



INSTRUCTIONS

J03228

2005-05-20



CHROME FRONT BRAKE MASTER CYLINDER KITS

GENERAL

Kit Number

42307-04, 42308-04

Models

These chrome front master cylinder kits fit all 2004 and later Sportster® model motorcycles. They are direct replacements for the stock black brake master cylinders, and include a new matching chrome clutch lever bracket assembly.

Kit 42307-04 fits models with a single front brake disc.

Kit 42308-04 fits models with dual front brake discs.

The front brake master cylinder designed for dual disc operation has a larger bore than the master cylinder designed for single disc operation.

Additional Parts Required

Installation of this kit will also require the use of Brake Pin Grease (Part Number 42820-04), available separately from any Harley-Davidson dealer.

Ask your Harley-Davidson Dealer about the selection of hand control levers, and braided brake lines and clutch cables that are also available for these models. These items can be easily installed at the same time as this kit.

⚠ WARNING

Rider and passenger safety depend upon the correct installation of this kit. 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. (00308b)

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.

⚠ WARNING

Brakes are a critical safety component. Contact a Harley-Davidson dealer for brake repair or replacement. Improperly serviced brakes can adversely affect brake performance, which could result in death or serious injury. (00054a)

⚠ WARNING

Do not use parts from single caliper repair kits (9/16 inch bore) on dual caliper models. Likewise, do not use parts from dual caliper repair kits (11/16 inch bore) on single caliper models. Using incorrect parts can cause brake failure, which could result in death or serious injury. (00278a)

Kit Contents

See Figure 9 and Table 1.

INSTALLATION

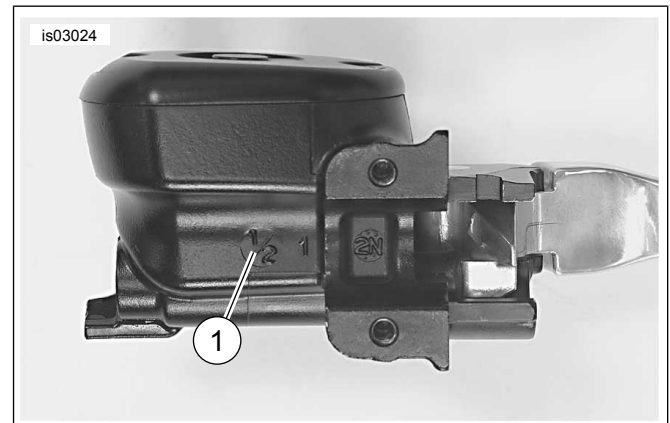


Figure 1. Verifying Front Brake Master Cylinder Bore Size (Single Disc Master Cylinder Shown)

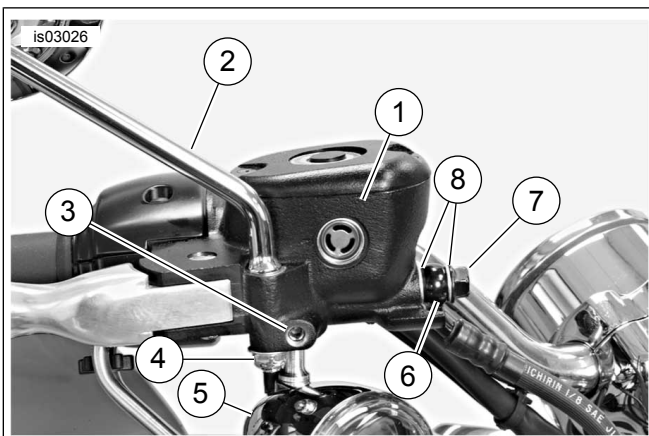
1. See Figure 1. The bore size is cast into the side of the master cylinder body facing the handlebar.
 - The single disc master cylinder has "1/2" (1/2 inch) cast into the body.
 - The dual disc master cylinder has "14" (14 mm) cast into the body.

Removing the Stock Master Cylinder

⚠ WARNING

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

1. Refer to the Service Manual and follow the instructions given to remove the maxi-fuse.
2. See Figure 2. Loosen the turn signal clamp screw (3) and remove the turn signal assembly (5) from the front brake master cylinder housing (1).



1. Front master cylinder
2. Mirror
3. Turn signal clamp screw
4. Mirror locknut/washer
5. Turn signal
6. Banjo fitting
7. Banjo bolt
8. Washer (2)

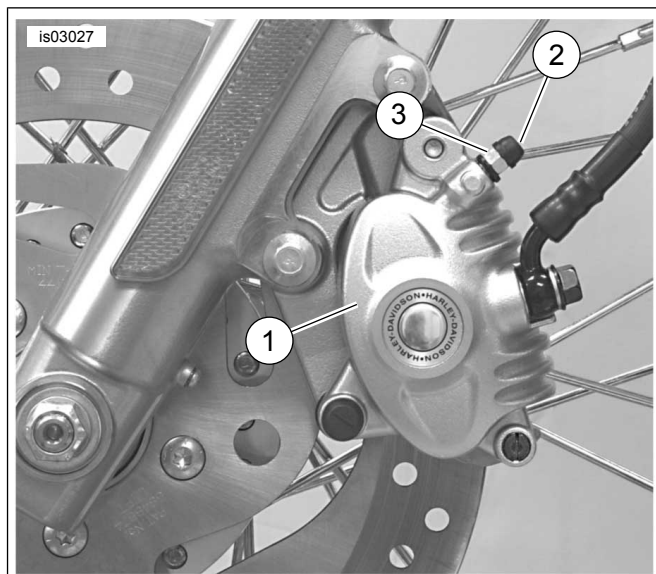
Figure 2. Front Brake Master Cylinder

3. Loosen and remove the lock nut and washer (4), and lift the mirror (2) from the master cylinder housing.

⚠ 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)**

4. See Figures 3 and 4. Remove the bleeder nipple cap (2) from the bleeder valve (3) on the front brake caliper (1). Install the end of a length of clear plastic tubing over the caliper bleeder valve (3), while placing the free end in a suitable container. Open the bleeder valve about 1/2 turn. Pump the brake hand lever to drain the brake fluid. Close the bleeder valve.



1. Front brake caliper
2. Bleeder nipple cap
3. Bleeder valve

Figure 3. Front Caliper Bleeder Valve

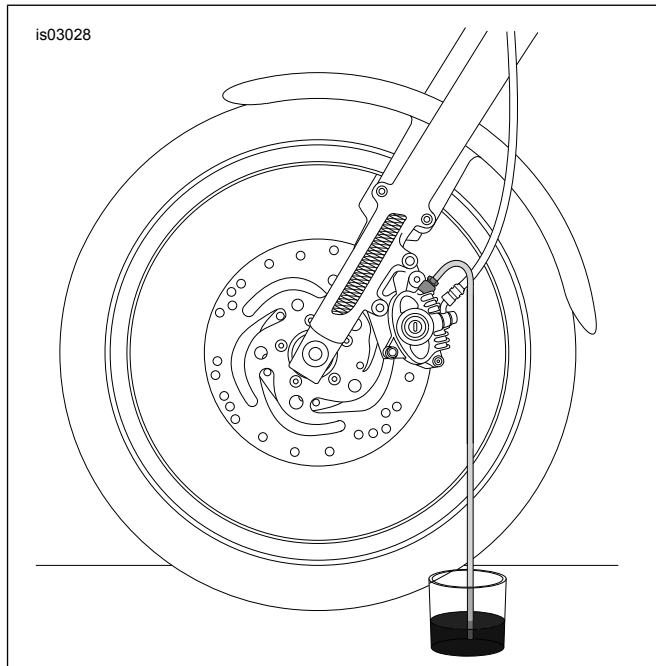


Figure 4. Bleeding the Hydraulic System

⚠ WARNING

Replace brake line gaskets. Re-using original gaskets can cause brake failure and loss of vehicle control, which could result in death or serious injury. (00318a)

5. See Figure 2. Remove the banjo bolt (7) and two brake-line sealing washers (8) to disconnect the hydraulic brake line banjo fitting (6) from the master cylinder (1). Discard the washers.

NOTICE

Do not remove or install the master cylinder assembly without first positioning a 5/32-inch (4 mm) thick insert between the brake lever and lever bracket. Removing or installing the master cylinder assembly without the insert in place may result in damage to the rubber boot and plunger on the front stoplight switch. (00324a)

6. See Figure 5. Squeeze the front brake lever and place a 5/32 inch (4 mm) thick insert between the brake lever and lever bracket. Release the brake lever.

NOTE

A small section of corrugated cardboard or the eyelet of an ordinary cable strap can be used for this purpose.

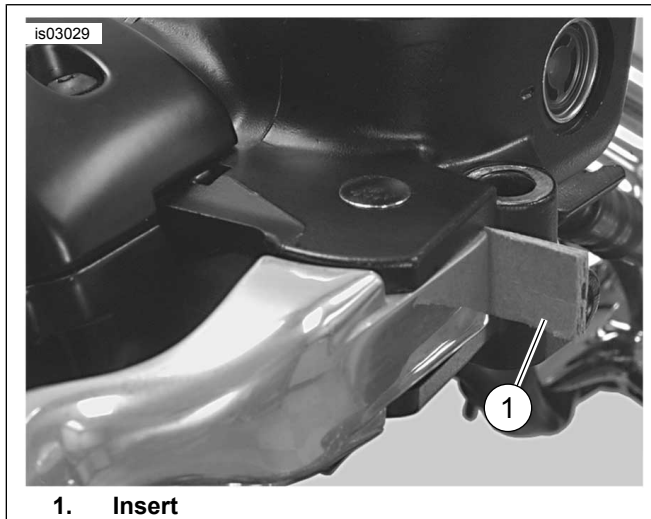


Figure 5. Install 5/32-Inch (4 mm) Thick Insert Before Removing or Installing Master Cylinder Assembly

7. See the Service Parts illustration. Using a T-27 TORX drive head, remove the two screws (9) securing the handlebar clamp (8) to the master cylinder (1) housing. Remove the brake lever/ master cylinder assembly and clamp from the handlebar.

⚠ WARNING

Wear safety glasses or goggles when removing or installing retaining rings. Retaining rings can slip from the pliers and could be propelled with enough force to cause serious eye injury. (00312a)

8. Remove and discard the retaining ring (6) from the groove at the bottom of the brake hand lever pivot pin. Remove and save the pivot pin and brake hand lever from the master cylinder assembly. Further disassembly is not needed.

Installing the New Chrome Master Cylinder

1. Obtain the new chrome master cylinder and cover assembly from the kit.
2. Apply approximately 0.1 g of G40M brake grease (Part No. 42820-04, sold separately) to the pivot hole in the brake hand lever.

3. Align the hole in the brake hand lever with the hole in the master cylinder bracket. From the top of the assembly, slide the pivot pin (removed in Step 8) through the bracket and hand lever.

⚠ WARNING

Wear safety glasses or goggles when removing or installing retaining rings. Retaining rings can slip from the pliers and could be propelled with enough force to cause serious eye injury. (00312a)

4. Install the new retaining ring (6) from the kit in the pivot pin groove. Verify that the retaining ring is fully seated in the groove.

NOTICE

Do not remove or install the master cylinder assembly without first positioning a 5/32-inch (4 mm) thick insert between the brake lever and lever bracket. Removing or installing the master cylinder assembly without the insert in place may result in damage to the rubber boot and plunger on the front stoplight switch. (00324a)

5. See Figure 5. Squeeze the front brake lever and place a 5/32 inch (4 mm) thick insert between the brake lever and lever bracket. Release the brake lever.

NOTE

A small section of corrugated cardboard or the eyelet of an ordinary cable strap can be used for this purpose.

6. See Figure 6. Position the brake lever/ master cylinder assembly inboard of the switch housing assembly (1), engaging the tab (5) on the lower switch housing in the slot (4) at the top of the brake lever bracket (3).

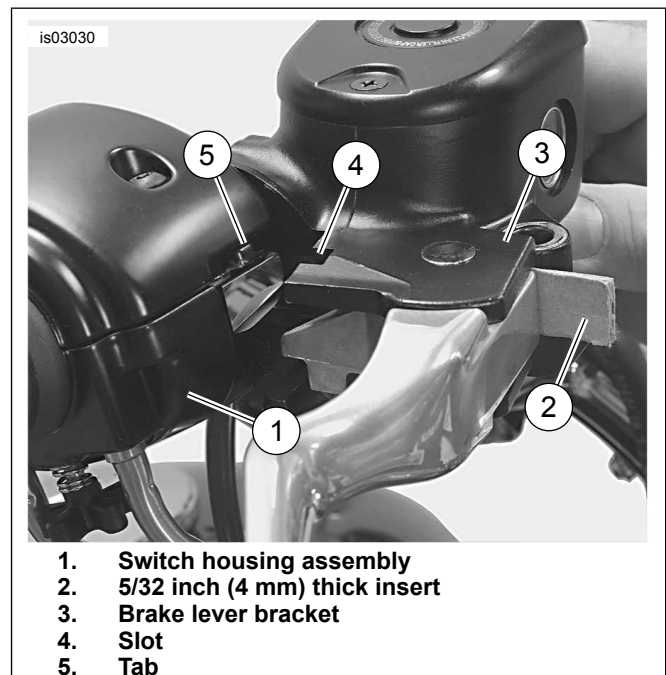


Figure 6. Fitting Brake Lever/ Master Cylinder to Right Handlebar Switch Housing

7. See the Service Parts illustration. Align the holes in the handlebar clamp with those in the master cylinder housing. From the kit, start the new screws and washers (9). Position for rider comfort. Beginning with the top screw, tighten the screws to 108-132 **in-lbs** (12.2-14.9 Nm) using a T27 TORX drive head.

NOTE

Master cylinder housing has a positive stop for banjo fitting. When tightening banjo bolt into master cylinder in the next step, rotate banjo fitting clockwise until it contacts positive stop.

▲ WARNING

Replace brake line gaskets. Re-using original gaskets can cause brake failure and loss of vehicle control, which could result in death or serious injury. (00318a)

NOTICE

Avoid leakage. Be sure gaskets, banjo bolt(s), brake line and caliper bore are clean and undamaged before assembly. (00321a)

8. See Figure 2. Position a new washer (8) on each side of the hydraulic brake line banjo fitting (6). Insert the banjo bolt (7) through the washers and fitting. Thread the bolt into the master cylinder housing. Tighten to 20-25 ft-lbs (27.1-33.9 Nm).
9. Position the motorcycle so that the top of the master cylinder reservoir is level. See the Service Parts illustration. Remove the two screws (5), front master cylinder reservoir cover (3), diaphragm plate and diaphragm (see Gasket Kit, item 2).

NOTE

See Figure 7. Do not use sight glass to determine maximum fluid level. Sight glass should only be used as a visual indicator that fluid level is low and needs attention. A ridge is cast into the inside of the reservoir to assist you in determining the correct level.

Use only Harley-Davidson D.O.T. 5 SILICONE HYDRAULIC BRAKE FLUID from a sealed container.

Do not overfill reservoir. Do not reuse old brake fluid.

See Figure 7. Add enough Harley-Davidson D.O.T. 5 SILICONE HYDRAULIC BRAKE FLUID (Part No. 99902-77) to reservoir to bring fluid level even with ridge cast into inside of reservoir, about 0.25 inch (6 mm) below top edge.



Figure 7. Filling Front Master Cylinder Reservoir

▲ 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)

▲ 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)

10. Verify proper operation of the master cylinder relief port. Actuate the brake hand lever with the reservoir cover removed. A slight spurt of fluid will break the fluid surface in the reservoir compartment if all internal components are working properly.
11. See Figure 3. Install a length of clear plastic tubing over the front brake caliper bleeder valve (3). Place the free end of the tube in a clean container.
12. See Figure 7. Add enough Harley-Davidson D.O.T. 5 SILICONE HYDRAULIC BRAKE FLUID (Part No. 99902-77) to the reservoir to bring the fluid level even with the ridge cast into the inside of the reservoir, about 0.25 inch (6 mm) below the top edge.
13. Depress and hold the brake hand lever to build up hydraulic pressure.
14. Open the front caliper bleeder valve about 1/2-turn. Brake fluid will flow from the bleeder valve through the tubing. Close the bleeder valve when the brake hand lever has moved approximately 1/2 to 3/4 of its full range of travel. Allow the brake hand lever to return slowly to its released position. Repeat Steps 14 through 16 until all air bubbles are purged.

15. Final tighten the bleeder valve to 35-61 **in-lbs** (3.9-6.9 Nm). Install the bleeder nipple cap.

NOTE

On models with two front brake calipers, repeat steps 14 through 18 on the second caliper.

16. Add enough Harley-Davidson D.O.T. 5 SILICONE HYDRAULIC BRAKE FLUID to the reservoir to bring the fluid level even with the ridge cast into the inside of the reservoir, about 0.25 inch (6 mm) below the top edge.
17. See the Service Parts illustration. Note that the angular shape of the master cylinder cover (3) makes one side thicker than the other. Install the cover with the diaphragm plate and diaphragm (see Gasket Kit, item 2) on the master cylinder housing as shown so that the thicker side is positioned above the brake line banjo fitting. Fasten the cover to the reservoir with two screws (5). Tighten to 9-17 **in-lbs** (1.0-2.0 Nm).
18. See Figure 2. Install the mirror (2), secure with the lock nut and washer (4) removed in Step 3. Position the mirror for best rearward visibility. Tighten the lock nut to 96-144 **in-lbs** (10.9-16.3 Nm).
19. Install the turn signal (5), and secure with the clamp screw (3) removed in Step 2. Position so the turn signal lens faces directly forward and the turn signal does not strike the fuel tank when the handlebars are turned to the full right position. Tighten to 96-120 **in-lbs** (10.9-13.6 Nm).

Removing the Stock Clutch Lever Bracket

1. See Figure 8. Remove the retaining ring (3) and pivot pin (6) from the clutch lever (1). Retain the pivot pin, but discard the retaining ring. Remove the clutch lever from the clutch lever bracket (5).

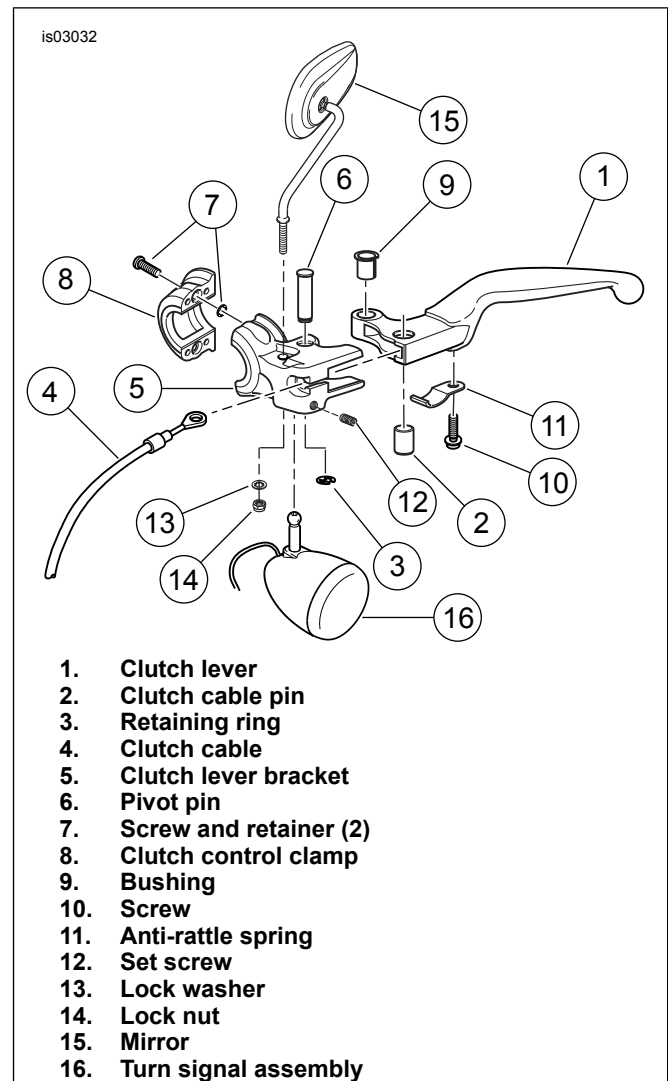


Figure 8. Clutch Hand Control

2. Remove the clutch cable pin (2). Disconnect the clutch cable (4) upper section from the lever.
3. Loosen the set screw (12), and remove the turn signal assembly (16) from the clutch lever bracket.
4. Loosen and remove the lock nut (14) and lock washer (13), and lift the mirror (15) from the clutch lever bracket.
5. Remove and discard the two screws and retainers (7) from the clutch control clamp (8). Remove and discard the clutch control clamp and clutch lever bracket from the left side of the handlebar.

NOTE

You may need to loosen the two screws of the left-side handlebar switch housing to remove the clutch control clamp and clutch lever bracket from the handlebar.

Installing the New Chrome Clutch Lever Bracket

1. Position the new chrome clutch control clamp (8) and clutch lever bracket (5) from the kit onto the left side of the handlebar. Hold the clamp and bracket assembly firmly against the left-side handlebar switch housing. See the Service Parts illustration. Secure the clamp and bracket to the left side of the handlebar using the two new screws, washers (9) and retainers (6). Tighten to 108-132 **in-lbs** (12.2-14.9 Nm).
2. See Figure 8. Re-install the mirror (15), and secure with the lock nut (14) and lock washer (13) removed earlier. Position the mirror for best rearward visibility, then tighten the lock nut to 96-144 **in-lbs** (10.9-16.3 Nm).
3. Install the turn signal (16), and position so the turn signal lens faces directly forward and the turn signal does not strike the fuel tank when the handlebars are turned to the full left position. Tighten the set screw (12) to 96-120 **in-lbs** (10.9-13.6 Nm).

NOTE

If the two screws of left-side handlebar switch housing were loosened during clutch hand control removal, tighten to 35-45 **in-lbs** (4.0-5.1 Nm).

4. Connect the end of the clutch cable (4) upper section to the clutch lever (1) using the clutch cable pin (2).
5. Position the lever within the clutch lever bracket (5), install the pivot pin (6) and secure with the new retaining ring (3) from the kit.

6. Adjust the clutch if necessary. Refer to CLUTCH: ADJUSTMENT in the Service Manual.

Final Steps

1. Refer to the Service Manual and follow the instructions given to re-install the maxi-fuse.

⚠ 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)

2. Turn the Ignition/ Light Key Switch to IGNITION and apply the front brake hand lever to test the 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)

3. Test ride the motorcycle at low speed. If the brake feels spongy, repeat the bleeding procedure.

SERVICE PARTS

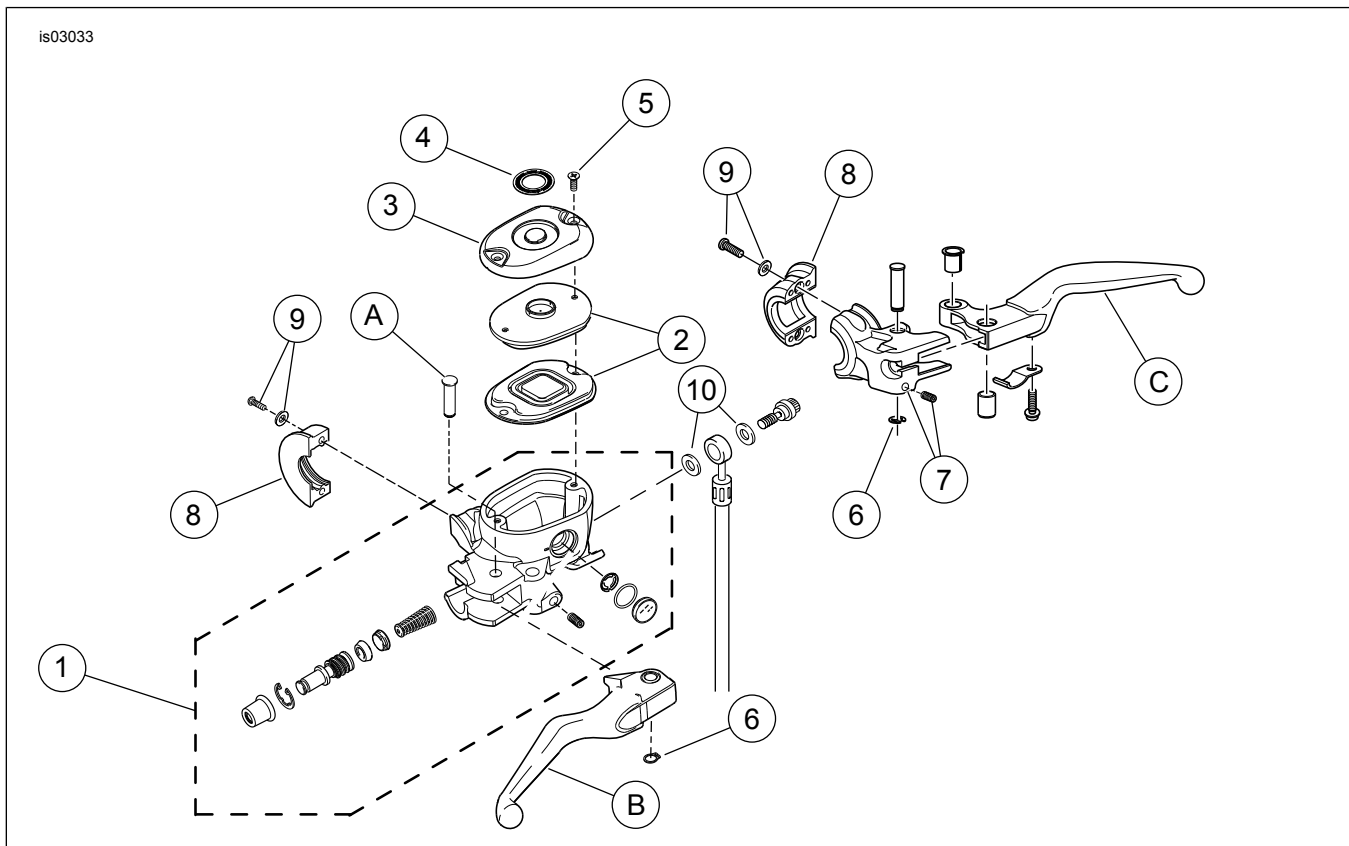


Figure 9. Service Parts: Chrome Front Brake Master Cylinder

Table 1. Service Parts Table

Item	Description (Quantity)	Part Number
Kit 42307-04 (Single Disc Brake Master Cylinder)		
1	Master cylinder (chrome)	45321-04
2	Gasket kit, master cylinder	42805-04
	Diaphragm plate	Not Sold Separately
	Diaphragm	Not Sold Separately
3	Cover, master cylinder (chrome)	42318-04
4	Decal	44791-04
5	Screw, cover (chrome) (2)	2498
6	Retaining ring (2)	11379
7	Clutch lever bracket assembly (chrome)	38603-04
8	Clamp (chrome) (2)	42323-04
9	Screw (2), washer (2)	42320-04A
10	Sealing washer, 10 mm (2)	41732-04
Kit 42308-04 (Dual Disc Brake Master Cylinder)		
1	Master cylinder (chrome)	45324-04
2	Gasket kit, master cylinder	42805-04
3	Cover, master cylinder (chrome)	42318-04
4	Decal	44791-04
5	Screw, cover (chrome) (2)	2498
6	Retaining ring (2)	11379
7	Clutch lever bracket assembly (chrome)	38603-04
8	Clamp (chrome) (2)	42323-04
9	Screw (chrome) (2)	42320-04
10	Sealing washer, 12 mm (2)	41743-04
Items mentioned in text, but not included in kit:		
A	Pin, pivot	
B	Lever, brake hand	