

“Wiring Repair” Job Aid

This information is not intended to replace technical training or Wiring Diagram information.

This Job Aid covers the following topics:

1. What is Available for Wiring Repair

- Connector Pigtail Kits
- Terminal Repair Kits
- Splice Kits (including Heat Shrink Tubing)
- Correct Soldering and Crimping Procedures

2. How to Order

- Connector Pigtail Kits and Terminal Repair Kits
- Splicing and Crimping materials
- Correct tools for wiring diagnosis and repairs

3. Repair Processes and Information

- Overlay Wire/Circuits

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Wiring Diagram – Cell 5 and Cell 150

- **Cell 5** - Contains information on wiring circuit inspection and testing
- **Cell 150** – Contains connector views. You can also access the connector view and location while in a wiring cell by placing your mouse over the connector number you wish to view and left click.
- **Cell 151** – Contains connector locations

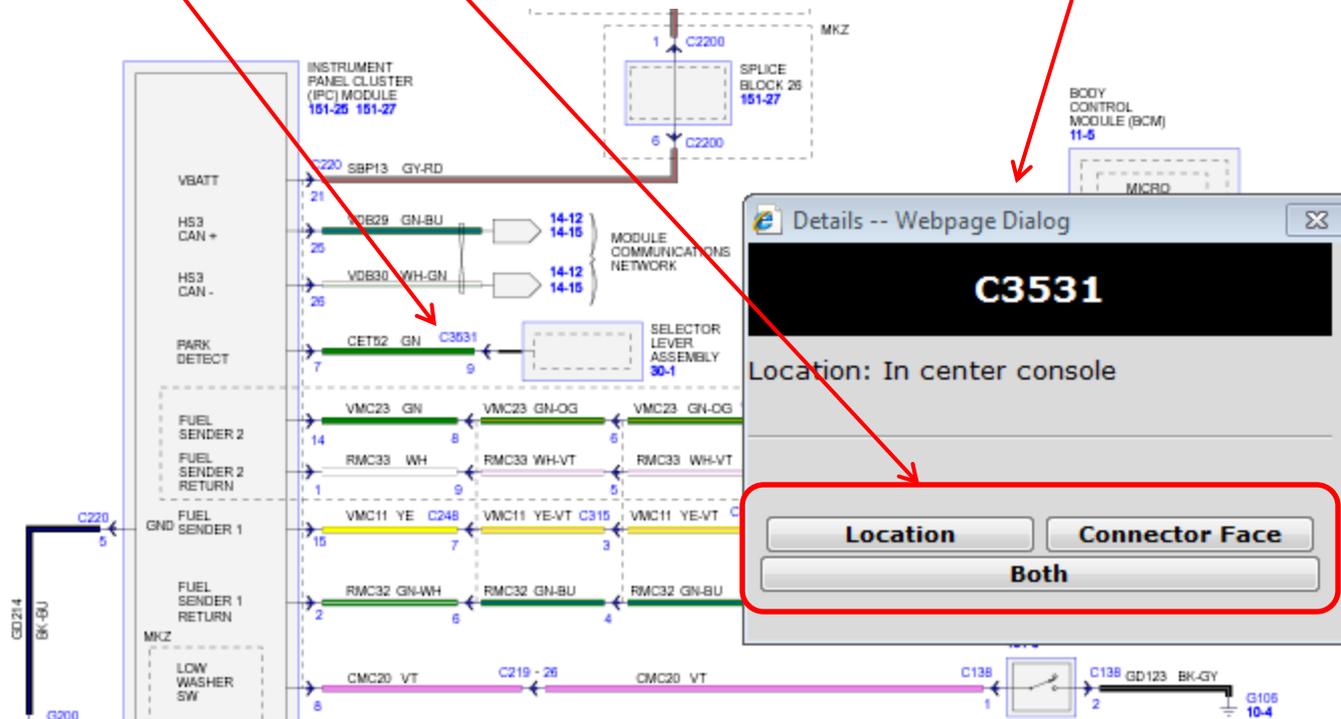
NOTE: Items on the following pages only show up in the wiring diagram if a VIN was used during Vehicle ID in PTS

Cell	Title	Cell	Title
3-1	Introduction	85-1	Headlamps/Autolamps
4-1	Symbols	86-1	Fog Lamps
5-1	Connector Repair Procedures	89-1	Interior Lamps
10-1	Grounds	90-1	Turn Signal/Stop/Hazard Lamps
11-1	Fuse and Relay Information	92-1	Parking, Rear and License Lamps
12-1	Charging System	93-1	Reversing Lamps
13-1	Power Distribution/BCM	95-1	Trailer/Camper Adapter
14-1	Module Communications Network	96-1	Police Option
20-1	Starting System	100-1	Power Windows
23-1	Electronic Engine Controls - 2.0L GTDI	101-1	Roof Opening Panel
24-1	Electronic Engine Controls - 3.5L/3.7L TIVCT	109-1	Power Liftgate
25-1	Electronic Engine Controls - 3.5L GTDI	112-1	Passive Anti-Theft System
29-1	Transmission Controls - 6F50/6F55	117-1	Remote Keyless Entry and Alarm
30-1	Transmission Controls - 6F35	118-1	Tire Pressure Monitor System
31-1	Cruise Control	119-1	Climate Controlled Seats
33-1	Cooling Fan	120-1	Power Seats
34-1	All Wheel Drive (AWD)	123-1	Memory Seats
37-1	Shift Interlock	124-1	Power Mirrors
42-1	Vehicle Dynamic Systems	127-1	Adjustable Pedal
43-1	Power Steering Controls	128-1	Adjustable Steering Column
44-1	Horn/Cigar Lighter	130-1	Audio System/Navigation
46-1	Supplemental Restraint System	131-1	Parking Aid
52-1	Auxiliary Climate Control	136-1	Vehicle Emergency Messaging System
54-1	Manual Climate Control System	149-1	Component Testing
55-1	Automatic Climate Control System	150-1	Connector Views
56-1	Heated Window	151-1	Component Location Views

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Connector Information

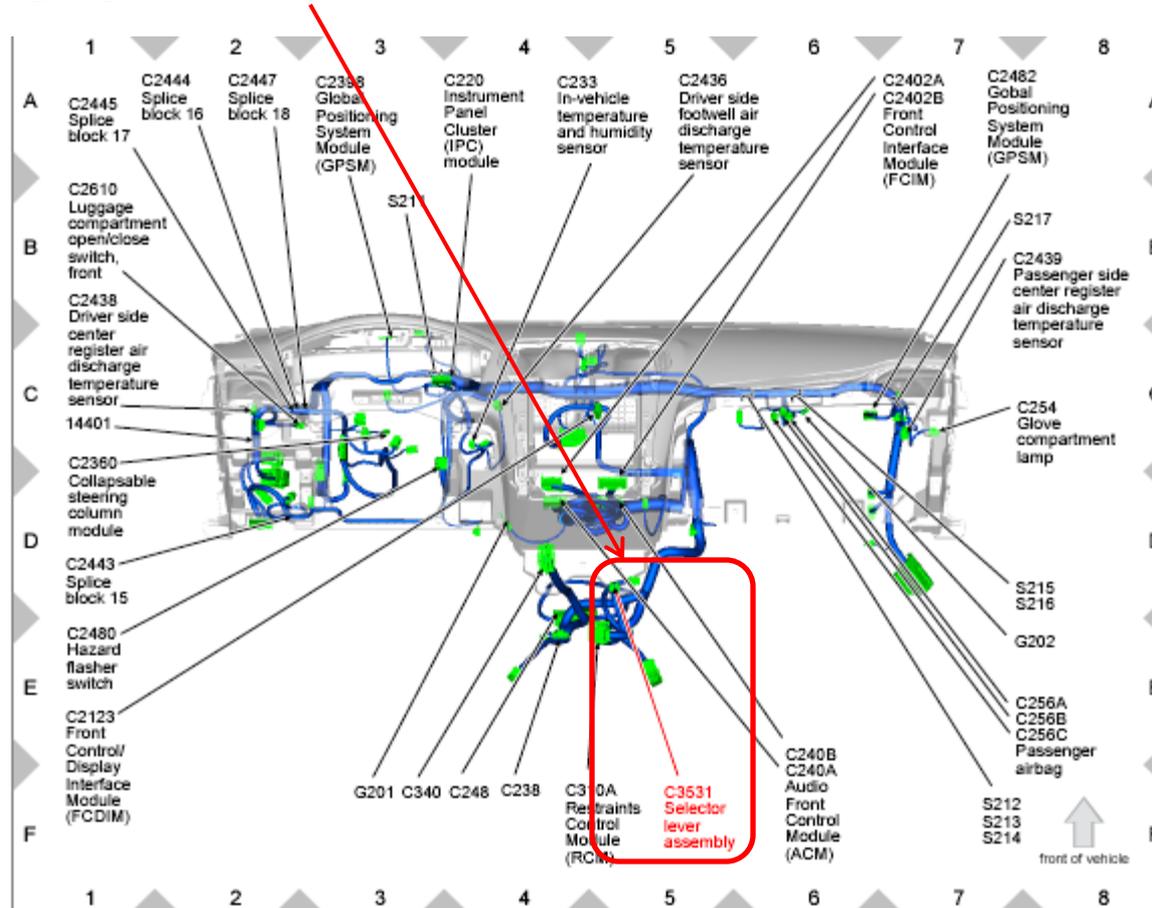
When you click on the connector number you would like to view, a pop up box will appear which allows you to view the connector location, connector face, or both.



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Location

The Location tab will show you this page with the connector you are looking for, most times it will be highlighted in red



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Connector Face

The Connector Face tab will give you a view of the connector face with the option to Check for Terminal Part Numbers (if available). Along with the Pigtail Kit part numbers in blue (if available). Motorcraft Pigtail Part Numbers are in black (if available).

NOTE: VIN must be used to see these part numbers

Connector: **C3531**

Description: SELECTOR LEVER ASSEMBLY

Color: GY

Harness: [4401](#)

Base Part # part# N/A

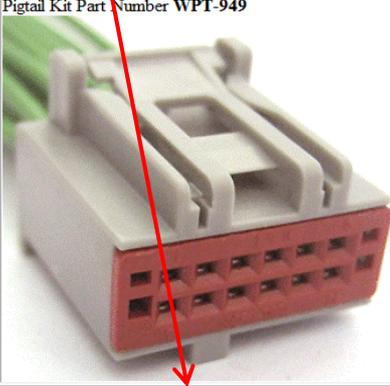
Service Pigtail: See Below

Pin	Circuit	Gauge	Circuit Function	Qualifier
-	-	-	Not Used	
2	CBP19 (BN-WH)	22	FUSE - 19 OR CIRCUIT BREAKER	
3	CET34 (BN)	26	SWITCH - TRANSMISSION CONTROL / OVERDRIVE CANCEL (TCS)	
4	RE407 (YE-VT)	22	CTRL MOD. - POWERTRAIN # SIGNAL RETURN COWL (C-SIGRTN) (SIGRTN-C)	
5	CET4 (GY)	22	SWITCH - TRANSMISSION SELECT SHIFT # UP (SST)	
6	CET42 (GN-VT)	22	SWITCH - TRANSMISSION SELECT SHIFT # DOWN (SST)	
7	VLN04 (VT-WH)	26	CTRL MOD. - IP/SWITCH ILLUMINATION	
8	CDC26 (GY-BN)	26	RELAY - STARTER INHIBIT	
9	CET52 (GN)	26	SWITCH - TRANSMISSION PARK DETECT	
10	CDC41 (WH)	26	SWITCH - SOLENOID KEY LOCK INHIBIT REMOVAL)	
11	GD383 (BK-WH)	22	GROUND - CROSS MEMBER MIDDLE PASSENGER OR RIGHT	
12	CET53 (BU-OG)	26	CTRL MOD. - POWERTRAIN # BRAKE SHIFT INTERLOCK	

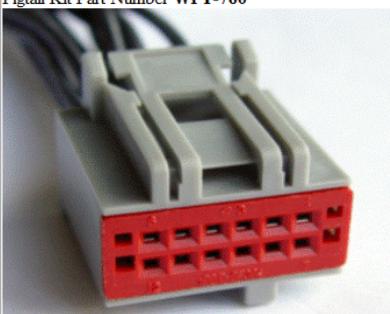
[Check for Terminal Part Numbers](#)

Available Pigtail Kits

Pigtail Kit Part Number **WPT-949**



Pigtail Kit Part Number **WPT-760**



Service Part Number: [3U2Z-14S411-3MAB](#)

Gauge: 18

Pin material: Silver

Cavities: 12

Vehicle Uses

- Control - Navigation Display
- Module - Driver Door
- Module - Front Interface
- Monitor - Video/DVD
- Switch - Gear Shift Select/Neutral Safety

Service Part Number: [3U2Z-14S411-BMAA](#)

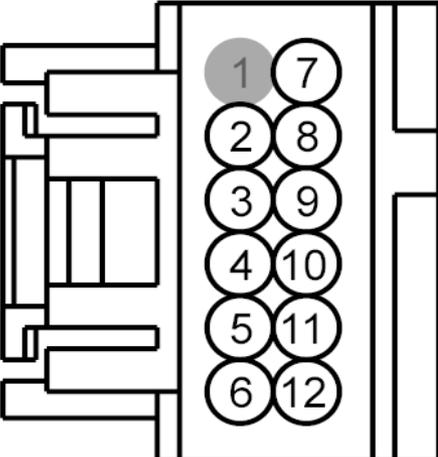
Gauge: 18

Pin material: Tin

Cavities: 12

Vehicle Uses

- Coil - Ignition
- Lamp - Storage Compartment - Trunk
- Mirror - Rearview
- Module - Heated Seat (Rear)



NOTE: Match the orientation of the keyway and the gauge of the wire to order the correct connector

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Check for Terminal Kit Part Numbers

When you click on Check for Terminal Part Numbers (if available) the terminal part numbers will be displayed in the Terminal Part Number column and the corresponding Service Part Number will be shown in **blue** at the bottom right of the chart.

NOTE: VIN must be used to see these part numbers

Connector: **C3531**

Description: SELECTOR LEVER ASSEMBLY

Color: GY

Harness: [14401](#)

Base Part #: part# N/A

Service Pigtail: See Below

Pin	Circuit	Gauge	Circuit Function	Qualifier	Terminal Part Number
1	-	-	Not Used		N/A
2	CEP19 (BN-WH)	22	FUSE - 19 OR CIRCUIT BREAKER		9U5T-14474-LA
3	CET34 (BN)	26	SWITCH - TRANSMISSION CONTROL / OVERDRIVE CANCEL (TCS)		9U5T-14474-NA
4	RE407 (YE-VT)	22	CTRL MOD. - POWERTRAIN # SIGNAL RETURN COWL (C-SIGRTN) (SIGRTN-C)		9U5T-14474-LA
5	CET43 (GY)	22	SWITCH - TRANSMISSION SELECT SHIFT # UP (SST)		9U5T-14474-LA
6	CET42 (GN-VT)	22	SWITCH - TRANSMISSION SELECT SHIFT # DOWN (SST)		9U5T-14474-LA
7	VLN04 (VT-WH)	26	CTRL MOD. - IP/SWITCH ILLUMINATION		9U5T-14474-NA
8	CDC26 (GY-BN)	26	RELAY - STARTER INHIBIT		9U5T-14474-NA
9	CET52 (GN)	26	SWITCH - TRANSMISSION PARK DETEC		9U5T-14474-NA
10	CDC41 (WH)	26	SWITCH - SOLENOID KEY LOCK (INHIBIT REMOVAL)		9U5T-14474-NA
11	GD383 (BK-WH)	22	GROUND - CROSS MEMBER MIDDLE PASSENGER OR RIGHT		9U5T-14474-LA
12	CET53 (BU-OG)	26	CTRL MOD. - POWERTRAIN # BRAKE SHIFT INTERLOCK		9U5T-14474-NA

Terminal Part Number	Service Part Number
9U5T-14474-LA	DU2Z-14474-BA
9U5T-14474-NA	DU2Z-14474-BA

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Clicking on the **blue** part number from the **Connector Face** page (pg. 5) will open the Catalog Advantage page (shown below) where you can click on the part number you want in the Search Results tab. This will open the Physical Part Content Page (shown on page 8).

https://web.fcaf.dealerconnection.com/?sync=yes - Ford Catalog Advantage Application - Welcome - Windows Internet Explorer

This website wants to install the following add-on: 'FordSettings.dll' from 'FORD Motor Company Code Signing'. If you trust the website and the add-on and want to install it, click here...

Shortcut Search | Filter | Language English | Currency USD

DMS | Home | Find Price | Bookmark | Links | Settings | Support | About | Help | Log Out

Textual Search | **Illustrated Index** | Shopping

CC7 Fusion 2013 3FA6P0D92DR209735

Search CC7 Fusion

Base Description SPN Motorcraft Associated Part No.

Search: - -

Cross Reference Search

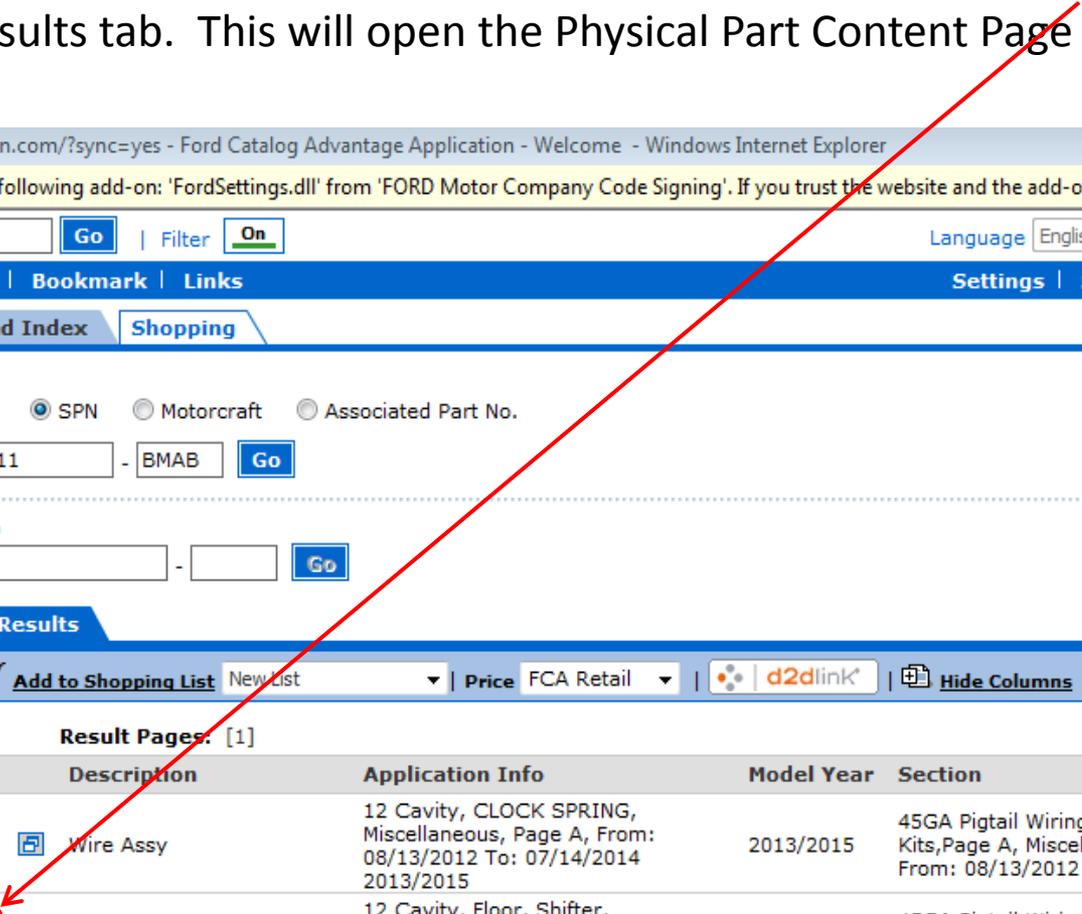
EPN: - -

VIN Results | **Search Results**

| Price FCA Retail | |

Results 1- 2 out of 2 | Result Pages: [1]

<input type="checkbox"/>	SPN	Description	Application Info	Model Year	Section	Price	Qty	Indicators
<input type="checkbox"/>	3U2Z-14S411-BMAB	<input type="button" value="Image"/> Wire Assy	12 Cavity, CLOCK SPRING, Miscellaneous, Page A, From: 08/13/2012 To: 07/14/2014 2013/2015	2013/2015	45GA Pigtail Wiring Kits,Page A, Miscellaneous, From: 08/13/2012 2013/	38.27	1	<input type="button" value="Link"/>
<input type="checkbox"/>	3U2Z-14S411-BMAB	<input type="button" value="Image"/> Wire Assy	12 Cavity, Floor, Shifter, Miscellaneous, Page A, From: 08/13/2012 To: 07/14/2014 2013/2015	2013/2015	45GA Pigtail Wiring Kits,Page A, Miscellaneous, From: 08/13/2012 2013/	38.27	1	<input type="button" value="Link"/>



“Wiring Repair” Job Aid

This page allows you to do the following:

- Add to shopping list
- Order it by transmitting to your dealer’s Dealer Management System (DMS) if applicable
- View Terminal part information

Ford Catalog Advantage Application - Welcome DWOOD10 - Physical Part Content Page -- Webpage Dialog

Detailed Part Card

[Add to Shopping List](#) New List | [View Illustrations](#)

[Transmit to DMS](#) | [d2dlink](#)

Callout No. 14S411Q; **Description:** Wire Assy
Comment: 12 Cavity, Floor, Shifter, Miscellaneous, Page A

Refer to:

SPN	Application Information	QTY	Indicator
3U2Z-14S411-BMAB	12 Cavity, Floor, Shifter, Miscellaneous, Page A, From: 08/13/2012 To: 07/14/2014 2013/2015	1	

SPN: 3U2Z-14S411-BMAB	QTY: 1	DMS Retail Price:
Eng.: 3U2J-14B475-BMAB	UOI: 1	
Motorcraft: WPT949	Retail Price: 38.27	Stock on hand:
	Core: 0.00	Bin Location:

Associated Numbers:

Vehicle Applicability:

From: 08/13/2012	2013/2015
To: 07/14/2014	

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Clicking on the [blue](#) service part number from the **Terminal Kit Part Number** page (pg. 6) will open the Catalog Advantage page (shown below) giving you both the Service Part and Motorcraft part numbers along with ordering information (depending on dealership).

Find Price -- Webpage Dialog

Find Price

Find Price For: SPN Motorcraft

Part No.: DU2Z - 14474 - BA [Display Price](#)

Description: Terminal

Service Part No.: DU2Z-14474-BA

Motorcraft: WT1001

UOI: 5

Retail Price: 25.52 USD

DMS Price:

[Transmit to DMS](#) [Add to Shopping List](#) New List [Close](#)

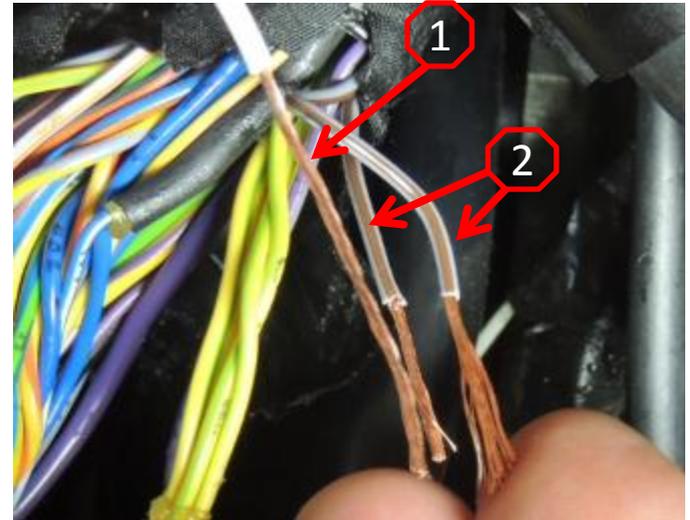
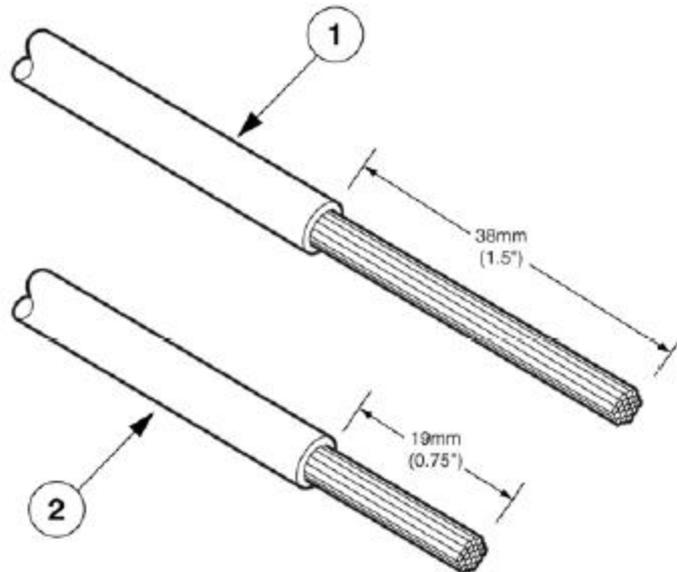
“Wiring Repair” Job Aid

Shown below is the contents of a Terminal Kit. It contains enough components to repair 5 terminals.



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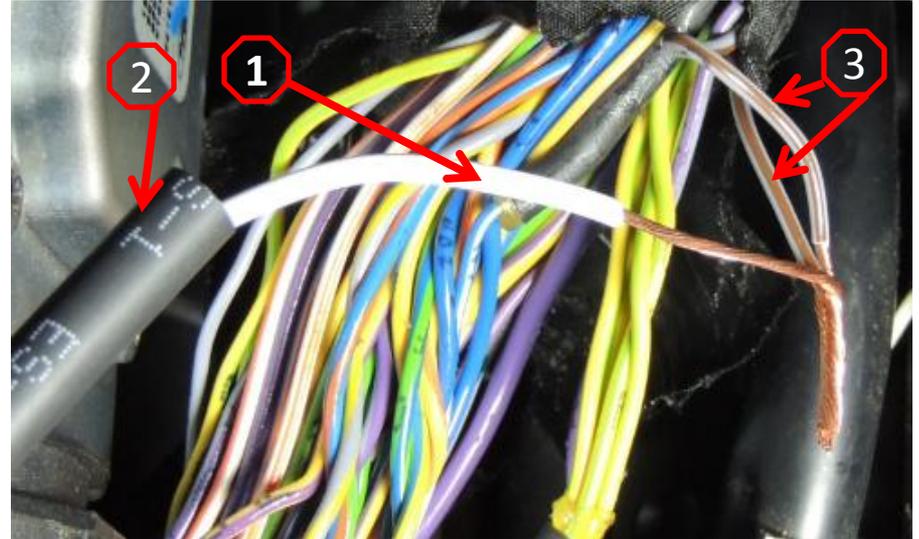
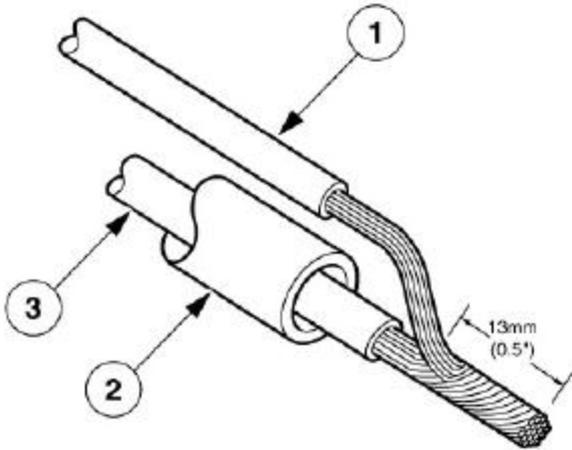
Solder/Heat Shrink Wire Repair



1. Strip insulation off of wire (#1) 1 ½ inches
2. Strip insulation off of wire (#2) ¾ inch (picture on right shows 2 wires being spliced)

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Solder/Heat Shrink Wire Repair



1. Install the heat shrink tubing (#2)
2. Twist approximately $\frac{1}{2}$ inch of the wires together (#1 & #3)
3. Solder the wires together (see page 13)

Note: The soldering procedure shown in Cell 5 (page 6) of the Wiring Diagram is also acceptable

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Solder/Heat Shrink Wire Repair



Proper Soldering Process

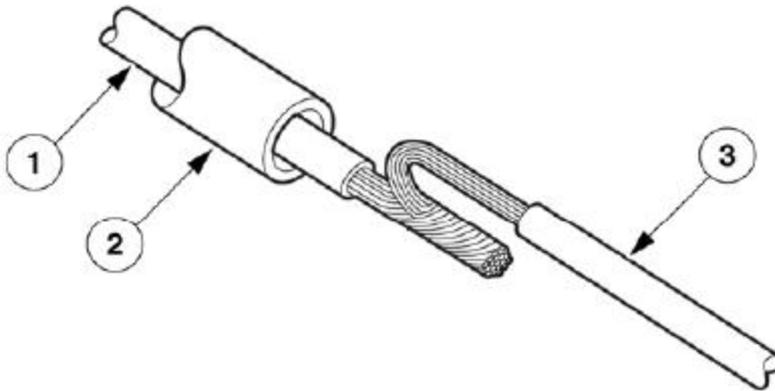


Proper Solder Joint

- Place Rotunda Soldering Gun WELD550PK (or equivalent) under twisted wires until wires are hot enough to melt solder
 - NOTICE:** Do not overheat wire or damage to insulation may occur
- Feed solder into wires from the top
 - NOTE:** Use rosin core mildly activated (RMA) solder. Do not use acid core solder
 - NOTE:** Do not drip melted solder on to the wires, as this will cause a cold solder joint

“Wiring Repair” Job Aid

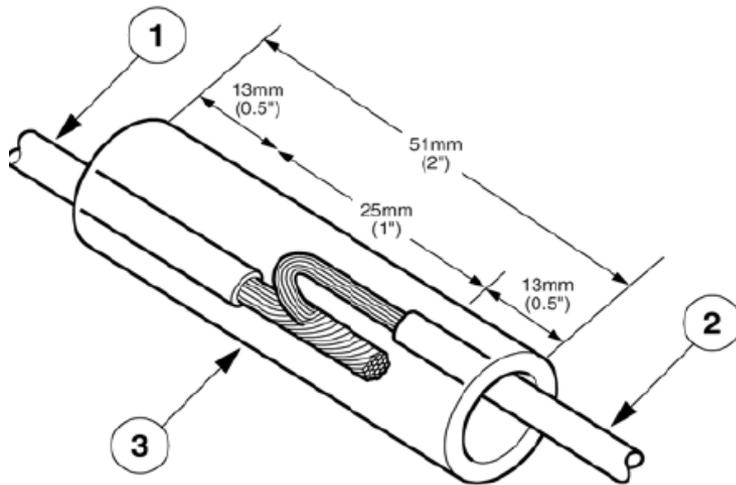
Solder/Heat Shrink Wire Repair



- Bend wire (#3) back and slide Heat Shrink Tubing (#2) over the solder joint

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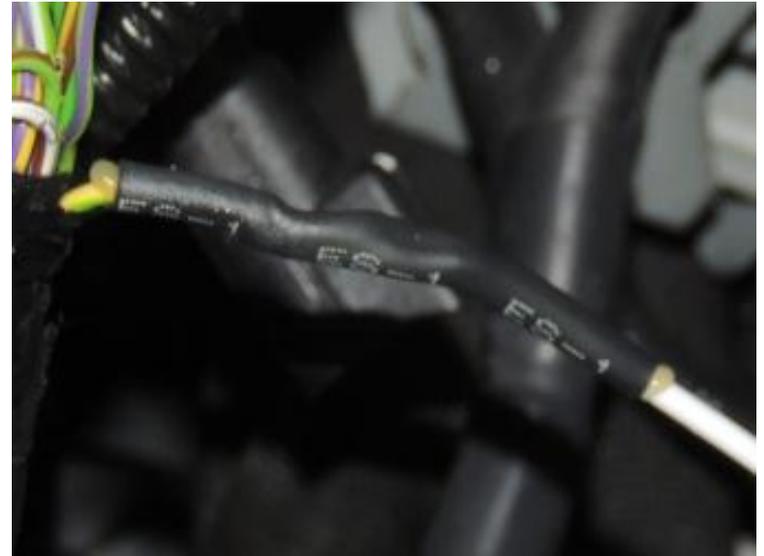
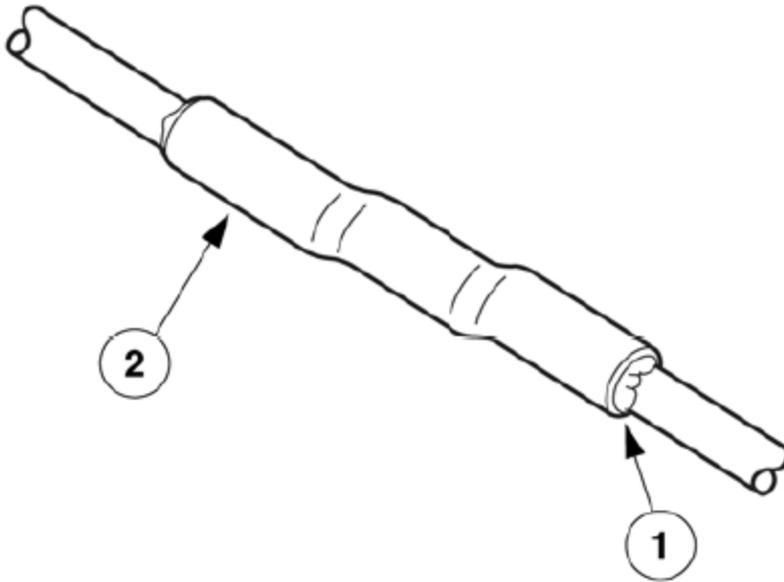
Solder/Heat Shrink Wire Repair



- Heat Tubing with Rotunda Shielded Flameless Heat Gun NAIAT-R5902 (or equivalent) until adhesive is showing on each end of Heat Shrink Tubing (see page 16)

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Solder/Heat Shrink Wire Repair



- Properly heated Heat Shrink Tubing (#2) with Adhesive wax showing on both ends (#1)

“Wiring Repair” Job Aid

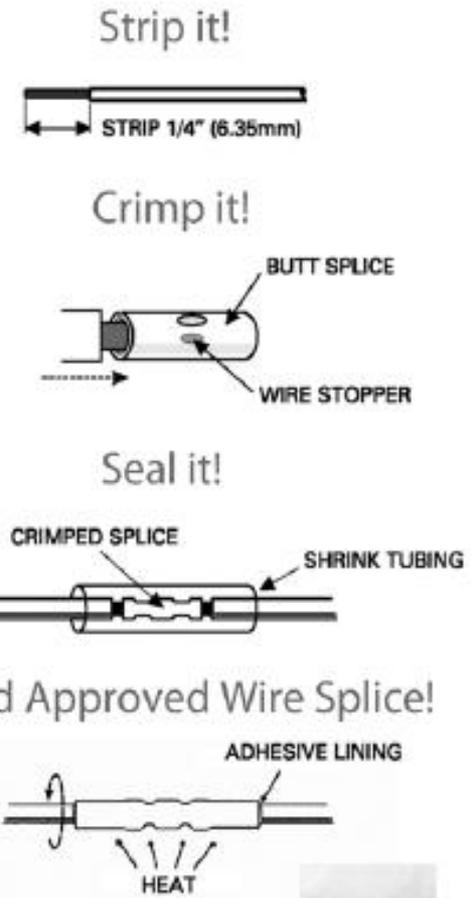
Splicing and Crimping Materials

Motorcraft Wire Splice/Shrink Tubing Packages

- ❖ Motorcraft wire splice/shrink tubing packages contain 5 uninsulated butt splices, 5 pieces of dual wall adhesive lined heat shrink tubing and an instruction sheet
- ❖ Packages are available at www.motorcraft.com in 4 wire ranges:

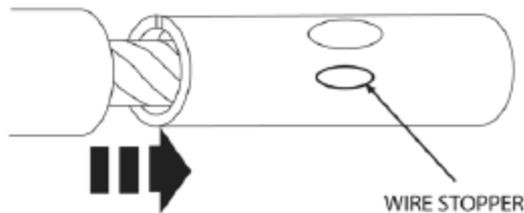
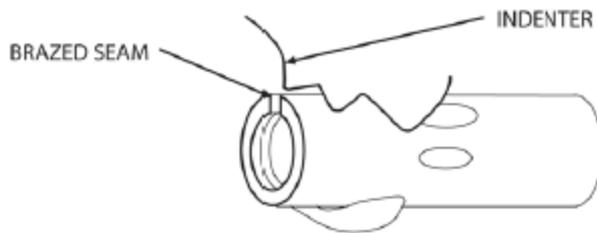
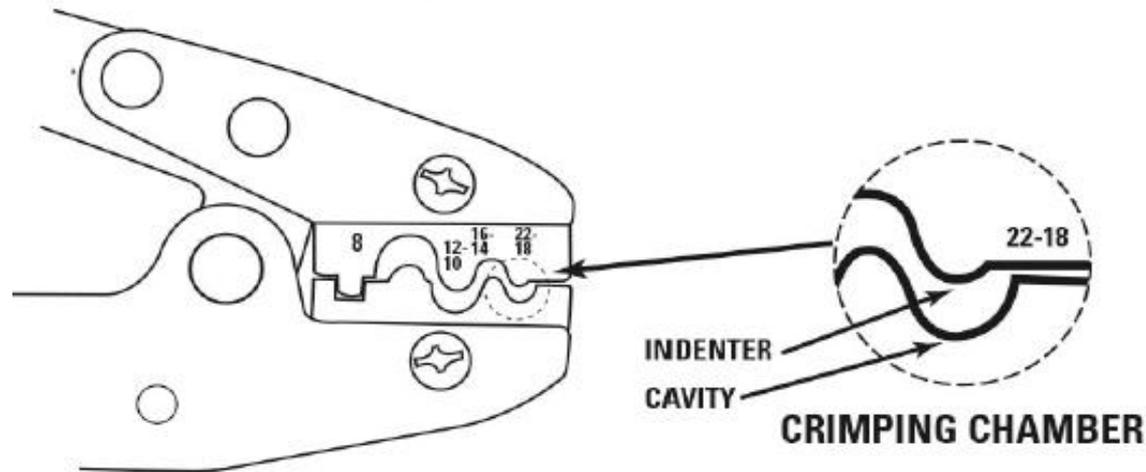
<u>Motorcraft Part #</u>	<u>Wire Range</u>
WT-56814	22-18 AWG
WT-56815	16-14 AWG
WT-56816	12-10 AWG
WT-56869	8 AWG

- ❖ Recommended Tools are available at the Rotunda Technician Tool Program (RTTP)
 - NAIAT-R5902 Shielded Flameless Heat Gun
 - NAIAT-R5903 Complete Wire Splice Tool Kit



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Splicing and Crimping Materials



- Center one end of the splice in the appropriate crimping chamber
- Insert stripped wire into the barrel of the splice
- Holding the wire in place, squeeze tool handles until ratchet releases
- Repeat above steps to crimp the other half of the splice

“Wiring Repair” Job Aid

Overlay Wiring Circuits

Overlaying (bypass) a circuit is an acceptable repair procedure for a visible pinched/broken or corroded/damaged wire(s) in a loom or an in-line connector where a replacement Terminal Kit is not available, as long as the following guidelines are used:

Pinched/Broken Wires

- Identify damaged area and remove/isolate wiring loom to prevent further damage
- Use a wire that is equal to, or one size larger than the American Wire Gauge (AWG) or metric equivalent size of the wire you are replacing
- Use a length of wire that is long enough to allow for the repair to be made without creating tension on the overall loom or added resistance to the circuit being repaired
- Wire must be taped back into loom using Coroplast Tape (or equivalent) and the loom positioned back into it's original position with all convolute/securing devices in place

Corroded/Damaged Terminal (In-line Connector)

- Use a wire that is equal to, or one size larger than the American Wire Gauge (AWG) or metric equivalent size of the wire you are replacing
- Use a length of wire that is long enough to allow for the connector to be disconnected for future testing/servicing
- Wire must be looped over and taped to the connector using Coroplast Tape (or equivalent)

NOTE: Inspect all wires and terminals within the connector and repair as needed. Soldering or Crimping procedures in this Job Aid or Cell 5 of the Wiring Diagram should be used for wiring repairs, whenever possible. Bypassed wires in the connector should be sealed to prevent further damage.

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Resources

Rotunda Tools – www.onerotunda.com (RTTP tab)

- Wire Splice Tool Kit – NAIAT-R5903 (includes the following)
 - Ratchet Action Crimp Tool (4 crimp chambers)
 - Shielded Flameless Heat Gun w/deflector
 - Adhesive lined Heat Shrinkable Tubing (55 - 2” cut pcs.)
 - Motorcraft Wire Splice/Shrink Tubing Kit (1 ea., WT-56814, WT-56815, WT-56816)
- Weller Professional Soldering Kit – WELD550PK
- Nu-Di – Flex Probe Kit – NUD105-R025E
- Nu-Di – Terminal Release Tools (3)
 - NUD900-001 - 1.0mm Flat, Tapered Point (Black)
 - NUD900-002 - .64mm Terminal Removal Tool (Blue)
 - NUD900-003 - 1.5mm Terminal Removal Tool (Brown)

Connector Pigtail Kits & Terminal Repair Kits – Professional Technician Society (PTS) Wiring Diagram Cell 150 or Ford Catalog Advantage Parts Catalog under the Workshop tab. You can also go to the Motorcraft website to order at www.motorcraft.com