



FORD PERFORMANCE

## M-15200K-R Off Road 40" LED Light Bar Ranger Installation

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Please visit [www.performanceparts.ford.com](http://www.performanceparts.ford.com) for the most current instruction and warranty information.

**PLEASE READ ALL OF THE FOLLOWING INSTRUCTIONS CAREFULLY PRIOR TO INSTALLATION. AT ANY TIME YOU DO NOT UNDERSTAND THE INSTRUCTIONS, PLEASE CALL THE FORD PERFORMANCE TECHLINE AT 1-800-367-3788**

### Kit includes:

- 1 - Off Road 40" LED Light Bar
- 1 - Wiring Harness (Fused)
- 1 - Wiring Harness (with Relay)
- 1 - Switch
- 1 - Butt Splice/Heat Shrink Kit-Motorcraft WT-56816
- 1 - Blue Splice Connector
- 10 - Zip Ties

### Light bar installation when using M-19007-R Chase Rack

1. Park vehicle on level ground and set emergency brake.
2. Disconnect negative battery terminal.
3. Use the light manufacturer's hardware to bolt the light to both Light Tabs. (Fig D)



(Chase Rack comes with light bar spacers, use if necessary)

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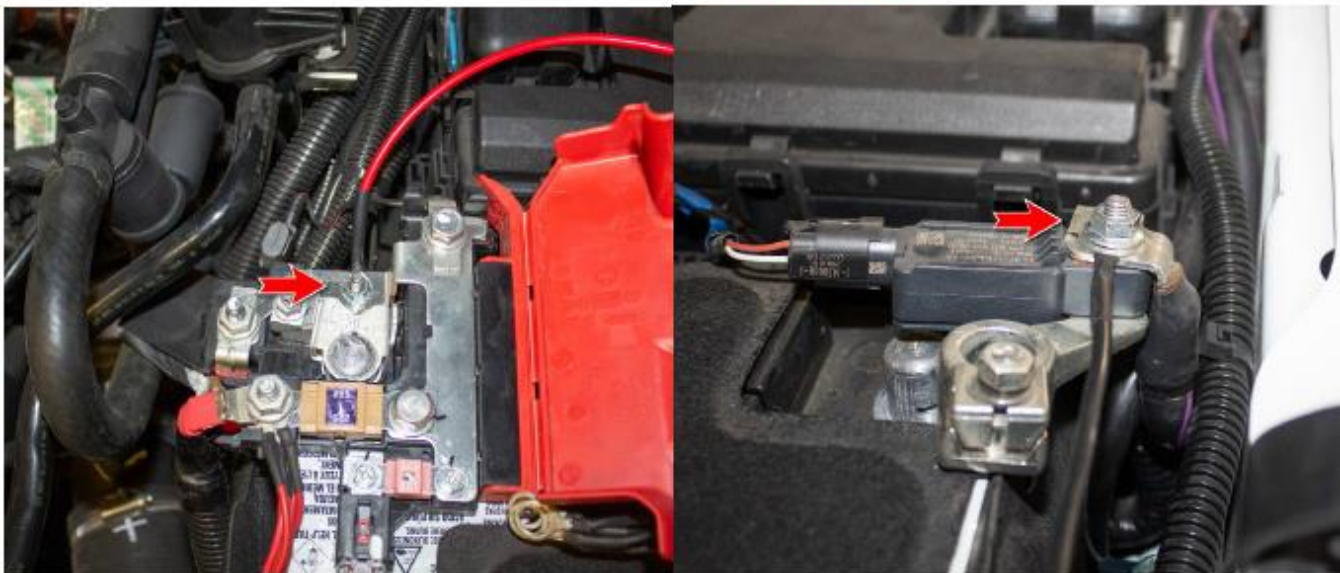
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4. Find the smaller section of the supplied harness with fused battery leads. First, remove the fuse from the fuse holder on the harness. Then, connect the red wire from that harness to the positive battery terminal. Connect the black wire from the harness to the negative battery terminal. (Fig G)

Fig G



Connect these two ends to the positive and negative battery terminals.



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5. Route the harness to the bulkhead on the driver side. Then, pass the end with the two blue connectors into the cab of the truck through the rubber grommet shown in (Fig H).



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6. Open the front driver side door. Then, remove the kick panels as shown in (Fig I). There are no tools required for this step, they simply pull off by hand. See Workshop Manual for removal procedures if needed.



Pull both of these panels off.

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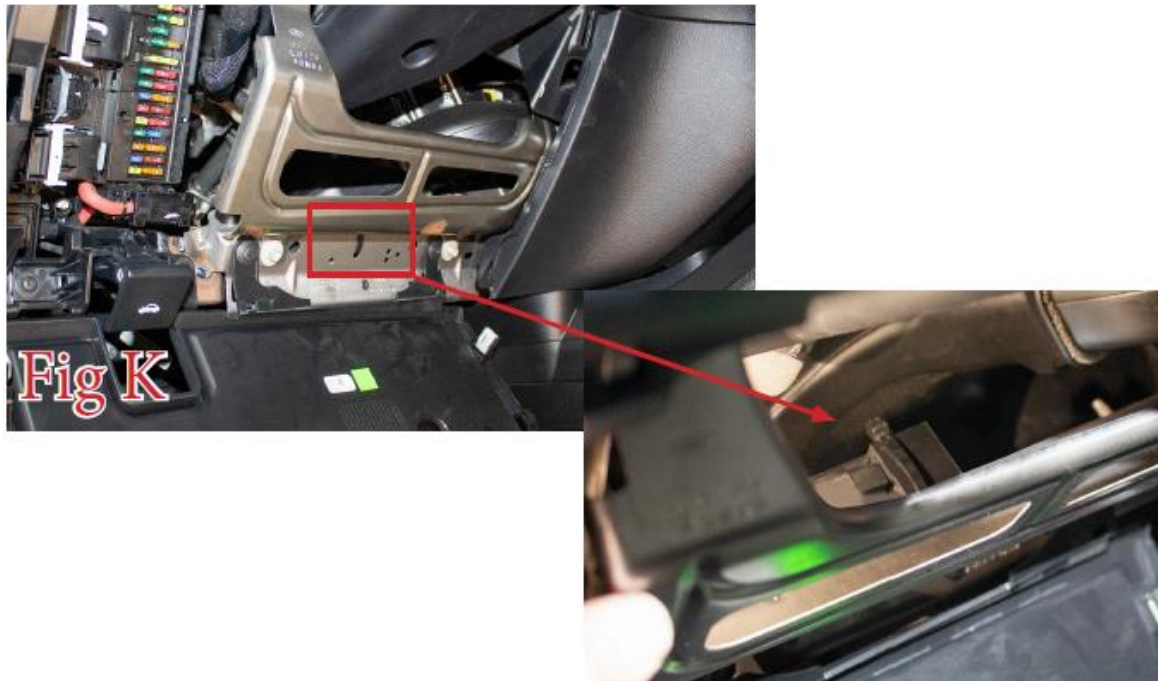
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7. Release the clips on the plastic trim piece below the steering wheel and let it swing downwards as shown in (Fig J).



8. Find the main part of the chase rack harness. Zip tie the relay to the backside of the structure shown in (Fig K).



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9. Plug the two blue connectors that were passed through the bulkhead in Step 5 into the matching blue connectors coming off the relay. Zip tie them if necessary. (Fig L)



10. Drill a  $\frac{3}{4}$ " Hole in the location shown, to the left of the information icon molded into the plastic beneath your headlight switch. Then, push the provided switch into place in the newly drilled hole. (Fig M)

Before

After



Fig M

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11. Route the section of the harness with the yellow wire coming off it to the backside of the switch. Connect the wires to your switch as the illustrated in the table below. (Fig N)

Wire Color	Wire Termination	Switch pin location
Black	Common Ground	1B
Black	Common Ground	3B
Blue	Output to Primary LED's	1A
Yellow	Ignition Power Input	2A
White	Output to Backlighting LED's	3A

Fig N

12. Find the connector referenced in (Fig O). It is just beside the fuse panel underneath the steering wheel.

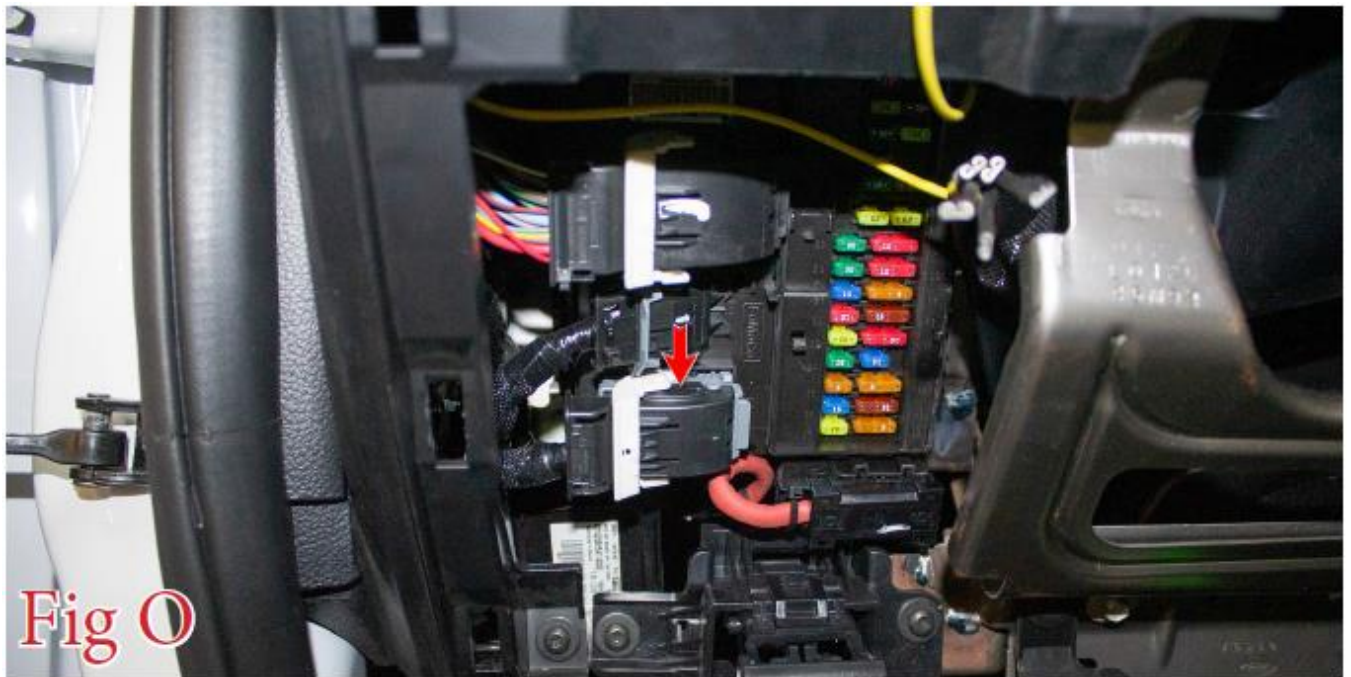


Fig O

13. Unplug the connector by releasing the white locking lever. (Fig P)

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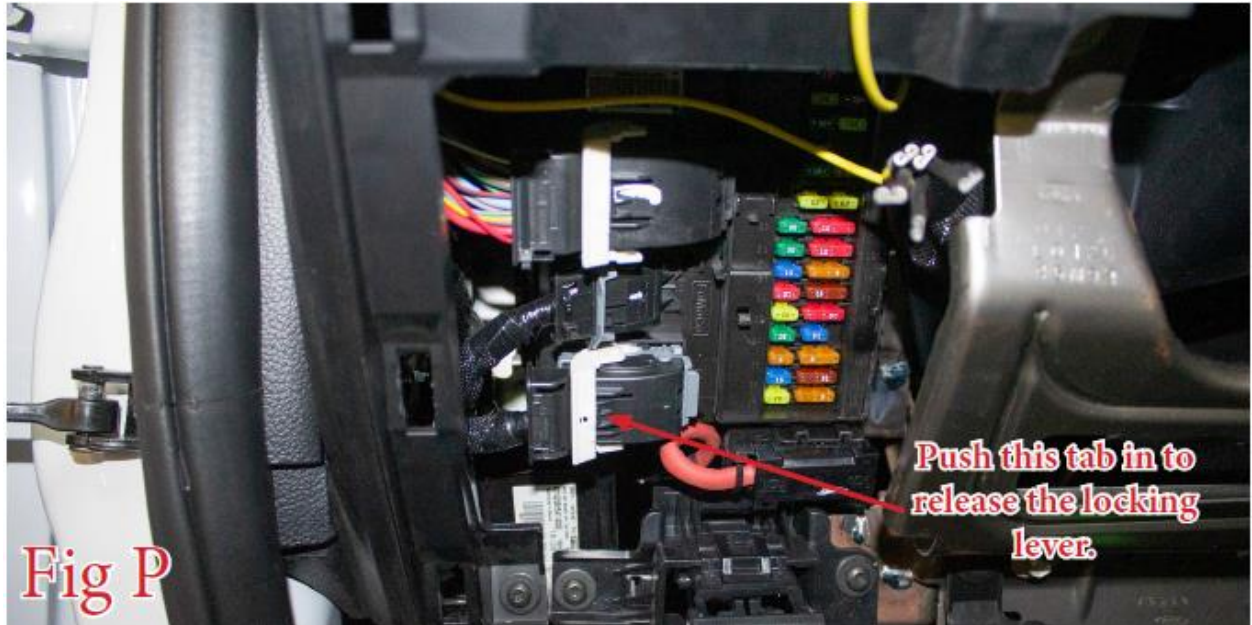




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14. Remove the black plastic cover by releasing the clip that holds it on. (Fig Q)



15. Pull the wire cover back and identify the brown wire with a yellow stripe. Connect the yellow wire from the chase rack harness to the brown wire with a yellow stripe from the vehicle using the supplied blue splice connector. (Fig R) shows where the wire is, while (Fig S) explains how

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the connector works. **Be sure to leave enough for the black plastic cover from Step 14 to be re-installed after the splice connection is made.**

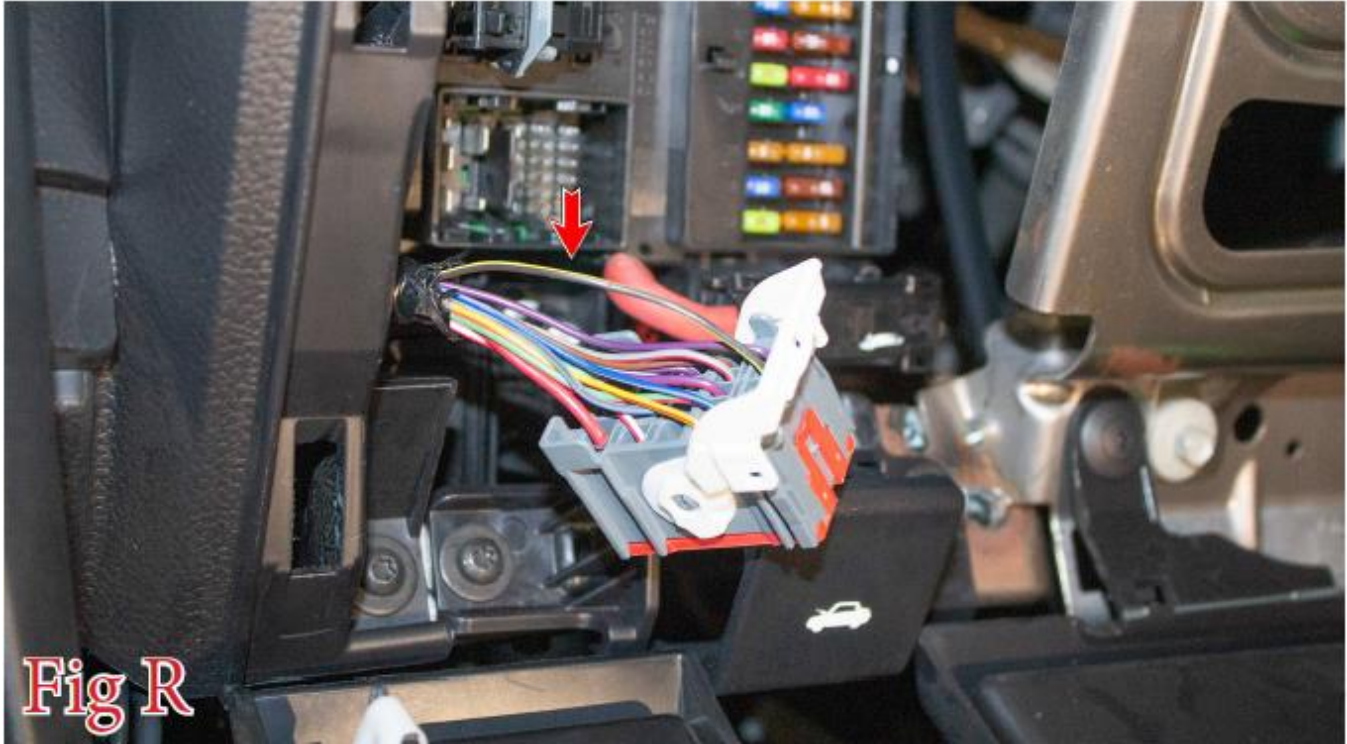
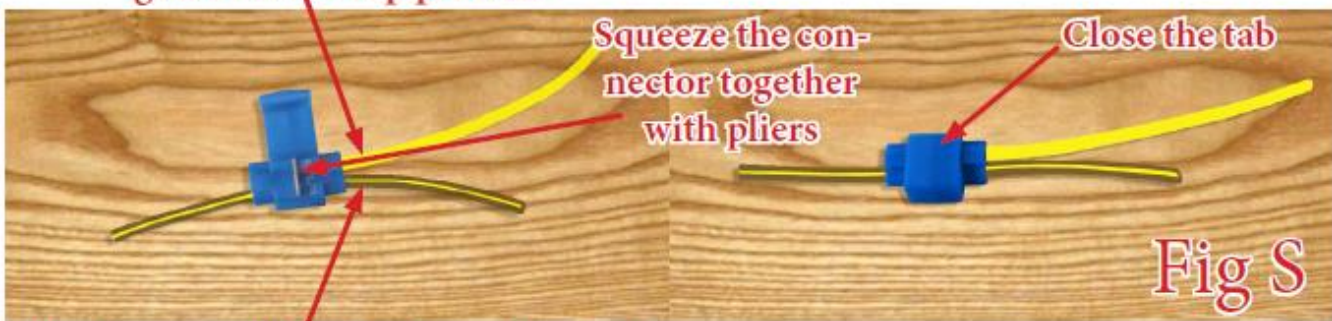


Fig R

The yellow wire from the harness goes into the top portion



The brown/yellow wire from the truck goes into the bottom portion

16. Replace the black plastic cover from Step 14, then plug the connector back in.

17. Release the pillar trim just behind the driver seat. This trim will not come all the way off, but will become loose. (Fig T)

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18. Open the rear driver side door. Remove the kick panel and release the other side of the trim from Step 17. (Fig U & Fig V)

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Before

After



Fig U



Fig V

19. Lean the back seat forward. Then, remove the top plastic trim piece. There are no tools required for this step, it simply pulls off by hand. (Fig W)

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**After**

**Before**



20. Remove the trim panel in the back corner of the cab. (Fig X)



21. Find the plastic structure shown in (Fig Y). It sits underneath the kick panel that was removed in Step 18. Release the 4 clips to swing it open.

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22. Route the final branch of the chase rack harness (the longest branch that ends in red/black/white wires) through the kick panel area towards the rear of the cab. (Fig Z)



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23. Route the harness through the seat belt trim piece. Use a zip tie or electrical tape to attach the harness to the OEM wiring channels before and after it goes through this piece. Also make sure it does not interfere with the seat belt mechanism. (Fig AA & Fig AB)



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24. Route the harness through the plastic structure from Step 21. Then, push it closed until all the tabs click back into place. (Fig AC)

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25. Move the carpet along the back wall of the truck's cab out of the way to reveal the rubber grommet in the bottom/rear corner of the cab. Remove this grommet but save it for reuse. (Fig AD)

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Fig AD

26. Cut a slit in the Rubber Grommet that was removed in Step 25. Then, reinstall that grommet, and pass the harness through the newly cut slit to the outside of the truck's cab. (Fig AE)



Fig AE

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27. Route the harness up between the bed/cab and into the hole cut into the bottom corner of the chase rack as shown in (Fig AF).



**Fig AF**

1. Route the wires on the light bar down through the hole in the top of the chase rack. (Fig AG)

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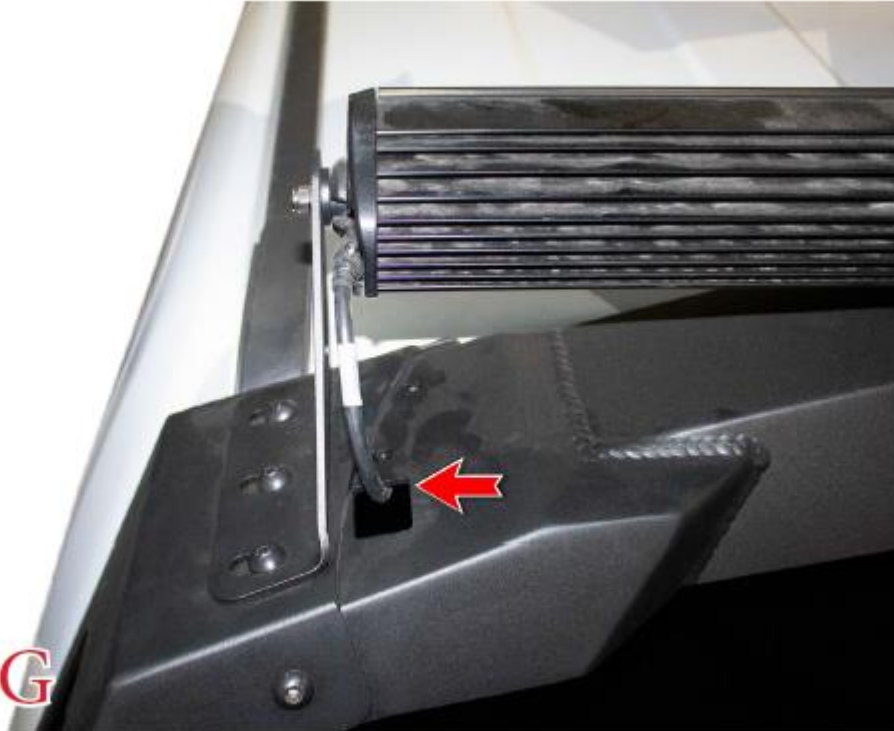


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Fig AG



28. Slip the larger piece of heat shrink tubing over all three wires on the chase rack harness. Then, slip the smaller pieces of heat shrink tubing over the individual wires as shown in (Fig AH).

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Fig AH

29. Use the supplied butt splice connectors (Motorcraft WT-56816) to attach the wires from the chase rack harness to the wires on the light bar. Make sure the butt connectors are staggered so they don't all rest in the same location. Connect red to red, black to black, and white to white. (Fig A). Please see attached, detailed instructions for Motorcraft WT-56816.

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30. Heat shrink each individual butt connection. Then, use the large heat shrink tubing to heat shrink all three connections together. Make sure there is suitable insulation at the both end of the large heat shrink tubing, use electrical tape to seal the ends if necessary. (Fig AJ)

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31. Zip tie the harness in place using the zip tie cutouts in the chase rack. (Fig AK & Fig AL)

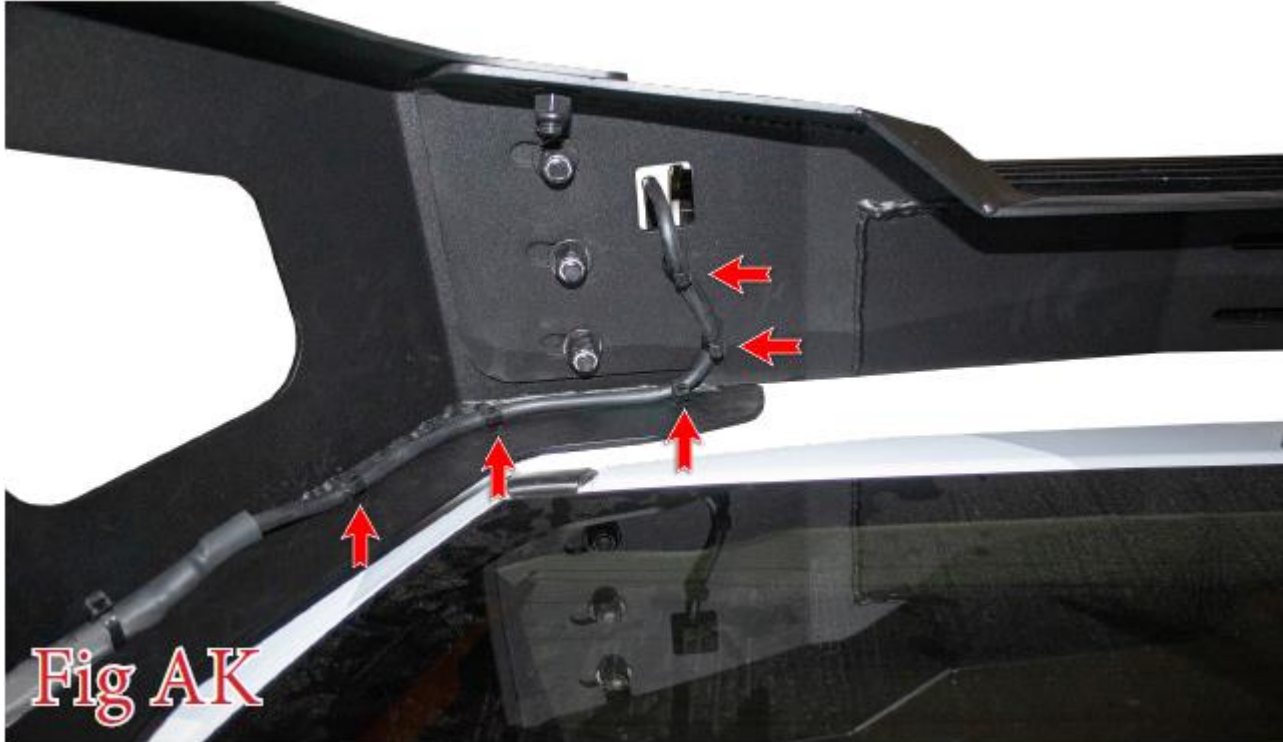
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1. Reinstall the trim pieces that were removed in Steps 6-7 and Step 18-21.
2. Reinstall the fuse that you removed in Step 4.
3. Reconnect the negative battery terminal.
4. Aim light bar according to your off road needs.
5. Check and re-tighten, if needed, all bolts after 100 miles and periodically thereafter.

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## CRIMP/HEAT SHRINK WIRE SPLICE PROCEDURE

KIT CONTENTS		
Part Number	Description	Quantity
Kit Specific	Butt Splice	5
Kit Specific	Shrink Tube	5
SK 3U2J-14293-AB	Instruction Sheet	1

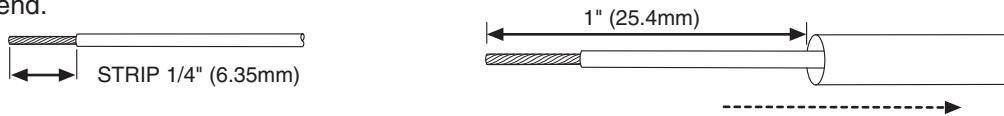
### SERVICE PROCEDURE:

#### Installation Procedure

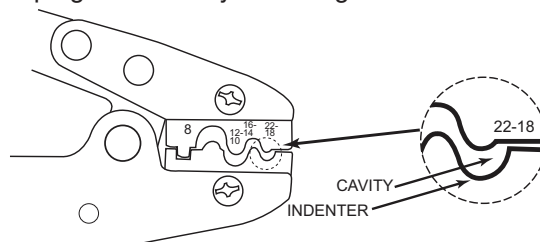
Read these instructions thoroughly before crimping or repairing any wire splice.

**1. Disconnect battery ground.**

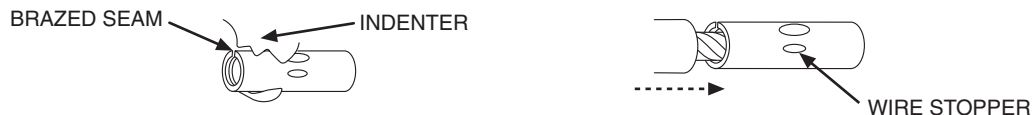
2. Select appropriate wire splice for the wire size. Refer to guide at bottom of procedure.
3. Use heat shrinkable tubing marked with ES-1 to seal 22-18, 16-14 and 12-10 AWG wire splices. Use heat shrinkable tubing marked with ES-2 to seal 8 AWG wire splices. Refer to guide at bottom of procedure.
4. Strip 1/4" (6.35mm) of insulation from wire end, taking care not to nick or cut wire strands.
5. Slide heat shrink tubing onto one (1) of the wire ends to be crimped, must be a least 1" away from stripped end.



6. Identify the appropriate crimping chamber by matching the wire size on the dies with the wire size stamped on the wire splice.



7. Hold the crimping tool so the identified wire sizes are facing you. Squeeze tool handles together until the ratchet releases, then allow the jaws of the tool to open fully.
8. Center one (1) end of the wire splice on the appropriate crimping chamber. If visible, be sure to place the brazed seam of the wire splice toward the indenter.
9. Hold the wire splice in place and squeeze the tool handles together until ratchet engages sufficiently to hold the wire splice in position. (Typically one or two clicks!) **DO NOT** deform the wire barrel.
10. Insert stripped wire into the wire barrel, making sure the insulation on wire does not enter the wire barrel.



11. Holding the wire in place, squeeze tool handles together until ratchet releases. Allow tool handles to open, then remove crimped wire splice.
12. To crimp the other half of the splice, reposition the uncrimped wire barrel in the same crimping chamber, and repeat steps 6-11.



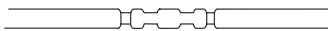


**NOTE: If splice cannot be turned for crimping the other half, turn the tool around.**

13. Perform a visual inspection of crimped wire splice.

**Criteria for an acceptable crimp**

1. Crimp is centered on each end of the butt splice. It is acceptable for crimp to be slightly off center, but NOT OFF THE END of the wire barrel.



2. Wire insulation does not enter wire barrel.
3. Wire is visible through inspection hole of splices.

**Applying Heat Shrinkable Tubing to Seal and Protect the Wire Splice**

1. Slide the heat shrink tubing over the crimped splice, ensure the tubing is centered over the wire splice.
2. Follow instructions for proper operation of the flameless heat gun.
3. Using the flameless heat gun with the shrink tubing deflector attachment, apply heat evenly to the middle of the tubing working your way out to the ends. Rotate wire assembly to ensure complete shrinkage and heat until the tubing shrinks into place or will shrink no further. *Adhesive lining will melt and flow and should be visible at both ends of the tubing.*



**NOTE: Keep the heat source moving and at least 1" away from the tubing to prevent charring or burning.**

4. Allow repair to cool before handling.

REPLACEMENT COMPONENTS				
Motorcraft Wire Splice/Heat Shrinkable Combination Packages				
Motorcraft Part Number	Wire Gage Size	Quantity	Description	Markings on Tubing
WT-56814	22-18	5	22-18 AWG Uninsulated Wire Splices	ES-1 ES-1 repeated
		5	2" pieces of Dual Wall Heat Shrinkable Tubing	
WT-56815	16-14	5	16-14 AWG Uninsulated Wire Splices	ES-1 ES-1 repeated
		5	2" pieces of Dual Wall Heat Shrinkable Tubing	
WT-56816	12-10	5	12-10 AWG Uninsulated Wire Splices	ES-1 ES-1 repeated
		5	2" pieces of Dual Wall Heat Shrinkable Tubing	
WT-56869	8	5	8 AWG Uninsulated Wire Splices	ES-2 ES-2 repeated
		5	2" pieces of Dual Wall Heat Shrinkable Tubing	
Recommended Installation Tools:				
Part Number				
NAIAT-WS	22-8 AWG Wire Stripper			
NAIAT-RACT-NI	Ratchet Action Crimp Tool			
NAIAT-R5902	Shielded Flameless Heat Gun with Heat Deflector			
NAIAT-R5903	Wire Splice Tool Kit (kit contains one (1) wire stripping tool, one (1) crimp tool, one (1) heat gun and an assortment of allsplices and tubing)			



## PROCÉDURE POUR LE MANCHON D'ÉPISURE DE FIL PAR SERTISSAGE/THERMORÉTRÉCISSE

CONTENU DU NÉCESSAIRE		
Numéro de pièce	Description	Quantité
Spécifique au nécessaire	Manchon prolongateur	5
Spécifique au nécessaire	Gaine thermorétractable	5
SK 3U2J-14293-AB	Mode d'emploi	1

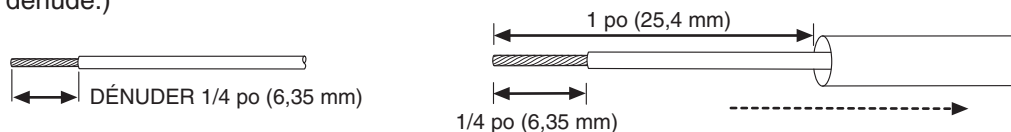
### PROCÉDURE DE SERVICE :

#### Méthode d'installation

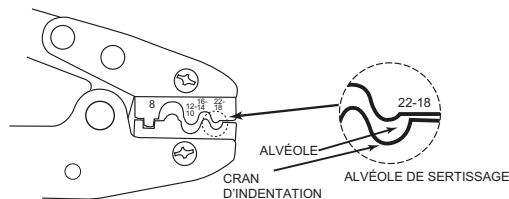
Lire complètement ce mode d'emploi avant de sertir or de réparer toute épissure de fil.

#### 1. Déconnecter le câble de masse de batterie.

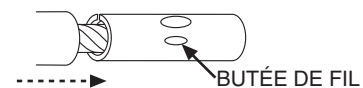
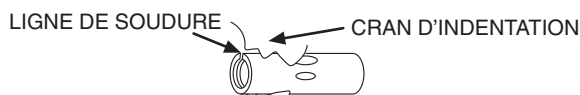
2. Sélectionner la taille d'épissure correspondant au calibre de fil. Consulter le guide au bas de ce mode d'emploi.
3. Utiliser le tube thermorétractable marqué ES-1 pour sceller les épissures de fil 22-18, 16-14 et 12-10 AWG. Utiliser le tube thermorétractable marqué ES-2 pour sceller les épissures de fil 8 AWG. Voir le guide en bas de la procédure.
4. Dénuder 6,35 mm (0,25 po) d'isolant de fil du bout du fil en veillant à ne pas entailler ou couper les brins de fil.
5. Enfiler la gaine thermorétractable sur l'une (1) des extrémités du fil à sertir (doit être à 2,5 cm au moins du bout de fil dénudé.)



6. Identifier le logement de sertissage adéquat en faisant correspondre le calibre de fil des matrices au calibre de fil embouti sur le manchon d'épissure.



7. Tenir l'outil de sertissage de sorte que les calibres de fil identifiés soient tournés vers soi. Serrer les poignées de l'outil jusqu'à ce que le rochet se déclenche, puis laisser les mâchoires de l'outil s'ouvrir complètement.
8. Centrer l'une (1) des extrémités du manchon d'épissure sur l'alvéole de sertissage adéquate. Si elle est visible, veiller à tourner la ligne de soudure du manchon d'épissure vers le cran d'indentation.
9. Maintenir le fil en place et serrer ensemble les poignées de l'outil jusqu'à ce que le rochet soit suffisamment engagé pour maintenir le manchon d'épissure en place. (Généralement un ou deux déclics !) NE PAS déformer la cosse.
10. Introduire le fil dénudé dans la cosse, en s'assurant que l'isolant du fil ne pénètre pas dans la cosse.



11. Tout en maintenant le fil en place, serrer les poignées de l'outil jusqu'à ce que le rochet se déclenche. Serrer les poignées de l'outil, puis retirer le manchon d'épissure sertie.
12. Pour sertir l'autre moitié du manchon, repositionner la cosse non sertie dans la même alvéole de sertissage et répéter les étapes 6 à 11.

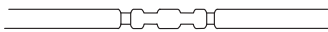


**REMARQUE: S'il est impossible de retourner le manchon pour sertir l'autre côté, retourner l'outil.**

13. Inspecter visuellement le manchon de fil sertie.

**Critères d'un sertissage acceptable**

1. Le sertissage est centré entre les deux bouts du manchon prolongateur bout à bout. Il est acceptable que le sertissage soit légèrement décalé par rapport au milieu, mais pas qu'il soit pratiqué AU BOUT DU TUBE de fil.



2. L'isolant de fil ne pénètre pas dans la cosse.

3. Le fil est visible à travers les trous de visite du manchon.

**Application d'une gaine thermorétractable pour sceller et protéger l'épissure de fil.**

1. Faire glisser le tube thermorétractable sur l'épissure sertie, s'assurer que la gaine est centrée sur l'épissure de fil.

2. Observe le mode d'emploi pour le bon fonctionnement du pistolet chauffant sans flamme.

3. Avec le pistolet chauffant sans flamme équipé de l'accessoire déflecteur de gaine thermorétractable, appliquer la chaleur de manière uniforme au milieu de la gaine en se dirigeant vers les bouts. Faire tourner l'ensemble de fil de façon à assurer un rétrécissement complet et chauffer jusqu'à ce que la gaine rétrécisse sur place ou ne rétrécisse plus. La garniture adhésive fondra et coulera pour devenir visible aux deux bouts de la gaine.



**REMARQUE: Déplacer constamment la source de chaleur et la maintenir à au moins 1 po (25,4 mm) de la gaine afin d'éviter de la carboniser ou de la brûler.**

4. Laisser la réparation refroidir avant de manipuler.

COMPOSANTS DE RECHANGE				
Ensemble de combinaisons de manchon d'épissure thermorétractable Motorcraft				
Motorcraft Numéro de pièce	Fil Calibre de	Quantité	Description	Mentions sur la gaine
WT-56814	22 à 18	5	Manchons non isolés 22 à 18 AWG	ES-1 ES-1 répétée
		5	Sections de 2 po (50,8 mm) de gaine thermorétractable à double paroi	
WT-56815	16 à 14	5	Manchons non isolés 16 à 14 AWG	ES-1 ES-1 répétée
		5	Sections de 2 po (50,8 mm) de gaine thermorétractable à double paroi	
WT-56816	12 à 10	5	Manchons non isolés 12 à 14 AWG	ES-1 ES-1 répétée
		5	Sections de 2 po (50,8 mm) de gaine thermorétractable à double paroi	
WT-56869	8	5	Manchons non isolés 8 AWG	ES-2 ES-2 répétée
		5	Sections de 2 po (50,8 mm) de gaine thermorétractable à double paroi	
<b>Outils de montage recommandés :</b>				
<b>Numéro de pièce</b>				
NAIAT-WS		22-18 AWG Outil de sertissage		
NAIAT-RACT-NI		Outil de sertissage à rochet		
NAIAT-R5902		Pistolet chauffant blindé et sans flamme à déflecteur de chaleur		
NAIAT-R5903		Nécessaire d'outil de manchon d'épissure (Le nécessaire contient un (1) outil de sertissage, un (1) pistolet chauffant et un assortiment de manchons et de gaines)		





## PROCEDIMIENTO PARA ENGARZAR/TERMOENCOGER EMPALMES

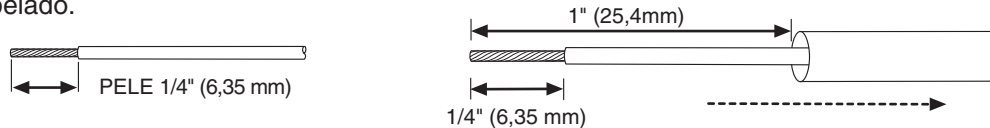
CONTENIDO DEL JUEGO		
Número de pieza	Descripción	Cantidad
Específico del juego	Empalme a tope	5
Específico del juego	Tubo de encogimiento	5
SK 3U2J-14293-AB	Hoja de instrucciones	1

### PROCEDIMIENTO DE SERVICIO:

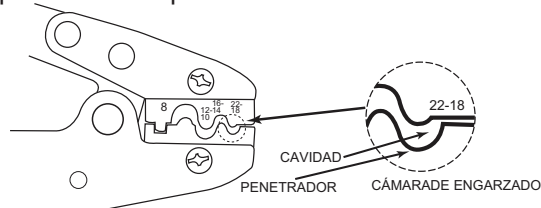
#### Procedimiento de instalación

Lea completamente estas instrucciones antes de engarzar o reparar cualquier empalme de conductores.

1. **Desconecte la conexión a tierra de la batería.**
2. Seleccione el empalme de conductores apropiado para el tamaño del conductor. Consulte la guía al final del procedimiento.
3. Use tubería termocontraible marcada con ES-1 para sellar el empalmes de alambres calibre 22-18, 16-14 y 12-10 AWG. Use tubería termocontraible marcada con ES-2 para sellar empalmes de alambres calibre 8 AWG. Consulte la mencionada al final del procedimiento.
4. Pele 1/4" (6,35mm) de aislamiento del extremo del cable, teniendo cuidado de no mellar o cortar torones.
5. Deslice el tubo termocontraible sobre uno (1) de los extremos que se vaya a engarzar. Debe estar al menos a 1" del extremo pelado.



6. Identifique la cámara de engarzado apropiada haciendo corresponder el tamaño del conductor en las matrices con el tamaño estampado en el empalme.



7. Sujete la herramienta engarzadora de modo que los tamaños de conductores identificados apunten hacia usted. Apriete los mangos de la herramienta hasta que se suelte el trinquete. A continuación deje que las mandíbulas de la herramienta se abran completamente.
8. Centre un (1) extremo del empalme en la cámara de engarzado apropiada. Si es visible, asegúrese de poner la costura cobresoldada del empalme apuntando hacia el penetrador.
9. Sujete el empalme en posición y apriete los mangos de la herramienta hasta que el trinquete enganche lo suficiente para sujetar el empalme en posición. (¡Normalmente uno o dos clics!) NO deforme la parte cilíndrica del cable.
10. Inserte el cable pelado en la parte cilíndrica, asegurándose de que el aislamiento no se introduzca en la parte cilíndrica.



11. Sujete el conductor en posición, apriete los mangos de la herramienta hasta que se suelte el trinquete. Deje que se abran los mangos de la herramienta y luego quite el empalme engarzado.
12. Para engarzar la otra mitad del empalme, vuelva a colocar la parte cilíndrica sin engarzar del cable en la misma cámara de engarzado, y repita los pasos 6-11.



**NOTA: Si no se puede plegar el empalme para engarzar la otra mitad, gire la herramienta media vuelta.**

13. Haga una inspección visual del empalme engarzado.

**Criterios para un engarce aceptable**

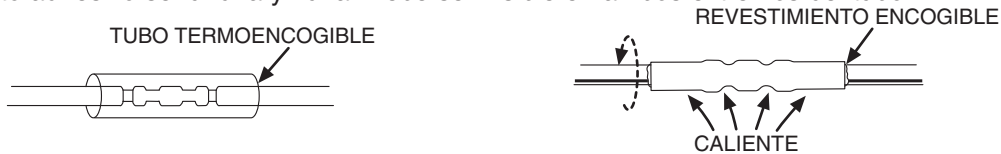
1. El engarce debe estar centrado en cada extremo del empalme a tope. Se acepta que el engarce esté ligeramente descentrado, pero NO FUERA DEL EXTREMO de la parte cilíndrica.



2. El aislamiento del cable no debe introducirse en la parte cilíndrica del cable.
3. El cable debe ser visible por el agujero de inspección de empalmes. Aplique tubo termoencogible para sellar y proteger el empalme.

**Aplicación de tubo termoencogible para sellar y proteger el empalme**

1. Deslice el tubo termoencogible sobre el empalme engarzado y asegúrese de que el tubo esté centrado sobre el empalme.
2. Siga las instrucciones para operar debidamente la pistola de aire caliente sin llama.
3. Use la pistola de aire caliente sin llama con el accesorio deflector de tubo de encogimiento y caliente de modo uniforme la parte intermedia del tubo yendo hacia los extremos. Gire el conjunto de cable para asegurar un encogimiento completo y caliente hasta que el tubo se encoja en posición o deje de encogerse. El revestimiento adhesivo se fundirá y fluirá. Debe ser visible en ambos extremos del tubo.



**NOTA: Mantenga la pistola en movimiento y al menos a una distancia de 1" del tubo para impedir que se carbonice o se quemé**

4. Deje que se enfríe la parte reparada antes de manipular.

<b>COMPONENTES DE REPUESTO</b>				
<b>Paquetes combinados para empalmes/tubos termoencogibles Motorcraft</b>				
<b>Número de pieza Motorcraft</b>	<b>Calibre del cable</b>	<b>Cantidad</b>	<b>Descripción</b>	<b>Marcas en tubos</b>
WT-56814	22-18	5 5	Empalmes sin aislar de calibre 22-18 AWG Pedazos de 2" de tubos termoencogibles de pared doble	ES-1 ES-1 repetido
WT-56815	16-14	5 5	Empalmes sin aislar de calibre 16-14 AWG Pedazos de 2" de tubos termoencogibles de pared doble	ES-1 ES-1 repetido
WT-56816	12-10	5 5	Empalmes sin aislar de calibre 12-10 AWG Pedazos de 2" de tubos termoencogibles de pared doble	ES-1 ES-1 repetido
WT-56816	8	5 5	Empalmes sin aislar de calibre 8 AWG Pedazos de 2" de tubos termoencogibles de pared doble	ES-2 ES-2 repetido
<b>Herramientas de instalación recomendadas:</b>				
<b>Número de pieza</b>				
NAIAT-WS	22-8 AWG Wire Stripper			
NAIAT-RACT-NI	Herramienta engarzadora de acción de trinquete			
NAIAT-R5902	Pistola de aire caliente blindada sin llama con deflector de calor			
NAIAT-R5903	Juego de herramientas para empalmes de conductores (el juego contiene una (1) herramienta engarzadora, una (1) pistola de aire caliente y un surtido de toda clase de empalmes y tubos)			

