Bendix® Double Anchor Pin Cam Brake

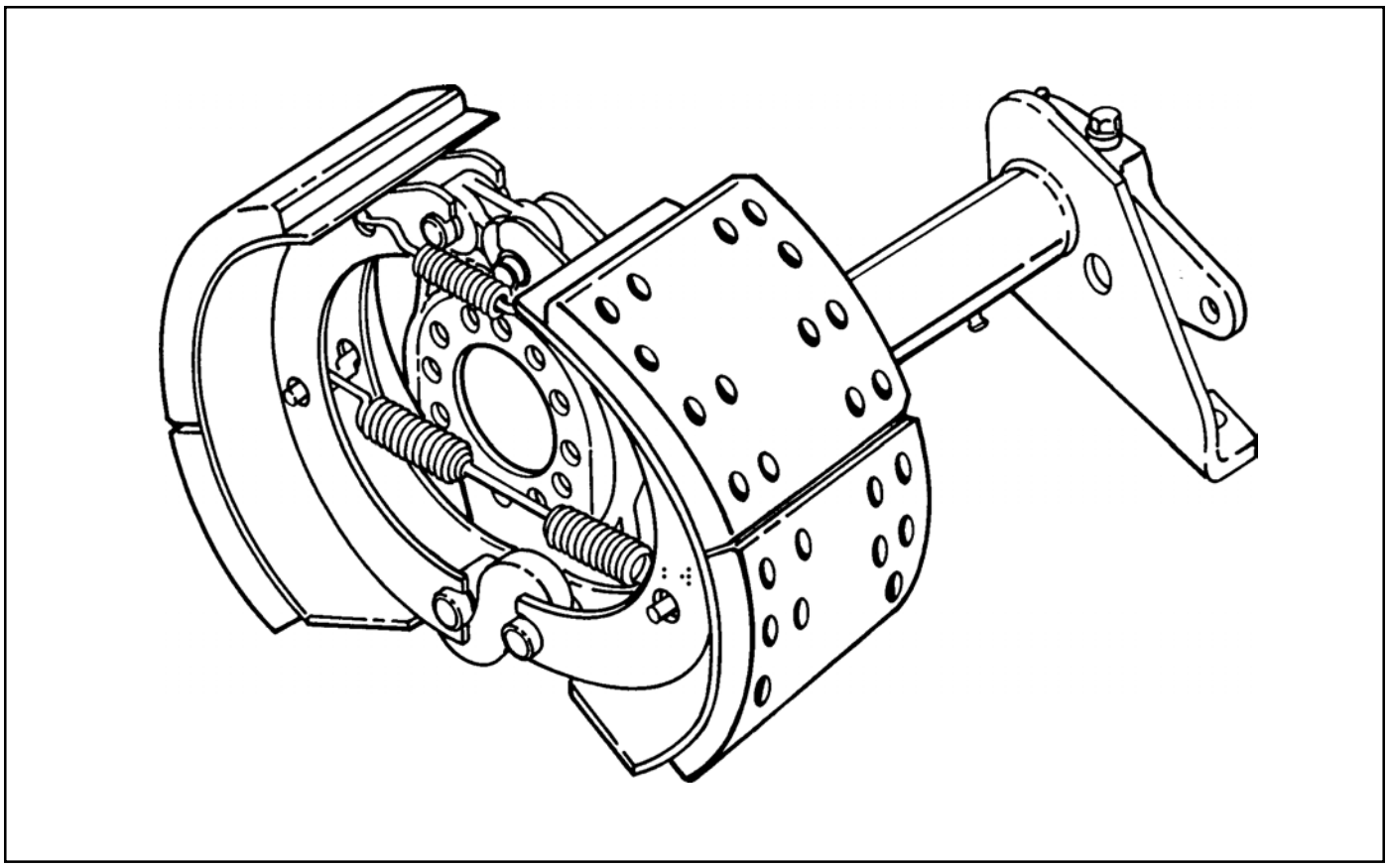

FIGURE 1

GENERAL DESCRIPTION

The Bendix 16-1/2” x 7” double anchor pin cam brake is designed for use on heavy duty highway vehicles. It is a mechanically actuated, leading /trailing shoe brake with a fixed position cam and anchors.

The brake consists of two fabricated steel shoe assemblies individually anchored to a cast iron torque spider and actuated by a single forged cam shaft. Two retaining springs secure the shoe assemblies to their respective anchor pins. The twin webs of each shoe assembly engages the anchor pin on one end and the cam roller on the other. A single shoe to shoe return spring is used to maintain constant contact between the shoe, cam roller and cam.

OPERATION

The Bendix cam brake operates in the following manner during a braking application. The force of the push rod of the actuator is converted from a linear force to a rotary torque. This is accomplished by use of the slack adjuster. This torque is transferred to the cam shaft of the foundation brake due to the spline of the cam shaft being connected to the gear of the slack adjuster. On the opposite end of the cam shaft is the S-Cam which when rotated lifts the cam rollers. This spreads the brake shoe ends apart and pivots the shoes about the anchor pin so the brake lining comes in contact with the rotating brake drum. The friction created by the lining pressure against the drum generates the torque necessary to provide a retarding force to slow down the vehicle. The energy of the vehicle in motion is converted to heat at the surface of the drum and lining. The heat raises the temperature of the drum. The heat is stored in the drum and finally dissipated to the air.

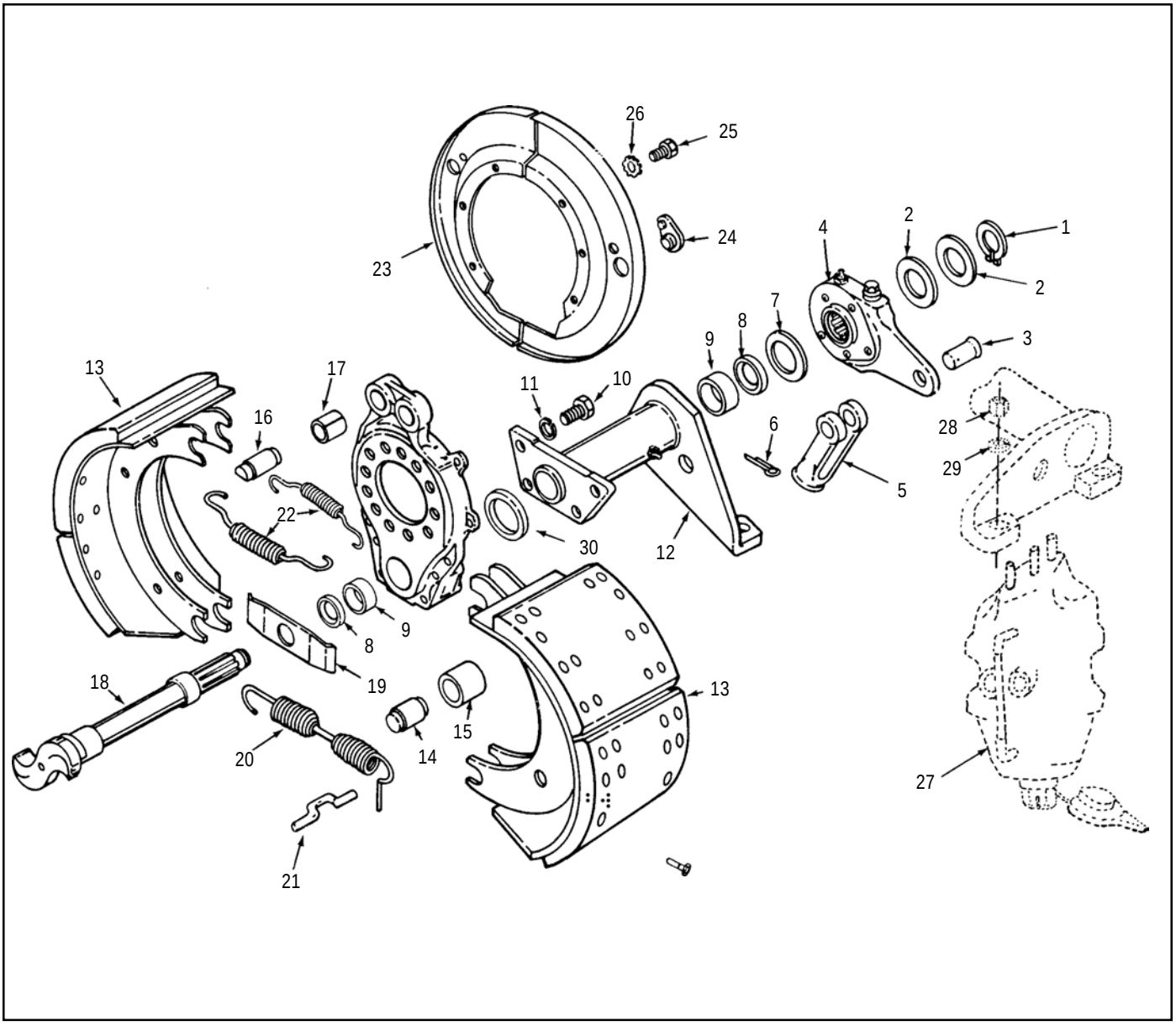

FIGURE 2 - 16-1/2" DOUBLE ANCHOR PIN S-CAM BRAKE

Key No.	Description	Qty.	Key No.	Description	Qty.
1	Snap ring	1	16	Anchor pin	2
2	Spacer washers	#reqd.	17	Anchor pin bushing	2
3	Yoke pin	1	18	S-Cam shaft	1
4	Slack adjuster	1	19	Cam head washer	1
5	Yoke	1	20	Shoe return spring	1
6	Cotter pin	1	21	Spring retainer pin	2
7	Washer	1	22	Anchor spring	2
8	Grease seal	2	23	Dust shield	2
9	Bushing	2	24	Rubber inspection plug	2
10	Cap screw	4	25	Cap screw	6
11	Lock washer	4	26	Star washer	6
12	Actuator bracket and cam tube	1	27	Actuator	1
13	Brake shoe assembly	2	28	Nut	2
14	Cam roller	2	29	Washer	2
15	Cam roller bushing	2	30	Sealing Ring	1

PREVENTIVE MAINTENANCE

1. BRAKE ADJUSTMENT

   Weekly, or whenever push rod stroke exceeds maximum distance listed on the following chart. For complete adjustment information, see Bendix Service Data Sheet SD-05-1.

Service Actuator Type	Service Diaphragm Effective Area (Sq. In.)	Outside Diameter	Max. Stroke	Max. Stroke With Brakes Adjusted	Full Pressure Max. Stroke at which Brakes Should Be Readjusted
24 30	24 30	7-7/32 8-3/32	2-1/4 2-1/2	short as possible without brakes dragging	1-3/4 2

2. BRAKE LUBRICATION

   Grease camshaft bracket with vehicle manufacturer's recommended chassis lube. Lube once every six months or at each chassis lubrication.

3. BRAKE RELINE

   The life of the brake lining is dependent on many factors such as the material of the lining, type of operation the vehicle is used for, and the driver of the vehicle. If driving conditions require frequent braking, lining replacement will be required more often. Reline when lining thickness at center of shoe is 1/4". Refer to section "Reline Procedure".

4. BRAKE OVERHAUL

   As often as necessary to maintain adequate brake performance. NOTE: When overhauling brake system, provide equal service to all drive axle brakes on the vehicle.

WARNING! PLEASE READ AND FOLLOW THESE INSTRUCTIONS TO AVOID PERSONAL INJURY OR DEATH:

When working on or around brake systems and components, the following precautions should be observed at all times:

1. **Park the vehicle on a level surface, apply the parking brakes, and always block the wheels. When working around or under the vehicle, stop the engine and remove the key from the ignition. Always keep hands away from chambers as they may apply as system pressure drops. Always wear safety glasses.**
2. **When working in the engine compartment, the engine should be shut off and the ignition key should be removed. Where circumstances require that the engine be in operation, EXTREME CAUTION should be used to prevent personal injury resulting from contact with moving, rotating, leaking, heated or electrically charged components.**
3. **Do not attempt to install, remove, disassemble or assemble a component until you have read and thoroughly understand the recommended procedures. Use only the proper tools and observe all precautions pertaining to the use of those tools.**
4. **Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that safely removes all electrical power from the vehicle.**
5. **If the vehicle is equipped with an air over hydraulic brake system or any auxiliary pressurized air system, make certain to drain the air pressure from all reservoirs before beginning ANY work on the vehicle. If the vehicle is equipped with an AD-IS™ air dryer system or a dryer reservoir module, be sure to drain the purge reservoir.**
6. **Never connect or disconnect a hose or line containing pressure; it may whip. Never remove a component or pipe plug unless you are certain all system pressure has been depleted.**
7. **Never exceed manufacturer's recommended pressure.**
8. **Never attempt to disassemble a component until you have read and understand all recommended procedures. Some components contain powerful springs and injury can result if not properly disassembled. Use only proper tools and observe all precautions pertaining to use of those tools.**
9. **Use only genuine Bendix® replacement parts, components and kits.**
   A. **Use only components, devices and mounting and attaching hardware specifically designed for use in hydraulic brake systems.**
   B. **All replacement hardware, tubing, hose, fittings, etc. must be of equivalent size, type and strength as the original equipment.**
10. **Components with stripped threads or damaged parts should be replaced rather than repaired. Do not attempt repairs requiring machining or welding unless specifically stated and approved by the vehicle and component manufacturer.**
11. **Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.**

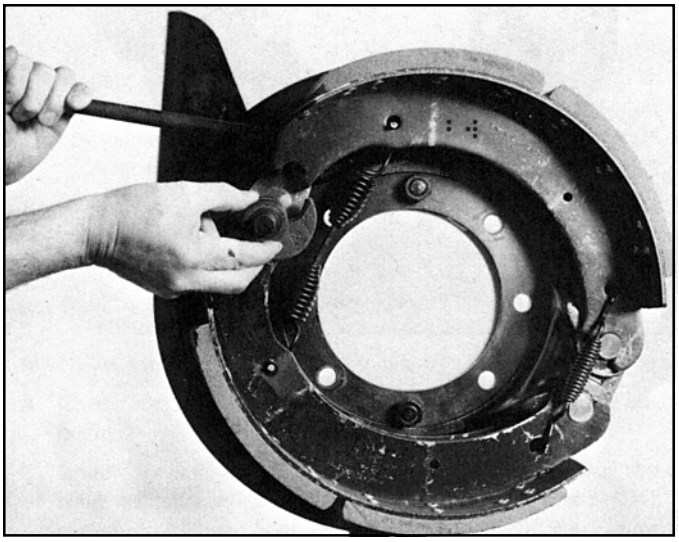

FIGURE 3 - REMOVING CAM ROLLERS

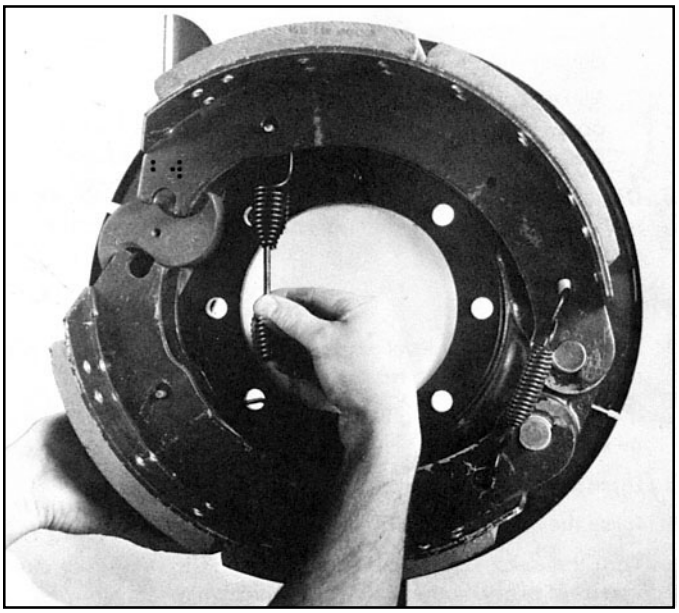

FIGURE 4 - REMOVING SHOE RETURN SPRING

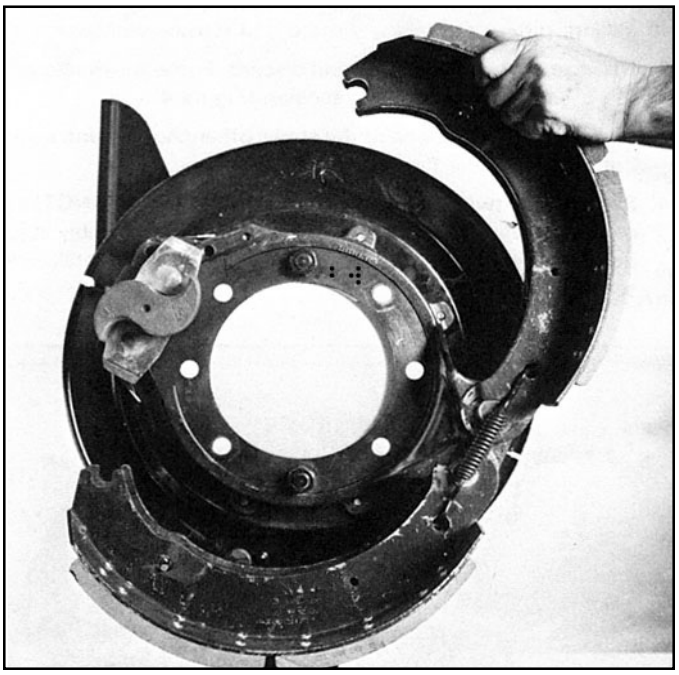

FIGURE 5 - REMOVING SHOES

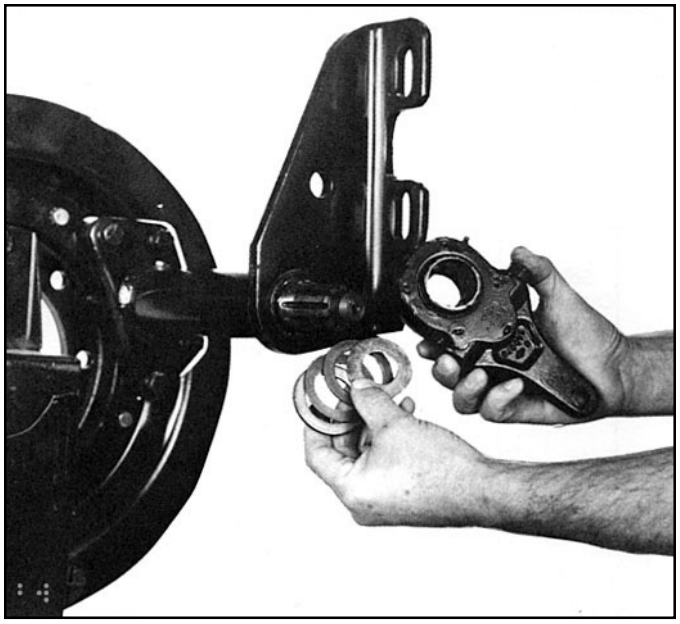

FIGURE 6 - REMOVING SLACK ADJUSTER

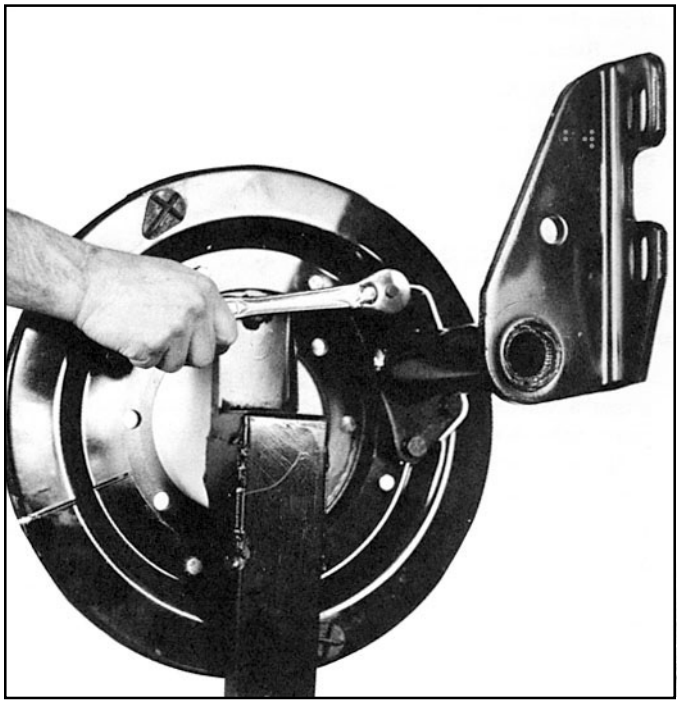

FIGURE 7 - REMOVING ACTUATOR BRACKET

PREPARATION

1. Park vehicle on a level surface and prevent movement by means other than the brakes.
2. If equipped with spring brakes, cage the spring on all axles to be worked on.
3. Drain air from all reservoirs.
4. Raise the axle, to be worked on until the tires clear the ground.
5. Turn the slack adjuster adjusting screw in the opposite direction used to adjust the brakes until the cam rollers return to the start position on the S-cam.
6. Remove wheels and drums using the procedures specified in the vehicle maintenance manual.

DISASSEMBLY (See Figure 2)

1. Insert a sturdy lever between one of the shoes and the cam shaft housing. Pry shoe away from cam roller until pin and roller assembly can be removed. Repeat on opposite shoe (See Figure 3). (If cam rollers or pins show signs of wear, galling, pitting or cracks, discard and replace with new.)
2. Remove shoe return spring and discard. Force shoes towards the S-cam to relieve spring tension (Figure 4).
3. Remove shoes. Lift one of the shoes off anchor pin and lower both shoes to the floor (see Figure 5).
4. Remove the two shoe retainer springs and discard. NOTE: If only replacing the brake shoes, no further disassembly is required. Reverse Steps 1 thru 4. NOTE: Always install new springs.
5. Remove the two anchor pins by sliding them out of the bushings. If bushings are to be replaced, drive them out of the spider using a tool of the proper diameter (a 15/16" socket will work as a driver).
6. Remove the cotter pin from the yoke of the actuator. Remove yoke pin so the slack arm is free of the yoke. Remove the two nuts and washers that secure the actuator to the bracket and remove the actuator.
7. Remove snap ring and washer from splined end of cam shaft. Remove slack adjuster from cam shaft. (A puller may be required.) Remove spacers and the thick washer from cam shaft (See Figure 6).
8. Remove cam shaft from actuator bracket and cam tube. Remove large flat cam head washer from the cam shaft.
9. Mark and remove the dust shields from the spider by removing the six cap screws using a 3/8" socket. Do not remove unless there is apparent damage.
10. Remove the actuator bracket and cam tube from the spider by removing the four cap screws and lockwashers using a 3/4“ socket. Remove and discard the sealing gasket from the end of the actuator bracket (See Figures 2 and 7).
11. Remove and discard the two cam shaft grease seals. One at the end of the actuator bracket and one at the cam entrance in the spider. Pry out with a large screwdriver.
12. Remove the spider from the axle flange by removing the twelve bolts, nuts, and lockwashers that secure it. To facilitate assembly, note or mark the relationship of the spider to the axle (driver or curb side) and the orientation on the axle flange.
13. Remove and discard the two cam shaft bushings located in the same area as the seals in Step 11. Use a drift of adequate length to drive the bushings out. NOTE: Prior to removal, see the “Inspection of Parts” section, Steps 1B and 3B.

CLEANING OF PARTS

After disassembling the foundation brake, Wash the metallic components in mineral spirits and wipe dry. Be careful not to get any foreign material, especially grease on the brake shoes or interior of the brake drum. Use a wire brush to remove heavy contamination from the spider and outside of the brake drum.

INSPECTION OF PARTS

1. ACTUATOR BRACKET AND CAM TUBE
   A. Check assembly for bent actuator bracket and broken or cracked cam tube welds.
   B. Inspect cam shaft bushing for signs of wear. Bearing surfaces should be smooth and free of any pitting or fractures. Insert cam shaft and measure looseness at both ends with a dial indicator. If more than .020" movement is noted, replace bushings and/or cam shaft. NOTE: If it is determined that a bushing requires replacement, both cam shaft bushings should be replaced.
2. CAM SHAFT
   A. Inspect cam shaft spline for cracks and excessive deformation. Replace as necessary.
   B. Inspect the cam shaft bearing journals for wear or corrosion. If the shaft shows wear or roughness that is visible or roughness that can be detected by feel, it must be replaced.
   C. Inspect cam head for cracks, and its roller surfaces for flat spots, brinneling, or ridges. Note unusual wear patterns which may indicate an out-of-square condition. Replace if any of these conditions exist.
3. SPIDER
   A. Inspect for cracked or broken surfaces an the spider at the cam, anchor pins, and mounting bolt holes. Replace any spiders with visible damage. Do not attempt to weld or repair. Check fit of anchor pins in torque spider. Radial clearance in excess of .010" indicates excessive wear. Replace anchor pin bushings and/or anchor pins.
   B. Check cam shaft bushing for signs of wear. (See 1 B) Bearing surface should be smooth and free of any pitting or fractures. NOTE: If it is determined that the bushing requires replacement, change both cam shaft bushings.
4. ROLLERS AND PINS
   A. Inspect rollers and pins for flat spots, galling, broken or cracked surfaces. Replace as necessary.
5. ANCHOR PIN
   A. Inspect anchor pin for worn, broken or cracked surfaces. Replace as necessary.

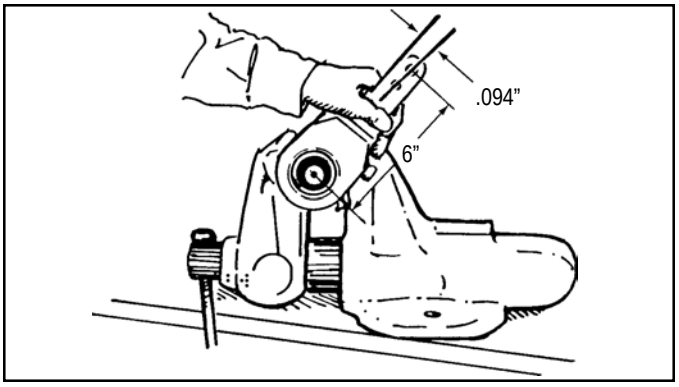

FIGURE 8 - CHECKING SLACK ADJUSTER BACKLASH

6. SHOES AND LINING
   A. Check shoes for bent shoe webs, cracks in shoe table welds or webs, and elongated rivet holes. Replace shoes if any of these conditions exist.
   B. Measure the shoe span by loosely installing the anchor pin and cam roller in the appropriate ends of the shoe web. If the distance from center of anchor pin to center of cam roller exceeds 11.72" replace shoe.
   C. Check linings. Replace when any of the following conditions exist:
      1. Lining thickness at thinnest point is 1/4" or less.
      2. Linings are cracked or worn in an unusual or odd pattern, i.e., lining wear tapered from side to side across shoe table. Unusual wear patterns can indicate damage to foundation brake parts.
      3. Rivet holes are elongated in lining or shoes.
      4. Lining is oil soaked.
      5. Linings can be moved by hand, i.e.; loose rivets.
7. BRAKE DRUMS
   A. Inspect drums for cracks, heat checking, glazing, grooving, severe out-of-round condition or bell mouthing (must not exceed .025 T.I.R.). Replace any cracked drums. It is recommended that drums be turned at reline to prevent hot spotting and achieve quicker, more complete burnishing of the new lining.
   B. Measure the drum I.D. to be sure the maximum limit allowed (stamped on drum) has not been exceeded, due to wear or machining.
8. MANUAL SLACK ADJUSTER
   A. Check for cracks in the body and arm of the slack adjuster.
   B. Check for spline wear. The amount of backlash in the slack adjuster to camshaft should be no more than .094" measured 6" from centerline of the cam shaft (See Figure 8).
   C. Check ability to rotate the adjusting nut at least one complete revolution in each direction. Force required to rotate the adjusting nut should not exceed 15 ft. lbs. NOTE: If any of the above conditions are found, replace the slack adjuster. Do not attempt to repair.

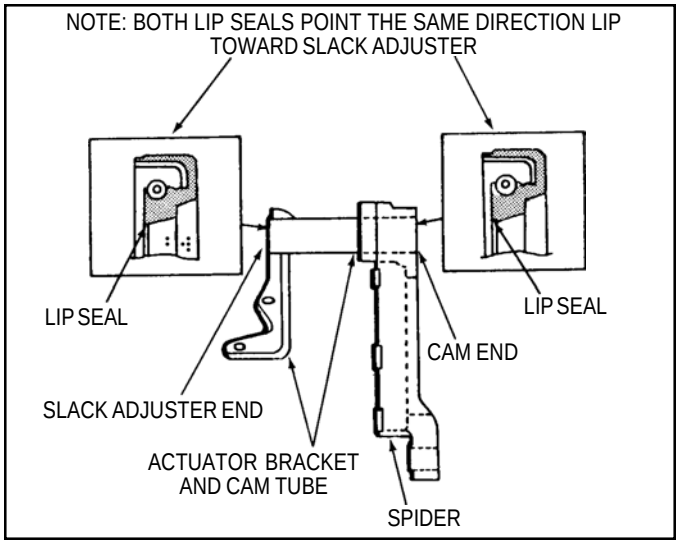

FIGURE 9 - SEAL INSTALLATION

9. AUTOMATIC SLACK ADJUSTERS
   A. Consult manufacturer's service information. (For information on Bendix Automatic Slack Adjusters, see Service Data Sheet SD-05-1200, formerly SD-05-2).
10. ACTUATORS
   A. Check for cracked housing, loose mounting studs.
   B. Check for damage to the push rod, and push rod boot (if so equipped).
   C. Check for broken push rod return spring.
   D. Check for excessive wear on yoke, yoke pin, and slack adjuster yoke pin hole or bushing. There should be no more than .031 combined free play in these components.

   CAUTION: If the vehicle is equipped with spring brakes, refer to manufacturer's instructions. High spring load, if not handled properly, may result in serious injury or death may result.

ASSEMBLY (SEE FIGURE 2)

1. Install the spider onto the axle flange using the twelve bolts, lockwashers and nuts. Be sure spider is properly oriented, as noted during disassembly. Tighten mounting bolts to vehicle manufacturer's specifications.
2. If anchor pin bushings or cam shaft bushings were removed, replace with new bushings before installing torque spider on axle. Drive into place using an Owatonna 630-7 piloted driver or similar tool taking care not to damage or distort the I.D. of the bushings. NOTE: One of the cam shaft bushings is installed in the actuator bracket and cam tube.
3. Install new cam shaft grease seals in the end of the cam tube and actuator bracket and the cam shaft opening in the spider. Use an Owatonna 630-7 piloted driver or similar tool to install grease seals.

CAUTION: The lip of the grease seals must be installed correctly to prevent possible damage. The lip of the seal that is installed in the spider must enter the opening first. The lip of the seal that is installed in the opposite end of the cam tube must enter last. (See Figure 9).

4. Install a new actuator bracket seal ring between the spider and cam tube of the bracket. Install the actuator bracket and cam tube onto the spider using four cap screws and lockwashers. Torque to 70-80 ft. lbs. Secure the actuator to the bracket using the two nuts and washers. Torque to vehicle manufacturer's specification.
5. If removed, reinstall the dust shields. Tighten the six cap screws and lockwashers to 90-110 in. lbs. torque.
6. Place the cam head flat washer over the splined end of the cam shaft and slide it to the opposite end, next to the head of the cam. Install washer so that the bent ends face away from the head. Coat cam shaft journals with light film of chassis lube. Do not coat "S"-cam head.
7. Install the cam shaft with cam head flat washer into the cam tube. Be careful not to damage the grease seals.
8. Install the thick cam shaft flat washer, the slack adjuster, spacers, washer, and a new snap ring in that sequence onto the splined end of the cam shaft. Adjust end play of the cam shaft to between .005" and .045" by using the appropriate number of spacer washers. Make sure the snap ring is seated into the groove at the end of the splined camshaft.
9. Install the two anchor pins into the anchor pin bushings. Center the anchor pins in the bushings so they protrude equally from each end of the bushings.
10. Install new brake shoe retaining springs. Engage hook ends of the two springs into each of the holes of the two brake shoes.
11. Place the top shoe onto the spider by engaging the open slots on the end with the retaining springs onto the anchor pin. Place opposite end of the shoe against the S-cam. Swing the opposite shoe with springs attached back until slots in the shoe engage the other anchor pin, then swing shoe towards the S-cam. Spring tension will hold the shoes in this position. NOTE: When placing slots of the shoes onto the anchor pins, be sure to match the flat surfaces of the mating parts.
12. Place the short hook of the brake shoe return spring onto the top return spring pin. Be sure spring is installed so that the long hook on the other end of the spring is facing the web of the brake shoe. Hold shoes against the S-cam and push the long hook of the brake shoe return spring over the opposite return spring pin until it snaps in place.
13. Insert a sturdy bar between the end of one of the brake shoes and the spider housing at the S-cam end of the shoe. Pry down until the brake shoe roller and pin can be installed between the S-cam and the slots in the end of the brake shoe. Repeat the same procedure on the other shoe.
14. Adjust the slack adjuster until the yoke pin can be installed through the proper hole in the arm. Install a new cotter pin to retain. Make sure the cam rollers are in the lowest position on the cam.
15. Lubricate the cam shaft bushings by filling the cam shaft tube with chassis lube through the zerk fitting provided. Fill until grease is forced out in the area of the slack adjuster. Grease should not appear at the cam head end. If it does, the seal has not been properly installed, or the old seals should be replaced.
16. Reinstall brake drums and wheels. Torque and adjust to manufacturer's specifications.
17. Spin the wheel slowly and adjust the slack adjuster until wheel will no longer turn. Back off slack adjuster just enough for wheel to spin freely. Be sure to adjust brakes equally on each axle.
18. Apply and release brakes and observe slack adjusters. Both slacks on each axle should respond rapidly and in unison during application and release.
19. Drive vehicle at a low speed in a safe area and check for brake effectiveness prior to putting back into service.

RELINE PROCEDURE

When removing rivets from the brake shoes, be careful to avoid doing any damage to the holes in the shoe. Do not use a chisel to shear them off as the force will elongate the rivet holes. Neglecting any elongated holes may result in a loose lining installation. If holes are burred, they should be filed down flush with the shoe table.

Rust often develops on the surface of the shoe table under the brake lining or blocks. In addition, scale may form from salt on the highways, or tar and oil may find their way into the brake assembly. During every reline job, shoe tables should be thoroughly cleaned. The best procedure is to steam clean the entire shoe or put it in a degreaser.

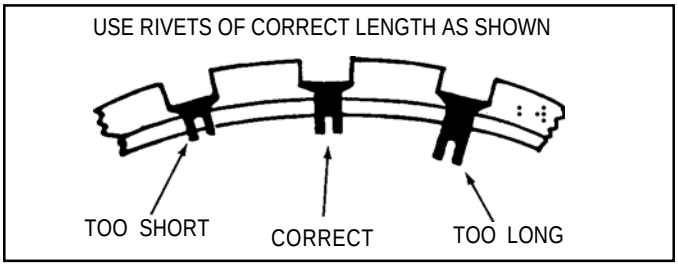

FIGURE 10

After cleaning the shoe, the shoe table should be scraped clean of rust and scale. Any burrs or nicks should be filed smooth. At the same time, the entire shoe should be examined to see whether it is worn or bent.

The shoe should be either reconditioned or discarded. It is also necessary to check for flat spots on the shoe that can be caused by cleaning away the rust from the area that was under the block previously. This can cause a mismatch of shoe and lining arcs. After the shoe is cleaned and inspected, it should be given a coating of rust preventative paint. Such treatment of a new, unpainted shoe is also suggested to

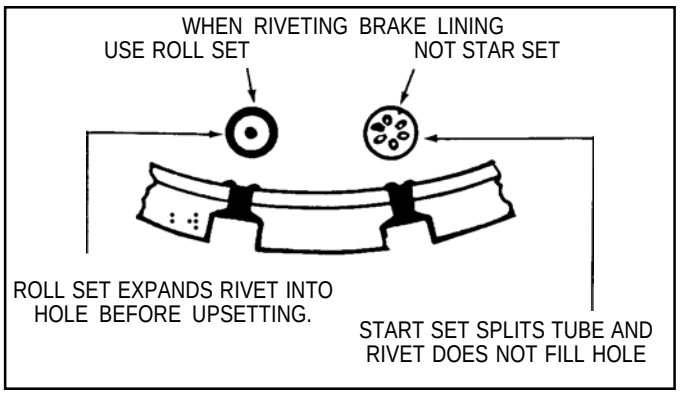

FIGURE 11

prevent the initial rusting problem. Before riveting, clamp the blocks tightly to the shoe, placing the clamps close to the rivet holes. Be sure the holes in the blocks and the shoes are exactly matched.

Never shim the brake linings as this will only cause problems. Brake noise may result because of cracked and loose lining since a tight installation is not possible. The inside surface of the lining is the correct arc to match the shoe table, and the rivet holes in the linings will only line up with holes in the shoes when they are in direct contact.

The sequence of riveting should be such that the center of the block is attached first and then the ends.

Some brake failures result from the use of rivets which are too short, too long, or the wrong diameter. Incorrect setting of the riveting machine may induce other types of failures. The correct length rivet must be selected for each application. A variation in shoe table thickness may require a different length rivet.

The solid portion of the rivet should end just at the inner surface of the shoe. The hollow portion of the rivet should protrude past the inner surface of the shoe.

The proper size rivet must be used to completely fill the rivet hole.

Brass plated steel rivets are recommended but cartridge brass rivets can be used if so desired.

USE ONLY

#10-10 RIVETS

The riveting machine must be adjusted so that the roll of the rivet is complete, but the rivet should not split. Always use a roll set, never a star set, when riveting brake linings. A star set does not compress the rivet and expand it to fill the hole. Consequently, the lining may work loose in service.

FOUNDATION BRAKE TROUBLESHOOTING CHART

SYMPTOM	CAUSE	REMEDY
1. Degraded brake performance.	A. Too much push rod free travel. B. Severely glazed or worn out linings. C. Grease or oil on linings. D. Worn, heat checked, cracked drums. E. Push rod length too long. F. Air chamber in wrong position in G. Broken or bent parts. H. Cam flipover, drum I.D. too large. I. Flat spots on cam or rollers.	A. Adjust brakes. B. Deglaze linings or replace. C. Replace linings. D. Replace part. E. Adjust device, shorten push rod length. F. Reposition. G. Replace part. H. Replace drum. I. Replace flat-spotted parts.
2. Slow brake application.	A. Cam shaft bushings binding.	A. Clean and lubricate. Check for seal leakage.
3. Slow brake release.	A. Binding cam shaft and bushings. B. Weak or broken shoe return spring. C. Flat spotted cam or rollers.	A. Clean and lubricate. B. Replace part. C. Replace flat-spotted parts.
4. Grabbing or pulling	A. Grease, oil or dirt on lining. B. Glazed linings. C. Brake linings not a balanced set, different friction codes, or lining brand. D. Loose or broken linings. E. Brake drum out-of-round. F. Defective brake drum. G. Clevis pin or cam shaft binding at one or more wheels. H. Defective slack adjuster. I. Uneven brake adjustment (side to side) J. Broken or bent parts. K. Loose spider or drum mounting bolts. L. Different air chamber size or slack adjuster length (side to side).	A. Replace lining. B. Deglaze lining or replace. C. Replace linings. D. Replace linings. E. Turn, per manufacturer's specifications. F. Replace part. G. Clean and lubricate. H. Replace part. I. Adjust brakes. J. Replace part. K. Retorque, per manufacturer's specifications. L. Use same size and materials on all brakes.

BRAKE SHOE AND LINING TROUBLESHOOTING CHART

SYMPTOM	CAUSE	REMEDY
1. Poor lining to drum contact.	A. Bell-mouth drum. B. Bent brake spider. C. Bent or stretched brake shoe. D. Undersize linings. E. Loose wheel bearing. F. Improper lining grind.	A. Replace part. B. Replace part. C. Replace part. D. Replace linings. E. Correct as required. F. Regrind linings to drum radius minus .015".
2. Linings tapered across width.	A. Bell-mouth drum. B. Bent brake shoe. C. Bent brake spider. D. Loose wheel bearings.	A. Replace parts. B. Replace parts. C. Replace part. D. Correct as required.
3. Unequal wear on in same brake.	A. Mismatched lining friction codes. B. Stretched shoe. C. Flat spots on cam or roller. D. Worn anchor pin. E. Worn cam shaft or bushings.	A. Replace linings. B. Replace part. C. Replace flat-spotted parts. D. Replace part. E. Replace part.
4. Unequal wear side to side brakes, same axle.	A. Mismatched lining friction codes. B. Seized or binding cam shaft. C. Brake drum surface in poor condition. D. Loose wheel bearing. E. Dragging spring brake F. Reline	A. Replace linings. B. Clean and lubricate. C. Replace or turn I.D. D. Correct as required. E. Correct as required F. Reline both drags together.
5. Wear on edge of lining.	A. Wrong width lining. B. Holes improperly drilled in lining. C. Wrong drum, or improperly machined. D. Loose bearing adjustment; bearing spacer missing or too thin. E. Improper wheel bearing or cone. F. Bent brake shoe. G. Bent brake spider. H. Worn axle spindle.	A. Replace linings. B. Clean and lubricate. C. Replace or turn I.D. D. Correct as required. E. Correct as required. F. Replace part. G. Replace part. H. Correct as required.
6. Glazed linings (hard and shiny)	A. Overheating, due to unbalanced braking system. B. Wrong type linings for service involved. C. Dragging spring brake chamber.	A. Correct as required. B. Replace linings. C. Correct as required.
7. Scored or grooved linings and drum.	A. Scored or worn drum, not machined at reline. B. Abrasive material between lining and drum. C. Broken springs.	A. Replace or remachine. B. Clean, remove dirt and debris. C. Replace springs.

8. Loose lining.	A. Improper size rivets (too long, too short, improper diameter). B. Improper crimping of rivet. C. Enlarged rivet holes in shoe. D. Incorrect lining hole size or counter bore depth. E. Rust build up on shoe table.	A. Re-rivet. B. Re-rivet. C. Replace part. D. Replace linings. E. Clean, remove rust and paint shoe
9. Cracked lining at rivet holes or bolt holes.	A. Overtightening bolts. B. Wrong type rivets or bolts. C. Rivets not properly crimped. D. Dirt or rust on shoe table. E. Wrong size lining counter bore.	A. Correct as required. B. Replace part. C. Replace lining. D. Clean, remove dirt and debris. E. Replace linings.
10. Elongated rivet holes.	A. Loose rivets or bolts.	A. Replace shoe and lining.

BRAKE DRUM TROUBLESHOOTING CHART

SYMPTOM	CAUSE	REMEDY
1. Brake drum heat checked.	A. Out of round brake drum. B. Eccentric mounting of drum. C. Loose wheel bearing. D. Glazed linings. E. Improper friction materials for duty cycle of vehicle. F. Overworked brake. G. Driver abuse. H. Wrong drum, too light.	A. Turn, per manufacturer's specifications. B. Inspect wheel and drum and replace defective part. C. Correct as required. D. Replace linings. E. Consult vehicle manufacturer. F. Check for proper brake balance. (Ref; Bendix procedure to check out system.) G. Correct as required. H. Replace part.
2. Excessive scoring of drum.	A. Defective brake lining. B. Abrasive material between lining and drum. C. Soft drum. D. Excessive lining wear, rivets contacting drum. E. Drum not turned at last reline. F. Build up of abrasives in rivet holes.	A. Replace linings. B. Clean, remove dirt and debris. C. Check hardness on flange. Should be 187 Brinnel minimum. D. Replace lining. E. Turn per manufacturer's specifications. F. Blow out debris.