For FLHR and FLHRC models:

Installation Instructions:
1. Remove the left-side mirror and mounting hardware. Remove the left-side turn signal if mounted on the hand lever bracket. Save all parts for later installation.
2. Remove the right-side saddlebag, if so equipped.
3. To access the transmission side cover assembly, remove the exhaust system as per your service manual.
4. Remove the magnetic drain plug at the bottom-right side of the oil pan, and drain the transmission lubricant into a suitable container.
5. Remove and retain the filler plug/dipstick (5) for later installation. Remove the six socket-head screws with washers (6) to free the transmission side cover (1) from the transmission case. Retain two screws and discard the remaining four. See Figure 1.

NOTE: If the hollow locating pins stay in the cover when removed, install pins back into the bearing housing.

6. Actuate the clutch lever to break the cover seal. Remove the cover. Remove and discard the cover gasket (2).
7. Remove the clutch ramp retaining ring (8). Rotate the inner ramp (7) to a position that will allow the clutch coupling to be disconnected. Disconnect the clutch coupling and disconnect the cable end from the coupling.
8. Unscrew the cable fitting from the transmission side cover. Remove the clutch cable and fitting, and discard the cover. Leave the clutch cable in place at this point.
9. Remove the oil slinger (4) as an assembly from the transmission mainshaft. Discard the oil slinger.

NOTE: After the clutch cable has been disconnected at both ends, but before pulling the cable out, note the entire cable routing and the location of all cable straps and "P"-clamps (if used). In many cases, you will be installing the new hydraulic fluid line the same way.
10. See Figure 2. Remove the retaining ring (9) from the clutch hand-lever pivot pin (4). Remove the pivot pin and clutch hand-lever (7) from the clutch-lever bracket (3).
11. Remove the anchor pin (8) and the clutch-cable eyelet (2) from the clutch hand-lever. Remove any clamps retaining the clutch cable to the bike, and remove the cable. Discard all components and hardware removed in this step.
12. Using a T27 TORX drive head, remove the two screws (6) with flat washers securing the handlebar clamp (5) to the clutch-lever bracket.
13. If necessary, remove the left-side passenger footpeg or footboard. See Figure 3. Using a T27 TORX drive head, remove the clutch-inspection (derby) cover (8) from the primary chaincase (1). Remove the clutch release plate retaining ring (4) and discard. Remove the release plate (3), adjuster rod (5) and nut (6) as an assembly, and discard.
14. Extract the pushrod (2) by pushing it through from the right (transmission side cover) side until it can be grasped through the clutch pressure plate (10). Pull the pushrod out of the chaincase opening and discard it.

Installing the Clutch-Release Plate:
1. Obtain the new release plate (3) and bearing (4) from the kit. Pressing only on the outer race, install the bearing into the plate to form the clutch-release plate assembly (2). Refer to Figure 4.
2. Assemble the new clutch-release plate assembly to the new pushrod (1) as shown, with the large diameter first. Install a small retaining ring (5) from the kit onto the pushrod.
3. Install the assembly into the clutch pressure plate. Fit the two ears (6) into the notches in the pressure-release plate. Push in until the clutch-release plate (3) bottoms out against the shoulder in the pressure plate. Install the new large retaining ring (7) in groove of pressure plate, and verify that the ring is fully seated.

Installing the Clutch Master Cylinder:
1. Obtain the clutch lever/master cylinder assembly (4) from the kit, and the two screws (1) and two flat washers (2) saved earlier. See Figure 5.
2. Slightly loosen the two screws holding the left-hand switch housing to the handlebar.
3. Position the clutch lever/master cylinder assembly to the handlebar, inboard of the left-hand switch housing assembly. Align the holes in the handlebar clamp with those in the master-cylinder housing and start the two screws (with flat washers). 4. Adjust the clutch lever for rider posture and comfort. Use a T27 TORX drive head to tighten first the upper, then the lower clutch-lever clamp screws to 60-80 in-lbs.
5. Adjust the switch housing for rider posture and comfort. Using a T25 TORX drive head, tighten first the lower, then the upper handlebar-switch housing screws to 35-45 in-lbs.

Installing the Transmission Side Cover:
1. Refer to Figure 6. Place the new cover gasket from the kit over the hollow locating pins (5) in the transmission housing. Line up the new transmission side cover assembly (which includes the secondary actuator [slave] cylinder and bleeder screw) on the locating pins.
2. Loosely install the two 2-1/4 inch (57 mm) long screws (saved from the old cover) into the top two holes in the new cover. Loosely install four new 1-3/4 inch (44 mm) long screws from the kit into the remaining four holes.
3. For 2005 ST models, tighten the side cover screws, in the sequence shown, to 84-108 in-lbs. For all other models, tighten the sidecover screws, in the sequence shown, to 120-144 in-lbs. See Figure 7.

Installing the Clutch-Fluid Line:
1. Obtain the clutch-fluid line assembly (8), banjo bolt (6) and new gaskets (steel/rubber washers, item 5) from the kit. Position the washers on each side of the hydraulic clutch-line banjo fitting. See Figure 5.
2. Remove the cap plugs from the handlebar end of the clutch-fluid line, if present.
3. Insert the banjo bolt through one brake line gasket, the clutch-fluid line banjo fitting, and the second brake line gasket. Thread the bolt into the master-cylinder housing but do not fully tighten at this time. Proceed to Step 4 for your model motorcycle.

For FLHR and FLHRC models:
4. Carefully pry off the fork-lock label plate (3) from the handlebar cover (2). Remove the entire plastic plate; do not remove the adhesive label from the plate. See Figure 8.
5. Remove and retain the Phillips-head screws holding the handlebar cover for later installation.
6. Remove the headlamp assembly from the headlamp nacelle. Refer to your Service Manual.
7. Route the clutch-fluid line as follows:
   a. Into the left top opening of the headlamp nacelle.
   b. Down between the steering head and the harness mounting plate.
   c. Around the front of the steering head to the right side.


V-Twin Mfg.
Hydraulic Clutch Kit
VT Part No. 18-0673/18-0562

This is a custom application and rider safety depends on proper installation. This product should only be installed by a knowledgeable and trained motorcycle technician. V-Twin Mfg. accepts no responsibility for improper installation.
d. Out of the nacelle, over the lower triple-clamp, and over the right-side engine guard.

e. Down along the front of the right-side frame down tube.

f. Behind the rear-brake master cylinder.

g. Over the footboard brackets to the transmission housing.

8. Remove the cap plugs from the clutch-fluid line and transmission side cover, if present. Install the fitting to the cover and tighten to 80-115 in-lbs.

9. Attach the clutch-fluid line to the bottom right-side frame tube using the two "P"-clamps from the kit. Bring the clutch-fluid line down in a reverse "S"-curve to the bottom right-side frame tube, then:
   a. Attach the line to the frame tube just below and to the rear of the cam cover.
   b. Just below and to the front of the cam cover.

10. Attach the clutch-fluid line to the motorcycle using the tie straps included in the kit:
   a. At two points on the bottom frame tube.
   b. Near the bottom of the right side frame down-tube.
   c. To the front of the down-tube above the reflector.
   d. To the switch-wire harness near the handlebar cover.

11. Tighten the banjo fitting bolt into the master-cylinder housing to 17-22 ft-lbs (23-31 Nm). Proceed to "Bleeding the Clutch-Fluid Line".

For FLHRS models:

1. Carefully pry off the fork-lock label plate (3) from the handlebar cover (2). Remove the entire plastic plate; do not remove the adhesive label from the plate. See Figure 9.

2. Remove and retain the two flat head Pozidrive screws (8) underneath the fork-lock label plate.

3. Loosen, but do not remove the pan head Pozidrive screw (9), nut (11) and flat washer (10) holding the front of the handlebar cover (2) and wind deflector (6) assembly.

4. Raise the handlebar clamp cover slightly, and while separating the halves of the headlamp nacelle, slide the cover and wind deflector assembly forward, running the shaft of the screw down the gap until the assembly is free of the nacelle.

5. Remove the headlamp assembly from the headlamp nacelle.

6. Route the clutch-fluid line:
   a. Into the left top opening of the headlamp nacelle.
   b. Behind the handlebar risers, over to the right side.
   c. Downward, out of the nacelle, around the front of the right-side engine guard.
   d. Down along the front of the right-side frame down tube.
   e. Behind the rear-brake master cylinder.
   f. Over the footboard brackets to the transmission housing.

7. Remove the cap plugs from the clutch-fluid line and transmission side cover, if present. Install the fitting to the cover and tighten to 80-115 in-lbs.

8. Attach the clutch-fluid line to the bottom right-side frame tube using the two "P"-clamps from the kit. Bring the clutch-fluid line down in a reverse "S"-curve to the bottom right-side frame tube, then:
   a. Attach the line to the frame tube just below and to the rear of the cam cover.
   b. Just below and to the front of the cam cover.

9. Attach the clutch-fluid line to the motorcycle using the tie straps included in the kit:
   a. At two points on the bottom frame tube.
   b. Near the bottom of the right side frame down-tube.
   c. To the front of the down-tube above the reflector.
   d. To the switch-wire harness near the handlebar cover.

10. Tighten the banjo fitting bolt into the master-cylinder housing to 17-22 ft-lbs. Proceed to "Bleeding the Clutch-Fluid Line".

For FLHT, FLHTC and FLHTCU models:

1. Route the clutch-fluid line:
   a. Through the grommeted opening in the fairing, under the fuel gauge.
   b. Down along the front of the left-side frame down tube.
   c. Across and down the frame to the right-side frame down tube.
   d. Over the engine mount, down to the bottom right-side frame tube.
   e. Along the top inside of the frame tube.

2. Remove the cap plugs from the clutch-fluid line and transmission side cover, if present. Install the fitting to the cover and tighten to 80-115 in-lbs.

3. Attach the clutch-fluid line to the bottom right-side frame tube using the two "P"-clamps from the kit. Bring the clutch-fluid line down in a reverse "S"-curve to the bottom right-side frame tube, then:
   a. Attach the line to the frame tube just below and to the rear of the cam cover.
   b. Just below and to the front of the cam cover.

4. Attach the clutch-fluid line to the motorcycle using the tie straps included in the kit:
   a. To the right-side frame down tube, at a point above the voltage regulator.
   b. To the left-side frame down tube just below the engine guard.

5. Tighten the banjo fitting bolt into the master-cylinder housing to 17-22 ft-lbs (23-31 Nm). Proceed to "Bleeding the Clutch-Fluid Line".

For FLTR and ST models:

1. Route the clutch-fluid line:
   a. Along the left side of the handlebar, down to the top of the left-side frame down tube.
   b. Across and down the frame to the right-side frame down tube.
   c. Over the engine mount, down to the bottom right-side frame tube.
   d. Along the top inside of the frame tube.

2. Remove the cap plugs from the clutch-fluid line and transmission side cover, if present. Install the fitting to the cover and tighten to 80-115 in-lbs.

3. Attach the clutch-fluid line to the bottom right-side frame tube using the two "P"-clamps from the kit. Bring the clutch-fluid line down in a reverse "S"-curve to the bottom right-side frame tube, then:
   a. Attach the line to the frame tube just below the front exhaust mount.
   b. At the bottom of the right side frame down tube, near the engine mount.

4. Attach the clutch-fluid line to the motorcycle using the tie straps included in the kit:
   a. To the right-side frame down tube, at a point above the voltage regulator.
   b. To the existing clutch-cable retainer, if so equipped, or to the upper portion of the left-side frame down tube.

5. Tighten the banjo fitting bolt into the master-cylinder housing to 17-22 ft-lbs.

**Bleeding the Clutch Fluid Line:**

1. Remove the bleeder cap from the transmission side cover bleeder valve. Install one end of a length of plastic tubing over the valve. Place the free end of the tube in a clean container.

2. Stand the motorcycle upright so that the master cylinder is in a level position. Remove the master-cylinder cover and gasket.

3. Add D.O.T. 5 SILICONE HYDRAULIC BRAKE FLUID to the master-cylinder reservoir until the fluid level is at or just below the fill line. Do not reuse
4. Activate the clutch lever 5-10 times.
5. Open the bleeder valve. Clutch fluid will flow from the bleeder valve through the tubing. It may take several minutes for fluid to exit the bleeder.
6. Once fluid exits the bleeder, close the bleeder valve.
7. If necessary, add additional clutch fluid to the master cylinder reservoir until the fluid level is at or just below the fill line.
8. Depress and hold the clutch hand-lever to build up hydraulic pressure.
9. Open the bleeder valve about one-half-turn. Clutch fluid will flow from the bleeder valve through the tubing. Close the bleeder valve when the clutch hand-lever has moved 50% to 75% of its full range of travel. Allow the clutch hand-lever to return slowly to its released position.
10. Repeat Steps 7 through 9 until all air bubbles are purged.
11. Tighten the bleeder valve to 80-100 in-lbs (9.0-11.3 Nm) and install the bleeder cap.
12. If necessary, add clutch fluid to the master cylinder reservoir until the fluid level is at or just below the fill line.
13. Verify proper operation of the master-cylinder relief port. Actuate the clutch hand-lever. A slight spurt of fluid will break the fluid surface in the reservoir compartment if all internal components are working properly.
14. Install the clutch master-cylinder cover (with gasket) on the master-cylinder reservoir so that the thicker side is over the clutch-line fitting. Fasten the cover with the two Phillips screws removed earlier. Tighten the screws to 6-8 in-lbs.

Measuring Clutch Plate Lift
1. Attach the standoff of a dial indicator to one of the 1/4-20 clutch-inspection (derby) cover mounting holes. Position the anvil to the end of the push rod.

NOTE: Insufficient clutch-release plate movement can lead to difficulty or inability to shift.
2. Actuate the clutch lever to measure the axial movement of the push rod and the clutch-release plate assembly. The axial movement needs to be at least 0.065 inch (1.65 mm).

NOTE: Proper bleeding of the system will typically yield plate movement of greater than .065 inch (1.65 mm). If clutch release plate movement is less than .065 inch, the system MUST BE RE-BLED.

Installing the Clutch-Inspection Cover
1. Remove the quad-ring clutch-inspection cover seal (7) from the groove in the primary chaincase cover. Wipe all lubricant from the seal and inspect it for cuts, tears or signs of deterioration. Replace if necessary. If the motorcycle is using a gasket instead of the quad-ring seal, replace gasket. See Figure 3.
2. Swab all lubricant from the quad-ring groove. Install the seal into the groove with the nubs contacting the groove walls. Refer to your Service Manual for proper installation of derby cover gasket, if so equipped.
3. Using a T27 TORX drive head, install the derby cover to the primary-chaincase cover with the five screws (with captive washers) removed earlier.
4. Tighten the derby cover screws, in the sequence shown, to 84-108 in-lbs. See Figure 10.

Final Assembly
1. Check the O-ring on the transmission drain plug removed earlier for tears, cuts or general deterioration, and replace if necessary.
2. Install the drain plug and torque to 14-21 ft-lbs.
3. Fill the transmission with the proper transmission lubricant.
4. Check the O-ring on the filler plug/dipstick removed from the old transmission side cover for tears, cuts or general deterioration, and replace if necessary. Install the filler plug/dipstick into the new transmission side cover assembly.
5. Re-install and tighten all exhaust-system components.
6. For ALL models: Install the left-side rear-view mirror and tighten the acorn nut to 12 ft-lbs. Check mirror adjustment and reposition if necessary.
7. Refer to the Service Manual, and follow instructions to connect the battery cables, positive cable first.
8. Follow the instructions in the Service Manual to install the seat.
9. If necessary, install the right-side saddlebag.
10. Test ride the motorcycle. If the clutch does not work properly, it may be necessary to re-bleed the clutch fluid line and re-measure the clutch-plate lift.
<table>
<thead>
<tr>
<th>Item</th>
<th>Description (Quantity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clutch master cylinder</td>
</tr>
<tr>
<td></td>
<td>Clutch lever/master cylinder assembly, chrome</td>
</tr>
<tr>
<td>1a</td>
<td>Clutch reservoir assembly</td>
</tr>
<tr>
<td>1b</td>
<td>Lever assembly Includes lever, pivot pin bushing, retaining ring, bushing, and roller kit.</td>
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<tr>
<td>2</td>
<td>Clamp, handlebar control, chrome</td>
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<tr>
<td>3</td>
<td>Bolt, banjo</td>
</tr>
<tr>
<td>4</td>
<td>Gasket, brake line (2)</td>
</tr>
<tr>
<td>5</td>
<td>Gasket, transmission side cover</td>
</tr>
<tr>
<td>6</td>
<td>Screw, 1/4-20 x 1-3/4 inch (4)</td>
</tr>
<tr>
<td>7</td>
<td>Side cover assembly (includes items 8 through 10)</td>
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<tr>
<td>8</td>
<td>Cover, side</td>
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<tr>
<td>9</td>
<td>Bleeder screw</td>
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<tr>
<td>10</td>
<td>Cap, bleeder screw</td>
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<tr>
<td>11</td>
<td>Clutch line assembly (braided stainless steel w/chrome fittings)</td>
</tr>
<tr>
<td>12</td>
<td>P-clamp (2)</td>
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<td>13</td>
<td>Screw, 1/4-20 x 3/8 inch (2)</td>
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<td>14</td>
<td>Locknut, 1/4-20 (2)</td>
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<td>15</td>
<td>Cable strap (6)</td>
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<td>16</td>
<td>Release plate</td>
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<tr>
<td>17</td>
<td>Bearing</td>
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<tr>
<td>18</td>
<td>Pushrod service kit (includes items 19, 20 and 21)</td>
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<td>Pushrod, clutch release</td>
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<td>Retaining ring, internal, 2 inch</td>
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<td>21</td>
<td>Retaining ring, internal, 3/8 inch</td>
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