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Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





APPLICATION SPECIFICATION



MX150 System Sealed Product Line

REVISION: B	ECR/ECN INFORMATION: EC No: 114800 03/15/2017	TITLE: MX150 Application Guide	SHEET No. 1 of 74
DOCUMENT NUMBER: AS-33472-100	CREATED / REVISED BY: T. Skiver	CHECKED BY: M. Hussain	APPROVED BY: K. Dekoski



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APPLICATION SPECIFICATION

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.

- SD-33471-**** (multiple documents)
- SD-33472-**** (multiple documents)
- SD-33481-**** (multiple documents)
- SD-33482-**** (multiple documents)
- SD-160008-**** (multiple documents)
- SD-160011-**** (multiple documents)
- SD-34986-**** (multiple documents)
- SD-34985-**** (multiple documents)

Section 1: Product Introduction MX150 System

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APPLICATION SPECIFICATION

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), SAE Automotive (22 to 14) and ISO (0.35 to 1.5mm²) 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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APPLICATION SPECIFICATION

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

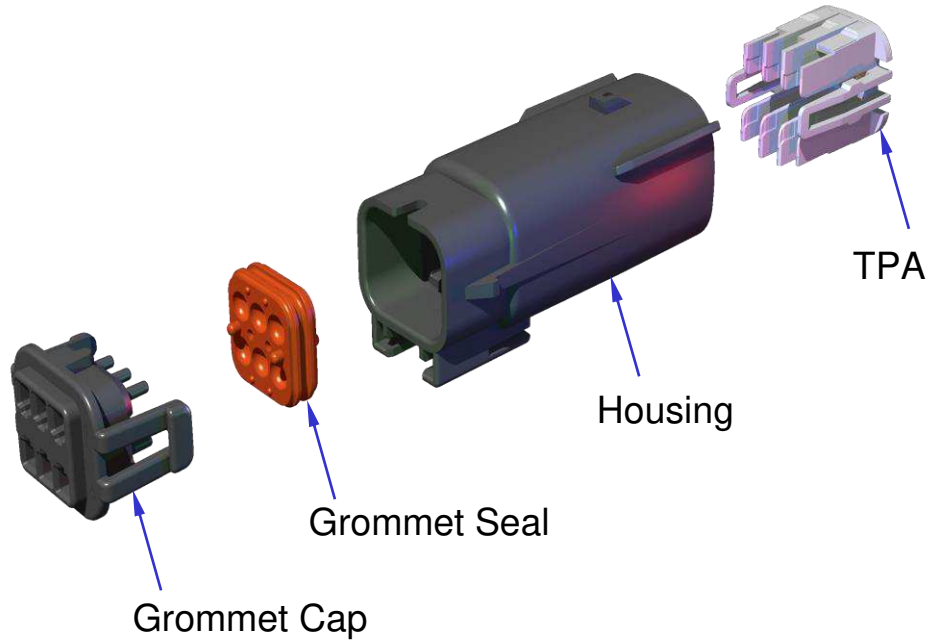
This User Manual can be found at www.molex.com/ind/mx150.html
 To order, please contact your Molex Sales Representative or check www.molex.com

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APPLICATION SPECIFICATION

Section 2: Product Summary A. Connector Assemblies



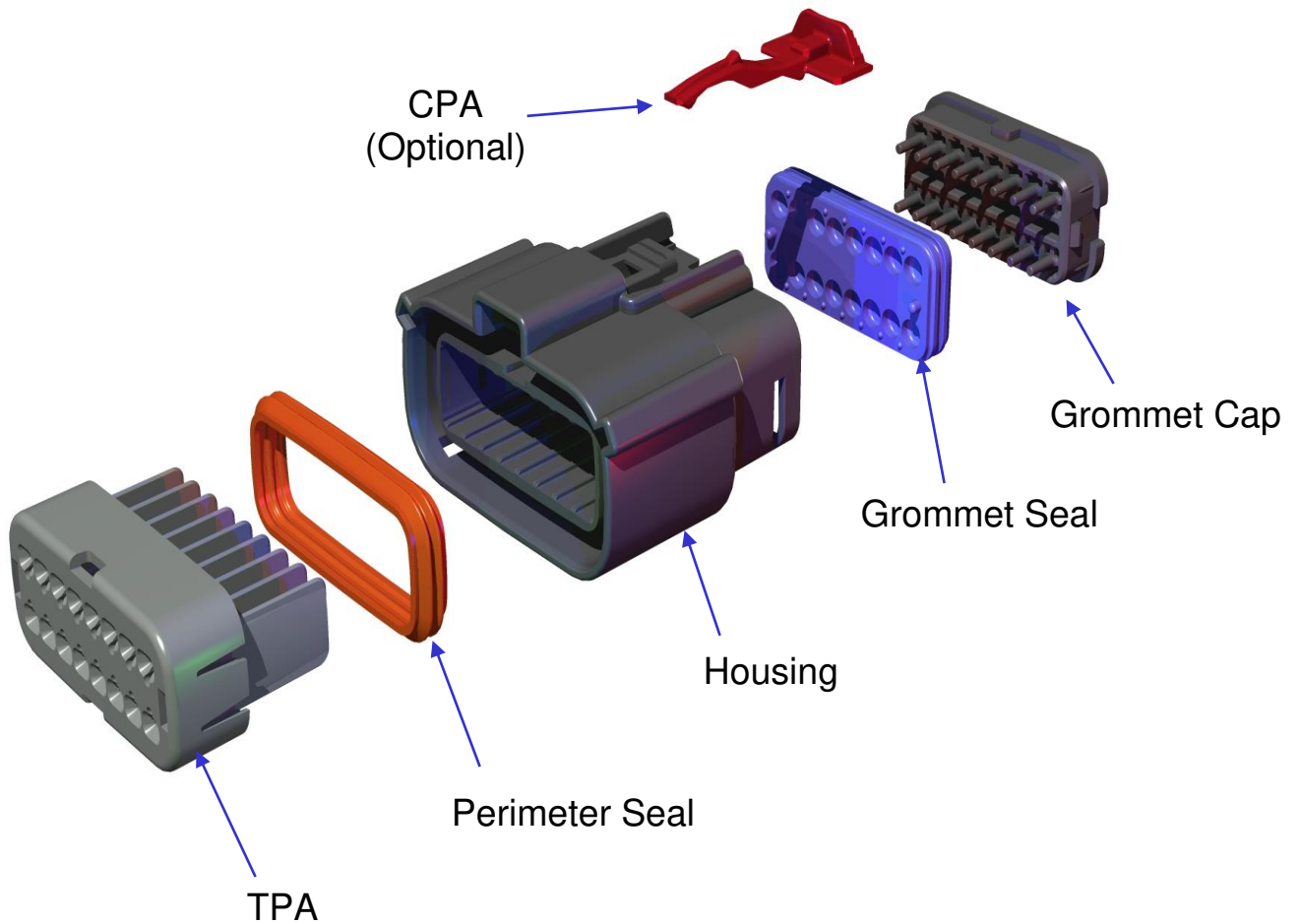
6 Way 2X3 Blade Connector

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APPLICATION SPECIFICATION

Section 2: Product Summary B. Connector Assemblies (continued)



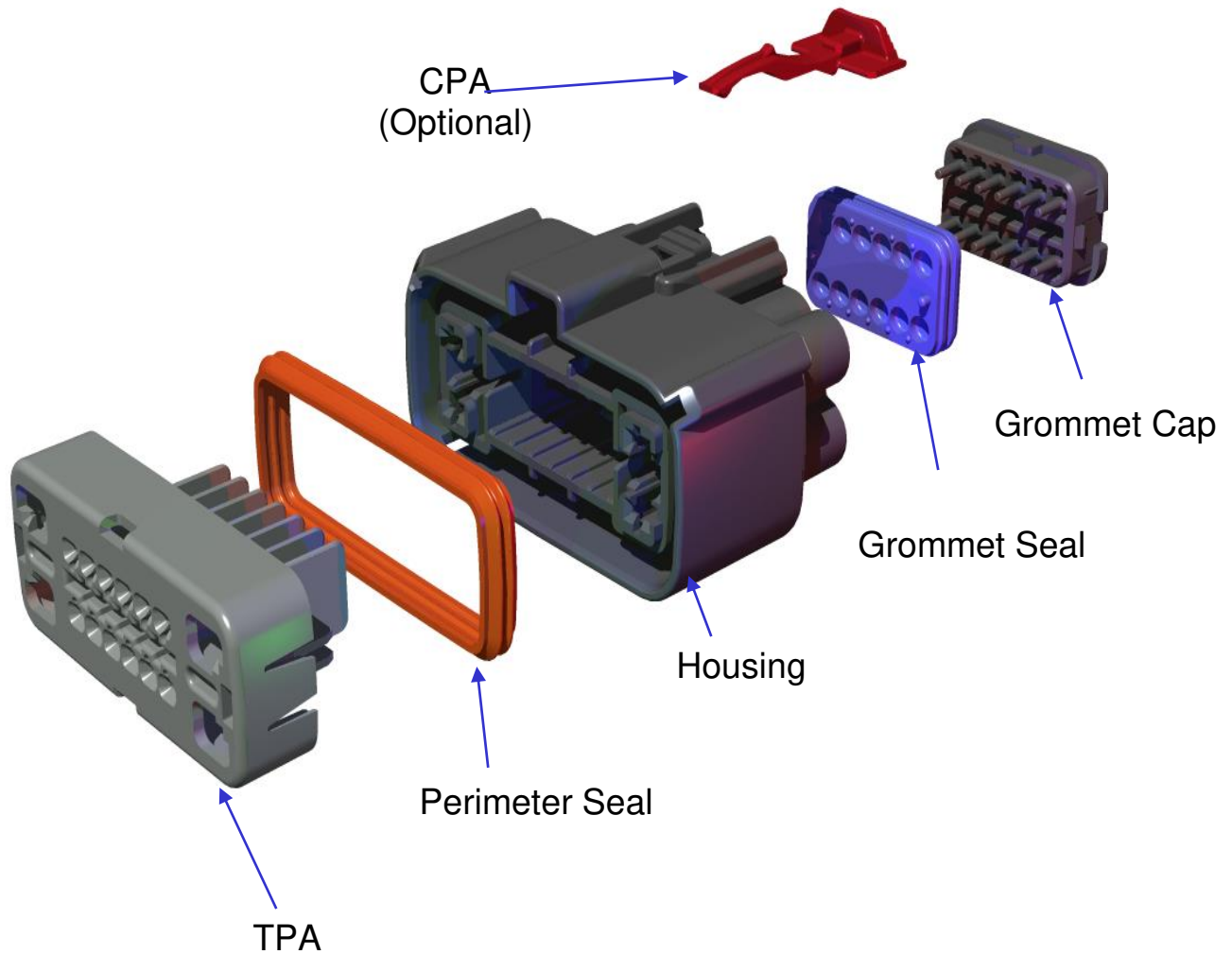
16 Way 2X8 Standard Receptacle Connector

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APPLICATION SPECIFICATION

Section 2: Product Summary C. Connector Assemblies (continued)



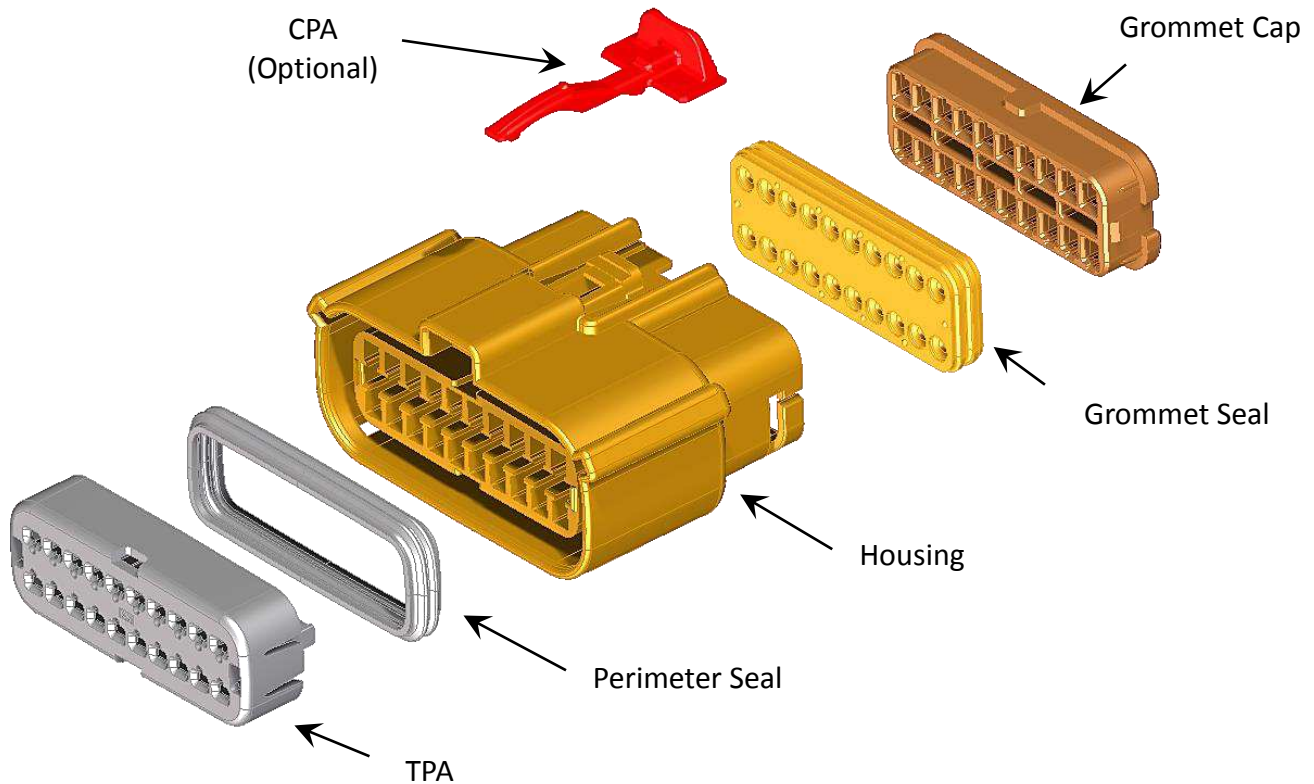
16 Way Hybrid Receptacle Connector

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APPLICATION SPECIFICATION

Section 2: Product Summary C. Connector Assemblies (continued)



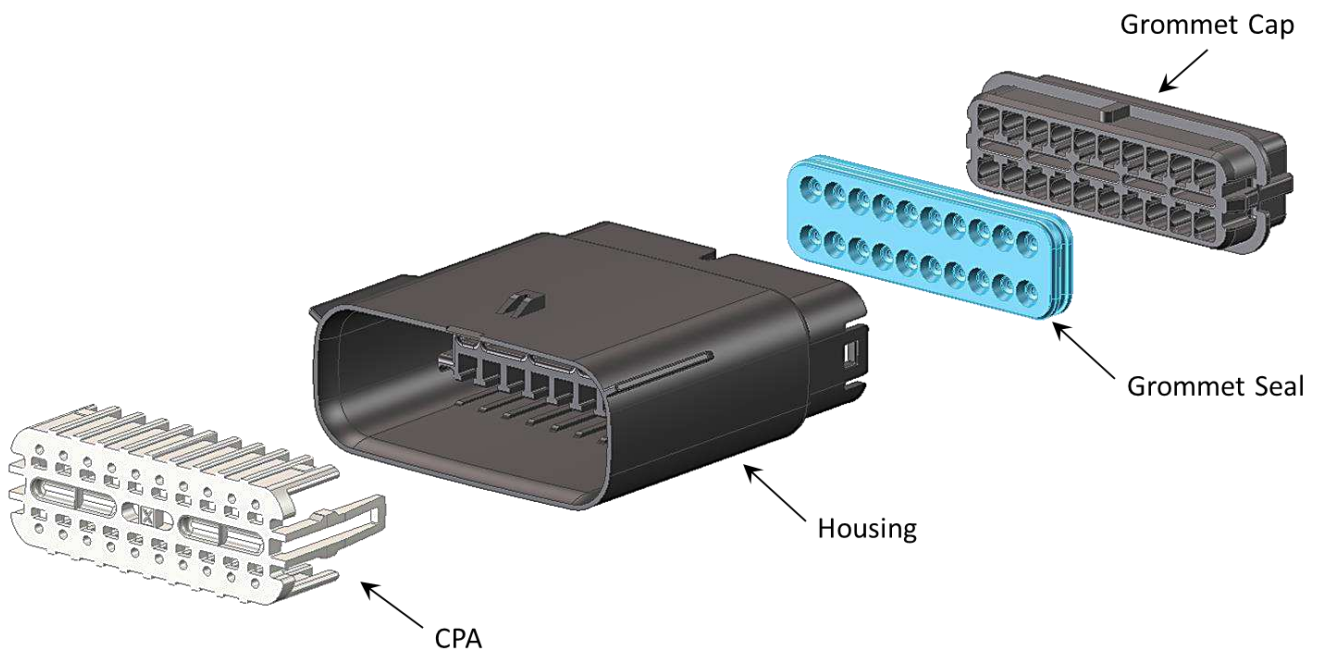
20 Way 2X10 Receptacle Connector

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APPLICATION SPECIFICATION

Section 2: Product Summary C. Connector Assemblies (continued)



20 Way 2X10 Blade Connector

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APPLICATION SPECIFICATION

Section 2: Product Summary

D. Receptacle/Blade Terminal

Terminal Features

Base Material - Copper Alloy

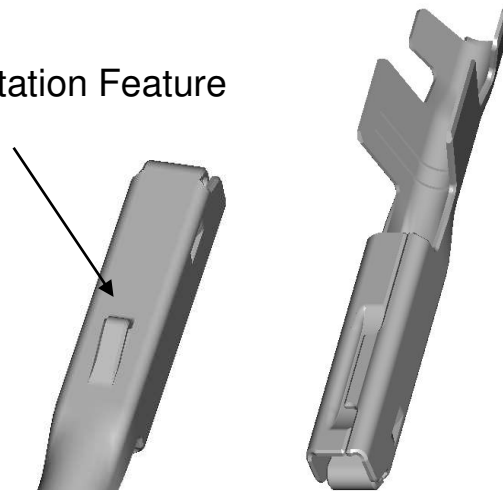
Plating Options - Tin, Gold, Silver

Wire Sizes: 14,16,18,20,22 AWG

1.5, 1.0, 0.8, 0.75, 0.5, 0.35 mm²

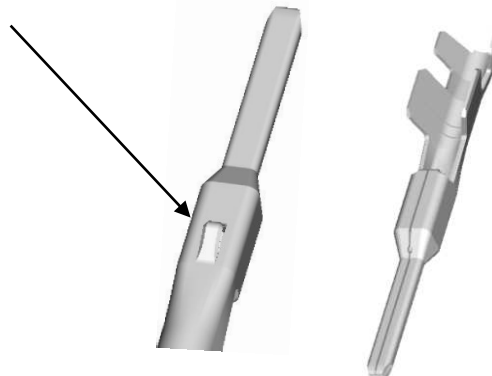
Refer to Section 7 for crimping details.

Orientation Feature



Receptacle Terminal

Orientation Feature



Blade Terminal

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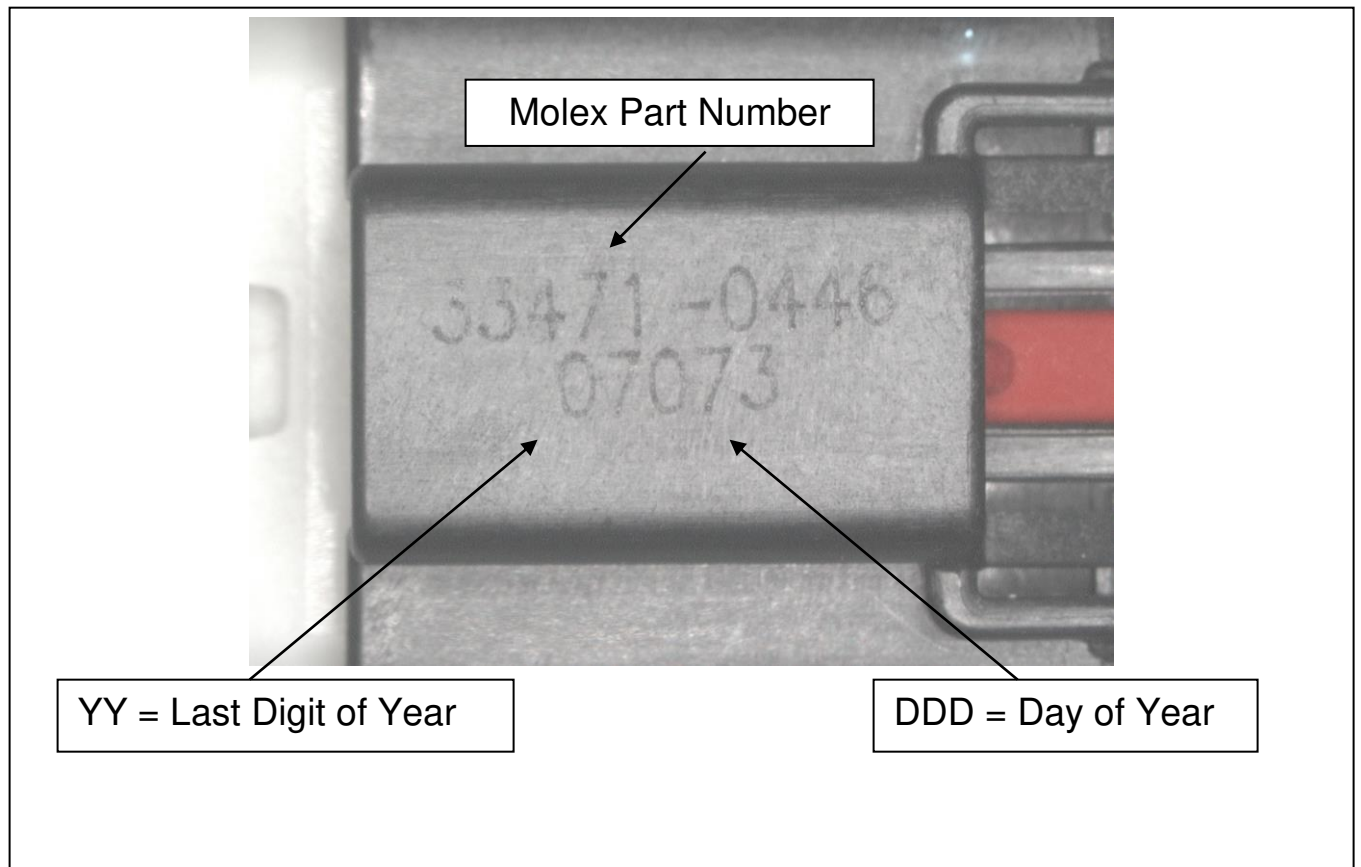
APPLICATION SPECIFICATION

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 – Presence of laser marking for MX 150 16 way Hybrid depends on the manufacturing place.



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APPLICATION SPECIFICATION

Section 3: Connector Assembly

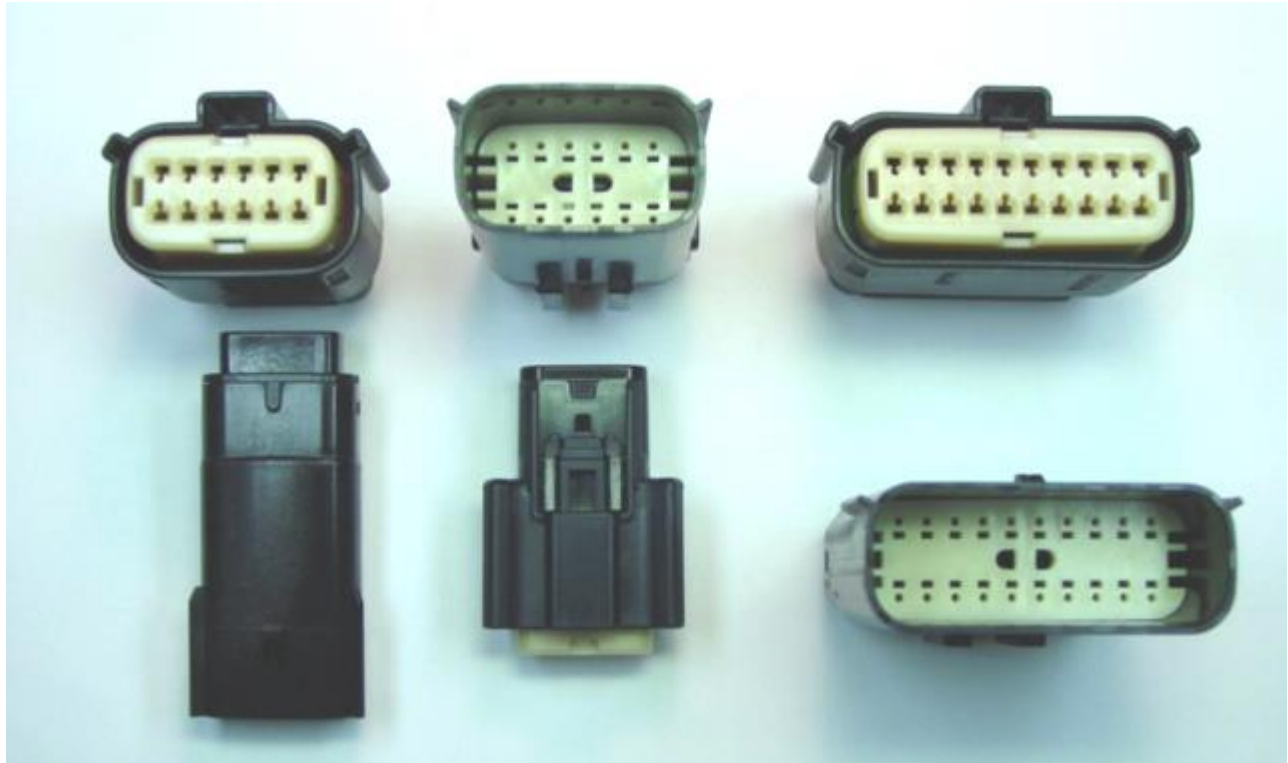
A. "As Shipped" connector positions

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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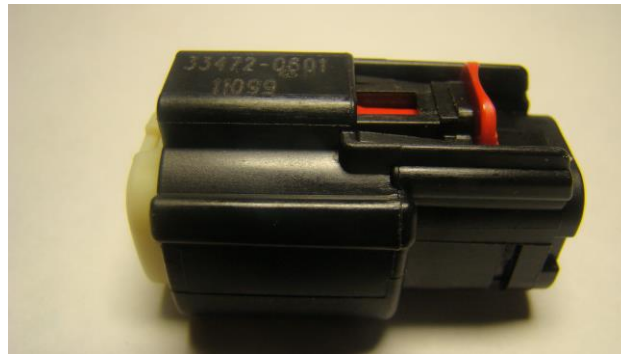


APPLICATION SPECIFICATION

CPA is shown in “as shipped” pre-lock condition:



CPA's shown in pre-lock



CPA's shown in final-lock

If CPA gets moved from pre-lock to final lock position during shipping, pull CPA to bring it back to the pre-lock position.



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APPLICATION SPECIFICATION

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

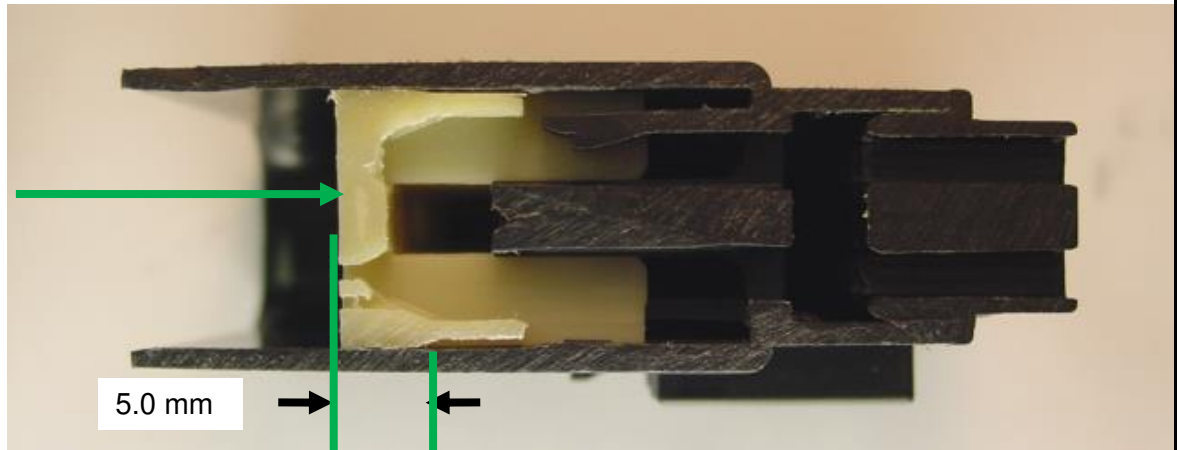
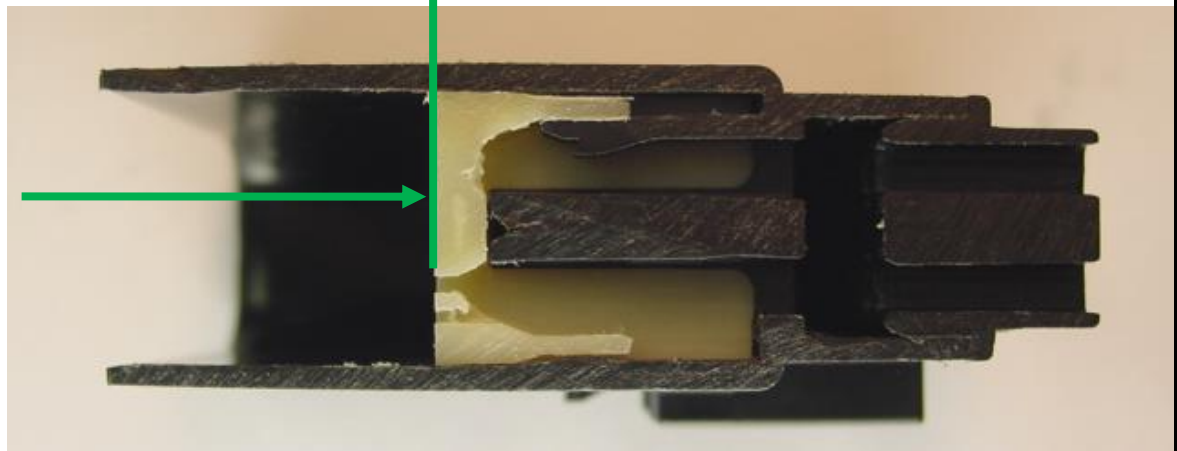


Fig. 10-b

Lock



Cross section of TPA in pre-lock / lock

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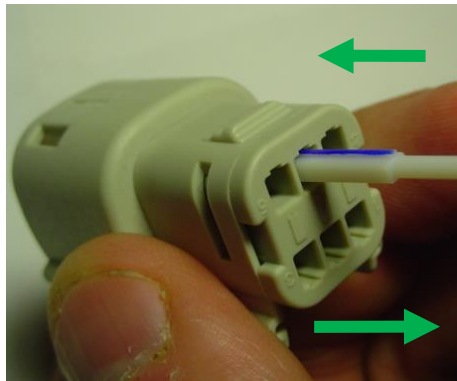
APPLICATION SPECIFICATION

Section 3: Connector Assembly

C. 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.

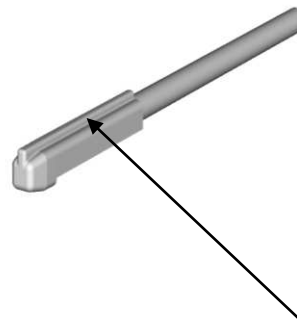
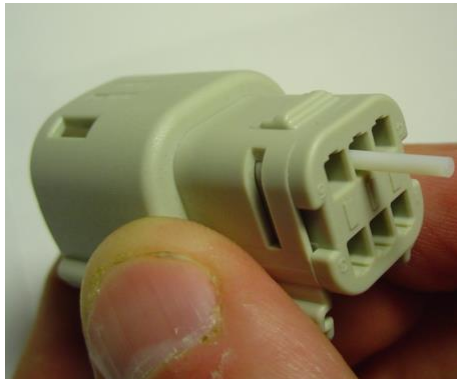
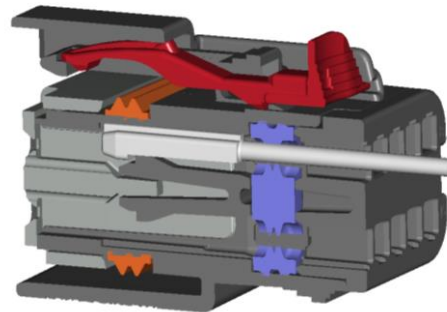
Caution: Once fully seated, the seal plug is not a serviceable item.



PUSH

CLICK

PULL



Orientation Feature

Orientation feature is highlighted blue for reference only

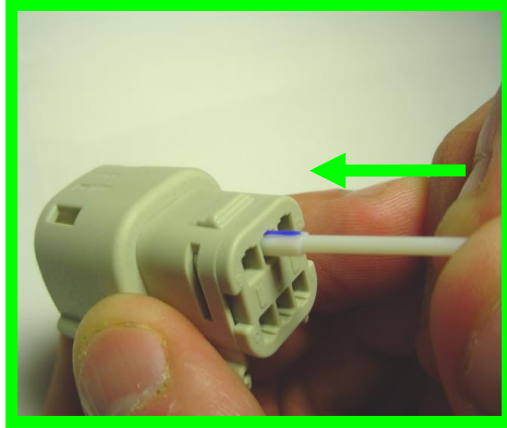
Seal plug can not be used in shorting bar circuits!

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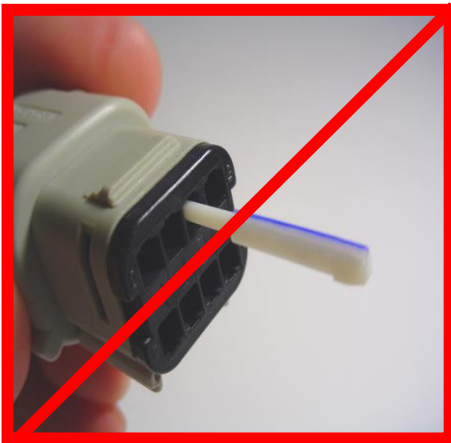


APPLICATION SPECIFICATION

Section 3: Connector Assembly C. Seal Plug Installation continued



**YES!
CORRECT!**

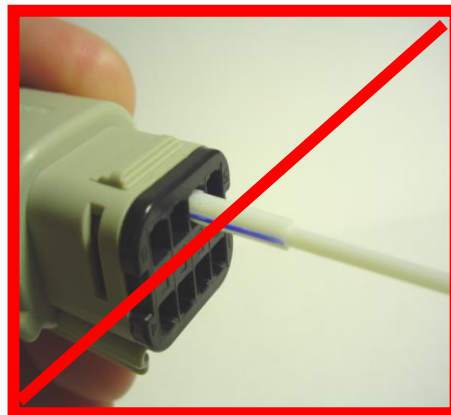


Backwards



180° out of alignment!

**NO!
WRONG!**



90° out of alignment!

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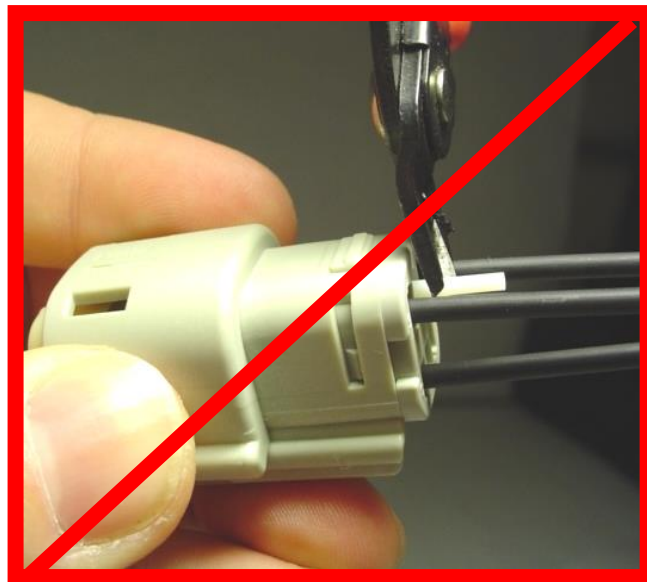
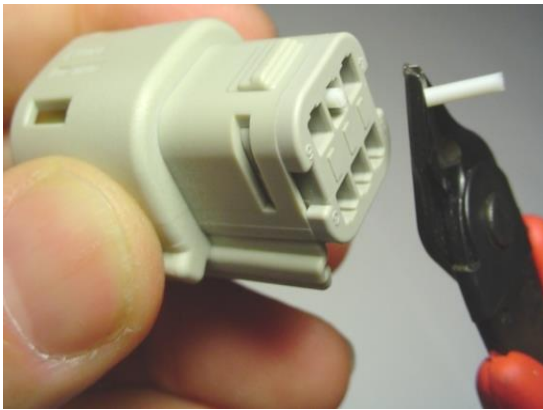


APPLICATION SPECIFICATION

Section 3: Connector Assembly C. Seal Plug Installation continued

Cavity plugs can be trimmed flush to avoid wire chafing and avoid cavity plug dislocation/push through, the decision to trim is the discretion of the harness supplier. 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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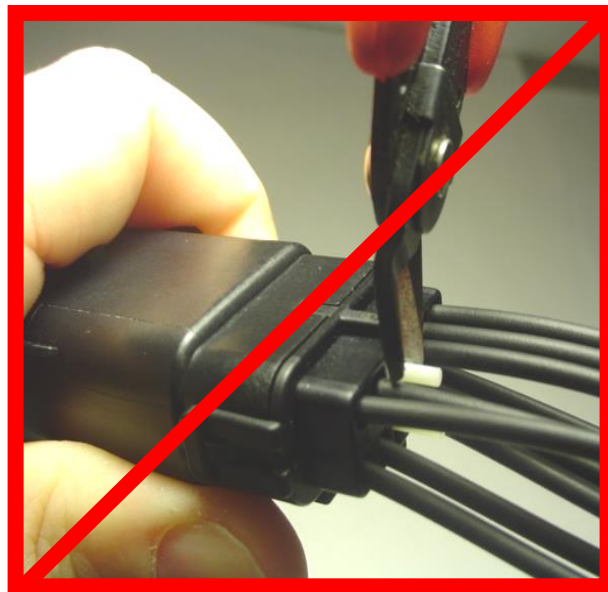
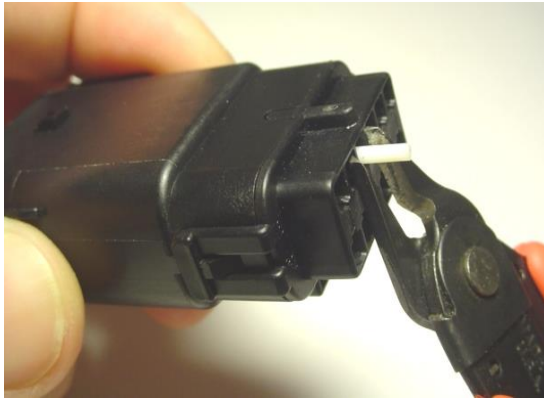


APPLICATION SPECIFICATION

Section 3: Connector Assembly C. Seal Plug Installation continued

Cavity plugs can be trimmed flush to avoid wire chafing and avoid cavity plug dislocation/push through, the decision to trim is the discretion of the harness supplier. 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!



Caution: Once fully seated, the seal plug is not a serviceable item.

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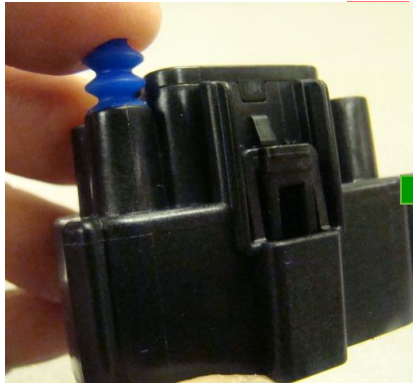
APPLICATION SPECIFICATION

Section 3: Connector Assembly C. Seal Plug Installation continued

2.8 cavity plug step by step installation is shown in the illustrations below. The cavity plug must be fully installed with all 3 seal glands engaged in the seal cavity.



Yazaki Seal Plug PN: 7158-3114-90



Receptacle Connector



Blade Connector

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APPLICATION SPECIFICATION

WRONG



The cavity plug must be fully installed with all 3 seal glands engaged in the seal cavity



CORRECT

WRONG



Never use a screw driver or an object with sharp edge to push in the plug as it will damage seal
If a tool will be used to seat the plug, only use a rounded blunt end to push in the plug

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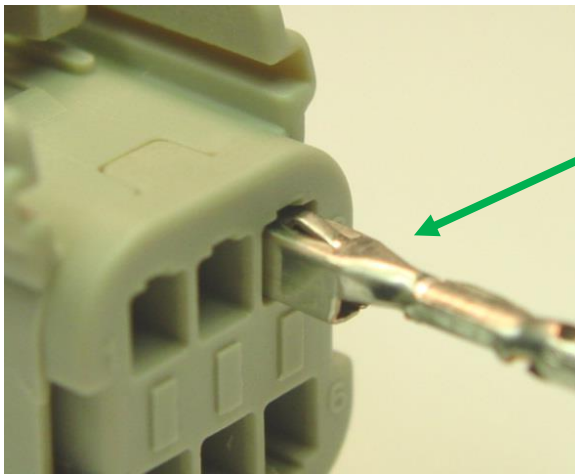
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Section 3: Connector Assembly

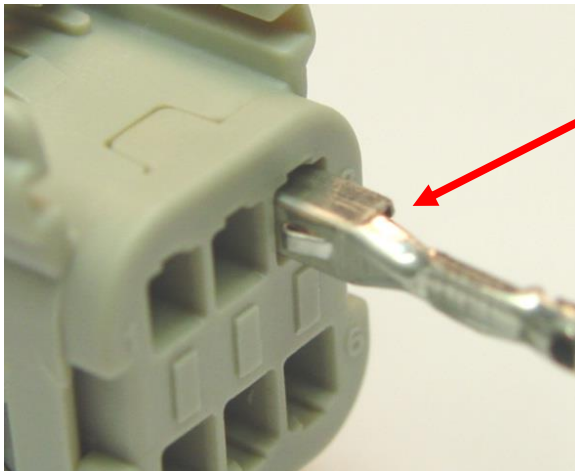
D. Terminal Installation

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

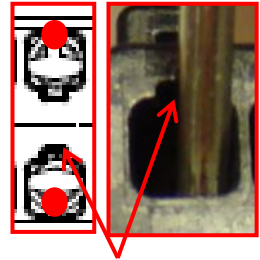
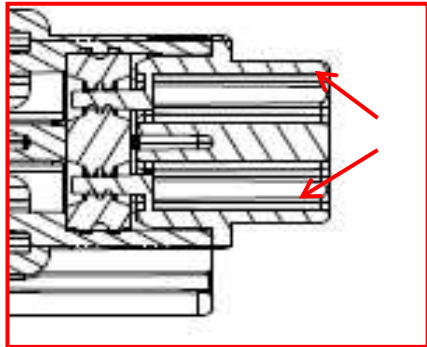
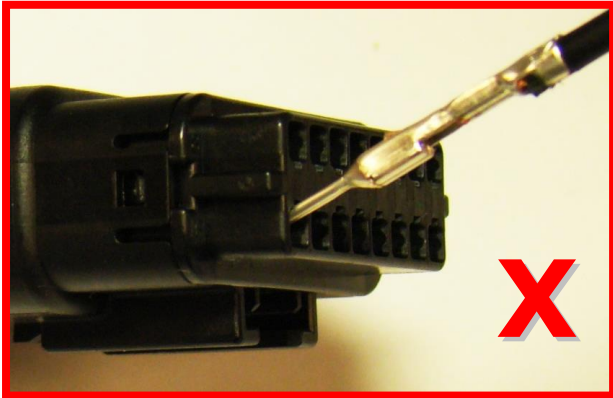
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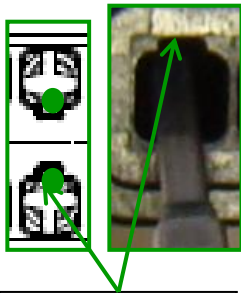
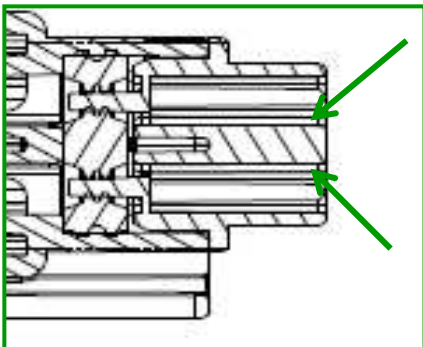
Dual Row MX150 Blade Installation

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

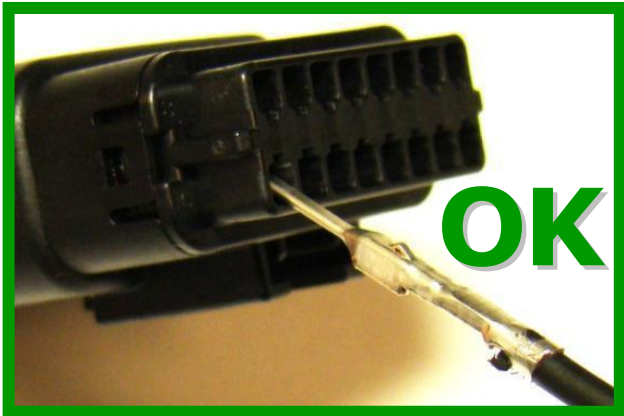


Orientation Feature

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



Orientation Feature



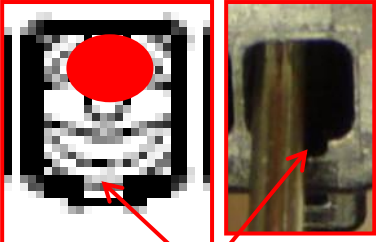
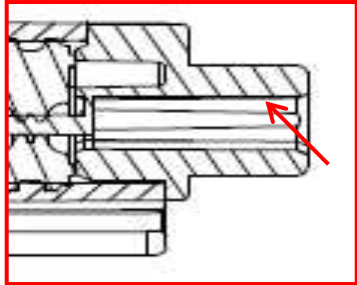
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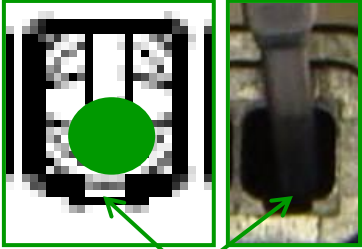
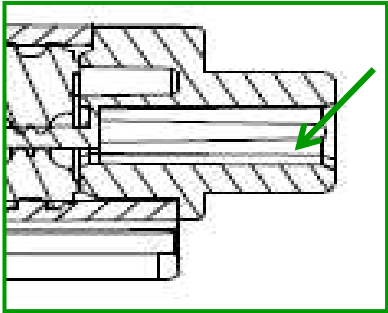
Single Row MX150 Blade Installation

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



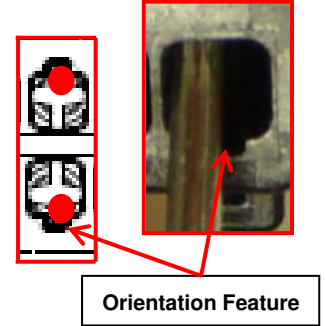
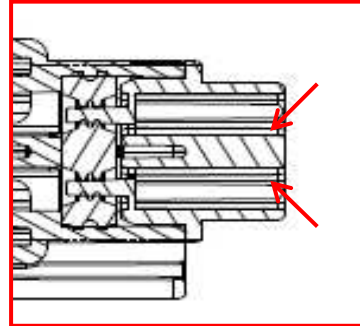
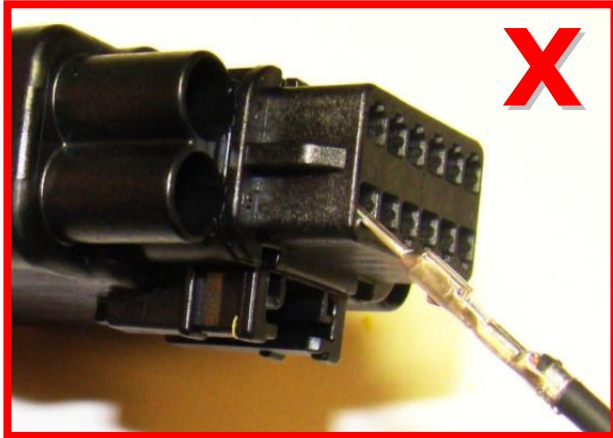
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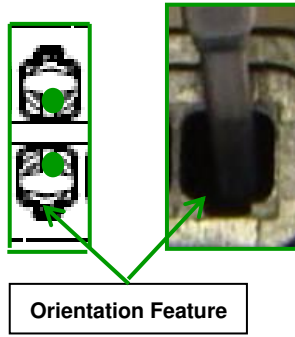
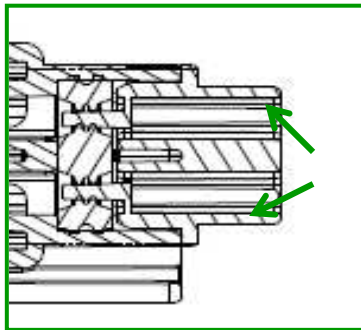
Hybrid MX150 Blade Installation

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

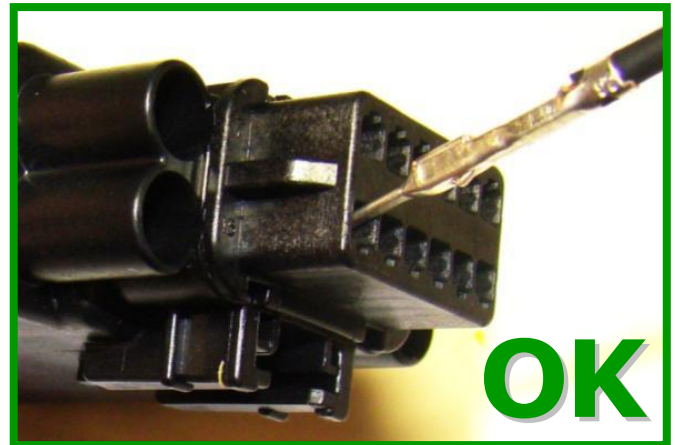


Orientation Feature

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



Orientation Feature



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