

Subject: Low Pedal / Brake Bleeding “Tips” Dual Piston Calipers

Vehicle Involved: 1988 and later Ford E & F Series 250/350 and many vehicles equipped with a variety of caliper configurations.

Condition: Difficult time removing air from front calipers after replacement of hydraulic components.

Repair Procedure: Dual piston caliper equipped vehicles may be difficult to bleed for several reasons. Note the caliper bleeder position on the vehicle you are working on. The bleeder screw position may be just “shy” of the 12 o’clock position, allowing a small air pocket to exist. Many Technicians recall the days of rear caliper bleeding problems with older Corvettes. Many Techs learned to lift the rear of the vehicle to aid in the bleeding procedure. Despite the caliper bleeder position, the bigger issue seems to be the inner “roughness” or perhaps caliper porosity, which has a tendency to hold air bubbles, making the bleeding procedure a long and frustrating process. 1988 and later Ford trucks have been particularly hard to bleed. The following “tip” may help to bleed the calipers and to restore the brake pedal height and feel. To bleed the front brakes, begin by removing the caliper from the knuckle or caliper support bracket brake hoses still attached. To do this, open the bleeder screw and place an isolation clamp gently on the brake hose. See figure 1. Tighten the clamp until brake fluid stops dripping. Do not over tighten the clamp. Push the caliper pistons slowly and evenly back into the caliper bore. This procedure helps to push contaminated brake fluid out of the bleeder screw and not upstream into sensitive ABS hydraulic control units. Remove the isolation clamp, and close the bleeder screw. Remove the brake pads; place a block of wood within the caliper. The idea here is to extend the caliper pistons as far out of the caliper bore as practical. Have an assistant apply the brake pedal numerous times. Wait ten seconds between cycles and do not push the pedal to the floor. “Tip” Have your assistant place their left foot under the brake pedal as they pump the pedal. This will act as a stop preventing damage to the master cylinder. See figure 2. At this point hold the caliper, bleeder screw at the 12 o’clock position. Lightly tap on the caliper with a small hammer. The vibration created by the hammer dislodges the air bubbles stuck to the sides of the rough caliper bore fluid channels. See figure 3. Bleed and tap on the caliper until all of the air bubbles are out of the system. Slowly push the caliper pistons back into the caliper bore and reinstall the caliper. Never allow the caliper to hang by the brake hose at any time during this procedure. Repeat this bleeding procedure to the other side front. Check master cylinder fluid level. Confirm pedal height and feel.

Figure 1



Figure 2

