



APPLICATION SPECIFICATION



MX150 System Sealed Product Line

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AS-33472-100		Tim Skiver	Chris Taylor	Vijy Koshy



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Section 1: Product Introduction

MX150 System

This instructions manual contains supplemental information pertaining to the Molex 1.50 mm sealed Product Line. Additional information, keyway and knockout patterns can be found on the sales drawings.

Single Row Assembly	Sales Drawing
Receptacle	
	SD-33471-031.drw
	SD-33471-041.drw
	SD-33471-051.drw
	SD-33471-061.drw
Blade	
	SD-33481-031.drw
	SD-33481-041.drw
	SD-33481-051.drw
	SD-33481-061.drw
Dual Row Assembly	
Receptacle	
	SD-33472-041.drw
	SD-33472-061.drw
	SD-33472-081.drw
	SD-33472-121.drw
	SD-33472-131.drw
	SD-33472-161.drw
	SD-33472-201.drw
Blade	
	SD-33482-041.drw
	SD-33482-061.drw
	SD-33482-081.drw
	SD-33482-121.drw
	SD-33482-161.drw
	SD-33482-201.drw

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Section 1: Product Introduction MX150 System

Features and Benefits:

- Pre-assembled connector housings, seals and TPA components
- Simple crimp, poke and plug application
- Integral Terminal Position Assurance (TPA)
- Integral two way, mat and interface seals designed and tested to IP 67 and SAE USCAR-2, Rev 3 standards
- Easy terminal extraction and insertion
- Compatible with a wide range of UL (22 to 14 AWG) and SAE Automotive (22 to 14) style wires
- Integral locking latch with secondary connector position assurance (CPA) option
- Applied cost savings
- No need to crimp individual wire seals
- Locks terminals into housings and prevents terminals from backing out
- More than just waterproof, a true sealed connector system tested under submersed conditions
- Quick, low cost field repairs
- Supports a wide range of power and signal applications
- Assures positive mating of connector and prevents accidental disengagement during high vibration and severe shock application

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Section 1: Product Introduction MX150 System

MX150 Applications:

- Passenger Automobiles (Exclusively for MX150 family)
- Off Highway Construction Equipment
- Agriculture Equipment
- Trucks, Busses and RVs
- Commercial and Recreational Marine Equipment
- Material Handling Equipment
- Lawn and Garden Equipment
- Outdoor Lighting
- Industrial Control

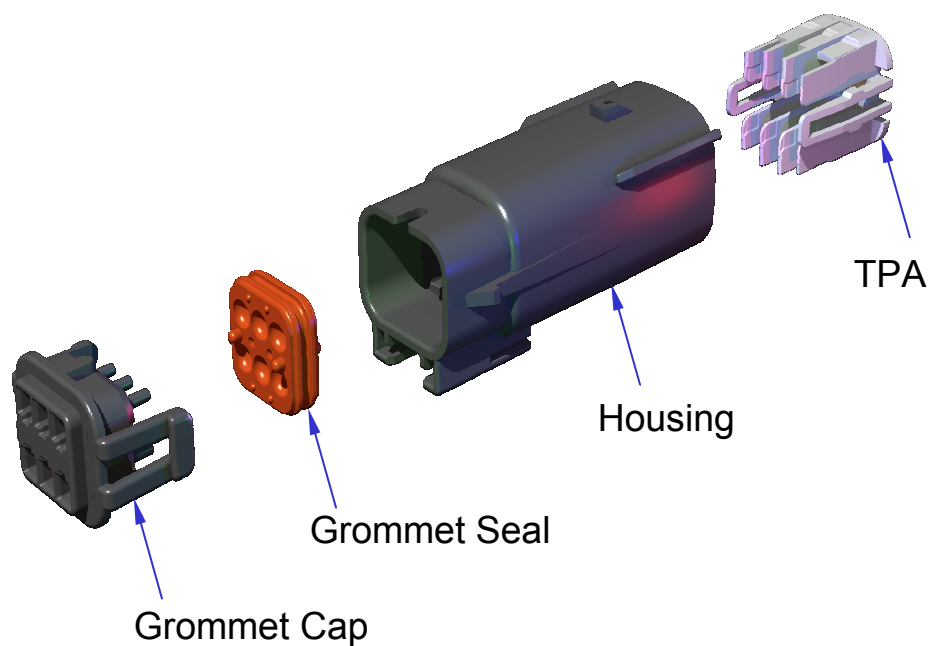
For product ordering information, please contact your Molex Inside Sales Representative at (800)786-6539. This User Manual can be found at www.molex.com/ind/mx150.html

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Section 2: Product Summary

A. Connector Assemblies



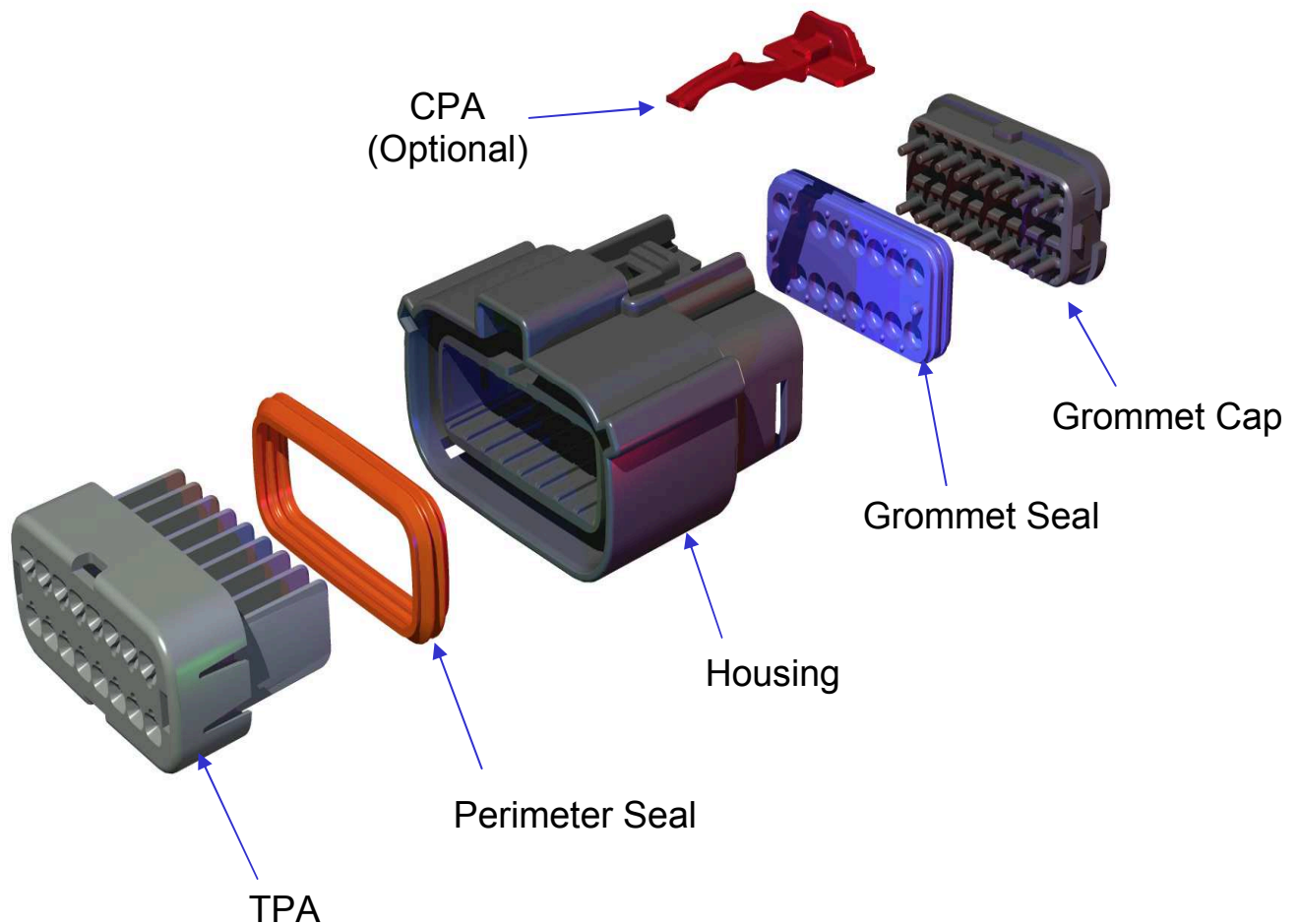
6 Way 2X3 Blade Connector

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Section 2: Product Summary

B. Connector Assemblies (continued)



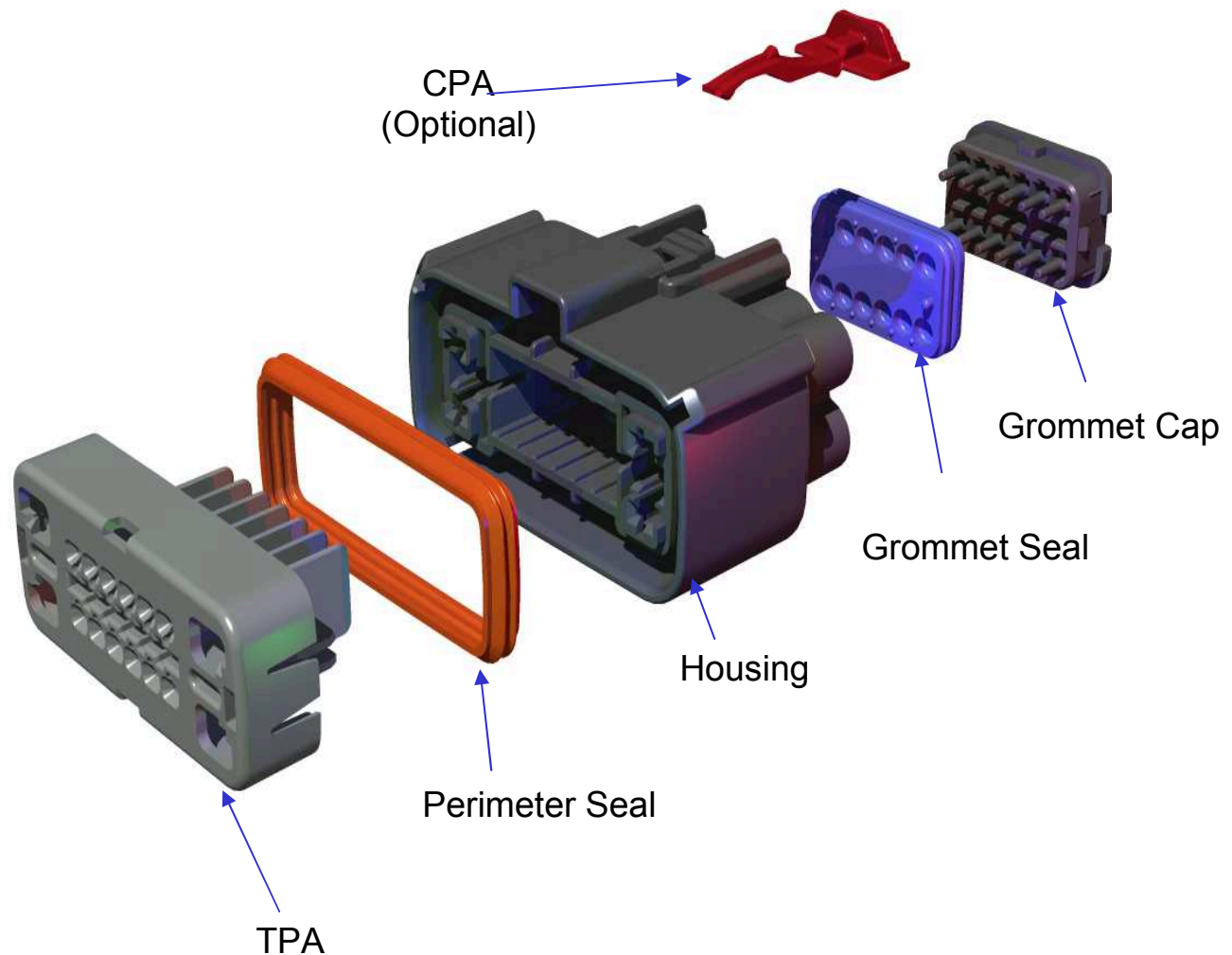
16 Way 2X8 Standard Receptacle Connector

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Section 2: Product Summary

C. Connector Assemblies (continued)



16 Way Hybrid Receptacle Connector

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Section 2: Product Summary

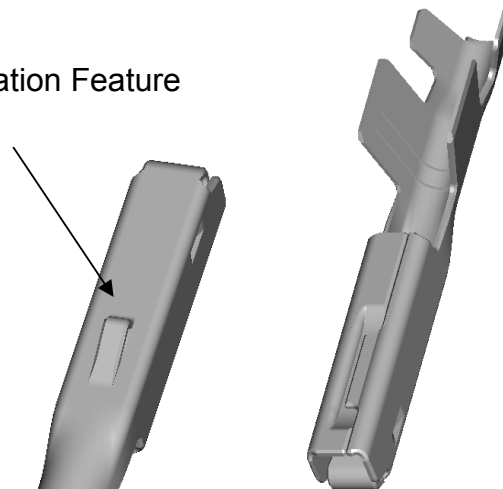
D. Receptacle/Blade Terminal

Terminal Features

Base Material - Copper Alloy
Plating Options - Tin, Gold, Silver
Wire Sizes: 14,16,18,20,22 AWG
1.5, 1.0, 0.8, 0.5 mm²

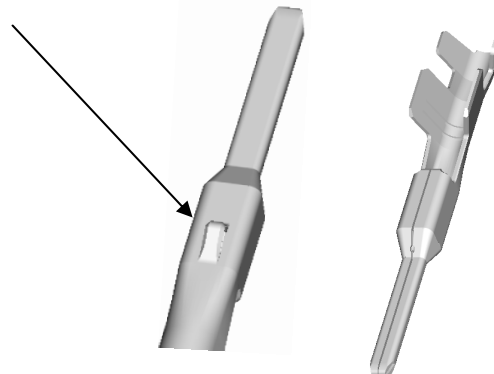
Refer to Section 7 for crimping details.

Orientation Feature



Receptacle Terminal

Orientation Feature



Blade Terminal

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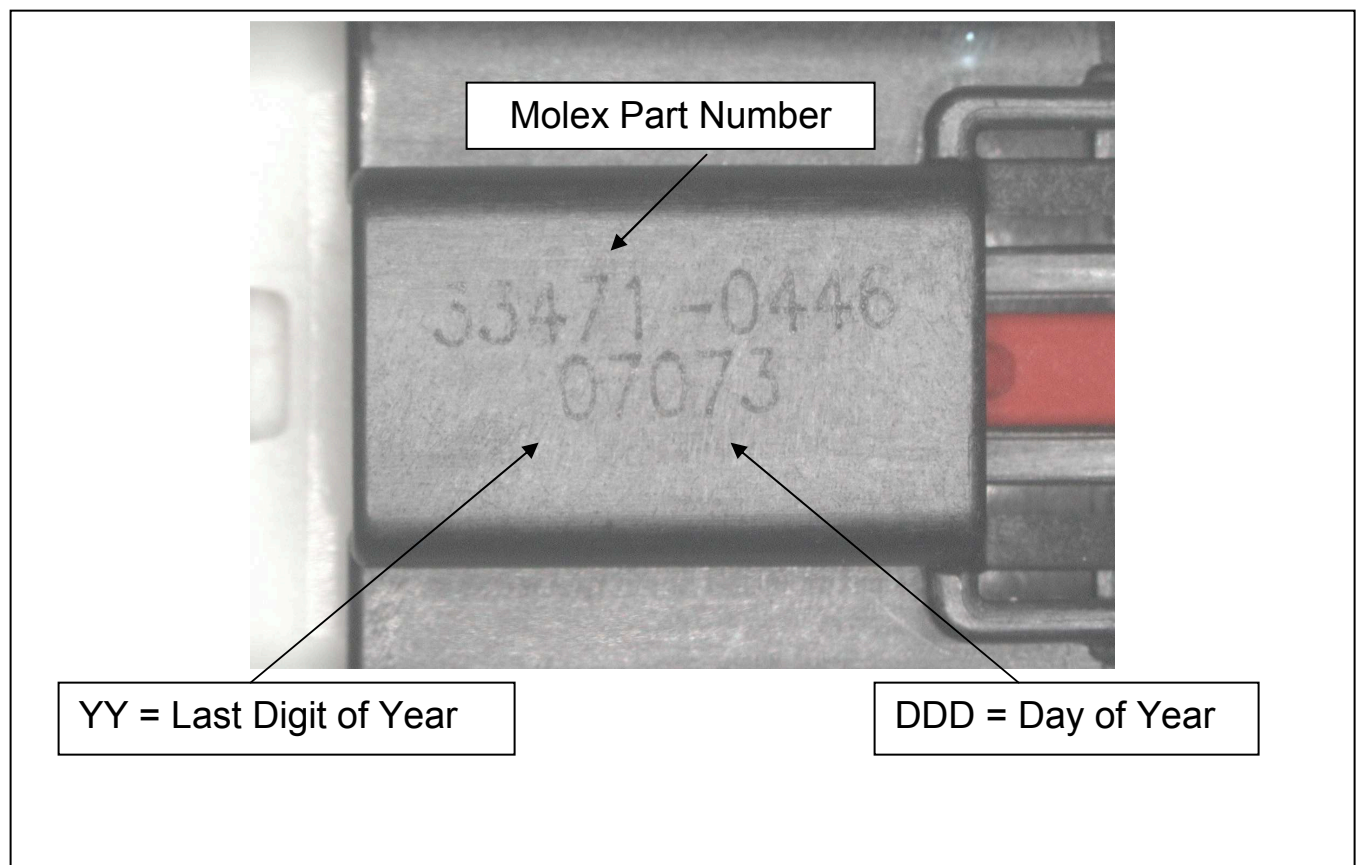


Section 2: Product Summary

E. Product Identification

- All parts are laser etched with:
 1. Molex Part Number
 2. Date Code (YYDDD)
 - YY = Last Digit of Year
 - DDD = Day of Year

Note – MX150 16 way hybrid and MX150 20 way **DO NOT** have Laser marking.



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Section 3: Connector Assembly

A. “As Shipped” connector positions

TPA's shown in “As Shipped” condition.

The TPA should remain in the pre-lock position until all circuits are loaded. TPA movement distance from pre-lock to final lock = 5.0 mm in both Blade and Receptacle connectors.

The TPA should never be removed from the connector!



TPA's shown in pre-lock

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Section 3: Connector Assembly

B. TPA in Pre-lock and Lock

TPA shown in “Pre-lock” position.(Fig.10-a)

TPA shown in “lock” position. (Fig 10-b)

The TPA should never be removed from the connector!

Fig. 10-a

Pre-lock

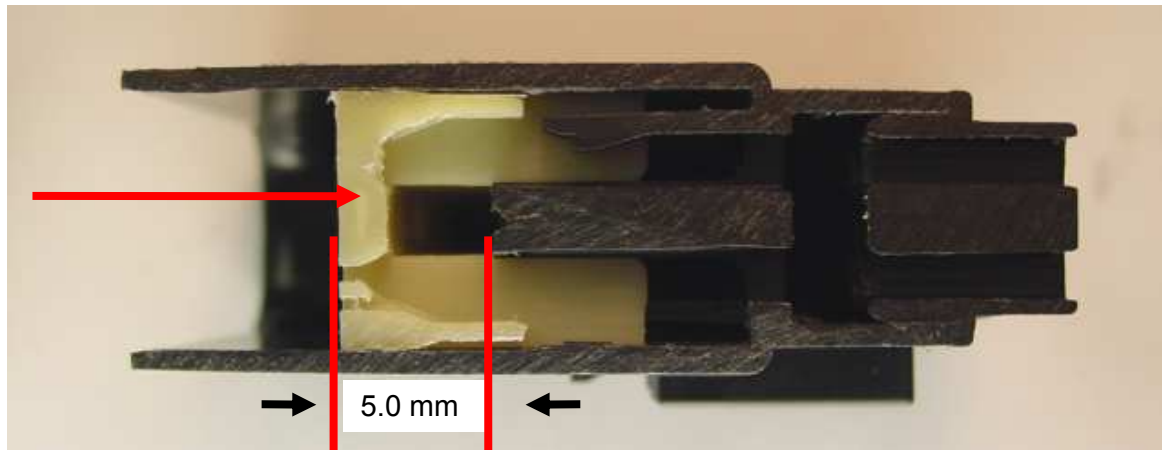
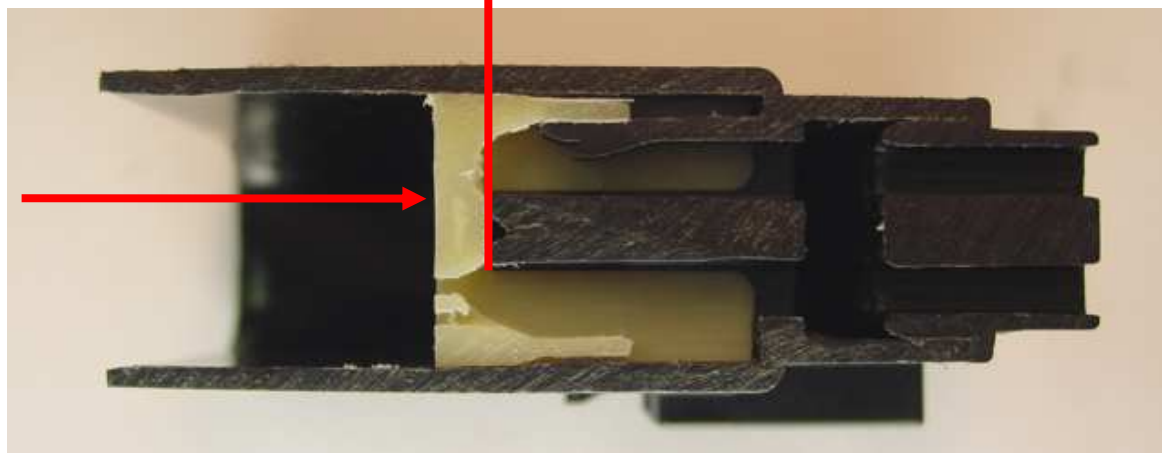


Fig. 10-b

Lock



Cross section of TPA in pre/ lock

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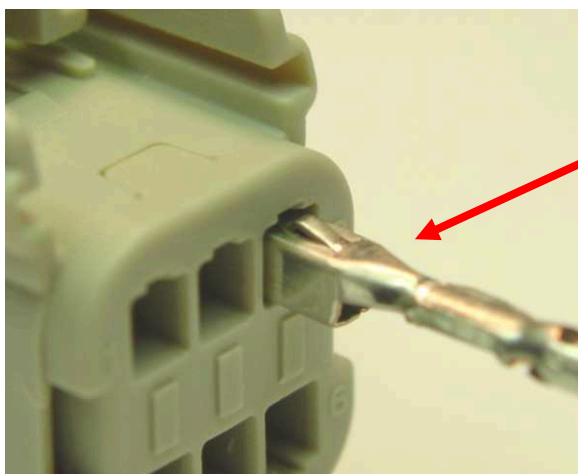
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Section 3: Connector Assembly

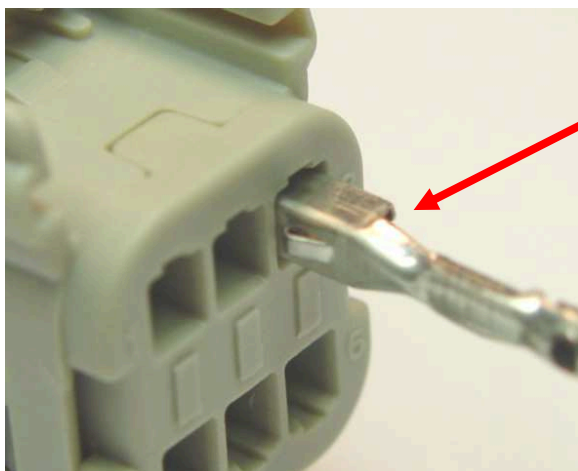
C. Terminal Installation

With TPA still in pre-lock position, orient terminal to rear of connector. Grip the wire no less than 30 mm from the terminal insulation crimp align the orientation feature and insert through appropriate circuit opening. If resistance is encountered, retract the terminal and adjust the angle of insertion. Continue inserting the terminal until it stops and locks up on the lock finger with an audible click.

MX150 Receptacle Installation



Correct Orientation



90° Mis-orientation

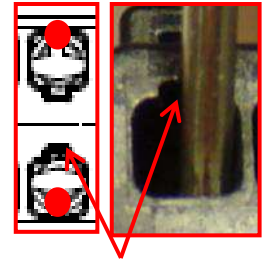
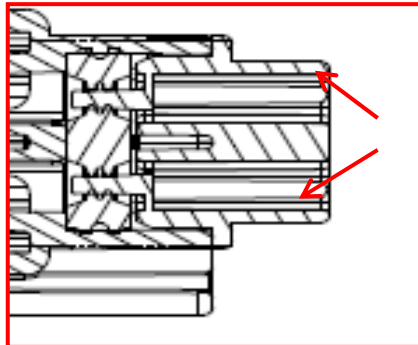
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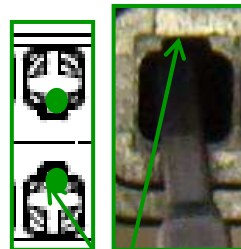
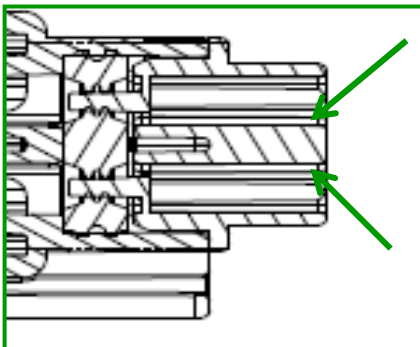
Dual Row MX150 Blade Installation

Do not install the blade terminal away from the grommet cap orientation feature

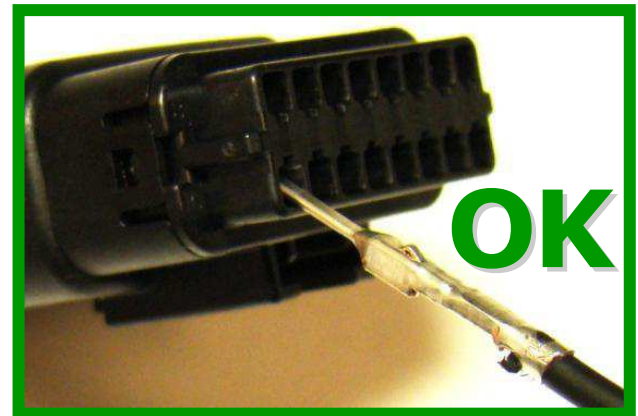


Orientation Feature

Install blade terminal straight or slightly angled towards the grommet cap orientation feature



Orientation Feature



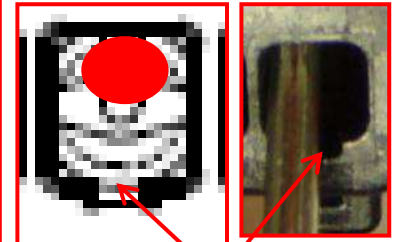
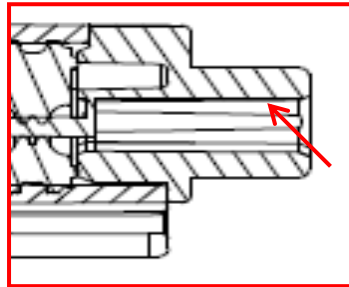
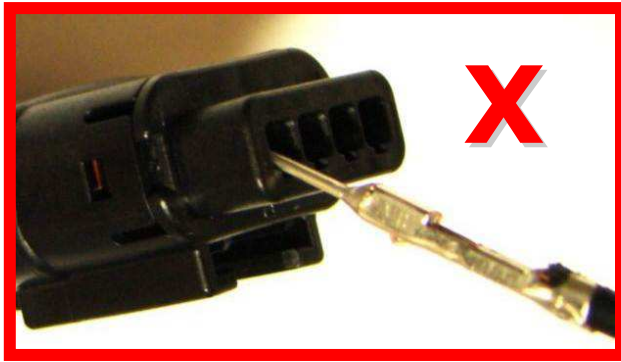
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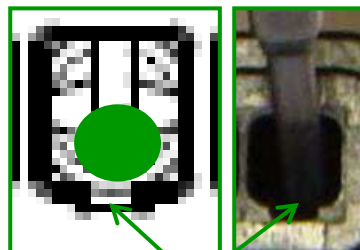
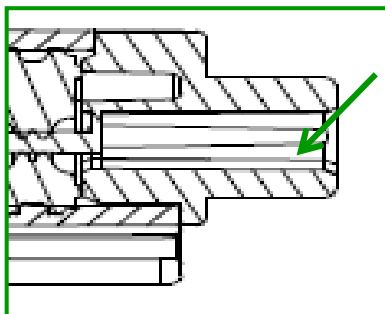
Single Row MX150 Blade Installation

Do not install the blade terminal away from the grommet cap orientation feature



Orientation Feature

Install blade terminal straight or slightly angled towards the grommet cap orientation feature



Orientation Feature



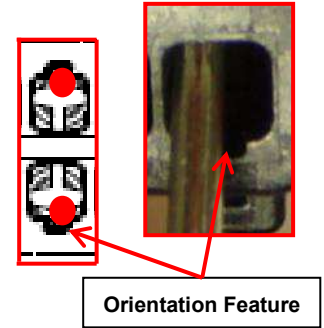
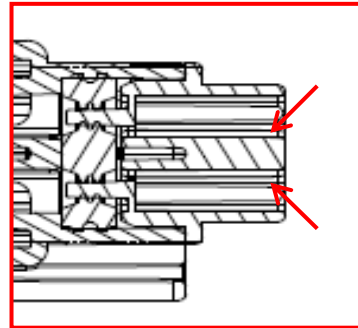
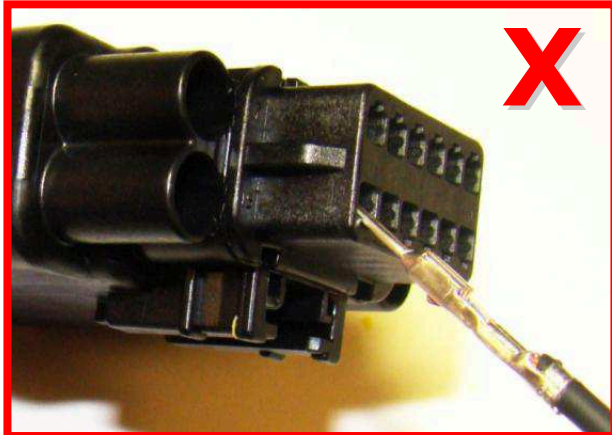
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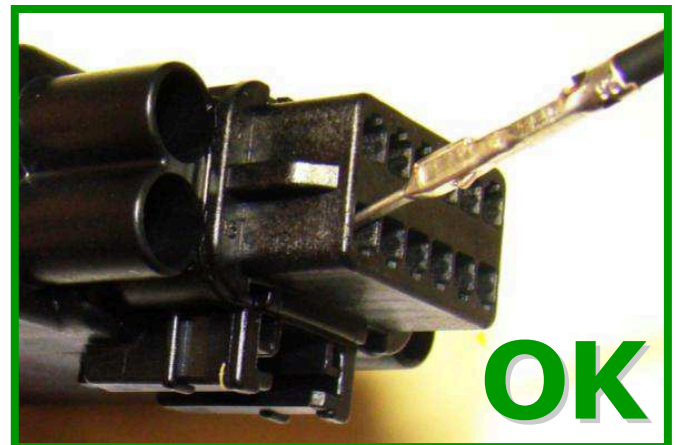
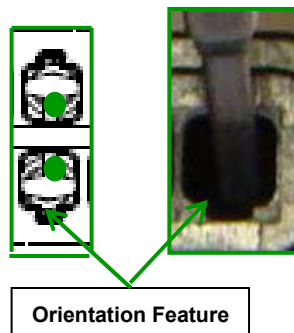
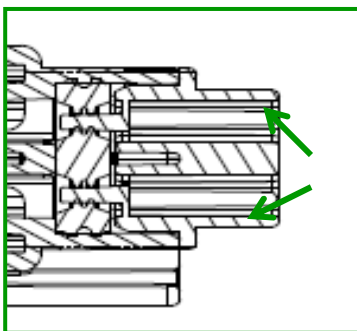
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Hybrid MX150 Blade Installation

Do not install the blade terminal away from the grommet cap orientation feature



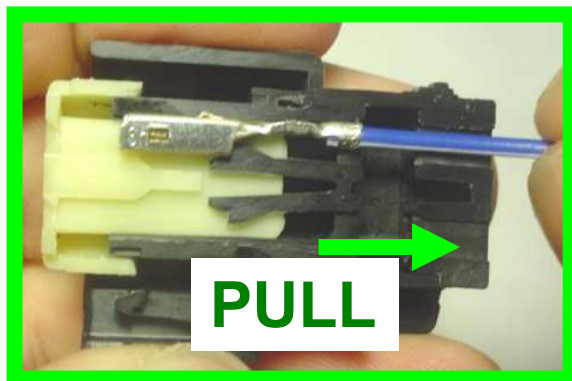
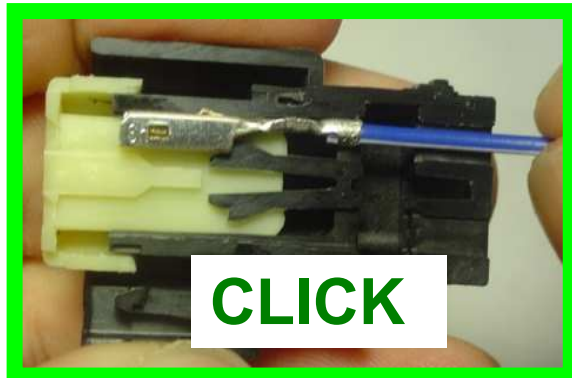
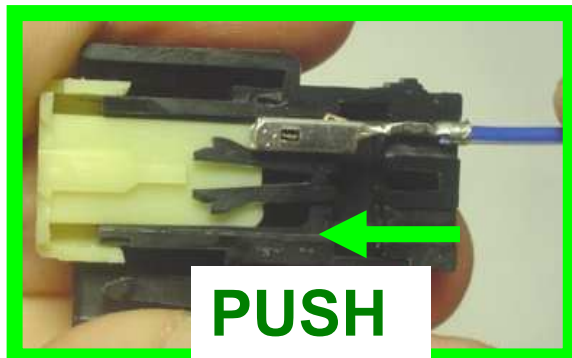
Install blade terminal straight or slightly angled towards the grommet cap orientation feature



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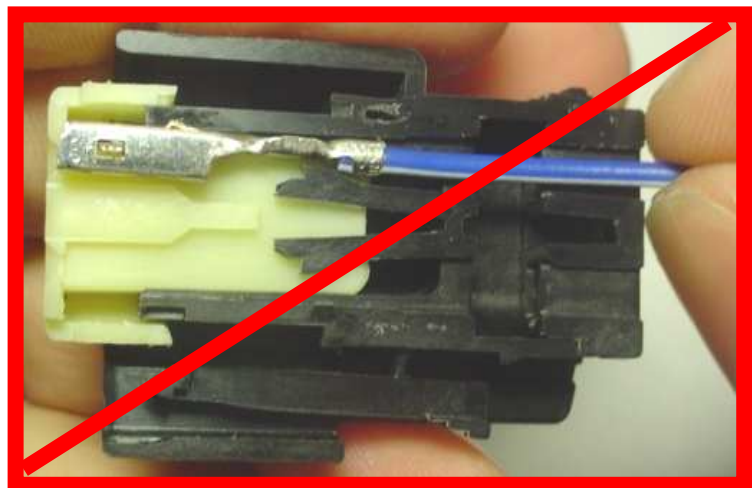
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With TPA still in pre-lock position, orient terminal to rear of connector. Align the orientation feature and insert through appropriate circuit opening. If resistance is encountered, retract the terminal and adjust the angle of insertion. Continue inserting the terminal until it stops and locks up on the lock finger with an audible click. Once the audible click is heard, stop inserting the terminal.

Follow Push, Click, Pull method of terminal installation.

NO!!!



WRONG!!

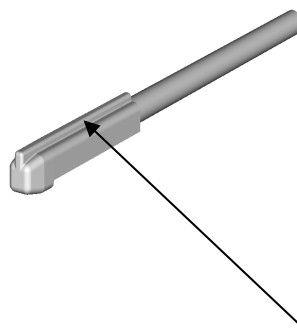
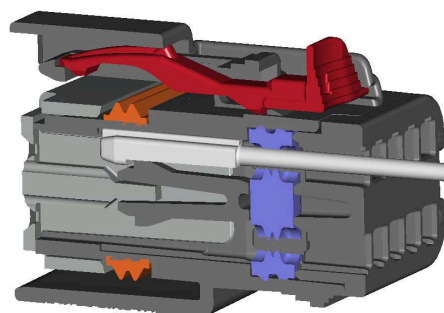
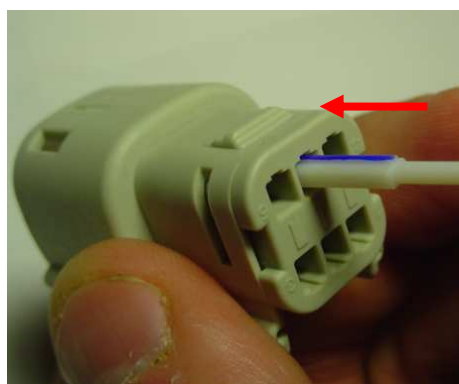
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Section 3: Connector Assembly

D. Seal Plug Installation

With TPA still in pre-lock position, orient seal plug to rear of connector. Align the orientation feature and insert through appropriate circuit opening. If resistance is encountered, retract the terminal and adjust the angle of insertion. Continue inserting the terminal until it stops and locks up on the lock finger with an audible click. Seal plugs can be used on both Blade, and Receptacle connectors.



Orientation Feature

Orientation feature is highlighted
blue for reference only

***Seal plug can not be used in shorting
bar circuits!***

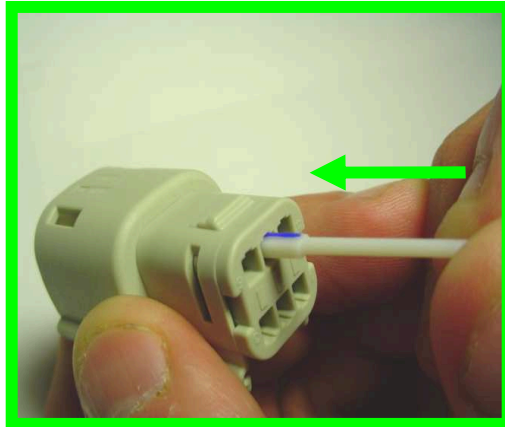
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Section 3: Connector Assembly

D. Seal Plug Installation continued



**YES!
CORRECT!**

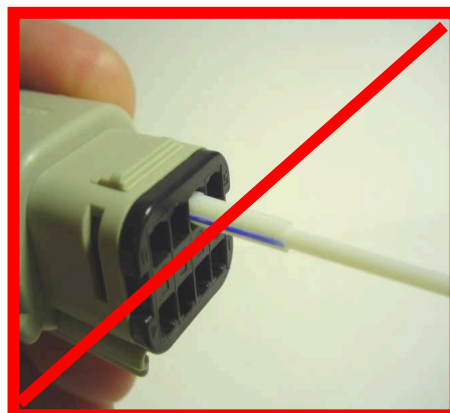


Backwards!



180° out of alignment!

**NO!
WRONG!**



90° out of alignment!

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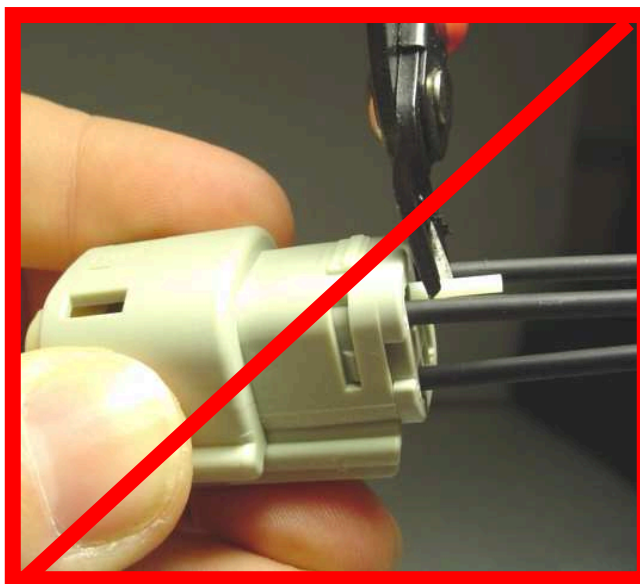
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Section 3: Connector Assembly

D. Seal Plug Installation continued

Cavity plugs must be installed, and trimmed before wires are installed. Cavity plugs can be used on both Blade, and Receptacle connectors.

Never trim cavity plugs with wires installed!



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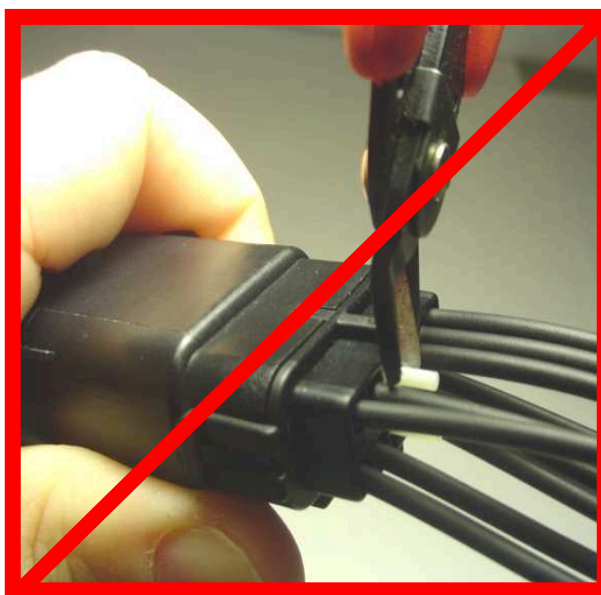
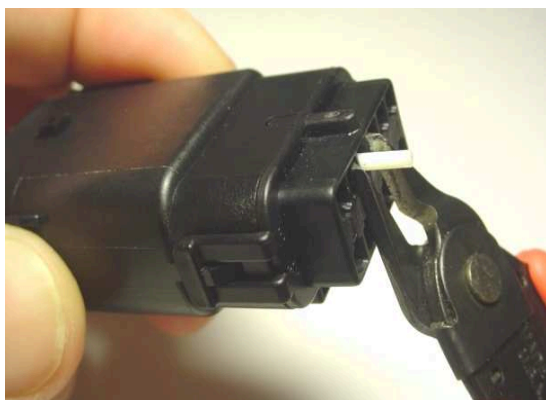


Section 3: Connector Assembly

D. Seal Plug Installation continued

Cavity plugs must be installed, and trimmed before wires are installed. Cavity plugs can be used on both Blade, and Receptacle connectors.

Never trim cavity plugs with wires installed!



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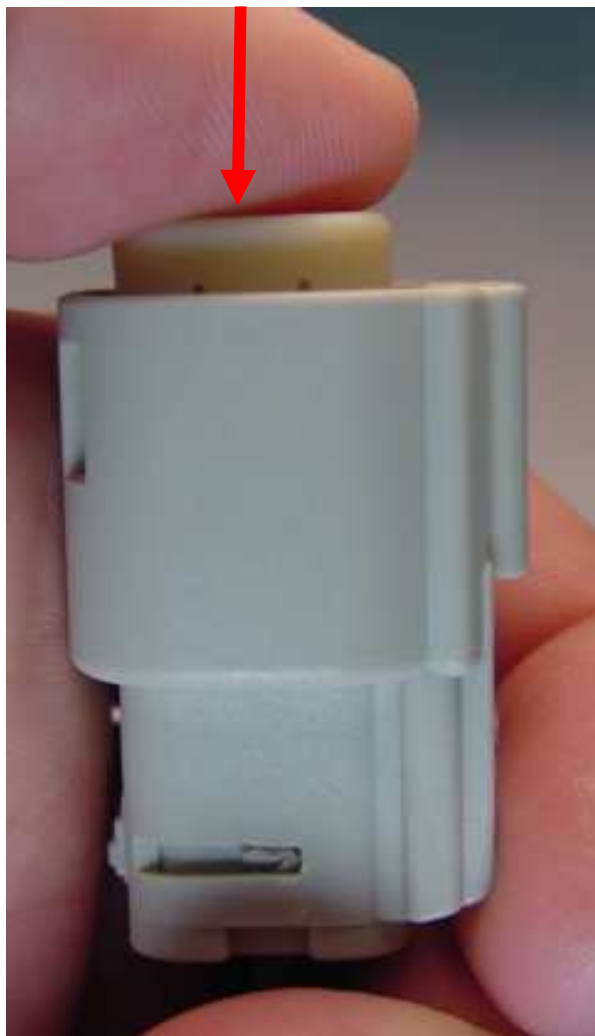
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Section 3: Connector Assembly

E. Seating the TPA Receptacle side

With the Receptacle terminals fully installed, the TPA can be seated into its final lock position by applying an even force to both ends until it comes to a stop, with an audible click. TPA movement distance from pre-lock to final lock is 5.0 mm.

The TPA should never be fully removed!



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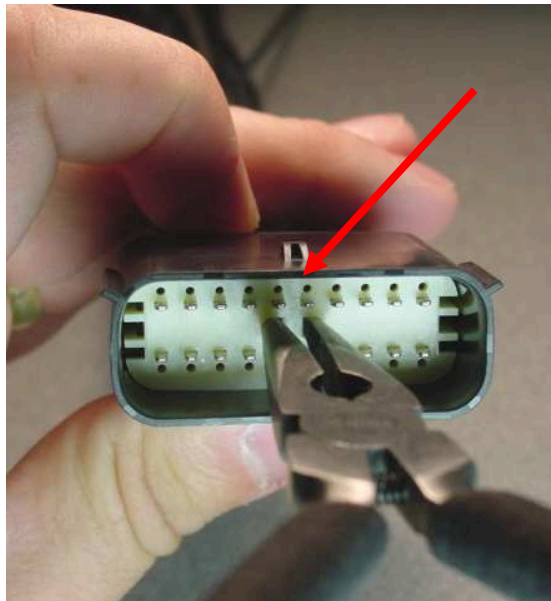
APPLICATION SPECIFICATION

Section 3: Connector Assembly

F. Seating the TPA Blade side

A modified process can be used for the Blade terminal. Using a pair of needle nose pliers, apply even pressure to the TPA. If the TPA resists it may be detecting a partially installed terminal. Pull the TPA back into its pre-lock position and make sure all terminals are fully installed. Upon completion, the TPA can be seated. TPA movement distance from pre-lock to final lock is 5.0mm.

The TPA should never be fully removed!



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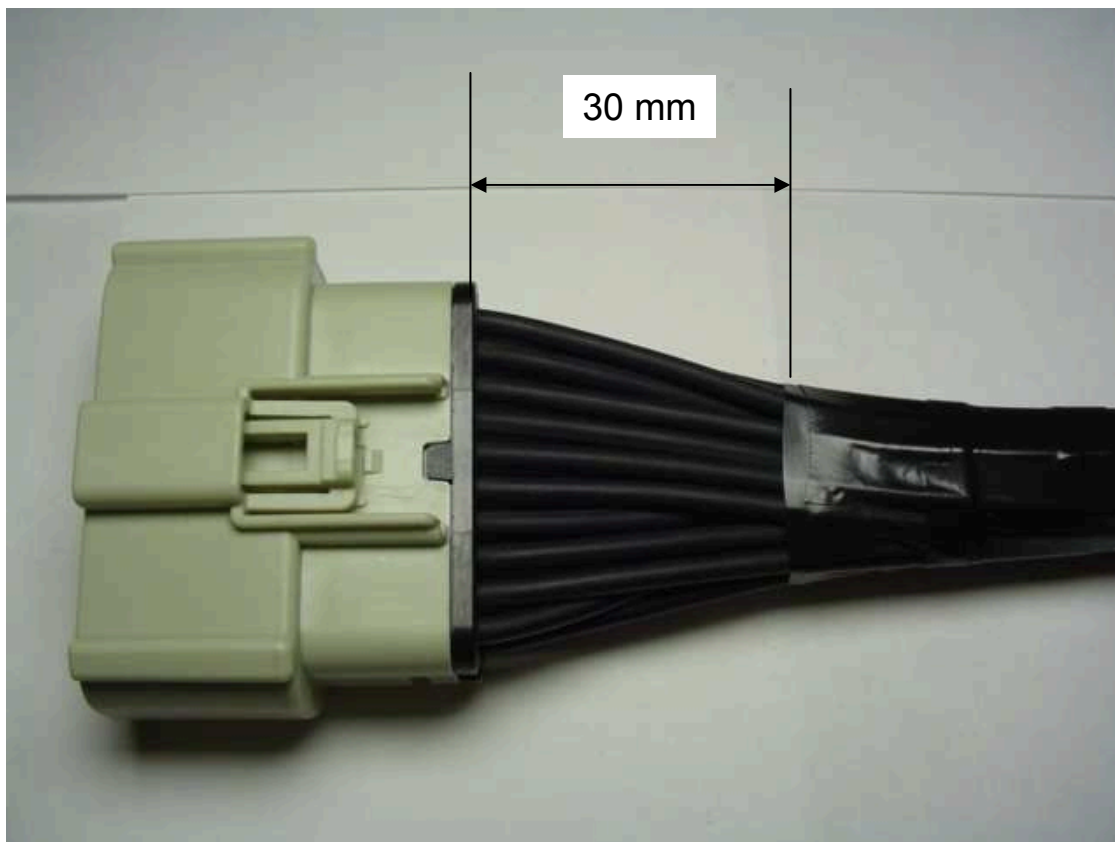
Section 3: Connector Assembly

G. Harness taping recommendations

Industry standard for harness taping: Molex recommends tape should be a minimum of 30mm from the back of connector housing.

TPA must be seated before any tape is applied to the harness!

Tape must not contact the back of connector housing!



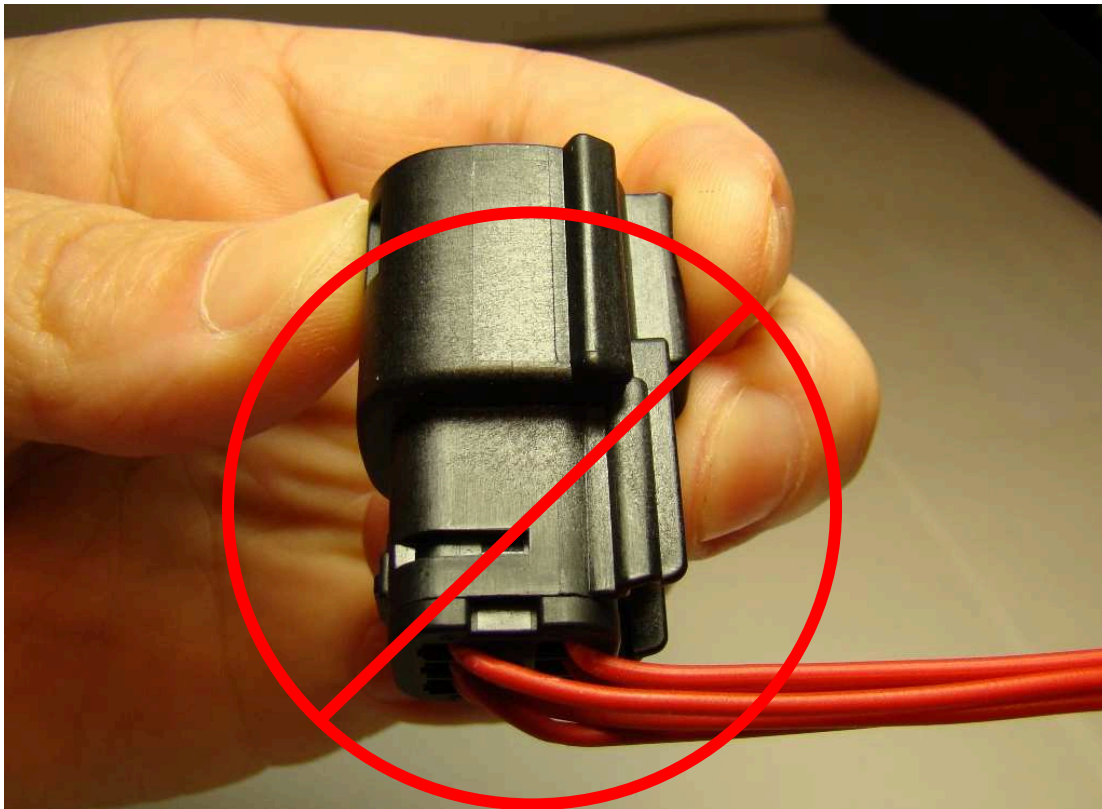
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APPLICATION SPECIFICATION

Industry standard for harness routing: Molex recommends gradual bends in wire harnesses.

***Sharp 90 degree bends in the harness should be avoided!
Excessive force, or severe bending of the wire harness may damage the harness.***



WRONG!

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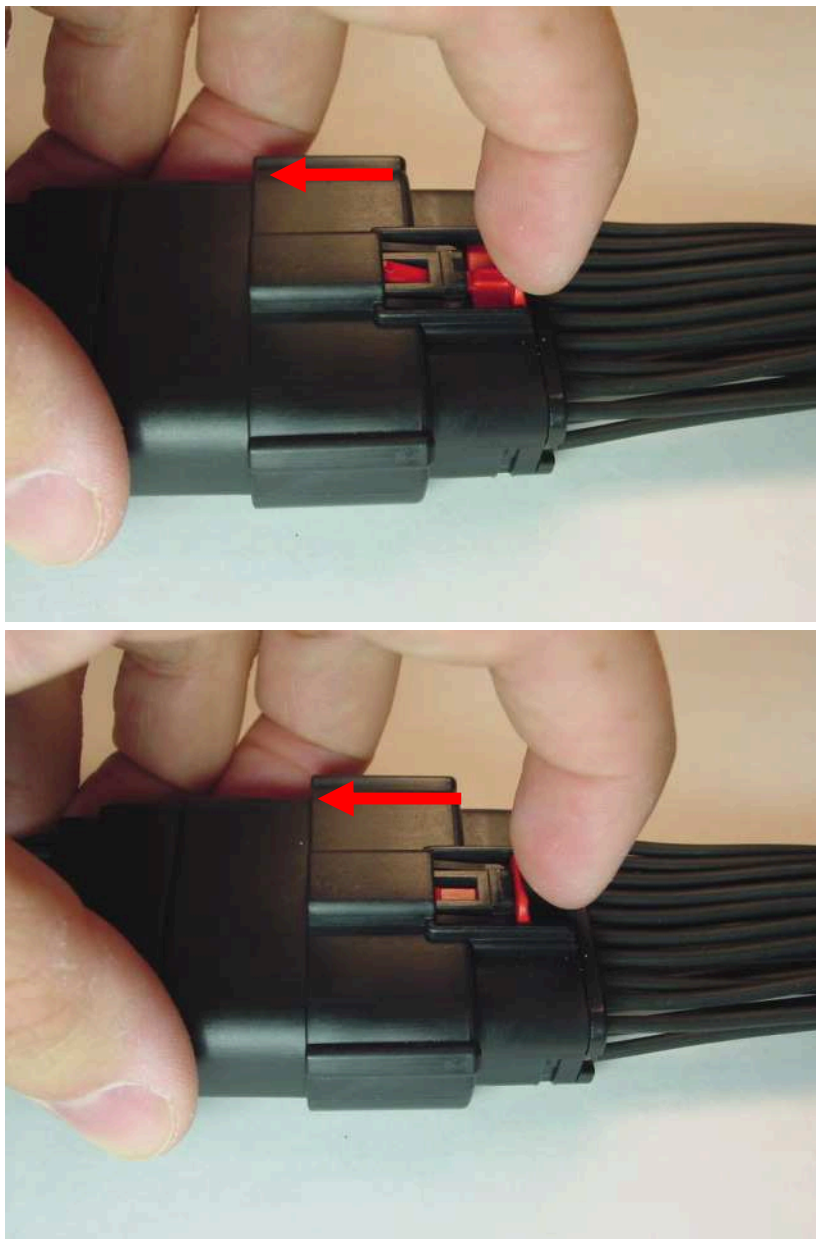


APPLICATION SPECIFICATION

Section 4: Connector Mating

B. Connector mating (continued)

Once together the final step will be locking the CPA. Simply press in to the center of the connector, until you see/feel positive engagement.



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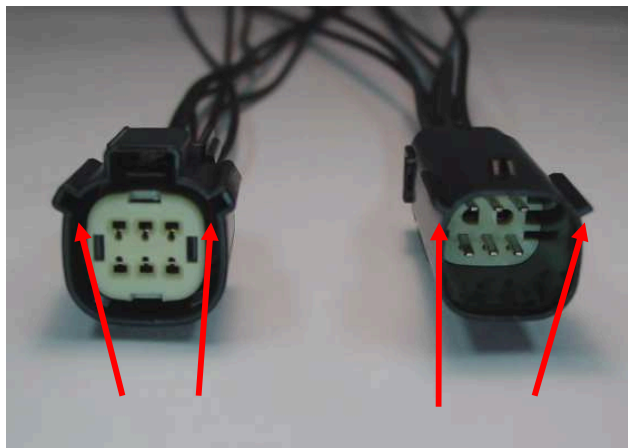


APPLICATION SPECIFICATION

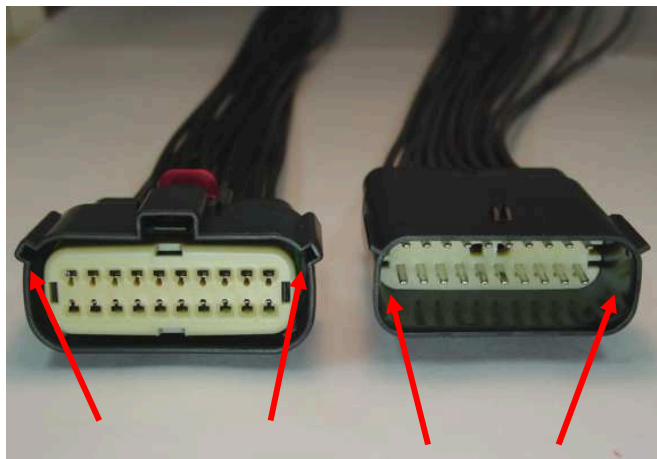
Section 4: Connector Mating

A. Connector mating

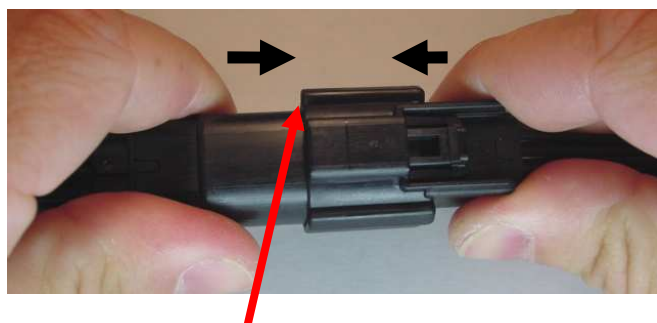
Note and align connector keying features, from connector to connector. Begin mating procedure by sliding the two connectors together, press firmly until you hear an audible click from the primary latch.



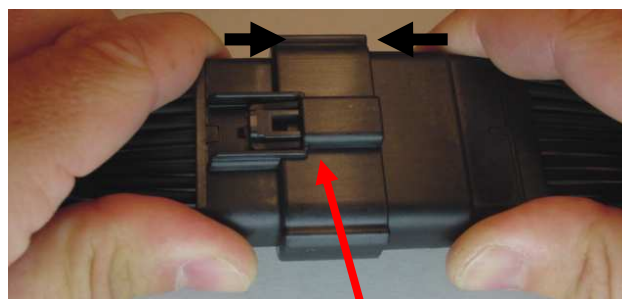
Keying features



Keying Features



Primary Latch



Primary Latch

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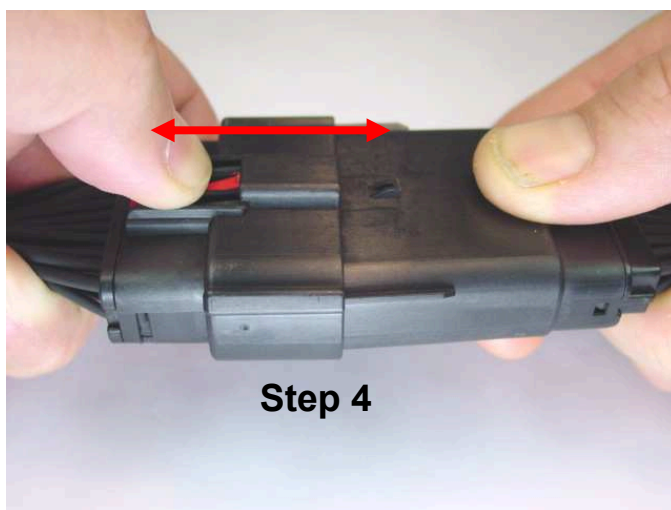
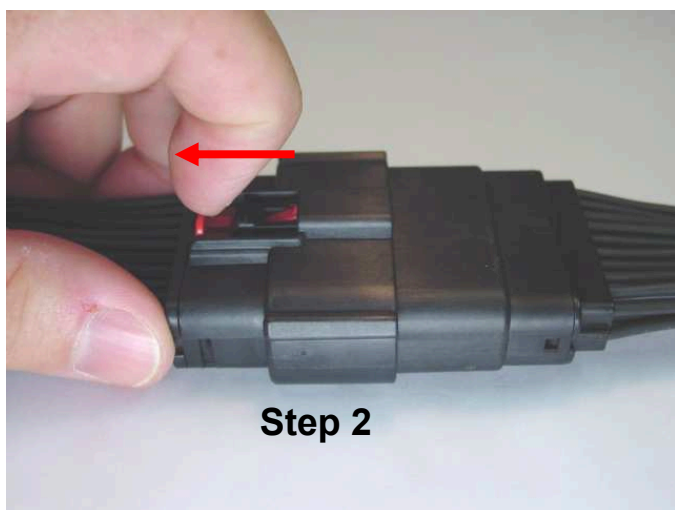
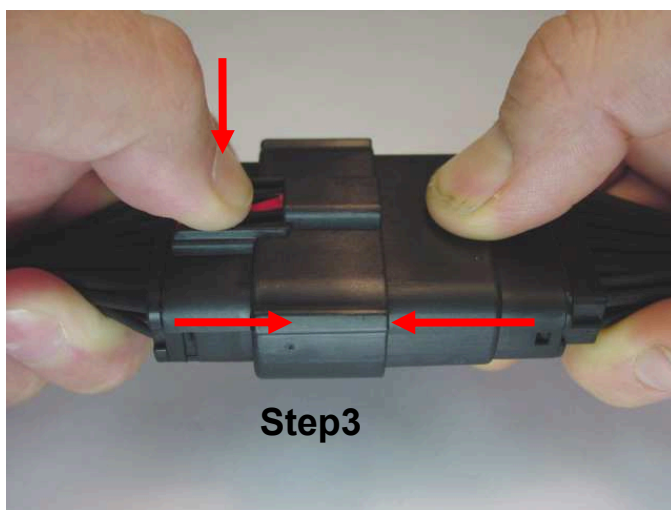
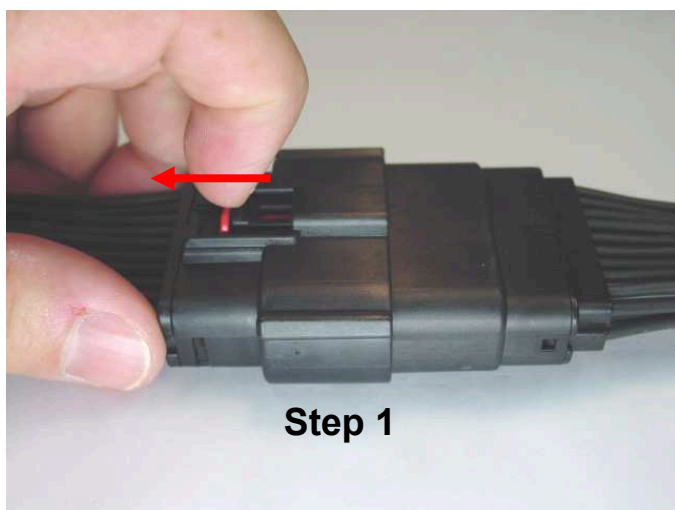


APPLICATION SPECIFICATION

Section 5: Service Instructions

A. Un-mate procedure

To un-mate the connectors, pull back on the CPA (step 1, and step 2). Push connector together to unload the latch system. Then depress the latch with your thumb (step 3). Continue to depress the latch, and gently pull apart connector assemblies (step 4).



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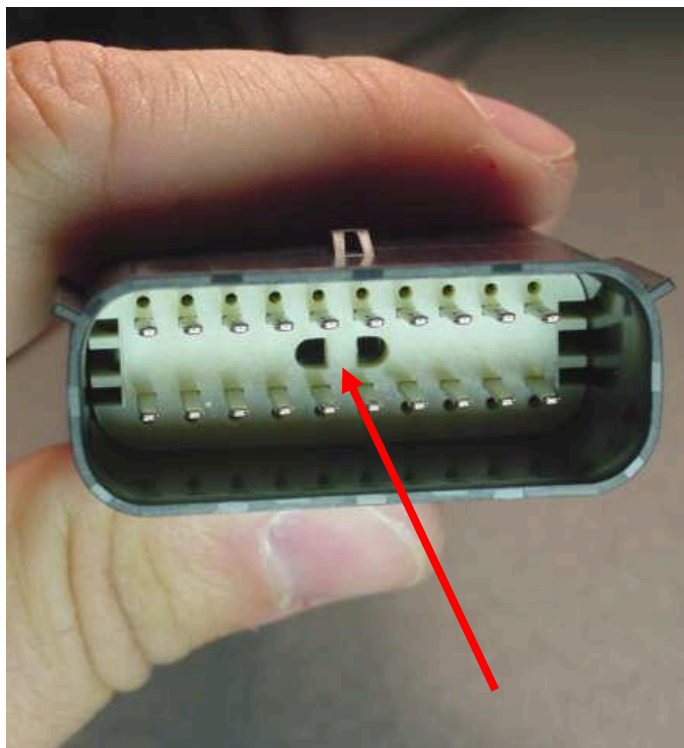
Section 5: Service Instructions

B. TPA servicing Blade side

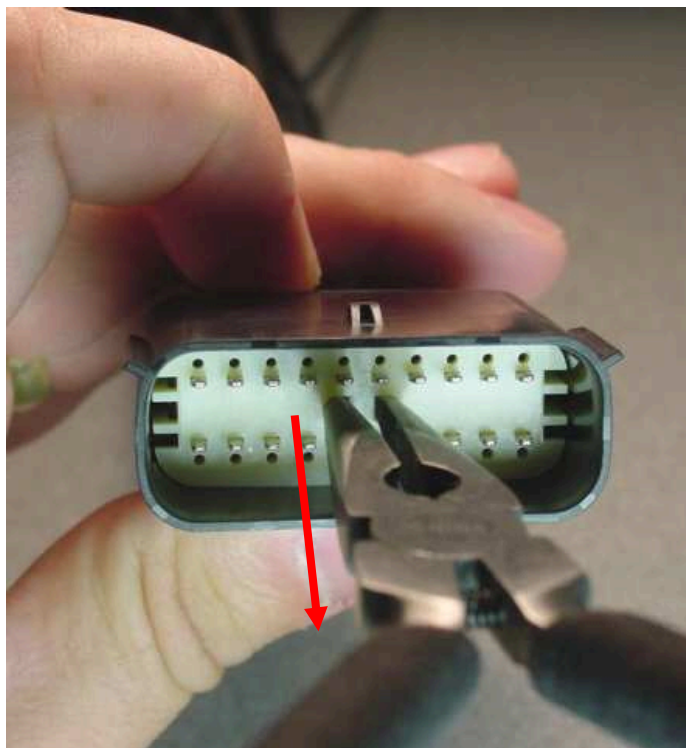
***The TPA should never be fully removed from the connector housing!
Excessive force may damage the TPA!***

Step 1: Insert a small pair of needle nose pliers to the designated grab point

Step 2: Pull back 5.0 mm, gently, until the TPA reaches pre-lock position.



Grab point



**Pull back gently
Approximately**

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APPLICATION SPECIFICATION

Section 5: Service Instructions

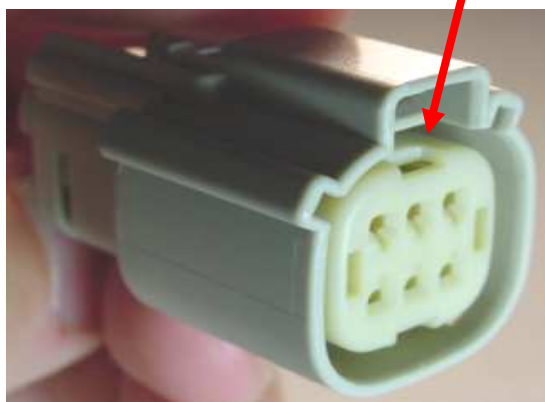
C. TPA servicing Receptacle side

Step 1: Insert a small screwdriver (max width= 3.0 mm) into the designated pry point

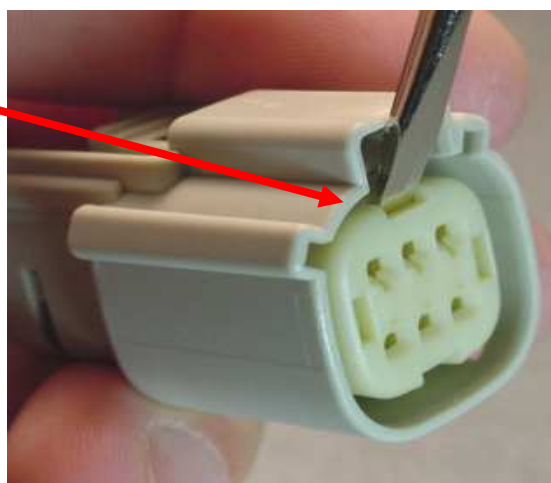
Step 2: Using the housing as a pivot point gently pry out on the TPA, until it reaches pre-lock position (5.0 mm, travel)

The TPA should never be fully removed from the connector housing! Excessive force may damage the TPA!

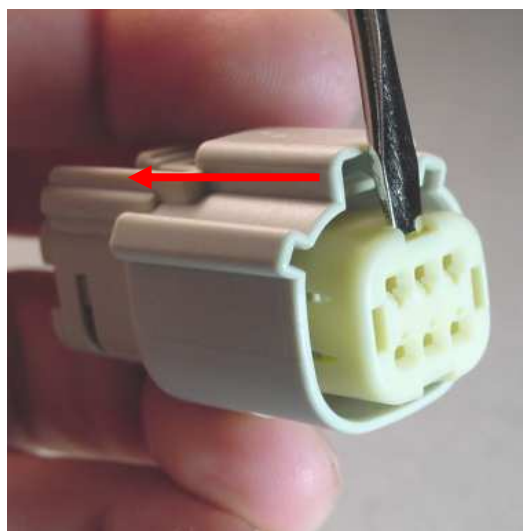
Pry Point



Step 1



Step 2



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APPLICATION SPECIFICATION

Section 5: Service Instructions

D. 1.50 mm terminal removal

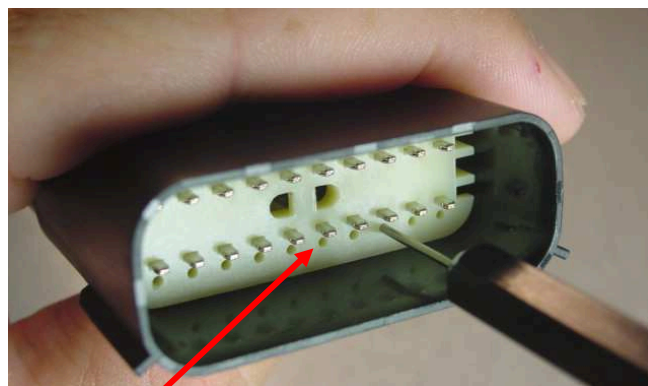
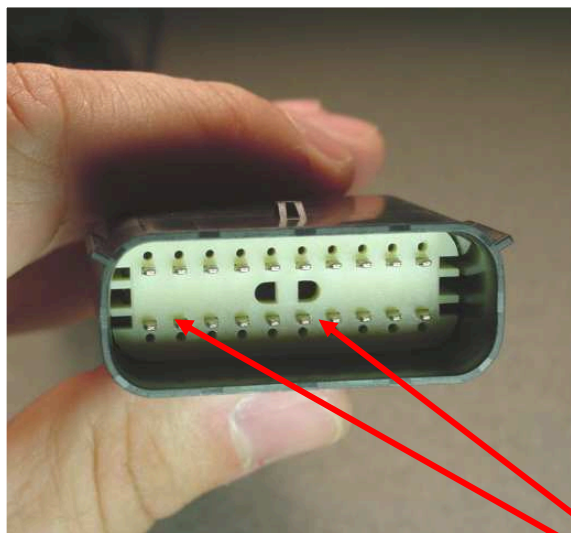
Step 1: Using the 1.50 mm service tool #63813-1500, insert the tip into the terminal service hole adjacent to the terminal to be serviced.

Step 2: Push straight down gently and apply pressure to release locking finger. This motion will release the locking finger, "picking" is not required. Cavity plugs are removed in the same manner.

Do not apply any lateral force, this may damage the tool, or the locking finger!

Do not use excessive force, excessive force can damage the lock finger!

Do not insert the service tool at an angle, this may cause damage to the terminal!



Service Ports

Service tool must be 90° to the connector face!

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APPLICATION SPECIFICATION

Section 5: Service Instructions

E. Terminal removal (continued)

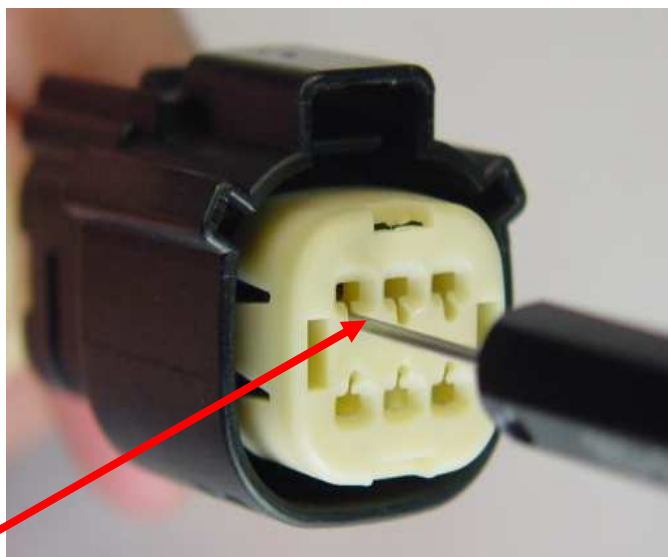
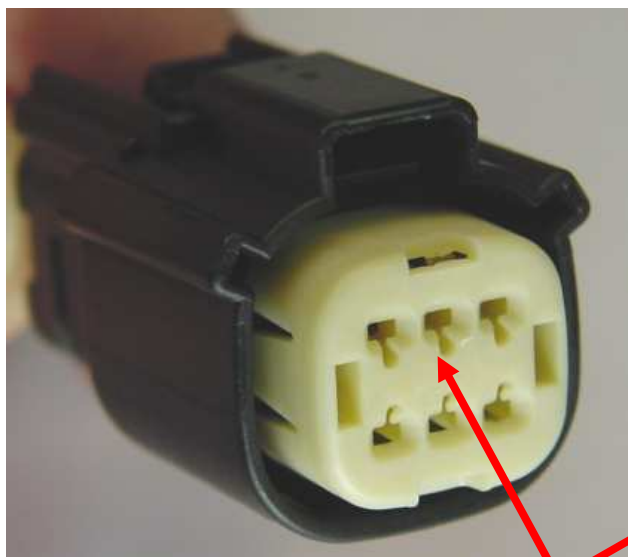
Step 3: Once the Lock finger is disengaged, gently pull on the wire to release the terminal. If the terminal resists, the service tool may not be fully engaged. Push the service tool straight into the service opening to ensure that it has fully disengaged the locking finger.

Do not insert the service tool into the terminal opening!

Do not use excessive force, excessive force can damage the lock finger!

Do not insert the service tool at an angle, this may cause damage to the terminal!

Do not apply any lateral force, this may damage the terminal or lock finger!



Service Ports

Service tool must be 90° to the connector face!

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Section 5: Service Instructions

Service tool must be 90° to the connector face!



**CORRECT!
YES!**



**WRONG!
NO!**

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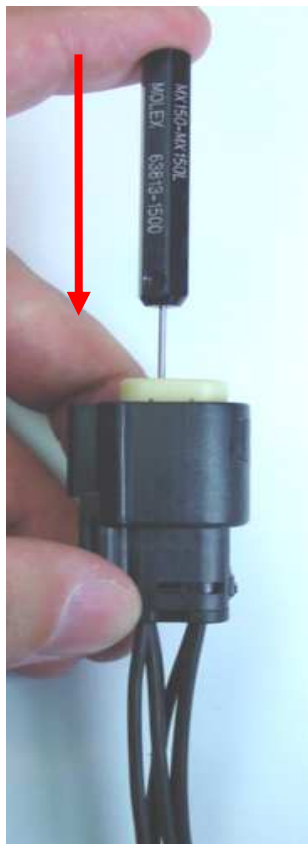
Section 5: Service Instructions

F. Terminal removal (continued)

1



2



3



Service tool must be 90° to the connector face!

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Section 5: Service Instructions

G. Service tools

If the 1.50 mm terminal needs to be replaced, a new one can be hand crimped using the Molex Crimp tool # 63811-5900(Female)16,14 AWG, and # 63811-2600 (Male)22,20,18AWG Shown in (Fig.22a) #63811-2400(Male)16,14AWG #63811-6000(Female)22,20,18AWG. Also shown Molex Terminal removal tool # 63813-1500

Fig. 22a



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Section 6: Electrical Continuity Checking

Fixtures used for continuity testing must meet the row and pitch dimensions as identified in Section 6.

Fixtures outside these requirements could result in damage to the connector and/or terminal.

Probe pin recommendations:

1. When testing the connector for continuity it is imperative that you do not damage the terminals!
2. Pogo pins should be checked for damage or sticking several times a shift. This should assure containment if an issue is found.
3. First a visual inspection of all the pins for damage should be performed.
4. Next a testing block should be used to depress all the pogo pins up into the barrel. If there is a bent or sticking pin, it should remain stuck in the barrel of the pogo pin. A damaged or stuck pin should be replaced before any additional testing is performed.

Probing damage can occur:

1. If a sharp ended probe is inserted into the contact of the terminal it may damage the plating and increase contact resistance
2. If an oversized diameter probe is inserted into the terminal, this will overstress the beam in the terminal. This will create an environment for intermittent connections, and increased contact resistance.
3. If a probe is inserted into the connector on an angle or off center it may damage the terminal, and or the connector.

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APPLICATION SPECIFICATION

Section 6: Electrical Continuity Checking

• Preferred method of probing receptacle

Fixtures used for continuity testing must meet the row and pitch dimensions as identified in Section 6. Fixtures outside these requirements could result in damage to the connector and/or terminal.

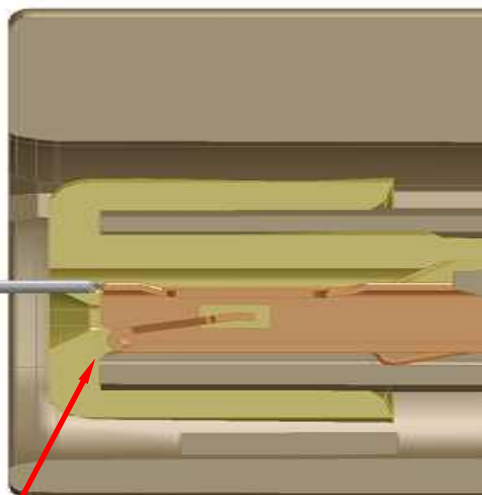
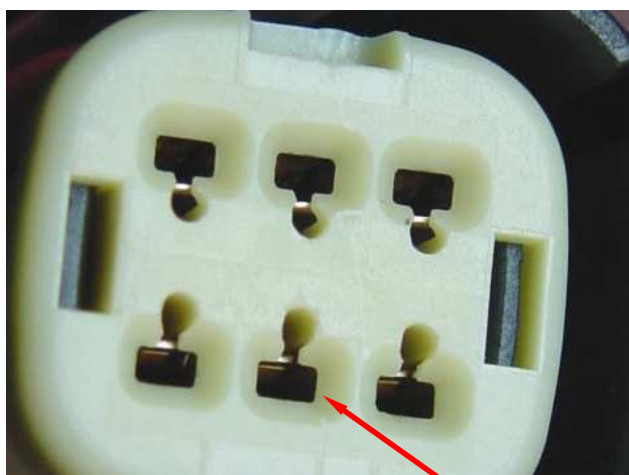
When TPA allows access to the box, probe using this method.

Check electrical continuity on the terminal by inserting probe pin between terminal access hole and terminal opening with a 0.50 mm probe.

Shown below are pictures of MX150 Sealed connector. Unsealed connectors must be probed at the same location (between access hole and terminal opening)

Molex Receptacle connector

View of probe pin female terminal



**Must use this pin
or damage will
occur!**

(0.50) mm probe

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APPLICATION SPECIFICATION

Section 6: Electrical Continuity Checking Preferred method of probing receptacle

Probe pin details

Manufacturer: Everett Charles technologies

Preferred probe number: POGO-72J-4

Pin length 0.330" (8.38 mm)

Pin diameter: (0.50 mm)

Tip shape: Spherical

Tel: (909) 625-9390

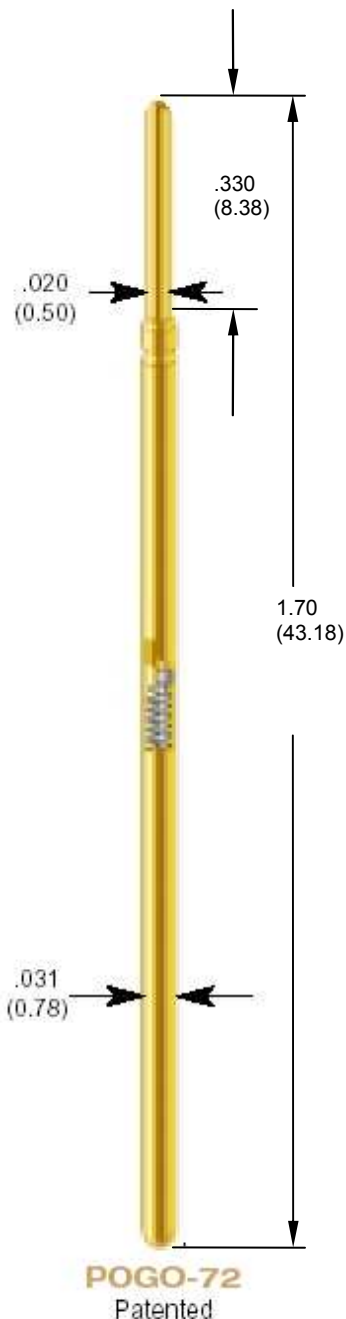
Must use this pin or damage will occur!



POGO-72J
POGO-72J-S



Dimensions shown are in (mm)



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Section 6: Electrical Continuity Checking

B. Alternative method of probing receptacle

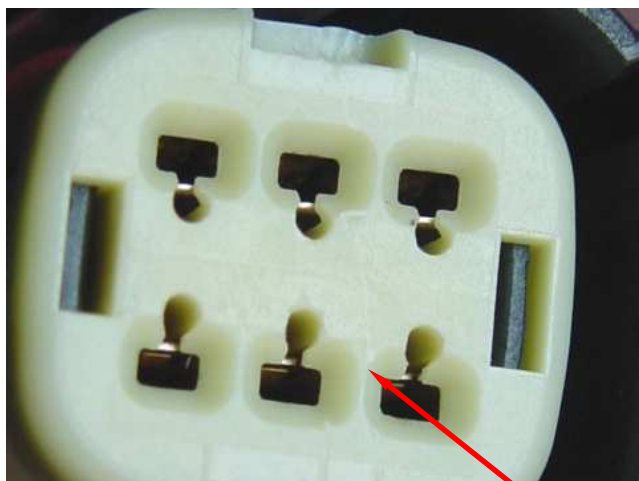
Fixtures used for continuity testing must meet the row and pitch dimensions as identified in Section 6. Fixtures outside these requirements could result in damage to the connector and/or terminal.

When TPA does not allow access to the box you must probe down the throat using this method.

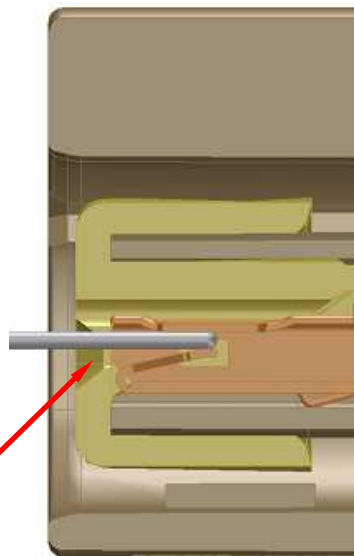
Shown below are pictures of MX150 Sealed connector. Unsealed connectors must be probed at the same location (center of receptacle TPA opening)

Check electrical continuity on the terminal by inserting probe pin down the center of receptacle TPA opening

Molex Receptacle connector



View of probe pin female terminal



(0.64) mm probe

Must use this pin or damage will occur!

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APPLICATION SPECIFICATION

Section 6: Electrical Continuity Checking Alternative

Probe pin details

Manufacturer: Everett Charles Technologies

Alternative probe number: POGO-1-J-4

Pin length 0.330" (8.38mm)

Pin diameter: (0.64 mm)

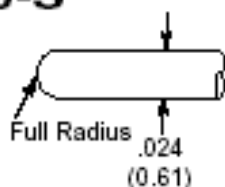
Tip shape: Spherical

Tel: (909) 625-9390

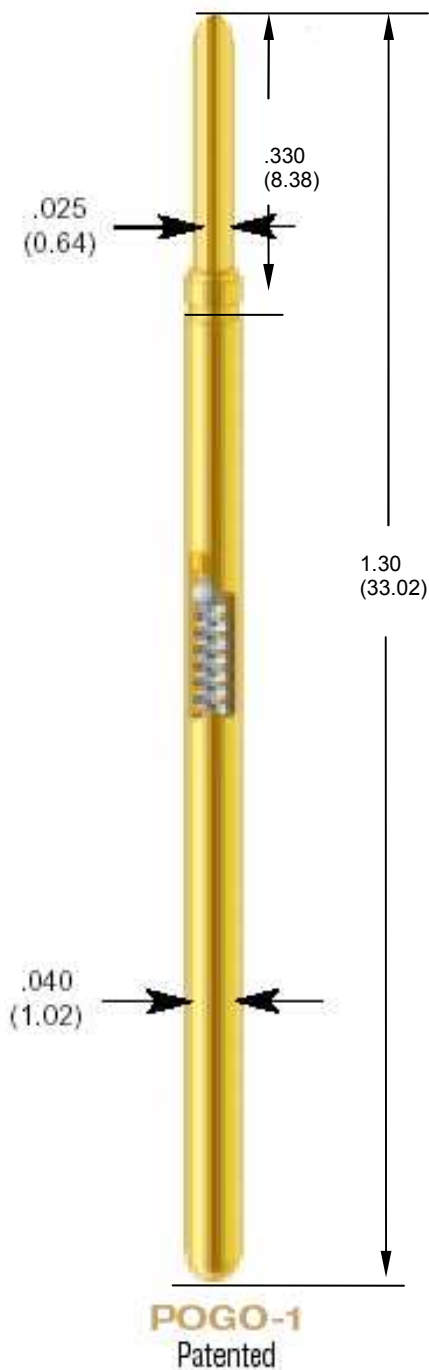
Must use this pin or damage will occur!

POGO- 1 — J — 4
PROBE MODEL TIP STYLE SPRING FORCE

POGO-1J
POGO-1J-S



Dimensions shown are in (mm)



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APPLICATION SPECIFICATION

Section 6: Electrical Continuity Checking - Blade

Probe pin details

Manufacturer: Lone Star Industrial

Recommended Probe number: LS054MR-849-4.6

Alternative Probe Number: LS054MR-846-4.6

Pin length: .335" (8.51mm)

Pin diameter: .060" (1.52 mm)

Recommended Tip shape: Serrated

Alternative Tip shape: Large Concave

Tel: (915) 779-7255

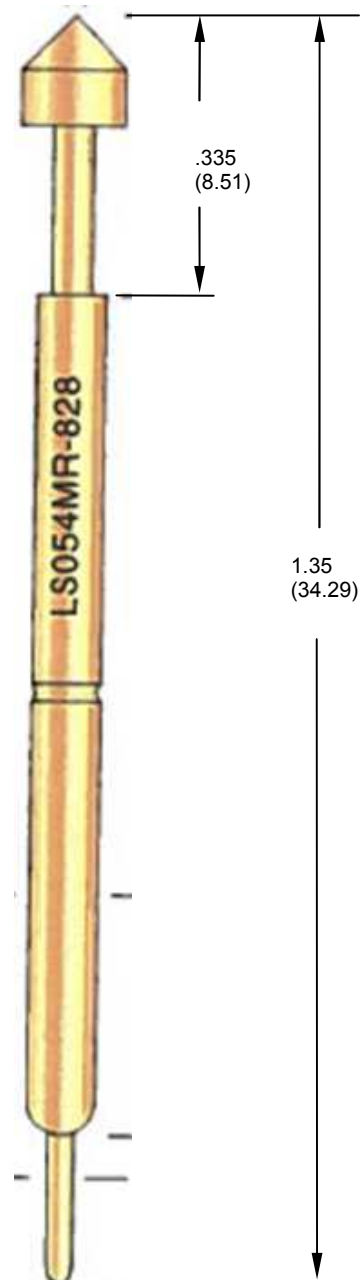
Recommended Pin Tip



Alternative Pin Tip



Dimensions shown are in (mm)



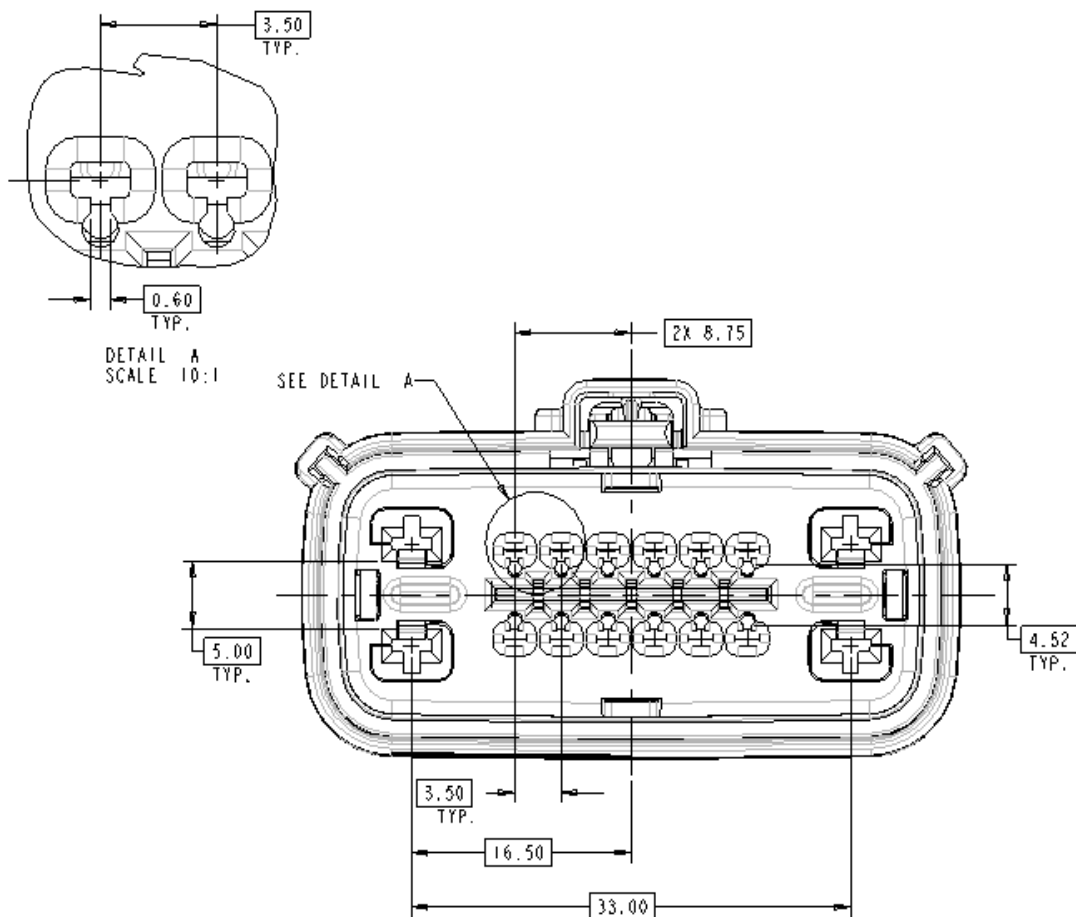
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APPLICATION SPECIFICATION

Section 6: Electrical Continuity Checking

MX150 16 WAY HYBRID RECEPTACLE PREFERRED PROBING



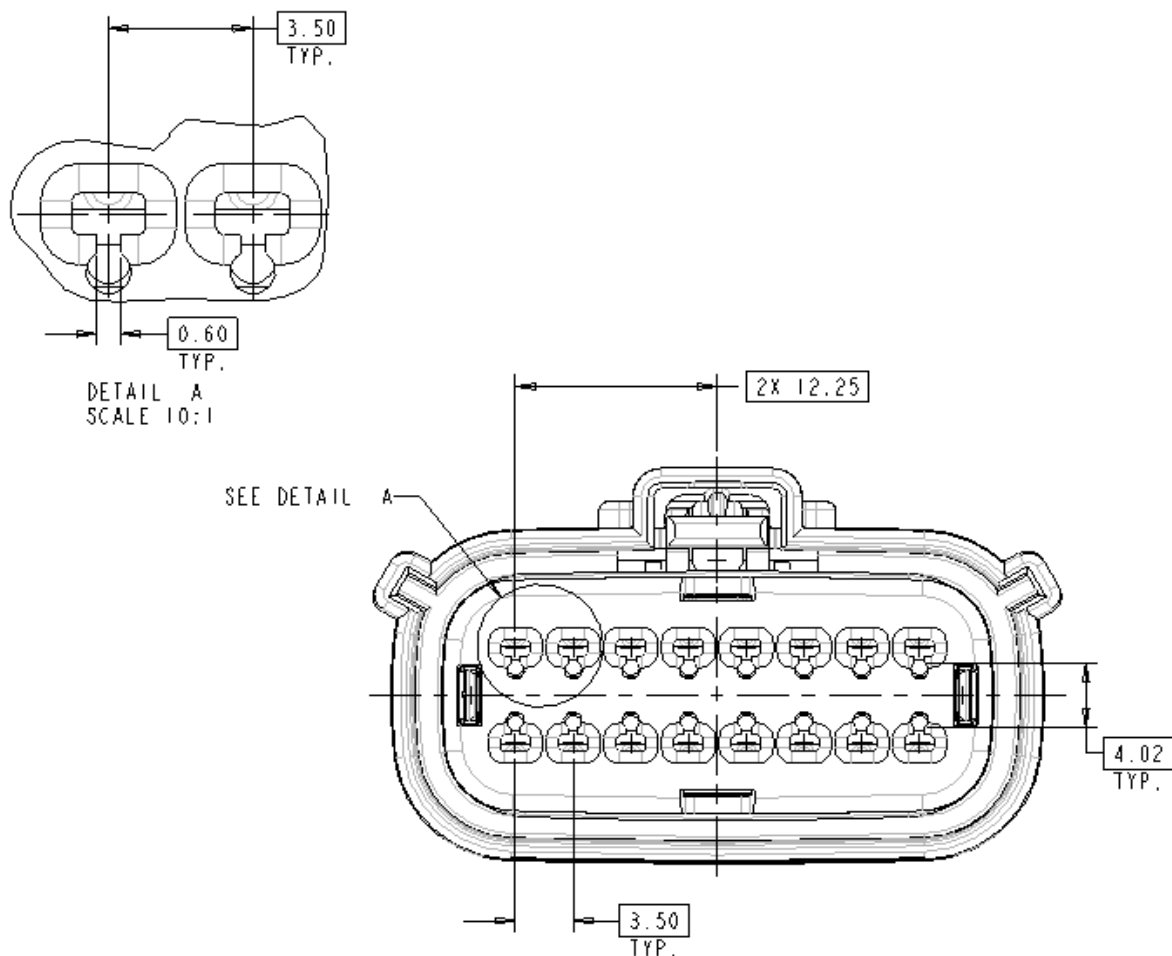
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APPLICATION SPECIFICATION

Section 6: Electrical Continuity Checking

MX150 16 WAY RECEPTACLE PREFERRED PROBING



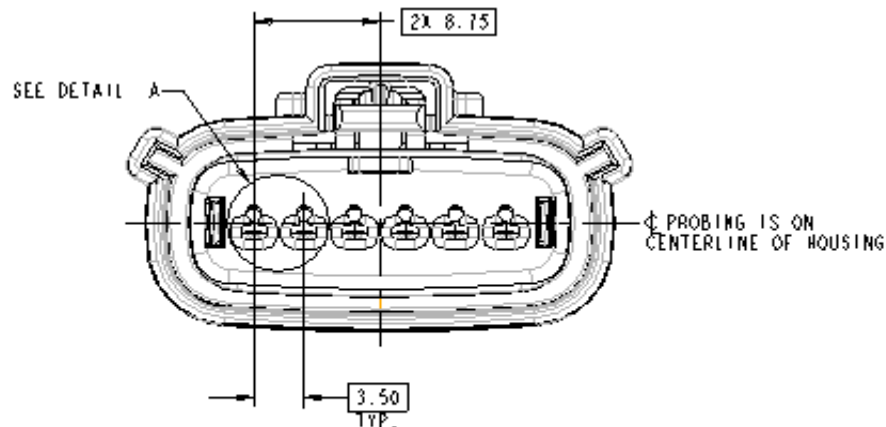
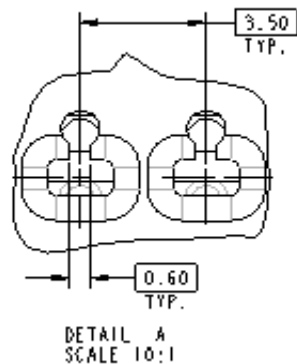
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APPLICATION SPECIFICATION

Section 6: Electrical Continuity Checking

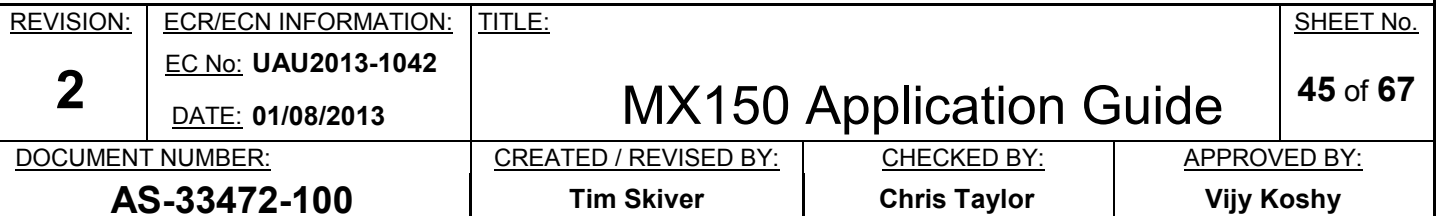
MX150 6 WAY RECEPTACLE PREFERRED PROBING



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MX150 16 WAY RECEPTACLE ALTERNATE PROBING

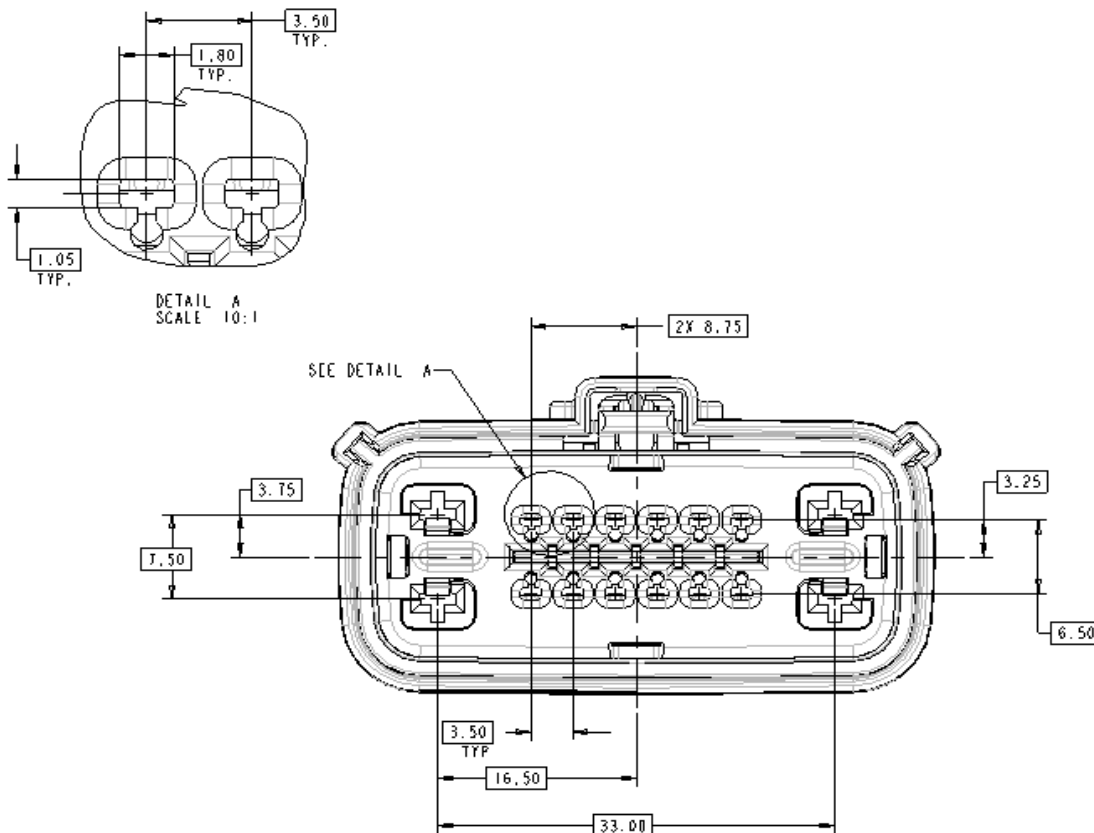




APPLICATION SPECIFICATION

Section 6: Electrical Continuity Checking

MX150 16 WAY HYBRID RECEPTACLE ALTERNATE PROBING



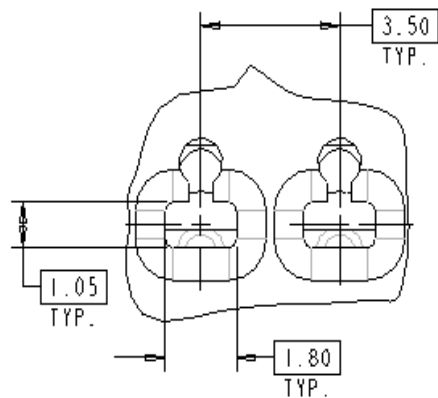
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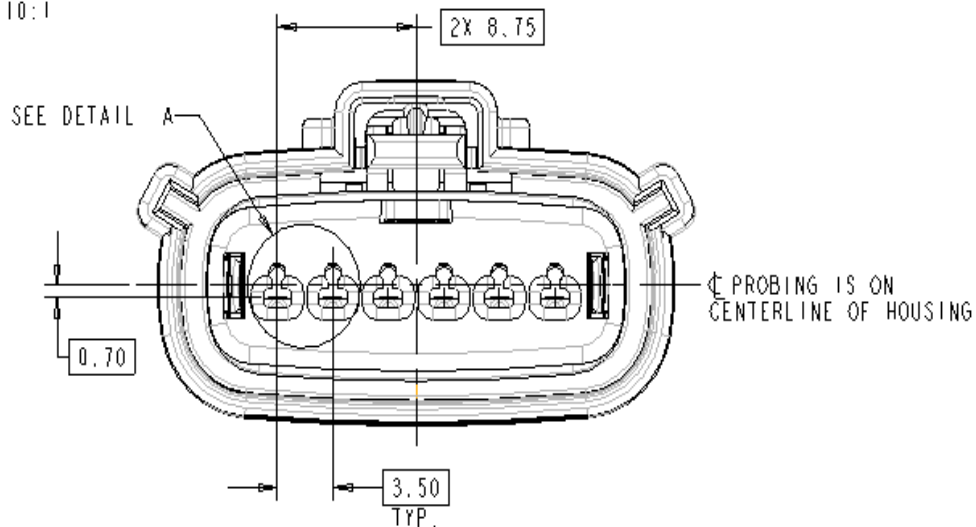
APPLICATION SPECIFICATION

Section 6: Electrical Continuity Checking

MX150 6 WAY RECEPTACLE ALTERNATE PROBING



DETAIL A
SCALE 10:1



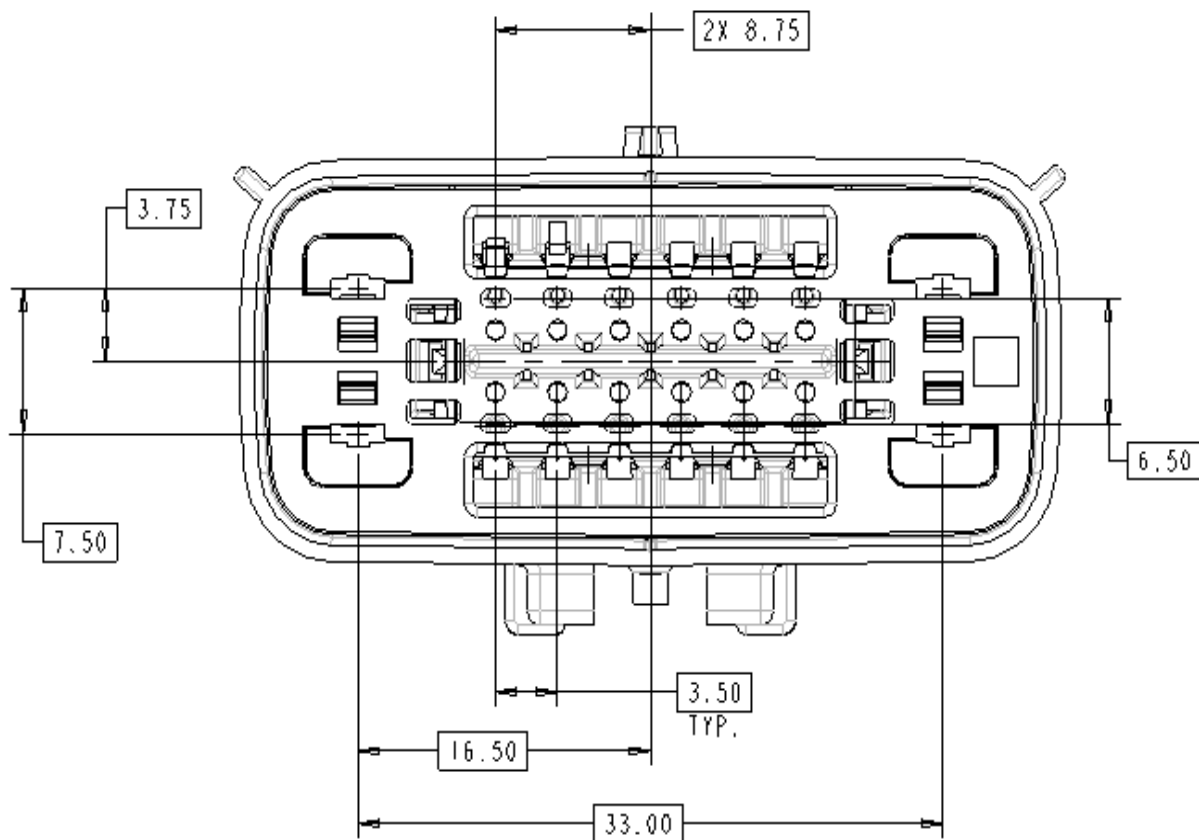
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APPLICATION SPECIFICATION

Section 6: Electrical Continuity Checking

MX150 16 WAY HYBRID BLADE



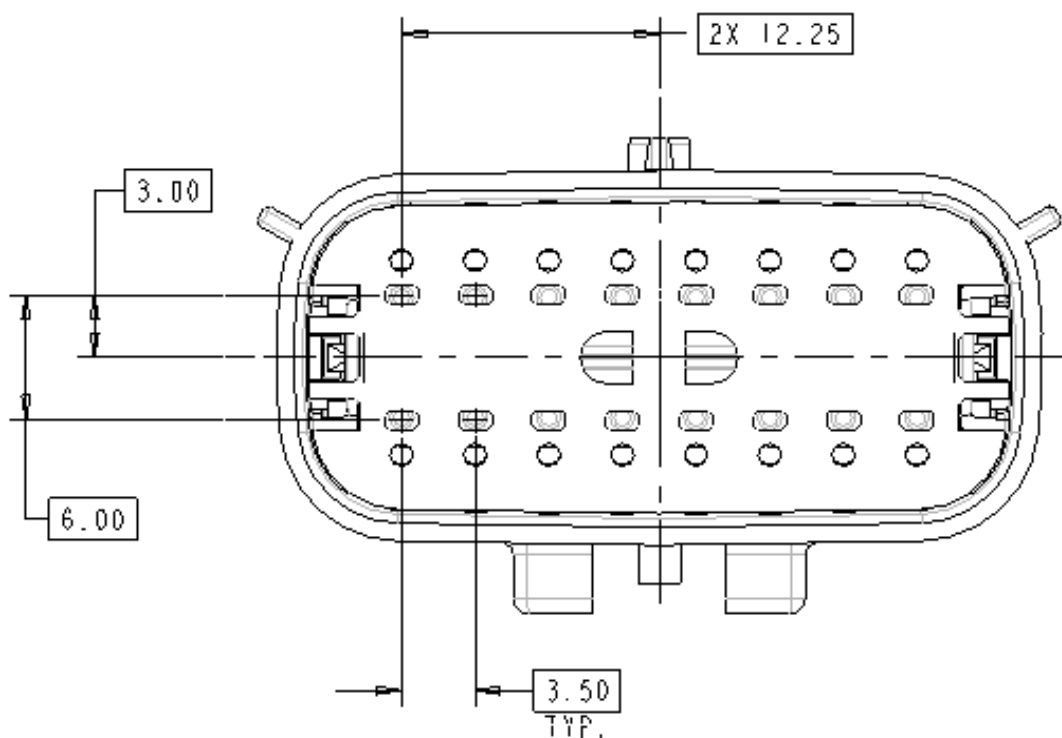
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APPLICATION SPECIFICATION

Section 6: Electrical Continuity Checking

MX150 16 WAY BLADE



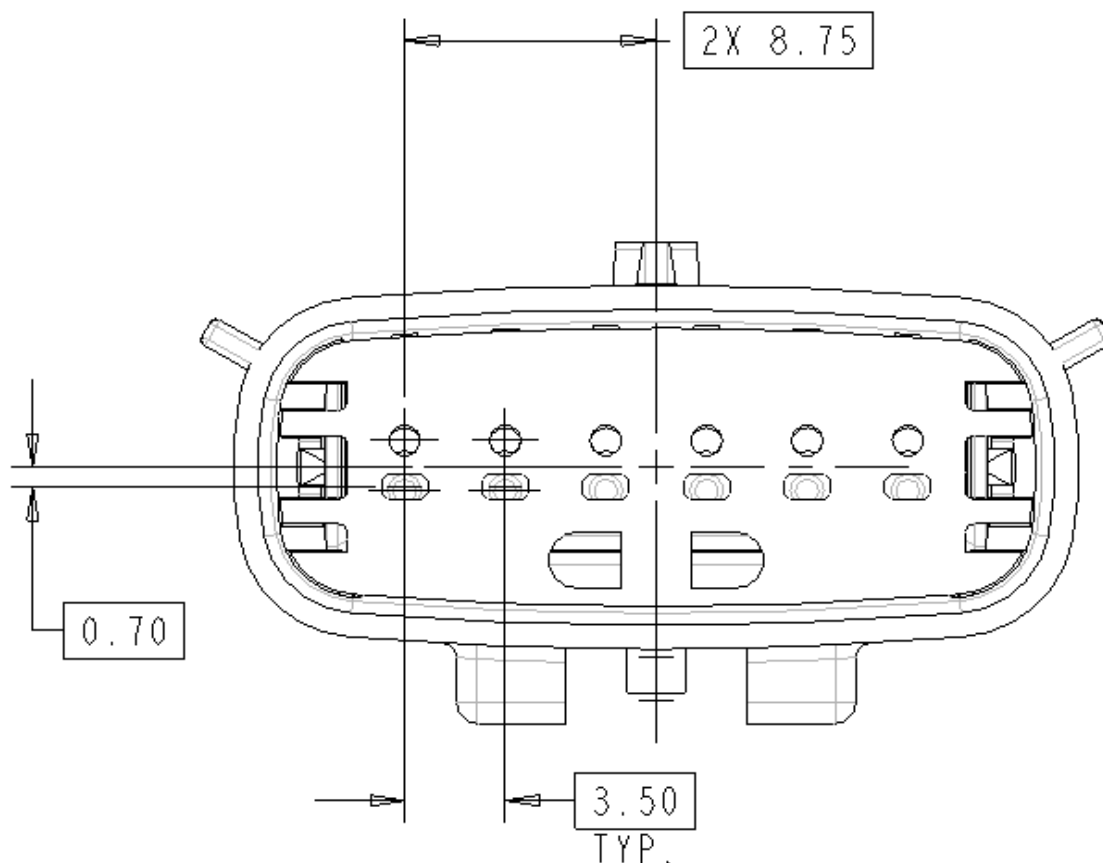
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APPLICATION SPECIFICATION

Section 6: Electrical Continuity Checking

MX150 6 WAY BLADE



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Section 7: Crimping

This MX150 crimping information can be found at:

www.molex.com/ind/mx150.html

MX150 Terminal Sales drawing

MX150 Female Terminal Sales Drawing: SD-33012-002

MX150 Female Terminal Crimping Specification: CS-33012-002

MX150 Male Blade Terminal Sales Drawing: SD-33000-001

MX150 Male Blade Terminal Crimping Specification: CS-33000-001

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APPLICATION SPECIFICATION

Section 7: Crimping

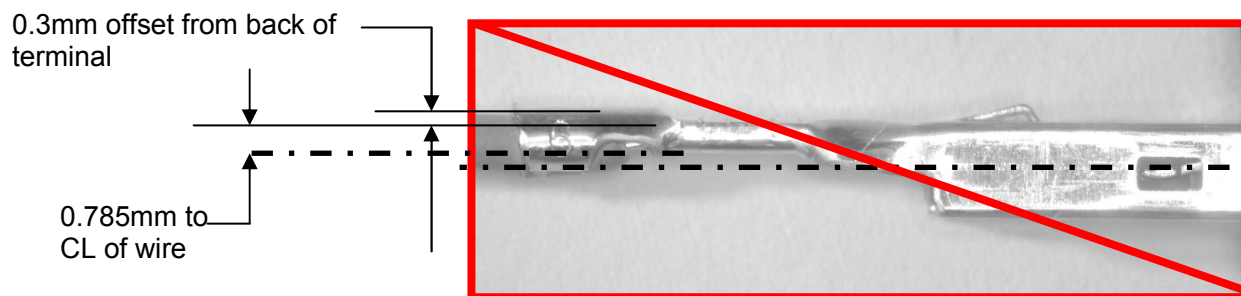
Issue: No Insulation grip step allowed on 22 gage MX150 Female terminal

Part Numbers:

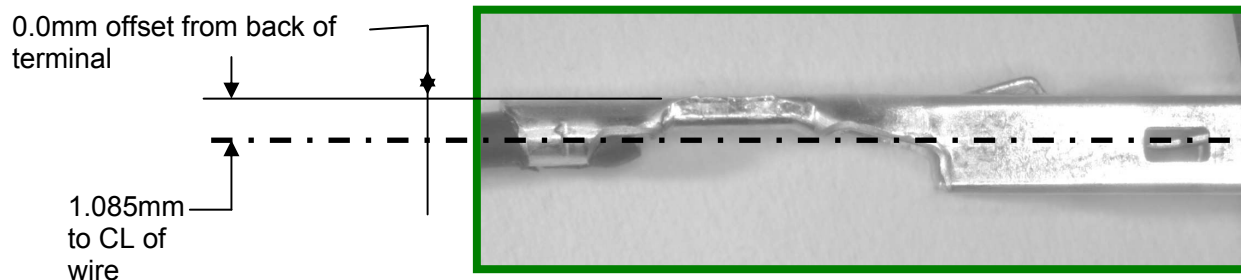
33012-2003 & 33012-3003
33001-2005 & 33001-3005
33001-4003 & 33001-5003

Tin Plated Terminals
Gold Plated Terminals
Silver Plated Terminals

Original 22 gage crimped terminal with Insulation Grip Step:



Modified Tool Set Up 22 gage crimped terminal without Insulation Grip Step:



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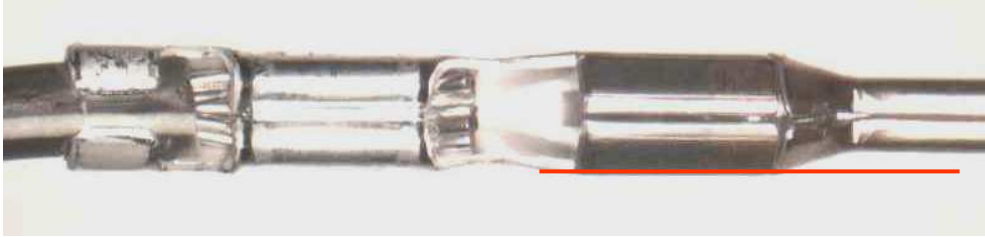
Section 7: Crimping

MX150 Shorting Bar Blade

Used in MX150 16 way hybrid and MX150 4 way with shorting bars

Issue: Good VS Bent Shorting Bar Terminal

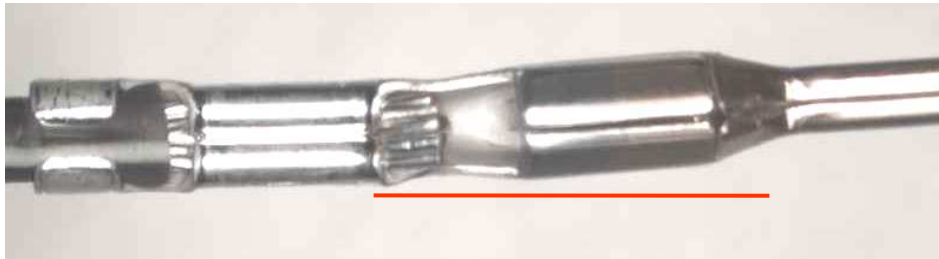
GOOD



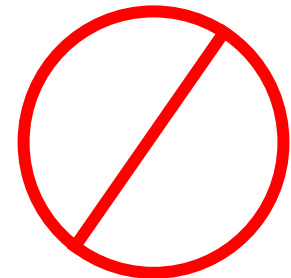
OK



BAD, TERMINALS BENT



This failure can limit the ability to lift the shorting bar to the correct height



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APPLICATION SPECIFICATION

Section 7: Crimping

2.8 Male Blade

Used in MX150 16 way hybrid

Issue: 2.8 terminals, and excessive wire brush



Excessive wire brush

This failure can limit the ability to seat the TPA



OK

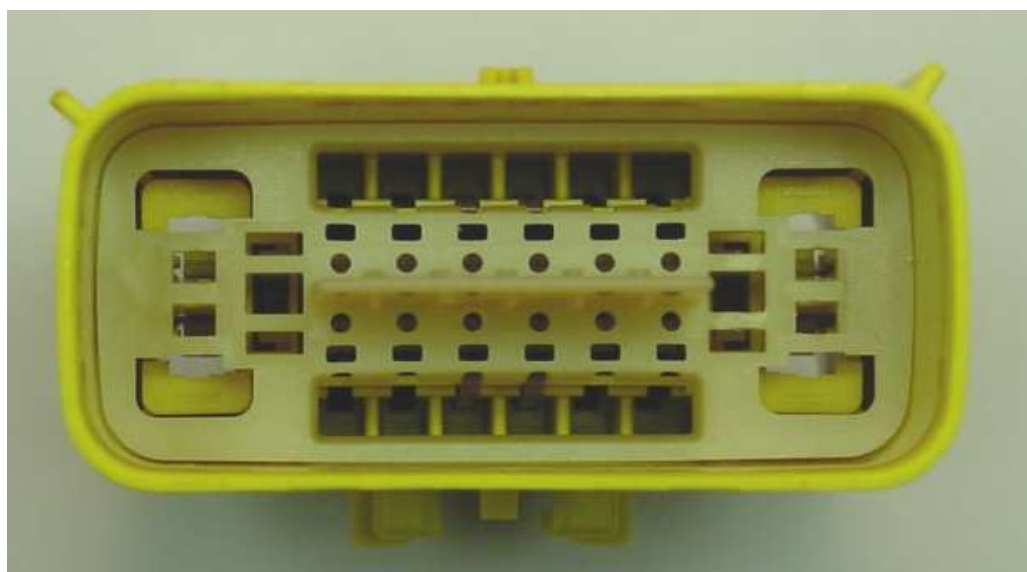
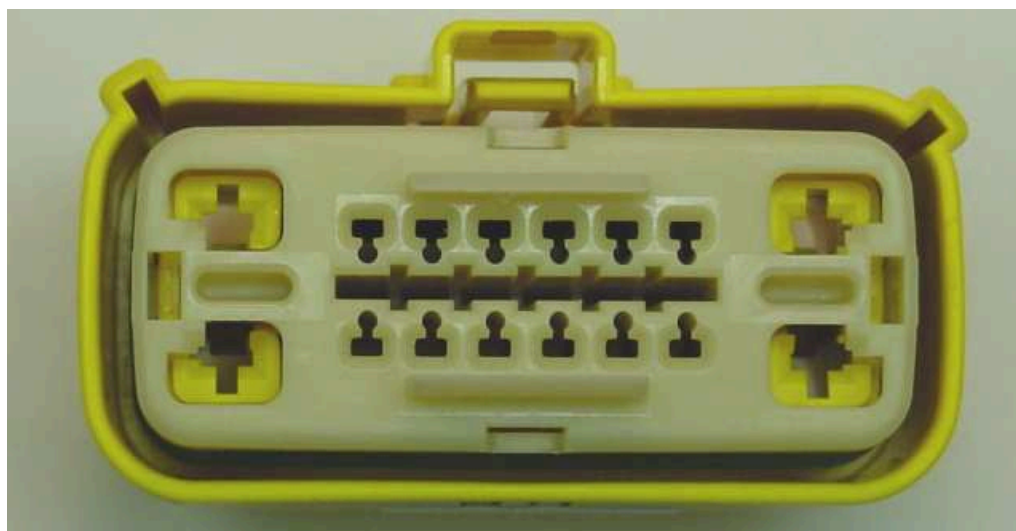
Proper wire brush

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Section 8: Hybrid Connector

A. Un-populated shorting bar connector (TPA in pre-lock)



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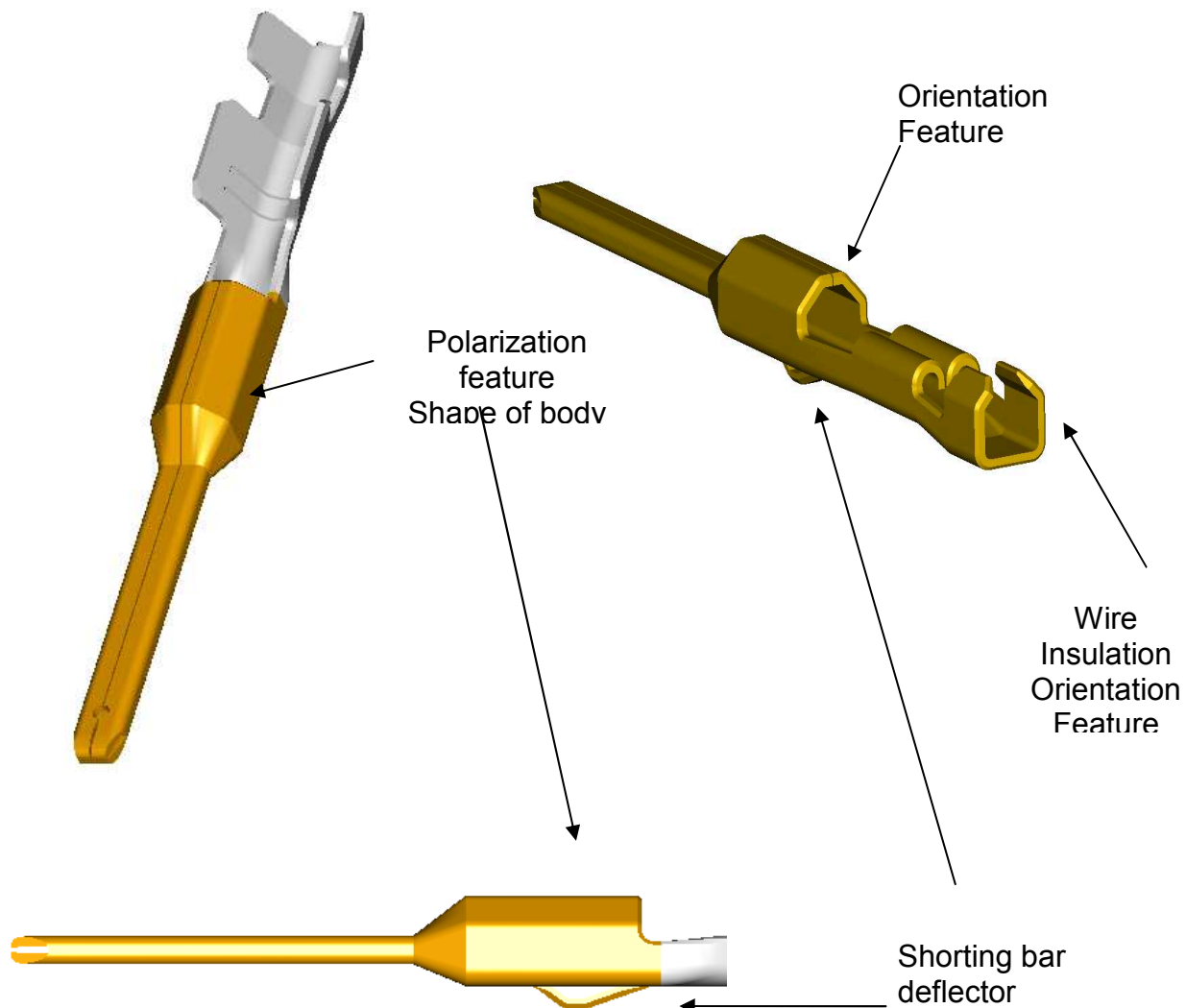
APPLICATION SPECIFICATION

Section 8: Hybrid Connector

B. Shorting Bar Blade Terminal (gold plating only)

Crimp information can be found on the corresponding terminal drawing.

Wire insulation grip is critical to prevent the rotation of the terminal during installation into the connector.



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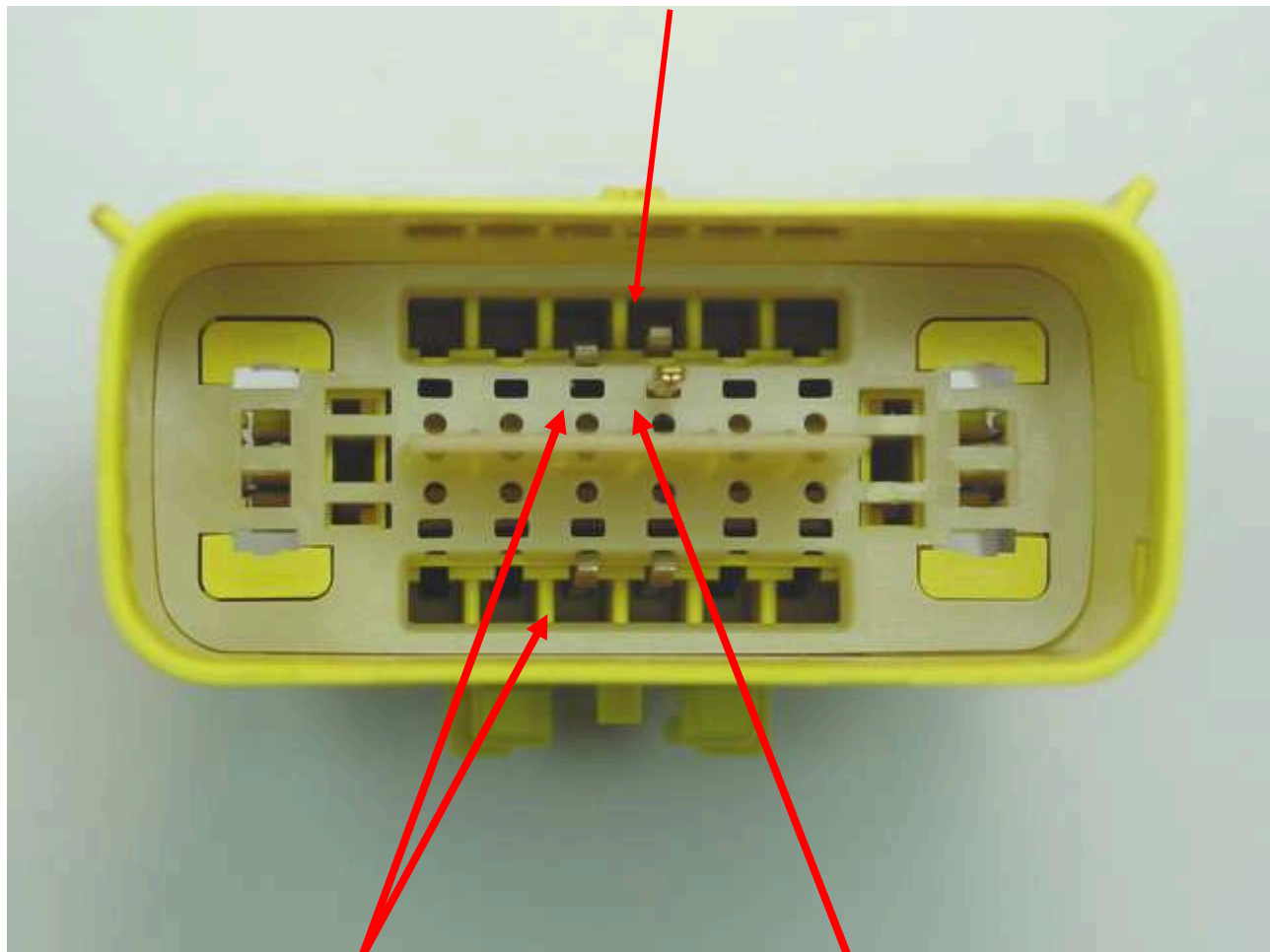


APPLICATION SPECIFICATION

Section 8: Hybrid Connector

C. Single cavity populated shorting bar connector (TPA in Lock)

NOTE! Lifted shorting bar



Shorting Bars

Blade Terminal

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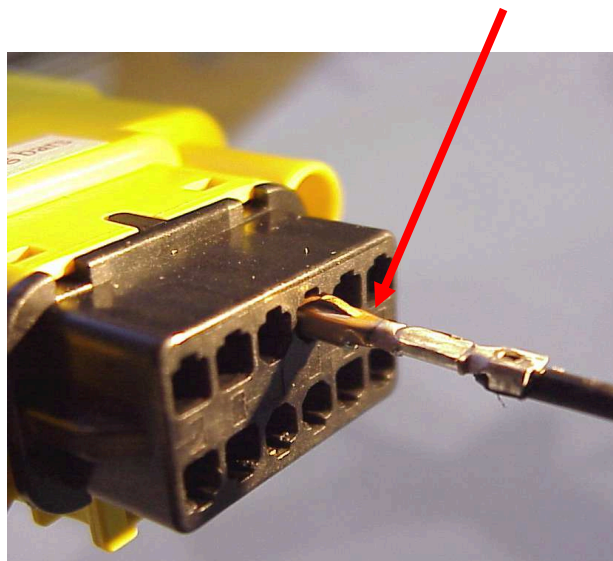
APPLICATION SPECIFICATION

Section 8: Connector Assembly

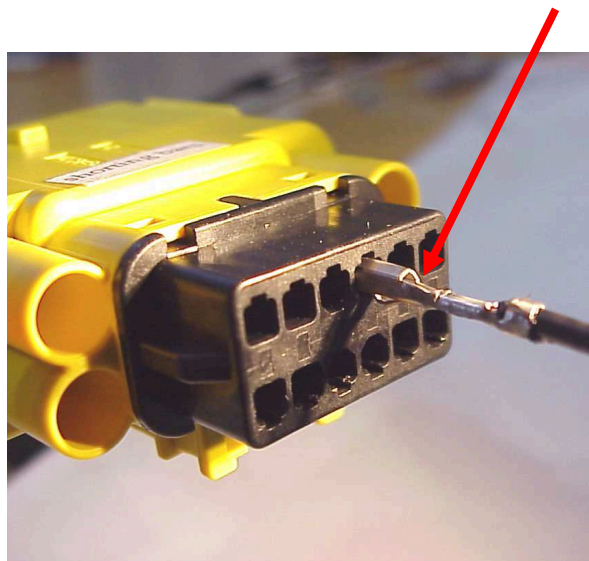
D. 1.5 mm Shorting Bar Terminal Installation

With TPA still in pre-lock position, orient terminal to rear of connector. Grip the wire no less than 30 mm from the terminal insulation crimp and insert through appropriate circuit opening. If resistance is encountered, retract the terminal and adjust the angle of insertion. Continue inserting the terminal until it stops and locks up on the lock finger with an audible click.

Correct Orientation



180° Mis-orientation



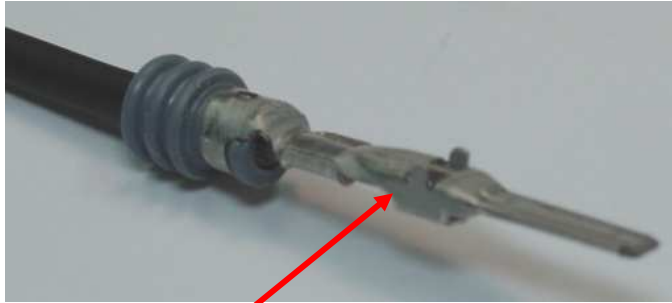
Do not apply excessive force, this may damage the terminal orientation feature!

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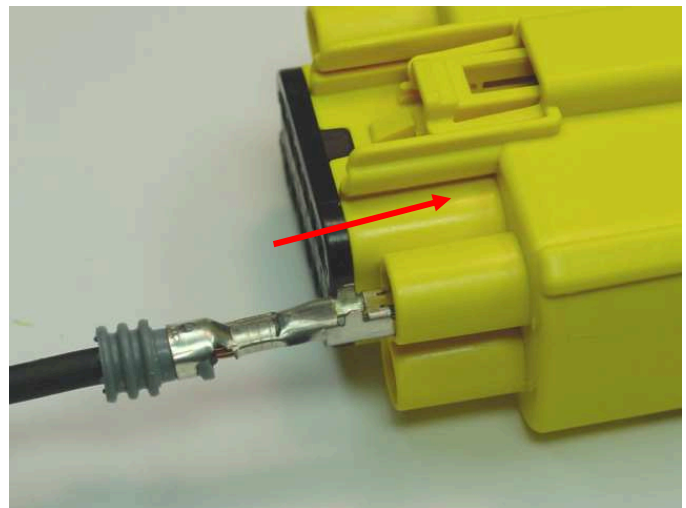
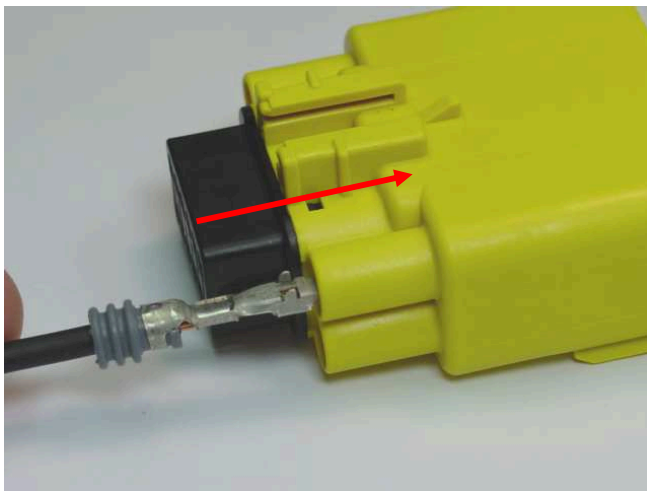
Section 8: Connector Assembly E. Populating the 2.8 mm Terminal



Note alignment tabs on Blade terminal



Note alignment tabs on Receptacle terminal



Align tabs and insert until you hear/feel positive engagement with an audible click

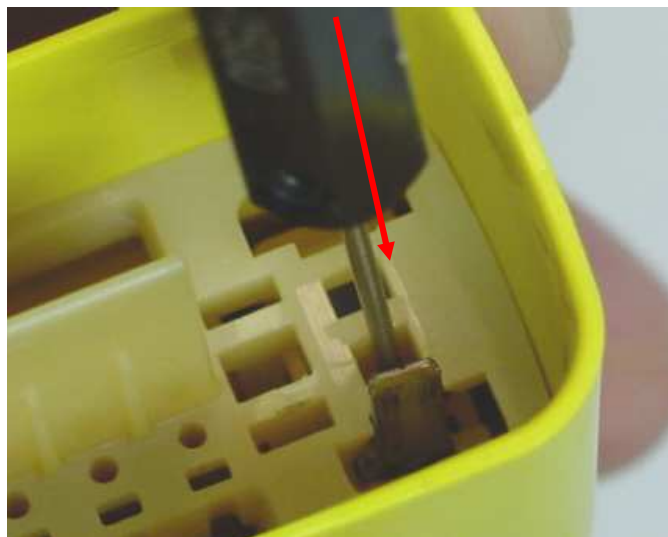
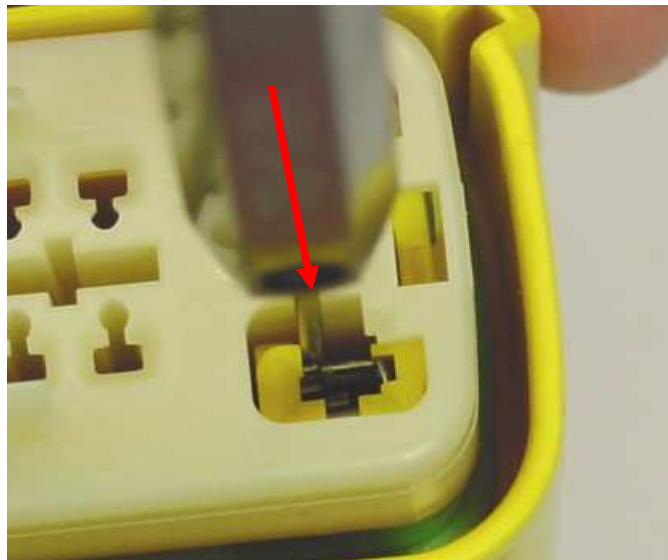
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Section 8: Service Instructions

Step 1: Using the 2.8 mm service tool #63813-1500, insert the tip into the terminal service hole adjacent to the terminal to be serviced.

Step 2: Push down gently to release locking finger.



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Section 9: Troubleshooting

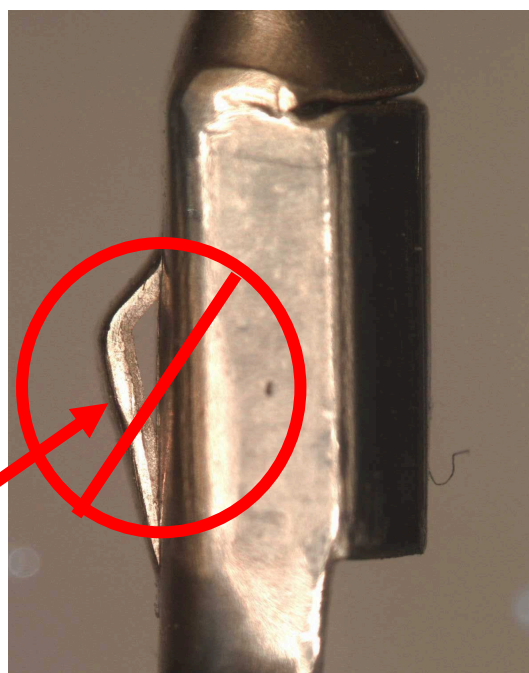
A. MX150 16 Way Male Hybrid

Issue: Damage on Shorting Bar Terminal



OK

Damage to Shorting Bar Terminal Orientation feature from being put into the grommet cap the wrong way.



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Section 9: Troubleshooting

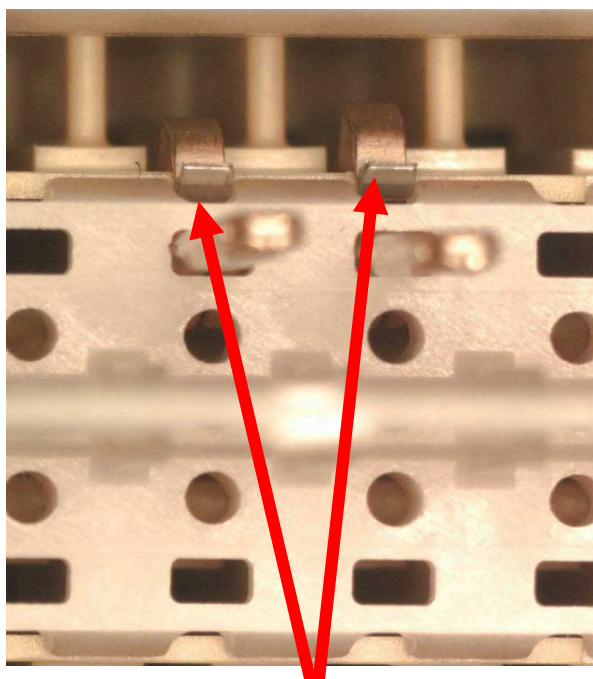
B. MX150 16 Way Male Hybrid

Issue: Damage to Orientation Feature Shorting Bar Terminal

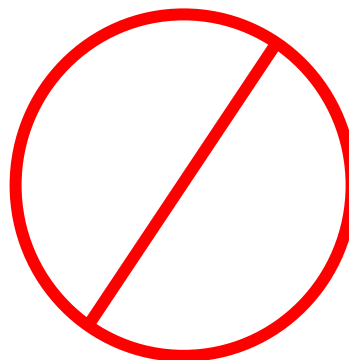


Proper Alignment of
Shorting Bar Orientation
Feature Un-damaged

OK



Damaged Terminal Orientation
Feature Shorting bars not
lifted



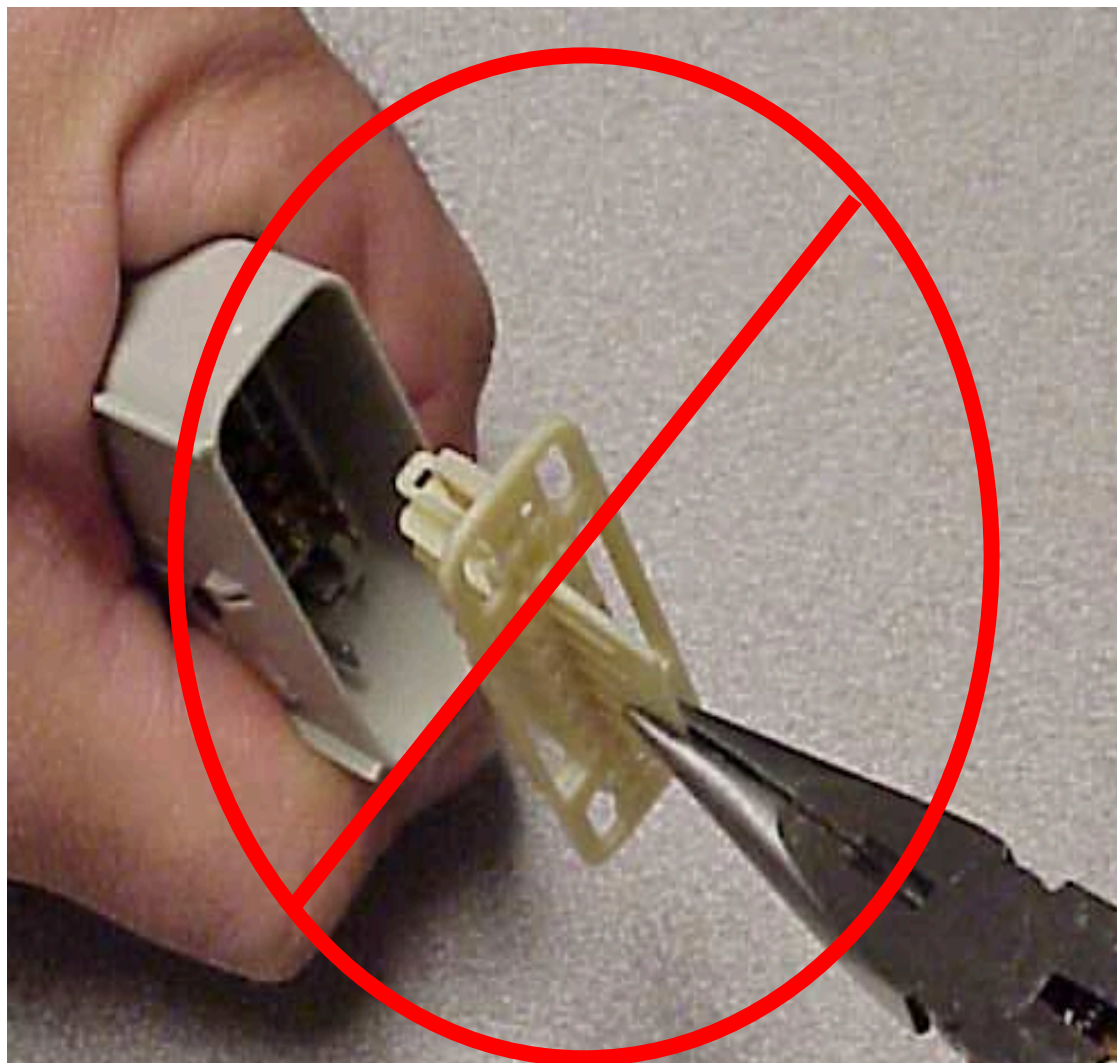
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Section 9: Troubleshooting

D. MX150 16 Way Male Hybrid

Issue: TPA should Never be fully removed from connector for any reason. If the TPA has been removed, replace entire connector.



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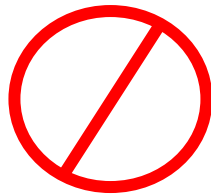


APPLICATION SPECIFICATION

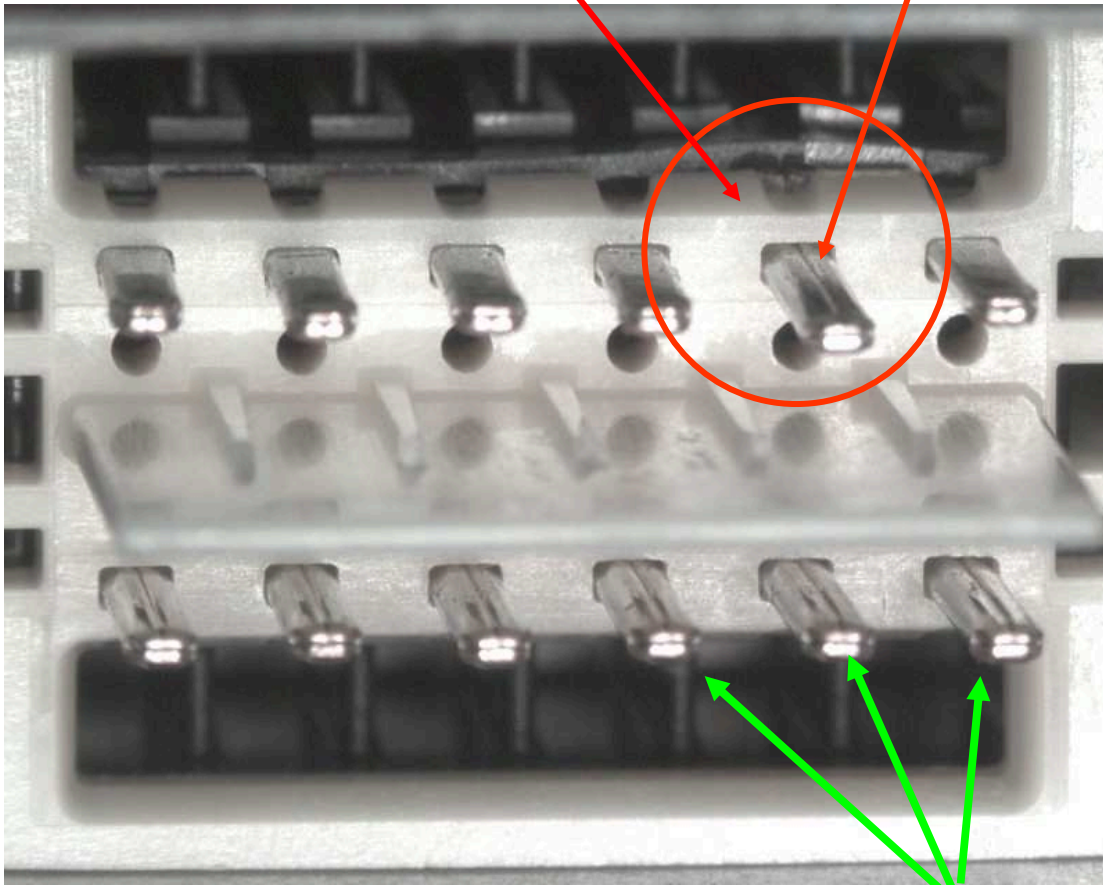
Section 9: Troubleshooting

E. MX150 16 Way Male Hybrid

Issue: Terminal inserted rotated 180 degrees out



1.5mm Terminal is turned upside-down



OK

1.5mm Terminals proper orientation

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Section 10: Packaging

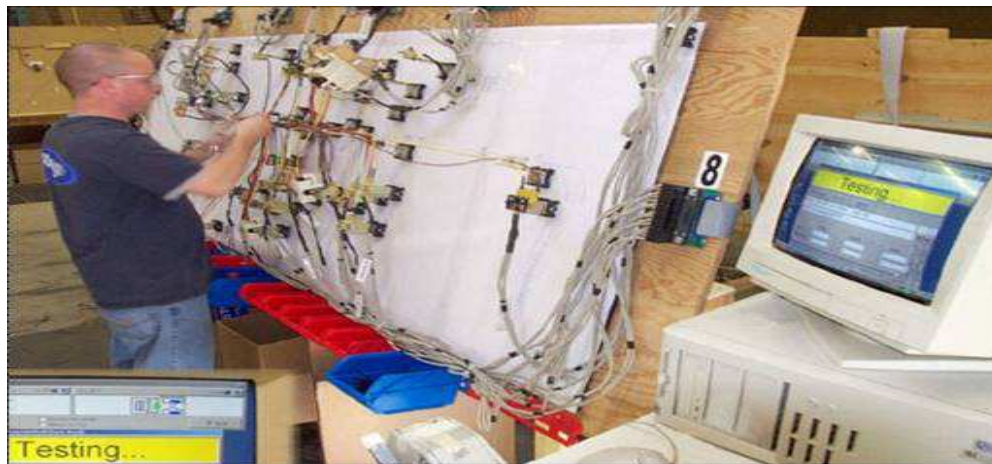
Assembly at Tier 1(Wire Harness Assembly Plant)

Unpacking:

TPA as received, The TPA are locked in place in the pre-lock position. If the TPA is in final lock follow the service section in section 5.

Handling in Plant:

Harness build board/fixture: Molex recommends moving the cell pack box or box to the line, this will insure against damage. Parts should remain in Molex cell pack until assembled placed on a harness assembly build board.



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APPLICATION SPECIFICATION

Section 10: Packaging

Bulk Pack

MX150 Seal Plug
Male 1x4 through 1x6
Male 2x3 through 2x8
Male 16 way Hybrid



Bulk Pack with 4 Compartments

Female 2x2 1x3
Male 2x2, 2x3, 2x4, 1x2, 1x3, 1x4, 1x5, 1x6
Male 16 way Hybrid



Cell Pack

Female 1x4 through 1x6
Female 2x3 through 2x10
Female 16 way Hybrid
Male 2x10



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Section 11: Appendix A

- Document Change History:**

Revision	Date	Description
1	03/16/08	Initial Release
2	05/31/13	Added Blade Pogo Pin recommendation: Updated terminal installation to include blade information; Changed cavity plug trimming from optional to mandatory; Added harness taping and bending recommendations

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