Automotive Technology

BOSCH

Chassis Division

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2004 MAR -4 P 1:56

February 26, 2004

Sent Via Facsimile to 202-366-7882 & U.S. Mail

Ms. Kathleen DeMeter
Director, Office of Defects Investigations
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

RE: Recall No. 03E-064
Bosch Zero Offset Pin Slide ("ZOPS") Calipers
Notices provided pursuant to 49 CFR §579.6(c)(9)

Dear Ms. DeMeter:

Enclosed please find a representative copy of a notice, which directly relates to the above referenced recall, which has been or is in the process of being sent to more than one vehicle manufacturer. The notice contains an email and an attached document entitled "Bosch Model Inspection Protocol – ZOPS Hydraulic Disc Brake Field Remedy."

This representative copy is being submitted to NHTSA pursuant to 49 CFR §579.6(c)(9).

This notice has been sent or is in the process of being sent to: (i) International Truck and Engine Corporation; (ii) Monaco Coach Corporation; (iii) Newmar Corp.; (iv) Western Recreational Vehicles, Inc.; and (v) Workhorse Custom Chassis LLC.

Please let me know if you have any questions.

Sincerely,

Keith Kondratko
Director Product Warranty

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Newton Janice (AC/QAS4)

From: Zavodny Doug (AC/EBH) *
Sent: Monday, February 23, 2004 11:20 AM
To: 'rick.vanlaar@nav-international.com'
Cc: Kondratko Keith (AC/QMM4) *
Subject: Model Remedy Protocol – Additional Information

Rick,

Attached is a model inspection protocol for the forthcoming brake system field campaign that incorporates several suggestions from NHTSA staff. Please note that this is a model protocol, and it may need to be adapted in some respects to the specific configuration of your vehicle(s). During Bosch discussions with NHTSA about the model protocol, they suggested that it might be a good idea that while the wheels are removed to perform the specific steps of the remedy protocol, to have the service technicians take this opportunity for a general brake system wheel end inspection. Bosch committed to NHTSA to pass this idea on for you to consider inspecting for items not contained within the Bosch Model Inspection Protocol. NHTSA commented that this inspection, and possible servicing, should be for anything obvious visually, such as damaged boots, fully worn pads, or other evidence of brake system wear that should be addressed by the owner. This might include wheel speed sensor condition/position, corroded rotors, ABS functionality/stored codes, hub bearing end play, etc.

Feel free to call me at 574-237-2229 if you have any questions.
Regards,
Doug Zavodny

Bosch Model
.emedy Protocol-29.

Tracking:

Recipient	Delivery
'rick.vanlaar@nav-international.com'	
Kondratko Keith (AC/QMM4) *	Delivered: 2/23/2004 11:20 AM

Bosch Model Inspection Protocol
ZOPS Hydraulic Disc Brake Field Remedy

IMPORTANT:

This service procedure applicable ONLY for recall Number XXXX

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Inspection procedure "tools and supplies needed" table 2

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Anchor plate inspection and repair instructions 11

Appendix

A. Caliper replacement procedure 17

- Read Complete Procedure Before Starting First Inspection -

Bosch Model Inspection Protocol
ZOPS Hydraulic Disc Brake Field Remedy

OVERVIEW: This procedure only applies to the defined vehicle population in recall number XXXX and identifies the steps required to perform an inspection of the caliper and anchor-plate. Based on the findings of the inspection, a repair or replacement of certain components may be necessary. The defined field remedy that follows is only applicable to the vehicles contained in this recall.

The table that follows is a summary of the procedure to be followed, the tools required, and if necessary (based on the findings of the inspection), the service kit required.

Step Number	Procedure	Tools and Supplies Needed (Items in *italics* are contained in service kits)	Service Kit Required	Service Kit Contents*
[redacted]				
1	1. Check VIN plate for build date code.	None	None	———
[redacted]				
2	1. Lift and secure vehicle, remove wheels and tires.	1. Shop hoist and stands. 2. Tools per vehicle manufacturer's service manual.	None	———
[redacted]				
3	1. Identify caliper assembly to verify Bosch OE.	None	None	———
[redacted]				
4 – 9	1. Remove selected fasteners. 2. Swing caliper down and support on stand. 3. Clean piston / housing area. 4. Extend pistons.	1. Wrench/socket 1.1. 21mm socket for Caliper mounting bolt 1.2. 1/8 inch socket for brake line bracket bolt 1.3. 7/16 inch tube wrench for caliper inlet tube fitting 1.4. 7/16 inch tube wrench for bleed screw 2. Jack stand to support caliper assembly for on vehicle service 3. Large flat bladed screw drive or suitable pry bar. 4. Flash light or trouble light. 5. *Wire brush (from Generic Tool Kit).* 6. *Spacer block (from Generic Tool Kit).*	Generic Tool Kit	1. Larger wire brush 2. Wire bore brush 3. Spacer block 4. Piston / boot insertion tool (one each size for 3x48mm and 2x73mm pistons/boots)
10	1. Inspect and verify caliper date code.	None	None	———
11 – 16	1. Remove piston boots 2. Clean and dry piston and housing opening 3. Inspect housing bore opening	1. Flat bladed screwdriver 2. Isopropyl or denatured alcohol 3. Clean lint free shop cloths 4. Flash light or inspection light 5. Shop air	None	———
17 – 25	1. Install Disc Brake Corrosion Grease onto piston and housing area 2. Install new piston boots 3. Push pistons into housing bore	1. *Small acid brush for grease distribution (from service kit).* 2. Piston / boot insertion tool (from Dealer Kit) 2.1. *2x73 – 0 204 102 033* 2.2. *3x48 – 0 204 102 034* 3. 10 inch 'C' clamp 4. *Spacer block (from Generic Tool Kit)*	Piston Boot Replacement Kit (for 2x73mm) OR (for 3x48mm)	1. Piston boots 2. Caliper bore grease packet (Disc Brake Corrosion Control Grease) 3. Acid brush
Appendix A	Caliper Replacement	1. Clip for hydraulic flex hose 2. Wrench and sockets 2.1. 21mm socket for Caliper mounting bolt	Caliper Replacement Kit (for 2x73mm)	1. Caliper assembly 2. Bleed screw

		2.2. 1/2 inch socket for Brake line bracket bolt 2.3. 7/16 inch tube wrench for caliper inlet tube fitting 3. 7/16 inch tube wrench for bleed screw	OR (for deliriums)	
26	1. Inspect caliper mounting bolt.	None	None	To determine if ZOPS or ZOH-T design level.
27 – 33	2. Remove caliper and secure. 3. Remove, clean and inspect caliper mounting pins.	1. Wrench and sockets 1.1. 21mm socket for Caliper mounting bolt 2. Isopropyl or denatured alcohol 3. Clean lint free shop cloths 4. Shop air	None	———
34 – 38	Reuse guide pins 1. Clean and grease anchor plate bore. 2. Grease and install new guide pin boot. 3. Grease & install guide pins	1. Clean lint free shop cloths 2. Denatured or isopropyl alcohol 3. Small wire bore brush (from *Generic Tool Kit*) 4. Shop air	Guide Pin Boot Replacement Kit	1. Caliper guide pin bolts 2. Disc brake guide pin / boot grease 3. Acid brush
39 – 47	1. Reusing caliper mounting bolts 2. Re-install caliper assembly 3. If ZOPS , check that caliper slides on guide pins.	1. Wrench and sockets 1.1. 21mm socket for Caliper mounting bolt 1.2. 1/2 inch socket for brake line bracket bolt 1.3. 7/16 inch tube wrench for caliper inlet tube fitting 1.4. 7/16 inch tube wrench for bleed screw 2. Torque wrench (150 Nm minimum) 3. Flat blade screw drive 4. Loctite® 9440 thread adhesive	None	—
N/A	1. Bleed brakes.	1. 7/16 inch tube wrench for bleed screw 2. DOT5 or DOT 4 brake fluid	None	Refer to vehicle manufacturer's service manual

IMPORTANT NOTES and REMINDERS

- Read complete procedure before beginning inspection.
- Due to brake fluid reservoir volume, perform <u>only one</u> caliper inspection at a time.
- Use only isopropyl or denatured alcohol for cleaning.
- Use only the recommended greases and apply in the proper location.

CAUTIONS & WARNINGS

- <u>Follow all shop or industry recognized safety practices. Failure to do so could result in damage to property or cause personal injury.</u> The following are some key reminders, but following accepted safety practices is not limited to this list.
  - Do not work under or around a vehicle supported by mechanical or hydraulic jacks. Vehicle must be supported by suitable floor stands.
  - Always wear suitable eye protection when working under or around a vehicle.
  - Always wear a respirator when working around brakes or brake lining dust.
- <u>NO</u> commercially available brake cleaners are to be used, otherwise damage could occur to the rubber components resulting in loss of braking.
- Use of greases, other than those specified, could damage rubber components resulting in the loss of braking.

Determine If The Vehicle Is Subject To This Field Remedy (VIN Plate Check)

1. Check the vehicle build date code found on the vehicle identification number plate (VIN Plate). Only vehicles having a build date as defined by the Vehicle Manufacturer are included in this recall.	DO NOT PROCEED WITH THIS MODEL INSPECTION PROTOCOL IF THE VEHICLE BUILD DATE DOES NOT MATCH WITH VEHICLE MANUFACTURER'S BUILD DATE INFORMATION.

Vehicle Preparation

2. Position vehicle on suitable floor stands and remove wheel (tire and rim).	**WARNING** **A JACK MUST NEVER BE USED ALONE TO SUPPORT A VEHICLE WHILE UNDER-CHASSIS SERVICE IS BEING PERFORMED. THE JACK MAY LOWER OR SLIP AND SERIOUS PERSONAL INJURY COULD RESULT. ALWAYS SUPPORT VEHICLE WITH SUITABLE FLOOR STANDS.**

Caliper Identification

3. Inspect and verify that the caliper on the vehicle is Bosch Original Equipment and not a remanufacture or non-Bosch product. (Bosch does not remanufacture calipers)	
Remanufactured (Reman) Caliper Assembly	**Non-Bosch Product (Clones or Knock-Offs)**
 1. Reman calipers will be identified. Typical locations for the "Reman" stamps are shown above. 2. Reman calipers have light gray piston boots (Bosch OE boot is dark gray) 3. Reman calipers typically are not plated (Bosch OE caliper has black plating)	 1. Non-Bosch products have cast in code numbers, normally 4-digits, as shown (Bosch OE caliper has none or "66" or "73") 2. Non-Bosch products will not have the Bosch 7-digit part-# cast into housing (Bosch OE caliper has "4153269" for 2x66mm or "41513222" for 2x73mm sizes). 3. Non-Bosch products will not have a 4-digit code cast into housing lower left area (Bosch OE caliper has this marking).

a) If the caliper IS a Bosch OEM caliper, proceed to "Caliper Inspection" section.
b) If the caliper IS NOT a Bosch OEM caliper (if it is remanufactured/Reman or Non-Bosch supplier product such as a Clone or Knock-off), proceed to "Anchor Plate Inspection" section.

NOTE: OE Service parts (such as piston boots, etc) are not interchangeable between the Bosch OE caliper and remanufactured or Non-Bosch product calipers.

Caliper Inspection

4. Remove any brake hose retaining fasteners as applicable. This allows the caliper to be rotated for piston boot inspection.

   Note: Do not remove brake hose at the caliper inlet.

5. Retract pistons. Place suitable pry bar on outboard side of rotor and pull caliper housing outboard (see arrow direction) until pistons are pushed back into housing.

6. Remove upper (top) caliper mounting bolt securing the caliper to the anchor plate.

7. Rotate the caliper assembly away from rotor and support with suitable stand for inspection.

   Note: Do Not Allow Caliper To Hang By Hose.

   Pad removal is not required, however if they are removed, be sure to mark them in some manner (i.e. left front inner, left front outer, right front inner, etc.) so that later they are reinstalled in the same location.

   Note: Do not mark on pad face. Keep pad face free of any grease or foreign materials.

8. With wire brush provide in the generic tool kit, remove loose rust, dirt and road debris from caliper underside near and beneath both pistons, and on caliper housing around the pistons and boots. Carefully blow away any loose debris with low pressure shop air.

9. Place spacer block provided in the generic tool kit into caliper housing between pistons and caliper legs. Depress brake pedal slowly and just enough to extend pistons to contact spacer.
   CAUTION:
   Keep hands away from pistons when brake pedal is depressed – hands or fingers may be injured.

   Use only block thickness indicated. Otherwise pistons will extend too far and a high pressure brake fluid leak could occur resulting in personal injury.

   Always wear safety glasses.

   If pistons are extended too far, DO NOT attempt to re-install pistons. Remove brake hose at the caliper, cap brake line and remove caliper assembly. Proceed to "Caliper Replacement Procedure" in Appendix A.

10. Inspections and Checks:

    If the caliper date code is <u>higher</u> than 1274A, 1274B, 1274C. (This date code represents October 1, 2001.
    - <u>Then</u> - Proceed to "<u>*ANCHOR PLATE INSPECTION*</u>" <u>Section.</u>
    - Otherwise continue to next step.

    Note: The caliper housing may need to be brushed with a wire brush from the generic tool kit to expose the date code. If caliper date code is not legible, and vehicle build date code in step-1 is before date-A, then proceed to next step. Otherwise, proceed to "*Anchor-Plate Inspection*" Section

Caliper Date Code

Caliper date code is <u>stamped</u> on the back near the center of the caliper housing and has 4 numbers and a letter. The 1st number is the year, the next 3 are the day of the year, and the letter represents the shift of production (For Example: 9120A : "9" means year 1999
"120" means the 120th day of the year
"A" means first shift (The letters "B" or "C" may appear for second or third shifts)

11. Remove both piston boots with a flat bladed screwdriver and discard.

12. Using isopropyl or denatured alcohol clean exposed pistons and visible caliper housing bore surfaces.

    CAUTION: No commercially available brake cleaners are to be used, otherwise part could be damaged and result in the loss of braking.

13. Use clean lintless type shop cloth and wipe pistons and caliper housing bore area.

14. CAREFULLY air dry pistons and caliper bore area with low pressure shop air.

    CAUTION: Safety glasses and protective clothing is recommended.

15. Using shop light or flashlight, inspect caliper housing bore near piston area for corrosion. Inspect entire circumference around piston. Also inspect piston for any indication of deterioration such as cracks or crumbling. Inspect to be sure that all components are dry before proceeding.

18. Inspect caliper housing for seal land corrosion.
    Note: The pistons are made from a phenolic material which is naturally brown in color and should not be confused with any corrosion color. Several photos in this procedure illustrate the brown color of the piston.

Examples of Corrosion Levels

NO CORROSION PRESENT Continue to next step.	**CORROSION PRESENT** Go to ***APPENDIX A***, "CALIPER REPLACEMENT PROCEDURE", for next step.

17. Using acid brush from piston boot replacement kit, lubricate pistons and caliper housing bore area with Disc Brake Corrosion Control Grease, packet p/n 0 204 262 951.

18. Place a small amount of Disc Brake Corrosion Control Grease onto the piston.

    NOTE: One packet is to be used for both pistons and bores of one caliper.

19. ***START*** at the caliper housing piston opening as shown and work up the piston including the piston boot groove. Spread grease uniformly.

20. **END** at the piston boot groove as shown.

WARNING: Use care while installing grease to avoid getting any debris on clean greased surfaces.

21. Inspect new piston boots provided in the piston boot replacement kit for cuts, tears or damage. If damaged, discard. Carefully install new piston boots.

Note: While the pistons are still extended, make sure that the boot bead is fully seated into piston boot bead groove.

22. Carefully move the free end of the boot back to the bead end of the piston so that the boot folds up correctly. Rotate the piston boot to firmly seat in piston boot bead in groove.

73mm Piston Boot Insertion Tool
Part Number: 0 204 102 033
(Similar Part: ZTSE4418)

60mm Piston Boot Insertion Tool
Part Number: 0 204 102 034
(Similar Part: ZTSE4417)

23. To push in the piston and piston boot, install the insertion tool from the generic tool kit onto piston boot.

    Note: Piston / piston boot installation tool must be properly oriented.

24. Insert spacer block in front of one piston to keep it in place. Center piston boot insertion tool onto opposite piston and boot. Slowly tighten C-clamp to insert this piston completely into housing.

25. Move spacer block to the inserted piston position to keep the inserted piston from being pushed out when the second piston is being pushed into the bore.

    Center piston boot insertion tool onto opposite piston and boot. Slowly tighten C-clamp to insert the 2nd piston completely into housing.

THIS COMPLETES THE CALIPER ASSEMBLY SERVICE PROCEDURE PORTION OF THE FIELD REMEDY. CONTINUE ON TO ANCHOR PLATE INSPECTION.

ANCHOR PLATE INSPECTION

26. Inspect the caliper mounting bolt and slide pins.

ZOPS Bolt: heavy hex head, yellow in color, course thread, thread patch (M12x1.75x30)

ZOH-T Bolt: flange head, dark in color, fine thread, may have thread patch as shown (M12x1.25x40).

If the bolt is course thread as shown, and neither pin has a notch in the mounting flange, Proceed to next step.

If the bolt is fine thread as shown, and one pin DOES have a notch in the mounting flange, Proceed to step 35

27. Remove lower caliper mounting bolt and secure caliper.
    Caution: Do Not Allow Caliper To Hang By Hose

28. Remove upper and lower caliper mounting pins and pin boots from anchor plate.

29. **SPECIAL NOTE:** On some rear axle applications, the caliper mounting pin (typically the uppermost pin) can not be removed without removal of the anchor plate.

30. Inspection of REAR axle guide pin which cannot be readily removed from the anchor plate (NOTE: For REAR axle guide pins which can be removed, continue to step 31).

    A. Pull the caliper guide pin out as far as possible and cut off boot.
    B. Use clean cloth dampened with isopropyl or denatured alcohol to clean pin and air dry with low pressure shop air.

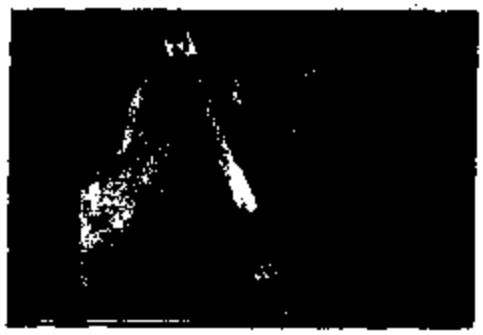
    CAUTION: DO NOT use liquid alcohol directly on guide pin - it may collect in anchor plate bore and degrade guide pin lubricating grease.

    C. Inspect caliper guide pin for corrosion using chart in step 33.

31. For all caliper guide pins that can be removed, remove and discard guide pin boots.

32. Using isopropyl or denatured alcohol clean and wipe pins dry with clean shop cloth.

    IMPORTANT NOTE: Some pin polishing is expected during normal use and will appear as shiny areas as shown. Pins with polishing may be reused.



33. Inspect for caliper guide pin corrosion.
    This chart is to be used for all front and rear axle guide pin inspections.

NO Corrosion	**LIGHT Corrosion**	**HEAVY Corrosion**
IF visual inspection reveals NO corrosion **Continue to next step.**	**IF visual inspection reveals light corrosion** **Use 220 grit sandpaper to clean exposed pin surface for light to moderate corrosion and re-clean pin with isopropyl or denatured alcohol and air dry.** **Continue to next step.**	**IF visual inspection reveals heavy corrosion:** • **For all pins that can be removed, install new pins from guide pin replacement kit and continue to next step.** • **For pins that can NOT be removed, refer to vehicle manufacturer's service manual for pins replacement.** **NOTE: If pins are stuck in the bore on either front or rear axle, replace anchor plate assembly per vehicle manufacturer's service manual. Continue to re-install caliper assembly, step 38.**

34. Disc Brake Guide Pin/Boot Grease, Part No. 0 204 302 291 for the anchor plate pin bore, caliper mounting pin and pin boot is contained in a two chamber packet.

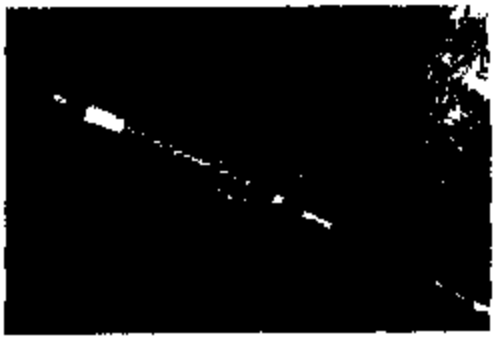
    One chamber of the grease packet is used for each anchor plate bore / guide pin / pin boot combination.

35. **For <u>REAR AXLE</u> guide pin which can NOT be removed.**
    A. Lubricate guide pin.
    B. Carefully install new boot over pin flange and seat boot into groove.
    C. Push guide pin in into anchor plate bore and seat boot onto anchor plate boot groove.

    NOTE: Verify that boot was not torn during installation.

    Continue for rear axle lower guide pin.

36. Cleaning and lubrication of anchor plate bores. Using round wire brush found in generic tool kit and isopropyl or denatured alcohol, wire brush both upper and lower anchor plate pin bores. Clean out any remaining loose residue with a clean shop cloth or swab. Carefully, air dry pin bores.



37. Only for pins removed from anchor plate bores, use the acid brush from the guide pin boot replacement kit, carefully grease anchor plate bore (Step 37A), caliper mounting pins (Step 37B), and pin boot beads (Step 37C) with Disc Brake Guide Pin / Boot grease.

Step 37A. Lubricate anchor plate bore.

Step 37B. Lubricate both guide pins

Step 37C Lubricate Pin boots.

38. Assemble pin boots onto pins and re-install into anchor plate.

NOTE: It's very important that the pins are installed in the correct location and the proper bolt torque is used. See "Chart: ZOPS and ZOH-T Caliper Guide Pins & Mounting Bolts" that follows.

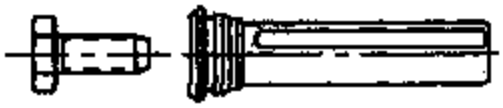
Align the leading and trailing pin flange flats so that they are parallel to facilitate caliper installation.

Note: After re-inserting guide pins and boots, clean pin flange face and internal threads with clean cloth and denatured or isopropyl alcohol. Air dry.

38. (continued)

Chart: ZOPS and ZOH-T Caliper Guide Pins & Mounting Bolts: (IMPORTANT identification, installation, and Torque information)

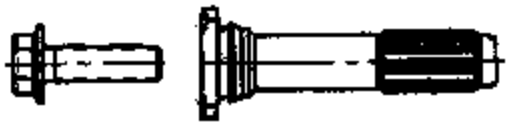
ZOPS Caliper guide pin and mounting bolt before to June 3, 2002



ZOPS Leading AND Trailing Guide Pin

- The same guide pin is used for both leading and trailing anchor plate positions.
- Bolt: M12x1.75x30 – Heavy hex head, course thread, yellow in color (see below).

ZOH-T Caliper guide pins and mounting bolt after June 3, 2003



ZOH-T Trailing Guide Pin

ZOH-T Leading Guide Pin

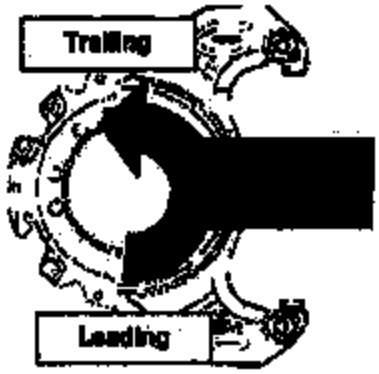
- Unique guide pins for leading and trailing anchor plate positions.
- Bolt: M12x1.25x40 – Flange head, fine thread, dark in color (see below).

- Bolt torque: 70-80 lb-ft (95–108 Nm)
- Bolt torque: 93-107 lb-ft (126–145 Nm)

NOTE: BOLT TORQUE IS DIFFERENT BETWEEN ZOPS AND ZOH-T

NOTE: It's important to know the anchor plate leading & trailing position because:

a. **For both ZOPS and ZOH-T, the leading bolt is always tightened first.**
b. **For ZOH-T, the guide pins must be in the proper position. The rubber bushed guide pin is always installed in the trailing position.**
c. **ZOPS or ZOH-T pins will fit in any anchor-plate, as long as BOTH pins are of the same type (Note - The 2 pins per anchor plate must both be ZOPS or both be ZOH-T. They must not be intermixed.)**



Definition of leading and trailing positions:
- Rotor rotation is for a vehicle moving forward.
- View rotor from outside of vehicle.

Re-using caliper mounting bolts.

39. When re-using the caliper mounting bolts, wire brush the lower half of both caliper mounting bolts and clean with isopropyl or denatured alcohol and air dry.

40. On the lower half of each bolt, apply liquid Loctite® 2440 around the circumference of the bolt.

    This procedure does not apply when using new bolts in guide pin replacement kit because Loctite® thread patch is already applied.

41. Position caliper assembly over leading and trailing pins.

42. Install both LEADING and TRAILING caliper mounting bolts **FINGER TIGHT**.

NOTE: ZOPS bolt shown. Same procedure for ZOH-T bolt.

43. Torque the LEADING bolt completely to torque value indicated in step 38.
    - For ZOPS bolt & pin, use a medium to large flat blade screwdriver under the pin flange to keep it parallel to the caliper abutment during bolt tightening.
    - For ZOH-T bolt & pin, screwdriver is Not required.

    CAUTION: Do Not Allow Screwdriver To Puncture Boot.

44. Torque TRAILING bolt completely using same procedure as above.

45. Re-assemble brake hose retaining fastener and refer to vehicle manufacturer's service manual for recommended torque.

Note: If installing new caliper, install brake line to caliper inlet and torque to vehicle manufacturer's recommended value.

46a. For ZOH-T (see step 38 for important details): Because the ZOH-T caliper suspension has a rubber bushed trailing pin, this step is not necessary and the inspection and repair procedure for this wheel end is complete.

46b. For ZOPS (see step 38 for important details): Check that the caliper slides on guide pins. Place hands on the caliper as shown, push / pull caliper and check that the caliper assembly slides on the guide pins.

- If the ZOPS caliper assembly slides on guide pins – **STOP.** Inspection and repair procedure for this wheel end is complete.
- If the ZOPS caliper assembly does NOT slide on guide pins, continue to next step.

47. ZOPS caliper assembly DOES NOT slide on guide pins:
    - Remove upper caliper mounting bolt (Note: this may be leading or trailing bolt depending on caliper mounting orientation on vehicle).
    - Rotate caliper assembly out slightly.
    - Rotate upper caliper guide pin 180 degrees (½ turn).
    - Clean bolt and re-apply Loctite® 2440 to bolt.
    - Reinstall upper caliper mounting pin bolt using the flat bladed screwdriver (same as step 43) and torque to the correct torque.
    - Repeat check that the caliper assembly slides on guide pins.
    - If caliper still does not slide, install new caliper guide pins from the appropriate service kit.

Appendix A.
Caliper Replacement Procedure

1. Remove and cap inlet brake line hose.
2. Remove lower caliper mounting bolt.
3. Replace pads (if removed)
   Note: Since the pads will typically be reused, be sure to reinstall them in the same position they were removed from as indicated by the markings from step 7 (i.e. if marked left front inner at step 7, then reinstall in left front inner position, etc.) . Be sure pad face is free of any grease or foreign material.
4. Procure new caliper replacement service kit.
   Note: Be sure to install the proper caliper size, either 2x66mm or 2x73mm.
5. Return to Step 26 – "Anchor Plate Inspection"
   Note: The new caliper is installed after the anchor plate inspection has been completed.