

[2009 Chevrolet Aveo](#) | [Aveo, Wave, G3, Barina \(VIN S/T\) Service Manual](#) | [Brakes](#) | [Disc Brakes](#) | [Specifications](#) |

Document ID: 1307700

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Brake Hose Inlet Fitting-to-Caliper Bolt	40 N·m	30 lb ft
Caliper Bleeder Valve	6 N·m	53 lb in
Caliper-to-Steering Knuckle Mounting Bolts	95 N·m	70 lb ft
Retaining Frame-to-Caliper Housing Bolts	27 N·m	20 lb ft
Rotor-to-Front Wheel Hub Detent Screw	4 N·m	35 lb in
Splash Shield-to-Steering Knuckle Screws	4 N·m	35 lb in

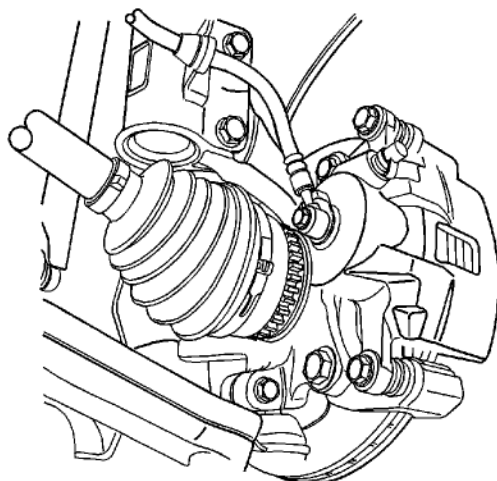
Disc Brake Component Specifications

Application	Specification	
	Metric	English
Caliper Piston Minimum Diameter	54 mm	2.12 in
Disc Type	Ventilated	
Discard Thickness for 236 mm (9.29 in) Diameter Rotor	18 mm	0.709 in
Discard Thickness for 256 mm (10.08 in) Diameter Rotor	22 mm	0.866 in
Maximum Assembled Lateral Runout - Installed	0.06 mm	0.002 in
Maximum Groove Depth	0.40 mm	0.016 in
Maximum Lateral Runout - Not Installed	0.03 mm	0.001 in
Maximum Thickness Variation	0.10 mm	0.004 in
New Rotor Thickness - 236 mm (9.29 in) Diameter Rotor	20 mm	0.787 in
New Rotor Thickness - 256 mm (10.08 in) Diameter Rotor	24 mm	0.945 in
Rotor Diameter - Larger Size with SACL500 Stamping	256 mm	10.08 in
Rotor Diameter - Smaller Size with SACL485F Stamping	236 mm	9.29 in

Front Disc Brake Pads Replacement

Removal Procedure

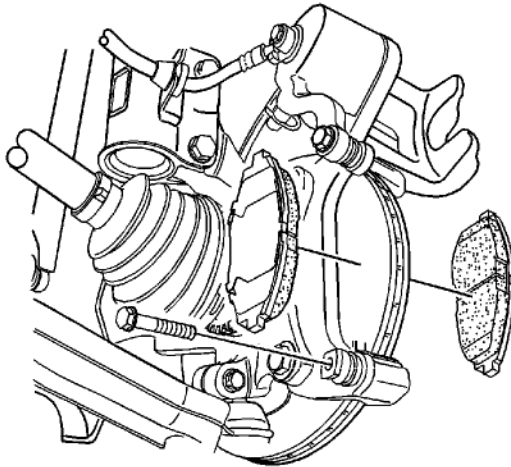
Caution: Refer to [Brake Caliper Caution](#) in the Preface section.



1. Raise and suitably support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. To maintain wheel balance, mark the relative positions of the wheel and the hub, and remove the front wheel. Refer to [Tire and Wheel Removal and Installation](#).

Note: It is not necessary to remove the caliper to service the brake shoes.

3. Remove the lower bolt of the caliper assembly retaining frame.

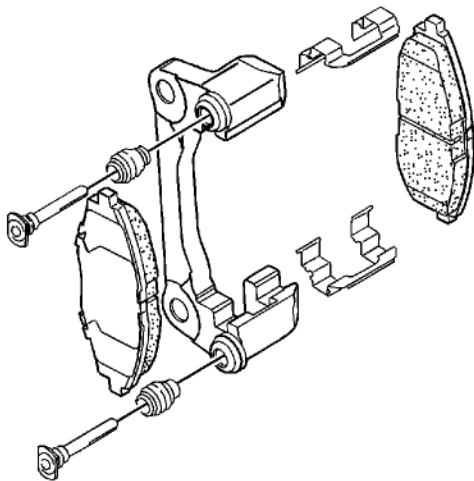


4. Pull the caliper piston housing up.

Warning: Refer to [Brake Dust Warning](#) in the Preface section.

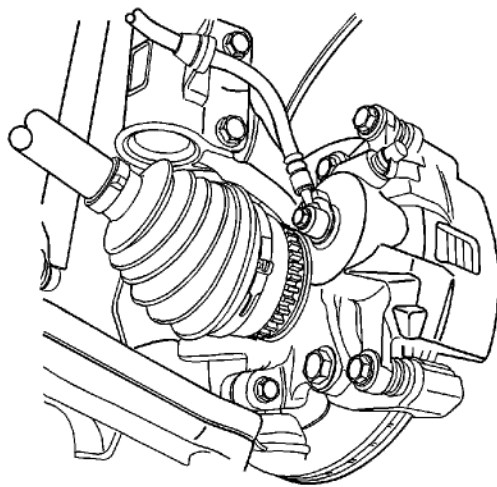
5. Remove the brake pads.

Installation Procedure



1. Measure the minimum lining thickness. Refer to [Brake Pad Inspection](#).
2. Install the brake pads into the caliper.
3. Push the piston inward, if necessary.

Caution: Refer to [Fastener Caution](#) in the Preface section.



Note: Take care not to damage the piston seal when the piston housing is pulled down.

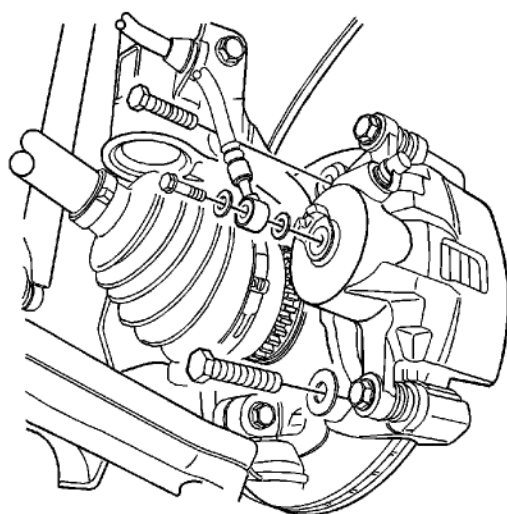
4. Pull down the caliper piston housing and secure it to the retaining frame with the lower bolt and tighten to **27 N·m (20 lb ft)**.
5. Align the marks that were made before the wheel removal and install the front wheels. Refer to [Tire and Wheel Removal and Installation](#).
6. Lower the vehicle.

Brake Caliper Replacement

Removal Procedure

1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Mark the position of the front wheels relative to the wheel hubs and remove the wheels. Refer to [Tire and Wheel Removal and Installation](#).

Warning: Refer to [Brake Dust Warning](#) in the Preface section.



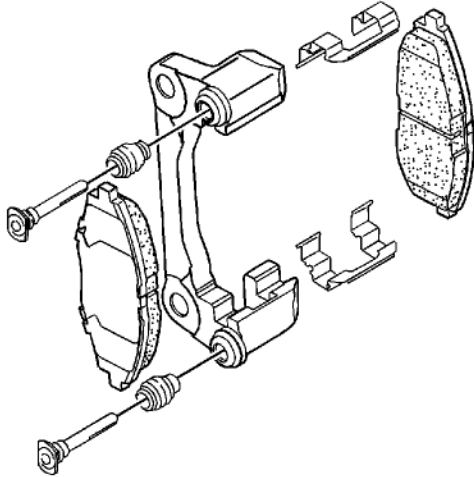
3. Remove the fitting and the washers that attach the brake hose to the caliper.

Warning: Refer to [Brake Fluid Irritant Warning](#) in the Preface section.

Caution: Refer to [Brake Fluid Effects on Paint and Electrical Components Caution](#) in the Preface section.

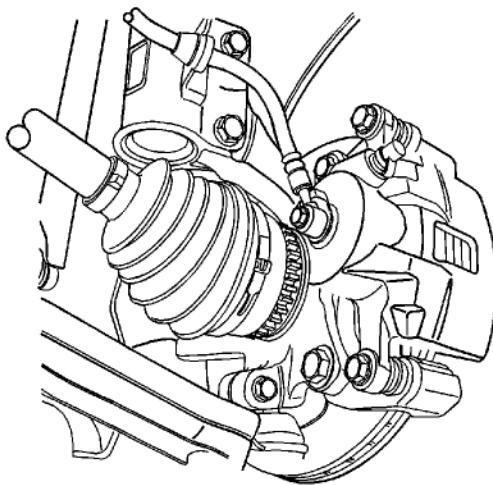
4. Disconnect the brake hose, and plug the openings in the caliper and the brake hose to prevent fluid loss and contamination.
5. Remove the caliper mounting bolts from the steering knuckle.
6. Remove the caliper assembly.

Installation Procedure



1. Ensure the slide pins are lubricated with Silicone Brake Lubricant, GM P/N 89021536, ACDelco P/N 89021537 (Canadian P/N 89021538), or equivalent. If necessary, refer to [Front Brake Caliper Overhaul](#).

Caution: Refer to [Fastener Caution](#) in the Preface section.



2. Install the caliper assembly with the mounting bolts.

Tighten

Tighten the caliper-to-steering knuckle mounting bolts to 95 N·m (70 lb ft).

3. Install the brake hose to the caliper with the washers and the brake hose inlet fitting.

Tighten

Tighten the brake hose inlet fitting to 40 N·m (30 lb ft).

4. Install the front wheels. Refer to [Tire and Wheel Removal and Installation](#).
5. Lower the vehicle.

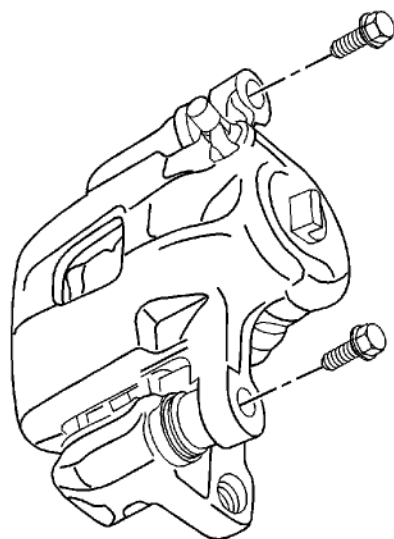
Warning: Do not move the vehicle until a firm brake pedal is obtained. Failure to obtain a firm pedal before moving vehicle may result in personal injury.

6. With the engine OFF, gradually apply and release the brake pedal several times in order to position the caliper piston and the pads.
7. Bleed the brake system. Refer to [Hydraulic Brake System Bleeding](#).

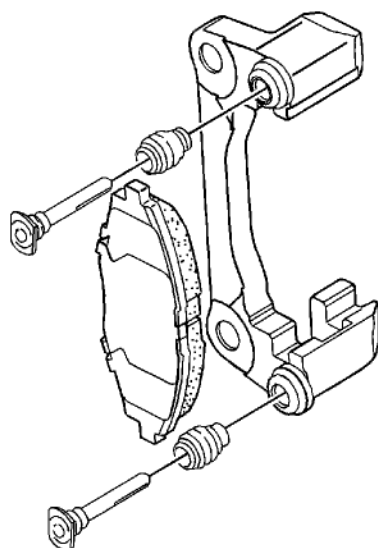
Front Brake Caliper Overhaul

Disassembly Procedure

1. Remove the caliper assembly. Refer to [Brake Caliper Replacement](#).

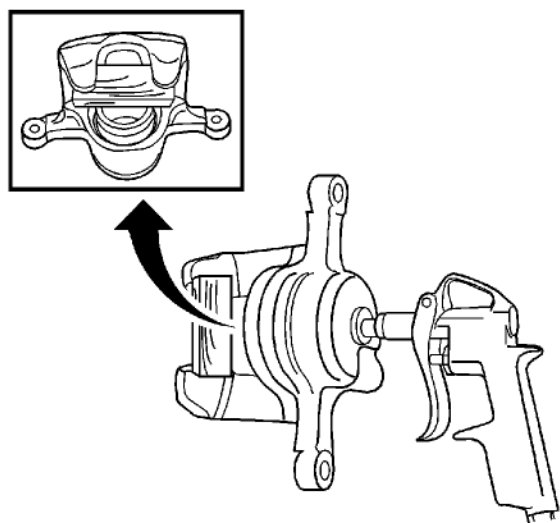


2. Remove the caliper guide pin that connects the caliper piston housing to the retaining frame.
3. Remove the bleeder valve protector and the bleeder valve.



4. Pull out the pins and the rubber boots.
5. Remove the front pad brake set, including the pad springs, from the caliper. Refer to [Front Disc Brake Pads Replacement](#).

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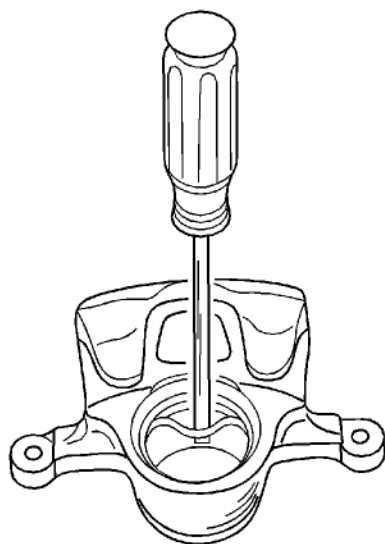
6. Insert a cloth or a piece of hardwood into the caliper housing.

Warning: Wear safety glasses when using compressed air in order to prevent eye injury.

Warning: Do not place fingers in front of the caliper piston(s) in an attempt to catch or protect it when applying compressed air. The piston(s) can fly out with force and could result in serious bodily injury.

Caution: Use just enough air pressure to ease the piston out of the bore. You can damage a blown-out piston even with the padding.

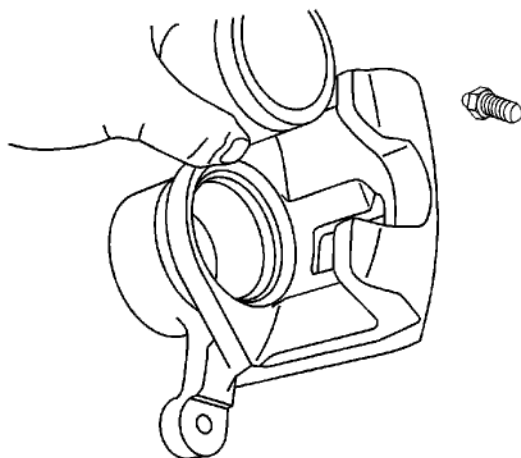
7. Apply compressed air to the caliper brake hose connector hole in order to remove the piston from the caliper.
8. Remove the outer seal.





9. Remove the inner seal from the caliper piston bore.

Inspection Procedure

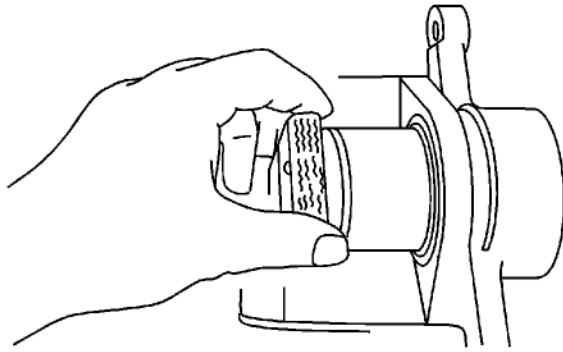


1. Clean all parts in denatured alcohol or brake fluid.
2. Use unlubricated compressed air in order to dry the parts and blow out all passages in the housing and the bleeder valve.
3. Inspect the caliper bleeder valve.

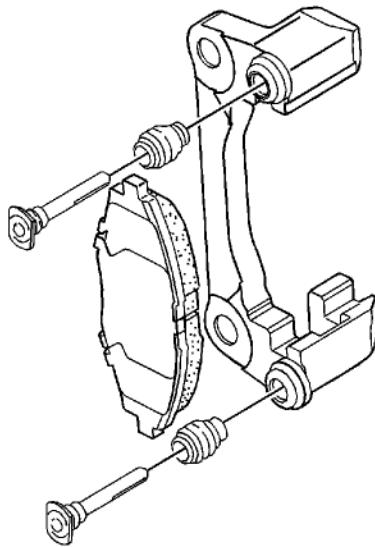
Note: Do not use a hone or any other procedure to remove material from the piston or the caliper bore.

4. Inspect the piston and the caliper for scoring, nicks, and corrosion. Replace components if necessary.

Assembly Procedure

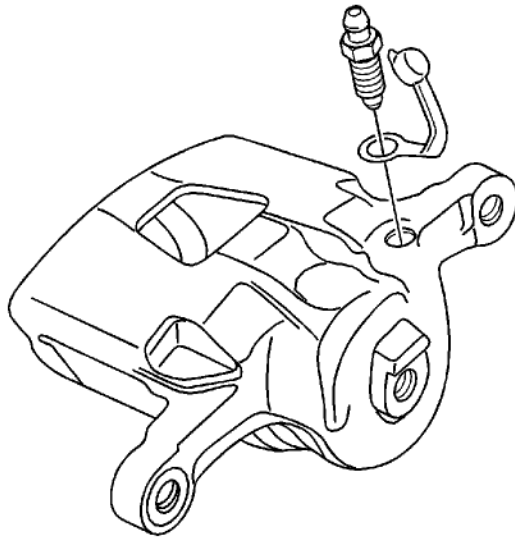


1. Lubricate a new piston inner seal with brake fluid.
2. Install the piston inner seal into the caliper housing groove. Ensure the seal is not twisted.
3. Lubricate the outer piston dust seal with brake fluid.
4. Install the outer piston dust seal in the groove.
5. Lubricate the piston with brake fluid.
6. Push the piston into its bore and ensure the dust seal is seated in the piston groove.

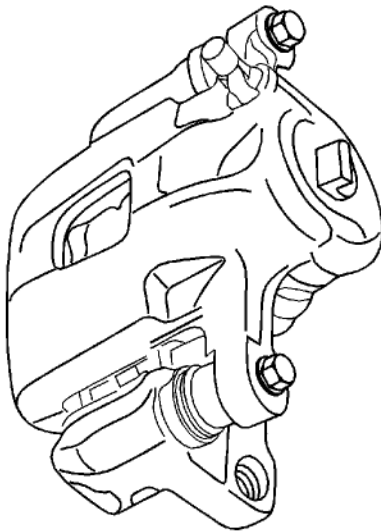


7. Coat the pins with Silicone Brake Lubricant, GM P/N 89021536, ACDelco P/N 89021537 (Canadian P/N 89021538), or equivalent, and install the boots.

Caution: Refer to [Fastener Caution](#) in the Preface section.



8. Install the caliper bleeder valve and the dust cap and tighten to **6 N·m (53 lb in)**.
9. Install the front pad brake set and the pad springs. Refer to [Front Disc Brake Pads Replacement](#).

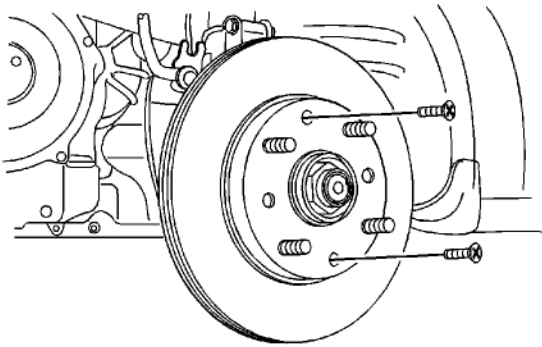


10. Connect the retaining frame to the caliper housing with the guide pin bolts and tighten to **27 N·m (20 lb ft)**.
11. Install the caliper assembly. Refer to [Brake Caliper Replacement](#).

Brake Rotor Replacement

Removal Procedure

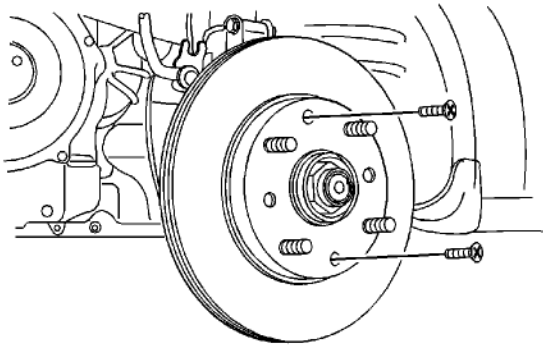
Caution: Refer to [Brake Caliper Caution](#) in the Preface section.



Note: To guarantee uniform braking on both sides, both rotors must have identical surfaces regarding smoothness and scoring depth. For this reason, always replace both rotors.

1. Remove the caliper assembly without disconnecting the brake hoses. Refer to [Brake Caliper Replacement](#).
2. Remove the caliper bracket.
3. Remove the rotor-to-front wheel hub detent screw from the rotor and the front wheel hub.
4. Pull off the rotor.

Installation Procedure



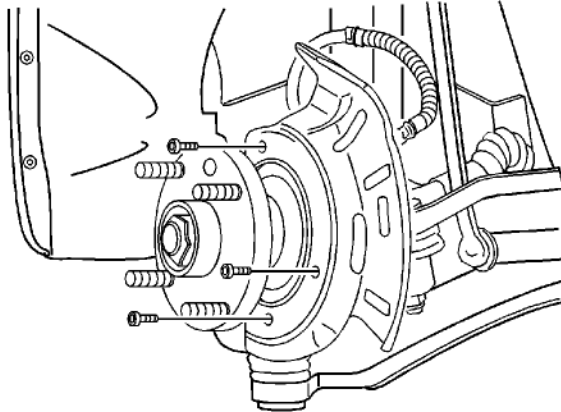
1. Inspect the rotor. Refer to [Brake Rotor Surface and Wear Inspection](#).

Caution: Refer to [Fastener Caution](#) in the Preface section.

2. Install the rotor to the front wheel hub by tightening the detent screw to **4 N·m (35 lb in)**.
3. Install the caliper bracket and tighten to **95 N·m (70 lb ft)**.
4. Install the caliper assembly. Refer to [Brake Caliper Replacement](#).

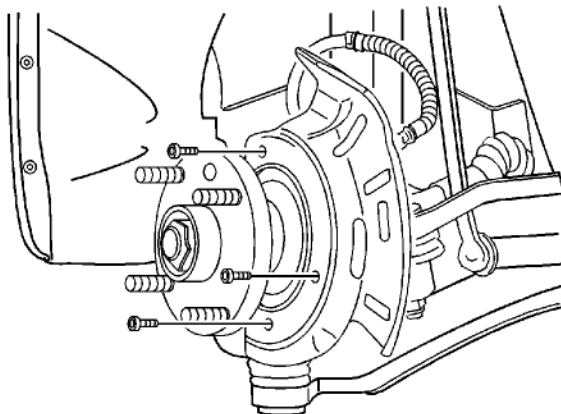
Front Brake Shield Replacement

Removal Procedure



1. Remove the rotor. Refer to [Brake Rotor Replacement](#).
2. Remove the screws for the splash shield from the steering knuckle.
3. Remove the splash shield.

Installation Procedure





1. Install the splash shield.

Caution: Refer to [Fastener Caution](#) in the Preface section.

2. Secure the splash shield to the steering knuckle with the screws and tighten to **4 N·m (35 lb in)**.
3. Install the rotor. Refer to [Brake Rotor Replacement](#).