

Drum Brakes

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Description and Operation

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Drum Brake System Description and Operation

System Component Description

The drum brake system consists of the following:

Drum Brake Shoes

Applies mechanical output force, from hydraulic brake wheel cylinders, to friction surfaces of brake drums.

Brake Drums

Uses mechanical output force applied to friction surface from drum brake shoes to slow speed of tire and wheel assembly rotation.

Brake Drum Hardware

Secures drum brake shoes firmly in proper relationship to hydraulic brake wheel cylinders. Enables sliding motion of brake shoes needed to expand toward friction surface of drums when mechanical output force is applied. Provides return of brake shoes when mechanical output force is relieved.

Brake Drum Adjusting Hardware

Provides automatic adjustments of brake shoes to brake drum friction surface whenever brake apply occurs.

System Operation

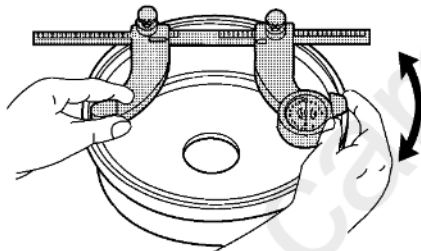
Mechanical output force is applied from the hydraulic brake wheel cylinder pistons to the top of the drum brake shoes. The output force is then distributed between the primary and secondary brake shoes as the shoes expand toward the friction surface of the brake drums. The brake shoes apply the output force to the friction surface of the brake drums, which slows the rotation of the tire and wheel assemblies. The proper friction of both the drum brake hardware and adjusting hardware is essential to the proper distribution of braking force.

Diagnostic Information and Procedures

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Brake Drum Diameter Measurement



1. [Click here for full size](#)

2. Warning:

Refer to [Brake Dust Warning](#).

3. Clean the brake shoe lining contact surface of the brake drum with denatured alcohol or an equivalent approved brake cleaner.
4. Using a brake drum micrometer calibrated in thousandths-of-an-inch, measure and record the largest diameter of the brake drum at four or more points, equally spaced around the drum.
5. Ensure the measurements are only taken within the brake shoe lining contact area. The micrometer must be positioned the same distance from the outside edge of the drum for each measurement.
6. Compare the largest diameter measurement recorded to the following specifications:
7. Specification
 - Brake drum maximum allowable diameter after refinishing: 200.75â€”mm (7.904â€”in)
 - Brake drum discard diameter: 201.00â€”mm (7.91â€”in)
8. If the largest diameter measurement of the brake drum is less than the maximum allowable inside diameter after refinishing specification, the drum may be refinished, depending upon surface and wear conditions.
9. If the largest diameter measurement of the brake drum is equal to or greater than the maximum allowable diameter after refinishing specification, the drum may not be refinished.
10. If the largest diameter measurement of the brake drum is equal to or greater than the discard diameter specification, the drum requires replacement.

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Brake Drum Surface and Wear Inspection

Special Tools

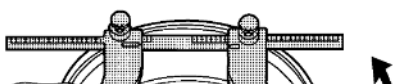
CH-8001 Dial Indicator Set

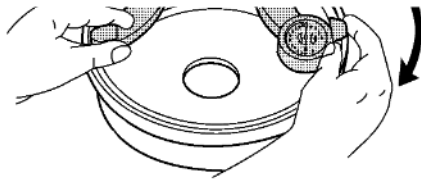
For equivalent regional tools, refer to [Special Tools](#).

1. Warning:

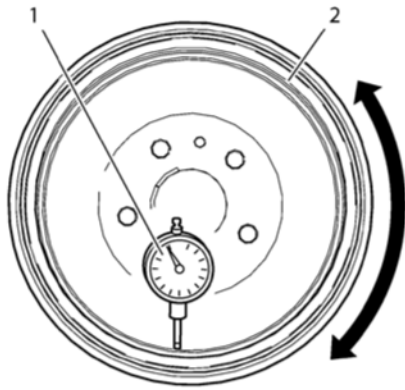
Refer to [Brake Dust Warning](#).

2. With the brake drum removed, clean the brake shoe lining contact surface of the brake drum with denatured alcohol or an equivalent approved brake cleaner.
3. Inspect the braking surface of the brake drum for the following braking surface conditions:
4.
 - Heavy rust and/or pitting
 - Light surface rust can be removed with an abrasive disc; heavy surface rust and/or pitting must be removed by refinishing the drum.
 - Cracks and/or heat spots
 - Excessive blueing discoloration
 - Missing balance weights
5. If the braking surface of the brake drum exhibits one or more of the braking surface conditions listed, the drum requires refinishing or replacement.





6. [Click here for full size](#)
7. Using a brake drum micrometer calibrated in thousandths-of-an-inch, measure and record any grooves present on the drum braking surface.
8. Ensure that the measurements are only taken within the brake shoe lining contact area.
9. Compare the groove, or scoring depth recorded to the following specification:
10. Specification
Brake drum maximum allowable scoring: 0.50 mm (0.020 in)
11. If the brake drum scoring depth exceeds the specification, or if an excessive amount of scoring is present, the drum requires refinishing or replacement.
12. Mount the brake drum on a brake lathe.



13. [Click here for full size](#)
14. Mount a dial indicator, *CH-8001* indicator (1), or equivalent, and position the indicator button so it contacts the braking surface of the brake drum (2) at a 90-degree angle, approximately 19mm (0.75in) from the outer edge of the drum.
15. Measure and record the radial runout of the brake drum.
- 16.
1. Rotate the drum until the lowest reading is displayed on the indicator dial, then zero the dial.
 2. Rotate the drum until the highest reading is displayed on the dial.
17. Compare the radial runout of the brake drum to the following specification:
18. Specification

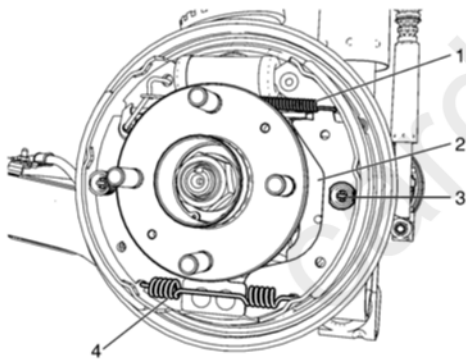
Brake drum maximum allowable radial runout: 0.03â€‰mm (0.001â€‰in)

19. If the brake drum radial runout exceeds the specification, the drum requires refinishing or replacement.

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Drum Brake Hardware Inspection

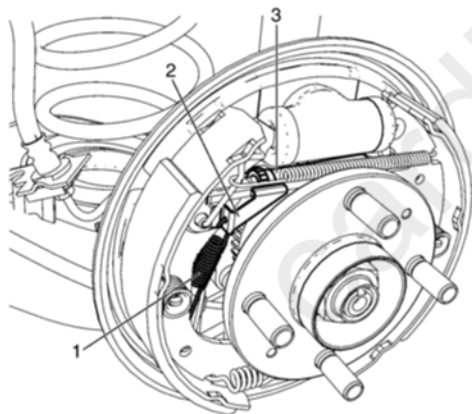


1. [Click here for full size](#)
2. Warning:

Refer to [Brake Dust Warning](#).
3. Visually inspect the drum brake upper return spring(1) for the following conditions:
4.
 - Excessive corrosion
 - Excessive stretching
 - Broken
 - Missing
5. If any of the conditions listed were found, the drum brake upper return spring requires replacement.
6. Visually inspect the park brake apply lever(2) for the following conditions:
7.
 - Bent
 - Broken
 - Missing
8. If any of the conditions listed were found, the park brake shoes require replacement.
9. Visually inspect the drum brake shoe hold down springs and cups(3) and pins for the following conditions:
10.
 - Excessive corrosion
 - Broken
 - Missing
 - Bent pins
11. If any of the conditions listed were found, the hold down springs, cups, and pins require replacement.
12. Visually inspect the drum brake lower return spring(4) for the following conditions:
13.
 - Excessive corrosion
 - Excessive stretching
 - Broken
 - Missing
14. If any of the conditions listed were found, the drum brake lower spring requires replacement.

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Drum Brake Adjusting Hardware Inspection



1. [Click here for full size](#)
2. Warning:

Refer to [Brake Dust Warning](#).
3. Visually inspect the adjuster actuator spring(1) for the following conditions:
4.
 - Excessive stretching
 - Excessive bending
 - Excessive corrosion
 - Broken
 - Missing
5. If any of the conditions listed were found, the adjuster actuator spring requires replacement.
6. Visually inspect the adjuster actuator lever(2) for the following conditions:
7.
 - Bent
 - Broken
 - The lever engagement surface excessively worn
 - Excessively bent or broken spring attachment tab
 - Missing
8. If any of the conditions listed were found, the adjuster actuator lever requires replacement.
9. Visually inspect the adjuster assembly(3) for the following conditions:
10.
 - Bent
 - Broken
 - Seized adjuster wheel threads
 - Excessively worn, damaged, or missing teeth
11. If any of the conditions listed were found, the adjuster assembly requires replacement.

Repair Instructions

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Brake Drum Replacement

Special Tools

- CH-41013 Rotor Resurfacing Kit
- CH-42450-A Wheel Hub Resurfacing Kit

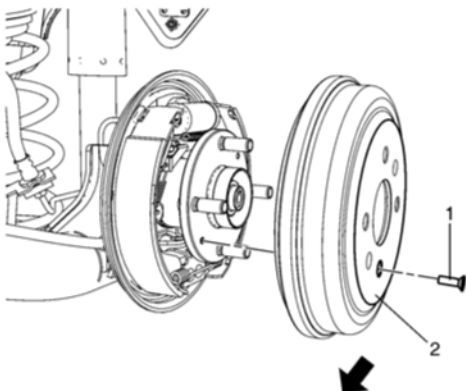
For equivalent regional tools, refer to [Special Tools](#).

Removal Procedure

1. Warning:

Refer to [Brake Dust Warning](#).

2. Check to ensure that the park brake is fully released.
3. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
4. Remove the tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).

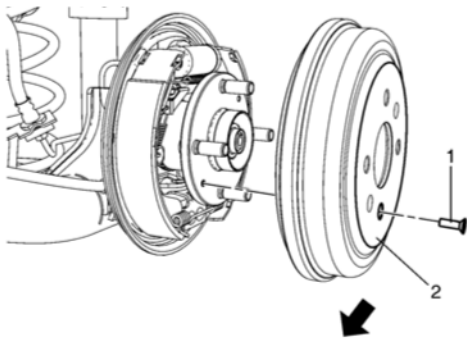


5. [Click here for full size](#)
6. Remove the brake drum screw(1).
7. Remove the brake drum(2).
8. If reinstalling the brake drum, use the *CH-41013* rotor resurfacing kit to clean the wheel hub flange mating surface of the brake drum of any corrosion.

Installation Procedure

1. Using the *CH-42450-A* wheel hub resurfacing kit to clean the wheel hub flange of any corrosion.





2. [Click here for full size](#)
3. Install the brake drum (2).
4. Adjust the drum brakes. Refer to [Drum Brake Adjustment](#).
5. Caution:
Refer to [Fastener Caution](#).
6. Install the brake drum screw (1) and tighten to 4 N-m (35 lb-in).
7. Install the tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).
8. Apply the brakes 2 or 3 times to seat and center the brake shoes on the brake drum.

Related Part Information

Part Name	Catalog Name	Part Code
Front Brake Drum	DRUM,FRT BRK(W/HUB)	0235A
Front Brake Drum	DRUM,FRT BRK (W/HUB)	0235D
Front Brake Drum	DRUM,FRT BRK(W/WHL)	0900A
Front Brake Drum	DRUM,FRT BRK(W/WHL)	0900D
Front Brake Drum	DRUM,FRT BRK (CSTG)	X0090
Front Brake Drum	DRUM,FRT BRK	X0149
Rear Brake Drum	DRUM,RR BRK(W/WHL)	0075A

Part Name	Catalog Name	Part Code
Rear Brake Drum	DRUM,RR BRK(W/WHL)	0075C
Rear Brake Drum	DRUM KIT,RR BRK	0099Z
Rear Brake Drum	DRUM,RR BRK	0100A
Rear Brake Drum	DRUM,RR BRK	0100B
Rear Brake Drum	DRUM,RR BRK	0100C
Rear Brake Drum	DRUM,RR BRK	0100D
Rear Brake Drum	DRUM,RR BRK (CSTG)	0100E
Rear Brake Drum	DRUM,RR BRK(W/HUB)	0355A
Front Brake Drum	DRUM KIT,FRT BRK	SJ155

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Brake Drum Refinishing

Special Tools

- CH-41013 Rotor Resurfacing Kit
- CH-42450-A Wheel Hub Resurfacing Kit

For equivalent regional tools, refer to [Special Tools](#).

1. Warning:

Refer to [Brake Dust Warning](#).

2. The brake drums do not require refinishing as part of routine brake system service. Do not refinish brake drums in an attempt to correct the following conditions:

3.

- Brake system noise (squeal, growl, groan)
- Uneven and/or premature brake lining wear
- Superficial or cosmetic corrosion/rust of the brake drum surface
- Scoring of the brake drum surface (less than the maximum allowable specification)

4. Brake drums should only be refinished if the following conditions exist:

5.

- Excessive corrosion/rust and/or pitting
- Cracks and/or heat spots
- Excessive blueing discoloration
- Scoring of the brake drum surface (in excess of the maximum allowable specification)
- Radial runout in excess of the maximum allowable specification

6. Inspect each of the brake drums and determine if the brake drums can be refinished and remain within the maximum allowable diameter after refinish specification:

7.

1. With the tire and wheel assemblies removed, measure the diameter of each of the brake drums. Refer to [Brake Drum Diameter Measurement](#).
2. Inspect each of the brake drums for excessive surface wear and/or radial runout. Refer to [Brake Drum Surface and Wear Inspection](#).

8. If the brake drums can be refinished, proceed with the rotor refinishing procedure.

9. If necessary, use the CH-41013 rotor resurfacing kit in order to thoroughly clean any corrosion/rust from the brake drum flange.

10. Mount the brake drum to the brake lathe according to the lathe manufacturer instructions.

11. Ensure that any vibration dampening attachments are securely in place.

12. With the brake lathe running, slowly bring in the cutting tool until it just contacts the brake drum friction surface.

13. Observe the witness mark on the brake drum. If the witness mark extends approximately three-quarters or more of the way around the brake drum surface, the brake drum is properly mounted to the lathe.

14. If the witness mark does not extend three-quarters or more of the way around the brake drum, re-mount the brake drum to the lathe.

15. Following the brake lathe manufacturer instructions, refinish the brake drum.
16. After each successive cut, inspect the brake drum diameter. Refer to [Brake Drum Diameter Measurement](#).
17. If at any time the brake drum exceeds the maximum allowable diameter after refinish specification, the brake drum must be replaced.
18. After refinishing the brake drum, use the following procedure in order to obtain the desired non-directional finish:
19.
 1. Follow the brake lathe manufacturer's recommended speed setting for applying non-directional finish.
 2. Using the moderate pressure, apply the non-directional finish:
 3.
 - If the lathe is equipped with a non-directional finishing tool, apply the finish with 120-grit aluminum oxide sandpaper.
 - If the lathe is not equipped with a non-directional finishing tool, apply the finish with a sanding block and 150-grit aluminum oxide sandpaper.
 4. After applying a non-directional finish, clean the friction surface of the brake drum with denatured alcohol or an equivalent brake cleaner and wipe the friction surface using a clean shop towel to remove metal particles remaining from machining. Repeat the cleaning process if necessary to remove all metal particles.
20. Remove the brake drum from the brake lathe.
21. If necessary, use the *CH-42450-A* wheel hub resurfacing kit in order to thoroughly clean any corrosion from the wheel bearing flange.

Related Part Information

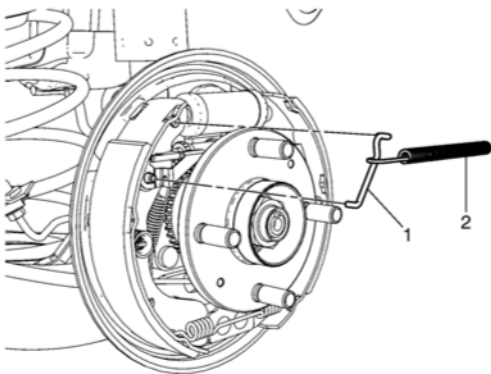
Part Name	Catalog Name	Part Code
Front Brake Drum	DRUM,FRT BRK(W/HUB)	0235A
Front Brake Drum	DRUM,FRT BRK (W/HUB)	0235D
Front Brake Drum	DRUM,FRT BRK(W/WHL)	0900A
Front Brake Drum	DRUM,FRT BRK(W/WHL)	0900D
Front Brake Drum	DRUM,FRT BRK (CSTG)	X0090
Front Brake Drum	DRUM,FRT BRK	X0149
Rear Brake Drum	DRUM,RR BRK(W/WHL)	0075A
Rear Brake Drum	DRUM,RR BRK(W/WHL)	0075C
Rear Brake Drum	DRUM KIT,RR BRK	0099Z
Rear Brake Drum	DRUM,RR BRK	0100A
Rear Brake Drum	DRUM,RR BRK	0100B
Rear Brake Drum	DRUM,RR BRK	0100C
Rear Brake Drum	DRUM,RR BRK	0100D
Rear Brake Drum	DRUM,RR BRK (CSTG)	0100E
Rear Brake Drum	DRUM,RR BRK(W/HUB)	0355A
Front Brake Drum	DRUM KIT,FRT BRK	SJ155

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Brake Shoe Replacement

Removal Procedure

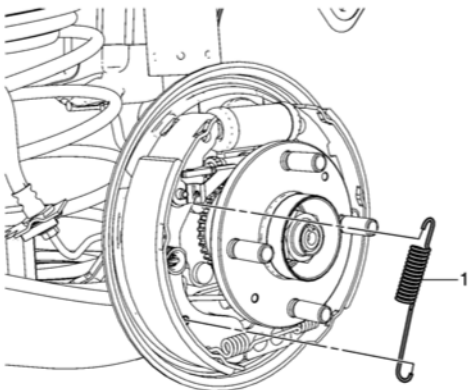
1. Warning:
Refer to [Brake Dust Warning](#).
2. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
3. Remove the tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).
4. Remove the brake drum. Refer to [Brake Drum Replacement](#).



5.

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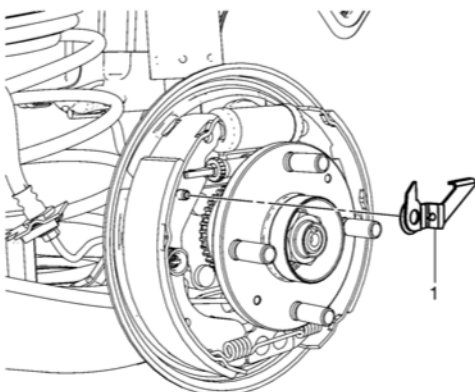
6. Remove the spring fastener(1) and upper brake shoe return spring(2).



7.

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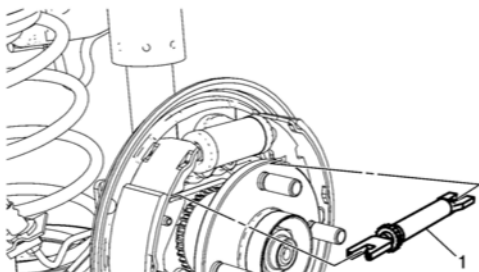
8. Remove brake adjuster actuator lever spring(1).

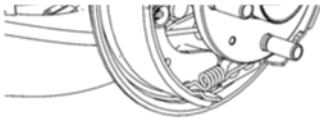


9.

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10. Remove the brake adjuster actuator lever(1).



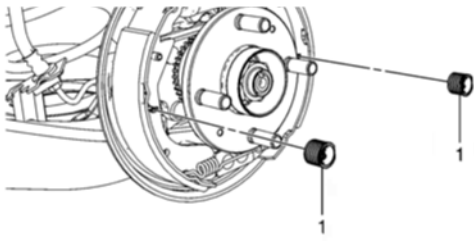


11.

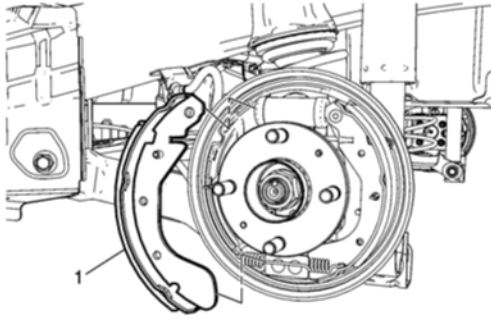
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12. Spread the top of the brake shoes apart slightly and remove the brake shoe adjuster (1).

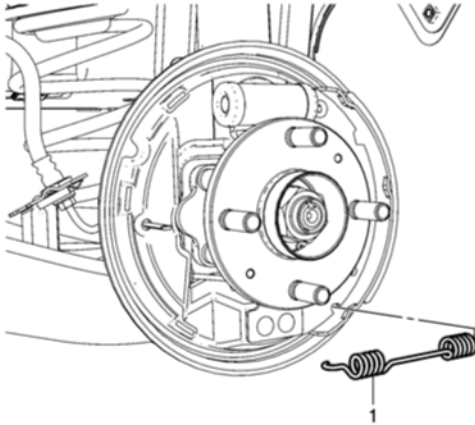




13. [Click here for full size](#)
14. Remove the brake shoe hold down spring and cup assemblies (1) by compressing the spring and rotating the assembly 1/4 turn.
15. Remove the 2 hold-down spring and cup assembly pins.



16. [Click here for full size](#)
17. Rotate the primary brake shoe(1) toward the wheel hub assembly and release the brake shoe from the lower brake shoe return spring.

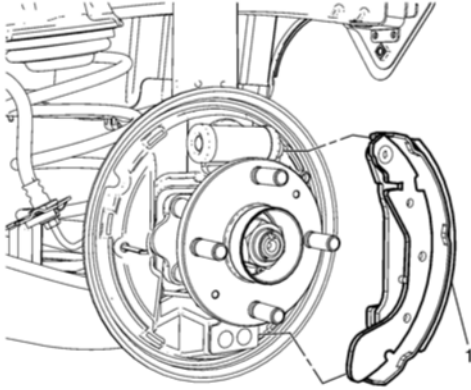


18.

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19. Remove the lower brake shoe return spring(1).

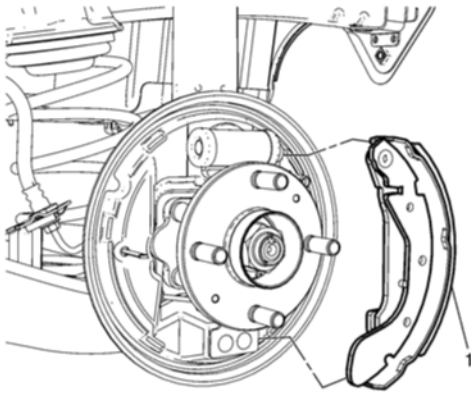
20. Inspect the drum brake hardware and replace any components, as necessary. Refer to [Drum Brake Hardware Inspection](#).



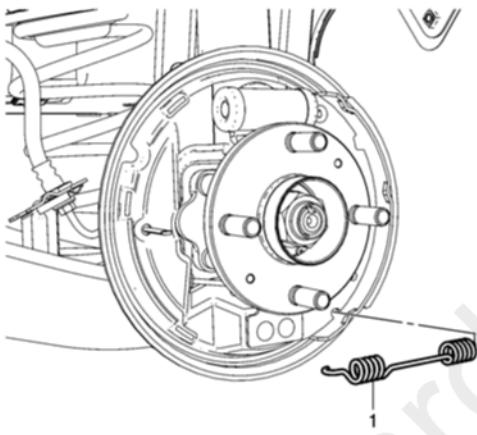
21. [Click here for full size](#)
22. Compress the park brake cable return spring and release the park brake cable fitting from the park brake apply lever and remove the brake shoe(1).

Installation Procedure

1. Clean the drum brake backing plate of any dirt and debris.
2. Apply a light coat of high temperature brake lubricant to the brake drum backing plate shoe contact surfaces.

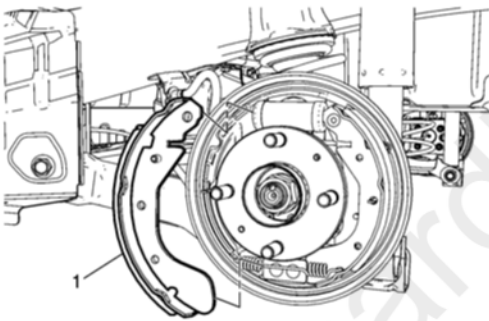


3. [Click here for full size](#)
4. Compress the park brake cable return spring and install the park brake cable fitting to the park brake apply lever and position the brake shoe(1) to the drum brake backing plate.

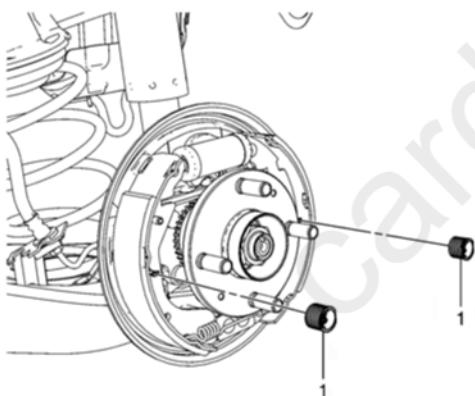


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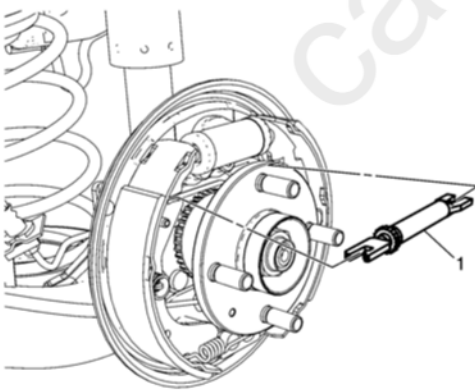
6. Install the lower brake shoe return spring (1).



7. [Click here for full size](#)
8. Position the primary brake shoe(1) to the brake drum backing plate and connect the brake shoe to the lower brake shoe return spring.



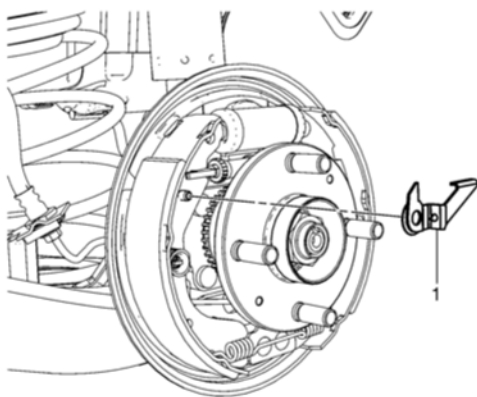
9. [Click here for full size](#)
10. Install the 2 hold-down spring and cup assembly pins.
11. Install the brake shoe hold down spring and cup assemblies(1) by compressing the spring and rotating the assembly 1/4 turn.



12.

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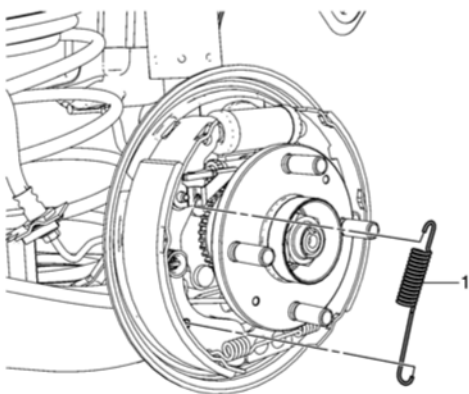
13. Spread the top of the brake shoes apart slightly and install the brake shoe adjuster (1).



14.

[Click here for full size](#)

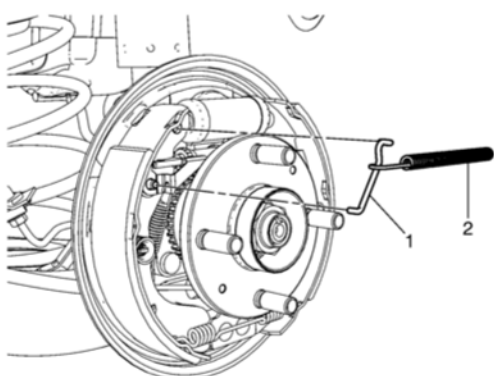
15. Install the brake adjuster actuator lever(1).



16.

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17. Install the brake adjuster actuator lever spring(1).



18. [Click here for full size](#)
19. Install the spring fastener(1) and upper brake shoe return spring(2).
20. Adjust the drum brakes. Refer to [Drum Brake Adjustment](#).
21. Install the brake drum. Refer to [Brake Drum Replacement](#).
22. Install the tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).
23. Lower the vehicle.

Related Part Information

Part Name	Catalog Name	Part Code
Front Brake Shoe	SHOE,FRT BRK	0040A
Front Brake Shoe	SHOE KIT,FRT BRK	0040B
Front Brake Shoe	SHOE KIT,FRT BRK	0040C
Rear Brake Shoe	SHOE,RR BRK	X0060
Rear Brake Shoe	SHOE KIT,RR BRK	X0079
Rear Brake Shoe	SHOE SET,RR BRK	X0099
Rear Brake Shoe	SHOE,RR BRK	X0100
Rear Brake Shoe	SHOE KIT,RR BRK	X0156

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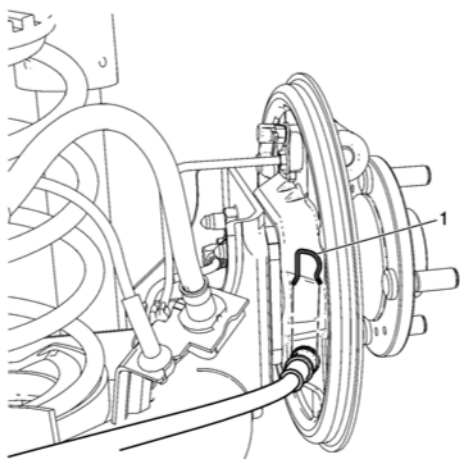
Rear Brake Backing Plate Replacement

Removal Procedure

Warning:

Refer to [Brake Dust Warning](#).

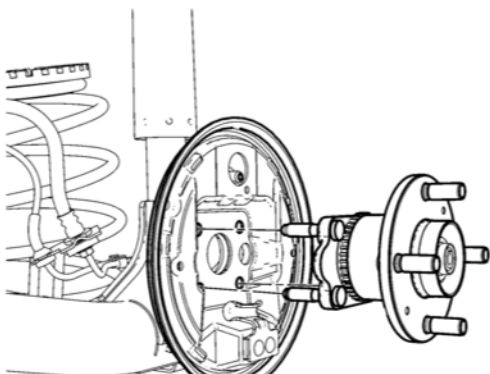
1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).
3. Remove the brake drum. Refer to [Brake Drum Replacement](#).
4. Remove the rear wheel speed sensor, if equipped. Refer to [Rear Wheel Speed Sensor Replacement](#).
5. Remove the brake shoes. Refer to [Brake Shoe Replacement](#).
6. Remove the wheel cylinder. Refer to [Rear Brake Cylinder Replacement](#).



7.

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8. Remove the park brake cable retaining clip(1) from the drum brake backing plate.





9.

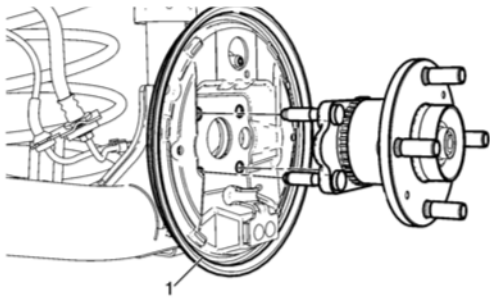
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10. Remove the rear wheel bearing and hub assembly. Refer to [Rear Wheel Bearing and Hub Replacement](#).

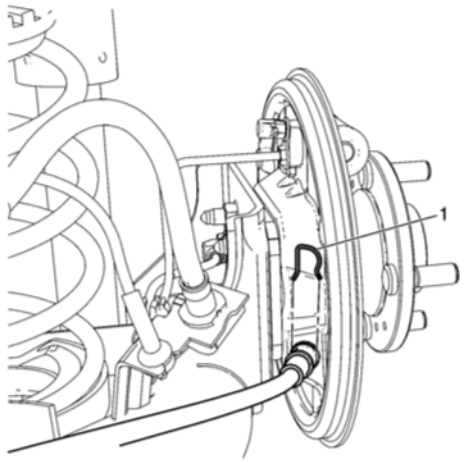
11. Remove the rear brake backing plate (1) from the rear axle assembly.

Installation Procedure





1. [Click here for full size](#)
2. Install the rear brake backing plate(1) to the rear axle assembly.
3. Install the rear wheel bearing and hub assembly. Refer to [Rear Wheel Bearing and Hub Replacement](#).
4. Install the wheel cylinder. Refer to [Rear Brake Cylinder Replacement](#).
5. Install the brake shoes. Refer to [Brake Shoe Replacement](#).



6. [Click here for full size](#)
7. Install the park brake cable retaining clip (1) to the drum brake backing plate.
8. Install the rear wheel speed sensor, if equipped. Refer to [Rear Wheel Speed Sensor Replacement](#).
9. Adjust the drum brakes. Refer to [Drum Brake Adjustment](#).
10. Install the brake drum. Refer to [Brake Drum Replacement](#).
11. Bleed the hydraulic brake system. Refer to [Hydraulic Brake System Bleeding](#).
12. Install the tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).
13. Lower the vehicle.

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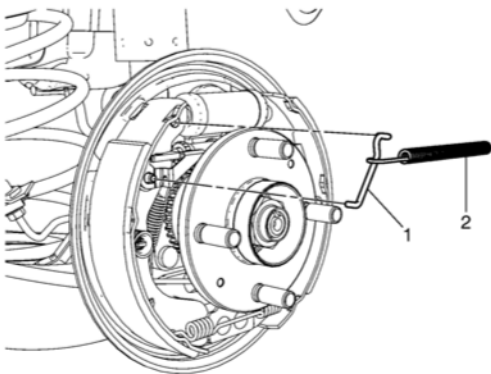
Drum Brake Hardware Replacement

Removal Procedure

1. Warning:

Refer to [Brake Dust Warning](#).

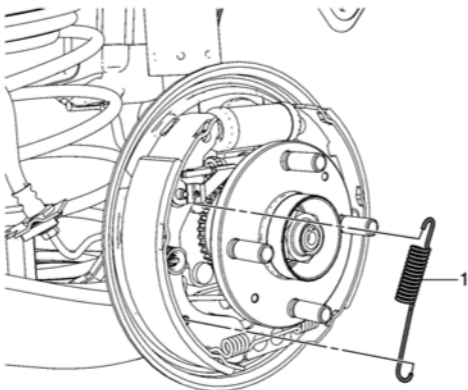
2. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
3. Remove the tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).
4. Remove the brake drum. Refer to [Brake Drum Replacement](#).



5.

[Click here for full size](#)

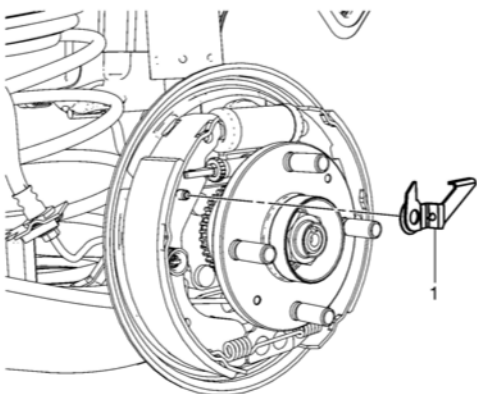
6. Remove the spring fastener(1) and upper brake shoe return spring(2).



7.

[Click here for full size](#)

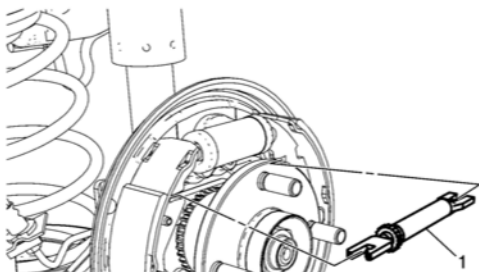
8. Remove brake adjuster actuator lever spring(1).

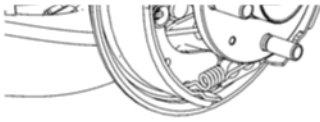


9.

[Click here for full size](#)

10. Remove the brake adjuster actuator lever(1).



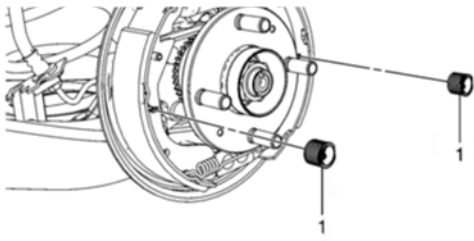


11.

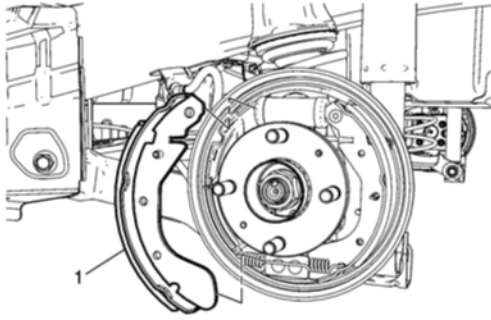
[Click here for full size](#)

12. Spread the top of the brake shoes apart slightly and remove the brake shoe adjuster (1).

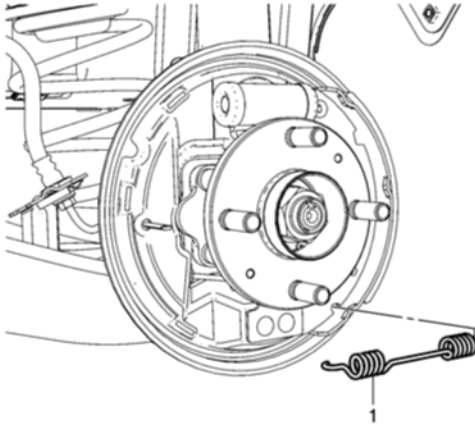




13. [Click here for full size](#)
14. Remove the brake shoe hold down spring and cup assemblies (1) by compressing the spring and rotating the assembly 1/4 turn.
15. Remove the 2 hold-down spring and cup assembly pins.



16. [Click here for full size](#)
17. Rotate the primary brake shoe(1) toward the wheel hub assembly and release the brake shoe from the lower brake shoe return spring.



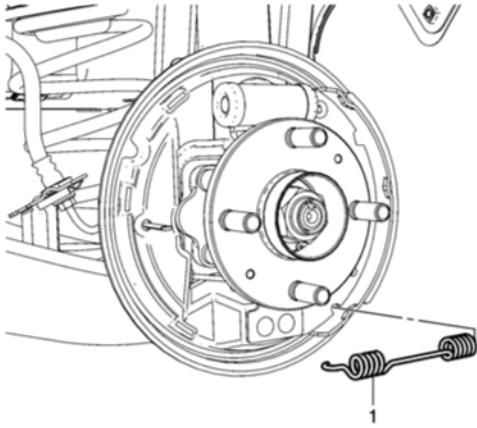
18.

[Click here for full size](#)

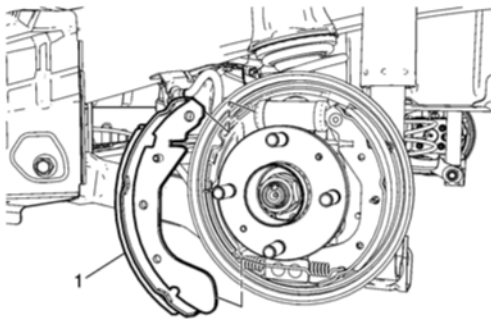
19. Remove the lower brake shoe return spring(1).

20. Inspect the drum brake hardware and replace any components, as necessary. Refer to [Drum Brake Hardware Inspection](#).

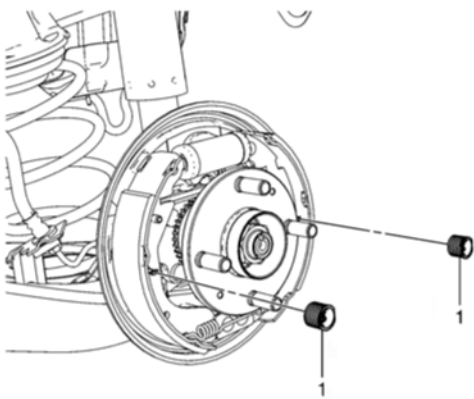
Installation Procedure



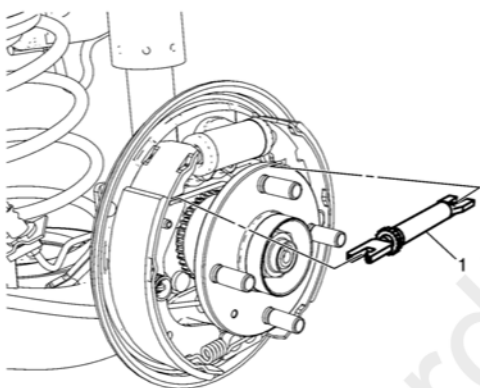
1. [Click here for full size](#)
2. Install the lower brake shoe return spring(1).



3. [Click here for full size](#)
4. Position the primary brake shoe(1) to the brake drum backing plate and connect the brake shoe to the lower brake shoe return spring.



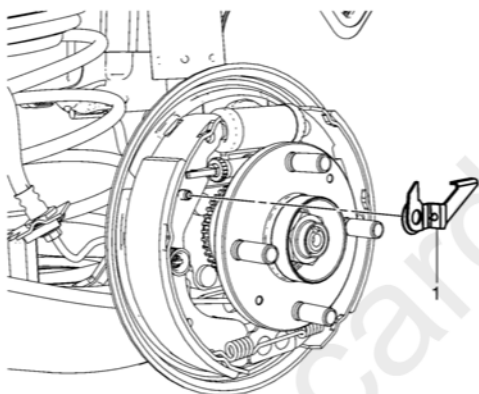
5. [Click here for full size](#)
6. Install the 2%hold-down spring and cup assembly pins.
7. Install the brake shoe hold down spring and cup assemblies% (1) by compressing the spring and rotating the assembly 1/4%turn.



9.

[Click here for full size](#)

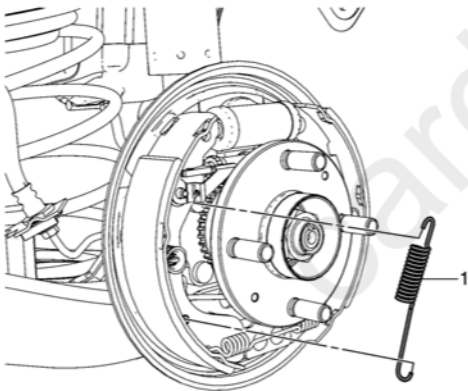
9. Spread the top of the brake shoes apart slightly and install the brake shoe adjuster (1).



10.

[Click here for full size](#)

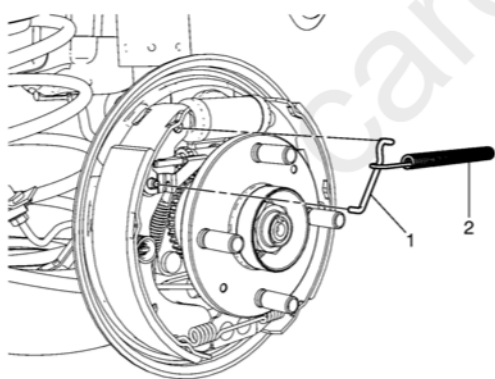
11. Install the brake adjuster actuator lever(1).



12.

[Click here for full size](#)

13. Install the brake adjuster actuator lever spring (1).



14. [Click here for full size](#)
15. Install the spring fastener(1) and upper brake shoe return spring(2).
16. Adjust the drum brakes. Refer to [Drum Brake Adjustment](#).
17. Install the brake drum. Refer to [Brake Drum Replacement](#).
18. Install the tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).
19. Lower the vehicle.

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1. BRAKES
2. DRUM BRAKES
3. REPAIR INSTRUCTIONS
- 4.

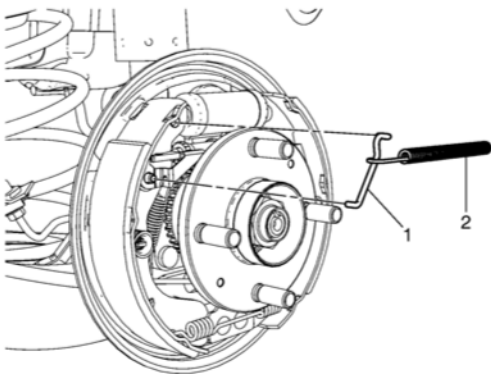
Drum Brake Adjusting Hardware Replacement

Removal Procedure

Warning:

Refer to [Brake Dust Warning](#).

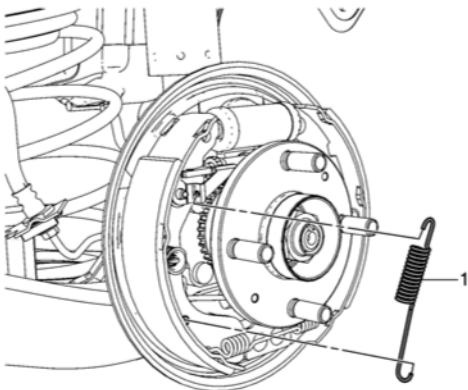
1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#).
3. Remove the brake drum. Refer to [Brake Drum Replacement](#).



4.

[Click here for full size](#)

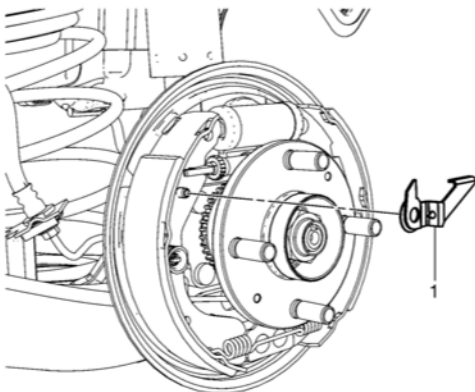
5. Remove the spring fastener(1) and upper brake shoe return spring(2).



6.

[Click here for full size](#)

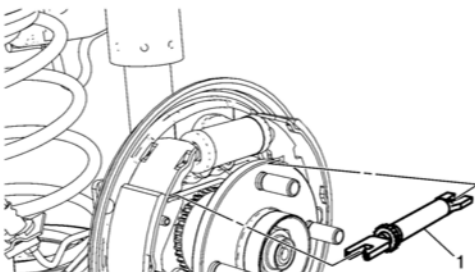
7. Remove brake adjuster actuator lever spring(1).

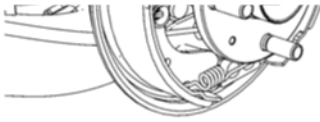


8.

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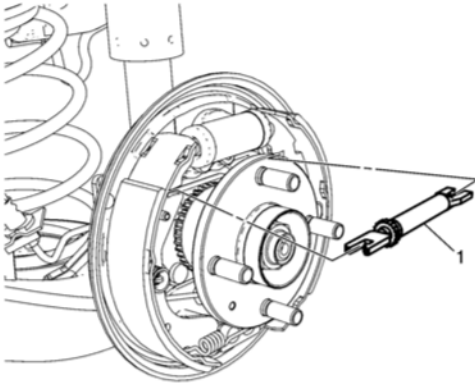
9. Remove the brake adjuster actuator lever(1).



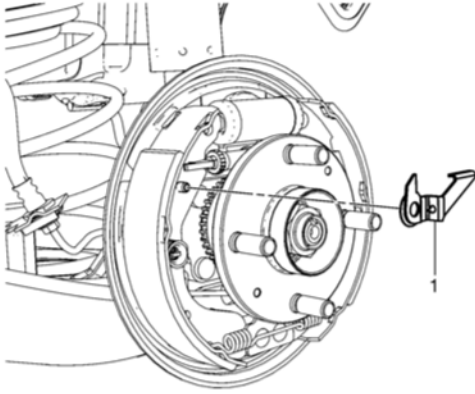


10. [Click here for full size](#)
11. Spread the top of the brake shoes apart slightly and remove the brake shoe adjuster (1).
12. Inspect the drum brake adjusting hardware and replace any damaged components as necessary. Refer to [Drum Brake Adjusting Hardware Inspection](#).
13. Disassemble the brake shoe adjuster and thoroughly clean the adjuster screw threads of any corrosion.

Installation Procedure



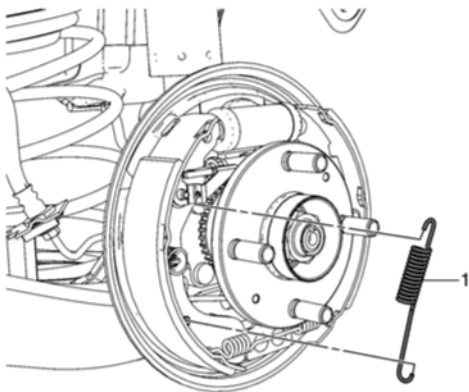
1. [Click here for full size](#)
2. Apply a light coat of high temperature brake lubricant to the brake shoe adjuster screw threads.
3. Assemble the brake shoe adjuster, setting the adjuster to the fully retracted position.
4. Spread the top of the brake shoes apart slightly and install the brake shoe adjuster (1).



5.

[Click here for full size](#)

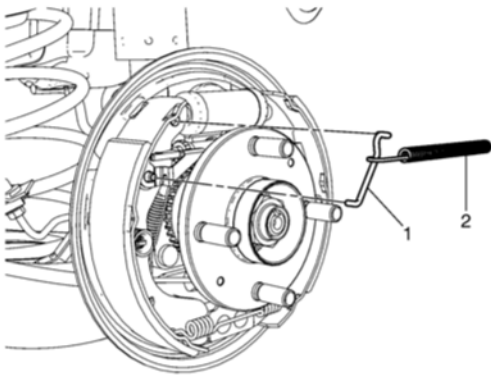
6. Install the brake adjuster actuator lever(1).



7.

[Click here for full size](#)

8. Install the brake adjuster actuator lever spring(1).



9.

[Click here for full size](#)

10. Install the spring fastener(1) and upper brake shoe return spring(2).

11. Adjust the drum brakes. Refer to [Drum Brake Adjustment](#).

12. Install the brake drum. Refer to [Brake Drum Replacement](#).

13. Install the tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).

14. Lower the vehicle.

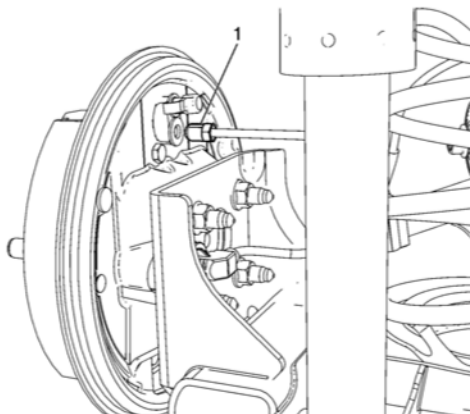
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1. BRAKES
2. DRUM BRAKES
3. REPAIR INSTRUCTIONS
- 4.

Rear Brake Cylinder Replacement

Removal Procedure

1. Warning:
Refer to [Brake Dust Warning](#).
2. Warning:
Refer to [Brake Fluid Irritant Warning](#).
3. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
4. Remove the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#).
5. Remove the brake drum. Refer to [Brake Drum Replacement](#).
6. Remove the drum brake adjusting hardware. Refer to [Drum Brake Adjusting Hardware Replacement](#).
7. Clean the area surrounding the wheel cylinder of dirt and debris.
8. Remove the wheel cylinder bleeder valve to get tool access to the brake pipe fitting.



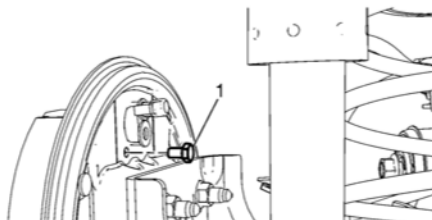


9.

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10. Disconnect the wheel cylinder brake pipe fitting (1).

11. Cap the brake pipe fitting to prevent brake fluid loss and contamination.



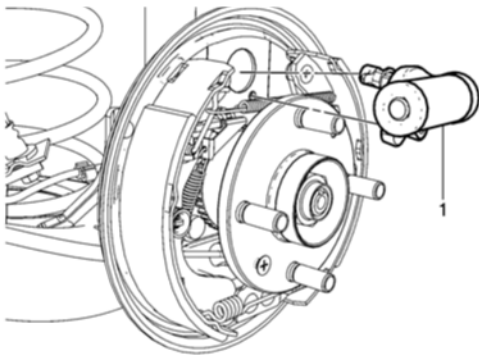


12.

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13. Remove the wheel cylinder bolts(1).



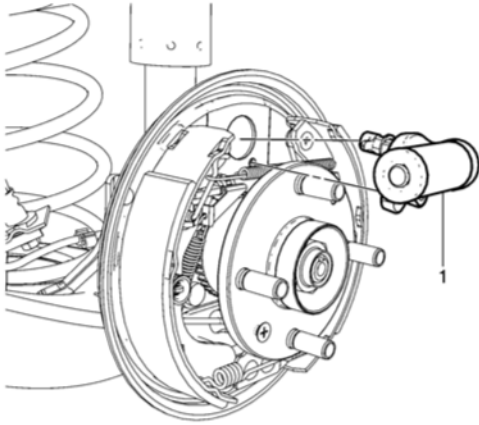


14.

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15. Spread the top of the brake shoes slightly and remove the wheel cylinder(1) from the backing plate.

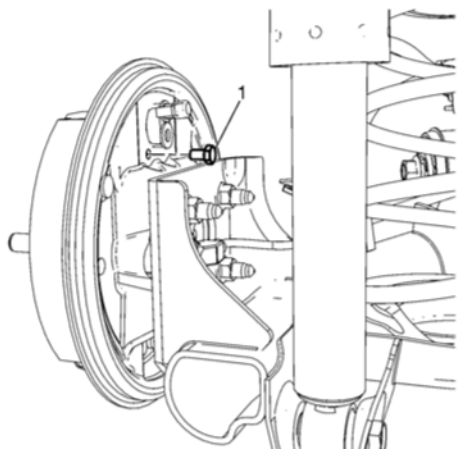
Installation Procedure



1.

[Click here for full size](#)

2. Spread the top of the brake shoes slightly and install the wheel cylinder(1) to the backing plate.



3.

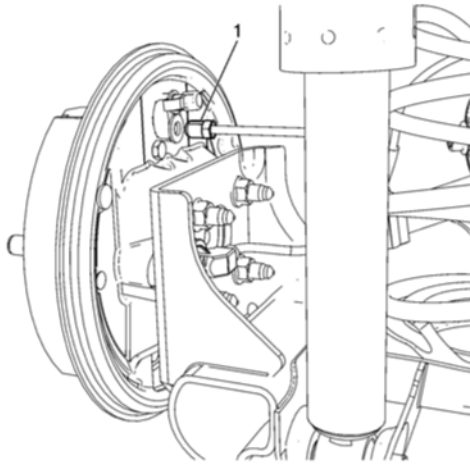
[Click here for full size](#)

4. Caution:

Refer to [Fastener Caution](#).

5. Install the wheel cylinder bolt(1) and tighten to 10â€”N-m (89â€”lbâ€”).

6. Install the wheel cylinder bleeder valve and tighten to 8.5â€”N-m (75â€”lbâ€”).



7.

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8. Install the wheel cylinder brake pipe fitting (1) to the wheel cylinder and tighten to 18 N·m (13 lb·ft).
9. Install the drum brake adjusting hardware. Refer to [Drum Brake Adjusting Hardware Replacement](#).
10. Adjust the drum brakes. Refer to [Drum Brake Adjustment](#).
11. Install the brake drum. Refer to [Brake Drum Replacement](#).

12. Install the tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).
13. Bleed the hydraulic brake system. Refer to [Hydraulic Brake System Bleeding](#).
14. Lower the vehicle.

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1. BRAKES
2. DRUM BRAKES
3. REPAIR INSTRUCTIONS
- 4.

Drum Brake Adjustment

Special Tools

CH-21177-A Drum to Brake Shoe Clearance Gauge

For equivalent regional tools, refer to [Special Tools](#).

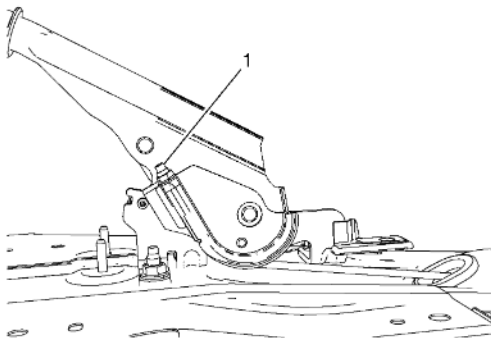
1. Warning:

Refer to [Brake Dust Warning](#).

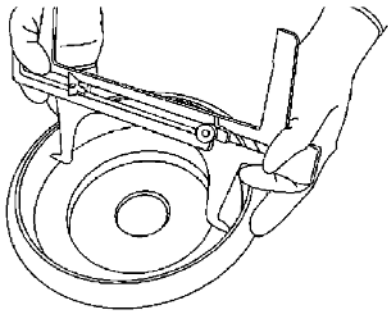
2. Note:

Use ONLY HAND TOOLS when loosening or tightening the adjusting nut.

3. Ensure the park brake lever is in the fully released position.
4. Release the park brake lever boot from the floor console by applying light pressure inward on the sides of the boot retainer.



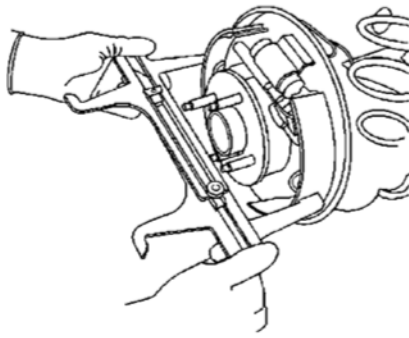
5. [Click here for full size](#)
6. Pull the boot away from the console to expose the front park brake cable adjusting nut(1).
7. Release the tension from the park brake cable system at the front cable adjusting nut.
8. Using ONLY HAND TOOLS, loosen the adjusting nut(1) completely to the end of the front cable threaded rod.
9. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
10. Remove the rear tire and wheel assemblies. Refer to [Tire and Wheel Removal and Installation](#).
11. Remove the brake drums. Refer to [Brake Drum Replacement](#).



12.

[Click here for full size](#)

13. Position the *CH-21177-A* gauge to the widest point of the brake drum inside diameter.
14. Firmly hand tighten the set screw on the *CH-21177-A* gauge .



15. [Click here for full size](#)
16. Remove the *CH-21177-A* gauge from the brake drum and position it over the corresponding brake shoe assembly at its widest point.
17. While holding the *CH-21177-A* gauge drum to brake shoe clearance gauge in position, insert a proper feeler gauge between one side of the *CH-21177-A* drum to brake shoe clearance gauge drum to brake shoe clearance gauge, and the corresponding brake shoe lining.
18. Rotate the brake shoe adjuster screw until the brake shoe linings contact the *CH-21177-A* gauge and the feeler gauge.
19. Specification
Brake shoe lining-to-drum clearance: $0.4 \pm 1.09 \text{ mm}$ ($0.016 \pm 0.043 \text{ in}$)
20. Repeat the above steps for the opposite brake drum and brake shoe assembly.
21. Install the brake drums. Refer to [Brake Drum Replacement](#).
22. Adjust the park brake. Refer to [Parking Brake Adjustment](#).
23. Install the rear tire and wheel assemblies. Refer to [Tire and Wheel Removal and Installation](#).
24. Lower the vehicle.
25. Position the park brake lever boot to the floor console and press the boot retainer into place to secure.

Specifications

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- 1. BRAKES
- 2. DRUM BRAKES
- 3. SPECIFICATIONS
- 4.

Fastener Specifications

Reusable Threaded Fastener Tightening Specifications

Application	Specification
	Metric (English)
Note:	
All fasteners listed in this table can be reused after removal.	
Brake Drum Screw	4N-m(35lb-in)
Brake Pipe Fitting	18N-m(13lb-ft)
Drum Brake Wheel Cylinder Bleeder Valve	8.5N-m(75lb-in)
Wheel Cylinder Mounting Bolt	10N-m(89lb-in)

1. BRAKES
2. DRUM BRAKES
3. SPECIFICATIONS
- 4.

Drum Brake Component Specifications

Application	Specification	
	Metric	English
Brake Drum Diameter— New	200.00±0.0mm	7.874±0.0in
Brake Drum Discard Diameter	201.00±0.0mm	7.913±0.0in
Brake Drum Maximum Allowable Radial Runout	0.03±0.0mm	0.001±0.0in
Brake Drum Maximum Allowable Scoring	0.50±0.0mm	0.020±0.0in
Brake Drum Maximum Diameter After Refinish	200.75±0.0mm	7.904±0.0in
Brake Shoe Lining Minimum Thickness	1.40±0.0mm	0.055±0.0in
Brake Shoe Lining Thickness— New	5.00±0.0mm	0.197±0.0in
Brake Shoe Lining-to-Drum Clearance	0.4±1.09±0.0mm	0.016±0.043±0.0in

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Special Tools and Equipment

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1. BRAKES
2. DRUM BRAKES
3. SPECIAL TOOLS AND EQUIPMENT
- 4.

Special Tools

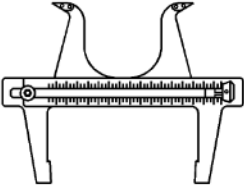
Illustration	Tool Number/Description
	CH-21177 J-21177-A Drum to Brake Shoe Clearance Gauge
Click here for full size	

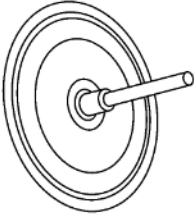
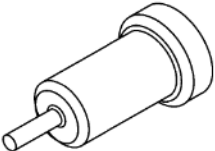
Illustration	Tool Number/Description
	CH-41013 J-41013 Rotor Resurfacing Kit Click here for full size

Illustration	Tool Number/Description
	CH-42450-A J-42450-A Wheel Hub Resurfacing Kit
Click here for full size	
	CH-8001 J-8001 Dial Indicator Set
Click here for full size	