INSTRUCTIONS

J06057 2017-01-11

AMPLIFIER INSTALLATION KIT FOR BOOM! AUDIO STAGE II SADDLEBAG LID SPEAKERS

GENERAL

Dealer installation is recommended.

Kit Number

76000584

Models

For model fitment information, see the P&A retail catalog or the Parts and Accessories section of www.harley-davidson.com (English only).

Installation Requirements

NOTE

DO NOT mix Stage I and Stage II speakers on the same vehicle.

These speakers are for use ONLY on **2014 and later** Harley-Davidson audio systems. Using these speakers on **2006-2013** Harley-Davidson audio systems **WILL permanently damage these speakers.** Using these speakers on **2005 or earlier** Harley-Davidson audio systems **WILL permanently damage those systems.**

This kit must be installed:

- **Before** installation of the Boom! Audio Stage II Saddlebag Lid Speaker Kit (Part No. 76000319)
- **After** installation of a PRIMARY fairing-mounted amplifier.
- **Before OR after** installation of a painted or primed Saddlebag Lid Kit.
- **ONLY if also installing a Fairing Lower Speaker Kit: Before OR after** installation of a painted or primed Fairing Lower Speaker Cap Kit.

The amplifier (Part No. 76000277A) installed **with this kit** must be purchased separately from a Harley-Davidson dealer.

If installing **more than TWO amplifiers**, a Battery+ Three-Way Y Connector (Part No. 70270-04A, available separately) is needed. **ONE** Battery+ Three-Way Y Connector can be used for up to three (3) more amplifiers

If installing **more than TWO amplifiers**, an AUDIO IN Three-Way Y Connector (included in THIS kit) is needed.

NOTICE

Radio EQ MUST be updated by a Harley-Davidson dealer BEFORE operating the audio system. Operating the audio system prior to radio EQ update will IMMEDIATELY damage the speakers. (00645d)

Radio EQ update using the Digital Technician® II diagnostic tool is:

- Recommended **before** speaker INSTALLATION
- Required **before** audio system OPERATION.
- Only available through authorized Harley-Davidson dealers.

⚠ WARNING

Rider and passenger safety depend upon the correct installation of this kit. Use the appropriate service manual procedures. If the procedure is not within your capabilities or you do not have the correct tools, have a Harley-Davidson dealer perform the installation. Improper installation of this kit could result in death or serious injury. (00333b)

NOTE

This instruction sheet references service manual information. A service manual for this year/model motorcycle is required for this installation. One is available from a Harley-Davidson dealer.

Electrical Overload

NOTICE

It is possible to overload the vehicle's charging system by adding too many electrical accessories. If the combined electrical accessories operating at any one time consume more electrical current than the vehicle's charging system can produce, the electrical consumption can discharge the battery and cause damage to the vehicle's electrical system. (00211d)

⚠ WARNING

When installing any electrical accessory, be certain not to exceed the maximum amperage rating of the fuse or circuit breaker protecting the affected circuit being modified. Exceeding the maximum amperage can lead to electrical failures, which could result in death or serious injury. (00310a)

The amplifier installed **with this kit** requires up to **8 amps** more current from the electrical system.

Kit Contents

See Figure 17 and Table 1.

PREPARATION

⚠ WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, remove main fuse before proceeding. (00251b)

NOTE

See the service manual. Remove main fuse.

⚠ WARNING

Disconnect negative (-) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00049a)

1. See the service manual to perform the following generalized steps:
   a. Remove seat. Retain all seat mounting hardware.
   b. Remove the ECM caddy from the top of the battery.
   c. Disconnect both battery cables, negative battery cable first.
   d. Remove battery.
   e. Remove right side cover.
   f. Remove left side cover.
   g. Remove the two bolts securing the electrical caddy under the left side cover.

RIGHT SADDLEBAG DRILLING AND CONNECTOR INSTALLATION

1. Remove all items from the right saddlebag. Remove saddlebag. Remove bag liners (if present).

NOTE

To minimize damage to paint during cutting and drilling. Cover both sides of the area being drilled or cut with masking tape.

2. Place the saddlebag on a protected surface with mounting (inboard) side facing up.

3. See Figure 1. Place the template (1) on the saddlebag. Align the grommet (2) and latch (3) fastener openings. Drill the hole at locations (4) and (5), beneath the remark "S'BAG SPEAKER ONLY".

4. Drill four holes (5) for the **lower** connector flange mounting locations.

   4.5 mm (0.177 in)

5. Drill a hole (4) for the connector location.

   22.5 mm (0.886 in)

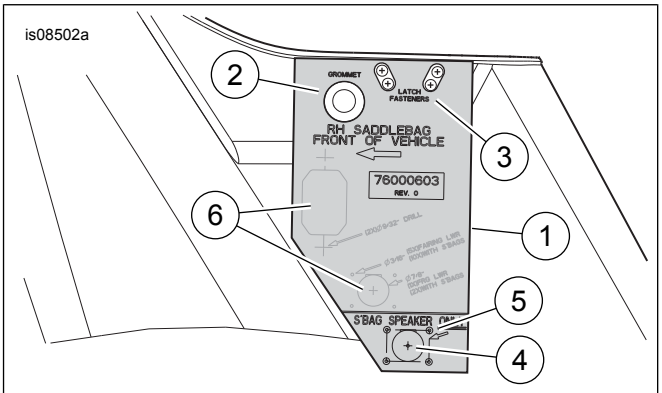
6. See Figure 13. Verify pilot hole placement with the four-way flanged connector [C36A] (3) on the harness.

7. Test-fit the connector. Shape the hole as seen on the template if necessary.

8. **If also installing an amplifier in the right saddlebag as part of the Fairing Lower Speaker Installation Kit:** Cut the openings (see Figure 1, Items 6) for the two upper bulkhead connectors now, per the instructions in **that** kit.

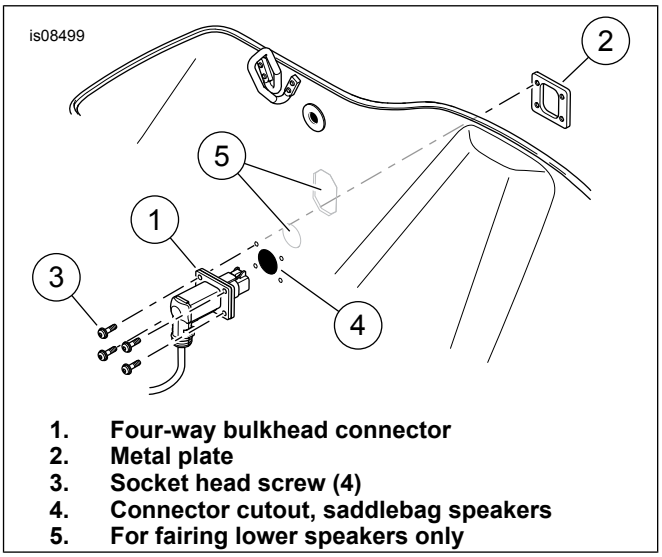
NOTE

ONLY if upper openings were cut for lower speakers: *Insert the connector through the* ***lowest*** *saddlebag hole from the inside.*



1. **Template, right side saddlebag**
2. **Rear grommet**
3. **Rear latch fasteners (2)**
4. **Connector cutout**
5. **Connector flange mounting holes (4)**
6. **For fairing lower speakers only**

Figure 1. Right Saddlebag Drilling For Stage II Saddlebag Speaker Installation



1. **Four-way bulkhead connector**
2. **Metal plate**
3. **Socket head screw (4)**
4. **Connector cutout, saddlebag speakers**
5. **For fairing lower speakers only**

Figure 2. Four-Way Harness Connector Installation

9. See Figure 2. Remove the metal plate (2) from the four-way bulkhead connector (1) on the saddlebag harness. Insert the connector through the saddlebag hole (4) from the inside.

10. Slide the metal plate back onto the connector outside the saddlebag. Secure the connector with four socket head screws (3) from **inside** the saddlebag. Tighten.

    Torque: 4–4.5 N·m (35–40 **in-lbs**) *Hex socket head screw*

NOTE

Speaker connections [36TB] and [36WB] are covered in the instructions for the Saddlebag Speakers.

LEFT SADDLEBAG DRILLING AND AMPLIFIER INSTALLATION AND CONNECTOR INSTALLATION

1. Remove all items from the left saddlebag. Remove saddlebag. Remove bag liners (if present).

NOTE

To minimize damage to paint during cutting and drilling. Cover both sides of the area being drilled or cut with masking tape.

2. Place the saddlebag on a protected surface with the mounting (inboard) side facing up. See Figure 3. Place the template (1) on the saddlebag. Align the grommet (2) and latch fastener (3) openings. Trace the cut outline (4) for connector [288A] onto the saddlebag. If saddlebag lid speakers are present from a previous installation, left side speaker wires could be in the connector cutout location. Remove the wire and grommet.

3. Carefully cut the cutout (4) in the template (1) for connector [288A] on the dashed line.

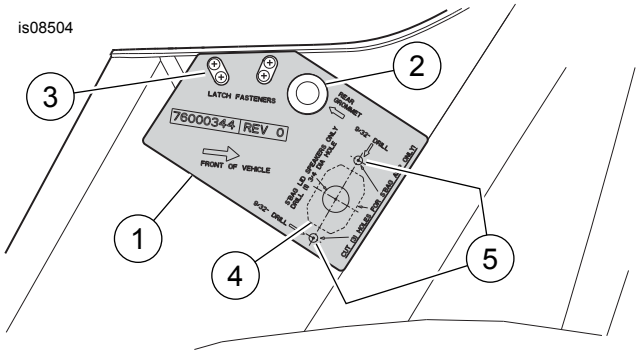
4. Drill two pilot holes (5) for the connector flange mounting locations.

5. Remove template. Verify size of cutout (4) with the 18-way flanged connector [288A] on the saddlebag harness (see Figure 12, Item 4) from the kit.

6. Cut the cutout for connector [288A] into the saddlebag wall.

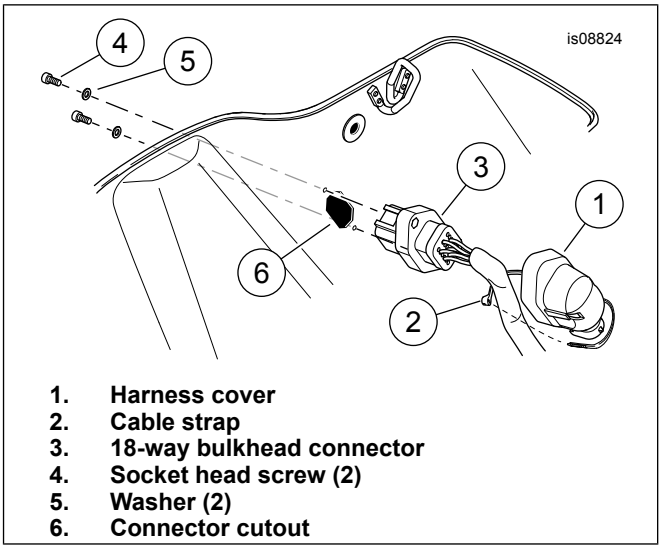
7. See Figure 3, Item 5. Drill two holes at the connector flange mounting pilot hole locations.

   Length/Dimension/Distance: 7.25 mm (½ in)



1. Template, left side saddlebag
2. Saddlebag rear grommet
3. Saddlebag rear latch fasteners (2)
4. Connector cutout
5. Connector flange mounting holes (2)

Figure 3. Left Saddlebag Drilling For Stage II Amplifier Installation



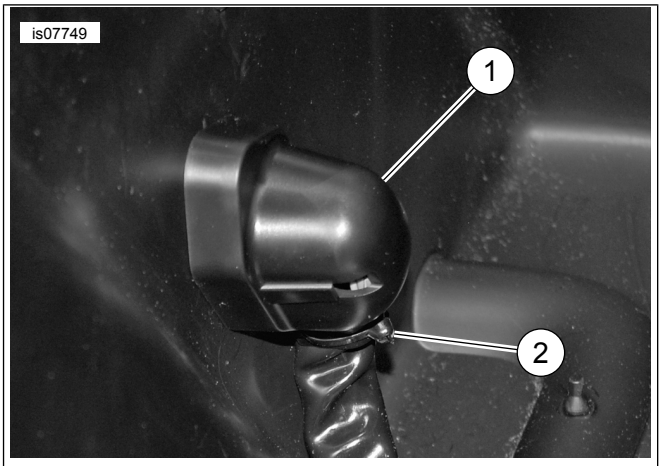
1. Harness cover
2. Cable strap
3. 18-way bulkhead connector
4. Socket head screw (2)
5. Washer (2)
6. Connector cutout

Figure 4. 18-Way Connector and Cover Installation to Left Saddlebag

8. See Figure 4. Insert the pin side 18-way bulkhead connector (3) from the saddlebag harness through the connector cutout (6) from the inside. Secure the connector from **outside** the saddlebag with two socket head screws (4) and washers (5). Tighten.

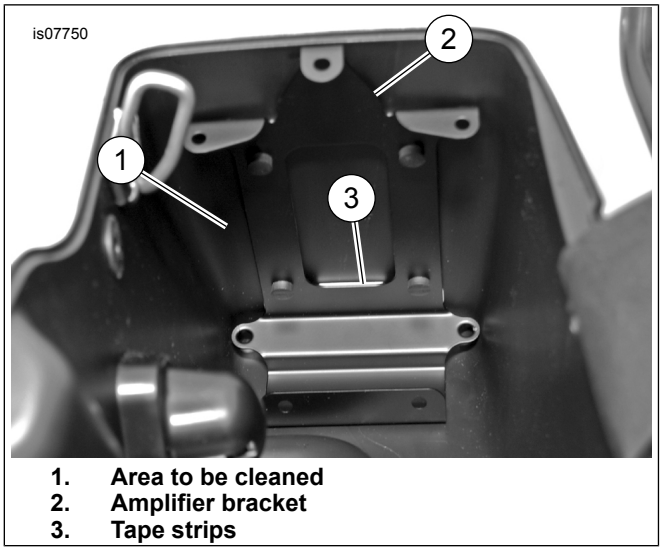
   Torque: 4–4.5 N·m (35–40 **in-lbs**) *M5 hex socket head screw*

9. See Figure 5. Snap the harness cover (1) over the 18-way connector. Secure with a cable strap (2) . The harness routes inside the saddlebag after the amplifier is mounted.



1. Harness cover
2. Cable strap

Figure 5. Harness Cover



1. **Area to be cleaned**
2. **Amplifier bracket**
3. **Tape strips**

Figure 6. Amplifier Bracket Installation

10. See Figure 6. Clean the inside rear and bottom surfaces of the saddlebag with a 50-50 mixture of isopropyl alcohol and distilled water.

NOTE

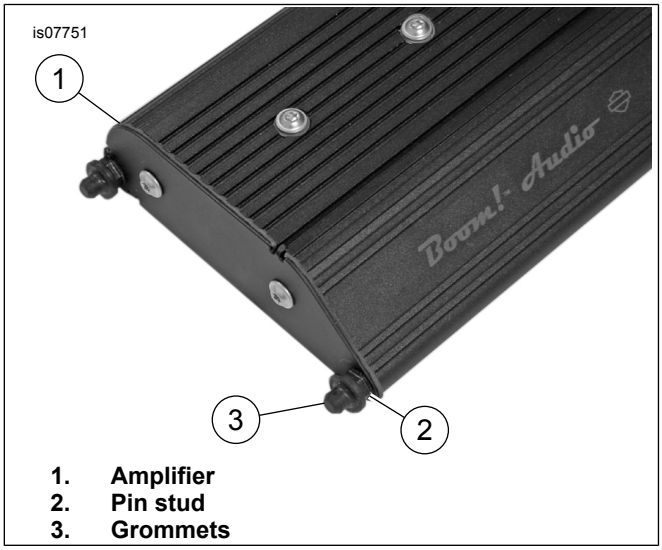
Verify that all four tape strips are contacting the saddlebag.

11. Remove the four pieces of protective backing from the amplifier bracket tape strips. Position the bracket as shown.

12. See Figure 7. Install the amplifier pin studs in the amplifier. Tighten.

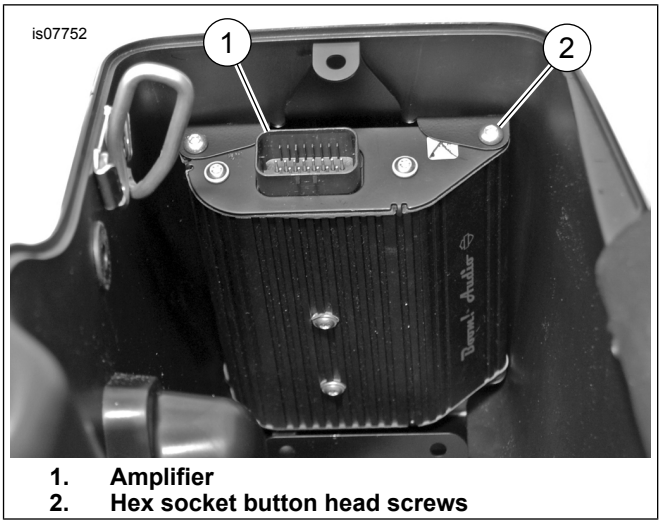
    Torque: 9.4–12.2 N·m (7–9 ft-lbs)

13. Install the grommets



1. **Amplifier**
2. **Pin stud**
3. **Grommets**

Figure 7. Amplifier Pin Studs



1. **Amplifier**
2. **Hex socket button head screws**

Figure 8. Amplifier Installation

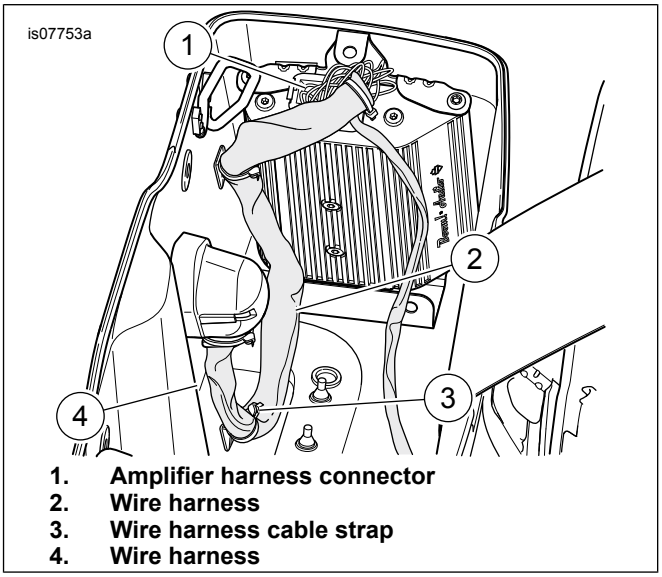
14. See Figure 8. Position the amplifier with the grommets in the holes in the bottom of the amplifier bracket. Slide the top into the bracket. Install the hex socket button head screws (2). Tighten.

    Torque: 9.4–12.2 N·m (7–9 ft-lbs)

15. See Figure 9. Plug in connector [149] of the saddlebag harness to the top of the amplifier. Route the saddlebag side harness inside the left saddlebag. Clean the inside bottom and side surfaces of the saddlebag along the harness path with a 50-50 mixture of isopropyl alcohol and distilled water. Secure with cable straps and bases as shown.

NOTE

Speaker connections [37TB] and [37WB] are covered in the instructions for the Saddlebag Speakers.



1. **Amplifier harness connector**
2. **Wire harness**
3. **Wire harness cable strap**
4. **Wire harness**

Figure 9. Inner Harness Routing

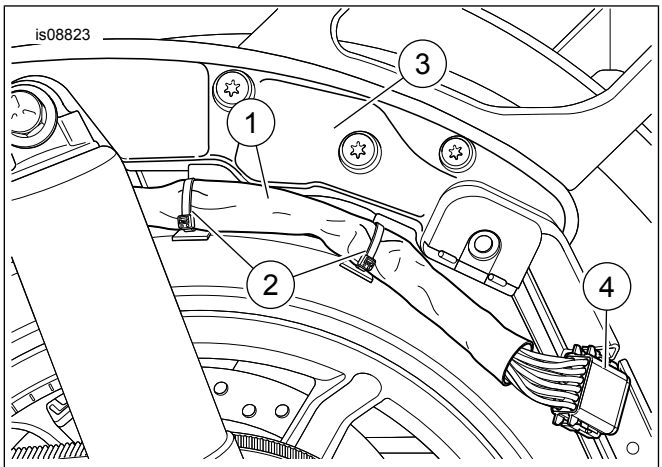
AMPLIFIER HARNESS INSTALLATION

NOTE

These tips help make sure all wiring fits under the seat, especially in multiple amplifier installations:

- *Begin routing the vehicle-side amplifier harness from the large 18-way amplifier connector [288B], moving forward on the vehicle. The large connector **does not fit** through narrower passages.*
- *Route all wire harnesses **under** the frame rail to avoid pinching by covers or the seat.*
- *Take care to route ALL amplifier harness branches away from spark plug wires. Close proximity induces spark noise into the audio system.*
- *When routing wires from one side of the vehicle to the other, tuck harnesses **under** the frame tray **behind** the battery to keep the battery compartment accessible.*
- *Route the six-way black, pink-wired audio connectors **under** the right frame rail, into the right side cover. Bundle in front of the ABS module (if present).*
- *Route the six-way, gray Data Link Connectors (DLCs) along the left frame rail. Bundle the connectors in a pocket of the frame in front of the battery, under the wire trough along the frame backbone.*

1. See Figure 10. Route the vehicle-side amplifier harness (1) in the saddlebag mounting area, beginning the vehicle. Route the harness around the rear wheel sprocket, following the saddlebag support rail.



1. Secondary amplifier harness
2. Cable strap
3. Fender support
4. Connector [288B]

Figure 10. Harness Routing

2. Route the harness:
   a. behind and underneath the frame,
   b. into the underseat battery area.
3. Use cable straps (2) to tie the harness loosely to the saddlebag support. Use the large hole near the saddlebag rear attachment point or one of the cable strap slots along the bottom of the support.
4. Temporarily install the left saddlebag into the support assembly. When sufficient clearance is confirmed, tighten the cable straps. Remove the saddlebag.
   a. Confirm that the vehicle-side harness connectors reach the saddlebag connectors.
   b. Confirm that the amplifier harness connectors and harness routing are clear of all moving parts.
   c. Confirm that no contact is made at full extension and compression of the shock absorber.

NOTE

Continue routing the harness forward on the vehicle.

5. See Figure 16. Locate the black, four-way Molex connector [296A] near the back of the underseat area for models with stock Tour-Pak or, inside fairing for models without Tour-Pak. **FLHX/FLTRX models:** Install jumper harness (11) provided with fairing amplifier (part number 69200489) to connector [162] (8) coming from the fairing. **FLHTCU/FLHTK models:** Install interconnect (11) (part number 69200714) harness with two 16-way ([162C] and [162D]) and two four-way ([296A] and (297B]) connectors provided with primary amplifier install from connector [162] (7) **With ONLY ONE Stage II amplifier installed in the rear:** Remove the plug from the four-way [296A] connector identified above. Connect the amplifier harness [296B] (10). **With TWO or more Stage II amplifiers installed in the rear:** See Figure 16. Plug the socket side of the audio input harness from this kit into connector [296A] identified above. Connect [296B] of each successive harness into the corresponding pin side of the input harness (up to three amplifiers).
6. Locate the gray six-way Data Link Connector (DLC) [91A] in the electrical caddy.
   a. Remove the cap.
   b. Pull connector [91A] back through the electrical caddy to a location under the seat, behind the caddy.
   c. Plug in gray six-way socket connector [91B] from the amplifier harness to connector [91A] under the seat.
   d. Route gray six-way pin connector [91A] from the amplifier harness into the electrical caddy.
   e. Insert the weather cap removed earlier into the new pin connector [91A]. Use a cable strap (17) from the kit to attach the tether to the harness.

NOTE

- *If more than two amplifiers or other accessories already use the ground post of the battery, use one of the frame ground studs.*
- *Only one Battery+ Three-Way Y Connector (Part No. 70270-04A) is needed for **up to a FOUR amplifier installation**. If installing **more than TWO amplifiers**, an AUDIO IN Three-Way Y Connector (included in THIS kit) is needed.*

7. Route the battery terminal branch to the battery terminals, but **DO NOT** connect the battery cables now.

8. Route the longer harness branch (with six-way socket connector [36B]) to the right side of the vehicle. Use cable straps (3) to tie the harness loosely to the saddlebag support. Use the large hole near the saddlebag rear attachment point or one of the cable strap slots along the bottom of the support.

9. Temporarily install the right saddlebag into the support assembly. When sufficient clearance is confirmed, tighten the cable straps. Remove the saddlebag.

   a. Confirm that the vehicle-side harness connector [36B] reaches saddlebag connector [36A], installed earlier.

   b. Confirm that the amplifier harness connector and harness routing are clear of all moving parts.

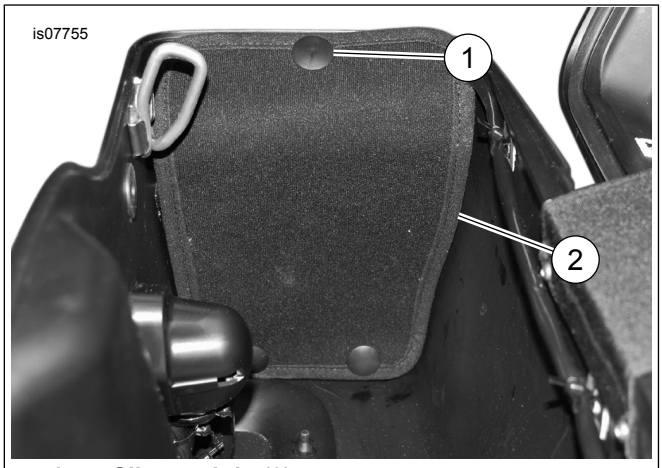
   c. Confirm that no contact is made at full extension and compression of the shock absorber.

10. Follow instructions in the Boom! Audio Saddlebag Speaker Kit to complete the installation.

SADDLEBAG WIRING

1. See Figure 11. Install the amplifier cover on the bracket. Secure with three clips.

2. **Saddlebag liners (if present):** Trim saddlebag liners. Install saddlebag liners.



1. Clip, push-in (3)
2. Amplifier cover

Figure 11. Amplifier Cover

3. Install the saddlebags. Plug in all saddlebag connectors.

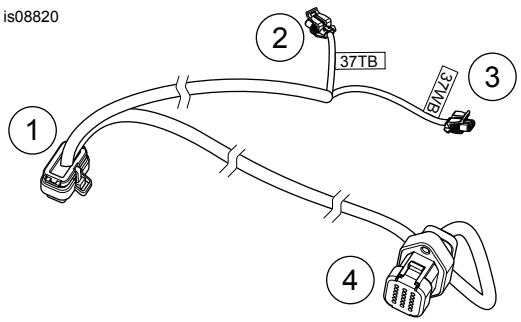
4. Attach a **new** saddlebag capacity label (included in the Saddlebag Lid Kit) over the existing label in the left saddlebag. Note the revised load limit for the left saddlebag due to the amplifier installation.

5. Install the electrical caddy under the left side cover with the two bolts removed earlier. Tighten.

   Torque: 8.1–10.8 N·m (72–96 **in-lbs**)

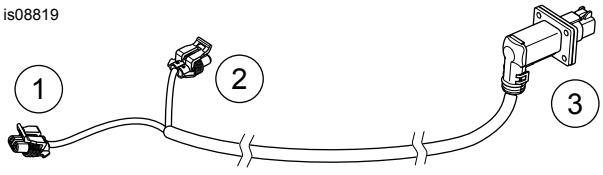
6. Install left side cover.

7. Install right side cover.



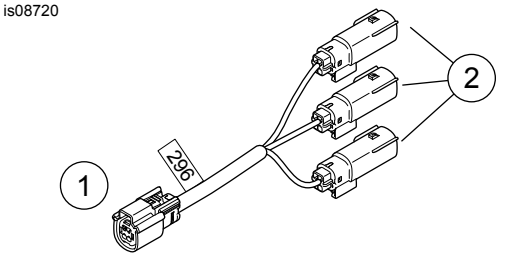
1. Fairing amplifier connector [149]
2. Left side, tweeter/mid range, saddlebag speaker [37TB]
3. Left side, woofer, saddlebag speaker [37WB]
4. Left side, saddle bag connector [288]

Figure 12. Wire Harness, Left Side Saddlebag Speaker



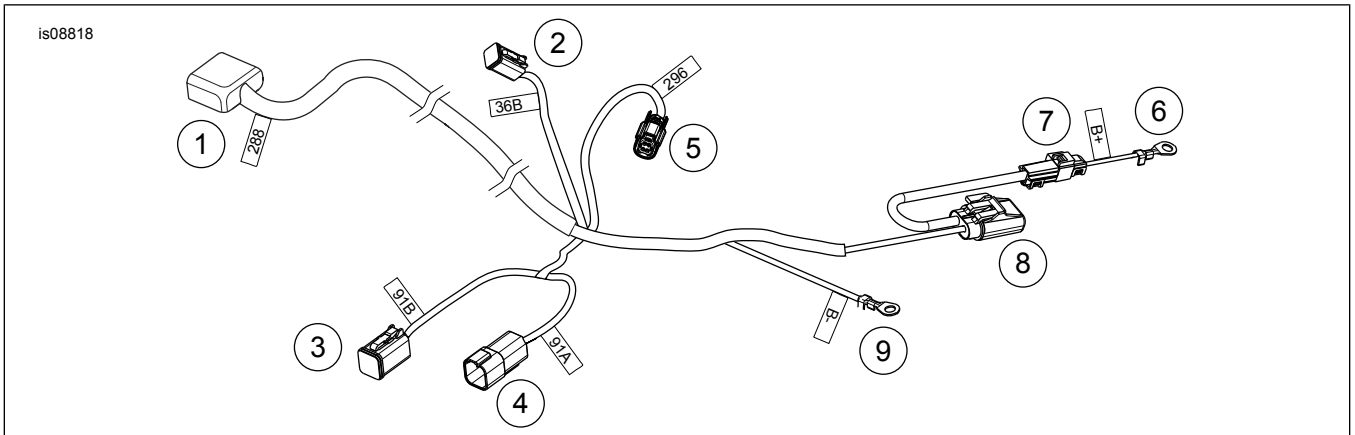
1. Right side, woofer, saddlebag speaker [36WB]
2. Right side, tweeter/mid range, saddlebag speaker [36TB]
3. Right side speaker out [36A]

Figure 13. Wire Harness, Rear Speaker Jumper



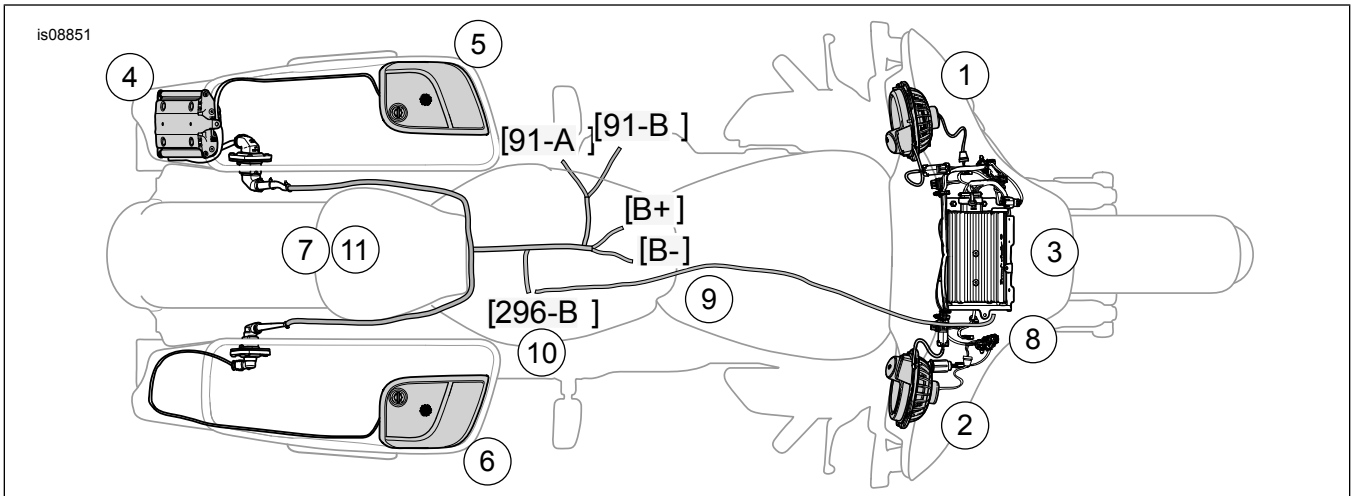
1. Radio rear channel output connector [296]
2. Audio input connector (3)

Figure 14. Audio Input and Output Wire Harness



1. Left side saddlebag connector [288]
2. Saddlebag Speaker interconnect [36B]
3. Secondary amplifier input [296]
4. New Digital Technician connector [91A]
5. Digital Tech connector [91B] to OE harness
6. Positive battery terminal [B+]
7. Inline B+ connector [160A/B]
8. Amplifier fuse
9. Negative battery terminal [B-]

Figure 15. Wire Harness



1. Left side fairing speaker (installed earlier)
2. Right side fairing speaker (installed earlier)
3. Amplifier, fairing (installed earlier)
4. Amplifier, left side saddlebag
5. Left side saddlebag speaker
6. Right side saddlebag speaker
7. Connnector [162] (under seat)
8. Connnector [162] (inside fairing)
9. Jumper harness, (models without Tour-Pak
10. Connector [296B]
11. Speaker interconnect (models with Tour-Pak)

Figure 16. Saddlebag Speakers and Left Side Saddlebag Amplifier

COMPLETION

NOTE

*To prevent possible damage to the sound system, verify that the ignition switch is OFF **before** attaching the battery cables.*

⚠ WARNING

Connect positive (+) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00068a)

1. See the service manual. Connect the battery terminal branch to the battery terminals (red positive cable first).

    a. Position the + ring terminal onto the positive battery terminal. Install the bolt.

    b. Position the in-line fuse holder in a location that can be easily accessed.

    c. Position the - ring terminal onto the negative battery terminal. Install the bolt.

    d. Tighten both bolts to 6.8–7.9 N·m (60–70 **in-lbs**).

2. Apply a light coat of petroleum jelly or corrosion retardant material to battery terminals.

3. Install the ECM caddy per the service manual.

4. See the service manual. Install seat. After installing seat, pull up on the seat to verify that it is secure.

5. Install main fuse.

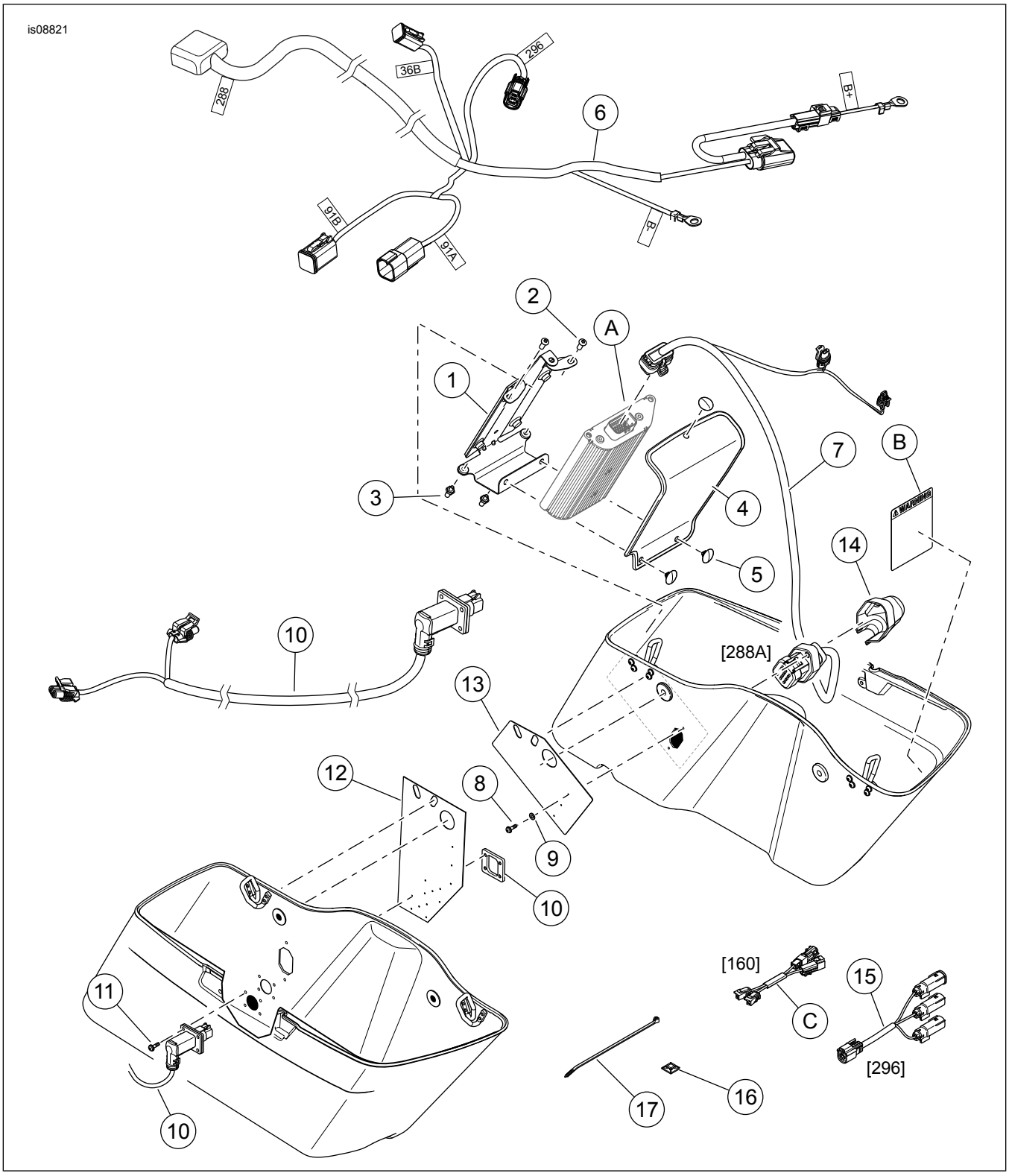


Figure 17. Service Parts, Amplifier Installation Kit For Boom! Audio Saddlebag Speakers

SERVICE PARTS

Table 1. Service Parts

Item	Description (Quantity)	Part Number
1	Amplifier bracket	76000282A
2	Screw, hex socket button head (2), 1/4-20 x 0.62 in long, Grade 8, with lock patch	926
3	Pin stud (2)	12600087
4	Cover, amplifier	76000502
5	Clip, push-in (3)	12600068
6	Wire harness, vehicle side, Boom! Audio Stage II saddlebag speaker	69200922
7	Wire harness, saddlebag side, Boom! Audio Stage II right saddlebag speaker	69200923
8	Screw, hex socket head, M5-0.8 x 12 mm long (2)	3798M
9	Flat washer, M5 (2)	6454
10	Wire harness, saddlebag side, Boom! Audio Stage II left saddlebag speaker	69200916
11	Screw, pan head, TORX, #8-32 x 0.62 in long, stainless, with lock patch (4)	10200065
12	Drill template, saddlebag amplifier connector (right)	76000603
13	Drill template, saddlebag speaker connector (left)	76000344
14	Cover, saddlebag amplifier connector	69200586
15	Wire harness, audio input	69201092
16	Base, cable strap (10)	69200342
17	Cable strap (10)	10006
Items mentioned in text, but not included in kit:		
A	Amplifier (Part No. 76000277A, purchase separately)	
B	Saddlebag capacity label (Part No. 14001047, from Saddlebag Lid Kit)	
C	Wire harness, accessory adapter (Part No. 70270-04A, purchase separately if needed)	

Wiring Diagram Information

Wire Color Codes

For Solid Color Wires: See Connector/Wiring Diagram Symbols (Typical) . The alpha code identifies wire color.

For Striped Wires: The code is written with a slash (/) between the solid color code and the stripe code. For example, a trace labeled GN/Y is a green wire with a yellow stripe.

Wiring Diagram Symbols

See Connector/Wiring Diagram Symbols (Typical) . Brackets [] indicate connector numbers. The letter inside the brackets identifies whether the housing is a socket or pin housing.

A=Pin: The letter A and the pin symbol after a connector number identifies the pin side of the terminal connectors.

B=Socket: The letter B and the socket symbol after a connector number identifies the socket side of the terminal connectors. Other symbols found on the wiring diagrams include the following:

Diode: The diode allows current flow in one direction only in a circuit.

Wire break: The wire breaks are used to show option variances or page breaks.

No Connection: Two wires crossing over each other in a wiring diagram that are shown with no splice indicating they are not connected together.

Circuit to/from: This symbol indicates a complete circuit diagram on another page. The symbol is also identifying the direction of current flow.

Splice: Splices are where two or more wires are connected together along a wiring diagram. The indication of a splice only indicates that wires are spliced to that circuit. It is not the true location of the splice in the wiring harness.

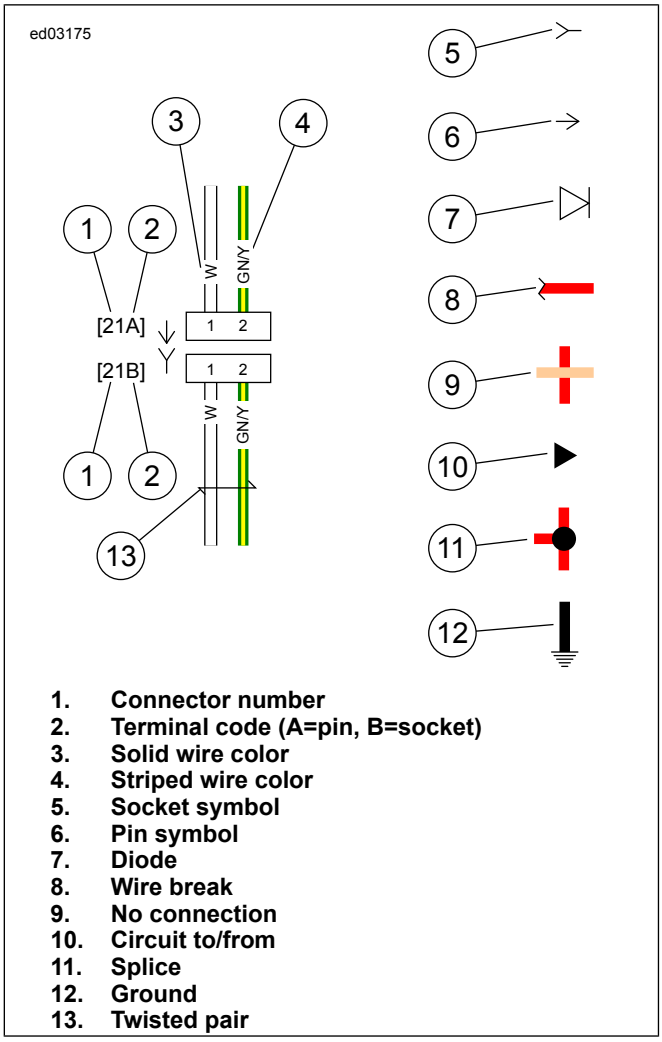
Ground: Grounds can be classified as either clean or dirty grounds. Clean grounds are identified by a (BK/GN) wire and are normally used for sensors or modules.

NOTE

Clean grounds usually do not have electric motors, coils or anything that may cause electrical interference on the ground circuit.

Dirty grounds are identified by a (BK) wire and are used for components that are not as sensitive to electrical interference.

Twisted pair: This symbol indicates that the two wires are twisted together in the harness. This minimizes the circuit's electromagnetic interference from external sources. If repairs are necessary to these wires, they should remain as twisted wires.

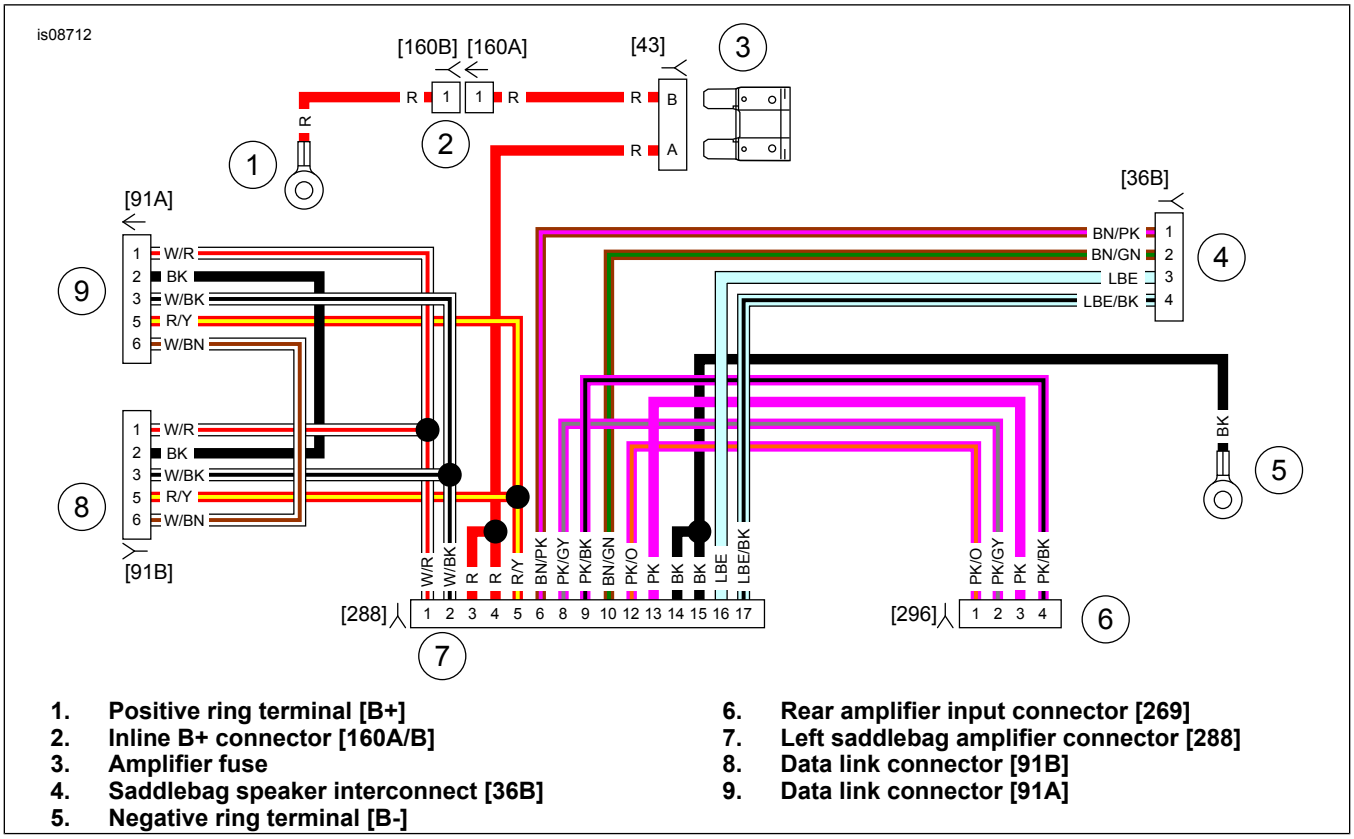


1. **Connector number**
2. **Terminal code (A=pin, B=socket)**
3. **Solid wire color**
4. **Striped wire color**
5. **Socket symbol**
6. **Pin symbol**
7. **Diode**
8. **Wire break**
9. **No connection**
10. **Circuit to/from**
11. **Splice**
12. **Ground**
13. **Twisted pair**

Figure 18. Connector/Wiring Diagram Symbols

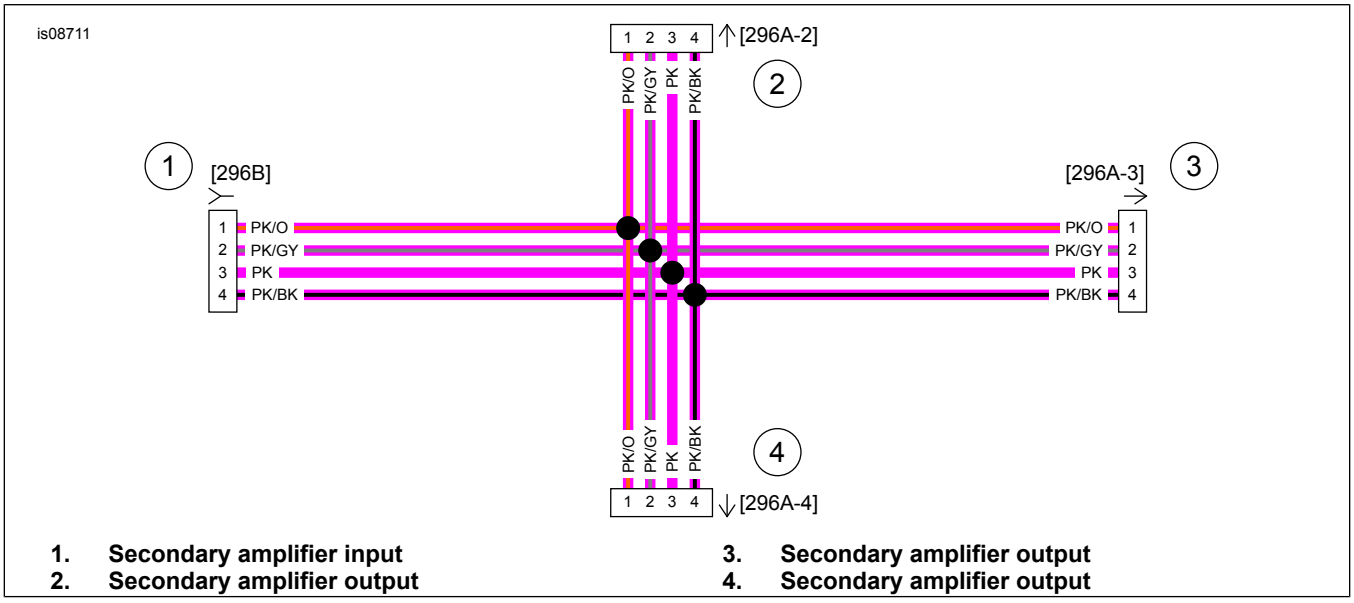
Table 2. Wire Color Codes

ALPHA CODE	WIRE COLOR
BE	Blue
BK	Black
BN	Brown
GN	Green
GY	Gray
LBE	Light Blue
LGN	Light Green
O	Orange
PK	Pink
R	Red
TN	Tan
V	Violet
W	White
Y	Yellow



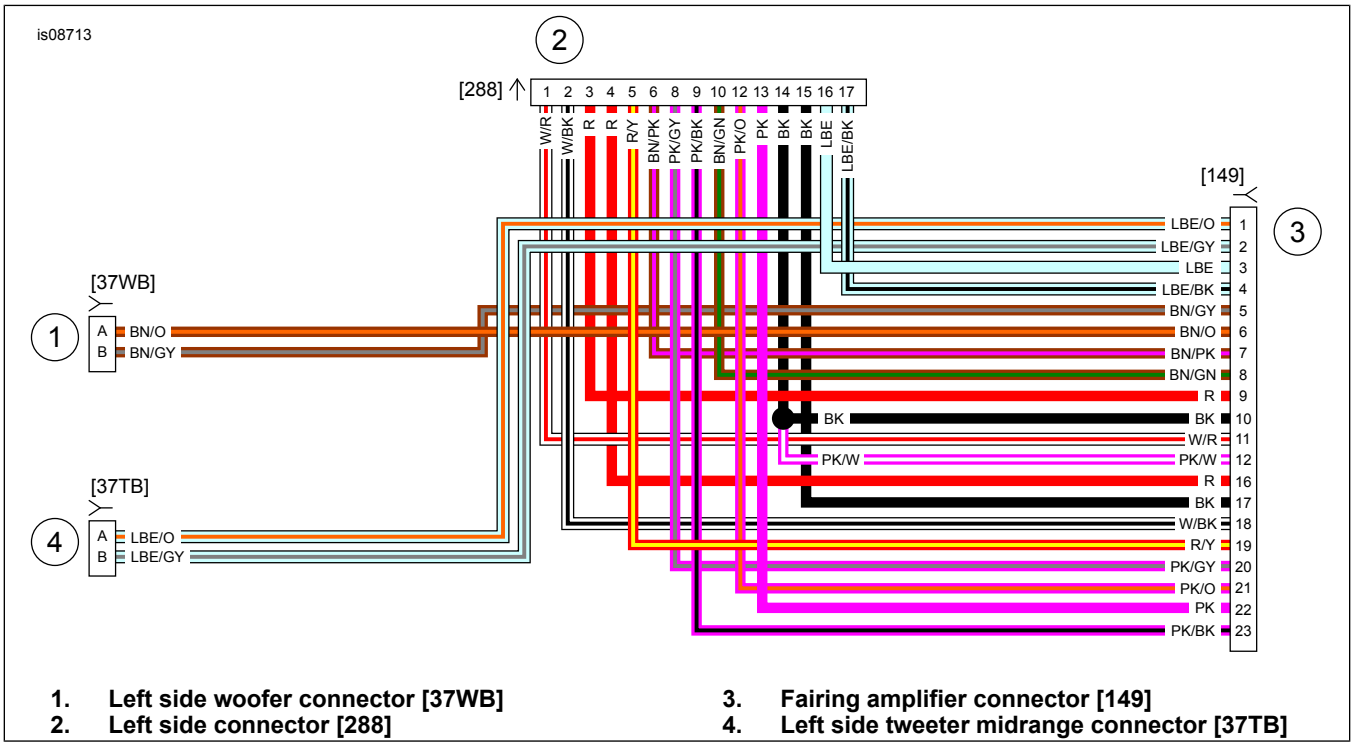
1. **Positive ring terminal [B+]**
2. **Inline B+ connector [160A/B]**
3. **Amplifier fuse**
4. **Saddlebag speaker interconnect [36B]**
5. **Negative ring terminal [B-]**
6. **Rear amplifier input connector [269]**
7. **Left saddlebag amplifier connector [288]**
8. **Data link connector [91B]**
9. **Data link connector [91A]**

Figure 19. Saddlebag Speaker Wire Harness



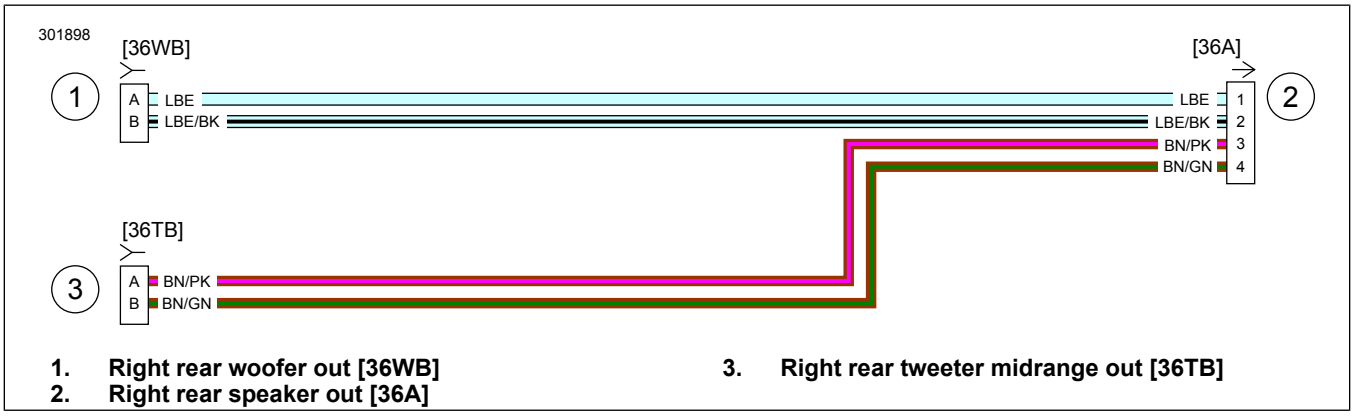
1. **Secondary amplifier input**
2. **Secondary amplifier output**
3. **Secondary amplifier output**
4. **Secondary amplifier output**

Figure 20. Audio Input Harness



1. Left side woofer connector [37WB]
2. Left side connector [288]
3. Fairing amplifier connector [149]
4. Left side tweeter midrange connector [37TB]

Figure 21. Left side saddlebag speaker Wire Harness



1. Right rear woofer out [36WB]
2. Right rear speaker out [36A]
3. Right rear tweeter midrange out [36TB]

Figure 22. Rear Speaker Jumper Wire Harness