Group:	Service Manual Update
Bulletin No.:	SB-15-018
Issue Date:	2/18/2015

SERVICE INFORMATION BULLETIN

Subject: CORRECTION OF WORKSHOP MANUAL FOR 2016 MY
(CORRECTION OF PARKING BRAKE ASSEMBLY)

The following is to inform you of the above caption. This service data should be attached to the relevant pages of the workshop manuals for maintenance and to use for servicing.

RELEVANT MODEL:
2016 MY (HINO 238, 258, 268, 338, 358)

CONTENTS:
Correction of parking brake assembly

RELEVANT MANUALS:

Model Year	MANUAL No.	CHAPTER	Page No.
2016MY	S1-UNAE12A	PARKING BRAKE (BOSCH 12”)	BR07-2, BR07-4, BR07-20, BR07-21, BR07-22

Vendor Ref.:	SB-A-47-014

PARKING BRAKE (BOSCH 12")

BR07-001

PARKING BRAKE ASSEMBLY

DATA AND SPECIFICATIONS

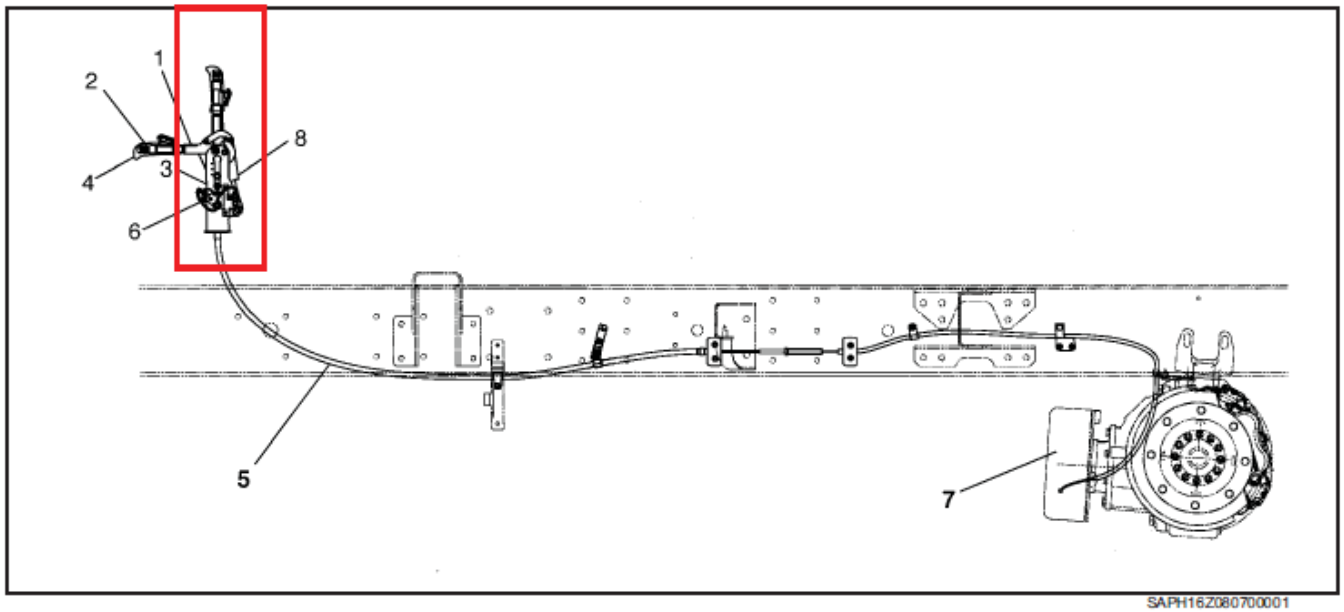
EN16Z0807I200001

Parking brake type	Duplex Cam mechanical brake, internal expanding acting type
Parking brake control type	Lever type control with control cable
Drum inside diameter	304.8 mm {12.0 in.}
Brake lining	Width 76.2 mm {3.0 in}

DESCRIPTION

EN16Z0807C100001

CHANGE



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1	Parking brake lever	5	Parking brake cable
2	Knob	6	Parking brake switch
3	Brake lever bracket	7	Parking brake assembly
4	Knob cover	8	Damper

TROUBLESHOOTING

EN16Z0807F300001

Symptom	Possible cause	Remedy/Prevention
Light force or lack of resistance when applying brake lever (on manual apply systems)	Shoe cage under-adjusted (*1)	Adjust shoes per cage adjustment procedure.
	Worn or deformed actuation components (lever, cam lugs shoe ends)	Inspect and replace per Anchor Screw, Lever and Cam. Replacement procedure or Shoe Replacement procedure
	Maladjusted control linkage	Readjust.
Heavy force or excessive resistance when applying when applying brake lever (on manual apply system)	Over adjusted brake	Adjust brake cage clearance diameter.
	Apply system over adjusted.	Adjust or repair per manufacture's recommended procedures.
Brake does not release.	Internal damage to brake.	Inspect and replace damaged components.
	Apply cable bound up.	Check cable for corrosion, binding, kinks, or damage.
	The parking brake lever in the cab is binding	Check the parking brake lever assembly for damage or corrosion. Repair or replace as needed.
Brake does not hold vehicle on hill.	Grease, oil or other foreign material on or embedded in shoe linings.	Replace shoes and clean drum (*2).
	Damaged or incorrect shoes.	Replace with correct shoes.
	Worn out lining (metal shoe run contacting drum)	Replace shoes and resurface or replace drum as necessary.
	Excessive drum runout.	Resurface or replace drum per manufacturer's recommended procedure.
	Shoe cage under-adjusted.	Adjust shoes per primary (or alternate) Shoe Cage Adjustment procedure.
	Worn or deformed actuation components (lever, cam lugs, shoe).	Inspect and replace per Anchor, Screw, Lever and Cam. Replacement procedure

*1: Inspect adjuster components to see if any are damaged or jammed.
*2: Inspect the rear pinion seal for leakage that can contaminate the park brake system part. Repair as necessary.

SERVICE INFORMATION BULLETIN

COMPONENT LOCATOR

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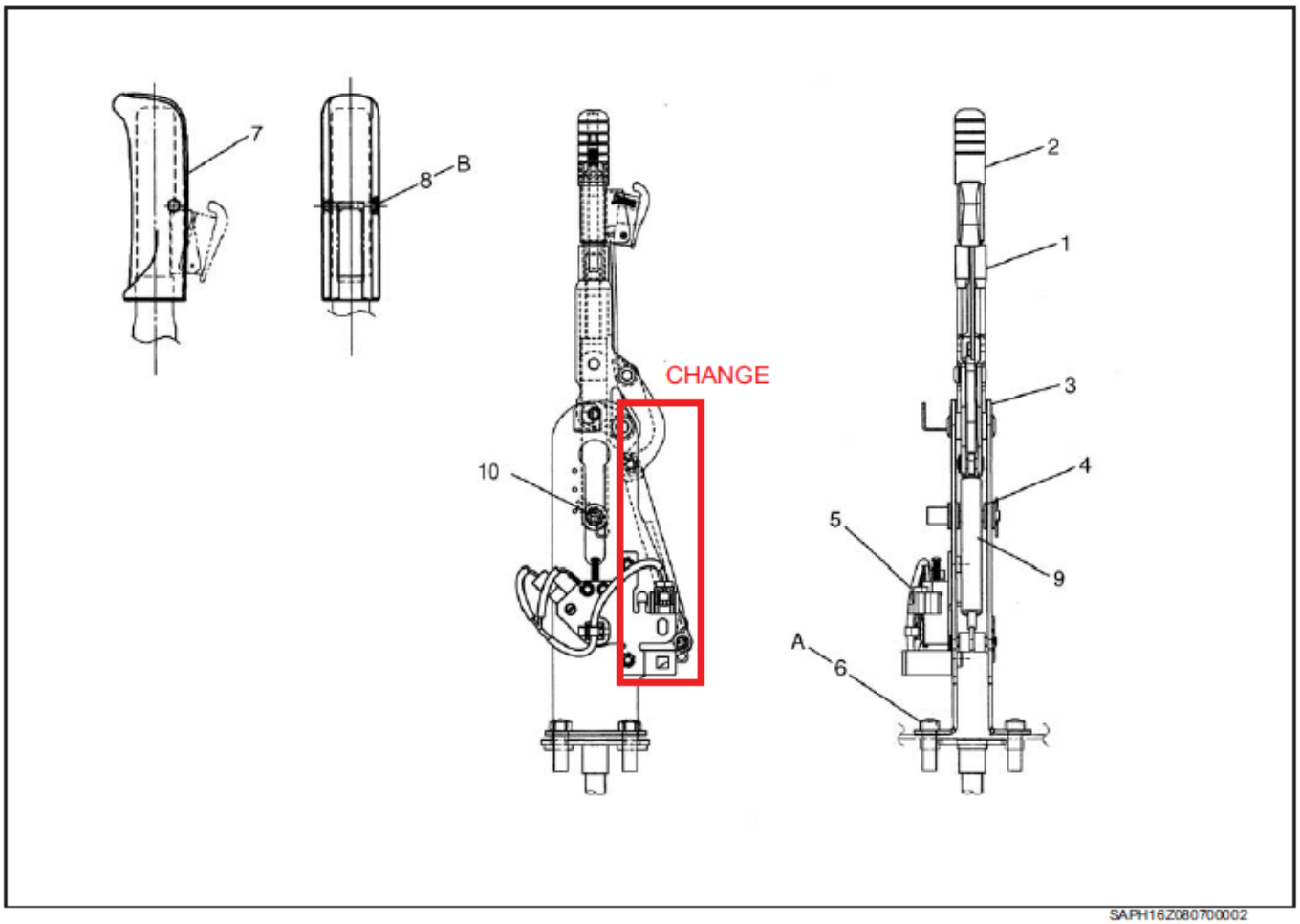
PARKING BRAKE LEVER



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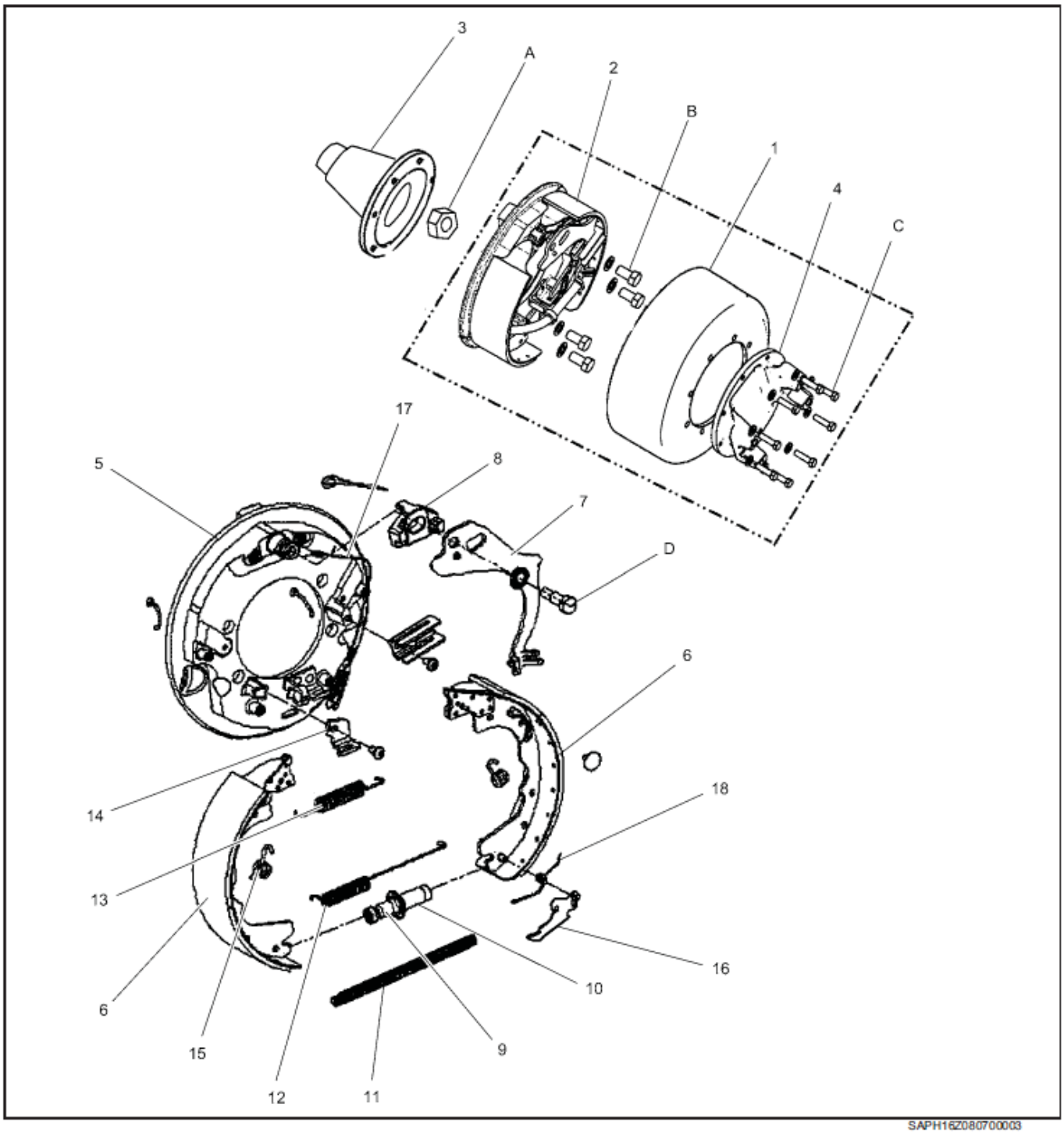
1	Parking brake lever	6	Bolt
2	Knob	7	Knob cover
3	Brake lever bracket	8	Bolt
4	Clevis	9	Damper
5	Parking brake switch	10	Roller

Tightening torque — Unit: N·m {kgf·cm, lbf·ft}

A	42-62 {430-630, 31-46}	B	1.1-1.9 {12-19, 0.9-1.4}

PARKING BRAKE



1	Brake drum	10	Adjuster nut
2	Parking brake assembly	11	Lever return spring
3	Companion flange	12	Lower return spring
4	End yoke	13	Upper return spring
5	Backing plate	14	Hold-down bracket
6	Brake shoe	15	Hold-down spring
7	Lever	16	Auto adjuster lever
8	Cam plate	17	Adjuster cable
9	Adjuster screw	18	Auto adjuster spring

Tightening torque — Unit: N·m {kgf·cm, lbf·ft}

A	1,251-1,535 {12,757-15,653, 923-1,132 }	C	55-75 {561-765, 41-55}
B	270-350 {2,753-3,569, 200-258}	D	90-110 {918-1,120, 67-81}

OVERHAUL

EN16Z0807H200001

SHOE REPLACEMENT

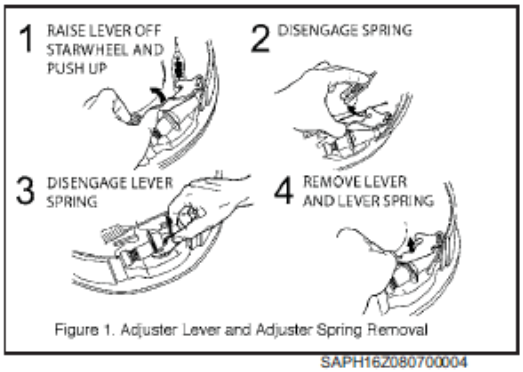


Figure 1. Adjuster Lever and Adjuster Spring Removal

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1. REMOVING THE SHOES

(1) Block the front wheels to keep the vehicle from moving.
(2) With the engine off and battery disconnected, place the transmission in gear and release the parking brake.
(3) If recommended in vehicle manufacturer's service manual, raise the rear of the vehicle so the wheels clear the floor and install safety stands to support.
(4) Remove the drum. See vehicle manufacturer's service manual for details, if necessary.

⚠ CAUTION
Do not use a drum puller or a torch to remove a brake drum. Drum distortion may result.

NOTICE
If the drum proves difficult to remove, insert a thin flat bladed screw-driver through the brake adjusting hole in the backing plate and disengage the adjuster lever from the adjuster nut teeth. With the adjuster lever disengaged as shown in Figures 8 and 9, insert a brake adjusting tool (or flat bladed screw driver) through the adjusting hole to engage the adjusting nut teeth. Move the teeth upward enough times to retract the brake shoes to clear the drum. If the drum is rusted to the axle input flange yoke pilot, tap the center of the brake drum with a nonmetallic mallet to loosen.

(5) Inspect the brake per the INSPECTION PROCEDURE in this service manual.
(6) Detach adjuster cable from adjuster lever, slide cable off of adjuster cable guide, and remove the cable retaining tab if so equipped. See Figure 1.
(7) Remove the adjuster lever and the adjuster spring. (These parts will need to be placed on the new replacement shoe, along with the adjuster lever mounting pin, in the opposite order removed.) See Figure 1.

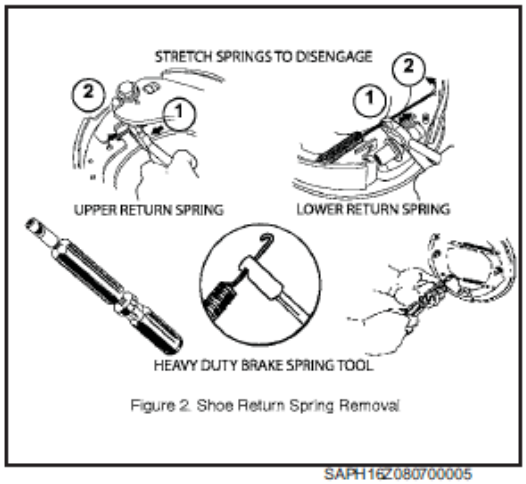

Figure 2. Shoe Return Spring Removal

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(8) Remove both shoe-return springs. Use pliers, vice-grips, or a heavy duty brake spring tool as shown in Figure 2.

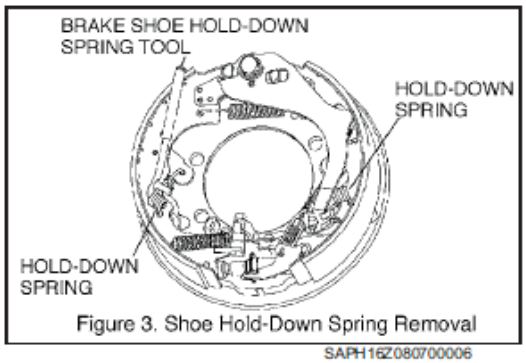

Figure 3. Shoe Hold-Down Spring Removal

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(9) Remove both shoe hold-down springs. Use a brake shoe spring tool as shown in Figure 3.

HINT

Detach the parking brake apply cable and lever return spring from the end of the lever to allow easier access to the spring on the lever side.

NOTICE

If the brake is a Release 2 level design with a lever guide present, it will need to be removed to provide access to the spring underneath with the tool shown in Figure 9. Upon removal of the hold down springs, the shoes, and the adjuster nut screw assembly will fall if not secured by hand.

(10) Remove brake shoes from backing plate.

(11) Disassemble the adjuster nut and screw assembly for cleaning and inspection of the threads.

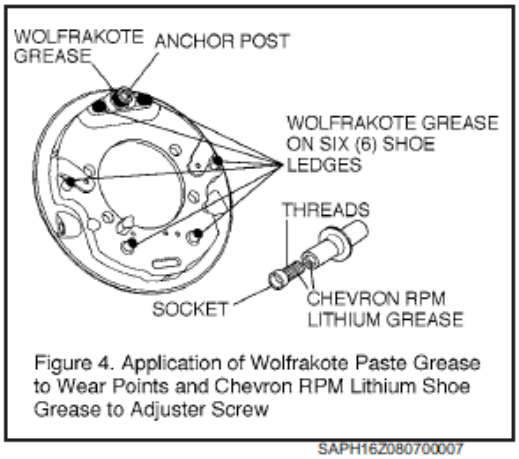

Figure 4. Application of Wolfrakote Paste Grease to Wear Points and Chevron RPM Lithium Shoe Grease to Adjuster Screw

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2. INSTALLING THE SHOES

⚠ WARNING

- **Failure to correctly assemble the Adjuster Cable may result in reduced brake performance that could cause personal injury or property damage.**
- **Torque all fasteners to the manufacturer's recommended torque using a torque wrench. Failure to do so could possibly result in personal injury or property damage.**

(1) Clean backing plate and adjuster screw assembly. Remove old grease from shoe contact points and adjuster threads as well as debris and corrosion that could contaminate linings or interfere with proper brake operation.

(2) Apply a light film of Wolfrakote paste ledge grease to the six (6) backing plate shoe ledges and one (1) anchor post as shown in Figure 4.

(3) Apply Chevron RPM heavy duty, lithium complex, molybdenum disulfide, extreme pressure grease, or equivalent, to the cam plate lugs where they contact the shoe ends, the end of the shoes that contact the cam lugs, and the brake lever.

(4) Apply Chevron RPM heavy duty, lithium complex, molybdenum disulfide, extreme pressure grease to the threads of the adjuster screw, adjuster nut, and the socket ends of the adjuster nut and install the screw fully into the adjuster nut. Insure the screw moves in and out freely. If any damage to the threads prohibits free movement, or if the starwheel is damaged, replace adjuster assembly. See Figure 4.

NOTICE

- **Only use the approved lubricants as specified. Do not substitute.**
- **When installing new shoes, make sure the shoe with the adjuster cable guide and adjuster lever pin is installed on the correct side of the shoe. See Figure 5.**

(5) Place one shoe into the installed position. Reattach shoe hold-down spring and pin. See Figures 3 and 5.

⚠ CAUTION

For Steps (5) through (10), proper orientation of the various springs, including their hook-ends must be maintained, as shown in Figure 5, for proper brake function.

(6) Position the second shoe and the adjuster nut and screw assembly as shown in Figure 5. The adjuster nut (internally threaded) should be seated against the shoe with the adjuster cable guide and pin. Reattach shoe hold-down spring to shoe hold-down pin using the brake spring tool as shown in Figure 3.

(7) Install both shoe-return springs as shown in Figure 5.

(8) Install the adjuster spring and the adjuster lever. Ensure that the adjuster lever is properly seated against the starwheel as shown in Figure 5.

(9) If the lever has been removed, reinstall lever and associated components per the ANCHOR SCREW, LEVER, AND CAM REPLACEMENT section in the manual.

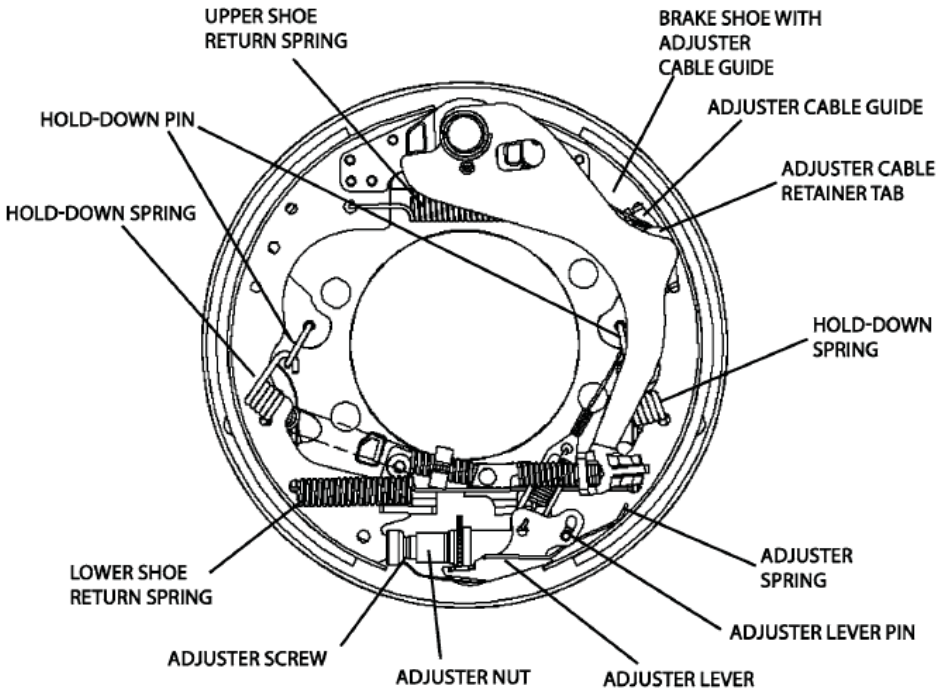

Figure 5. Brake Shoe Installation

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(10) Route the adjuster cable around the adjuster cable guide, under the shoe hold down spring, and attach to the adjuster lever as shown in Figure 6. Install adjuster cable retaining tab if so equipped.

NOTICE

Correctly assembled, the adjuster cable end-fitting is behind the adjuster lever, with the spring hook facing out as shown in Figure 6.

(11) The shoe cage should be adjusted now per the SHOE CAGE ADJUSTMENT PRIMARY procedure or after the drum has been reinstalled per the SHOE CAGE ADJUSTMENT ALTERNATE procedure in this service manual.

(12) Make a final inspection of the shoe linings and the inside of the drum to ensure that no grease or other contamination was accidentally applied.

⚠ WARNING

Keep grease and other foreign materials away from the shoe lining and drum surfaces. Contamination of shoe linings or drum surface may result in degradation of brake holding capability, possibly resulting in personal injury or property damage.

(13) Inspect, service and reinstall drum per the vehicle manufacturer's service manual.

(14) Lower the vehicle and test the brake for proper function before returning the vehicle for service use. If necessary, make adjustments per the vehicle manufacturer's service manual.

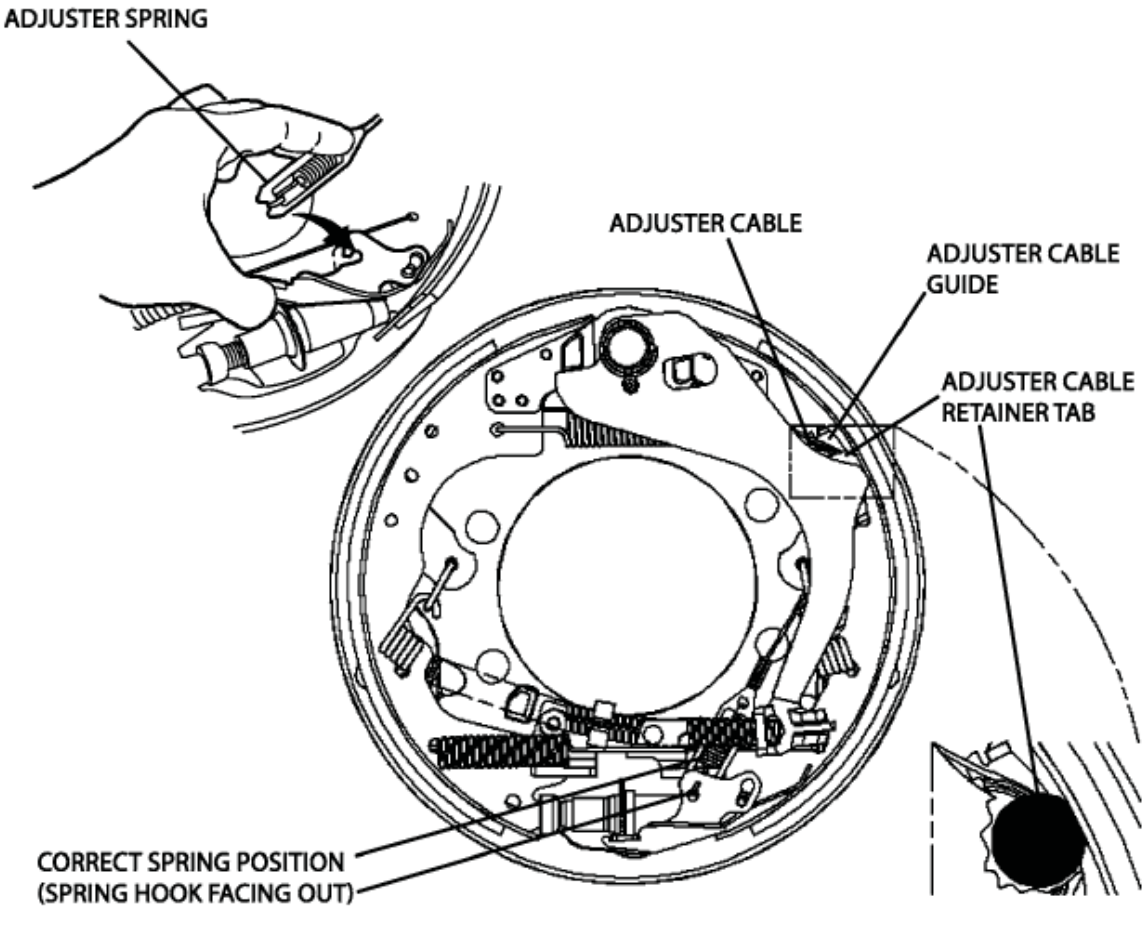

Figure 6. Adjuster Cable Installation

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SHOE CAGE ADJUSTMENT PROCEDURES

1. ADJUSTMENT WITH DRUM OFF - PRIMARY PROCEDURE

(1) Use a 12 inch caliper, or inside micrometer, to measure the inside diameter of the drum. Subtract 0.025 inches from the drum inside diameter measurement. Set the measurement caliper to this value, and lock the set screw.

(2) Rotate the axle input flange yoke as necessary to provide clearance for the measurement caliper.

(3) Place the pre-adjusted caliper over the shoes at the center of the shoes.

(4) To adjust brake, rotate the starwheel until the shoes touch the measurement caliper jaws. It is necessary to disengage the adjuster lever away from the starwheel. See Figure 7.

NOTICE

During adjustment the calipers should be moved up and down around the shoe center points to ensure adjustment at the highest points across the width of the shoes.

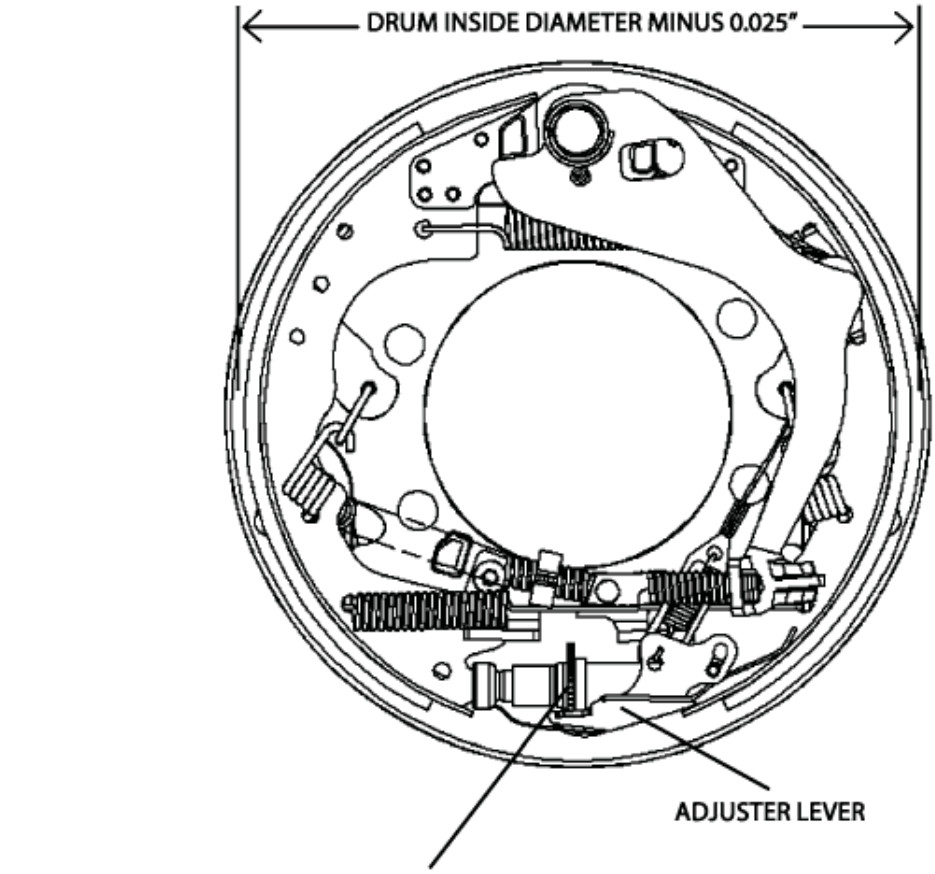

Figure 7. Initial Brake Shoe Adjustment

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2. ADJUSTMENT WITH DRUM INSTALLED - ALTERNATE PROCEDURE

(1) With the engine off, the battery disconnected, and the tires blocked to prevent vehicle movement, place transmission in neutral and fully release the parking brake. Check to see if the drum can be rotated back and forth by hand. If the drum cannot rotate, it will be necessary to raise the rear wheels off the ground, in order to allow rotation of the drum. Support the vehicle with suitable floor stands.

NOTICE

Some vehicles may not have enough clearance behind the park brake to have direct access through the access slot to the adjuster lever. In these cases, an adjuster lever tool can be made from 3/32" diameter welding filler rod. See Figure 10.

(2) Insert the adjuster lever tool or a thin flat bladed screw driver through the adjusting slot in the back-plate and push on the adjuster lever to disengage it from the adjuster starwheel. Insert a brake adjusting tool (or flathead screwdriver) through the adjusting slot and move the starwheel teeth downward to expand the brake shoes outward. See Figures 8 and 9. Continue expanding the shoes until the drum can not be rotated by hand.

(3) Now adjust the starwheel teeth upward to retract the shoes until the drum just begins to rotate freely by hand (without drag from the shoes). See Figures 8 and 9.

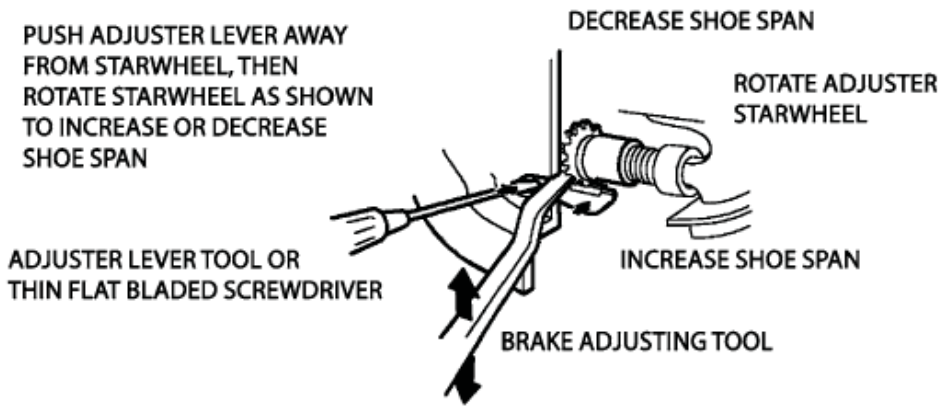

Figure 8. Brake Adjustment With Drum In Place (cut away view)

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3. DISENGAGING ADJUSTER LEVER FROM ADJUSTER STAR-WHEEL TO ALLOW RETRACTING THE BRAKE SHOES (LOOSEN BRAKE)

NOTICE

Some vehicles may not have enough clearance behind the park brake to have direct access through the access slot to the adjuster lever. In these cases, an adjuster lever tool can be made from 3/32 inch diameter welding filler rod. See Figure 10.

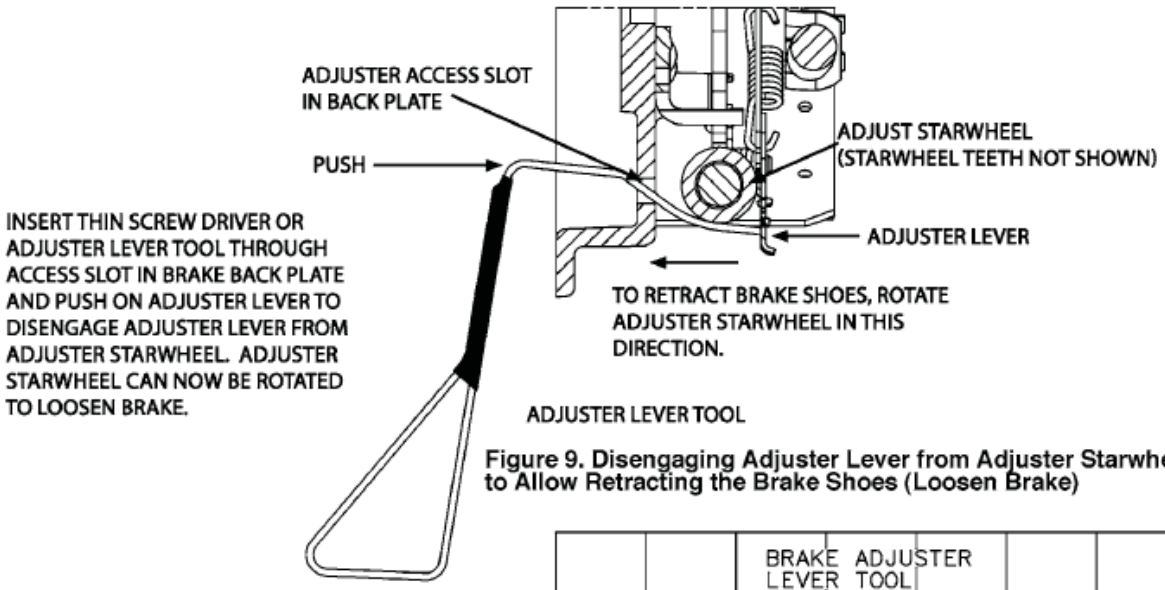

Figure 9. Disengaging Adjuster Lever from Adjuster Starwheel to Allow Retracting the Brake Shoes (Loosen Brake)

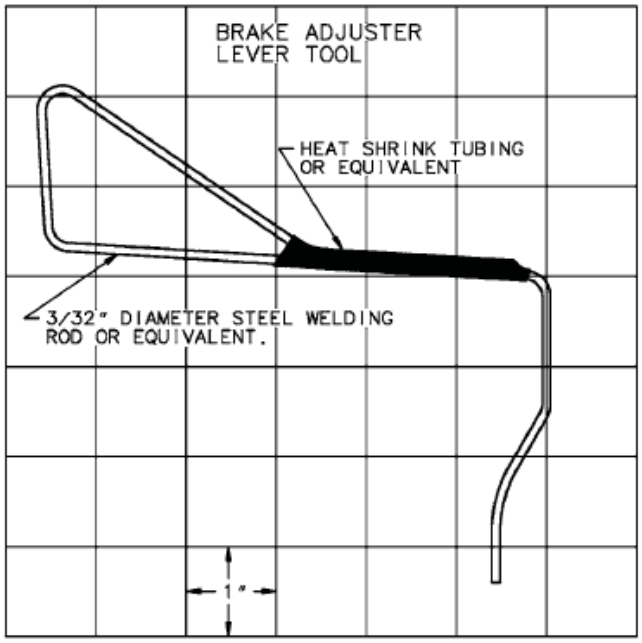

Figure 10. Brake Adjuster Lever Tool

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ANCHOR SCREW, LEVER AND CAM REPLACEMENT

1. REMOVING COMPONENTS

NOTICE

The anchor screw, lever, and cam should all be replaced at the same time. Do not replace just one or two of the three parts at any time. Inspection of these parts is recommended at 250,000 miles or 5 years for typical use, or more often under severe operating conditions.

(1) Block the front wheels to keep the vehicle from moving.
(2) With the engine off and battery disconnected, place the transmission in gear and fully release the parking brake.
(3) If recommended in vehicle manufacturer's service manual, raise the rear of the vehicle so the wheels clear the floor and install safety stands to support.
(4) Remove the drum. See vehicle manufacturer's service manual for details, if necessary.

⚠ CAUTION

Do not use a drum puller or a torch to remove a brake drum. Drum distortion may result.

NOTICE

If the drum proves difficult to remove, insert a narrow screwdriver through the brake adjusting hole in the backing plate and disengage the adjuster lever from the adjuster nut starwheel teeth. With adjuster lever disengaged as shown in Figures 8 and 9, insert a brake adjusting tool (or screw driver) through the adjusting hole to engage the adjusting nut teeth. Move the teeth upward enough times to retract the brake shoes to clear the drum. If the drum is rusted to the axle input flange yoke pilot, tap the center of the brake drum with a non-metallic mallet to loosen.

(5) Inspect the brake per the INSPECTION procedure in this service manual.
(6) Detach the parking brake apply cable and lever return spring from end of brake lever. Remove the apply lever guide (on Release brakes).
(7) Detach adjuster cable from the adjuster lever and slide adjuster cable off the adjuster cable guide, remove retaining tab if so equipped. See Figure 1.
(8) Remove the anchor screw. See Figure 11.

NOTICE

On Release 1 brakes with a hex socket anchor screw, the use of a thread-locking compound may prevent removal of the anchor screw with a hex key and torque in excess of 55 N·m (40 ft.-lbs.) May break or deform a 6 mm hex key. If necessary, use a pipe wrench, vice grips, or similar tool on the knurling of the head to loosen the anchor screw. Replace screw if removed, regardless of condition.

(9) Remove the flat washers (if installed on your application for Release 1 level brake), anti-rattle spring, lever, cam, and adjuster cable. See Figure 11.

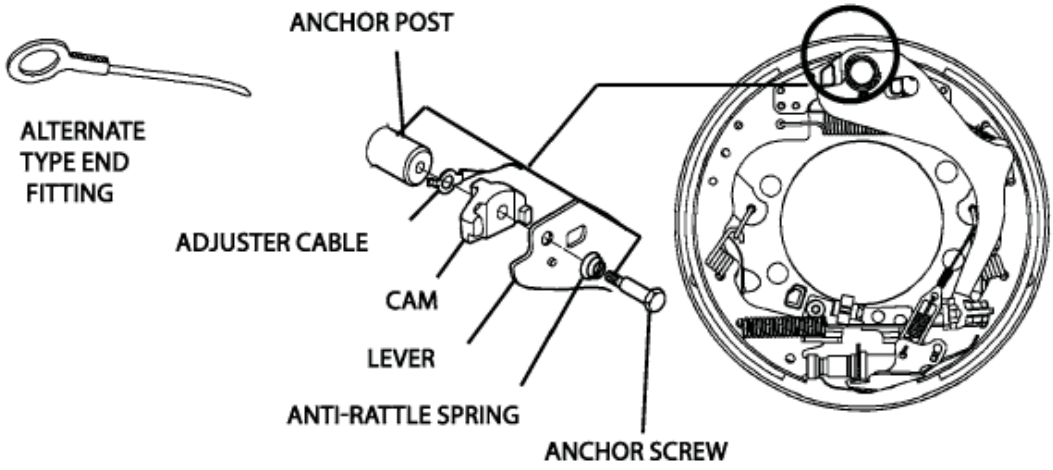

Figure 11. Spring, Lever, Cam, and Adjuster Cable Removal (Release 3 Brake Shown)

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2. INSTALLING COMPONENTS

NOTICE

If for any reason the cam, lever, and anchor screw is removed, a complete new set is recommended for service.

(1) Remove the cured thread-locking compound from the anchor post hole threads. Run the appropriate size tap completely into the anchor post and back out to clean the threads. Remove loose debris from anchor post hole.

NOTICE

For brakes with a hex socket head anchor screw, use an M10 x 1.5 tap (brakes manufactured prior to April 2002). For brakes with an external hex head anchor screw, use and M12 x 1.75 tap (brakes manufactured after April 2002).

(2) Apply Chevron heavy duty lithium complex extreme pressure grease, or equivalent, to the cam plate lugs where they contact the shoes and the apply lever, to the cam plate slotted hole and top and bottom faces. Apply grease to the brake lever pivot hole and the contact surfaces with the cam plate lugs. Apply grease to the non-threaded portion of the anchor screw. Do not get grease on anchor screw threads or in anchor post threaded hole.

(3) Reinstall the adjuster cable, new cam plate, new lever, anti-rattle spring (small coil end toward screw head for Release 2), flat washers (if previously installed on your application), and new anchor screw as shown in Figure 12. Make sure the adjuster cable end fitting is installed to allow the cam plate to sit flat on the fitting and anchor post.

- Stepped type end fitting - the step faces towards the back-plate. See Figure 12.
- Alternate "eyelet" type fitting - cable crimp portion faces towards the back-plate. See Figure 12.

⚠ CAUTION

- **Only thread anchor screw into the anchor post 1 to 2 turns to temporarily hold assembly together. Do not thread in completely until ready to tighten to specification (step (4)).**
- **A faulty installation will result if the thread-locking compound is activated and begins to cure prior to tightening the screw.**
- **When installing the hex socket head anchor screw, careful attention should be taken during reassembly to ensure that the adjuster cable-end fitting is not clamped underneath the shoulder of the anchor screw during reassembly.**
- **Clamping the adjuster cable may prevent proper functioning of the brake selfadjust feature.**

(4) Tighten the anchor screw per the appropriate specification:
For the internal hex socket anchor screw tighten to 50±3 Nm (37±2 ft-lbs.)
For the external hex head anchor screw tighten to 100±10 Nm (74±7 ft-lbs.)

⚠ CAUTION
To tighten the anchor screw, only use a recently calibrated, known good, "clicker" type torque wrench set to the correct torque specification. Do not use add on devices such as universal joints, swivels, crows feet or other devices as these can cause inaccurate tightening results. Do not attempt this repair if a recently calibrated, known good "clicker" type torque wrench is not available.
Failure to do so could result in personal injury or property damage.

NOTICE
Remove excess grease that could contaminate brake drum or linings while the brake is in service.

(5) Reinstall the lever return spring and parking brake cable to the end of the brake lever.
(6) Route the adjuster cable around the adjuster cable guide, under the shoe hold-down spring, and attach to the adjuster lever as shown in Figure 6. Install adjuster cable retainer tab if equipped.

NOTICE
When correctly assembled, the adjuster cable end-fitting is behind the adjuster lever with the spring hook facing out as shown in Figures 6 and 12. Failure to do so may result in reduced brake operation.

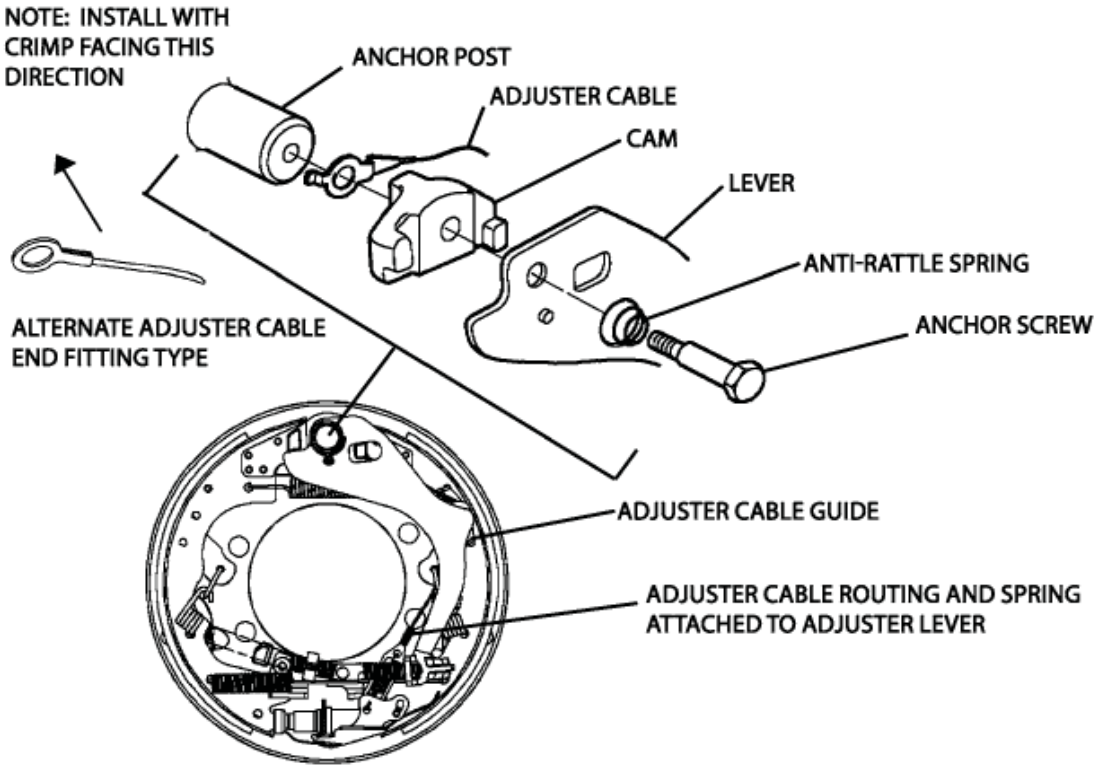

Figure 12. Install Adjuster Cable, Cam Lever, Anti-rattle Spring and Anchor Screw

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(7) The shoe cage should now be adjusted per the SHOE CAGE ADJUSTMENT PRIMARY procedure or after the drum has been reinstalled, per the SHOE CAGE ADJUSTMENT ALTERNATE procedure in this service manual.

(8) Make a final inspection of the shoe linings and the inside of the drum to ensure that no grease or other contamination is present.

⚠ **CAUTION**

Keep grease and other foreign materials away from the shoe lining and drum surfaces. Contamination of shoe linings or drum surface may result in degradation of brake holding capability, possibly resulting in personal injury or property damage.

(9) Inspect, service, then reinstall drum per the vehicle manufacturer's service manual.

(10) Lower vehicle and remove the blocks or wheel chocks from the front wheels.

(11) Test the brake for proper function before returning the vehicle for service use. If necessary, make adjustments per the vehicle manufacturer's service manual.

INSPECTION

1. INSPECT PARTS.

NOTICE

It is not necessary to raise vehicle for "inspection" in most cases. However, if required, follow steps (1) through (3) in SHOE REPLACEMENT section.

Anytime service is required, it is recommended that a complete visual inspection be performed on all components in the park brake assembly. This includes:

(1) Follow manufacturer's recommended procedures to ready the vehicle for servicing. Pay attention to all WARNING and CAUTION notes throughout this booklet.

(2) Remove the drum. See section on SHOE REPLACEMENT.

(3) Clean the individual brake components, removing dust and grease.

(4) Visually inspect the brake shoes (Figure 13). Shoes should be replaced if there is uneven lining wear or when the remaining lining reaches 0.76 mm (0.030 in. or approximately 1/32 in.) thickness or less above the shoe. If grease, automotive fluids, or other foreign material that would compromise operation is found on, soaked into or embedded in the linings, the shoes should be replaced. Also, if cracks, excessive deformation, or wear on either end is found, the shoes should be replaced. See section on SHOE REPLACEMENT for service details.

(5) Visually inspect the brake lever and cam (COMPONENT LOCATOR). If cracks, excessive wear, or abnormal deformation is found in either part, they should be replaced. Light wear, which typically shows up as polishing is acceptable. If unsure, replace brake lever, cam plate and anchor screw. See section on ANCHOR SCREW, LEVER, AND CAM REPLACEMENT for service details.

(6) Inspect various springs and hold down pins (Figure 13) for excessive wear, heat discoloration, heavy corrosion or other damage and replace as necessary. See section on SHOE REPLACEMENT for service.

⚠ WARNING

Whenever possible, work on brakes in a separate area away from other operations. Always wear a respirator approved by NIOSH or MSHA during all brake service procedures. NEVER use compressed air or dry brushing to clean brake parts or assemblies. OSHA recommends that you use cylinders that enclose the brake. These cylinders have vacuums with high efficiency HEPA filters and worker's arm access sleeves. But, if such equipment is not available, carefully clean parts and assemblies in the open air.

Clean brake parts and assemblies in the open air. During disassembly, carefully handle all parts to avoid getting dust in the air. Use an industrial vacuum cleaner with a HEPA filter system to clean dust from the brake drums, backing plates and other brake parts. After using the vacuum, remove any remaining dust with a rag soaked in water and wrung until nearly dry.

(7) Inspect adjuster cable assembly for damage or wear (Figure 13). Replace as necessary. See section on SHOE REPLACEMENT for service details.

(8) Inspect adjuster nut and screw (Figure 13) for any damage or corrosion to the threads or burrs, chips, corrosion or other damage to the teeth on the adjuster nut starwheel. Damaged teeth or threads may prevent proper function of the brake self-adjusting function. Replace as necessary. See section SHOE REPLACEMENT for service details.

(9) Clean-out all dust or grease present on the inside of drum. Use a 12 inch caliper or an inside diameter micrometer to measure the manufacturer's recommended inside diameter of the drum. Replace drum if it exceeds maximum inside diameter (which typically is stamped on the inside of the drum near the mounting holes), is worn unevenly, has deep grooves, heavy corrosion or excessive runout.

(10) Inspect the parking brake lever-apply cable for excessive wear or damage, and replace as necessary.

(11) Inspect the axle pinion oil seal for leakage that can contaminate the park brake system parts and repair as necessary. See the section "REAR AXLE" for details.

(12) After a thorough inspection, if the brake and its components are found to be in good working condition, check parking brake for proper shoe cage adjustment. See the section "SHOE CAGE ADJUSTMENT PROCEDURES" for details.

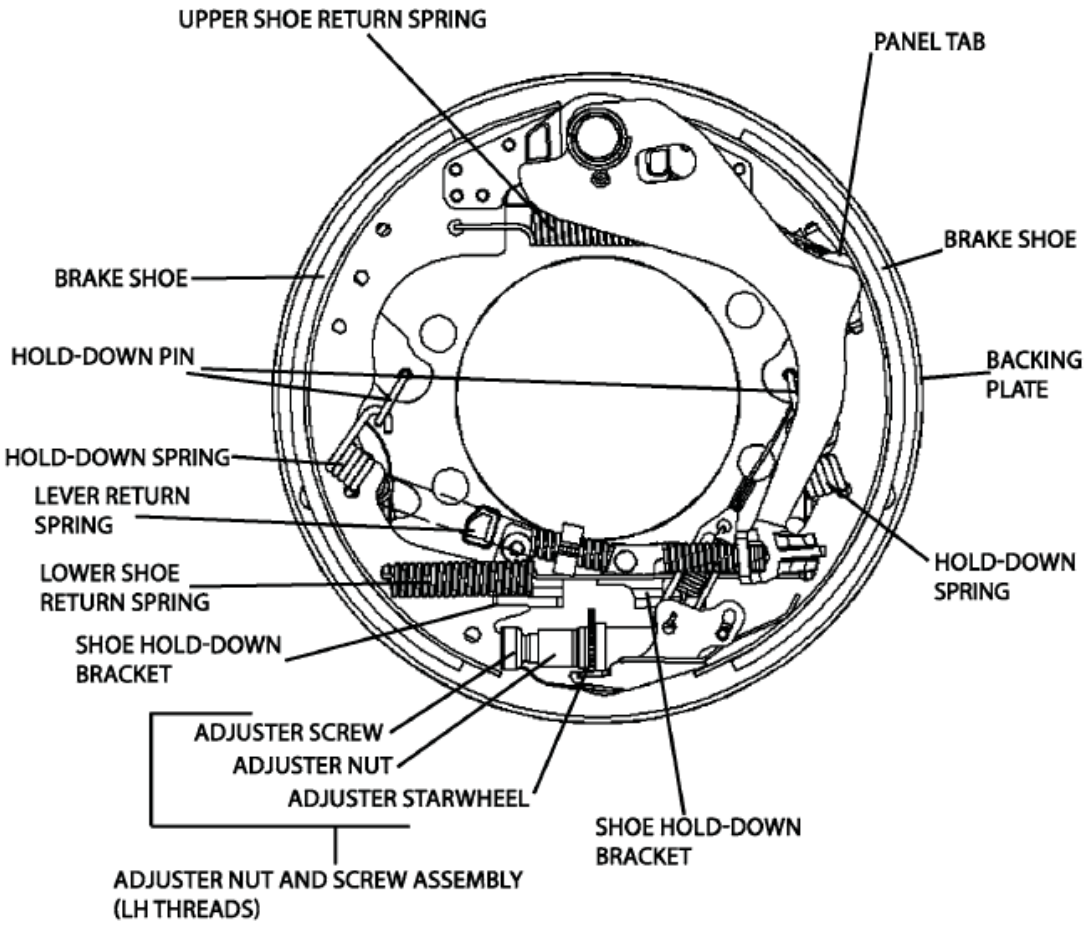


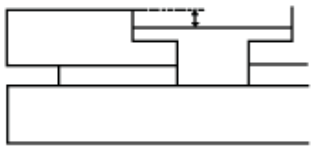
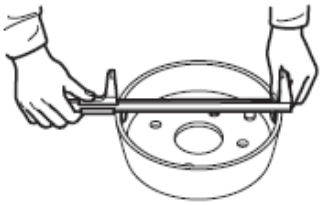
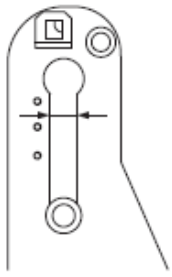
Figure 13. Brake Shoe Installation

SAPH16Z080700015

INSPECTION AND REPAIR

EN16Z0807H300001

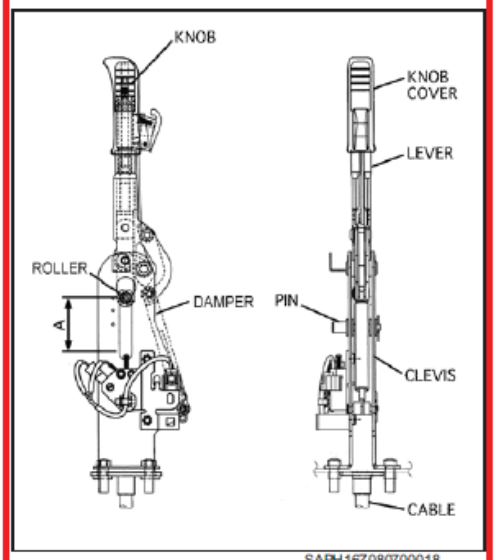
Unit: mm {in.}

Inspection item	Standard	Limit	Remedy	Inspection procedure
Brake lining: Lining thickness	7.00 {0.277}	0.76 {0.03}	Replace.	Measure 
Brake drum: Inside diameter	304.8 {12}	305.7 {12.035}	Replace.	Measure 
Parking brake lever: Roller sliding groove width	14.8 {0.582}	16.9 {0.665}	Replace.	Measure 

ADD

ADJUSTMENT

CHANGE



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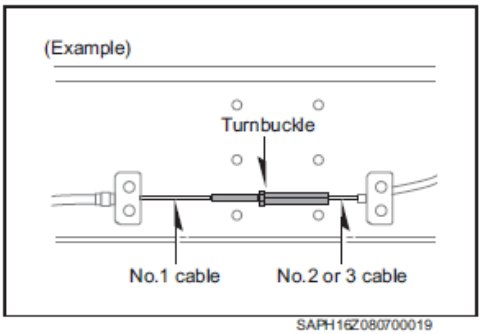

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CHANGE

EN16Z0807H300002

1. INSTALL THE PARKING BRAKE LEVER AND CABLE

(1) Using the adjustment knob on the lever, set the pin height (Distance A) to the specified value.
Refer to the figure on the left for location measurements.
Standard: 53-57 mm {2.09-2.24 in.}

(2) Install the No.1 cable to the cab floor with nuts.

(3) Install the parking brake lever to the cab floor with bolts. Then release the parking brake lever.

(4) Connect the No.1 cable to the parking brake lever with the cable connecting pin.

(5) Connect the No.3 cable to the parking brake assembly.

(6) Release the parking brake lever. Then, using the turnbuckle in the frame, connect both the No.2 cable (G W/B: No.1 cable) and No.3 cable.

NOTICE
When connecting the cable or adjusting the turnbuckle, confirm that the lever is off and there is no tension on the cable.

2. ADJUST THE CABLE

(1) If a new cable has been installed, using the turnbuckle on the cable, adjust so that the lever pull force is set to 338.5-387.5 N {34.5-39.5 kgf, 76-87 lbf}. Cycle the parking brake lever 30 times.
If the original parking brake cable is used; set the lever pull force to 232.5-281.5 N {23.7-28.7 kgf, 52.3-63.3 lbf}.
However, for minor adjustments, the lever knob can be used as long as the pin height is within 53-57 mm {2.09-2.24 in.}.
When measuring the pull force, do not jerk the tester because the reading will be inaccurate.
Then, confirm that engagement of turnbuckle is 12.7 mm (0.5 in.) or more.

(2) After the pull force adjustment is made, tighten the turnbuckle jam nut to the specified value.
Standard: 22-32 N·m {224-326 kgf·cm, 16-23.6 lbf}

(3) Pull the parking brake lever until the parking brake warning light comes on and keep the lever in position. Release the parking brake lever from the position where the parking brake warning light comes on and let it go down naturally.

(4) Confirm that the parking brake lever pin returns to the OFF position and the parking brake warning light goes off.

BR07–22 PARKING BRAKE (BOSCH 12")

CHANGE

(5) Reinstall the knob cover and tighten it with bolts to the specified value.
Standard: 1.1-1.9 N·m {11.2-19.4 kgf·cm, 0.81-1.4 lbf}
(6) Confirm that there is no feeling of 'drag' from the brake when the parking brake lever is released.
(7) Check that the knob cover has no backlash and the parking brake works properly by actually operating the parking brake lever several times.

3. BRAKE BURNISHING

(1) Burnishing of lining
When replacing lining or drum of parking brake with new parts, be sure to perform lapping by the following procedure.
Braking force may be extremely lowered without lapping, so be sure to perform the lapping.

NOTICE
Apply parking brake burnishing only after replacing the lining and in an emergency when the vehicle is moving.

a. Release parking brake and turn adjusting knob until a control force becomes approximately 18 kgf (40lbf).
b. Mark ten (10) stops from 16 km/h (10 mph) on a dry, hard surface road using only parking brake to stop vehicle.
c. After each stop, release parking brake and drive vehicle at 32 km/h (20 mph) for 4 km (2.5 miles) to cool the brake.
d. After operation, adjust hand lever adjusting knob.

(2) Confirmation of parking brake application.
After completing all-brake adjustment, stop the vehicle on a safe slope or using a brake tester, confirm whether the parking brake is securely applied.