Technical Service Bulletin

SUBJECT: Accelerated Brake Lining Wear, Front Versus Rear

NO: 05-04-97

GROUP: Brakes

DATE: Mar. 28, 1997

THIS BULLETIN SUPERSEDES TECHNICAL SERVICE BULLETIN 05-02-96 REV. A, DATED NOV. 15, 1996, WHICH SHOULD BE REMOVED FROM YOUR FILES AND NOTED IN THE 1996 TECHNICAL SERVICE BULLETIN MANUAL (PUBLICATION NO. 81-699-97010). THIS BULLETIN INCORPORATES THE USE OF REVISED BRAKE LININGS FOR VEHICLES EQUIPPED WITH 80MM FRONT CALIPERS. ALL REVISIONS ARE HIGHLIGHTED WITH **ASTERISKS.**

MODELS:

1994 - 1997 (BR) Ram Trucks

NOTE: THIS BULLETIN APPLES TO 2500 SERIES AND 3500 SERIES RAM TRUCKS.

SYMPTOM/CONDITION:

Front brake linings wear prematurely when compared to the wear experienced on the rear brake linings. Normally, it is expected that the front brake linings will require replacement approximately twice before the rear lining assemblies will need replacement. The accelerated wear condition can be identified by requiring the front brake linings to be replaced four to six times before the rear lining assemblies are replaced.

DIAGNOSIS:

1. Review service history to determine if front brake lining wear has been accelerated, typically 3 to 4 times as often as the rear brake linings.

2. If the vehicle is a 2500 series, 8800 GVW, and is operated continuously near the Gross Vehicle Weight Ratings, have the vehicle weighed to determine if the loaded condition is at 75% or greater of the gross vehicle weight rating.

3. Visually inspect both front and rear brake assemblies for any signs of abnormal wear, abuse or mis-assembly of components. Refer to the appropriate Service Manual, Group 5, for information regarding service of braking components if the brake assemblies show signs of abnormal wear, abuse or mis-assembly of components.

4. If the front brake pads are evenly worn with the rear brake linings indicating light wear, perform the following Repair Procedure.

PARTS REQUIRED:

**AR	(1)	05003163AA	80mm Front Brake Lining Set, 2500 Series, 7500 GVW (All) And 8800 GVW 4X2**
AR	(1)	04886279AA	86mm Front Brake Lining Set, 2500 Series, 8800 GVW, 4X4 And All 3500 Series Vehicles
AR	(1)	04886328AA	Rear Brake Lining Set, All 3500 Series Vehicles
AR	(1)	04761560	Hold-down Spring Package, All 3500 Series Vehicles
AR	(1)	04761603	Wheel Cylinder (27mm), 2500 Series, 8800 GVW Vehicles (Sales Code Z2B and Z7B)

REPAIR PROCEDURE:

This bulletin involves replacing the front brake linings on 2500 series and 3500 series vehicles, the rear brake linings on 3500 series vehicles, and the rear wheel cylinders on 2500 series, 8800 GVW vehicles (sales codes Z2B and Z7B only) that are operated continuously near 75% or greater of the Gross Vehicle Weight Rating.

Also, because rear brake adjustment is critical to the total operation of the braking system, it is recommended that the customer be made aware of the proper procedures to operate the rear automatic self adjusting brake system. The procedures are outlined in the Owners Manual. The procedure states, "To maintain the correct adjustment, you need only drive your vehicle in reverse and apply the brakes until the vehicle comes to a complete stop."

2500 Series, 8800 GVW Vehicles Only - Rear Wheel Cylinder Replacement

NOTE: THIS PORTION OF THE REPAIR PROCEDURE SHOULD ONLY BE PERFORMED IF THE VEHICLE IS A 2500 SERIES, 8800 GVW (SALES CODE Z2B OR Z7B) AND IS CONTINUOUSLY OPERATED AT 75% OF GROSS VEHICLE WEIGHT OR GREATER AS DETERMINED IN DIAGNOSIS STEP 2.

1. Be sure parking brake is released.

2. Raise the vehicle on an appropriate lift.

3. Remove rear wheel and tire assemblies.

4. Using tube nut wrenches, disconnect brake line from wheel cylinder.

5. Lift adjusting lever away from adjuster screw then, turn adjusting screw star wheel until screw is fully retracted.

6. Remove brake shoe return springs, adjuster spring, and adjuster screw. Move upper ends of brake shoes apart to provide removal clearance for wheel cylinder links.

7. Remove the rear wheel cylinder attaching screws and remove wheel cylinder from the support plate. Discard the wheel cylinder.

8. Apply thin coat of Mopar Silicone Sealer (p/n 4318025) to wheel cylinder mounting surface of support plate. Sealer prevents road splash from entering brake drum past cylinder.

9. Start brake line in cylinder inlet by hand. Do not tighten fitting at this time.

10. Mount wheel cylinder on support plate and install cylinder attaching screws. Tighten screws to 20 Nm (15 ft. lbs.) of torque.

11. Tighten brake line fitting to 13 Nm (115 in. lbs.) of torque.

12. Install brake shoe components removed to access wheel cylinder.

13. Adjust brake shoe to drum clearance. Refer to the 1997 Ram Truck Service Manual (Publication No. 81-370-7108), pages 5-40 and 5-41 "ADJUSTMENT WITH BRAKE GAUGE," for information regarding proper rear brake adjustment procedures.

14. Install brake drum.

15. Repeat steps 2 through 13 for opposite side of vehicle.

16. Fill and pressure bleed brake system with Mopar DOT 3 Brake Fluid (p/n 04318080) or equivalent.

17. Install rear wheel and tire assemblies and proceed to the next repair procedure. Refer to the 1997 Ram Truck Service Manual (Publication No. 81-377-7108), pages 22-8 through 22-10 for information regarding proper wheel installation and lug nut torques.

****2500/3500 Series Vehicles - Front Brake Lining Replacement**

NOTE: THIS PORTION OF THE REPAIR PROCEDURE APPLES TO 2500 SERIES, 8800 GVW 4X4 AND ALL 3500 SERIES RAM TRUCKS BUILT BEFORE AUG. 5, 1996 (MDH 0805XX) AND 2500 SERIES 7500 GVW (ALL) AND 8800 GVW 4X2 BUILT BEFORE APRIL 7, 1997 (MDH 0407XX).**

1. If not already done so, support the vehicle and raise on suitable hoist.

2. Remove front wheel and tire assembly.

3. Press caliper piston back into bore.

4. Remove caliper mounting bolts with 3/8 in. hex wrench or socket.

5. Rotate caliper rearward off rotor and out of steering knuckle support ledges.

6. Remove and discard inboard brake lining by tilting the shoe at the top to unseat the retaining spring clip (Figure 1).

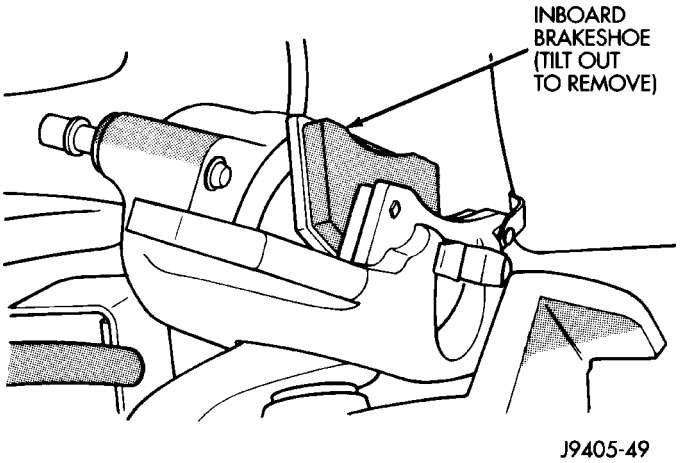

FIGURE 1 - Inboard Brake Lining Removal

7. Remove and discard outboard brake lining by unseating the retaining spring on one end and rotating the lining out of the caliper (Figure 2).

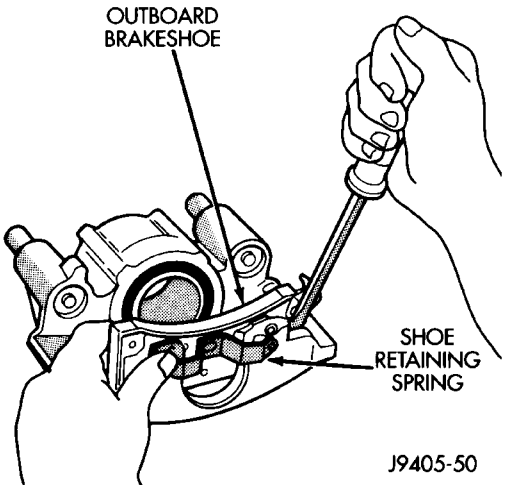

FIGURE 2 - Outboard Brake Lining Removal

8. Secure caliper to chassis or suspension component with wire.

CAUTION: DO NOT ALLOW THE BRAKE HOSE TO SUPPORT THE CALIPER. SUSPENDING THE CALIPER BY THE BRAKE HOSE CAN DAMAGE THE HOSE AND FITTING JOINTS. USE WIRE TO SUPPORT AND SECURE THE CALIPER TO A CHASSIS OR SUSPENSION COMPONENT.

9. Clean caliper and steering knuckle slide surfaces with a wire brush.

10. Lubricate the caliper mounting pin and interior of bushing with silicone grease (Figure 3).

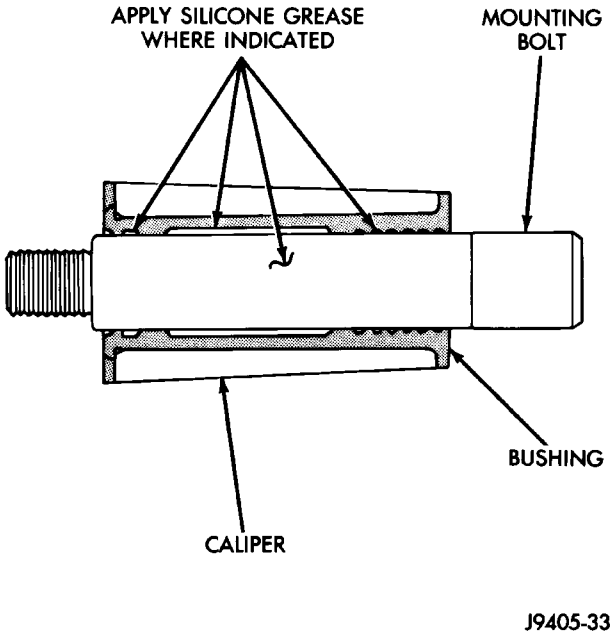

FIGURE 3 - Mounting Bolt Lubrication

11. Install inboard brake lining from front brake lining set (see Parts Required section) onto caliper. Be sure the end of the retaining spring clip does not get jammed between the piston and the edge of the shoe plate (Figure 4).

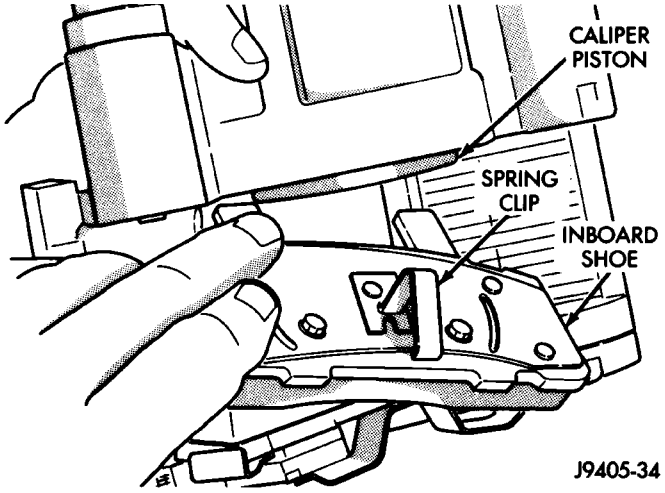

FIGURE 4 - Inboard Brake Lining Installation

12. Install outboard brake lining from front brake lining set (see Parts Required section) onto caliper. Be sure retaining spring ends are seated in dimples in caliper (Figure 5).

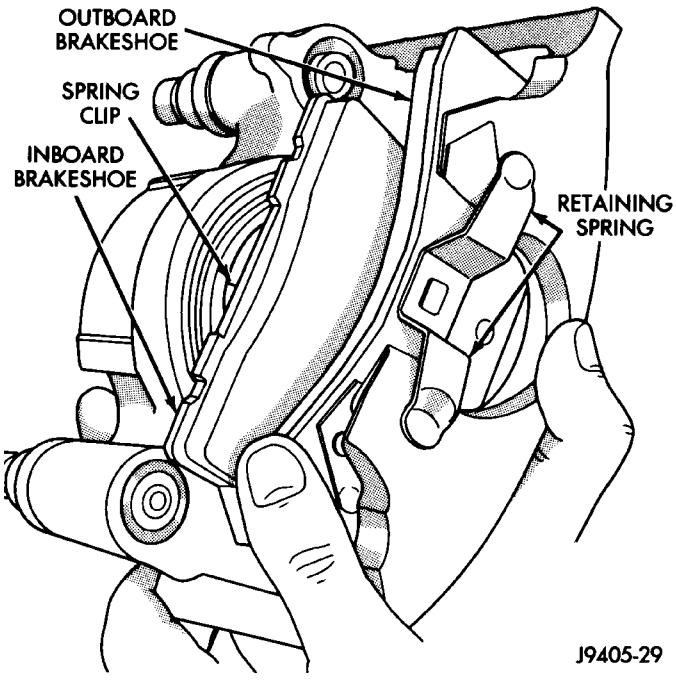

FIGURE 5 - Outboard Brake Lining Installation

13. Install caliper over rotor and into steering knuckle mounting arms (Figure 6). **Be sure caliper is seated flush on mounting arm surfaces as shown.**

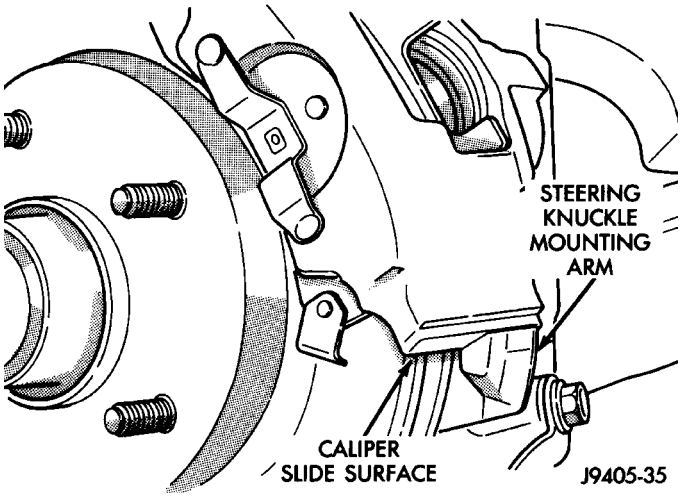

FIGURE 5 - Caliper Installation

14. Start the caliper mounting bolts by hand to avoid cross threading then, tighten the mounting bolts to 51 Nm (38 ft. lbs.) of torque. Install tire and wheel assemblies. Refer to the 1997 Ram Truck Service Manual (Publication No. 81-377-7108), pages 22-8 through 22-10 for information regarding proper wheel installation and lug nut torques.

15. Pump brake pedal to reset caliper pistons and brake linings.

WARNING: DO NOT MOVE THE VEHICLE UNTIL THE BRAKE LININGS HAVE BEEN PROPERLY SEATED.

16. Check brake fluid level and add Mopar DOT 3 Brake Fluid (p/n 04318080) or equivalent if necessary.

17. If the vehicle is a 2500 series Ram Truck and the rear brakes were not adjusted from the previous repair procedure, adjust rear brake shoe to drum clearance. Refer to the 1997 Ram Truck Service Manual (Publication No. 81-370-7108), pages 5-40 and 5-41 "ADJUSTMENT WITH BRAKE GAUGE," for information regarding proper rear brake adjustment procedures.

3500 Series Vehicles Only - Rear Brake Shoe Replacement

NOTE: THIS PORTION OF THE REPAIR PROCEDURE APPLES TO 3500 SERIES RAM TRUCKS BUILT BEFORE AUG. 5, 1996 (MDH 0805XX).

1. Be sure parking brake is released.

2. Raise the vehicle on an appropriate lift.

3. Remove rear wheel and tire assemblies.

4. Remove brake drum.

5. Remove primary (front) brake shoe return spring from anchor pin with brake pliers (Figure 7).

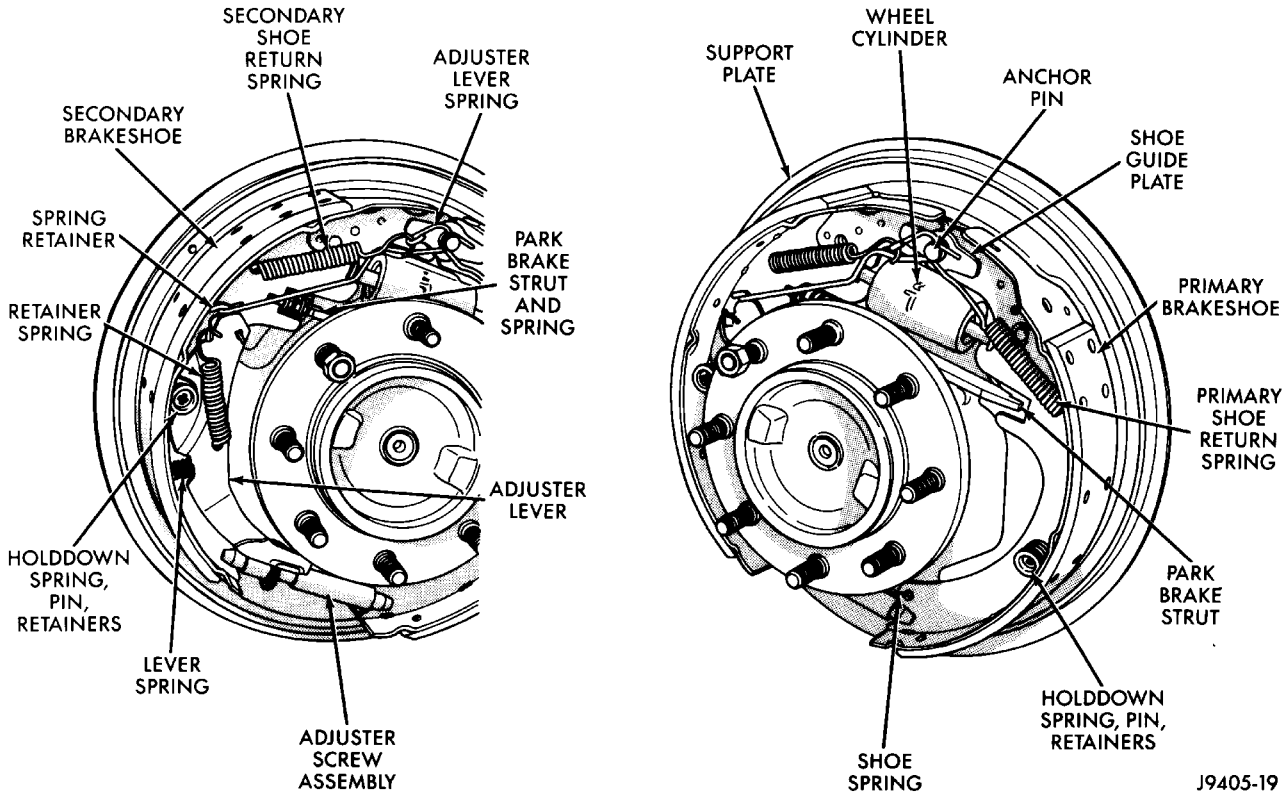

FIGURE 7 - Brake Shoes And Hardware

6. Remove primary brake shoe hold-down spring, pin, and retainers using a hold-down spring tool.

7. Disconnect shoe spring and remove primary brake shoe and parking brake lever strut.

8. Remove adjuster screw assembly.

9. Remove secondary brake shoe hold-down spring, pin, and retainer assembly then, remove adjuster lever, spring, and spring retainer assembly. It is not necessary to disassemble adjuster lever components unless they are worn or damaged.

10. Disconnect parking brake cable from lever attached to secondary brake shoe then remove brake shoe.

11. Remove and discard E-clip attaching parking brake lever to secondary brake shoe and remove lever.

NOTE: REAR WHEEL CYLINDER OR REAR AXLE SEAL SERVICE MUST BE PERFORMED PRIOR TO CONTINUING IF THERE IS ANY EVIDENCE OF LEAKAGE. REFER TO THE 1997 RAM TRUCK SERVICE MANUAL (PUBLICATION NO. 81-370-7108) PAGE 5-32 FOR INFORMATION REGARDING WHEEL CYLINDER SERVICE OR PAGES 3-87 THROUGH 3-152 FOR REAR AXLE SERVICE.

12. Clean support plate with Mopar Brake parts Cleaner (p/n 04549623). Then, smooth brake shoe contact pads with a wire brush or emery cloth.

13. Lubricate adjuster lever, anchor pins, and brake shoe contact pads with Mopar Brake Lubricant (p/n 04796269).

14. Clean and check operation of adjuster screw assembly. Replace assembly if threads are heavily rusted, corroded, or damaged. Make sure each screw assembly rotates freely then, lubricate the adjuster screw threads with Mopar Spray White Lube (p/n 04318066).

15. Attach parking brake lever to new secondary brake shoe (from p/n 04886328AA Rear Brake Lining Set). Use new E-clip to secure lever to shoe. If lever is secured with a U-clip, pinch new clip together with channel lock piers to secure it.

16. Attach parking brake cable to parking brake lever.

17. Install secondary brake shoe and adjuster lever as follows:

    a. Insert new secondary brake shoe hold-down pin (from package p/n 04761560) through support plate.

    b. Position secondary brake shoe on support plate and insert new pin (from package p/n 04761560) through shoe.

    c. Position adjuster lever on brake shoe and insert new hold-down spring inner retainer (from package p/n 04761560) into lever and shoe. Inner retainer has a shoulder on it which seats in lever and shoe.

    d. Install new hold-down spring (from package p/n 04761560) over pin and seat it in inner retainer. Then, install and seat hold-down spring outer retainer on pin with hold-down spring tool.

18. Install adjuster lever spring between brake shoe and lever. Be sure spring is seated on lever tang.

19. Attach shoe spring to secondary brake shoe. Long end of spring goes into secondary shoe.

20. Instal oval shaped spring onto parking brake strut and engage spring end of strut into secondary brake shoe.

21. Install primary brake shoe (from p/n 04886328AA Rear Brake Lining Set) onto support plate. Use new hold-down spring, pin, and retainers (from package p/n 04761560) to secure shoe. Be sure parking brake strut is seated in both brake shoes.

22. Install adjuster screw assembly. Be sure star wheel is positioned adjacent to adjuster lever and that notches in adjuster screw are properly seated on brake shoes.

23. Attach shoe spring to primary brake shoe. Use brake spring pliers and long screwdriver to seat spring in shoe.

24. Install shoe guide plate onto anchor pin.

25. Attach adjuster spring to spring retainer at the top of the adjuster lever then, seat spring on anchor pin with brake spring pliers.

26. Install secondary brake shoe return spring. Attach short end of spring to brake shoe then, hook opposite end on adjuster spring. Use brake spring pliers or a long shank screwdriver to engage return spring in adjuster spring.

27. Install primary brake shoe return spring.

28. Check component installation. Be sure adjuster screw, wheel cylinder links, and park brake struts are all seated in brake shoes.

29. Adjust brake shoe to drum clearance. Refer to the 1997 Ram Truck Service Manual (Publication No. 81-370-7108), pages 5-40 and 5-41 "ADJUSTMENT WITH BRAKE GAUGE," for information regarding proper rear brake adjustment procedures.

30. Install brake drums.

31. Install wheel and tire assemblies. Refer to the 1997 Ram Truck Service Manual (Publication No. 81-377-7108), pages 22-8 through 22-10 for information regarding proper wheel installation and lug nut torques.

32. Repeat steps 3 through 31 for opposite side of vehicle.

33. Lower vehicle down and install any wheel covers that were removed earlier.

POLICY: Reimbursable within the provisions of the warranty.

TIME ALLOWANCE:

Labor Operation No:	Install Front Brake Linings 05-70-24-92	0.6 Hrs.
	Install Rear Wheel Cylinder on 2500 Series, 8800 GVW Vehicles 05-90-50-92	1.1 Hrs.
	Install Rear Brake Shoes on 3500 Series Vehicles 05-70-07-90	0.7 Hrs.
Related Operation:	Dual Rear Wheels 05-70-07-92/93	0.2 Hrs.

FAILURE CODE: P8 - New Part