



INSTRUCTIONS

J06051

2017-06-06



AMPLIFIER INSTALLATION KIT FOR BOOM! AUDIO STAGE II FAIRING LOWER SPEAKERS

GENERAL

Dealer installation is recommended.

Kit Number

76000586

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

Amplifier Kit (part number 76000277B)

FLHXSE models require separate purchase of installation kit (part number 76000734) and audio input adapter (part number 69201477).

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 refers to 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 14 and Table 1.

PREPARATION

⚠ WARNING

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

1. See the service manual. Remove main fuse.

⚠ WARNING

When servicing the fuel system, do not smoke or allow open flame or sparks in the vicinity. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. (00330a)

2. 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 fuel tank console. Remove fuel tank.



- e. See Figure 1. Remove the wire trough cover.
- f. Remove right side cover.
- g. Remove left side cover.
- h. Remove the two bolts attaching the electrical caddy under the left side cover.



Figure 1. Wire Trough

AMPLIFIER INSTALLATION

1. Remove all items from the right saddlebag. Remove saddlebag.

NOTE

To minimize damage to paint place masking tape on area that will be cut and drilled. Also, use a step drill to make larger holes.

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

Cut openings for connector [289-1]:

NOTE

FLHXSE models require template (part number 76000733) included in kit (part number 76000734).

1. See Figure 2 Use the template (1) to cut the openings in the saddlebag for the **fairing lower** amplifier 18-way flanged connector [289-1].
 - a. If saddlebag lid speakers are present from a previous installation, right side speaker wires could be in the connector cutout location. Remove the wire and grommet.
 - b. Place the template on the saddlebag. Align the grommet (2) and latch fastener (3) openings. Use tape (10) to secure the template in place.
 - c. Place masking tape on the opposite side of the template to reduce possible paint damage to the outside of the saddlebag.
 - d. Trace the cut outline (4) onto the saddlebag. Trace the cut outline (7) onto the saddlebag.
 - e. Drill two 9/32 in holes (5) for the connector flange mounting locations. Drill five 3/16 in holes (6) for the connector flange mounting locations.
 - f. Remove template. Use an air saw or similar tool to cutout the connector cutout (4). Verify size of opening (4) with the 18-way flanged connector [289-1A] on the saddlebag harness (see Figure 14, Item 7). Shape the hole as seen on the template if necessary for proper fit.

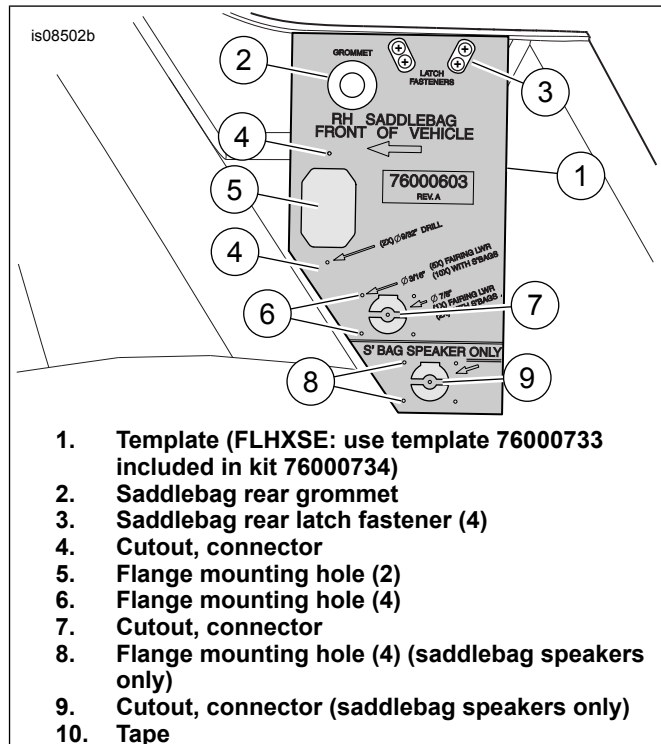


Figure 2. Right Saddlebag Cutout and Drilling For Stage II Harness Installation

Cut openings for four-way connector [289-2]:

See Figure 2, Items 6 and 7.

NOTE

DO NOT drill four-way connector openings (Items 8 and 9) unless using saddlebag speakers. Follow instructions in saddlebag speaker installation kit.

1. Use the outlines made earlier and the center pilot hole to drill a hole for the **upper** four-way flanged connector [289-2].
 - a. Use a step drill to make a 7/8 in hole for connector cutout (7).
 - b. Use a file to make the flats at the top of the hole.
 - c. Test-fit the connector [289-2]. Shape the hole as seen on the template if necessary for proper fit.

ALL applications:

1. See Figure 3. Remove the metal plate (2) from the four-way bulkhead connector (1) on the saddlebag harness. Insert the connector through the saddlebag hole from the inside.
2. 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*
 Torque: 4–4.5 N·m (35–40 **in-lbs**) *Hex socket head screw*

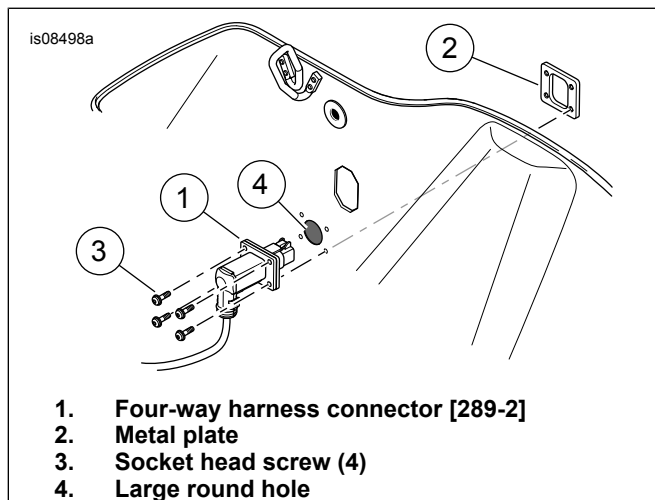


Figure 3. Four-Way Harness Connector Installation

3. See Figure 4. Insert the pin side 18-way bulkhead connector (3) from the saddlebag harness through the saddlebag hole 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*
 Torque: 4–4.5 N·m (35–40 **in-lbs**) *M5 Hex socket head screw*
4. Snap the harness cover (1) over the 18-way connector. Secure with a cable strap (2) (see Harness Cover). The harness routes inside the saddlebag after the amplifier is mounted.

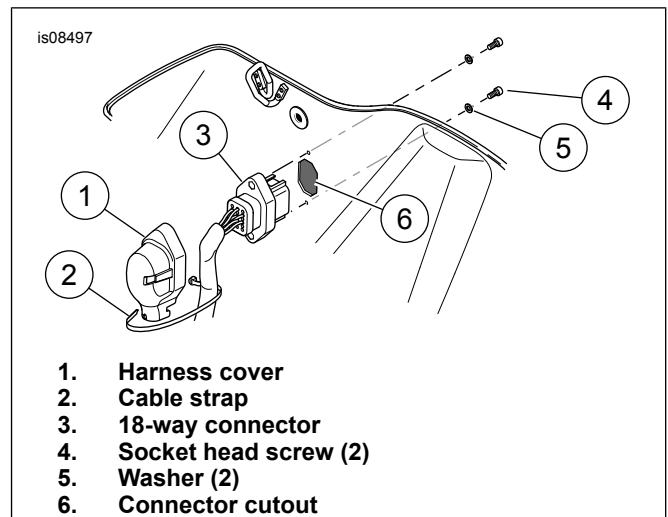


Figure 4. 18-Way Connector and Cover Installation

5. See Figure 5. 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.

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

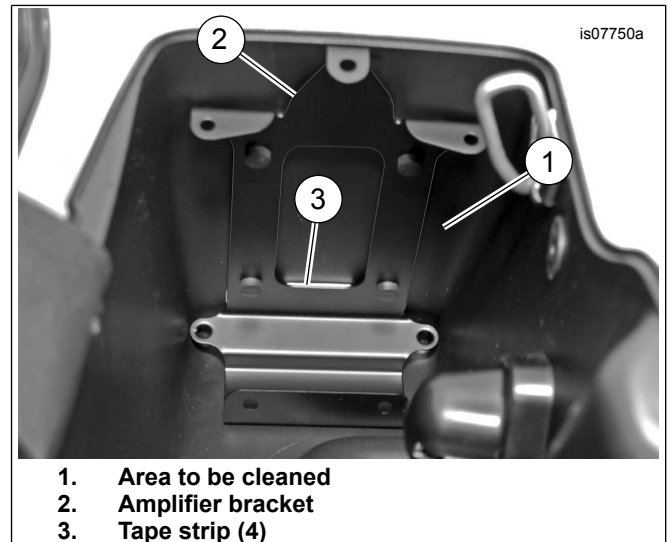


Figure 5. Amplifier Bracket Installation

7. See Figure 6. Install the amplifier pin studs in the amplifier. Tighten.

Torque: 9.4–12.2 N·m (7–9 ft-lbs) *Hex nut*
8. Install the grommets (3).

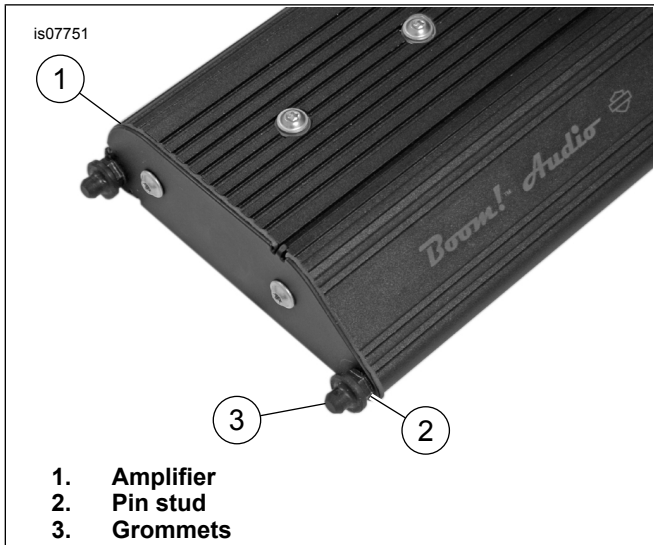


Figure 6. Amplifier Pin Studs

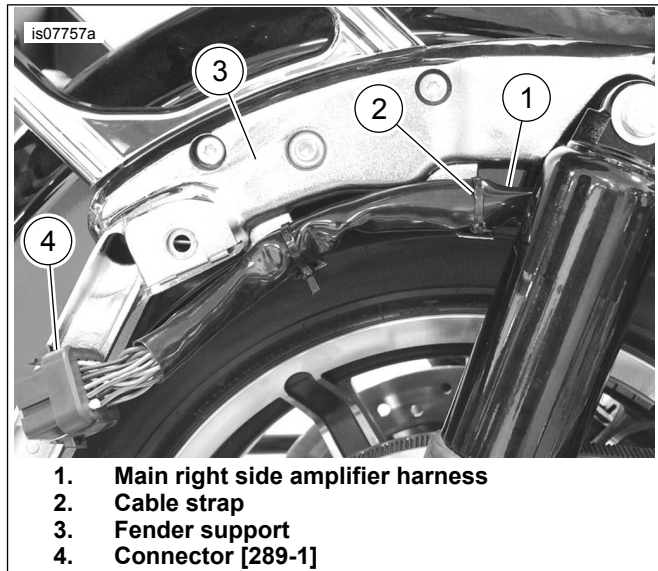


Figure 7. Main Amplifier Harness Routing

9. Position the amplifier with the grommets in the holes in the bottom of the amplifier bracket. Slide the top into the bracket. Install the 2 hex socket button head screws. Tighten.

Torque: 9.4–12.2 N·m (6.9–9.0 ft-lbs)

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 [289-1B], 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 four-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 7. Route the vehicle-side amplifier harness (1) in the saddlebag mounting area, beginning with the large 18-way amplifier socket connector [289-1A], moving forward on the vehicle. Route the harness following the saddlebag support (3).

2. Route the harness:
 - a. behind and underneath the frame,
 - b. into the 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 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 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 to the front of the vehicle.

5. Locate the amplifier input (rear output channel of the radio).
 - **All except CVO:** use connector [162A] on vehicle (see service manual).
 - **FLHX/FLTRX:** 4-way Molex pin side under fairing (may be connected to jumper 69200489 in prior installation).
 - **FLHTCU/K and FLTRU:** 16-way Molex behind passenger seat (may be connected to adapter 69200714 in prior installation).
 - **All CVO except FLHXSE:** use connector [296A] under seat.
 - **FLHXSE:** install 69201477 between vehicle connector [298A/B]. The 4-way side of this connector adds [296A].
6. **Models with one Stage II amplifier in rear:**

- **All except CVO:** connect 4-way pin side [162A] of vehicle to [296B] socket side of amplifier harness. See Figure 13, item 7 or 8.

FLHX/FLTRX: connect via jumper harness 69200489.

FLHTCU/K and FLTRU: connect via adapter harness 69200714.

- **All CVO except FLHXSE:** connect 4-way pin side [296A] of vehicle to [296B] socket side of amplifier harness. See Figure 13 (except as noted below).
 - **FLHXSE:** connect [296B] of amplifier harness to 4-way of 69201477.
7. **Models with two or more Stage II amplifiers in rear:** Install audio input "Y" (69201092) between 4-way socket side [296B] of amplifier harness and 4-way pin side connector as defined above.
 8. Locate the gray six-way Data Link Connector (DLC) [91A] in the electrical caddy.
 - a. Cut the tether attaching the weather cap around the harness. 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. On multiple amplifier installations, connect DLCs to each other in series.
 - d. Route gray six-way pin connector [91A] from the amplifier harness into the electrical caddy.
 - e. Insert the weather cap removed in Step 6a 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.*
 - *If more than two amplifiers are installed on the vehicle, **ONE** Battery+ Three-Way Y-Connector (available separately) is required.*
9. Route the battery terminal branch to the battery terminals, but **DO NOT** connect the battery cables now.
 10. Route the long harness branch forward, into the wire trough, to the left side. At the front of the trough, route the wires down the left side of the frame to the fairing lowers:
 - Connectors [36RT] and [36RW] to the right lower fairing speaker enclosure.
 - Connectors [37LT] and [37LW] to the left lower fairing speaker enclosure.
 11. Install one grommet (14) over each amplifier harness speaker wire set.
 12. Follow instructions in the Boom! Audio Fairing Lower Speaker Kit for wiring hole location, drilling and completing the installation.

SADDLEBAG WIRING

1. See Figure 10. Plug in connector (1) [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.

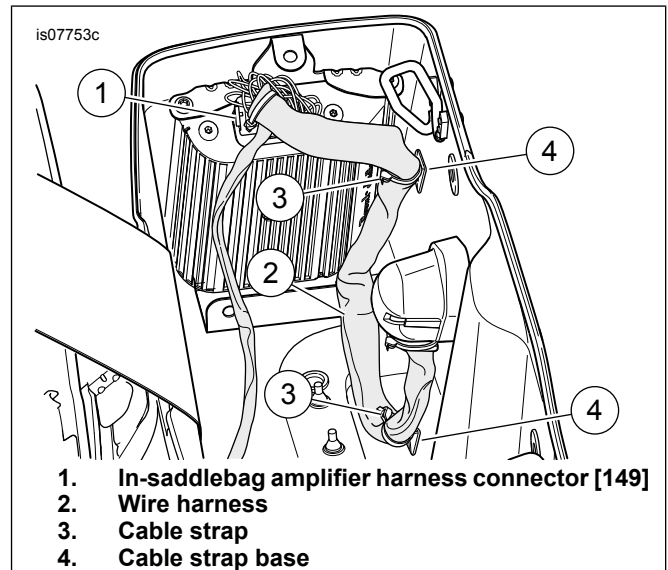


Figure 8. Inner Harness Routing

2. **Saddlebag liners (if present):** Trim saddlebag liners. Install saddlebag liners.
3. See Figure 8. Install the amplifier cover on the bracket. Secure with three clips.

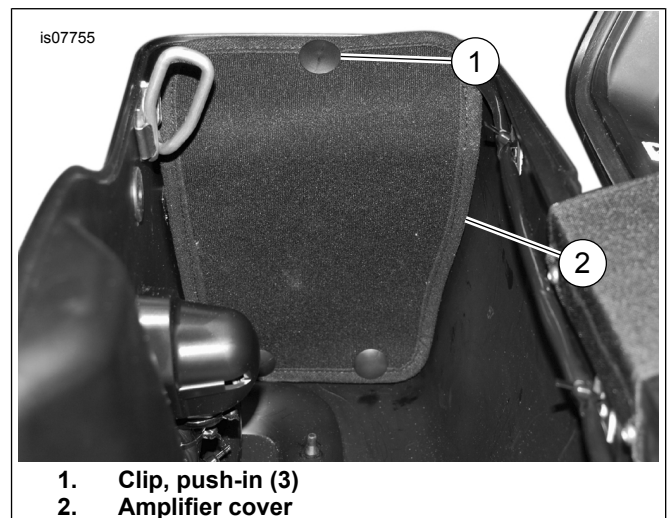


Figure 9. Amplifier Cover

4. Install the saddlebags. Plug in all saddlebag connectors.
5. See Figure 14. Attach the **new** saddlebag capacity label (12) over the existing label in the right saddlebag. Note the revised load limit for the right saddlebag due to the amplifier installation.

6. See the service manual. Install the wire trough cover.
7. Install the fuel tank per the service manual. Install the fuel tank console.
8. 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)
9. Install fuse.
10. Install left side cover.
11. Install right side cover.

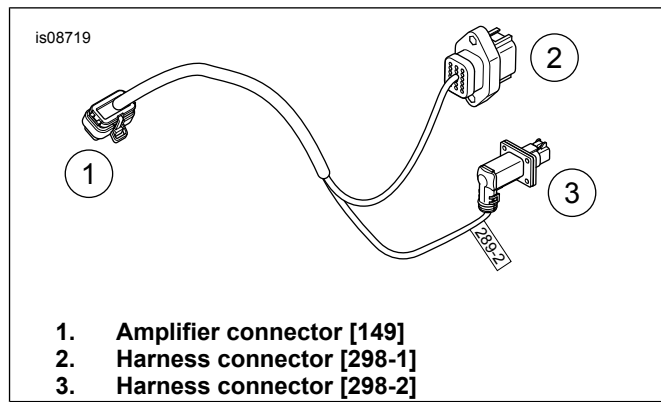


Figure 10. Wire Harness, Amplifier to Lower Speaker Connector Installation

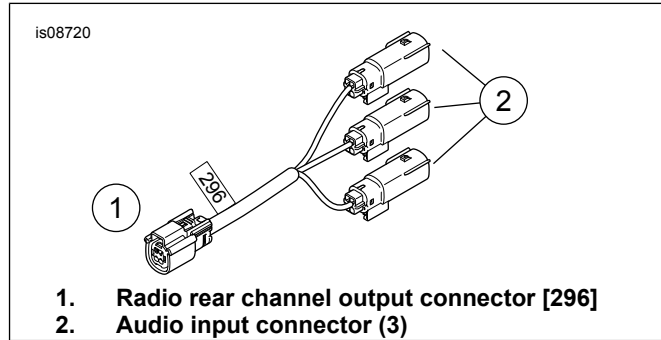
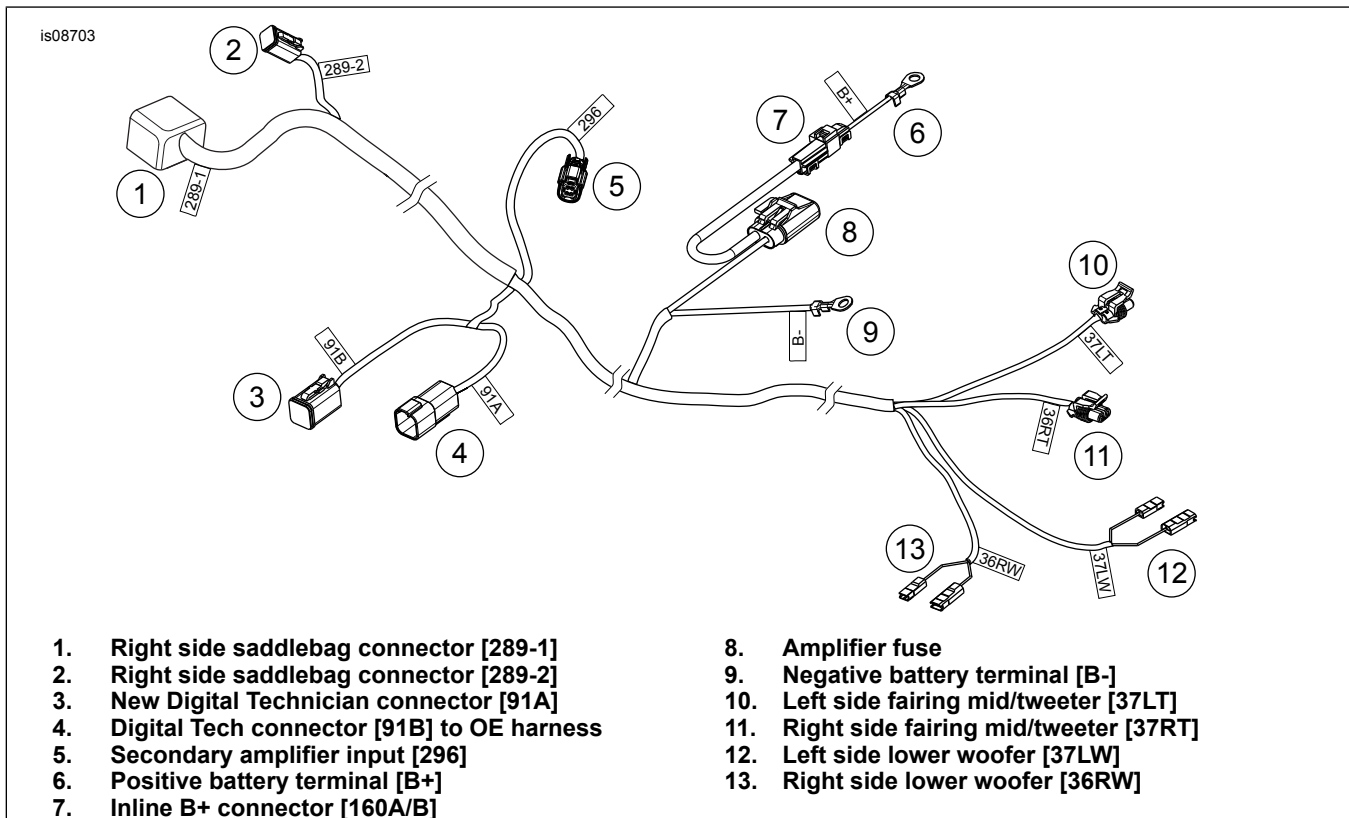
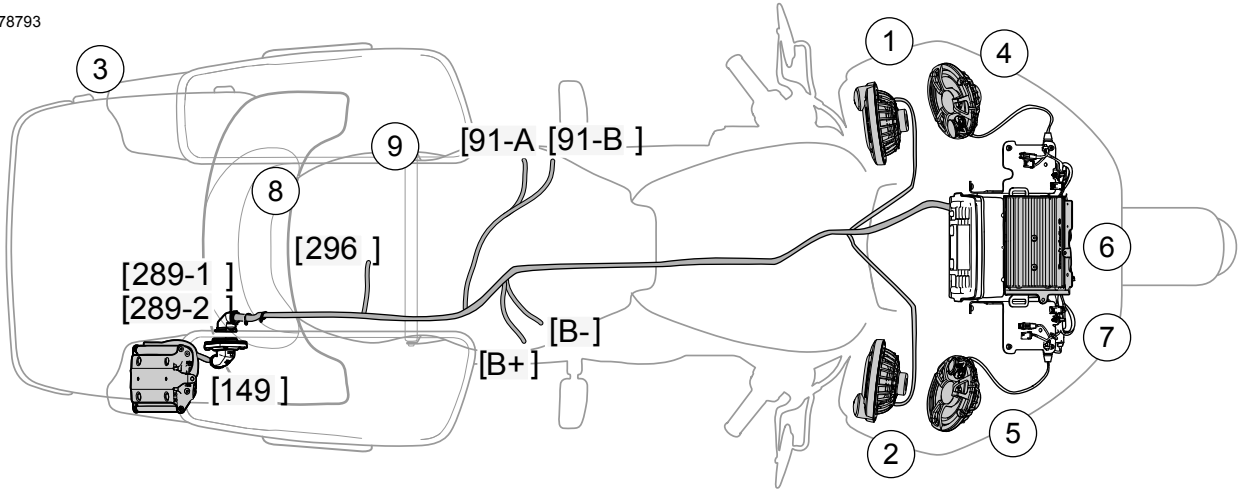


Figure 11. Audio Input and Output Wire Harness



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|--|--|
| <ol style="list-style-type: none"> 1. Right side saddlebag connector [289-1] 2. Right side saddlebag connector [289-2] 3. New Digital Technician connector [91A] 4. Digital Tech connector [91B] to OE harness 5. Secondary amplifier input [296] 6. Positive battery terminal [B+] 7. Inline B+ connector [160A/B] | <ol style="list-style-type: none"> 8. Amplifier fuse 9. Negative battery terminal [B-] 10. Left side fairing mid/tweeter [37LT] 11. Right side fairing mid/tweeter [37RT] 12. Left side lower woofer [37LW] 13. Right side lower woofer [36RW] |
|--|--|

Figure 12. Wire Harness



- | | |
|---|--|
| <ul style="list-style-type: none"> 1. Left lower speaker 2. Right lower speaker 3. Amplifier, right saddlebag 4. Left fairing speaker (installed earlier) 5. Right fairing speaker (installed earlier) | <ul style="list-style-type: none"> 6. Amplifier, fairing (installed earlier) 7. Connector [162] FLHX/FLTRX (use with 69200489 jumper) 8. Connector [162] FLHTCU/FLHTK/FLTRU (use with 69200714) 9. FLHXSE only: install 69201477 between [298A] and [298B] |
|---|--|

Figure 13. Lower Speakers, Right Saddlebag Amplifier and Approximate Connector Locations

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 B+ 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 B- 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.

SERVICE PARTS

is08721

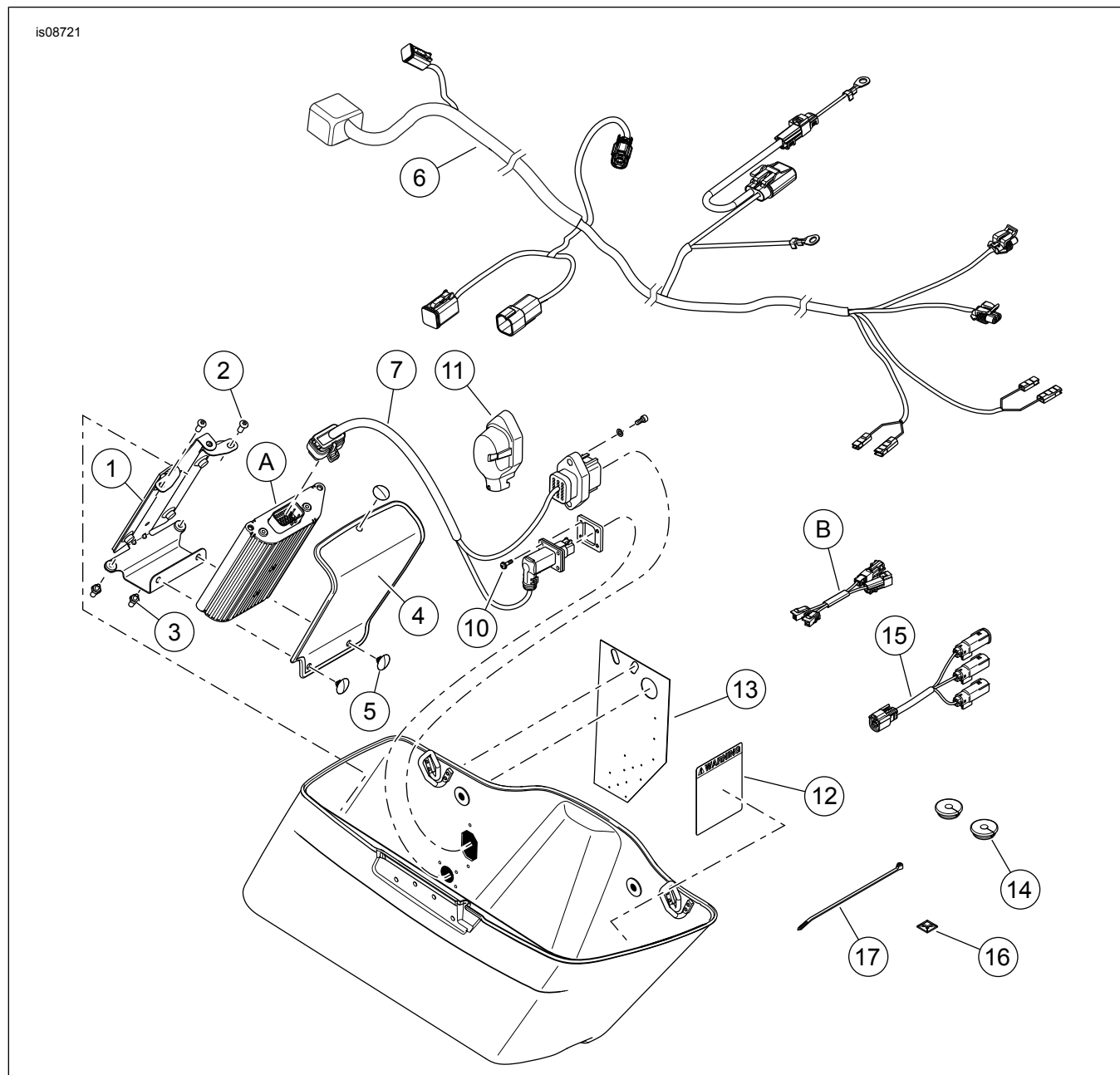


Figure 14. Service Parts, Amplifier Installation Kit For Boom! Audio Fairing Lower Speakers

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 5/8 in, 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 fairing lower speaker	69201090
7	Wire harness, saddlebag side, Boom! Audio Stage II fairing lower speaker	69201091
8	Screw, hex socket head, M5-0.8 x 12 mm long (2)	3798M
9	Flat washer, M5 (2)	6454
10	Screw, pan head, TORX, #8-32 x 5/8 in, stainless, with lock patch (4)	10200065
11	Cover, saddlebag amplifier connector	69200586

Table 1. Service Parts

Item	Description (Quantity)	Part Number
12	Saddlebag capacity label	14001047
13	Drill template, saddlebag amplifier connector (right)	76000603
14	Grommet, round, 1.0 in OD, 3/8 ID (2)	12100071
15	Wire harness, audio input (Three-way Y connector)	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. 76000277B, purchase separately)	
B	Wire harness, accessory adapter (Battery+ Three-way Y connector, 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.

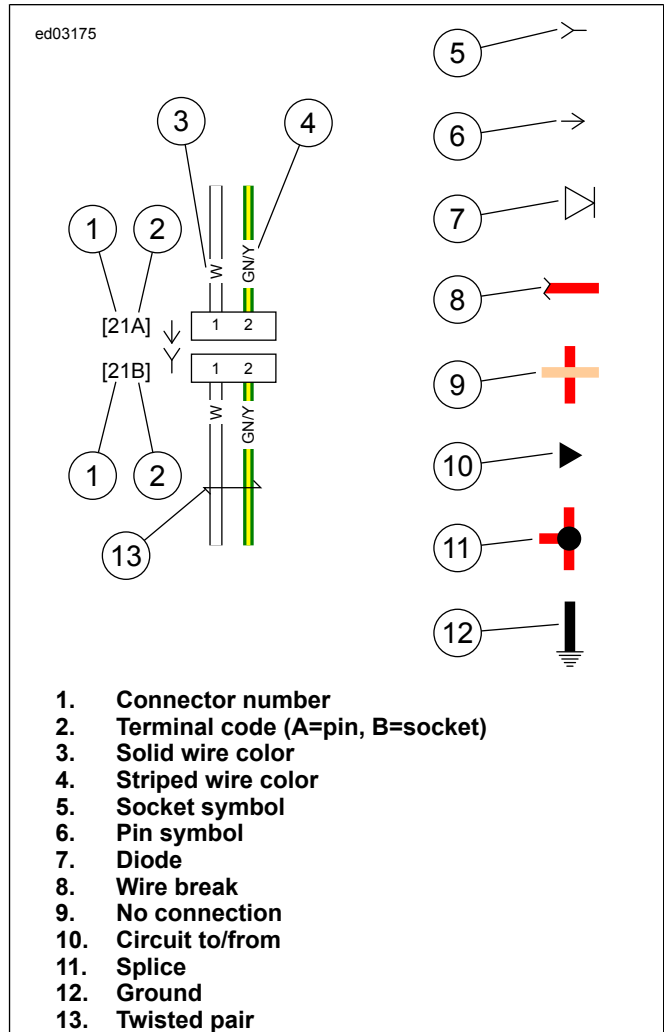


Figure 15. Connector/Wiring Diagram Symbols

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

Table 2. Wire Color Codes

ALPHA CODE	WIRE COLOR
TN	Tan
V	Violet

Table 2. Wire Color Codes

ALPHA CODE	WIRE COLOR
W	White
Y	Yellow

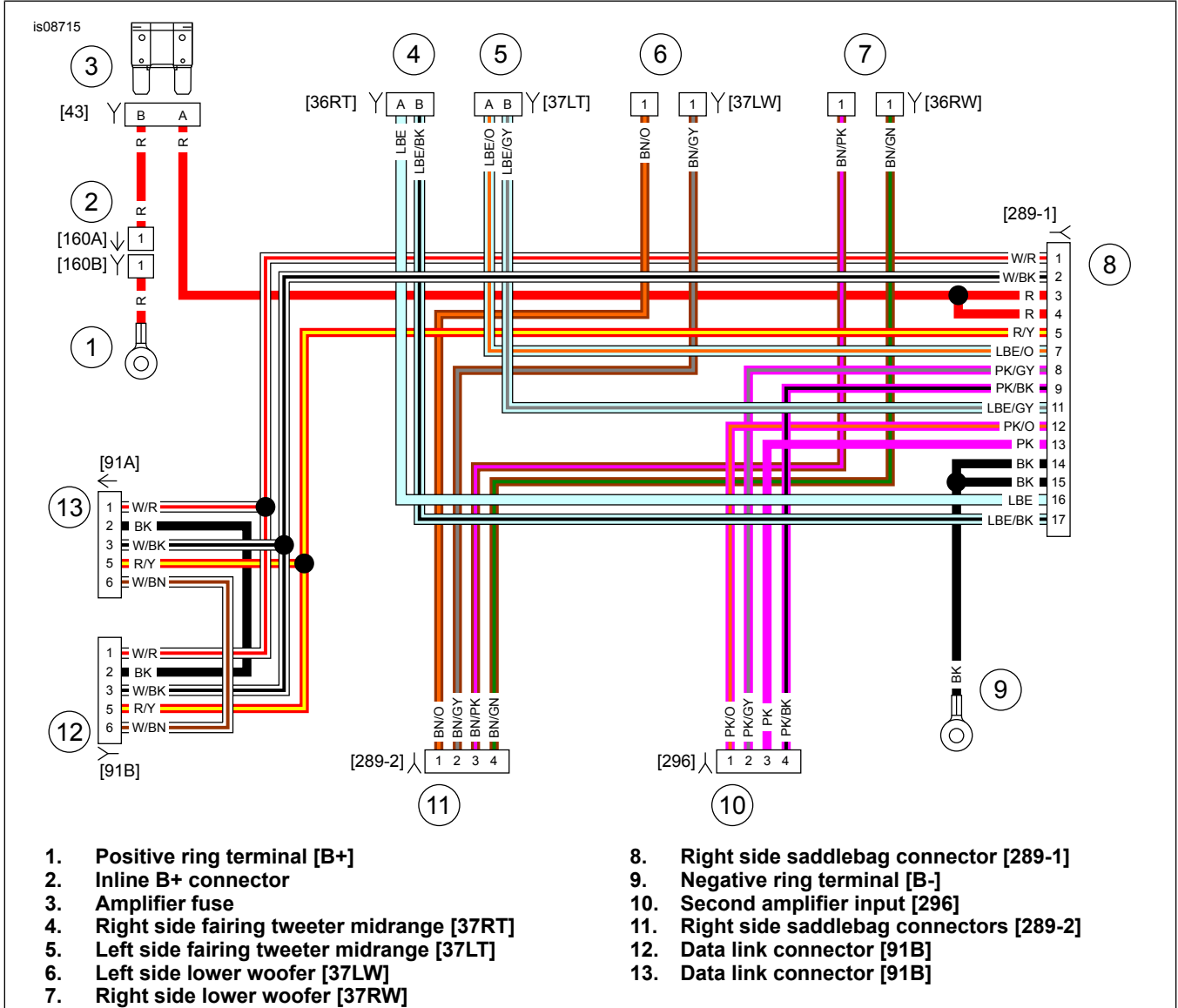
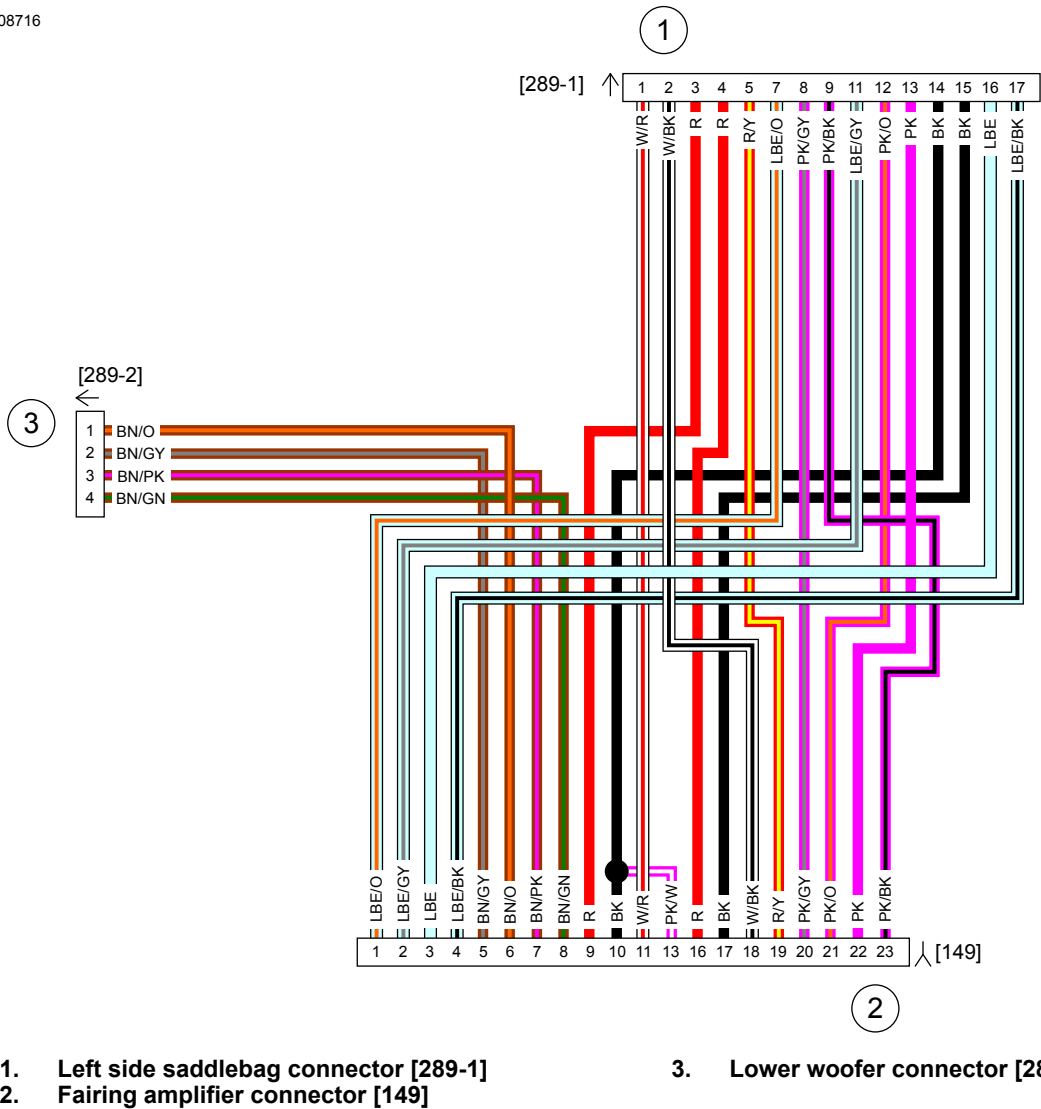
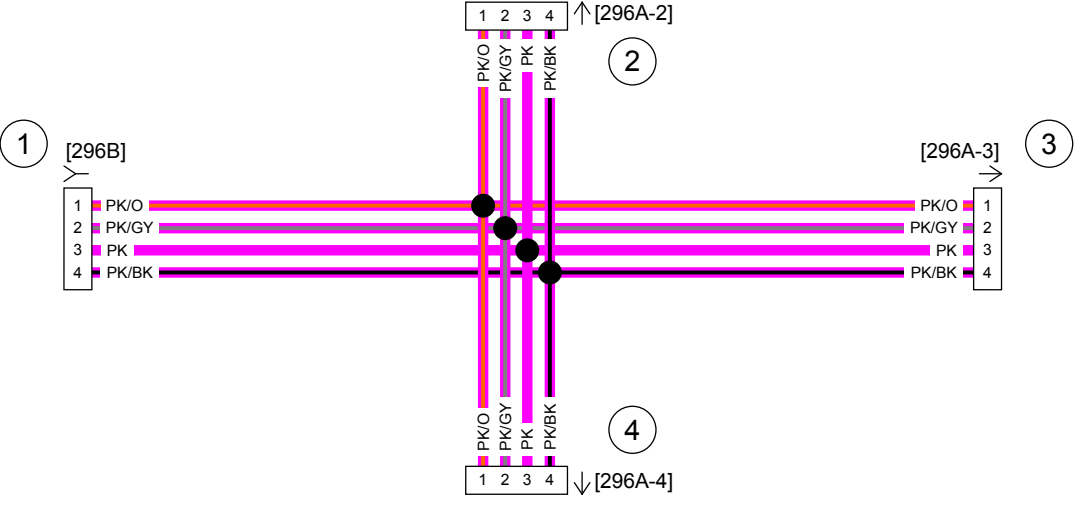


Figure 16. Main Amplifier Wiring Schematic



- 1. Left side saddlebag connector [289-1]
- 2. Fairing amplifier connector [149]
- 3. Lower woofer connector [289-2]

Figure 17. Lower Speaker Wire Harness



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

Figure 18. Audio Input Harness (Three-way Y connector)