

# Wire Harness Repair or Replacement Guide

**Service Category** Power Source/Network

**Section** Power Distribution

**Market** USA

Toyota Supports  
 ASE Certification 

## Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2014 - 2022	4Runner, Corolla, Highlander, Highlander HV, Tundra	
2013 - 2022	Avalon, Avalon HV, Land Cruiser, RAV4	
2015 - 2022	Camry, Camry HV	
2022	Corolla Cross	
2020 - 2022	Corolla HV	
2019 - 2022	Corolla Hatchback	
2016 - 2022	Mirai, Prius, RAV4 HV	
2017 - 2022	Prius Prime	
2012 - 2014	RAV4 EV	
2021 - 2022	RAV4 Prime, Sienna HV, Venza HV	
2015 - 2020	Sienna	
2012 - 2022	Tacoma	
2012 - 2019, 2022	Yaris	

## Wire Harness Repair or Replacement Guide

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### Introduction

This Service Bulletin includes guidelines meant to help determine whether to repair or replace a wire harness assembly based on damage type. This Service Bulletin should be used in conjunction with the applicable model and model year Electronic Wiring Diagram (EWD) and/or Repair Manual.

#### NOTE

The guidelines in this Service Bulletin should ONLY be performed by technicians that have taken the Toyota Technical Training E-Learning Module TEC306A – *Wire Harness Repair*. For a summary of that module, reference "[QT621A Wire Harness Repair Quick Training Guide](#)" found on the Technical Information System (TIS), by accessing the following menus: *Technical Training – QTG – Skill Area: Electrical & A/C*.

### Warranty Information

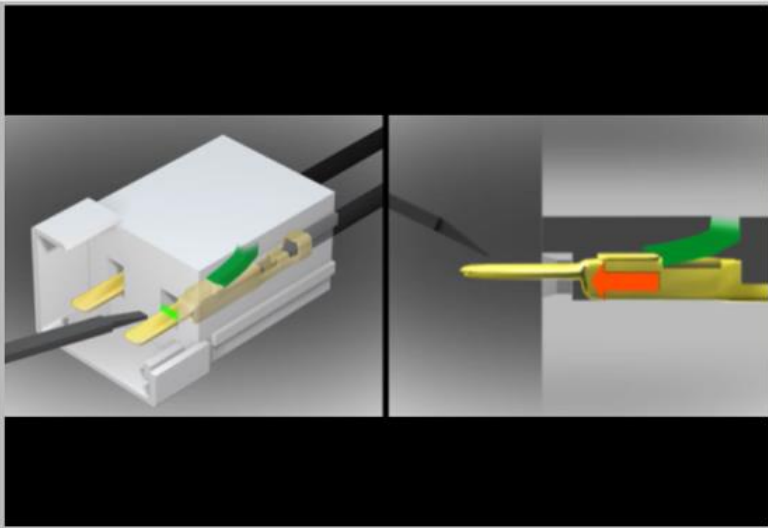

OP CODE	DESCRIPTION	TIME	OFF	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

## Wire Harness Repair or Replacement Guide

### Parts Information

For wire harness assembly replacement, look up the part(s) in the Electronic Parts Catalog (EPC) per the VIN. For wire harness repair parts information, use the wire harness repair information from the EWD component detail/wire harness repair screen. See the figure below for an example of this process.

**Figure 1. EWD Parts Information Example**

[+]Connector List Instrument Panel Instrument Panel Wire / No. 3 Instrument Panel Wire							
Name	Instrument Panel Wire and No. 2 Floor Wire						
Code	DG4	Part Number	90980-12862/90980-12861				
Spec		Color	White				
[-]Wire Harness Repair							
· WIRE HARNESS REPAIR GUIDELINES							
· TERMINAL AND CONNECTOR REPAIR PROCEDURES							
Caution Items	-						
Wire Type	Copper						
Terminal Type	1.5 (Non-waterproof Type)						
Male / Female	Female						
Sleeve	size:M (Silver) P/N: 82999-52020						
SST	P/N: 09991-00570						
		<b>Repair Wire</b>					
		 <p style="text-align: right;">E = 2.0</p> <table border="1"> <tr> <td>P/N:</td> <td>160mm</td> <td>82998-24350</td> </tr> <tr> <td></td> <td>500mm</td> <td></td> </tr> </table>		P/N:	160mm	82998-24350	
P/N:	160mm	82998-24350					
	500mm						

## Wire Harness Repair or Replacement Guide

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### Required Tools & Equipment

SPECIAL SERVICE TOOLS (SST)	PART NUMBER	QTY
Terminal Removal Tool Kit*	11819-00026	1

\*Essential SST.

**NOTE**

Additional SSTs may be ordered by calling 1-800-933-8335.

### Guides

- [Repair or Replacement Guide](#) ..... 5
- [Precautions for Repair Using Repair Wires and/or Connectors](#) ..... 10
- [New Terminal Removal Tool Kit Information](#) ..... 12

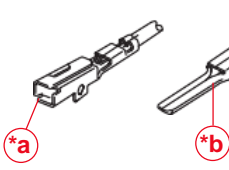
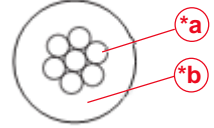
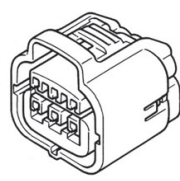
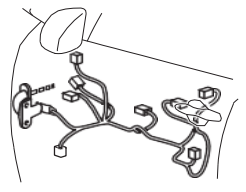
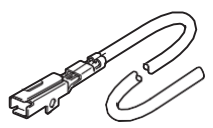
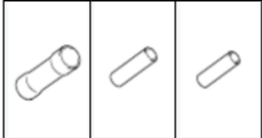
# Wire Harness Repair or Replacement Guide

## Repair or Replacement Guide

BEFORE the wire harness assembly is repaired or replaced, locate the damaged portion and identify the causes of the damage.

**NOTICE**  
 Serious malfunctions may result if the wire harness assembly is repaired or replaced without locating the damage or identifying the causes.

**Table 1. Wire Harness Parts Information**

TERMS	REFERENCE IMAGE	TERMS	REFERENCE IMAGE
Terminals *a: Female *b: Male		Wires *a: Insulator *b: Core	
Connector		Wire Harness Assembly	
Repair Wire		Sleeves	

If the wire harness assembly damage is related to ANY of the circumstances below, repair is **NOT RECOMMENDED** as a quality repair and can NOT be guaranteed:

- Orange wire harness assemblies for high-voltage systems (e.g., hybrid systems)
- Large (greater than or equal to 8 sq. mm, approximately 8 AWG) wire harness assembly for high-current systems (e.g., alternator system)
- Flood-damaged vehicles
- Thermal event damaged vehicles
- Shielded wires, such as antenna cable and video data cable
- Supplemental Restraint System circuits

Wire harness repair instructions for the circumstances above may be found in other publications such as, Recalls, Campaigns, Service Bulletins, Tech Tips, etc. that have been approved to address specific conditions on specific vehicles. The instructions found in these publications should be followed for those specific instances.

## Wire Harness Repair or Replacement Guide

### Repair or Replacement Guide (continued)

If the wire harness assembly damage is NOT related to ANY of the circumstances above, determine the best repair method by using the following information:

- Broken or separated wire.  
Recommended repair methods:
  - Wire repair
  - Wire harness assembly replacement

**Figure 2.**



- Bent or damaged male wire terminals.  
Recommended repair methods:
  - Wire terminal repair
  - Wire harness assembly replacement

**Figure 3.**

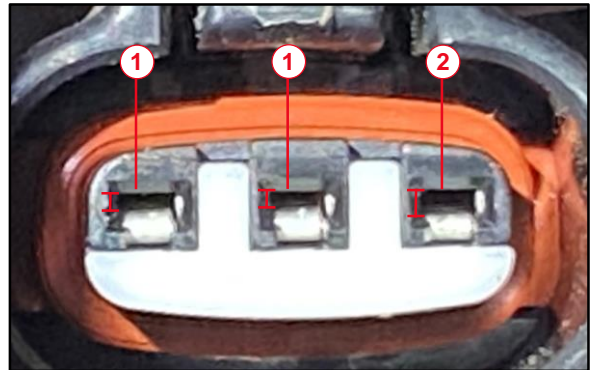


1	Not Good
2	Good

- Loose or damaged female wire terminals with poor tension/fit.  
Recommended repair methods:
  - Wire terminal repair
  - Wire harness assembly replacement

**NOTE**  
Until the wire terminal gauge tool is available, for a suspected poor terminal tension condition, replace the entire wire harness if unable to effectively diagnose by other reasonable methods such as a wiggle test or visual inspection for looseness.

**Figure 4.**



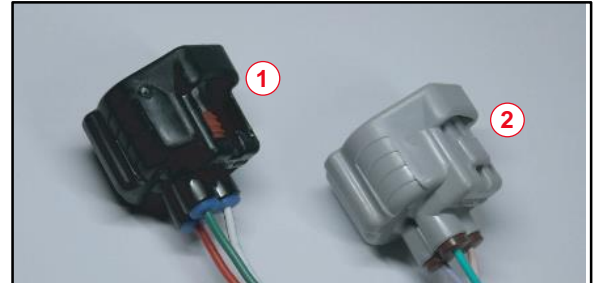
1	Good
2	Not Good (Female Wire Terminal With Poor Tension/Fit)

## Wire Harness Repair or Replacement Guide

### Repair or Replacement Guide (continued)

- Broken connector-lock tab  
Recommended repair methods:
  - Connector replacement
  - Wire harness assembly replacement

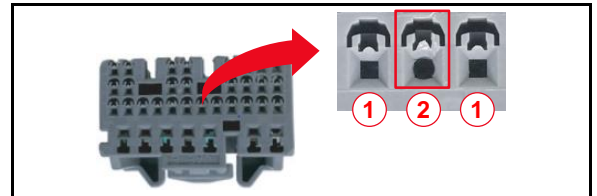
**Figure 5.**



<b>1</b>	<b>Not Good</b>
<b>2</b>	<b>Good</b>

- Connector deformation caused by incorrect terminal probing  
Recommended repair methods:
  - Connector replacement
  - Wire harness assembly replacement

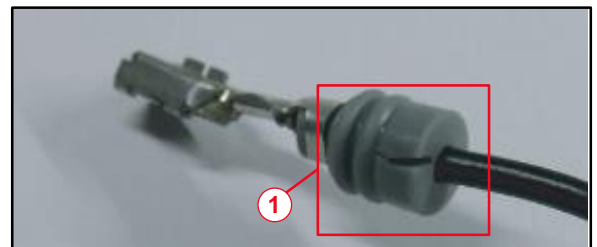
**Figure 6.**



<b>1</b>	<b>Good</b>
<b>2</b>	<b>Not Good</b>

- Damaged weather seal.  
Recommended repair methods:
  - Repair wire replacement
  - Wire harness assembly replacement

**Figure 7.**



<b>1</b>	<b>Damaged Weather Seal</b>
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## Wire Harness Repair or Replacement Guide

### Repair or Replacement Guide (continued)

- Melted wires.

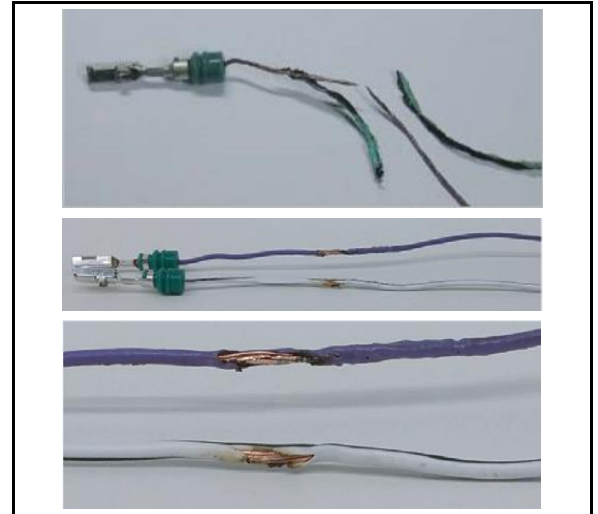
**NOTE**

- It is difficult to precisely locate ALL areas that were damaged.
- Excessive heat impairs the flexibility and electrical conductivity of the wire harness assembly.

Recommended repair method:

- Wire harness assembly replacement.

**Figure 8. Melted Wires Examples**



- Wire terminal discoloration

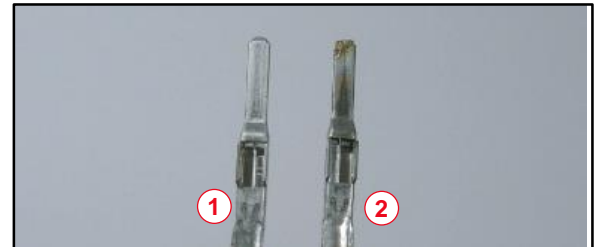
**NOTE**

- It is difficult to precisely locate ALL areas that were damaged.
- If a wire harness assembly repair is performed, corrosion or rust may still occur.

Recommended repair method:

- Wire harness assembly replacement

**Figure 9.**



1	Good
2	Not Good



## Wire Harness Repair or Replacement Guide

### Repair or Replacement Guide (continued)

- Wire terminal corrosion

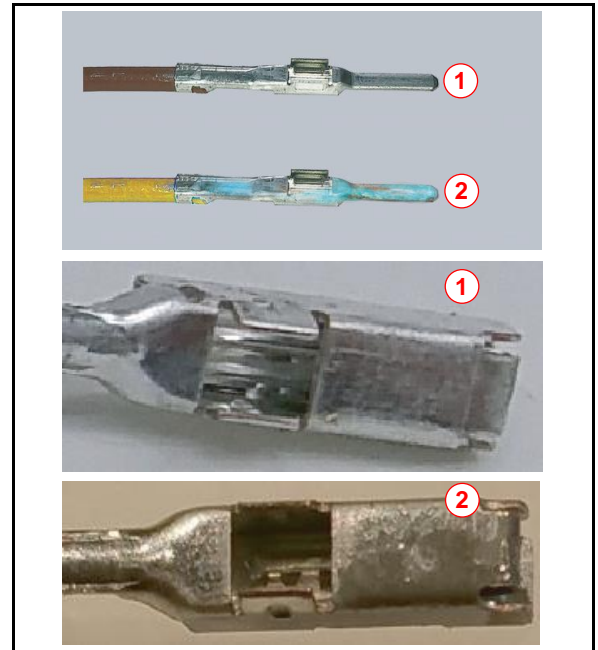
**NOTE**

- It is difficult to precisely locate ALL areas that were damaged.
- If a wire harness assembly repair is performed, corrosion or rust may still occur.

Recommended repair method:

- Wire harness assembly replacement

**Figure 10.**



<b>1</b>	<b>Good</b>
<b>2</b>	<b>Not Good</b>

## Wire Harness Repair or Replacement Guide

### Precautions for Repair Using Repair Wires and/or Connectors

1. Confirm the necessary wire harness assembly repair tools are available.

**NOTICE**

- Wire harness assembly parts may be damaged or broken if the repair is conducted without using the appropriate tools.
- The vehicle repair quality may NOT be achieved if the repair is completed without using the appropriate parts.

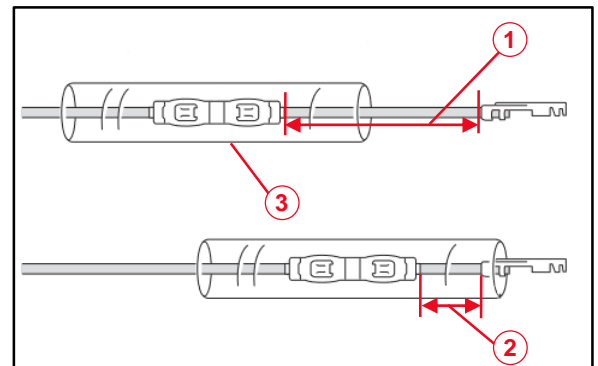
2. Do NOT repair wires that are meant to bend (such as wires in the door-jamb area).

**NOTICE**

Original wire harness assembly routing or layout can NOT be restored, as sleeves can NOT bend. Doing so could cause the sleeve to break and this may lead to other malfunctions or problems.

3. Check if the removed protective wire harness assembly covers and clamps can be restored after the completion of the repair. If the protective covers or clamps can NOT be restored, the wire harness assembly may be damaged or produce unusual noise due to vibration or interference with the vehicle body or components. Replace covers and/or clamps as needed.
4. Repairing communication wire harness assemblies is NOT recommended, for example, CAN (Controller Area Network) communication. Repair causes the electrical resistance to vary, potentially blocking communication signals.
5. Ensure the remaining wire length is AT LEAST 30 mm to achieve the waterproof capability and insulation performance of a heat shrink sleeve.

**Figure 11.**



1	Good (30-mm Wire Length)
2	Not Good (Less Than 30-mm Wire Length)
3	Heat Shrink Sleeve

## Wire Harness Repair or Replacement Guide

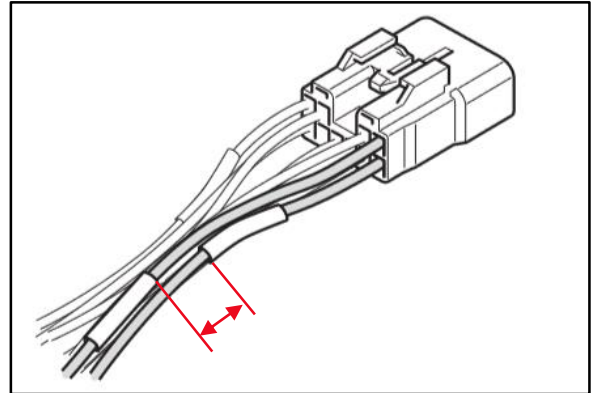
### Precautions for Repair Using Repair Wires and/or Connectors (continued)

6. Avoid the heat shrink sleeves being adjacent to each other when several wires connected to the same connector need to be repaired simultaneously.

**NOTE**

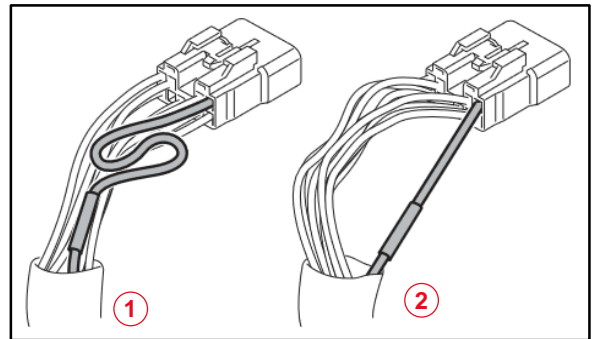
The protective wire harness assembly cover or clamps may NOT be restored if the heat shrink sleeves are adjacent to each other.

**Figure 12. Heat Shrink Sleeves in Good Locations**



7. Cut the repaired wire or the existing wire, whichever one will help you to obtain the same wire length as the original one AFTER the repair.
  - The repaired wire may have an open or short circuit due to vibration if it is too long.
  - The repaired wire may have an open or short circuit due to vibration if it is too short.
  - Terminal deformation or poor contact may also result from a repaired wire being too long or too short.

**Figure 13.**



<b>1</b>	<b>Repaired Wire is Too Long</b>
<b>2</b>	<b>Repaired Wire is Too Short</b>

## Wire Harness Repair or Replacement Guide

### New Terminal Removal Tool Kit Information

A NEW terminal removal tool kit was developed for wire harness repair. This kit includes 10 tools that can be used for multiple terminal and connector types. This section includes instructions for using the NEW wire terminal removal tool kit.

**Figure 14. Terminal Removal Tool Kit**

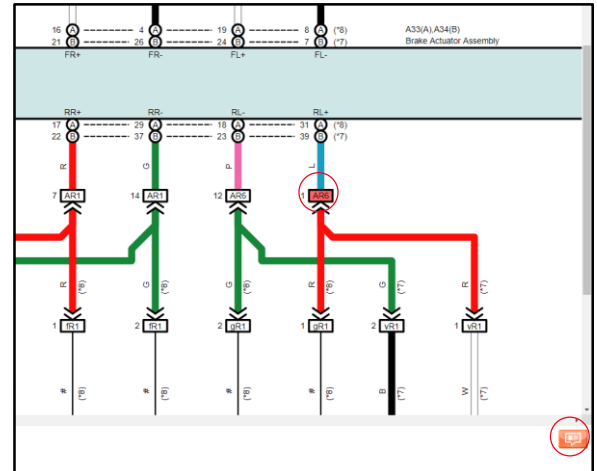


# Wire Harness Repair or Replacement Guide

## New Terminal Removal Tool Kit Information (continued)

1. Confirm terminal type.
  - A. Select the connector that is to be serviced within the EWD and open the component detail view for that connector.

Figure 15.



- B. Within the component detail view, expand the Wire Harness Repair section and confirm the terminal type.

Figure 16. Component Detail View

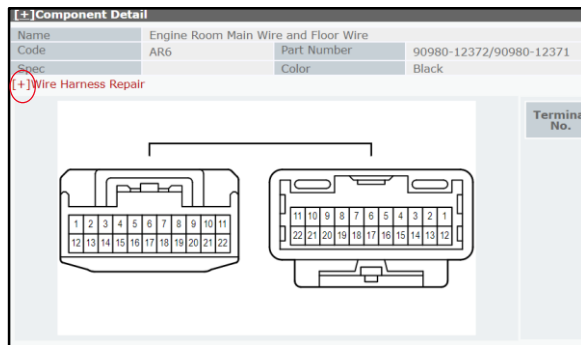
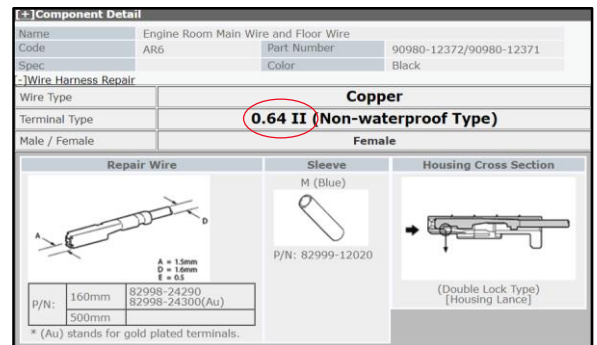


Figure 17. Terminal Type Example













## Wire Harness Repair or Replacement Guide

### New Terminal Removal Tool Kit Information (continued)

- Confirm the necessary tool by looking up the corresponding blade part number per terminal type by using the table below.

**Table 2.**

Illustration	Part Number	Part Name	Notes and Purpose
	09991-00500	Lance Canceling Tool	For Terminal Removal/ 0.64 Non-waterproof Type, Female
	09991-00510		For Terminal Removal/ 0.64 Non-waterproof Type, Male
	09992-01030		For Terminal Removal/ 0.64 II Non-waterproof Type, Male 0.64 II Non-waterproof Type, Female
	09991-00520	Lance Canceling Tool No. 1	For Terminal Removal/ 0.5 Non-waterproof Type, Female 0.5 W Non-waterproof Type, Female
	09991-00530	Lance Canceling Tool No. 2	For Terminal Removal/ 0.5 II Waterproof Type, Female 0.64 Non-waterproof Type, Female
	09991-00560	Lance Canceling Tool No. 3	For Terminal Removal/ 0.64 Waterproof Type, Male
	09991-00570	Lance Canceling Tool No. 4	For Terminal Removal/ 1.5 Non-waterproof Type, Male 1.5 Non-waterproof Type, Female
	09041-1C570	Minus screwdriver 1.8 mm	For Terminal Removal (to Release Retainer)/ 0.64 II Male, Mainly 2.3 - 8.0, etc.
	09041-1C580	Minus Screwdriver 0.9 mm	For Terminal Removal (to Release Retainer)/ Mainly 1.0 – 2.3 II, etc.
	09991-00550	Retainer Remover A	For Retainer Release/ 0.64 Waterproof Type, Male

- Use the corresponding tool(s) to disassemble the connector and remove the terminal. Use the procedures taught in the Toyota Technical Training E-Learning Module TEC306A and the [“QT621A Wire Harness Repair Quick Training Guide.”](#)

**NOTICE**

Wire harness assembly parts may be damaged or broken if this tool kit is NOT used correctly and carefully.