Component Procedures: Disc Brake System

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Component Procedures: Disc Brake System

Parts and Labor (itype_189)

Labor

Operation	Qualifier Path	Skill	Std Hrs	Wty Hrs
Remove & Replace	Brake Components > Brakes, R&R > Front Pads	B	1.3	0.0
Remove & Replace	Brake Components > Brakes, R&R > Front Pads >?		0.3	0.2
Remove & Replace	Brake Components > Brakes, R&R > Front Pads >?		0.2	0.2
Remove & Replace	Brake Components > Brakes, R&R > Front Pads >?		0.1	0.2
Remove & Replace	Brake Components > Brakes, R&R > Front Pads >?		0.2	0.2
Remove & Replace	Brake Components > Brakes, R&R > Front Pads >?		0.2	0.2
Remove & Replace	Brake Components > Brakes, R&R > Front Pads >?		0.4	0.2
Remove & Replace	Brake Components > Brakes, R&R > Rear Pads	B	1.3	0.0
Remove & Replace	Brake Components > Brakes, R&R > Rear Pads > ?		0.3	0.2
Remove & Replace	Brake Components > Brakes, R&R > Rear Pads > ?		0.2	0.2
Remove & Replace	Brake Components > Brakes, R&R > Rear Pads > ?		0.1	0.2
Remove & Replace	Brake Components > Brakes, R&R > Rear Pads > ?		0.2	0.2
Remove & Replace	Brake Components > Brakes, R&R > Rear Pads > ?		0.2	0.2
Remove & Replace	Brake Components > Brakes, R&R > Rear Pads > ?		0.4	0.2

Specifications Quick Reference (itype_439)

Quick Specifications
- item

Disc Brake System (Article 10585)

System Component Description

The disc brake system consists of the following components:

Applies mechanical output force from the hydraulic brake caliper s to friction surfaces of brake rotor s.

Uses mechanical output force applied to friction surfaces from the disc brake pad s to slow speed of tire and wheel assembly rotation.

Secures disc brake pads firmly in proper relationship to the hydraulic brake calipers. Enables a sliding motion of brake pads when mechanical output force is applied.

Provides mounting for hydraulic brake caliper and secures the caliper firmly in proper relationship to caliper bracket. Enables a sliding motion of the brake caliper to the brake pads when mechanical output force is applied.

System Operation (Floating Caliper)

Mechanical output force is applied from the hydraulic brake caliper pistons to the inner brake pads. As the pistons press the inner brake pads outward, the caliper housing s draw the outer brake pads inward. This allows the output force to be equally distributed. The brake pads apply the output force to the friction surfaces on both sides of the brake rotors, which slows the rotation of the tire and wheel assemblies. The correct function of both the brake pad and brake caliper hardware is essential for even distribution of braking force.

System Operation (Fixed Caliper)

Mechanical output force is applied from the hydraulic brake caliper inboard and outboard pistons to the inner and outer brake pads. The brake calipers are a fixed, opposed-piston design, allowing the output force to be equally distributed through the distribution of the pressurized brake fluid within the caliper. The brake pads apply the output force to the friction surfaces on both sides of the brake rotors, which slows the rotation of the tire and wheel assemblies. The correct function of the brake pad hardware and of the brake caliper inboard and outboard pistons is essential for even distribution of braking force.

System Characteristics

Brake Noise

Brake noise can occur and to a degree, some brake noise is normal. Variations in driving conditions such as the weather, environment, driving patterns, differences in vehicle loading, and type or style of driving, can affect brake wear. Any one of these variations can cause brake noise to become apparent. Inspect and verify that all metal-to-metal contact areas of the brake pads, brake pad guides or springs, brake caliper housing, caliper bracket and/or suspension knuckle, as applicable, are clean and free of corrosion and scale.

Brake noise is a “slip-stick” vibration of disc brake components and, if it occurs intermittently, can be considered normal. Most brake noise may be eliminated or temporarily reduced by performing 3 or 4 aggressive

brake applications. If the brake noise persists or consistently recurs, application of a damping compound to the brake pad mounting plate where it contacts the caliper can lessen the vibration as the components move relative to each other. Refer to Adhesives, Fluids, Lubricants, and Sealers in this section for recommended compounds.

The following brake noises are characteristic of all brake systems. These noises cannot be avoided, and may not indicate improper operation of the brake system.

Squeak/Squeal Noise

A squeak or squeal noise can occur on vehicles with front semi-metallic brake pads during light to medium brake pedal application at low to moderate vehicle speeds. Occasionally this noise may appear from the front or rear brakes after a period of non-use such as overnight, or cold brakes and/or in high humidity conditions.

Grinding Noise

Common occurrence for rear brakes and some front disc brakes during initial brake applications after the vehicle has been parked overnight. Caused by light corrosion forming on the metal brake component friction surfaces during vehicle non-use. Typically disappears after the first few brake applications.

Groan Noise

A groan type noise may be heard during a quick stop, or when slowly moving forward from a complete stop. On vehicles equipped with antilock brake systems (ABS), a groan or moan noise may occur during heavy brake application or on road surfaces with compromised traction such as loose gravel, or on wet or icy roads. This is a normal function of ABS activation.

Disc Brakes - Adhesives, Fluids, Lubricants, and Sealers (Article 10636)

Application	Type of Material	GM Part Number	
		United States	Canada
Brake Caliper Bolt	Threadlocker	19332211	10953488
Brake Caliper Bracket Bolt	Threadlocker	19332211	10953488
Hydraulic Brake System	DOT 3 Motor Vehicle Brake Fluid	19353126	19353127

Disc Brakes - Fastener Specifications (Article 10638)

Application	Specification
	Metric English
Brake Caliper Bleeder Valve	17-20 Nm 13-15 lb ft
Brake Caliper Bolt - Front (L99, LS3, LSA)	(1) 40 Nm + 90 degrees 30 lb ft + 90 degrees
Brake Caliper Bolt - Rear (L99, LS3, LSA)	(1) 40 Nm + 90 degrees 30 lb ft + 90 degrees
Brake Caliper Bracket Bolt - Front (LFX)	(1) 40 Nm + 90 degrees 30 lb ft + 90 degrees
Brake Caliper Bracket Bolt - Rear (LFX)	(1) 40 Nm + 90 degrees 30 lb ft + 90 degrees
Brake Caliper Guide Pin Bolt - Front (LFX)	27 Nm 20 lb ft
Brake Caliper Guide Pin Bolt - Front (LSA)	30 Nm 24 lb ft
Brake Caliper Guide Pin Bolt - Rear (LFX)	27 Nm 20 lb ft
Brake Hose Fitting Bolt	40 Nm 30 lb ft
Brake Rotor Bolt	10 Nm 89 lb in
Brake Shield Bolt	9 Nm 80 lb in

(1) Use NEW Fastener

Disc Brake Component Specifications (Article 10637)

Application	Specification
	Metric English
Brake Pad s	
Taper	0.15 mm 0.006 in
- Taper	
Front Brake Rotor LFX	
Rotor Diameter	321.0 mm 12.64 in
- Rotor Diameter	
Rotor Discard Thickness*	27.0 mm 1.063 in
- Rotor Discard Thickness*	
Rotor Maximum Allowable Assembled Lateral Runout	0.06 mm 0.002 in
- Rotor Maximum Allowable Assembled Lateral Runout	
Rotor Maximum Allowable Scoring	1.50 mm 0.059 in
- Rotor Maximum Allowable Scoring	
Rotor Maximum Allowable Thickness Variation	0.025 mm 0.001 in

- Rotor Maximum Allowable Thickness Variation
Rotor Thickness (New) 30.0 mm 1.181 in
- Rotor Thickness (New)
Front Brake Rotor L99, LS3
Rotor Diameter 355.0 mm 13.976 in
Rotor Discard Thickness* 30.0 mm 1.181 in
Rotor Thickness New 32.0 mm 1.259 in
- Rotor Thickness New
Front Brake Rotor LSA
Rotor Diameter 370.0 mm 14.567 in
Rotor Discard Thickness* 32.0 mm 1.259 in
Rotor Maximum Allowable Assembled Lateral Runout 0.09 mm 0.003 in
Rotor Thickness New 34.0 mm 1.338 in
Rear Brake Rotor LFX
Rotor Diameter 315.0 mm 12.40 in
Rotor Discard Thickness* 21.5 mm 0.846 in
Rotor Thickness New 23.0 mm 0.906 in
Rear Brake Rotor L99, LS3, LSA
Rotor Diameter 365.0 mm 14.37 in
Rotor Discard Thickness* 26.0 mm 1.023 in
Rotor Thickness New 28.0 mm 1.102 in
* All disc brake rotors have a minimum thickness dimension cast into them. Replace any rotor that does not meet the minimum thickness dimension.

All New Technical Service Bulletins (itype_432)

Tsbs
- Staining/Discoloring to Brake Caliper Paint (16-NA-059, 2026/06/01)

All Technical Service Bulletins (itype_100)

Tsbs
- Staining/Discoloring to Brake Caliper Paint (16-NA-059, 2026/06/01)
- Normal Characteristic - Front Or Rear Brake Noise On Slow Stops (PIC5590B, 2015/11/04)
- Brakes - Disc Brake System Repair/Lathe Calibration Information (00-05-22-002O, 2015/03/24)

Repair Tips (itype_110)

Tsbs
- Brakes - Disc Brake System Repair/Lathe Calibration Information (00-05-22-002O, 2015/03/24)

Front Disc Brake Mounting and Hardware Inspection (Article 10596)

- Inspect the fluid level in the brake master cylinder reservoir .
- If the brake fluid level is midway between the maximum–full point and the minimum allowable level then no brake fluid needs to be removed from the reservoir before proceeding.
- If the brake fluid level is higher than midway between the maximum–full point and the minimum allowable level then remove brake fluid to the midway point before proceeding.
- Raise and support the vehicle. Lifting and Jacking the Vehicle
- Remove the tire and wheel assembly. Tire and Wheel Removal and Installation
- Grasp the brake caliper housing and try to move the brake caliper housing up/down and forward/reverse in relation to the brake caliper mounting bracket. If excessive looseness is observed the brake caliper bracket bushings and/or the brake caliper mounting bolts may need to be replaced.
- Compress the front caliper pistons.
- Install a large C-clamp over the top of the caliper housing and against the back of the outboard pad.
- Slowly tighten the C-clamp until the pistons are pushed completely into the caliper bores.
- Remove the C-clamp from the caliper.
- With the pistons compressed into the caliper bores, grasp the brake caliper housing and slide it back and forth on the brake caliper mounting bolts. Check for smooth operation. If the brake caliper housing slide force is high or the brake caliper housing does not slide smoothly, inspect the brake caliper mounting bolts and/or the brake caliper mounting bracket bushings for wear or damage. If wear or damage conditions are found, replacement of the brake caliper mounting bolts and/or the brake caliper mounting bracket bushings is necessary.

- Remove the brake caliper mounting bolts from the brake caliper mounting bracket and support the brake caliper using heavy mechanics wire. Do Not remove the hydraulic brake hose from the caliper. Front Brake Caliper Replacement
- Remove the disc brake pad s from the brake caliper mounting bracket.
- Inspect the disc brake pad mounting hardware for the following:
- Missing mounting hardware
- Excessive corrosion
- Bent mounting tabs
- Looseness at the brake caliper mounting bracket
- Looseness at the disc brake pads
- Excessive contaminants in the brake caliper mounting bracket surface and threads.
- If any of the conditions listed are found, the disc brake pad mounting hardware requires replacement.
- Ensure the disc brake pads are held firmly in place on the brake caliper mounting bracket, yet slide easily on the mounting hardware without binding.
- Inspect the brake caliper guide pin bolt (1), brake caliper (2), caliper bracket (3), and the guide pin seal (4) for the following: Click for full-size image
- Binding
- Seizing
- Looseness in the brake caliper mounting bracket
- Bent or damaged brake caliper mounting bolts
- Cracked or torn boots
- Missing boots
- Bent or damaged brake caliper mounting bracket
- If any of the conditions listed are found then the brake caliper mounting hardware requires replacement.
- Install the disc brake pads to the brake caliper mounting bracket.
- Install the disc brake caliper to the brake caliper mounting bracket. Front Brake Caliper Replacement

Rear Disc Brake Mounting and Hardware Inspection (Article 10597)

- Inspect the fluid level in the brake master cylinder reservoir .
- If the brake fluid level is midway between the maximum–full point and the minimum allowable level then no brake fluid needs to be removed from the reservoir before proceeding.
- If the brake fluid level is higher than midway between the maximum–full point and the minimum allowable level then remove brake fluid to the midway point before proceeding.
- Raise and support the vehicle. Lifting and Jacking the Vehicle
- Remove the tire and wheel assembly. Tire and Wheel Removal and Installation
- Grasp the brake caliper housing and try to move the brake caliper housing up/down and forward/reverse in relation to the brake caliper mounting bracket. If excessive looseness is observed the brake caliper bracket bushings and/or the brake caliper mounting bolts may need to be replaced.
- Compress the rear caliper piston.
- Install a large C-clamp over the top of the caliper housing and against the back of the outboard pad.
- Slowly tighten the C-clamp until the pistons are pushed completely into the caliper bores.
- Remove the C-clamp from the caliper.
- With the piston compressed into the caliper bore, grasp the brake caliper housing and slide it back and forth on the brake caliper mounting bolts. Check for smooth operation. If the brake caliper housing slide force is high or the brake caliper housing does not slide smoothly, inspect the brake caliper mounting bolts and/or the brake caliper mounting bracket bushings for wear or damage. If wear or damage conditions are found, replacement of the brake caliper mounting bolts and/or the brake caliper mounting bracket bushings is necessary.
- Remove the brake caliper mounting bolts from the brake caliper mounting bracket and support the brake caliper using heavy mechanics wire. Do not disconnect the hydraulic brake hose from the caliper. Rear Brake Caliper Replacement
- Remove the disc brake pad s from the brake caliper mounting bracket.
- Inspect the disc brake pad mounting hardware for the following:
- Missing mounting hardware
- Excessive corrosion
- Bent mounting tabs
- Looseness at the brake caliper mounting bracket
- Looseness at the disc brake pad s
- Excessive contaminants in the brake caliper mounting bracket surface and threads.
- If any of the conditions listed are found, the disc brake pad mounting hardware requires replacement.

- Ensure the disc brake pads are held firmly in place on the brake caliper mounting bracket, yet slide easily on the mounting hardware without binding.
- Inspect the caliper bolts (1) or guide pins for the following: Click for full-size image
- Binding
- Seizing
- Looseness in the brake caliper mounting bracket (3)
- Bent or damaged brake caliper mounting bolts or guide pins
- Cracked or torn boots (4)
- Missing boots
- Bent or damaged brake caliper mounting bracket (3)
- If any of the conditions listed are found then the brake caliper mounting hardware requires replacement.
- Install the disc brake pads to the brake caliper mounting bracket.
- Gently pull the edge of the upper guide pin seal (1) away from the brake caliper guide pin (2) while simultaneously pushing the brake caliper guide pin into the brake caliper bracket to expel any trapped air and excess brake lubricant. Click for full-size image
- Repeat step 17 for the lower guide pin seal and brake caliper guide pin.
- With a clean shop towel, clean any excess brake lubricant from the guide pin seal and brake caliper guide pin.
- Install the disc brake caliper to the brake caliper mounting bracket. Rear Brake Caliper Replacement

Disc Brake System Diagnosis (Article 10664)

Test Description
The numbers below refer to the step numbers on the diagnostic table:
- Lubricant leaks from non-brake system components may come in contact with and contaminate brake system components.
- Disc brake rotor shields/backing plates that come in contact with disc brake rotor s may cause brake system noise.
- Disc brake rotor thickness variation that exceeds the maximum acceptable level can cause brake pulsation.
- Disc brake rotor assembled lateral runout (LRO) that exceeds the maximum acceptable level can lead to thickness variation.

Step Action Yes No
DEFINITION: This diagnostic table is designed to diagnose ONLY the components of the DISC brake system in order to determine if the DISC brake system is operating properly. You will be directed by the appropriate Symptom table to go to other brake system diagnostic tables as appropriate.
1 Were you sent here from a Brake Symptom table? Go to Step 2 Go to Diagnostic Starting Point - Vehicle
2 Visually inspect the disc brake pad s for the following conditions: Refer to Front Disc Brake Pads Replacement . Lining thickness below specifications Uneven and/or abnormal wear— edge-to-edge and/or side-to-side Looseness or damage—including pad hardware Evidence of contamination from an external substance Did you find any conditions to indicate a concern with any of the front and/or rear disc brake pads ? Go to Step 3 Go to Step 12
- Lining thickness below specifications
- Uneven and/or abnormal wear— edge-to-edge and/or side-to-side
- Looseness or damage—including pad hardware
- Evidence of contamination from an external substance

3 Are any of the front and/or rear disc brake pad s contaminated? Go to Step 8 Go to Step 4
4 Are any of the front and/or rear disc brake pads worn unevenly? Go to Step 7 Go to Step 5
5 Are any of the front and/or rear disc brake pads and/or pad hardware loose or damaged? Go to Step 7 Go to Step 6
6 Remove and inspect the worn disc brake pads for glazing, looseness, heat spots or damage. Replace the worn disc brake pads as a complete axle set. Refer to Front Disc Brake Pads Replacement and/or Rear Disc Brake Pads Replacement . Did you complete the inspection and replacement? Go to Step 12 —
- Remove and inspect the worn disc brake pads for glazing, looseness, heat spots or damage.
- Replace the worn disc brake pads as a complete axle set. Refer to Front Disc Brake Pads Replacement and/or Rear Disc Brake Pads Replacement .

7 Caution: Support the brake caliper with heavy mechanic wire, or equivalent, whenever it is separated from its mount and the hydraulic flexible brake hose is still connected. Failure to support the caliper in this manner will cause the flexible brake hose to bear the weight of the caliper, which may cause damage to the brake hose and in turn may cause a brake fluid leak. Note: Do NOT disconnect the hydraulic brake flex hoses from the calipers. Remove the front and/or rear disc brake calipers, as appropriate, from the mounting brackets or from the suspension knuckles and support the calipers. Refer to Front Brake Caliper Replacement

and/or Rear Brake Caliper Replacement . Inspect the disc brake caliper mounting bracket or the suspension knuckles and the mounting/sliding hardware for the following conditions: Refer to Front Disc Brake Mounting and Hardware Inspection and/or Rear Disc Brake Mounting and Hardware Inspection . Binding or seized hardware Worn, damaged or missing hardware components Loose, bent, cracked, or damaged caliper mounting bracket or suspension knuckle Replace components as required. Refer to the following procedures, as required: Front Brake Caliper Bracket Replacement Rear Brake Caliper Bracket Replacement Front Brake Caliper Hardware Replacement Rear Brake Caliper Hardware Replacement Replace the unevenly-worn, loose or damaged disc brake pads as a complete axle set. Refer to Front Disc Brake Pads Replacement and/or Rear Disc Brake Pads Replacement . Did you complete the inspection and replacement? Go to Step 12 —
- Remove the front and/or rear disc brake calipers, as appropriate, from the mounting brackets or from the suspension knuckles and support the calipers. Refer to Front Brake Caliper Replacement and/or Rear Brake Caliper Replacement .
- Inspect the disc brake caliper mounting bracket or the suspension knuckles and the mounting/sliding hardware for the following conditions: Refer to Front Disc Brake Mounting and Hardware Inspection and/or Rear Disc Brake Mounting and Hardware Inspection .
- Binding or seized hardware
- Worn, damaged or missing hardware components
- Loose, bent, cracked, or damaged caliper mounting bracket or suspension knuckle
- Replace components as required. Refer to the following procedures, as required:
- Front Brake Caliper Bracket Replacement
- Rear Brake Caliper Bracket Replacement
- Front Brake Caliper Hardware Replacement
- Rear Brake Caliper Hardware Replacement
- Replace the unevenly-worn, loose or damaged disc brake pads as a complete axle set. Refer to Front Disc Brake Pads Replacement and/or Rear Disc Brake Pads Replacement .
8 Inspect the disc brake calipers, brake hoses and brake pipes for evidence of an external brake fluid leak. Replace any components found to be leaking brake fluid. Refer to the following procedures as required: Front Brake Caliper Overhaul or Front Brake Caliper Replacement Rear Brake Caliper Overhaul or Rear Brake Caliper Replacement Front Brake Hose Replacement Rear Brake Hose Replacement Brake Pipe Replacement Did you find and correct the source of the leak causing contamination of the pads? Go to Step 11 Go to Step 9
- Inspect the disc brake calipers, brake hoses and brake pipes for evidence of an external brake fluid leak.
- Replace any components found to be leaking brake fluid. Refer to the following procedures as required:
- Front Brake Caliper Overhaul or Front Brake Caliper Replacement
- Rear Brake Caliper Overhaul or Rear Brake Caliper Replacement
- Front Brake Hose Replacement
- Rear Brake Hose Replacement
- Brake Pipe Replacement
9 Inspect the wheel drive shaft outer seals for damage and evidence of a grease leak. Replace any wheel drive shaft seal that is found to be leaking grease which may be the source of the contamination to the pads. Did you find and correct the source of the leak causing contamination of the pads? Go to Step 11 Go to Step 10
- Inspect the wheel drive shaft outer seals for damage and evidence of a grease leak.
- Replace any wheel drive shaft seal that is found to be leaking grease which may be the source of the contamination to the pads.
10 Inspect the automatic transmission cooling system lines, if equipped, for damage and evidence of an external fluid leak which may be the source of the contamination to the pads. Inspect the power steering system hoses for damage and evidence of an external fluid leak which may be the source of the contamination to the pads. Replace any components found to be leaking fluid which may be the source of the contamination to the pads. Did you find and correct the source of the leak causing contamination of the pads? Go to Step 11 —
- Inspect the automatic transmission cooling system lines, if equipped, for damage and evidence of an external fluid leak which may be the source of the contamination to the pads.
- Inspect the power steering system hoses for damage and evidence of an external fluid leak which may be the source of the contamination to the pads.
- Replace any components found to be leaking fluid which may be the source of the contamination to the pads.
11 Clean the remaining disc brake system components to remove any traces of the contaminant. Caution: Support the brake caliper with heavy mechanic wire, or equivalent, whenever it is separated from its mount and the hydraulic flexible brake hose is still connected. Failure to support the caliper in this manner will cause the flexible brake hose to bear the weight of the caliper, which may cause damage to the brake hose and in turn may cause a brake fluid leak. Note: Do NOT disconnect the hydraulic brake flex hoses from the calipers. Remove the front and/or rear disc brake calipers, as appropriate, from the mounting brackets or the suspension knuckles and support the calipers. Refer to Front Brake Caliper Replacement and/or Rear Brake Caliper

Replacement . Inspect the disc brake caliper mounting/sliding hardware for the following conditions: Refer to Front Disc Brake Mounting and Hardware Inspection and/or Rear Disc Brake Mounting and Hardware Inspection . Binding or seized hardware Distorted, worn, damaged or missing hardware components Replace the caliper mounting/sliding hardware components as required. Refer to Front Brake Caliper Hardware Replacement and/or Rear Brake Caliper Hardware Replacement . Replace the contaminated disc brake pads as a complete axle set. Refer to Front Disc Brake Pads Replacement and/or Rear Disc Brake Pads Replacement . Did you complete the cleaning, inspection and replacement? Go to Step 12 —
- Clean the remaining disc brake system components to remove any traces of the contaminant.
- Remove the front and/or rear disc brake calipers, as appropriate, from the mounting brackets or the suspension knuckles and support the calipers. Refer to Front Brake Caliper Replacement and/or Rear Brake Caliper Replacement .
- Inspect the disc brake caliper mounting/sliding hardware for the following conditions: Refer to Front Disc Brake Mounting and Hardware Inspection and/or Rear Disc Brake Mounting and Hardware Inspection .
- Distorted, worn, damaged or missing hardware components
- Replace the caliper mounting/sliding hardware components as required. Refer to Front Brake Caliper Hardware Replacement and/or Rear Brake Caliper Hardware Replacement .
- Replace the contaminated disc brake pads as a complete axle set. Refer to Front Disc Brake Pads Replacement and/or Rear Disc Brake Pads Replacement .
12 Visually inspect each of the disc brake rotor shields/backing plates, if equipped, for evidence of contact with the brake rotors. Are any of the brake rotor shields/backing plates contacting the brake rotors? Go to Step 13 Go to Step 14
13 Repair or replace the disc brake rotor shields/backing plates as required. Refer to Front Brake Shield Replacement . Did you complete the repair or replacement? Go to Step 14 —
14 Check the thickness of each of the disc brake rotors. Note: Make the following determination AND ANSWER the question INDIVIDUALLY for EACH rotor. Make a determination for each brake rotor if the rotor can be REFINISHED and REMAIN ABOVE the minimum requirements. Refer to Brake Rotor Thickness Measurement . Does the disc brake rotor meet the minimum requirements for REFINISHING? Go to Step 15 Go to Step 18
- Check the thickness of each of the disc brake rotors.
- Make a determination for each brake rotor if the rotor can be REFINISHED and REMAIN ABOVE the minimum requirements.
15 Note: Perform the following inspection AND ANSWER the question INDIVIDUALLY for EACH rotor. Inspect each of the disc brake rotors for thickness variation that exceeds the maximum acceptable level. Refer to Brake Rotor Thickness Variation Measurement . Does the brake rotor exhibit thickness variation that exceeds the maximum acceptable level? Go to Step 17 Go to Step 16
16 Inspect each of the disc brake rotors for the following surface and wear conditions: Refer to Brake Rotor Surface and Wear Inspection . Heavy rust and/or pitting Cracks and/or heat spots Excessive blueing discoloration Deep or excessive scoring beyond maximum acceptable level Note: Make the following determination AND ANSWER the question INDIVIDUALLY for EACH rotor. Make a determination for each brake rotor if the rotor requires refinishing based upon the results of the inspection. If the brake rotor exhibits any of the conditions listed previously, it requires refinishing. Does the brake rotor require REFINISHING? Go to Step 17 Go to Step 22
- Inspect each of the disc brake rotors for the following surface and wear conditions: Refer to Brake Rotor Surface and Wear Inspection .
- Heavy rust and/or pitting
- Cracks and/or heat spots
- Excessive blueing discoloration
- Deep or excessive scoring beyond maximum acceptable level
- Make a determination for each brake rotor if the rotor requires refinishing based upon the results of the inspection. If the brake rotor exhibits any of the conditions listed previously, it requires refinishing.
17 Refinish the brake rotor. Refer to Brake Rotor Refinishing . Inspect the brake rotor thickness. Refer to Brake Rotor Thickness Measurement . Were you able to REFINISH the brake rotor within the minimum requirements? Go to Step 22 Go to Step 21
- Refinish the brake rotor. Refer to Brake Rotor Refinishing .
- Inspect the brake rotor thickness. Refer to Brake Rotor Thickness Measurement .
18 Is the brake rotor at or below the MINIMUM THICKNESS requirements? Go to Step 21 Go to Step 19
19 Note: Perform the following inspection AND ANSWER the question INDIVIDUALLY for EACH rotor. Inspect each of the disc brake rotors for thickness variation that exceeds the maximum acceptable level. Refer to Brake Rotor Thickness Variation Measurement . Does the brake rotor exhibit thickness variation that exceeds the maximum acceptable level? Go to Step 21 Go to Step 20
20 Inspect each of the disc brake rotors for the following surface and wear conditions: Refer to Brake Rotor

Surface and Wear Inspection . Heavy rust and/or pitting Cracks and/or heat spots Excessive blueing discoloration Deep or excessive scoring beyond maximum acceptable level Note: Make the following determination AND ANSWER the question INDIVIDUALLY for EACH rotor. Make a determination for each brake rotor if the rotor requires replacement based upon the results of the inspection. If the brake rotor exhibits any of the conditions listed previously, it requires replacement. Does the brake rotor require REPLACEMENT? Go to Step 21 Go to Step 22
- Make a determination for each brake rotor if the rotor requires replacement based upon the results of the inspection. If the brake rotor exhibits any of the conditions listed previously, it requires replacement.
21 Note: Whenever a brake rotor is replaced, the assembled lateral runout (LRO) of the rotor must be measured to ensure optimum performance of the disc brakes. Replace the brake rotor. Refer to Front Brake Rotor Replacement or Rear Brake Rotor Replacement . Did you complete the replacement? Go to Step 24 —
22 Note: Perform the following inspection AND ANSWER the question INDIVIDUALLY for EACH rotor. Inspect each of the disc brake rotors for assembled lateral runout (LRO) that exceeds the maximum acceptable level. Refer to Brake Rotor Assembled Lateral Runout Measurement . Does the brake rotor exhibit assembled LRO that exceeds the maximum acceptable level? Go to Step 23 Go to Step 24
23 Correct the LRO for each brake rotor that was determined to have LRO exceeding the maximum acceptable level. Refer to Brake Rotor Assembled Lateral Runout Correction . Did you complete the operation? Go to Step 24 —
24 Install or connect components that were removed or disconnected during diagnosis. Did you complete the operation? Disc Brake System OK Return to Symptom Table —

Disc Brakes - Special Tools (Article 10635)

Illustration Tool Number/Description
Click for full-size image CH-41013 J 41013 Rotor Resurfacing Kit
Click for full-size image CH-42450-A J 42450-A Wheel Hub Resurfacing Kit
Click for full-size image CH-45101 J 45101 Hub and Wheel Runout Gauge
Click for full-size image CH-45101-100 J 45101-100 Conical Brake Rotor Washers

Noise (itype_156)

Tsbs
- Normal Characteristic - Front Or Rear Brake Noise On Slow Stops (PIC5590B, 2015/11/04)

Tools and Equipment (itype_113)

Tsbs
- Brakes - Disc Brake System Repair/Lathe Calibration Information (00-05-22-002O, 2015/03/24)