



INSTRUCTIONS

J02247

2007-08-07



SOFTAIL BILLET FORWARD CONTROL KIT

GENERAL

Kit Number

33907-01

Models

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

NOTE

This Forward Control Kit will fit with Harley-Davidson Tunable 2-into-1 Exhaust System (Part Number 80093-03).

This kit will **not** fit with Harley-Davidson 16 Gauge Double Barrel Exhaust System (Part Number 64901-02).

Additional Parts Required

NOTE

This kit is designed to be used with Airfoil Peg Kit (Part Number 50346-03) or Rubber Peg Kit (Part Number 50347-03), sold separately.

FXSTD (Deuce) Models require separate purchase of Spacer Kit (Part Number 42802-03) for correct installation.

▲ 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 your model motorcycle is required for this installation and is available from a Harley-Davidson Dealer.

Loctite® 243 Threadlocker and Sealant (Part Number 99642-97) and is available from a Harley-Davidson Dealer.

Loctite® 565 Thread Sealant (Part Number 99818-97) and is available from a Harley-Davidson Dealer.

Kit Contents

See Figure 24, Table 1 and Figure 25 and Table 2.

INSTALLATION

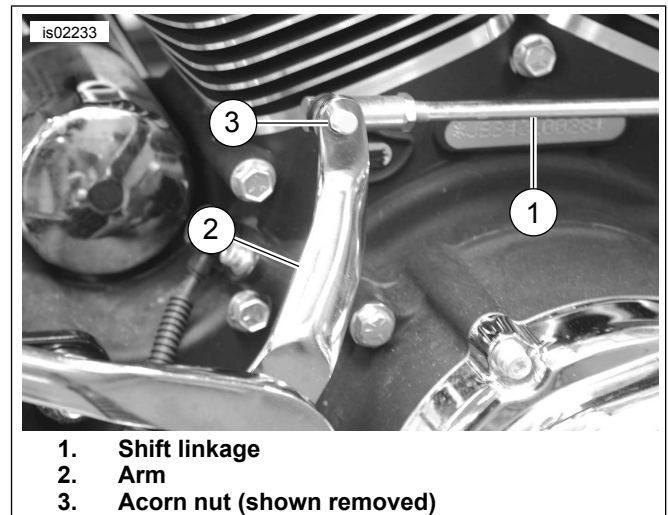
NOTE

Due to the large amount of items in this kit, begin installation by separating and laying out the kit components according to

the Brake and Shift Lever sides as shown in Figure 24 and Figure 25.

Remove Shifter, Jiffy Stand and Footrest Support Bracket Assembly

1. Place motorcycle in stable frame stand so that weight can be taken off of Jiffy stand.

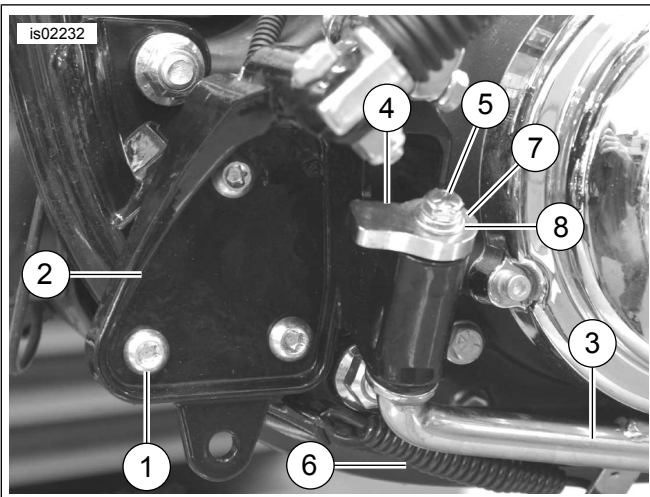


1. Shift linkage
2. Arm
3. Acorn nut (shown removed)

Figure 1. Remove Front Shift Linkage

2. See Figure 1. Remove acorn nut (3) securing front of shift linkage (1) to linkage arm (2) and remove linkage from arm. Save acorn nut for installation.
3. See Figure 2. Remove bolt (5), lockwasher (7), washer (8) and leg stop (4) and remove jiffy stand from support bracket. Save jiffy stand and mounting hardware for installation.





1. Screw (3)
2. Support bracket
3. Jiffy stand
4. Leg stop
5. Jiffy stand bolt
6. Spring
7. Lockwasher
8. Washer

Figure 2. Remove Footrest Support Bracket Hardware

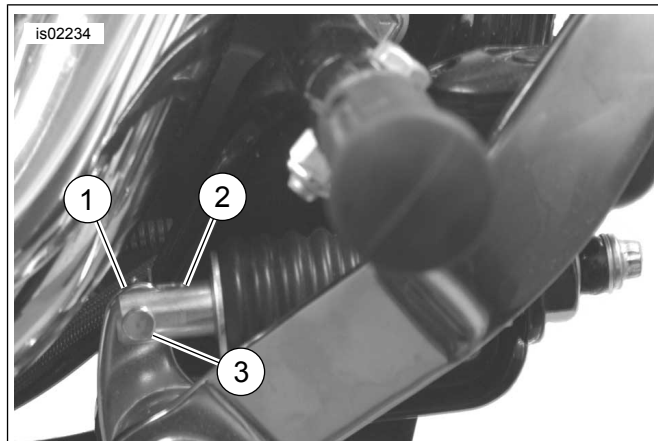
4. Remove the three footpeg support bracket screws (1) from bracket (2). Discard screws.
5. Detach spring (6) from jiffy stand (3) and support bracket (2). Jiffy stand (3), shifter and footrest components will drop as an assembly.

Remove Rear Brake/Footrest Support Assembly

NOTE

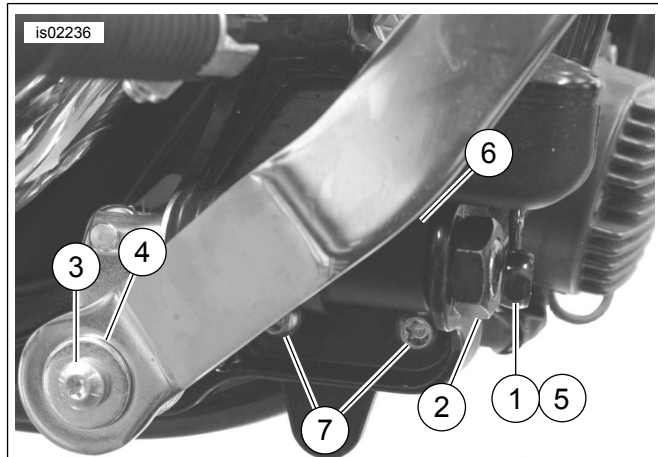
It is not necessary to remove the exhaust system to perform this procedure.

1. See Figure 3. Remove cotter pin and washer (1) from master cylinder push rod clevis pin (3). Discard cotter pin and washer.
2. Gently tap clevis pin outward and remove it from the push rod (2) clevis. Discard clevis pin.



1. Cotter pin and washer
2. Master cylinder push rod
3. Clevis pin

Figure 3. Remove Master Cylinder Hardware



1. Banjo bolt (shown removed)
2. Jam nut
3. Brake pedal bolt
4. Chrome flat washer
5. Brake line
6. Master cylinder
7. Support bracket screws (1 screw hidden)

Figure 4. Remove Brake Pedal/Footrest Support Bracket Hardware

⚠ CAUTION

Direct contact of DOT 5 brake fluid with eyes can cause eye irritation, swelling, and redness. Avoid eye contact. In case of eye contact flush with large amounts of water and get medical attention. Swallowing large amounts of DOT 5 brake fluid can cause digestive discomfort. If swallowed, obtain medical attention. Use in well ventilated area. KEEP OUT OF REACH OF CHILDREN. (00144b)

3. See Figure 4. At the front of the rear master cylinder (6), remove the banjo bolt (1) and washers securing the brake line (5) to the master cylinder (6) and remove brake line. Discard bolt and washers.
4. Remove the jam nut (2) securing the master cylinder to the brake pedal/footrest support bracket assembly and remove the master cylinder assembly (6). Discard nut and master cylinder assembly.

- Remove the brake pedal bolt (3) and large chrome flat washer (4) from brake pedal assembly. Discard bolt and flat washer.
- Remove the three bracket screws (7) securing the brake pedal/footrest support bracket to the frame. Discard brake pedal, footrest support bracket and all bracket hardware.

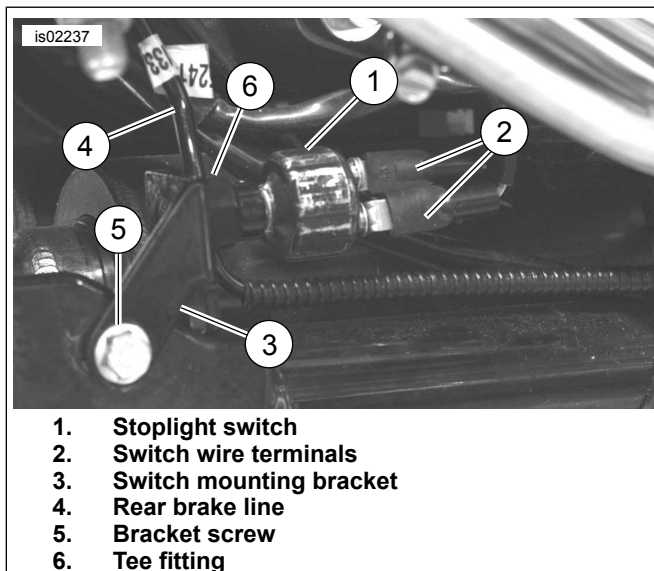


Figure 5. Remove Stoplight Switch and Rear Brake Line

- See Figure 5. Follow the brake line (4) back toward the rear of the bike to the brake stoplight switch (1). Remove the two wire terminals (2) from the switch.

NOTE

When performing Steps 8 and 9, make careful notes of brake line routing. The new line must be routed identically.

- Remove the screw (5) securing the stoplight switch bracket (3) to the frame and remove bracket with tee fitting (6) and switch. Unthread and save stoplight switch for installation. Discard screw and mounting bracket.
- Continue back to the rear brake caliper. Remove the brake line banjo bolt and washers securing the brake line to the brake caliper. Discard brake line (4) and washers. Save banjo bolt for installation.

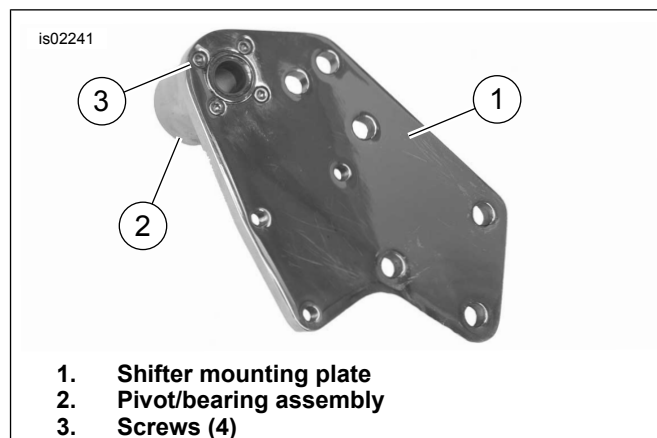


Figure 6. Install Pivot/Bearing Assembly to Shifter Mounting Plate

Assemble Shifter Side Components

- See Figure 24. Obtain the shifter mounting plate (6), pivot/bearing (5) and four screws (1) from kit. See Figure 6. Orient the pivot/bearing assembly (2) onto the shifter mounting plate (1). Apply a small amount of Loctite 243 (blue) to screw threads (3) and install and tighten screws to 1.6 N·m (14 in-lbs).

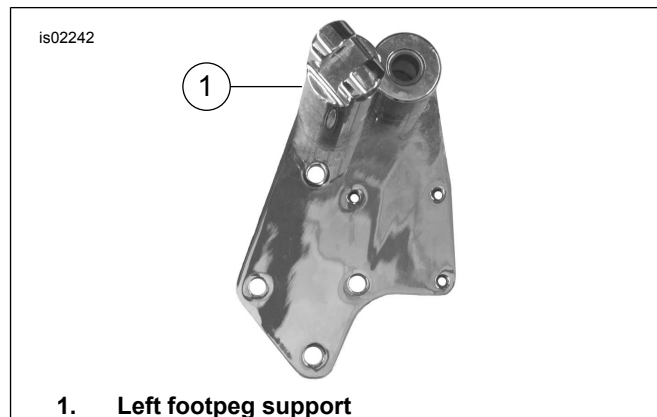


Figure 7. Install Left Footpeg Support to Shifter Mounting Plate

- See Figure 24. Obtain the left footpeg support (8) and two screws (13) from kit. See Figure 7. Apply a small amount of Loctite 243 (blue) to screw threads and install the footpeg support to the shifter mounting plate. Tighten screws to 33.9–40.7 N·m (25–30 in-lbs).
- See Figure 24. Obtain the jiffy stand bracket assembly (9), three screws (11), three lockwashers (10) and jiffy stand with hardware saved from earlier removal step.

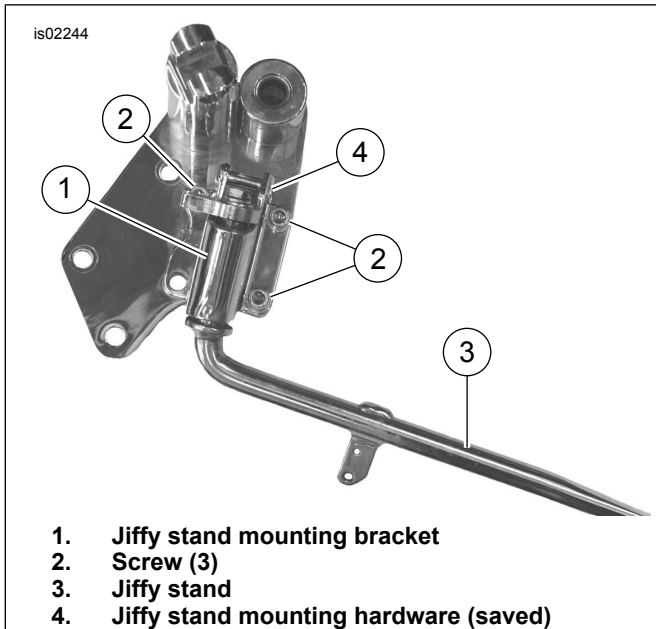


Figure 8. Install Jiffy Stand Mounting Bracket and Stand to Shifter Mounting Plate

4. See Figure 8. Apply a small amount of Loctite 243 (blue) to screw threads and using lockwashers, install jiffy stand bracket assembly to shifter mounting plate. Tighten screws to 26.3 N·m (19 ft-lbs).
5. Install jiffy stand to jiffy stand bracket using hardware saved during removal Step 5. Tighten jiffy stand mounting bolt to 16.3–20.3 N·m (144–180 in-lbs).

Install Shifter Side Components

1. See Figure 24. Obtain three screws (13) from kit and apply a small amount of Loctite 243 (blue) to threads. See Figure 9. Install shifter mounting plate assembly to the frame. Tighten screws to 33.9–40.7 N·m (25–30 ft-lbs).

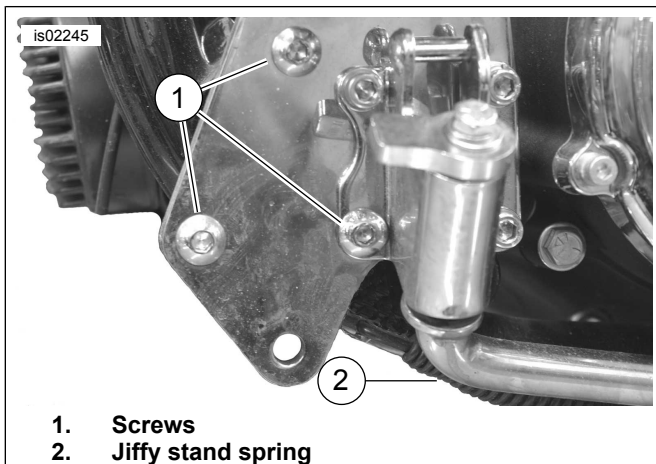


Figure 9. Install the Shifter Mounting Plate Assembly and Jiffy Stand Spring

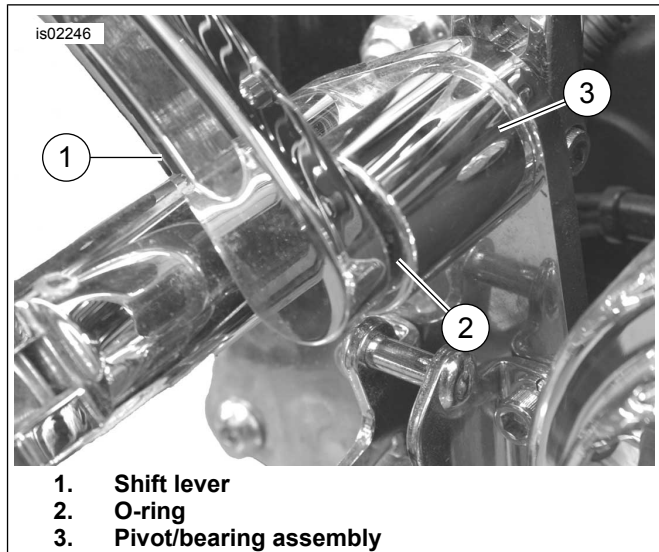


Figure 10. Install Shift Lever

2. Obtain jiffy stand spring saved from removal Step 4 and install jiffy stand to frame mount opening.
3. See Figure 24. Obtain the shift lever (4), and one O-ring (3) from kit. See Figure 10. Install O-ring (2) onto the shaft of the shift lever (1). Insert the shaft into the pivot/bearing assembly (3) and slide in until fully seated.
4. See Figure 24. Obtain the second O-ring (3), non-metallic washer (2), shift link (7) and cap screw (12) from kit. Slide the second O-ring onto the inboard side of the shift lever shaft.

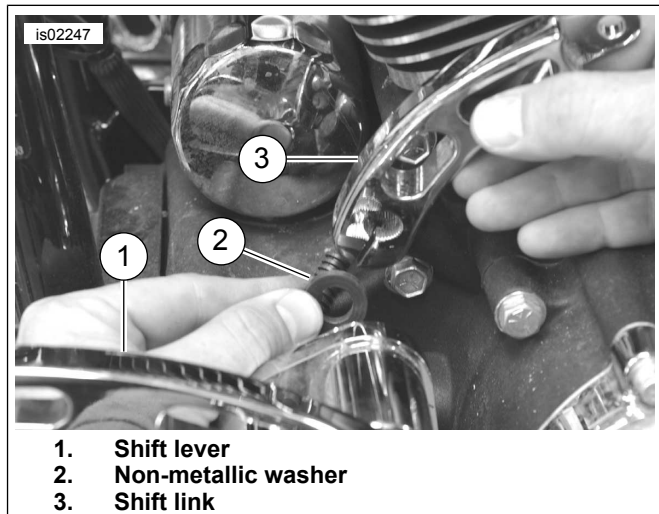
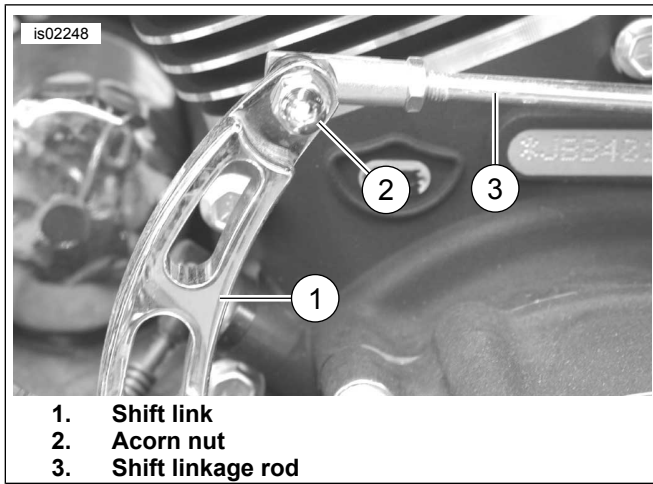


Figure 11. Align and Install Shift Link

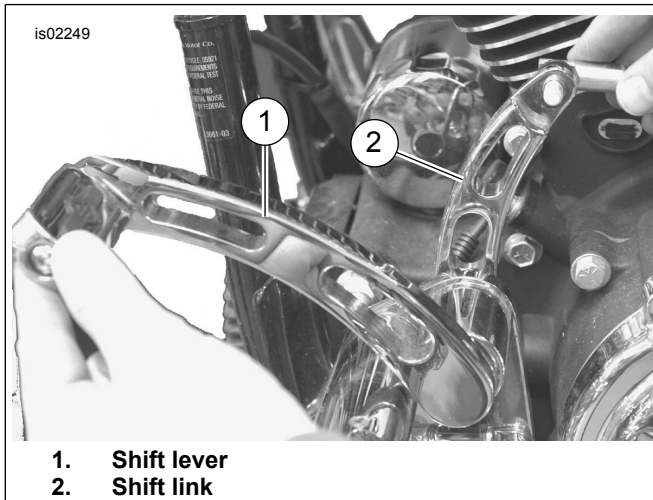
5. See Figure 11. Slide the non-metallic washer (2) onto shifter shaft. Orient the shift link (3) angled relative to the shift lever as shown and slide onto shaft splines. Apply a small amount of Loctite 243 (blue) to threads and install the cap screw to secure shift link to the shift lever shaft. Tighten screw to 24.4–29.8 N·m (18–22 ft-lbs).



1. Shift link
2. Acorn nut
3. Shift linkage rod

Figure 12. Install Shifter Linkage Rod

6. See Figure 12. Align the top of the shift link (1) with the shifter linkage rod (3) and obtain acorn nut (2) saved during earlier removal step. Apply a small amount of Loctite 243 (blue) to threads and install acorn nut (2) to stud on linkage rod (3). Tighten nut to 17.6–21.6 N·m (13–16 ft-lbs).



1. Shift lever
2. Shift link

Figure 13. Install Shift Link

7. See Figure 13. Note position of shift lever (1) after installation. Also note relationship between shift link (2) and shift lever (1). If necessary, remove acorn nut and screw securing shift link to shift lever shaft. Slide shift link from splines, re-align to obtain the desired position, then reinstall to splines on lever shaft. Re-install screw to secure shift link and tighten to 24.4–29.8 N·m (18–22 ft-lbs). Reinstall acorn nut to linkage stud and tighten to 17.6–21.6 N·m (13–16 ft-lbs).

Assemble Brake Side Components

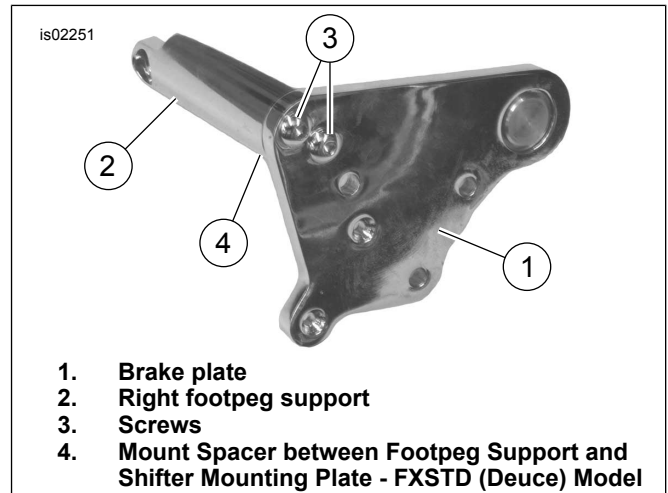
1. See Figure 25. Obtain the brake plate (11), two screws (20), and right footpeg support (7) from kit.

NOTE

When performing the next step, if you are installing this kit on FXSTD (Deuce) model, you will need footpeg spacer kit (Part Number 42802-03, sold separately). On FXSTD models, use the long bolts from the kit and mount the

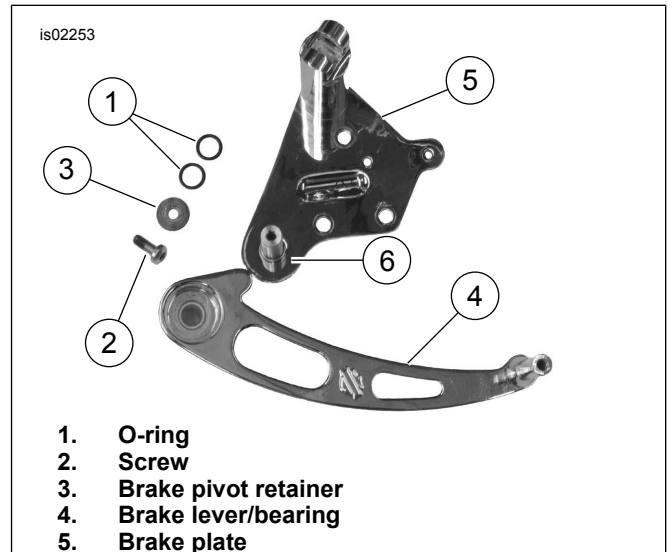
spacer between the footpeg support and shifter mounting plate.

2. See Figure 14. Orient footpeg support (2) as shown. Apply a small amount of Loctite 243 (blue) to threads of screws (3) and secure footpeg support (2) to the brake plate (1). Tighten screws to 33.9–40.7 N·m (25–30 ft-lbs).



1. Brake plate
2. Right footpeg support
3. Screws
4. Mount Spacer between Footpeg Support and Shifter Mounting Plate - FXSTD (Deuce) Model

Figure 14. Assemble Footpeg Support to Brake Plate

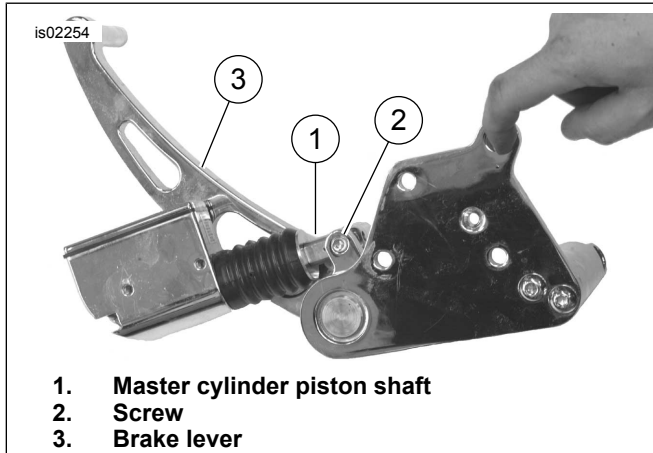


1. O-ring
2. Screw
3. Brake pivot retainer
4. Brake lever/bearing
5. Brake plate

Figure 15. Assemble Brake Lever Components to Brake Plate Pivot Shaft

3. See Figure 15. Obtain the brake lever/bearing assembly (4), two O-rings (1), brake pivot retainer (3) and pan head screw (2) from kit.
4. Following the exploded view (Figure 25), install the brake lever/bearing assembly components onto the brake plate pivot shaft. Tighten the screw (2) to 16.3–21.6 N·m (12–16 ft-lbs).
5. See Figure 25. Obtain the master cylinder (13) and the cap screw (3) from kit.

- See Figure 16. Align the master cylinder with the mount on the brake lever (3) and install cap screw (2) through the brake lever/bearing and master cylinder piston shaft (1). Tighten the screw (2) to 19.4 N·m (14 ft-lbs).



- Master cylinder piston shaft
- Screw
- Brake lever

Figure 16. Install Master Cylinder to Brake Lever



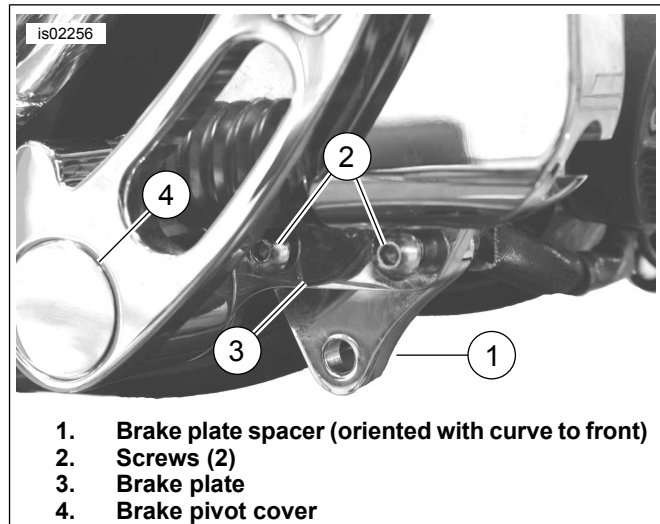
- Screws

Figure 17. Secure Master Cylinder to Brake Plate Screws

- See Figure 17. Rotate the the master cylinder on the shaft and align the holes in the master cylinder with the holes in the brake plate.
- See Figure 25. Obtain the two flat head screws (19) from kit and install a small amount of Loctite 243 (blue) to threads. Install screws to secure the master cylinder to the brake plate. Tighten screws to 19.4 N·m (14 ft-lbs).
- See Figure 25. Obtain the rubber pivot O-ring (5) from kit. Install the O-ring to the groove in pivot cover. See Figure 18. Obtain the chrome brake pivot cover (14) and snap into place.

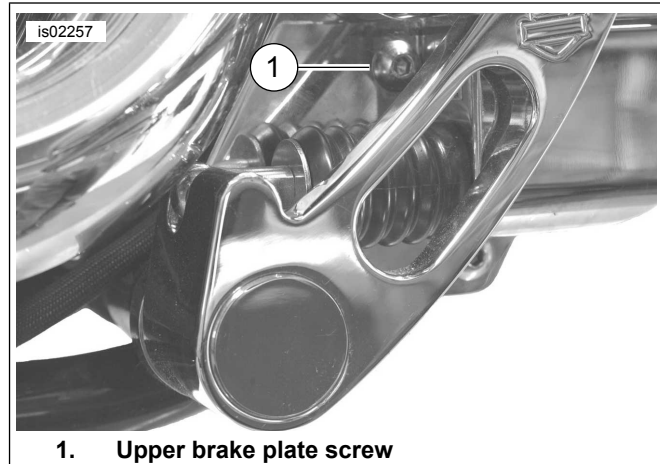
Install Brake Side Components

- See Figure 25. Obtain the brake spacer (17) and two screws (2) from kit. See Figure 18. Position the brake assembly near the frame mounting bracket. While holding the brake assembly in place, slide the brake spacer (1) with curve in spacer oriented toward front) between the brake plate (3) and frame mounting bracket. Install screws (2) through the brake plate, spacer and frame mounting bracket. Do not tighten screws at this time.



- Brake plate spacer (oriented with curve to front)
- Screws (2)
- Brake plate
- Brake pivot cover

Figure 18. Install Brake Plate Assembly to Motorcycle



- Upper brake plate spacer

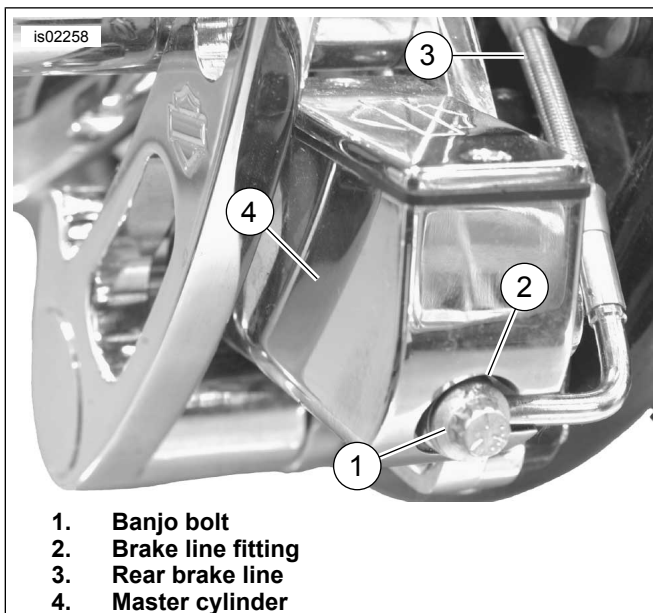
Figure 19. Install Upper Brake Plate Spacer and Screw

- See Figure 25. Obtain a third screw (2) and upper brake spacer (15) from kit. See Figure 19. Slide the upper brake spacer between the brake plate and frame mounting bracket at area of screw. Apply a small amount of Loctite 243 (blue) to threads and install the third brake plate screw through brake plate and spacer and into frame mounting bracket. Tighten screw to 33.9–40.7 N·m (25–30 ft-lbs).

NOTE

The upper brake plate spacer is installed behind brake plate between brake plate and frame mounting bracket.

- Return to the two lower brake plate screws installed in Step 1. Back the screws out slightly and apply a small amount of Loctite 243 (blue) to threads. Tighten screws to 33.9–40.7 N·m (25–30 ft-lbs).



1. Banjo bolt
2. Brake line fitting
3. Rear brake line
4. Master cylinder

Figure 20. Install Rear Brake Line to Master Cylinder

⚠ CAUTION

Direct contact of DOT 5 brake fluid with eyes can cause eye irritation, swelling, and redness. Avoid eye contact. In case of eye contact flush with large amounts of water and get medical attention. Swallowing large amounts of DOT 5 brake fluid can cause digestive discomfort. If swallowed, obtain medical attention. Use in well ventilated area. KEEP OUT OF REACH OF CHILDREN. (00144b)

NOTICE

Avoid leakage. Be sure gaskets, banjo bolt(s) and brake line are clean and undamaged before assembly. (00323a)

4. See Figure 25. Obtain banjo bolt (10), two brake line gaskets (9) and the rear braided brake line (16) from kit. See Figure 20. Lubricate the new brake line gaskets with D.O.T. 5 Silicone Brake Fluid. Install the banjo bolt (1) with a brake line gasket on each side of the brake line fitting (2) to the front of the master cylinder assembly (4). Tighten banjo bolt to 23–30 N·m (17–22 ft-lbs).
5. Route the rear brake line along the same path as the original brake line.

Install Rear Braided Brake Line

NOTE

The stoplamp switch manifold on the new brake line has a 1/4-20 tapped hole and a 1/4-inch diameter rod.

1. **2000-2003 Models** - Line up the tapped hole in the manifold to the hole in the frame mounting tab. Fit the rod into the bottom hole to orient the brake line. See Figure 25. Obtain the screw (1) from kit. Apply a small amount of Loctite 243 (blue) to the threads and secure manifold to frame tab. Tighten screw to 13.8 N·m (10 ft-lbs). **2004 and Later Models** - See Figure 25. Obtain the bracket (18) and two screws (1) from kit. See Figure 21. Line up the tapped hole (1) in the stoplamp switch manifold (4) to the top hole in the bracket (2). Fit the locator pin into the center hole to orient the brake line. Apply a small amount of Loctite 243 (blue) to threads of screws (3) and attach manifold to the bracket and the bracket to the frame. Tighten screws to 13.8 N·m (10 ft-lbs).

NOTE

Before installing the stoplamp switch, clean the pipe threads and apply Loctite 565 Thread Sealant to threads of switch.

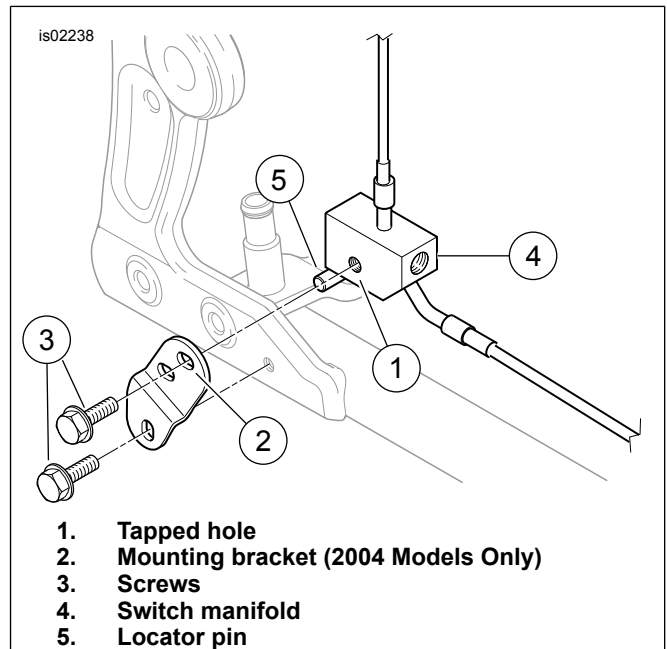
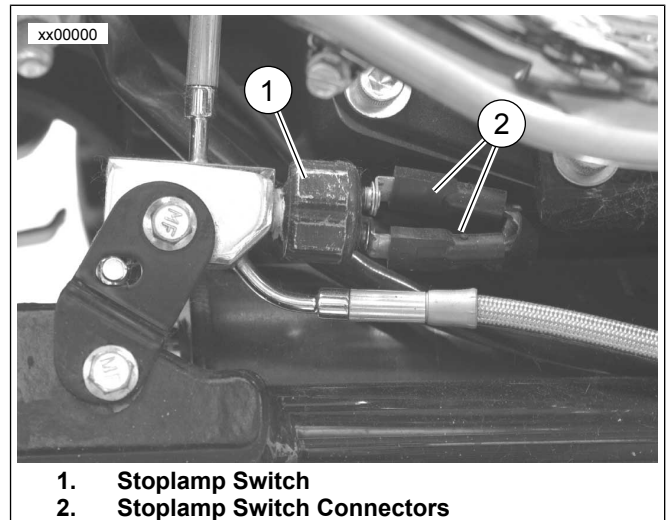


Figure 21. Install Stoplamp Switch Manifold to Frame



1. Stoplamp Switch
2. Stoplamp Switch Connectors

Figure 22. Install Stoplamp Switch and Connectors

2. See Figure 22. Install the stoplamp switch into the threaded hole in the manifold of the new brake line. Reattach the connectors (from main harness) to the stoplamp switch terminals.

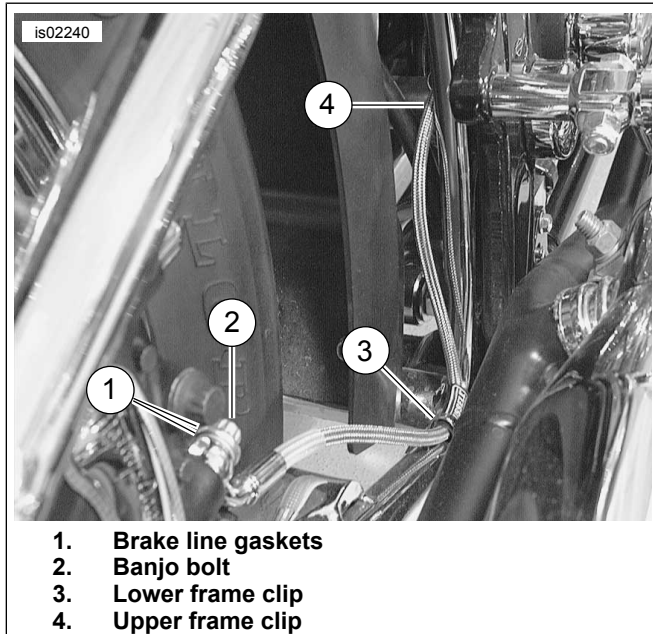


Figure 23. Install Brake Line to Caliper and Frame Clips

NOTICE

Avoid leakage. Be sure gaskets, banjo bolt(s) and brake line are clean and undamaged before assembly. (00323a)

3. See Figure 25. Obtain two brake line gaskets (9) from kit and the banjo bolt saved during the removal steps. See Figure 23. Lubricate the new brake line gaskets (1) with D.O.T. 5 Silicone Brake Fluid. Install the banjo bolt (2) with a brake line gasket (1) on each side of the brake line fitting into the threaded hole in the brake caliper assembly. Tighten the banjo bolt to 23–30 N·m (17–22 ft-lbs).
4. See Figure 25. Obtain the cable straps (4) from kit. Use straps to secure the brake line to the lower frame tube along the brake line route.
5. See Figure 23. Place the brake line under the frame clips (3, 4) at the locations shown.
6. Obtain footpeg, brake pedal and shift lever kits. Follow instructions in kits and install footpegs and brake and shift lever pads to new assemblies.
7. Remove the rear brake master cylinder cover. Stand the motorcycle upright so the master cylinder is in a level position. Follow the instructions in the applicable Service Manual and bleed the rear brake system.

⚠ WARNING

Be sure the master cylinder relief port is not plugged. A plugged relief port can cause brake drag or lockup and loss of vehicle control, which could result in death or serious injury. (00317a)

8. Verify proper operation of the master cylinder relief port. Actuate the brake pedal. A slight spurt of fluid will break the fluid surface in the reservoir compartment if all internal components are working properly.

⚠ WARNING

After servicing brakes and before moving motorcycle, pump brakes to build brake system pressure. Insufficient pressure can adversely affect brake performance, which could result in death or serious injury. (00279a)

⚠ WARNING

Be sure that all lights and switches operate properly before operating motorcycle. Low visibility of rider can result in death or serious injury. (00316a)

9. Turn the ignition/light key switch to IGNITION and apply the rear brake foot pedal to test operation of the brake lamp.

⚠ WARNING

After repairing the brake system, test brakes at low speed. If brakes are not operating properly, testing at high speeds can cause loss of control, which could result in death or serious injury. (00289a)

10. Test ride the motorcycle. If the brake feels spongy, repeat the bleeding procedure.

SERVICE PARTS

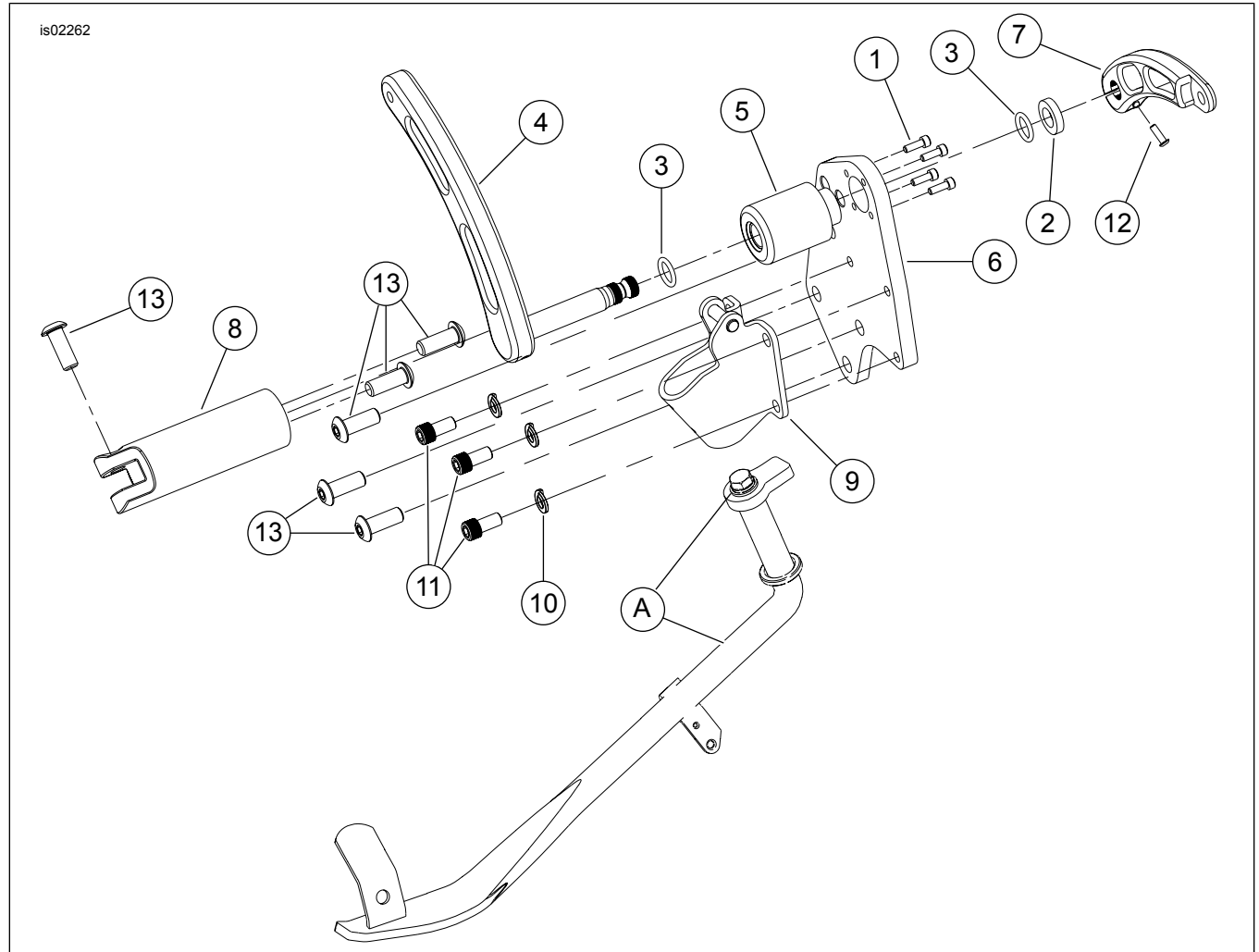


Figure 24. Service Parts: Billet Forward Foot Control Kit - Shifter Side Components

Table 1. Service Parts: Shifter Side Components

Item	Description (Quantity)	Part Number	Item	Description (Quantity)	Part Number
1	Screw, socket head cap, 8-32 x 1/2 inch (4)	Not Sold Separately	9	Assembly, jiffy stand bracket	50000-01
2	Washer, non-metallic	6057	10	Lockwasher, spring (3)	94081-90T
3	O-ring (2)	11191	11	Screw, hex socket head cap 5/16-18 x 5/8 inch (3)	94331-91T
4	Kit, shift lever	33002-01	12	Screw, hex socket button head cap 5/16-18 x 1 inch	94394-92T
5	Assembly, pivot/bearing	33113-01	13	Screw, hex socket button head cap 3/8-16 x 1 inch (6)	94400-92T
6	Plate, shifter mounting	Not Sold Separately	14	Service Kit (includes items 1, 5 and 6)	45037-03
7	Shift link	33928-01	Reference items:		
8	Support, left foot peg	33935-01	A	Jiffy Stand Leg and Hardware Not Included. Shown for Illustration Purposes	

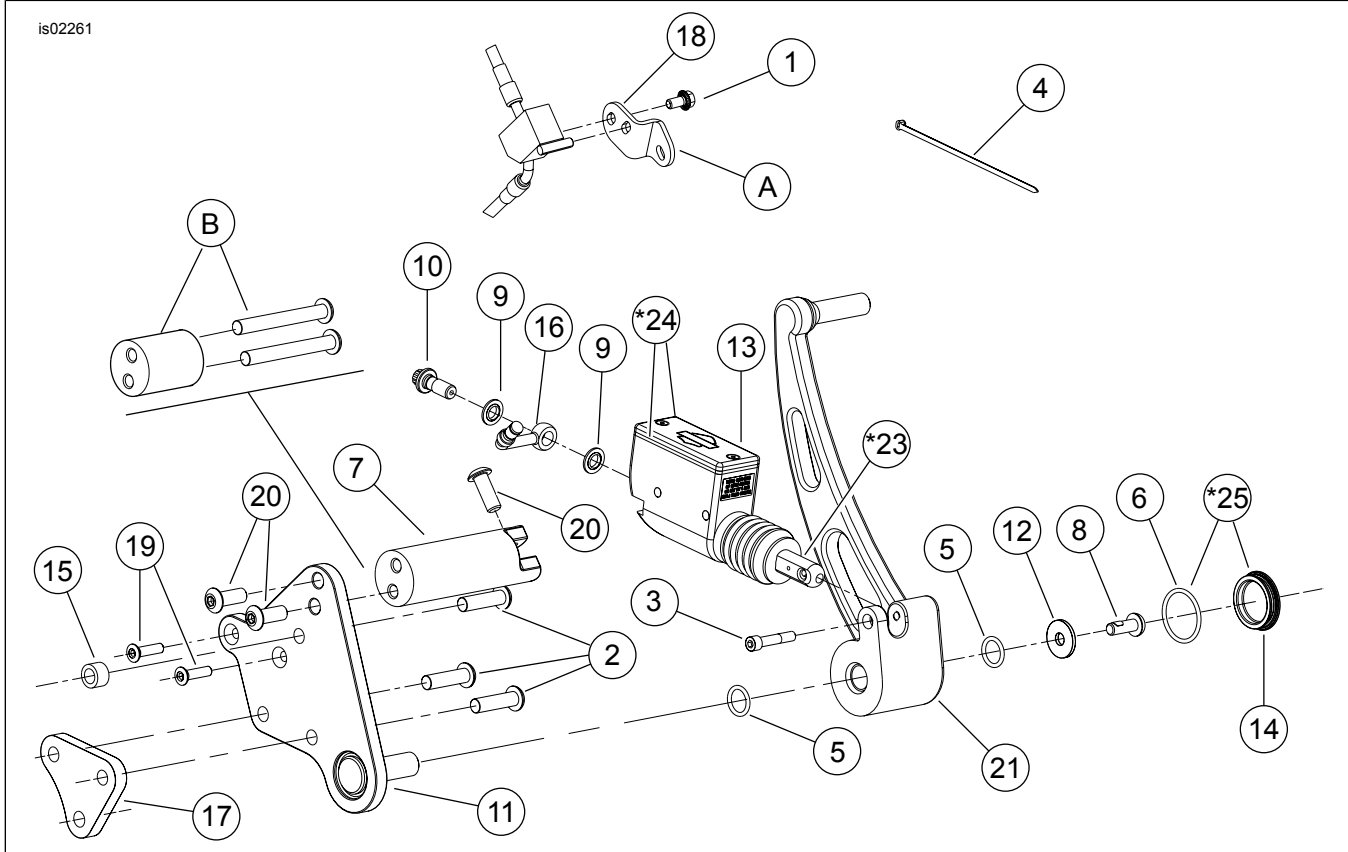


Figure 25. Service Parts: Billet Forward Foot Control Kit - Brake Side Components

Table 2. Service Parts: Brake Side Components

Item	Description (Quantity)	Part Number	Item	Description (Quantity)	Part Number
1	Screw, small flange 1/4-20 x 1/2 inch (2)	3588	16	Brake line, braided (rear)	44850-01
2	Screw, button head cap 3/8-16 x 1-3/8 inch (3)	3882	17	Spacer, brake	44855-01
3	Screw, socket head cap 1/4-20 x 1-1/4 inch	4280	18	Bracket, rear brake line (for 2003-on)	45108-01
4	Strap, cable (4)	10065	19	Screw, flat head hex 1/4-20 x 1 inch (2)	94203-01
5	O-ring (2)	11364	20	Screw, socket button head cap 3/8-16 x 1 inch (3)	94400-92T
6	O-ring, cover	Not Sold Separately	21	Assembly, brake lever/bearing	42207-01
7	Support, right footpeg	33935-01	22	Brake lever bushing (not shown)	33929-01
8	Screw, pan head Torx 5/16-18 x 7/8 inch	3655A	23	Service kit, master cylinder clevis	44018-01
9	Gasket, brake line (4)	41731-88A	24	Service kit, master cylinder cover w/gasket	45008-01
10	Bolt, banjo	41747-82A	25	Service kit, pivot cover and O-ring	45020-03
11	Kit, brake plate	41963-01	26	Service kit, master cylinder rebuild	42383-04
12	Retainer, brake pivot, billet	42792-01	Reference items only		
13	Master cylinder, billet	42793-01	A	Used on 2004 and Later Only	
14	Cover, brake pivot (billet)	Not Sold Separately	B	Spacer Kit (Part Number 42802-03) Necessary For Correct Installation on FXSTD (Deuce)	
15	Spacer, upper brake	44143-01			Sold Separately