

# ResearchNotes™

Disassembly and installation instructions from our Vehicle Research Team

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## 2024-up Ford Ranger

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# CRUTCHFIELD®

2641900032

## CONTENTS

Vehicle wiring guide.....	3
Wire splicing guide .....	4
Receiver .....	5
Amplifier.....	40
Amplifier wiring .....	41
Center dash speaker .....	42
Front pillar tweeters.....	46
Front door speakers .....	54
Rear door speakers .....	62
Subwoofer.....	69



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### Disconnect the battery

Set parking brake and disconnect negative battery cable to prevent any electrical short. Refer to the vehicle's owner's manual for information on disconnecting the battery.

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Before starting, compare items on your invoice with items received. Carefully check through packaging material. **If any item is missing, please call Crutchfield Technical Support at 1-888-955-6000.**

Although reasonable attempts are made to verify the accuracy of the information contained in these ResearchNotes, it is presented without warranties or guarantees of any type due to the constantly changing nature of this type of information and running changes in vehicle production. Any person or entity using this information does so at their own risk. If you find our instructions are different from your vehicle, or if you have questions, do not continue with your installation. Contact our toll-free technical support for assistance.

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Revision 06/03/2025

# Vehicle wiring guide

NOTE: In most cases, a speaker wiring adapter is available from Crutchfield and splicing will not be necessary. If no adapter is available, use this chart as a guide to splice or tap the wires. Some wiring may not be present depending on your vehicle's audio system.

FUNCTION/POLARITY	POLARITY/COLOR/LOCATION
Center dash speaker	Positive (+): white/light green, Negative (-): white/orange
Left front pillar tweeter	Positive (+): violet/orange or blue, Negative (-): yellow/orange or gray/brown
Right front pillar tweeter	Positive (+): green/orange or yellow/orange, Negative (-): gray/orange or green/brown
Left front door speaker	Positive (+): blue or white, Negative (-): gray/brown or white/brown
Right front door speaker	Positive (+): yellow/orange or white/violet, Negative (-): green/brown or white/orange
Left rear door speaker	Positive (+): gray, gray/violet, or white/green, Negative (-): light green/violet, brown/green, or brown/yellow
Right rear door speaker	Positive (+): green/violet or brown/white, Negative (-): gray or brown/blue
Subwoofer voice coil #1	Positive (+): yellow or green/violet, Negative (-): violet or gray
Subwoofer voice coil #2	Positive (+): green or white, Negative (-): black or blue/green
Speed sense <sup>1</sup> (2.3L engine)	brown/green - 126-pin black plug (E) at Power-train Control Module on passenger's firewall, pin 72
Speed sense <sup>1</sup> (2.7L & 3.0L engines)	brown/green - 90-pin black plug (T) at Power-train Control Module on passenger's firewall, pin 71
Reverse (+) <sup>1</sup>	Option 1: green/brown - 36-pin black plug (J3-C) at Body Control Module/dash fuse box, pin 11 Option 2: green/brown - 68-pin black plug (C275) in driver's kick panel, pin 37
Parking brake <sup>1</sup>	Use radio replacement interface if available.
Foot brake <sup>1</sup>	Option 1: violet/white - 22-pin gray plug (J1-A) at Body Control Module/dash fuse box, pin 1 Option 2: violet/white - 4-pin white plug at brake switch, pin 4
NOTES:	
<ul style="list-style-type: none"> <li>• The speaker wire colors listed above are at the speaker location unless otherwise noted.</li> <li>• If the vehicle is equipped with a factory amplifier, you'll find it behind the rear seat.</li> <li>• <sup>1</sup>If available, these wires and functions may also be generated by the OEM integration interface used when replacing the radio.</li> </ul>	

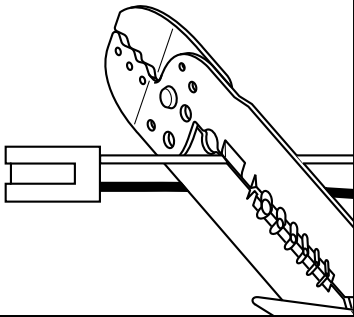
# Wire splicing guide

NOTE: These methods can be used to make wiring connections if no receiver or speaker wiring adapter is available. Wire color information can be found on the previous page.

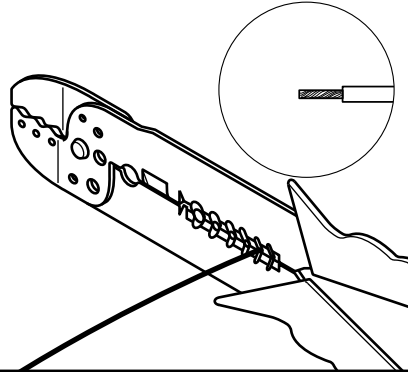
## CRIMP METHOD

Factory harness is removed. Save harness if it is to be reconnected in the future by this method.

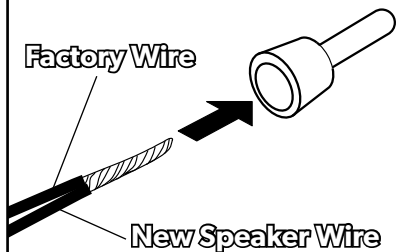
1. Cut factory wires behind factory speaker harness.



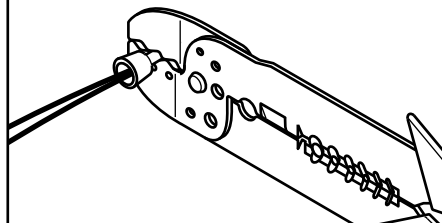
2. Strip end of each wire back 1/2".



3. Twist each positive pair of wires together and insert in crimp cap. Repeat step for negative wires.



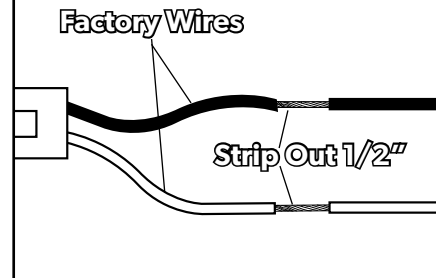
4. Squeeze middle of cap for tight connection.
5. Connect new wires to speaker with spade connectors.



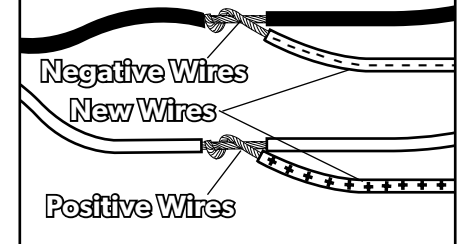
## SOLDER METHOD

New speaker wires are spliced into factory wires behind harness.

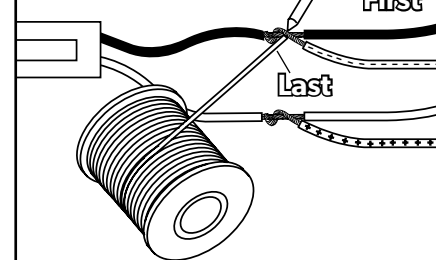
1. Carefully strip out a 1/2" section on each factory speaker wire behind the factory speaker harness.



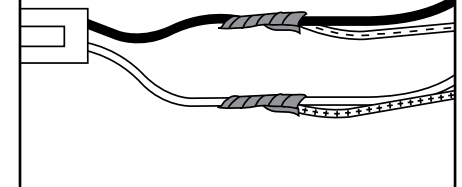
2. Twist wires from new speaker to stripped sections of factory wires as shown making sure polarity is correct.



3. Heat wires first with soldering iron, then touch solder to wires for solid connections.



4. Wrap wiring connections with electrical tape.
5. Connect new wires to speaker with spade connectors.



# Receiver

## REMOVAL INSTRUCTIONS

Tools Required: Panel tool, 7mm socket, ratchet and extension

1. Pry up gear shifter trim ring to release six (6) clips, then remove trim.
2. Remove three (3) 7mm screws exposed by removal of gear shifter trim ring.
3. Pry up center console top panel to release eight (8) clips, disconnect harness, then remove panel.
4. Remove two (2) 7mm screws exposed by removal of center console top panel.
5. Pry off both center console side trim strips to release three (3) clips on each, then remove both trim strips.
6. Pry out both center console pass-through trim panels to release three (3) clips on each, then remove both trim panels.
7. Remove two (2) 7mm screws on each side of center console exposed by removal of center console pass-through panels.
8. Lift up rear edge of wireless charger pad and pull toward rear of vehicle to release two (2) clips, disconnect harness, then remove charger pad.
9. Remove one (1) 7mm screw securing plastic crossbar in front of gear shifter, then lift crossbar to remove.
10. Pry off one (1) screw cover on each side of center console lower front section, then remove one (1) exposed 7mm screw at each location.
11. Pry off center console back panel to release eight (8) clips, disconnect harness, then remove panel.
12. Remove two (2) 7mm screws exposed by removal of center console back panel.
13. Disconnect harness at center console storage compartment, then pull center console toward rear of vehicle. (**Note:** Center console does not have to be removed from the vehicle.)
14. Pull passenger's side door weatherstrip away from body along dash.
15. Pry off passenger's side dash end cap trim panel to release six (6) clips, then remove trim panel.
16. Open upper glove box door, then remove two (2) 7mm screws inside glove box cavity.
17. Pry out upper glove box assembly to release twelve (12) clips, disconnect harness, then remove upper glove box assembly.
18. Remove one (1) 7mm screw exposed by removal of upper glove box assembly.
19. Pull driver's side door weatherstrip away from body along dash.
20. Pry off driver's side dash end cap trim panel to release six (6) clips, then remove trim panel.
21. Pry down driver's side knee panel to release eight (8) clips, then remove two (2) 7mm screws securing knee panel hinge.
22. Pry off knee panel assembly to release two (2) clips, disconnect harness, then remove assembly.
23. Pull lower instrument cluster trim panel toward rear of vehicle to release clips, but do not remove trim panel.
24. Pry out upper instrument cluster trim panel to release sixteen (16) clips, disconnect harness, then remove trim panel.

Continued on the next page.

## Receiver (continued)

### REMOVAL INSTRUCTIONS

25. Remove two (2) 7mm screws securing lower dash center trim panel, disconnect harnesses, then pry out trim panel to release fourteen (14) clips and remove.
26. Pry out trailer brake control panel to release four (4) clips, disconnect harness, then remove control panel.
27. Remove one (1) 7mm screw exposed by removal of trailer brake control panel.
28. Pry up receiver top trim panel to release four (4) clips, then remove trim panel.
29. Remove two (2) 7mm screws exposed by removal of receiver top trim panel.
30. Remove two (2) 7mm screws securing bottom of dash display panel.
31. Pull dash display panel out, disconnect harnesses, then remove display panel.
32. Remove four (4) 7mm screws securing receiver chassis, disconnect harnesses, then remove chassis.

### Important information about your vehicle

- You can't replace the radio in your vehicle because of dash configuration, safety issues, or electrical compatibility..

#1A



Note: Receiver replacement is not recommended. Radio removal is shown for OEM integration purposes only.

#1C



#1B



1. Pry up gear shifter trim ring to release six (6) clips, then remove trim.

#1D





2. Remove three (3) 7mm screws exposed by removal of gear shifter trim ring.





3. Pry up center console top panel to release eight (8) clips, disconnect harness, then remove panel.

#4A



#4C



#4B



#4D





4. Remove two (2) 7mm screws exposed by removal of center console top panel.

#6A



5. Pry off both center console side trim strips to release three (3) clips on each, then remove both trim strips.

#6C



#6B



#6D





6. Pry out both center console pass-through trim panels to release three (3) clips on each, then remove both trim panels.





#9A



7. Remove two (2) 7mm screws on each side of center console exposed by removal of center console pass-through panels.

#9C



#9B



#9D



#10A



8. Lift up rear edge of wireless charger pad and pull toward rear of vehicle to release two (2) clips, disconnect harness, then remove charger pad.

#10C



#10B



#10D



9. Remove one (1) 7mm screw securing plastic crossbar in front of gear shifter, then lift crossbar to remove.

#11A



#11C



10. Pry off one (1) screw cover on each side of center console lower front section, then remove one (1) exposed 7mm screw at each location.

#11B



#11D





#13A

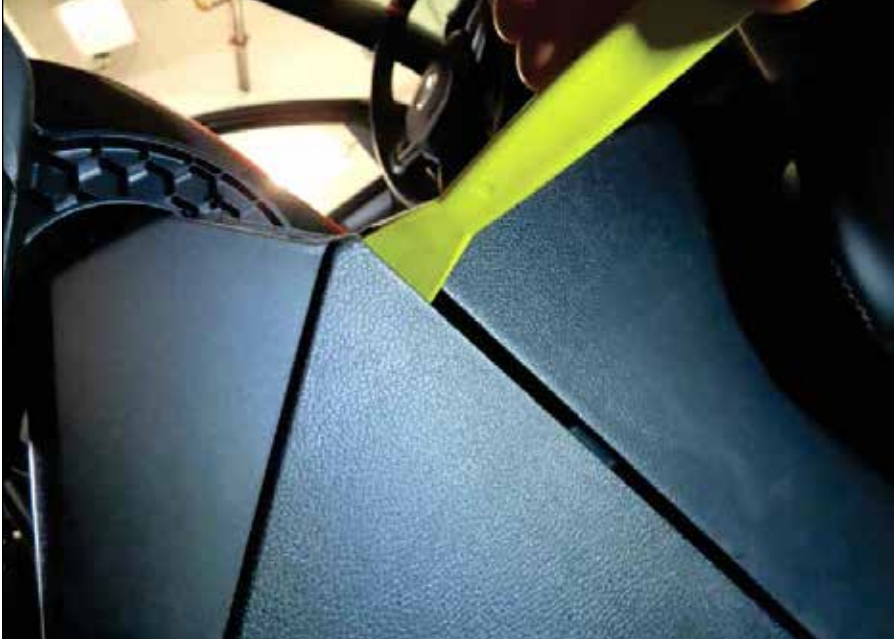


11. Pry off center console back panel to release eight (8) clips, disconnect harness, then remove panel.

#13C



#13B



#13D





12. Remove two (2) 7mm screws exposed by removal of center console back panel.

13. Disconnect harness at center console storage compartment, then pull center console toward rear of vehicle. (Note: Center console does not have to be removed from the vehicle.)

#15A



#15C



#15B



#15D



14. Pull passenger's side door weatherstrip away from body along dash.

#16A



15. Pry off passenger's side dash end cap trim panel to release six (6) clips, then remove trim panel.

#16C



#16B



#16D



#17A



16. Open upper glove box door, then remove two (2) 7mm screws inside glove box cavity.

#17C



#17B



#17D



17. Pry out upper glove box assembly to release twelve (12) clips, disconnect harness, then remove upper glove box assembly.



#19A



#19B



18. Remove one (1) 7mm screw exposed by removal of upper glove box assembly.

#19C



19. Pull driver's side door weatherstrip away from body along dash.

#19D



20. Pry off driver's side dash end cap trim panel to release six (6) clips, then remove trim panel.

#20A



#20C



#20B



#20D



21. Pry down driver's side knee panel to release eight (8) clips, then remove two (2) 7mm screws securing knee panel hinge.

#21A



#21C



#21B



#21D





22. Pry off knee panel assembly to release two (2) clips, disconnect harness, then remove assembly.

#23A



#23C



23. Pull lower instrument cluster trim panel toward rear of vehicle to release clips, but do not remove trim panel.

#23B



#23D





24. Pry out upper instrument cluster trim panel to release sixteen (16) clips, disconnect harness, then remove trim panel.



#25A



#25C



#25B



#25D



25. Remove two (2) 7mm screws securing lower dash center trim panel, disconnect harnesses, then pry out trim panel to release fourteen (14) clips and remove.

#26A



#26C

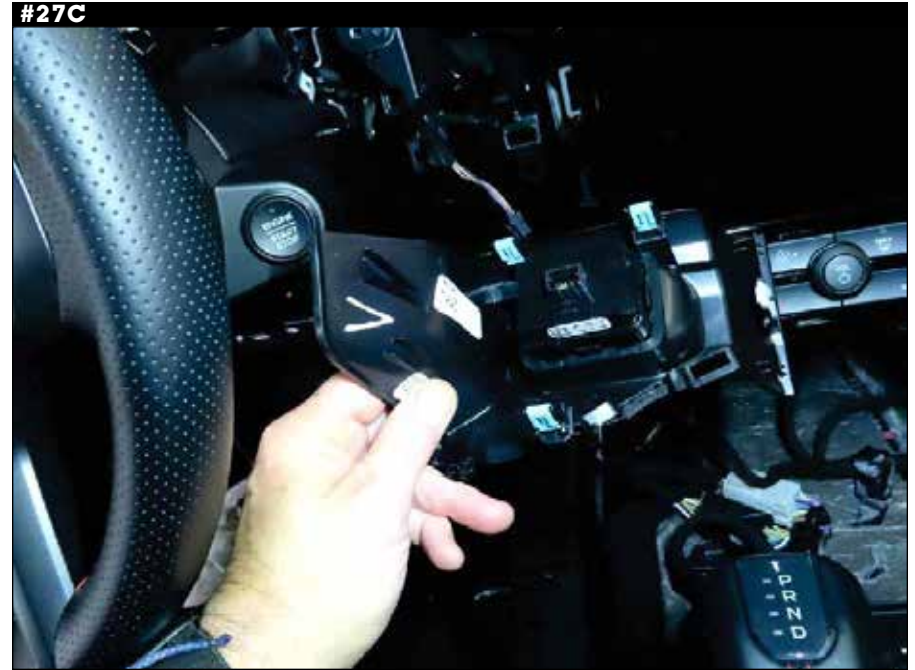


#26B



#26D





26. Pry out trailer brake control panel to release four (4) clips, disconnect harness, then remove control panel.

#28A



27. Remove one (1) 7mm screw exposed by removal of trailer brake control panel.

#28C



28. Pry up receiver top trim panel to release four (4) clips, then remove trim panel.

#28B



#28D





29. Remove two (2) 7mm screws exposed by removal of receiver top trim panel.





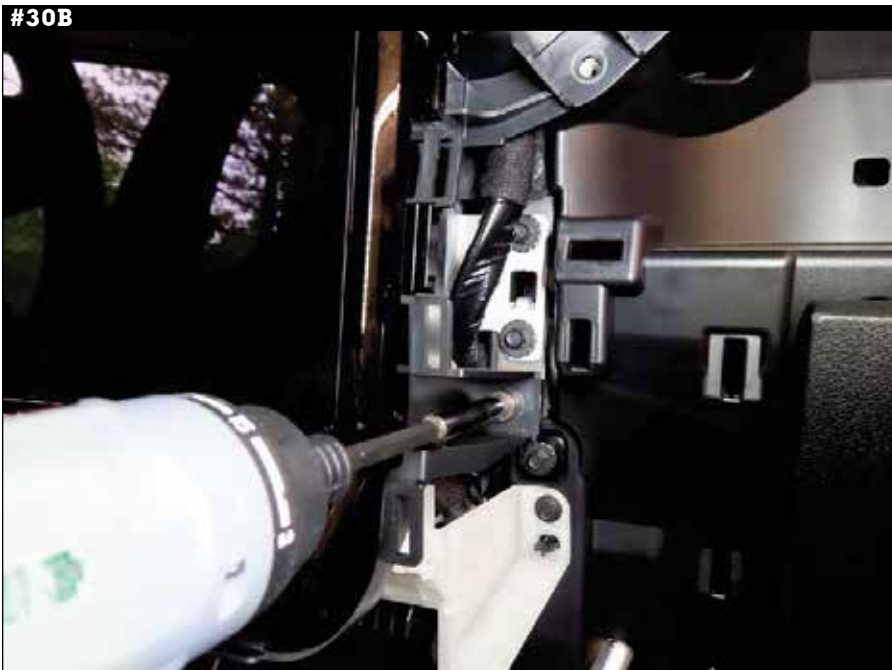
#30A

30. Remove two (2) 7mm screws securing bottom of dash display panel.



#30C

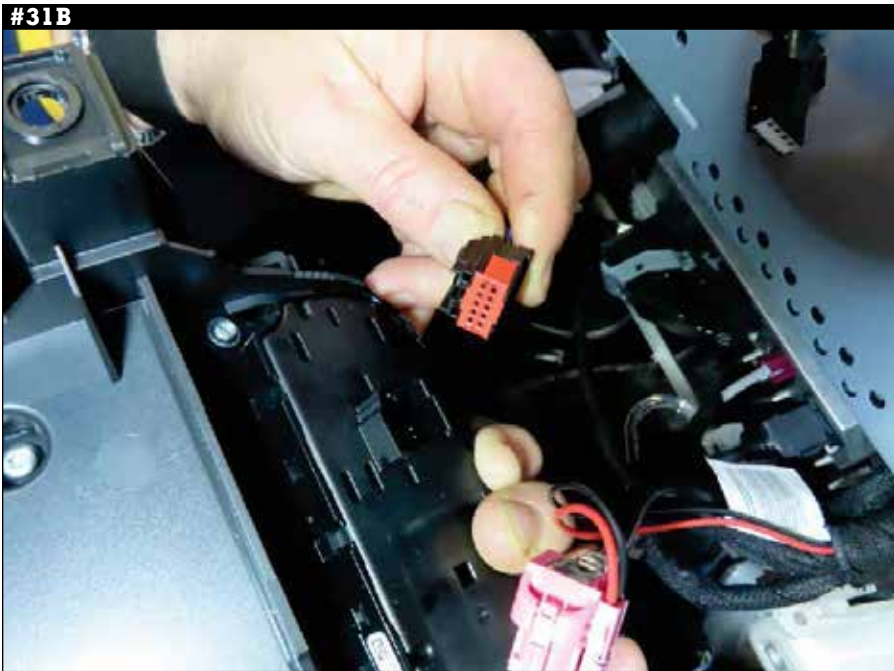
31. Pull dash display panel out, disconnect harnesses, then remove display panel.



#30B

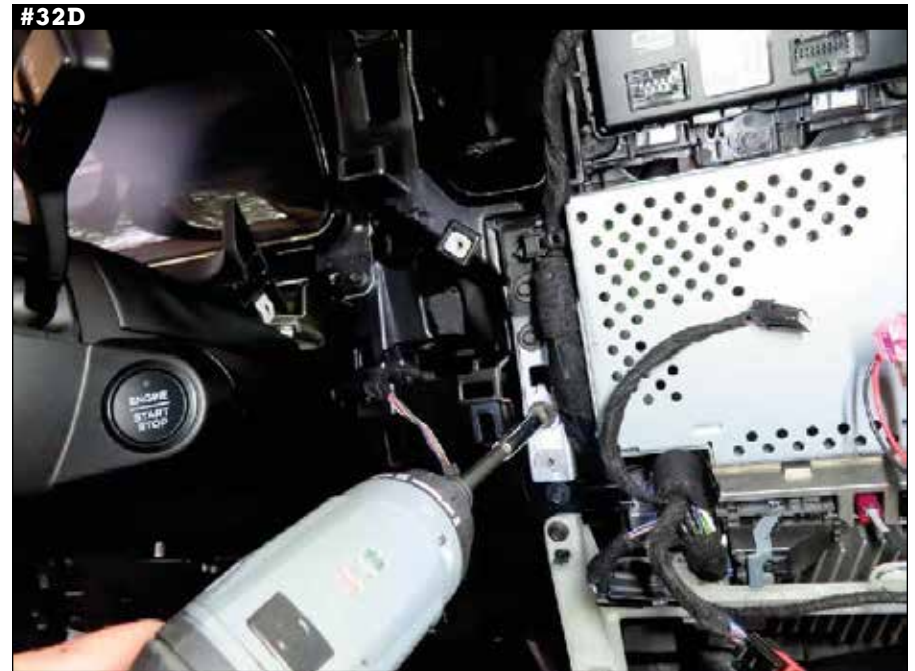


#30D

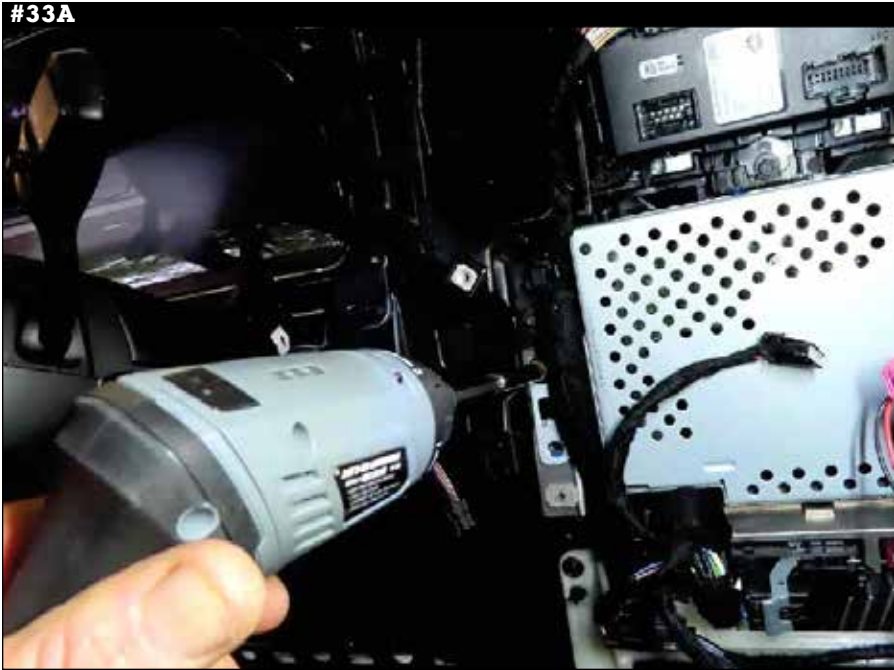




#32A  
32. Remove four (4) 7mm screws securing receiver chassis, disconnect harnesses, then remove chassis.



#33A



#33C



#33B



#33D

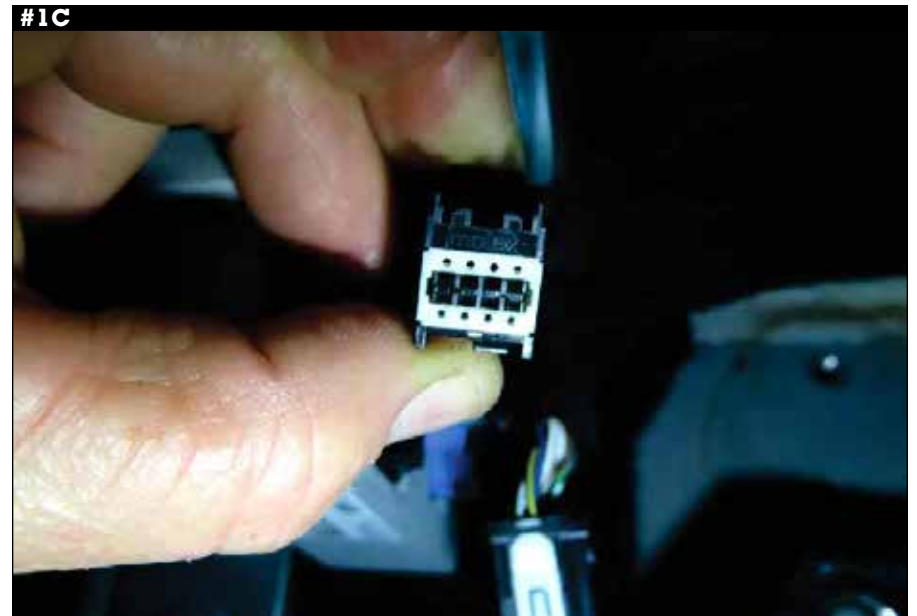
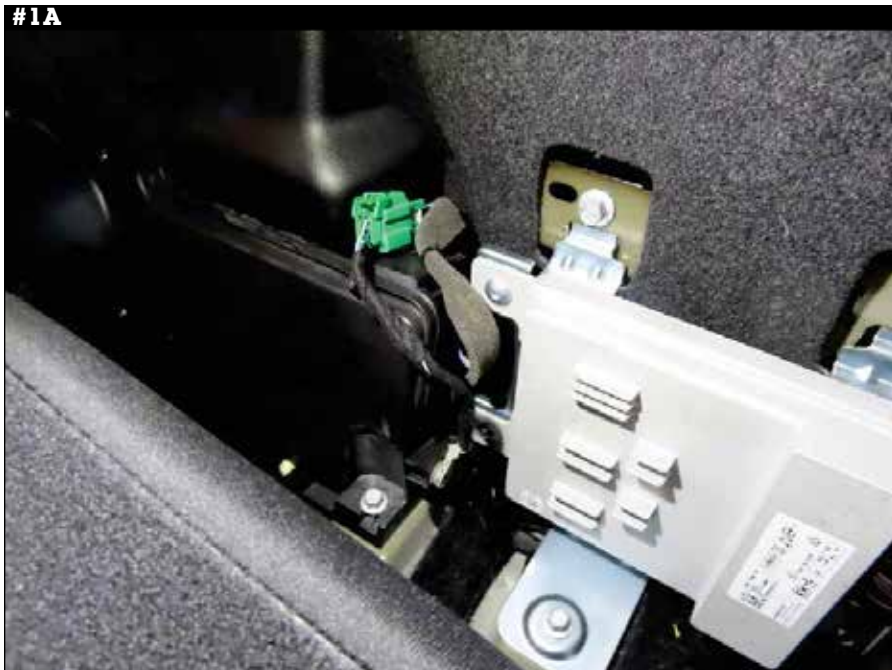


## FACTORY AMPLIFIER

The factory amplifier is located behind the rear seat.  
Amplifier access is shown for OEM integration purposes only.  
Amplifier wiring can be found on the next page.



Harness #1



Harness #2

# Amplifier wiring

NOTE: If our wiring pin numbers don't match the actual pin numbers on your factory plug, refer to the wire colors and locations below.

**Harness 1 of 2**

PIN #	FUNCTION/POLARITY	COLOR
1	Left rear door speaker (-)	brown/yellow
2	Subwoofer voice coil #1 (-)	blue/light green
3	Right rear door speaker (-)	brown/violet
4	Left front door speaker (-)	white/brown
5	Right front door speaker (-)	white/tan
6	Subwoofer voice coil #2 (-)	gray
7		
8		
9		
10	CANBus (Hi)	green/blue
11	Left rear door speaker (+)	white/light green
12	Subwoofer voice coil #1 (+)	white/violet
13	Right rear door speaker (+)	brown/white
14	Left front door speaker (+)	white
15	Right front door speaker (+)	white/violet
16	Subwoofer voice coil #2 (+)	green/violet
17		
18		
19		
20	CANBus (Lo)	white/green

**Harness 2 of 2**

PIN #	FUNCTION/POLARITY	COLOR
1	Constant 12 volt power	green/red
2	Amplifier remote	yellow/violet
3		
4	Chassis ground	violet/black
5	Constant 12 volt power	green/red
6		
7		
8	Chassis ground	black/violet

NOTE: The receiver powers the front pillar tweeters and the center dash speaker.

# Center dash speaker

## REMOVAL & INSTALLATION INSTRUCTIONS

Tools Required: Panel tool, 7mm socket, ratchet and extension, wire strippers

1. Pry up center dash grille to release seven (7) clips, then remove grille.
2. Remove two (2) 7mm screws securing speaker to dash, disconnect harness, then remove speaker.
3. Make wiring connections to new speaker following instructions on page 4. Return to this page to complete installation.
4. Secure new speaker to dash.
5. Test speaker operation, then reinstall speaker grille.

### Important information about your vehicle

- A wiring harness is not available. You'll have to splice or tap the vehicle's speaker wires to your new speaker wires.



1. Pry up center dash grille to release seven (7) clips, then remove grille.

#2A



#2C



#2B



#2D



2. Remove two (2) 7mm screws securing speaker to dash, disconnect harness, then remove speaker.

#3A



#3C



#3B



#3D



Return to page 42, step 3 to continue with installation.

# Front pillar tweeters

## REMOVAL & INSTALLATION INSTRUCTIONS

Tools Required: Panel tool, 6mm socket, ratchet and extension

Steps 1-3 apply to the driver's side only:

1. Starting at top edge, pry off pillar trim panel to release three (3) clips.
2. Twist two (2) tethers to release, then work out of slots in trim panel.
3. Lift trim panel, disconnect harness, then remove panel.

Steps 4-8 apply to the passenger's side only:

4. Starting at top edge, pry out top screw cover on pillar pull handle, then remove one (1) exposed 6mm screw.
5. Starting at lower edge, pry out bottom screw cover on pillar pull handle, then remove one (1) exposed 6mm screw.
6. Remove pillar pull handle.
7. Starting at top edge, pry off pillar trim panel to release one (1) clip.
8. Lift trim panel, disconnect harness, then remove panel.

Steps 9-13 apply to both sides of the vehicle:

9. Pry tweeter out of pillar trim panel to release three (3) tabs, then remove tweeter.
10. Fabricate a speaker mounting bracket and secure new speaker to bracket.
11. Secure tweeter/bracket assembly to pillar trim panel.
12. Connect speaker wiring adapter of replacement speaker to vehicle speaker harness.
13. Test speaker operation, then reassemble by reversing disassembly steps.

### Important information about your vehicle

- You'll need to fabricate brackets to install new tweeters in this location. In some cases, you may need to use backstraps, hot glue, or silicone to secure them.



Steps 1-3 apply to the driver's side only.



1. Starting at top edge, pry off pillar trim panel to release three (3) clips.



2. Twist two (2) tethers to release, then work out of slots in trim panel.

#2A



#2C



3. Lift trim panel, disconnect harness, then remove panel.

#2B



#2D





Steps 4-8 apply to the passenger's side only.



4. Starting at top edge, pry out top screw cover on pillar pull handle, then remove one (1) exposed 6mm screw.

#4A



#4C



5. Starting at lower edge, pry out bottom screw cover on pillar pull handle, then remove one (1) exposed 6mm screw.

#4B



#4D





6. Remove pillar pull handle.

7. Starting at top edge, pry off pillar trim panel to release one (1) clip.

#6A



8. Lift trim panel, disconnect harness, then remove panel.

#6C



#6D



9. Pry tweeter out of pillar trim panel to release three (3) tabs, then remove tweeter.

#6B





Return to page 46, step 10 to continue with installation.

# Front door speakers

## REMOVAL & INSTALLATION INSTRUCTIONS

Tools Required: Panel tool, Torx T20 driver, 7mm socket, ratchet and extension, Phillips screwdriver

1. Starting at top corner, pry off sail panel to release three (3) clips, then remove sail panel.
2. Pry out door release handle trim ring to release five (5) clips, then remove trim ring.
3. Remove two (2) Torx T20 screws exposed by removal of door release trim ring.
4. Remove two (2) Torx T20 screws along bottom edge of door panel.
5. Starting at either lower corner, pry off door panel to release six (6) clips, disconnect harnesses and door release cable, then remove door panel.
6. Remove four (4) 7mm screws securing speaker to door, disconnect harness, then remove speaker.
7. Secure new speaker to speaker mounting bracket.
8. Connect speaker wiring adapter of replacement speaker to vehicle speaker harness.
9. Secure speaker/bracket assembly to door.
10. Test speaker operation, then reassemble door panel by reversing disassembly steps.

### Important information about your vehicle

- You'll need speaker mounting brackets to install new speakers.
- To install a 6-3/4" speaker, you'll need to remove the inner tabs on the aftermarket speaker bracket.



1. Starting at top corner, pry off sail panel to release three (3) clips, then remove sail panel.



2. Pry out door release handle trim ring to release five (5) clips, then remove trim ring.





#3A

3. Remove two (2) Torx T20 screws exposed by removal of door release trim ring.



#3C

4. Remove two (2) Torx T20 screws along bottom edge of door panel.

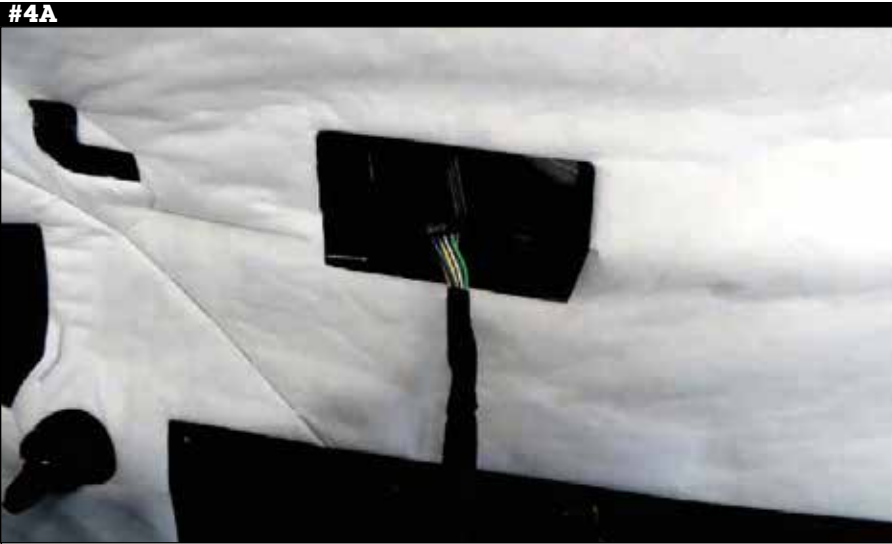


#3B



#3D

#4A

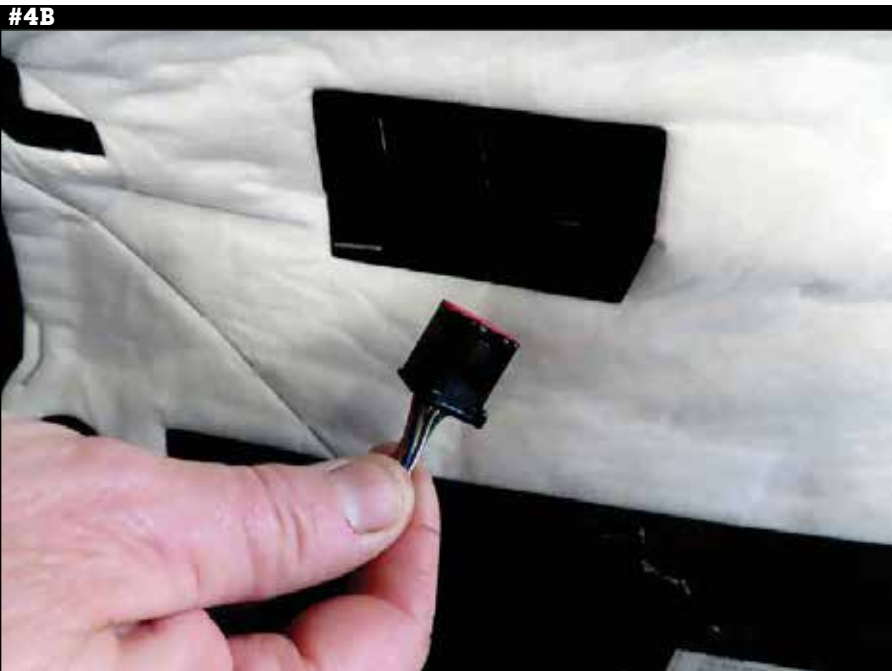


5. Starting at either lower corner, pry off door panel to release six (6) clips, disconnect harnesses and door release cable, then remove door panel.

#4C



#4B



#4D



#5A



#5C



#5B



#5D





6. Remove four (4) 7mm screws securing speaker to door, disconnect harness, then remove speaker.





Return to page 54, step 7 to continue with installation.

# Rear door speakers

## REMOVAL & INSTALLATION INSTRUCTIONS

Tools Required: Panel tool, Torx T20 driver, 7mm socket, ratchet and extension, Phillips screwdriver

1. Pry out door release handle trim ring to release five (5) clips, then remove trim ring.
2. Remove two (2) Torx T20 screws exposed by removal of door release trim ring.
3. Remove two (2) Torx T20 screws along bottom edge of door panel.
4. Starting at either lower corner, pry off door panel to release seven (7) clips, disconnect harnesses and door release cable, then remove door panel.
5. Remove three (3) 7mm screws securing speaker to door, disconnect harness, then remove speaker.
6. Secure new speaker to speaker mounting bracket.
7. Connect speaker wiring adapter of replacement speaker to vehicle speaker harness.
8. Secure speaker/bracket assembly to door.
9. Test speaker operation, then reassemble door panel by reversing disassembly steps.

### Important information about your vehicle

- You'll need speaker mounting brackets to install new speakers.
- To install a 6-3/4" speaker, you'll need to remove the inner tabs on the aftermarket speaker bracket.

#1A



#1C



#1B



#1D



1. Pry out door release handle trim ring to release five (5) clips, then remove trim ring.

#2A



#2C



#2B



#2D

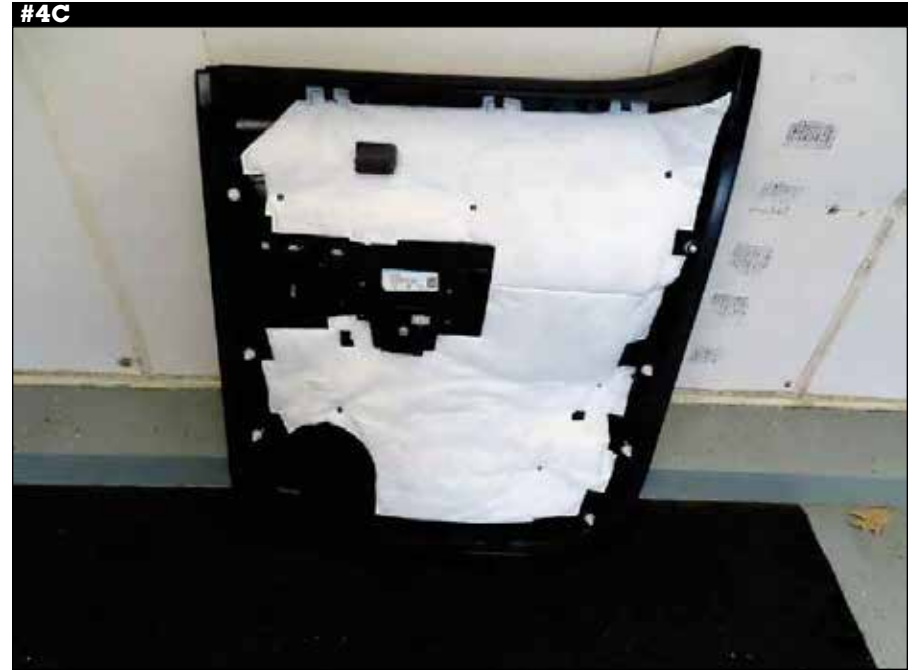


2. Remove two (2) Torx T20 screws exposed by removal of door release trim ring.

3. Remove two (2) Torx T20 screws along bottom edge of door panel.



4. Starting at either lower corner, pry off door panel to release seven (7) clips, disconnect harnesses and door release cable, then remove door panel.



#5A



5. Remove three (3) 7mm screws securing speaker to door, disconnect harness, then remove speaker.

#5C



#5B



#5D



#6A



#6C



#6B



#6D



Return to page 62, step 6 to continue with installation.

# Subwoofer

## REMOVAL & INSTALLATION INSTRUCTIONS

Tools Required: 8mm, 10mm and 13mm sockets, ratchet and extension, Torx T20 driver, drill with 1/8" bit

1. Fold down rear seat back.
2. Remove four (4) 13mm bolts securing rear seat assembly, then pull seat toward front of vehicle.
3. Remove one (1) 8mm and two (2) 10mm bolts securing subwoofer enclosure, disconnect and pry off harness, then remove enclosure.
4. Remove four (4) Torx T20 screws securing subwoofer and grille to enclosure, then remove grille.
5. Pull out subwoofer, disconnect harnesses, then remove subwoofer.
6. Place new speaker in location and mark new mounting holes. Remove speaker and drill new holes with a 1/8" bit.
7. Connect speaker wiring adapter of replacement speaker to vehicle speaker harness.
8. Secure new speaker to enclosure.
9. Reconnect enclosure and test speaker operation, then reassemble by reversing disassembly steps.

### Important information about your vehicle

- You'll need to re-drill the mounting screw holes.
- The factory system sends only bass frequencies to the dual voice coil subwoofer in this location, so a replacement aftermarket speaker will also only play bass.

#1A



#1C



#1B



#1D



1. Fold down rear seat back.

#2A



2. Remove four (4) 13mm bolts securing rear seat assembly, then pull seat toward front of vehicle.

#2C



#2B



#2D



#3A



#3C

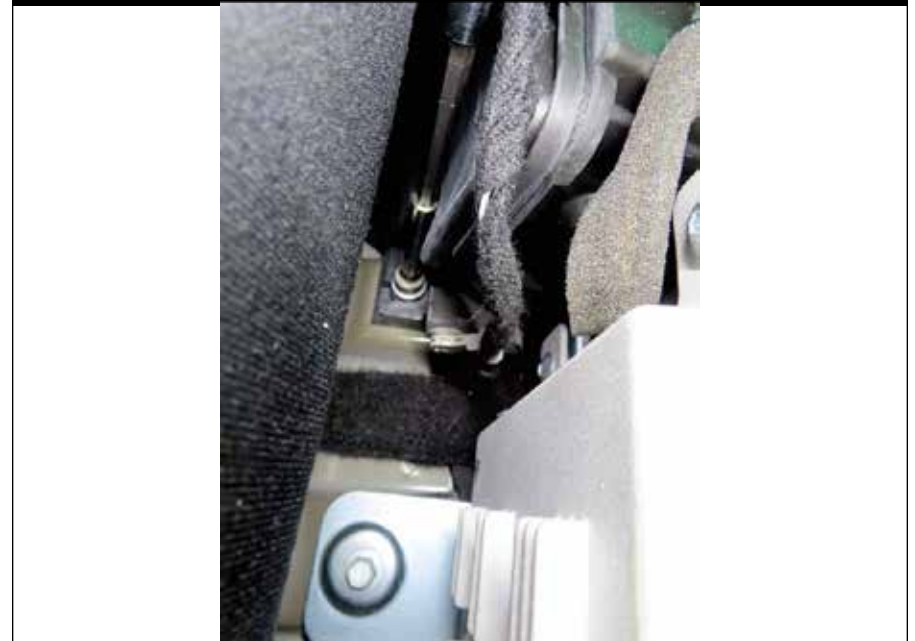


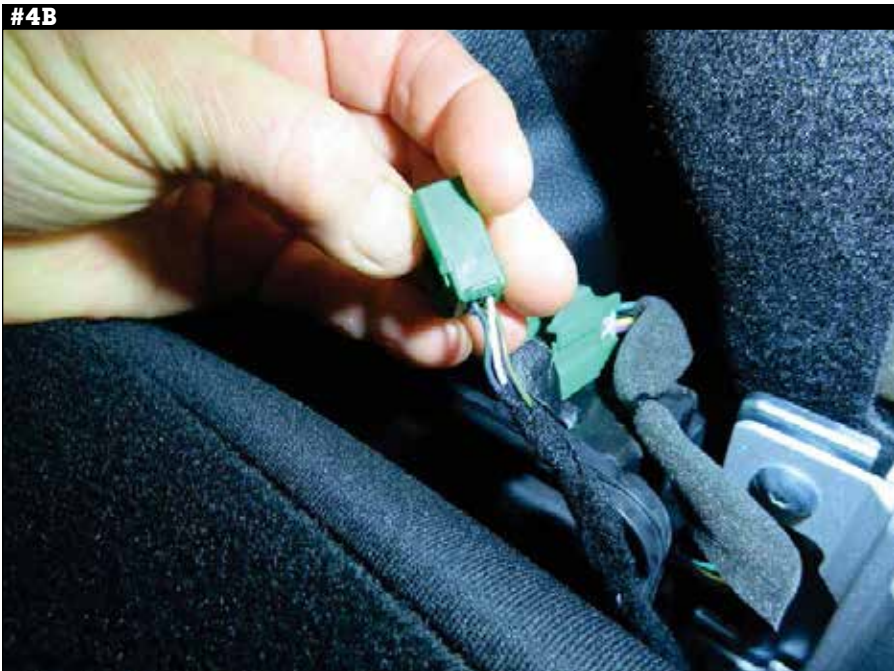
3. Remove one (1) 8mm and two (2) 10mm bolts securing subwoofer enclosure, disconnect and pry off harness, then remove enclosure.

#3B



#3D





#5A



#5C



4. Remove four (4) Torx T20 screws securing subwoofer and grille to enclosure, then remove grille.

#5B



#5D



#6A



#6C



#6B



#6D



#7A



#7C



#7B



#7D



5. Pull out subwoofer, disconnect harnesses, then remove subwoofer.

Return to page 69, step 6 to continue with installation.