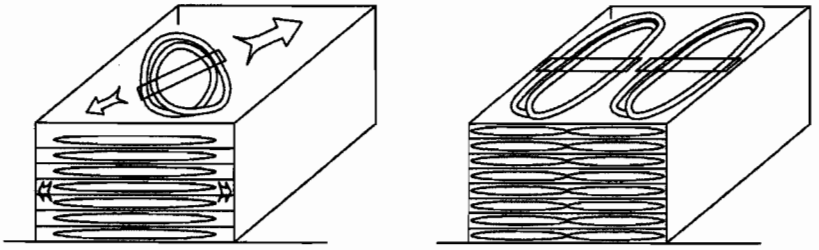


11. Wire Harness Packaging / Shipping (Continued)

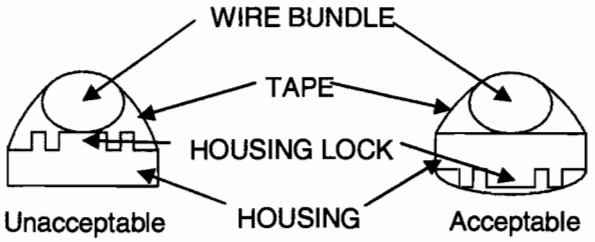
3. The connectors should be positioned to the outside or in the center of the W/H bundle to prevent the weight of the harness from being transferred to the connector.



4. The W/H bundle size should be compatible with the shipping carton to prevent shifting of the W/H during transportation and/or storage.



5. If the connector housing is 'taped back' on the wire harness bundle, assure that the housing lock or other flexible member of the connector is positioned away from the wire harness bundle.



6. Extra care must be taken to prevent wire harnesses tangling which may cause damage to the connector when the wire harness is removed from the carton at the vehicle assembly.

7. After transportation or storage, the connector must be checked for damages.

12. Connector Mating / Removal

12.1. Connector Mating

1. Confirm that the TPA is in full-lock position.
2. In the orientation shown in the Figure 12-1A below, push the female connector in the direction of arrow 1 until pre-set is felt / click is heard (connector will be in pre-set position shown in Figure 12-1B below).
3. Pull the lever in the direction of arrow 2 shown in Figure 12-1C until lever clicks into the fully mated position shown in Figure 12-1D.

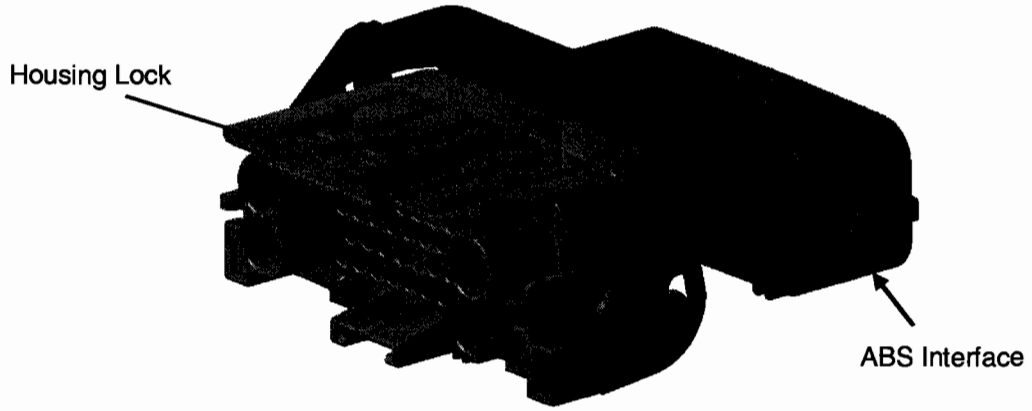
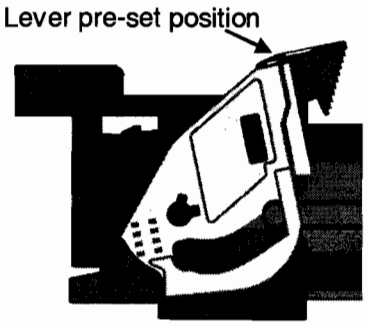
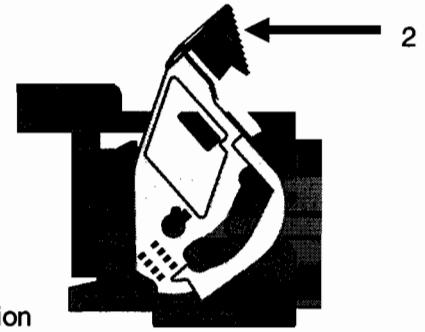


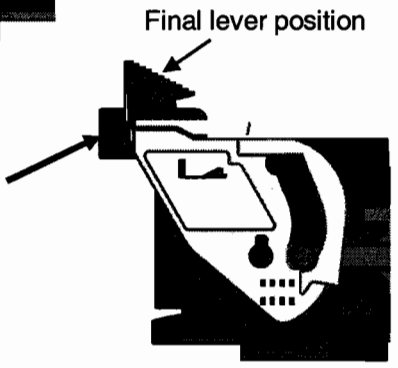
Figure 12-1A



Pre-set Position
Figure 12-1B



30° Position-Reference
Figure 12-1C



Fully Mated Position
Figure 12-1D

12. Connector Mating / Removal

12.2. Connector Removal

1. Release the housing lock by pushing the operation pad of the housing lock in the direction of arrow 1 (see figure 12-2A).
2. With the lock deflected, push the lever in the direction of arrow 2 (see Figure 12-2B) until connector is back in the pre-set position.
3. Rotate the female connector slightly in the direction of arrow 3 then pull the female connector from the interface in the direction of arrow 4 (see Figure 12-2C)

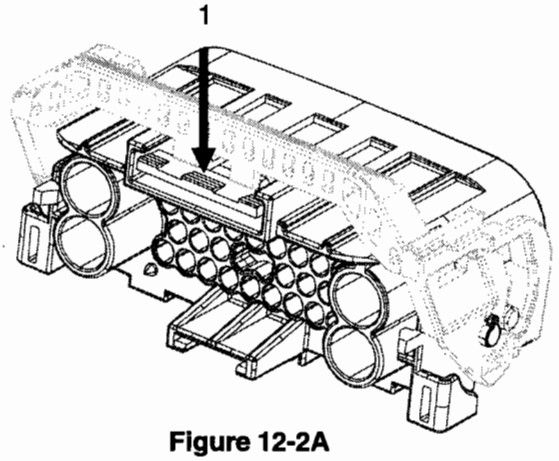


Figure 12-2A

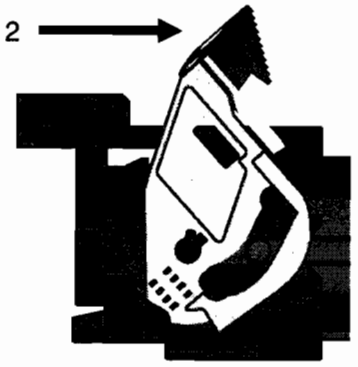
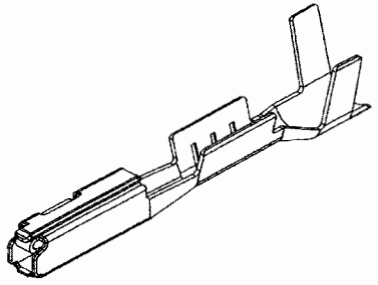
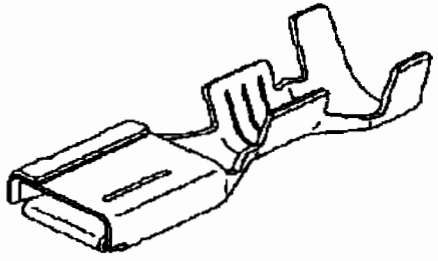


Figure 12-2B

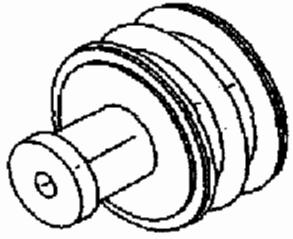
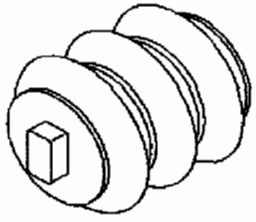
Pre-set Position

Figure 12-2C

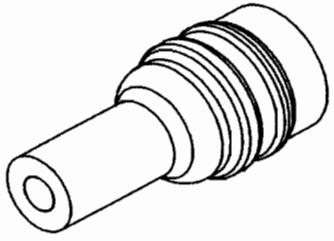
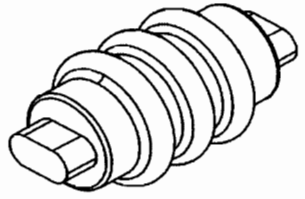
Connector Parts List

Yazaki Part No. (Yazaki part name)	Shape	Wire size, Type	Note
Yazaki # 7116-3703-02 (Kaizen WP 0.64mm Connector Terminal Female -Tin Plating)		22,20 AWG TXL 20AWG GXL	
Yazaki # 7116-3704-02 (Kaizen WP 0.64mm Connector Terminal Female -Tin Plating)		18 AWG TXL	
7116-4140-02 (6.3 System Connector Sealed Terminal Female -Tin Plating)		20,18,16 AWG TXL 20,18,16 AWG GXL	
7116-4141-02 (6.3 System Connector Sealed Terminal Female -Tin Plating)		14 AWG TXL 14 AWG GXL	
7116-4142-02 (6.3 System Connector Sealed Terminal Female -Tin Plating)		12 AWG TXL 12 AWG GXL	
7116-4143-02 (6.3 System Connector Sealed Terminal Female -Tin Plating)		10 AWG TXL	

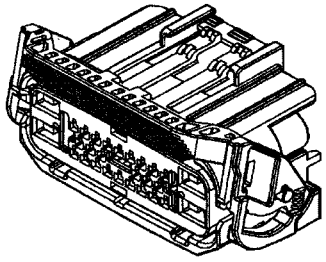
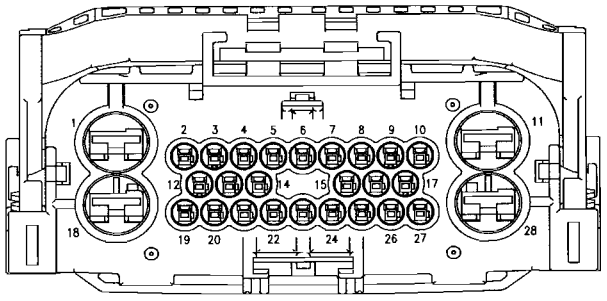
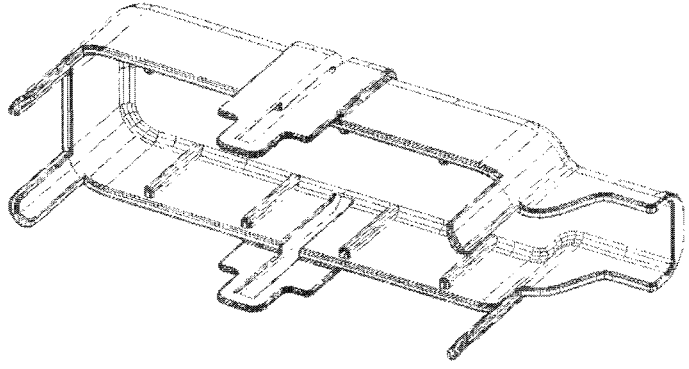
Attached Sheet - 1

Yazaki Part No. (Yazaki part name)	Shape	Wire size, Type	Note
7158-3081-50 (6.3 System Sealed Connector, Wire Seal)		20,18,16 AWG TXL 20 AWG GXL	Color: Red
7158-3082-90 (6.3 System Sealed Connector, Wire Seal)		14 AWG TXL 18,16 AWG GXL	Color: Blue
7158-3083-30 (6.3 System Sealed Connector, Wire Seal)		12 AWG TXL 14,12 AWG GXL	Color: Black
7158-3084-40 (6.3 System Sealed Connector, Wire Seal)		10 AWG TXL	Color: Gray
7158-3080-60 (6.3 System Sealed Connector, Cavity Plug)		----------	Color: Green

Attached Sheet - 2

Yazaki Part No. (Yazaki part name)	Shape	Wire size, Type	Note
7158-3504-80 (Kaizen 0.64 System Sealed Connector, Wire Seal)		22, 20 AWG TXL	Color: Rust
7158-3505-40 (Kaizen 0.64 System Sealed Connector, Wire Seal)		18 AWG TXL 20 AWG GXL	Color: Light Grey
7158-3503-50 (0.64 System Sealed Connector, Cavity Plug)		----------	Color: Red

Attached Sheet - 3

Yazaki Part No. (Yazaki part name)	Shape	Note
7283-9504-30 (28P (0.64x24 +6.3x4) ABS Hybrid Sealed Connector, Female)	 	Color: Black
7134-4489-30 (28P (0.64x24 +6.3x4) ABS Hybrid Sealed Connector, Wire Shield) 7134-8582-30 (28P (0.64x24 +6.3x4) ABS Hybrid Sealed Connector, Wire Shield - Large)		Color: Black