AMP SELF-ALIGNING INTERCONNECTOR 411-5727

日本エー・エム・ピー株式会社
AMP (Japan), Ltd.

INSTRUCTION SHEET
(RESTRICTED TO NISSAN MOTORS)

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CONTENTS

07-07-95

1. PRODUCT INTRODUCTION:

1.1 Product Part Numbers and Component Parts:

This product line has been designed under the name of 70-Pos. and 100-Pos. Self-Aligning Interconnector (S.A.I.), consisting of the component parts as shown in the sketch below.

For the purpose of this instruction sheet, the following nomenclature is used.

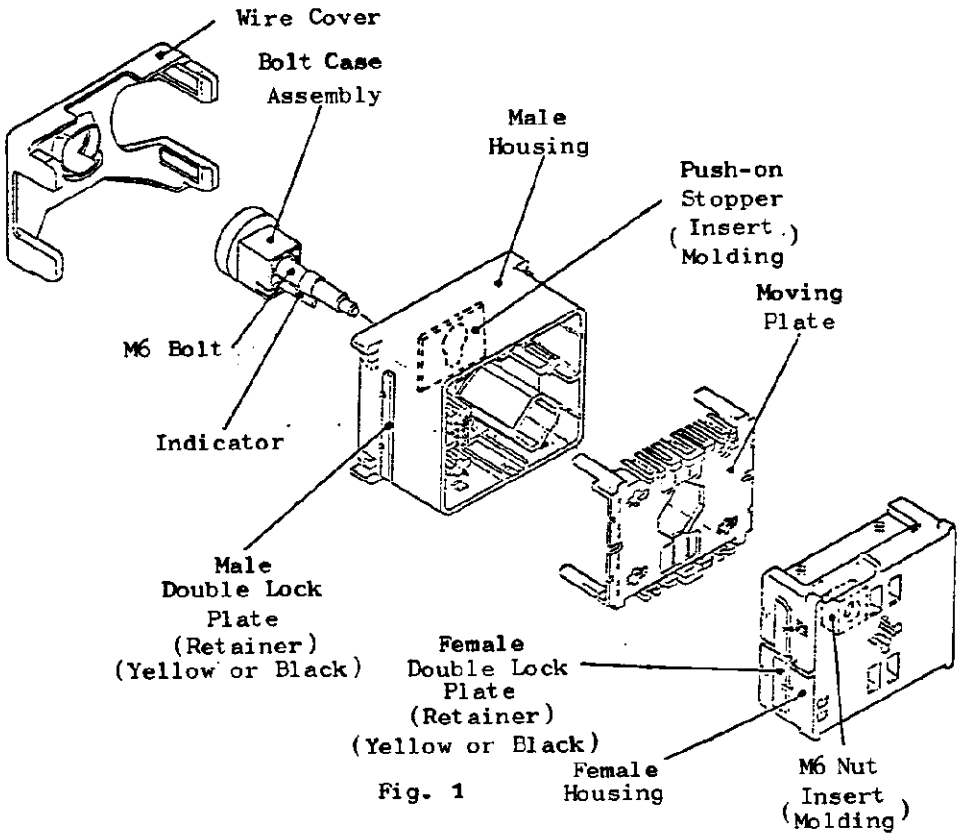


Fig. 1

Product Component Parts:

Part No.	Product Nomenclature	Nissan's Part Nos.
179220	100-Pos. Male Connector Assembly	TK80MGY-TAS16-M4
179216	100-Pos. Female Connector Assembly	TK80FGY-TAS16-M4
179264	70-Pos. Male Connector Assembly	TK58MGY-TAS8-M4
179263	70-Pos. Female	TK58FGY-TAS8-M4
179544	100-Pos. Wire Cover	COVER CONN.
179597	70-Pos. Wire Cover	COVER CONN.
179545	70 &. 100-Pos. Common Bolt Case Ass'y	BOLT SMJ

Fig. 2

1.2 Product Features, Number of Positions, Applicable Contacts and Wires:

Number of Positions	TK Contact for Micro-current (040)	TAS Contact for Micro-current (070)	M Contact for Medium-current (250)
100-Pos. SAI	80-Pos.	16-Pos.	4-Pos.
70-Pos. SAI	58-Pos.	8-Pos.	4-Pos.

Fig. 3

Applicable Contacts and Wires:

Contact Types		Part Numbers		Applicable Wires					
		Receptacle	Tab	Wire Types	0.3	0.5	0.85	1.25	2
040	S	175265-1	917067-1	CAVUS	Yes	Yes	Yes	No	No
				CAVS/AVSS	Yes	Yes	Yes	No	No
				AVS	Yes	Yes	No	No	No
070	S	175268-1	175272-1	CAVUS	Yes	Yes	Yes	No	No
				CAVS/AVSS	Yes	Yes	Yes	No	No
				AVS	Yes	No	No	No	No
070	M	175269-1	175269-1	CAVUS	No	No	No	Yes	No
				CAVS/AVSS	No	No	Yes	Yes	No
				AVS	No	Yes	Yes	Yes	No
070	ML	177654-1	177654-1	CAVUS	No	No	No	Yes	No
				CAVS/AVSS	No	No	No	Yes	Yes
				AVS	No	No	No	No	No
250	M	Contacts are made by Yazaki Parts Co. Ltd.							
250	M-US								

Fig. 4

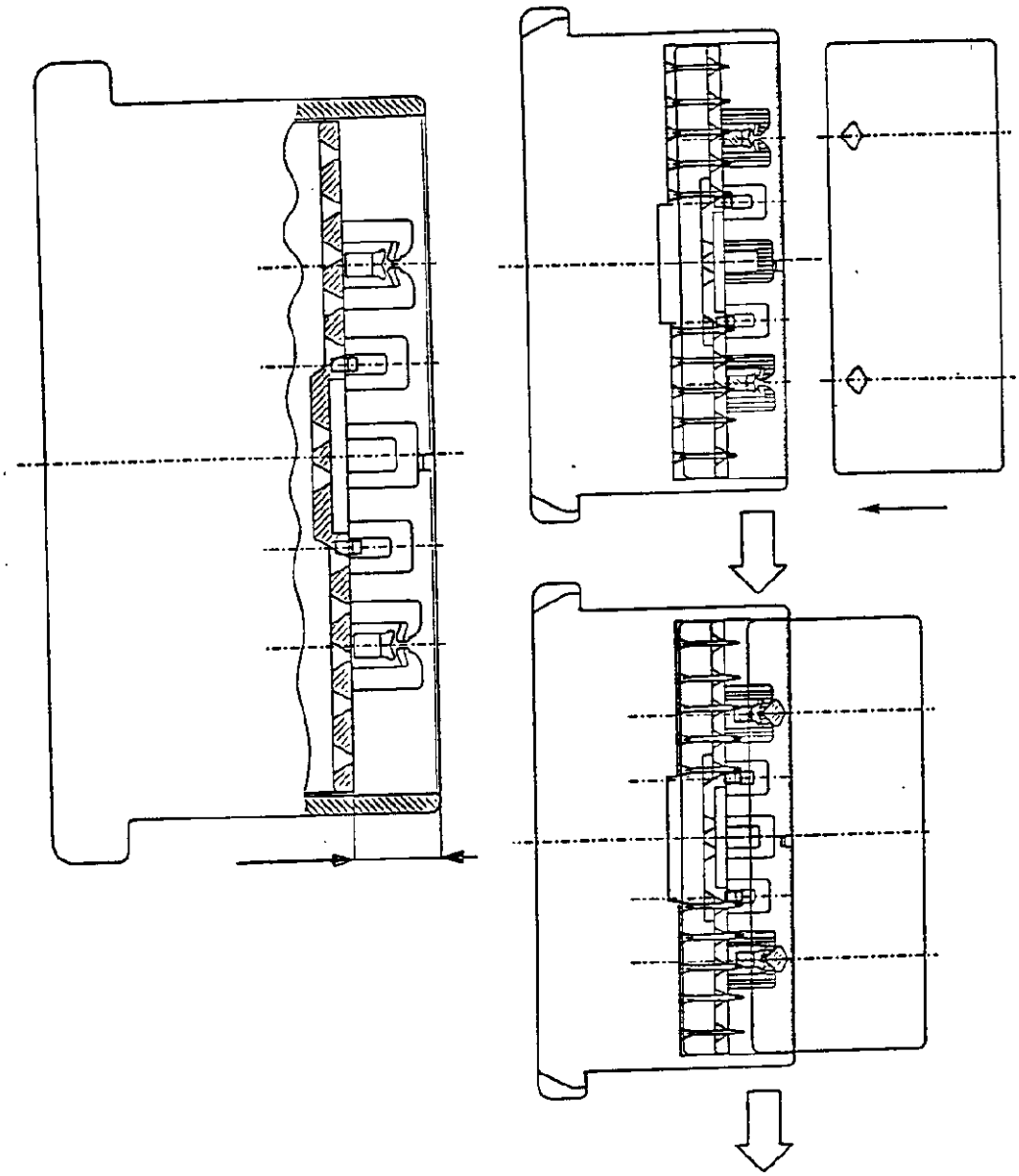
2. SPECIFIC PERFORMANCE FEATURE OF CONNECTOR:

This connector has a specific performance feature as stated below.

(1) Moving plate is provided to eliminate contact inclination.

The products delivered to the customers have the moving plate positioned as shown in the Fig. 5a left below.

The function and movement of moving plate are described in the following paragraphs.



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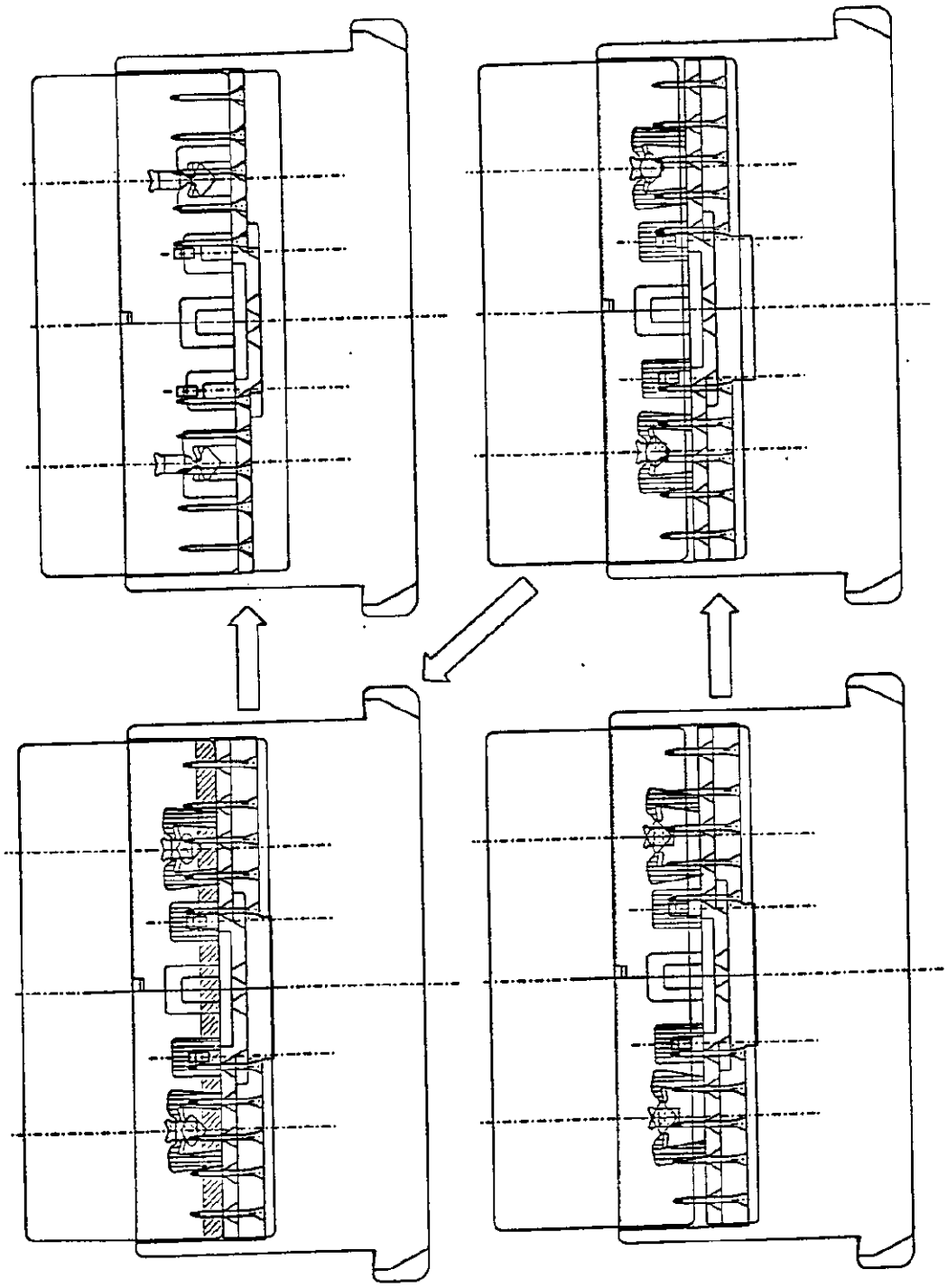


Fig. 5b

3. CONNECTOR ASSEMBLY PROCEDURE:

3.1 Crimping Contacts:

(1) Crimping Application

Crimping of contacts must be performed in accordance with the proper application specification as noted below respectively.

Crimping contacts being out of specified application limits will result defective contact performance capability, with less tensile strength of wire/insulation grip crimps.

Crimping Type "K" Contacts:

Use Application Specification, 114-5159, Crimping 040II Series, Receptacle and Tab Contacts.

Crimping Type "AS" Contacts:

Use Application Specification, 114-5160, Crimping 070II Series, Receptacle and Tab Contacts.

Crimping Type "M" Contacts:

Use Crimping instruction for "M" Type Contacts, prepared by Yazaki Parts Co. Ltd.

(2) Bend Control of Crimped Contacts:

Bending of contact after crimping is limited within $\pm 4^{\circ}$ in all directions. i.e. bend-up and bend-down inclusive.

The deformed contacts shall be discarded, and will have to be replaced by the new parts.

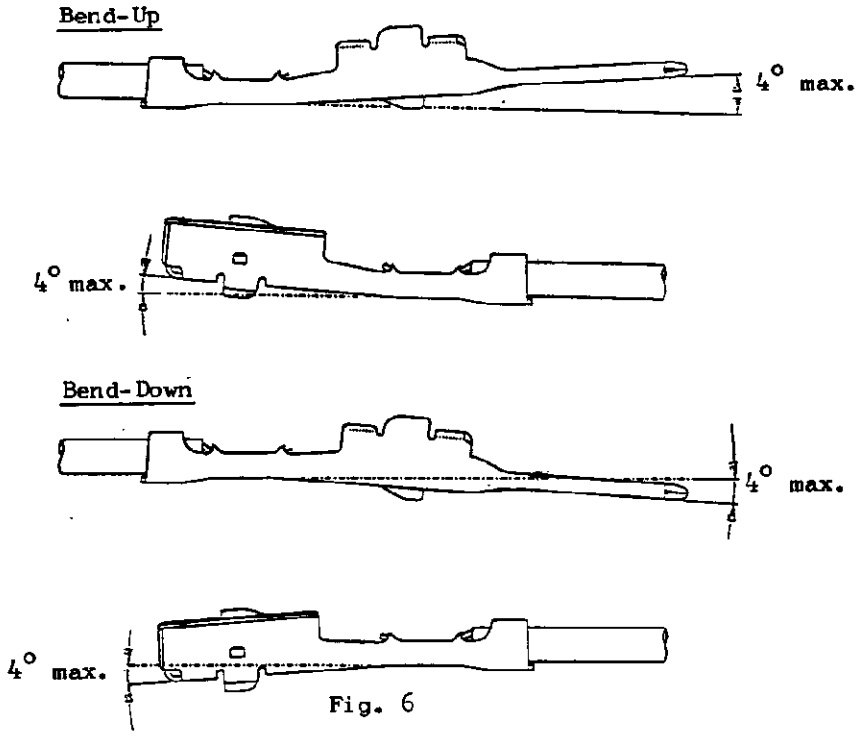


Fig. 6

3.2 Loading Crimped Contacts onto Connector Housing:

Before loading crimped contact onto housing cavity, make sure the orientation of the contact to be inserted into the housing cavity.

Then, insert the contact into the cavity as far as it goes until it stops at the bottom of the housing cavity.
When the contact is set engaged in position, a small clicking sound is heard at the moment of contact locking.
When inserted, just pull back the crimped wire lightly to see if the contact is locked in position. If the contact does not come out, it shows that the contact is locked.

Orientation of Contact Insertion:

(1) Male Housing Assembly:
Just let the stabilizer of contact face to the retainer side of housing.

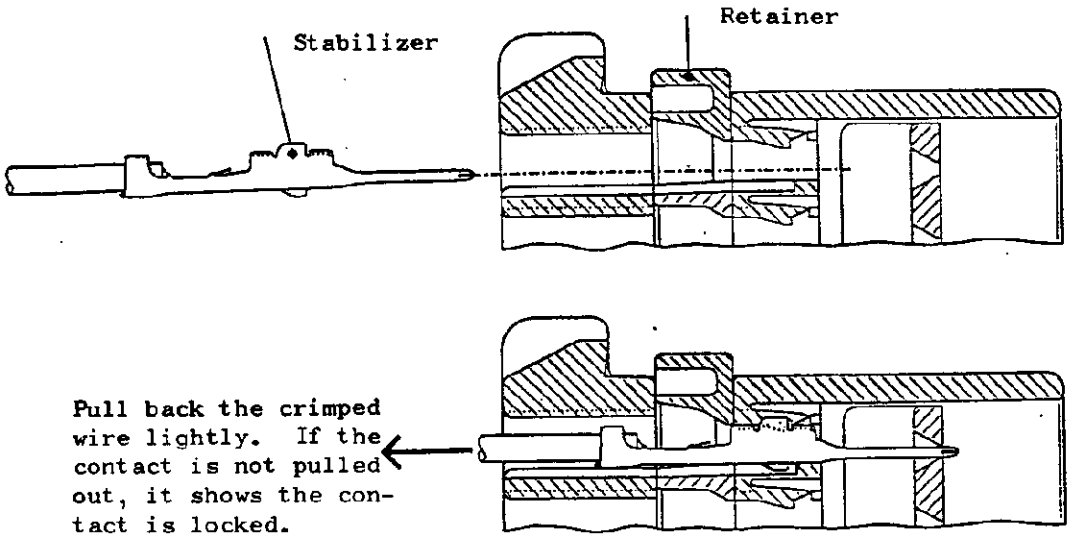


Fig. 7

(2) Female Housing Assembly:
Just let the dimple side of contact face to the retainer side of housing.

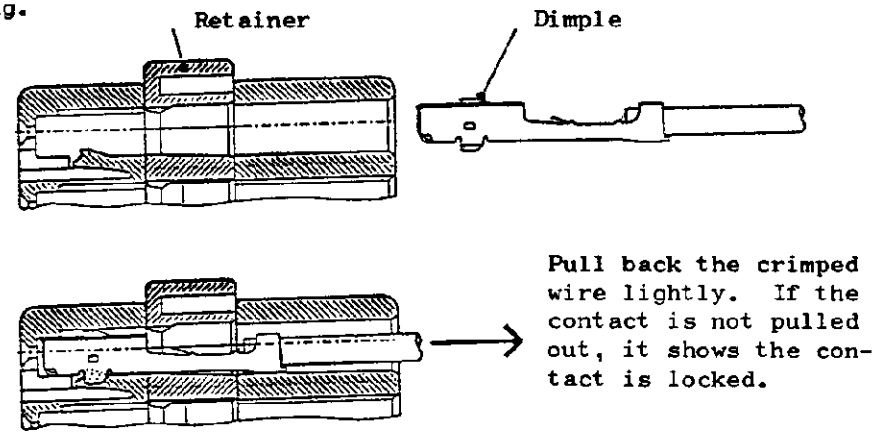


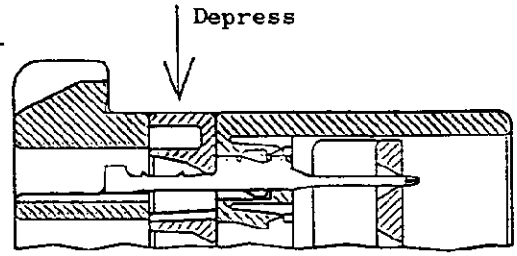
Fig. 8

3.3 Engagement of Contact Retainer onto Connector Housing:
(How to get set on from Primary Locking to Secondary Locking)

This connector is supplied to the customer with its retainer set on at primary locking position.

After loading of the contacts into all the contact positions, the retainer must be locked by moving the retainer to secondary locking position. If any of the loaded contact is not seated rightly in the position, the retainer will not move into the secondary locking position.
When the retainer does not move rightly, check to the contacts are all fully inserted into the positions in the connector cavities.

Male Housing



If the contact is not fully bottomed, the retainer does not move to locking position.

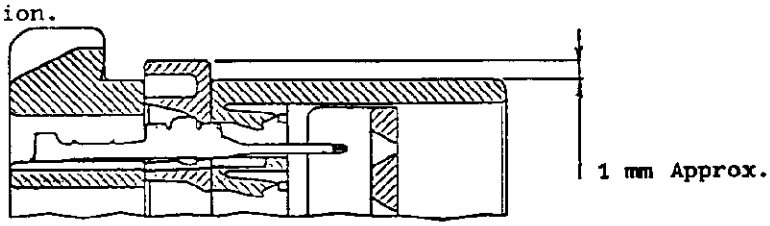
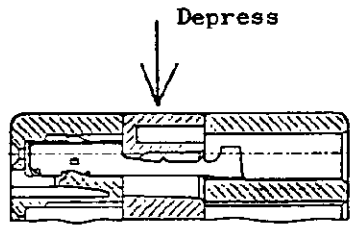


Fig. 9

Female Housing:



If the contact is not fully bottomed, the retainer does not move to locking position.

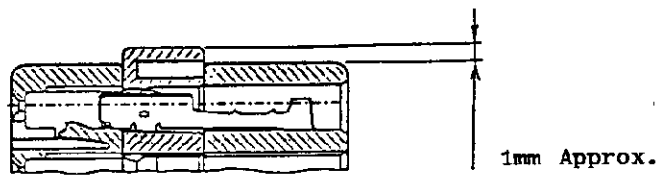


Fig. 10

3.4 Application of Bolt Case Assembly onto Connector:

Place the bolt case assembly onto the connector as shown in Fig. 11 and have it inserted into the designated depth of insertion. Then, move it toward the arrow direction with the head being depressed.

Confirm to listen to a clicking sound, as it engages to its retained position when the spring lock clicks. In addition, confirm that the bolt case does not move off from the male housing.

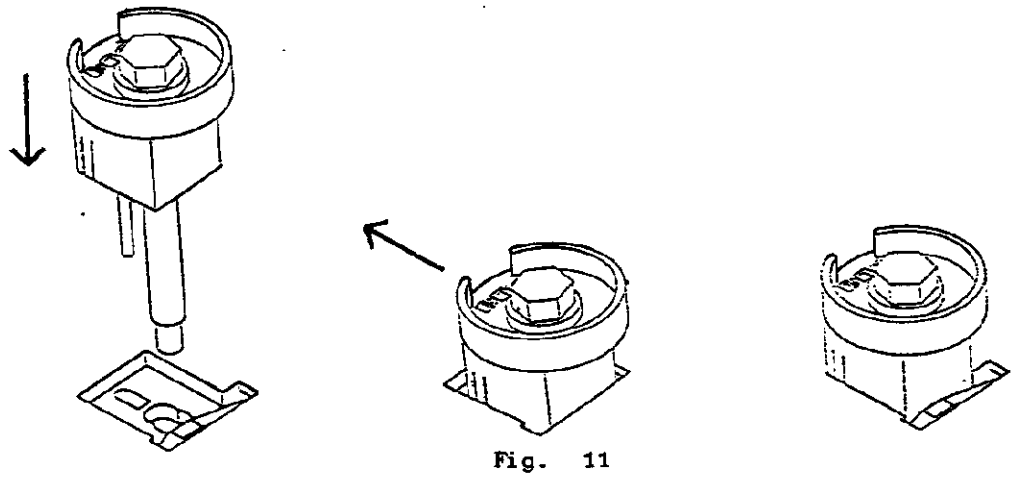


Fig. 11

3.5 Mounting Harness Cover onto Connector Housing:

As you put the harness cover over the connector, make sure that four locking devices are all engaged fully.
When you see the harness cover securely retained on the connector, make sure that no harness wiring is overflown outside the cover, nor the wires are bitten under the bolt case.

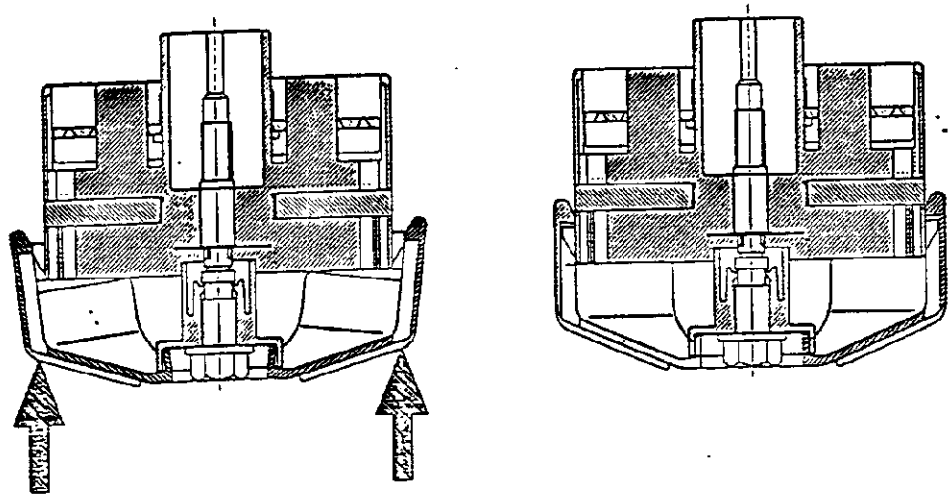


Fig. 12

3.6 Mating of Connector Halves:

The mating orientation of the connectors can be identified by having the color code of retainer corresponding one another.

Having the color code setting together is like the following:

Female Housing Retainer (Yellow) and Male Housing Retainer (Yellow)

Female Housing Retainer (Black) and Male Housing Retainer (Black)

After confirmation of mating orientation of both connectors, have them put together and mate them as far as they go until they stop at their depths.

After confirming that they are mated fully at their right position, tighten them by using an impact wrench.

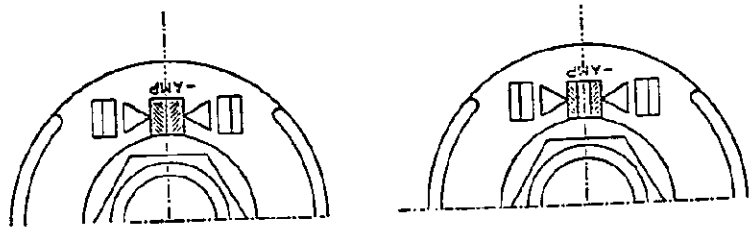
Before you use the impact wrench, have its tightening torque force to be within 4.9 - 7.84 Nm.

In order to prevent damage or breakage of housing, the bolt will be broken by the torque force ranging 9.8 - 14.8Nm before the housing becomes being danger of breakage.

When the bolt becomes broken, the bolt case is automatically released off. If it becomes broken and is released off, replace with the new bolt case assembly in place.

Before you mate the parts mated, make sure if there is no abnormalities about the parts involved.

For checking to see the connector mating normally, confirm the color codes of the connectors as shown below.



Complete Mating Incomplete Mating

Fig. 13

4. DISASSEMBLY OF CONNECTOR:

4.1 Unmating of Connector Halves:

For unmating the connector halves, first loosen the tightened bolt and pull off the male housing.

4.2 Removal of Harness Cover:

Remove harness cover with the use of AMP recommended extraction tool P/N 715131-1 for loosening the parts.

If undue, excessive force is applied to housing, the connector is being in danger of turning to milky color by the force. Avoid having it turned to milky color.

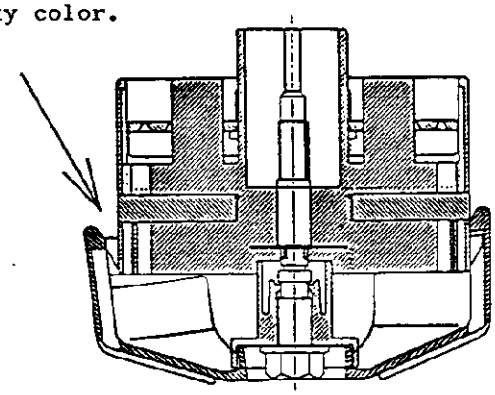


Fig. 14

4.3 Removal of Moving Plate/Loading of Molding Plate (Inclusive):

Within this connector, moving plate has been provided for prevention of inclination of male contacts. Therefore, in case of removal of male contact from housing, it is required to remove moving plate prior to remove male contacts from housing, in addition to the release of retainer.

For removal of moving plate, use AMP recommended extraction fixture, exclusively designed for the purpose.
Use AMP recommended extraction fixture, P/N 715131-1 to release two retention legs for the plate as shown by the arrows in Fig. 15. Remove moving plate from housing.

Beware, that after removal of moving plate, the loaded contacts have no no supporting and pretecting means, so that care must be taken not to allow deformation and contamination of the contacts.

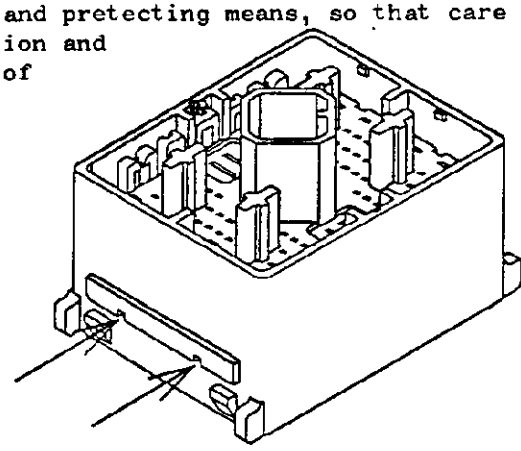


Fig. 15

(Reloading of Moving Plate)
After once removed, moving plate should be reloaded onto the connector, according to the following precedure.

Place moving plate over the connector frame, and reload down onto the connector until it reaches to the designated bottom and to get set in place with the engaging clicking sound to occur. Make sure for right placement in housing.

Beware to keep the moving place intact when removed and placed alone, since this part has many projecting ribs and legs that are susceptive for damage and breakage when handled roughly.

When any portion of the moving plate is found damaged or broken, replace it with the a new part.

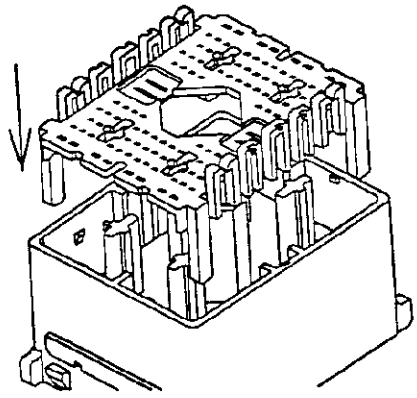


Fig. 16

4.4 **Removal of Retainer:** (Setting Back from Secondary Locking to Primary Locking Condition)

Removal of contacts from housing must be performed after setting the retainer back from secondary locking position to the primary locking position. With the retainer set in the secondary locking position, contacts cannot be removed from housing.

For setting back to primary locking position, use AMP recommencded fixture, P/N 715131-1 by inserting it according to the arrow markings in Figl 17 below.

If the retainer is disengaged from the primary locking position, align the marks as shown to get set in primary position.

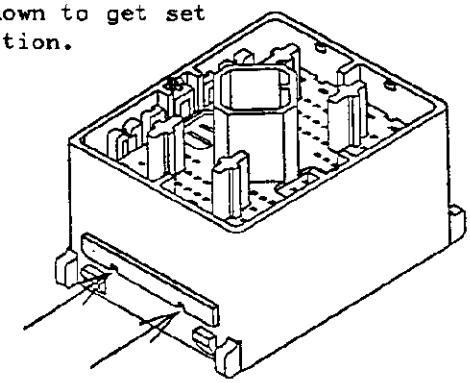


Fig. 17

4.5 Unloading of Loaded Contacts from Housing:

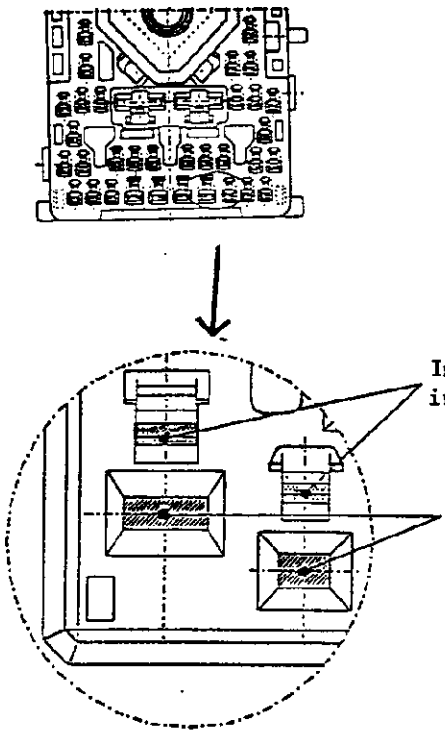
To unload the contact from housing, first set the retainer in primary locking position. (Refer to Para. 4.4.)

With the retainer being set in secondary locking position, contacts cannot be unloaded from housing.

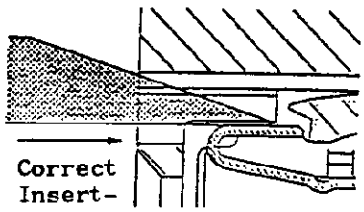
Refer to the sketch as shown below for the location into which you insert the fixture. Be sure to use AMP recommended extraction fixture, P/N 715131-1.

The fixture must be inserted into the hole horizontarily.

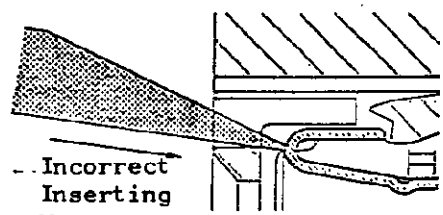
Never apply the fixture facing downward. Apply it horizontarily, lest the tip ends of the fixture enter the holes that may cause damage of contacts as shown in the sketch in Fig. 18 below.



Inserting Locations of Jig Fixture:



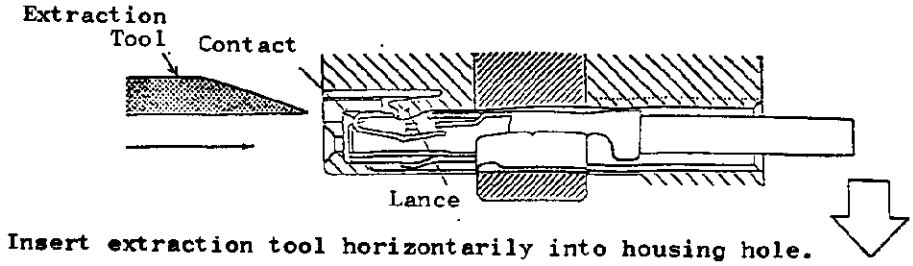
Jig fixture must be inserted horizontarily into the hole.



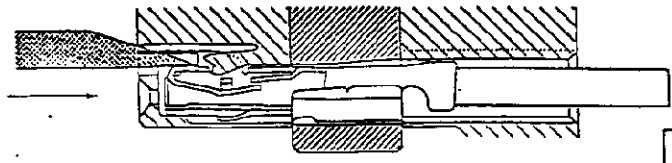
The tip end of jig fixture must be kept away from touching onto contacts, if you apply force onto contact by the fixture, the contact has danger of being broken.

Fig. 18

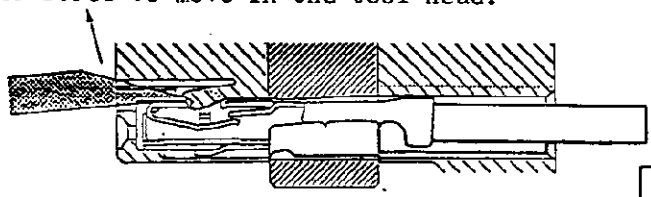
Extraction of contact should be performed according to the procedure as shown in the figures 19.



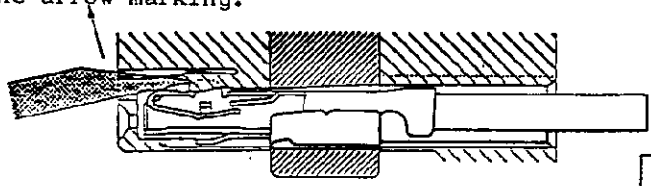
Insert extraction tool horizontarily into housing hole.



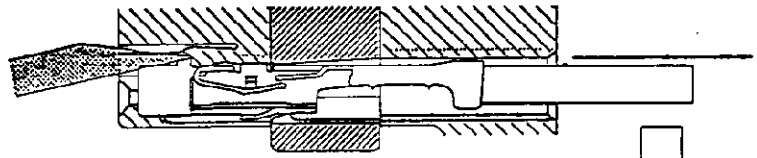
Insert the tool along the upper wall in the hole until it stops. Never force to move in the tool head.



Move up the tip end of the tool toward the direction of the arrow marking.



Move up the tool until it releases engagement of locking lance as shown.



With the tool tip raised up to hold the lance unlocked, pull the crimped wire back toward you.

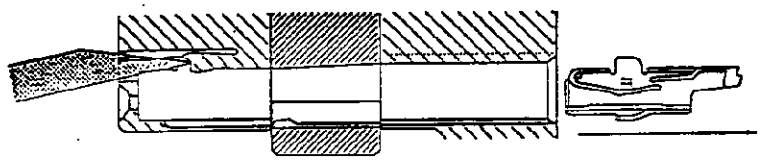


Fig. 19

5. ADDITIONAL INSTRUCTIONS:

5.1 Handling Care:

The product connector has been designed to withstand the physical impact to some degrees. However, reasonable care must be taken not result any damage to the assembled connector, since the multiple connectors bear to carry heavy weight of assembled wires together especially when assembled in harnesses.
Operators will never be too careful in handling and carrying the assembled connectors and harnesses. Never allow shock and drop impact to incur the assembled parts.

5.2 Prevention of Foreign Matters and Pollutant to Enter Inside the Housing:

When assembled, moving plate has a role to protect inserted male contacts. Pay attention not to allow any foreign matter to enter inside resulting deformation of contacts.

5.3 Handling Connectors Having Moving Plate Removed:

When connector has moveing plate removed, the loaded contacts are left open without any protecting means, being in danger of affection to deformation and bending, as the parts are depressed by outer attacking load applied to the contacts.
Reasonable care must be taken to protect the parts from damage and deformation.

5.4 Handling of Moving Plate as a Single Part without Assembly:

A moving plate is furnished with full of projecting legs and arms that are susseptive to damage and breakage, when left alone as a single part without assembly.
Handle a single part moving plate gently enough. When any damaged part is found, replace with a new, intact part.

5.5 Foreign Matter to Stray-in Inner Portion of Moving Plate:

When any foreign material to stray inside the moving plate. Do not try to detect and move off out of the part. In this case, discard the part. Be alert not to allow foreign materials to enter inside the moving plate.

5.6 Biting of Wires by the Assembled Parts:

Be careful not to allow assembling parts to bite the lead wires between them, especially during the assembly of harness cover and bolt case on the connector.

6. PRODUCT RELIABILITY MAINTENANCE PROVISIONS:

In order to maintain the product reliability of this connector, AMP consigns the client users to keep control and observation of the following provisions.

6.1 Checking Out to See if Any Contaminant Exists in Moving Part at Assembly:

When to remove erroneously loaded contact from connector, moving plate is unloaded also. Before to reload moving plate one the connector, check to see if any contaminant exists within moving plate. When found any, be sure to remove the contaminant from the moving plate.

6.2 Checking the Location of Moving Plate:

Moving plate must be locating within the range of 7.9 - 9.6mm from the end of connector before the connector is mated. Check this location and also the retention legs are surely engaged together on the connector.

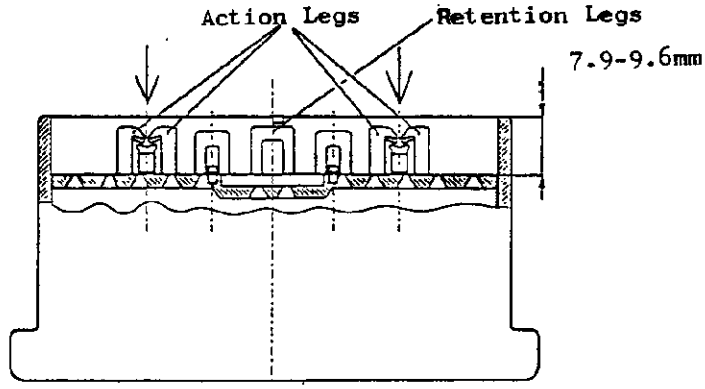


Fig. 20

6.3 Protrusion Length of Male Contact beyond the Moving Plate:

When loaded onto the connector, the tipe end of male contacts are protruding beyond the moving plate to the same length uniformly. The protruding lengths may differ depending on the type of contacts, i.e."K" Type to "K" Type, "AS" Type to "AS" Type and "M" Type to "M" Type and so on.

The same type of contacts should protrude to the same length uniformly. Check and see if the contact protrusion lengths are uniform according to the types of contacts.

In case the contact is loaded not being in complete position, the contact tip end will protrude to the length of 1mm approximately beyond the moving plate.

Contact incomplete loading can be detected by checking this protrusion length.

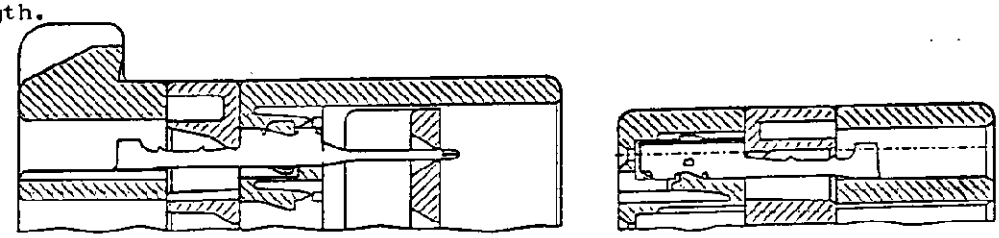


Fig. 21