

# Recall Campaign

Daimler Trucks  
North America LLC

June 2009  
FL550A  
NHTSA #09V-114

## Work Instructions

### Subject: FCCC FS/FB65 Hydraulic Brake Lines

**Models Affected:** Specific Freightliner Custom Chassis FS65 (Thomas Built Busses Conventional) school bus chassis and FB65 shuttle bus chassis equipped with MBE 906 engines, Allison automatic transmissions, hydraulic brakes, and air ride suspensions with air compressors manufactured between April 12, 2004, and September 18, 2006.

**IMPORTANT :** Formal kits are not required for this recall. Should a brake line show rubbing or damage and require replacement, please order the appropriate brake line for the vehicle, the most common part numbers are included in Table 1 below. It is expected that 10 percent or fewer brake lines will require replacement. When necessary, brake lines may be included on FL550 claims without additional authorization. Damaged brake lines must be mentioned in the claim story. When necessary, freight for brake lines may be claimed without additional authorization; the freight invoice must be available upon request. Up to one pint of brake fluid may be claimed without additional authorization when a brake line is replaced.

### Hydraulic Brake Line Inspection

1. Check the base label (Form WAR259) for a completion sticker for FL550 (Form WAR260), indicating this work has been completed. The base label is usually located above the driver's window. If a completion sticker is present, no further work is needed. If a completion sticker is not present, proceed to the next step.
2. Park the vehicle on a level surface, shut down the engine, apply the parking brake, and chock the tires.
3. Open the hood.
4. With the engine off, inspect for rubbing between the transmission dipstick tube and the hydraulic brake line. See Fig. 1.
5. If there is no sign of rubbing or damage, no further work needs to be done. Clean a spot on the base label (Form WAR259), write the recall number, FL550, on a red completion sticker (Form WAR260), and attach it to the base label. Lower the hood and remove the chocks from the tires.

If there are signs of rubbing or damage. Replace the damaged brake line (expected to be one brake line and rarely two brake lines). Go to Hydraulic Brake Line Replacement in these Work Instructions

### Hydraulic Brake Line Replacement

**IMPORTANT:** Brake line replacement is required only if a line shows signs of rubbing or is damaged. This must be referenced in the claim story when a brake line is claimed. It is expected that 10 percent or fewer brake lines will require replacement.

1. If necessary, loosen and remove any brackets or P-clamps that are holding the brake line to the frame or axle, so that you can remove the damaged section.
2. Place a container under the connection on one side of the hydraulic brake line, then disconnect the line. Plug both ends of the connection. Repeat this step at the connection at the other end of the brake line being replaced.
3. Remove the plugs installed earlier, then install the new section of brake line. Tighten the connections 15 lbf-ft (20 N·m).
4. Install any brackets or P-clamps that were removed in the steps above.

5. Check for any interference or rubbing between the brake lines and other components. There should be adequate clearance of 1/2 inch (13 mm) or more between the transmission dipstick tube and hydraulic brake line. See Fig. 2.
6. Go to Hydraulic System Bleeding in these Work Instructions.

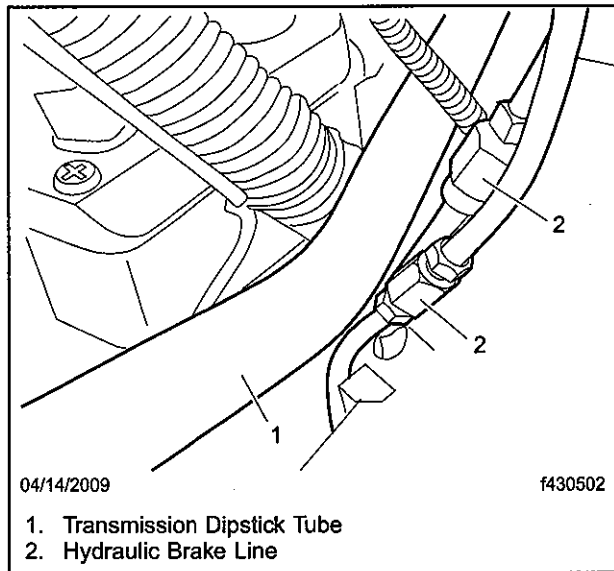
## Hydraulic System Bleeding

**IMPORTANT:** Whenever any hydraulic system fitting is loosened or disconnected, the entire system must be bled to remove any air that may have entered it.

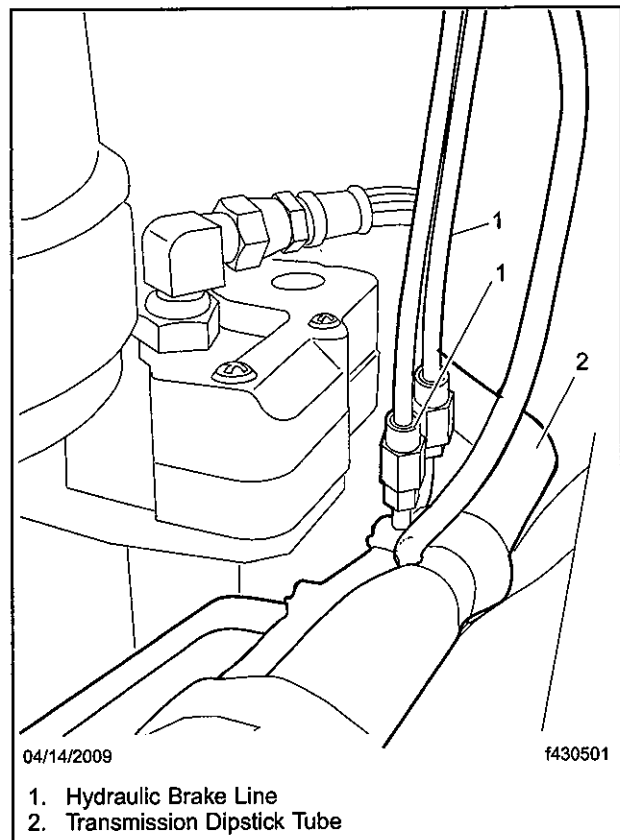
### NOTICE

**Power steering fluid and brake fluid are incompatible. Never mix these two fluids, or serious damage to both hydraulic systems will result. Use only brake fluid for the master cylinder and brake lines. Use only power steering fluid for the power booster.**

Always use new, clean brake fluid that meets DOT 3<sup>®</sup> specifications when bleeding the master cylinder and service brake system. Never reuse brake fluid, and do not use brake fluid containers for any other purpose. Keep brake fluid containers tightly closed to keep new brake fluid clean.



**Fig. 1, Insufficient Clearance Between the Hydraulic Brake Line and Transmission Dipstick Tube**



**Fig. 2, Adequate Clearance Between the Hydraulic Brake Line and Transmission Dipstick Tube**

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**IMPORTANT:** Do not let brake fluid touch any painted surfaces, as it will remove the paint. Brake fluid may also damage certain non-metal surfaces. Do not let it get on brake pads or rotors.

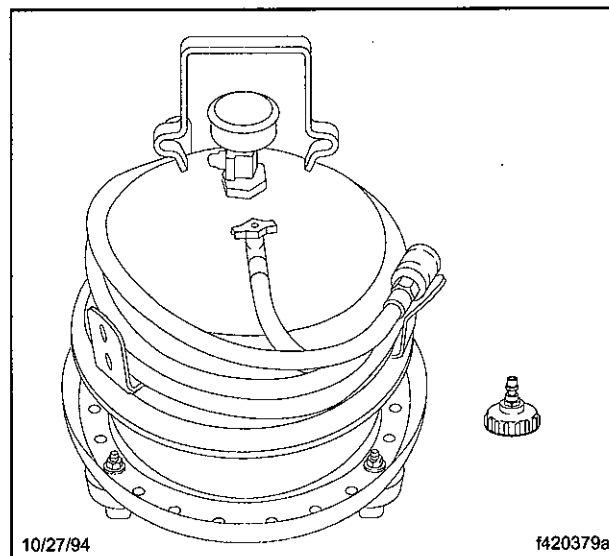
If your dealership has a pressure bleeder kit, go to the Pressure Bleeding section.

If your dealership does not have a pressure bleeder kit, go to the Manual Bleeding section.

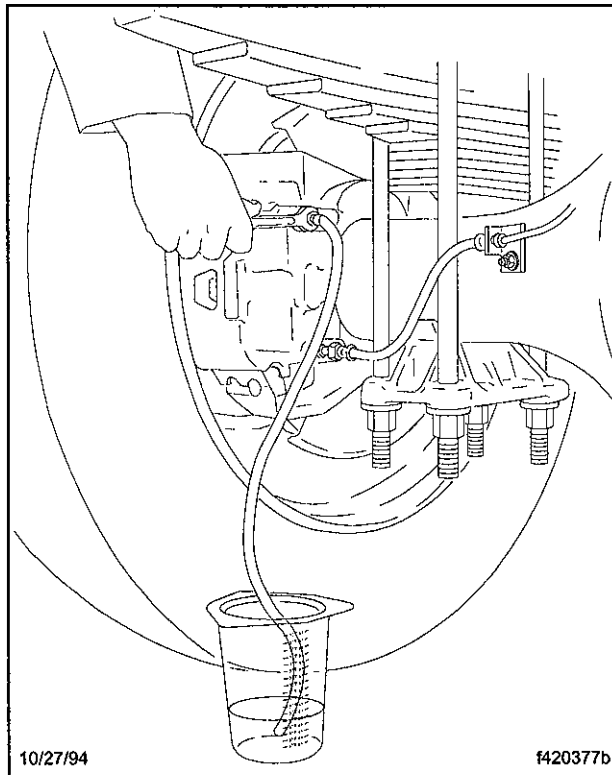
## Pressure Bleeding, Service Brake System

Pressure bleeding is the preferred method for bleeding the service brake system. It requires the use of a special pressure bleeder kit, consisting of a tank, pressure pump and valve, gauge, tubing, and adaptor. These are available from a number of manufacturers, and include instructions for use. See **Fig. 3**.

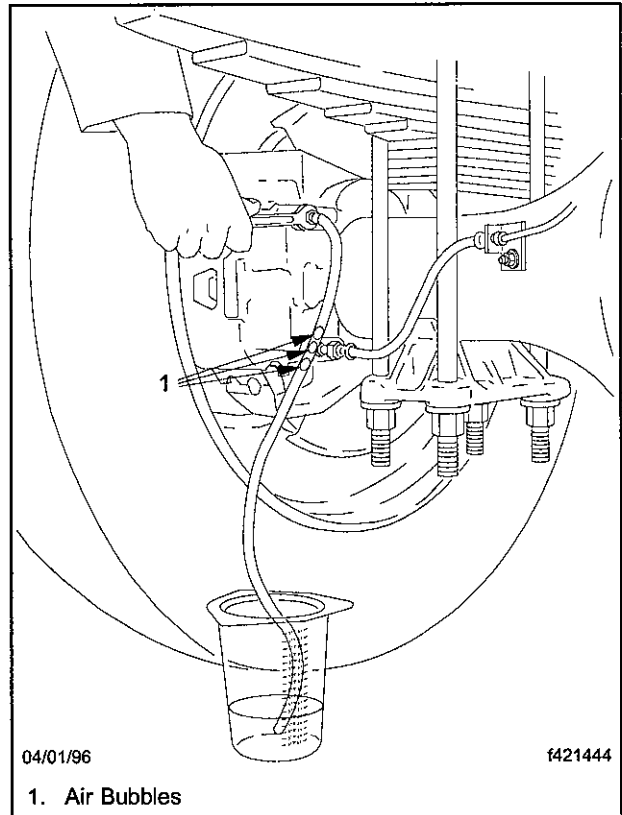
1. Connect the pressure bleeder to the brake master cylinder reservoir, following the manufacturer's instructions.
  - 1.1 Fill the pressure bleeder with new DOT 3 approved brake fluid, then pressurize it according to the manufacturer's instructions.
  - 1.2 Using the adaptor provided in the pressure bleeder kit, connect the pressure bleeder to the rear compartment of the master cylinder reservoir.
2. Bleed the hydraulic connections at the rear wheel calipers, starting on the right side.
  - 2.1 Place a wrench on the bleeder fitting at the caliper, then attach a length of clear tubing to the bleeder fitting. Make sure the tube fits snugly. Submerge the tubing in a container of clean brake fluid. See **Fig. 4**.
  - 2.2 Loosen the bleeder fitting about 3/4 turn, and let the brake fluid flow out of the fitting until it is free of air bubbles. See **Fig. 4** and **Fig. 5**. Then tighten the fitting firmly.
  - 2.3 Move to the left rear caliper, and repeat the steps for bleeding the caliper.
3. Disconnect the pressure bleeder from the rear compartment of the master cylinder reservoir, then connect it to the front compartment of the reservoir.
4. Bleed the front wheel brake calipers, starting at the right side.



**Fig. 3, Pressure Bleeder Kit**



**Fig. 4, Bleeding the Connections at the Rear Wheel Calipers**



**Fig. 5, Loosening the Bleeder Fitting Until the Air Bubbles are Gone**

- 4.1 Place a wrench on the bleeder fitting at the caliper, then attach a length of clear tubing to the bleeder fitting. Make sure the tube fits snugly. Submerge the tubing into a container of clean brake fluid. See Fig. 4.
- 4.2 Loosen the bleeder fitting about 3/4 turn, and let the brake fluid flow out of the fitting until it is free of air bubbles. See Fig. 4 and Fig. 5. Then tighten the fitting firmly.
- 4.3 Move to the left front wheel caliper, and repeat the steps for bleeding the caliper.
5. Check the brake fluid level in both compartments of the reservoir. Add new DOT 3 approved brake fluid if needed.
6. Check the operation of the brakes by depressing the brake pedal several times, until it feels firm and not going all the way down to the floor.
7. Clean a spot on the base label (Form WAR259), write the recall number, FL550, on a red completion sticker (Form WAR260), and attach it to the base label. Lower the hood and remove the chocks from the tires.

## Manual Bleeding, Service Brake System

If you don't have pressure bleeding equipment, you can use the manual bleeding procedure.

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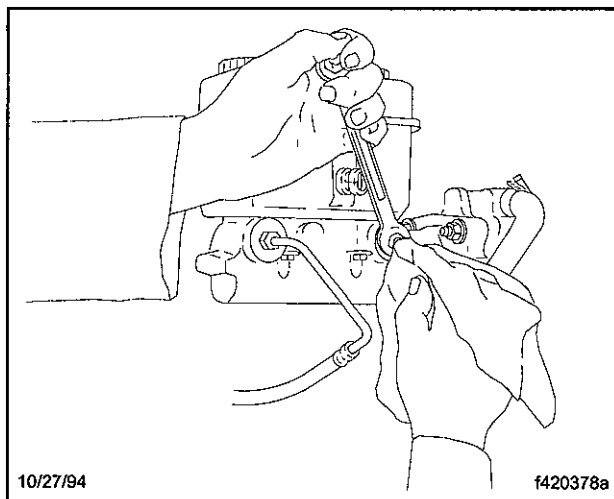
**IMPORTANT:** Do not let the brake master cylinder fluid level get too low during manual bleeding operation. Keep the master cylinder reservoir filled with new, DOT 3 approved brake fluid. Failure to keep the brake reservoir filled could result in more air entering the system, making it impossible to effectively bleed the system.

1. Bleed the master cylinder.

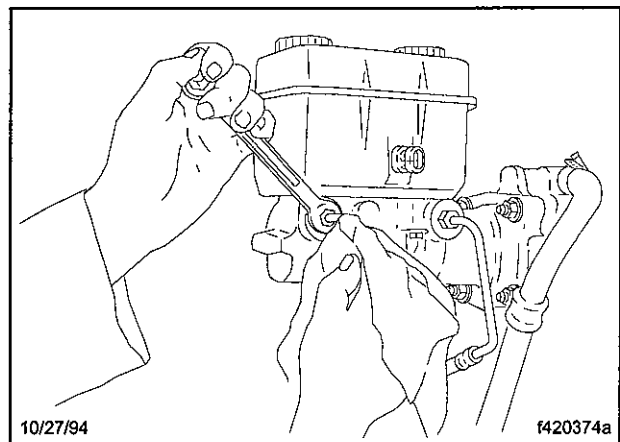
- 1.1 Using a wrench and a rag to absorb leaking brake fluid, loosen the fitting at the rear outlet port on the master cylinder. See **Fig. 6**. Loosen the fitting about one full turn.
- 1.2 Have someone push the brake pedal down slowly by hand, to the floor of the vehicle. Brake fluid, and any air in the master cylinder will exit from the fitting.
- 1.3 *With the brake pedal held down*, tighten the rear hydraulic line fitting firmly.

**IMPORTANT:** Do not release the brake pedal until the fitting is tightened, or more air will get into the system.

- 1.4 Release the brake pedal.
  - 1.5 Loosen the fitting again, and repeat the steps for bleeding as required until no air escapes from the fitting and the brake pedal feels firm.
  - 1.6 Check the brake fluid level in the rear compartment of the reservoir, then add new DOT 3 approved brake fluid if needed.
  - 1.7 Using a wrench and a rag to absorb leaking brake fluid, loosen the fitting at the front outlet port on the master cylinder. See **Fig. 7**. Loosen the fitting about one full turn.
  - 1.8 Repeat the steps as required for the front outlet port.
  - 1.9 Check the brake fluid level in the front compartment of the reservoir. Add new DOT 3 approved brake fluid if needed.
2. Bleed the hydraulic connections at the wheel calipers, starting at the right rear wheel caliper.
- 2.1 Place a wrench on the bleeder fitting at the caliper, then attach a length of clear tubing to the bleeder fitting. Make sure the tube fits snugly. Submerge the tubing in a container of clean brake fluid. See **Fig. 4**.



**Fig. 6, Loosening the Fitting at the Rear Outlet Port**



**Fig. 7, Loosening the Fitting at the Front Outlet Port**

- 2.2 Loosen the bleeder fitting about 3/4 turn.
- 2.3 Have someone slowly push the brake pedal to the floor, then *with the brake pedal depressed*, tighten the bleeder fitting.

**IMPORTANT:** Make sure the brake pedal stays depressed while tightening the fitting. If it is released before the fitting is tightened, more air will get into the system.

- 2.4 Release the brake pedal. Check the fluid in the tube. If air bubbles are present, repeat the steps as required until the fluid in the tube is completely free of air bubbles, as shown in **Fig. 4** and **Fig. 5**.
  - 2.5 Check the brake fluid level in the reservoir. Add new DOT 3 approved brake fluid if needed.
  - 2.6 Repeat the steps for bleeding the connections for the left rear caliper, then the right front caliper, and finally for the left front caliper.
3. Clean a spot on the base label (Form WAR259), write the recall number, FL550, on a red completion sticker (Form WAR260), and attach it to the base label. Lower the hood and remove the chocks from the tires.