

Brake System Bleeding

Material

Item	Specification
Motorcraft® High Performance DOT 3 Motor Vehicle Brake Fluid (US) / Motorcraft® Brake Fluid - Heavy Duty DOT 3 (Canada) PM-1-C (US); CPM-1-C (Canada)	WSS-M6C62-A or WSS-M6C65-A1

Manual Bleeding

WARNING: Do not use any fluid other than clean brake fluid meeting manufacturer's specification.

Additionally, do not use brake fluid that has been previously drained. Following these instructions will help prevent system contamination, brake component damage and the risk of serious personal injury.

WARNING: Carefully read cautionary information on product label. For emergency medical information seek medical advice. In the USA or Canada on Ford/Motorcraft products call: 1-800-959-3673. For additional information, consult the product Material Safety Data Sheet (MSDS) if available. Failure to follow these instructions may result in serious personal injury.

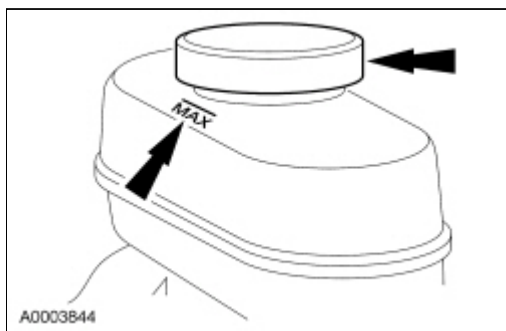
WARNING: Do not allow the brake master cylinder to run dry during the bleeding operation. Master cylinder may be damaged if operated without fluid, resulting in degraded braking performance. Failure to follow this instruction may result in serious personal injury.

NOTICE: Do not spill brake fluid on painted or plastic surfaces or damage to the surface may occur. If brake fluid is spilled onto a painted or plastic surface, immediately wash the surface with water.

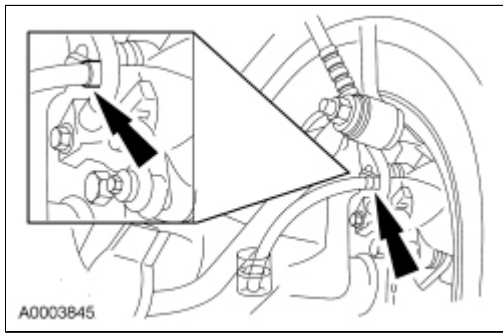
All vehicles

- NOTE:** Pressure bleeding the brake system is preferred to manual bleeding.

Clean all dirt from and remove the brake master cylinder filler cap and fill the brake master cylinder reservoir with clean, specified brake fluid.



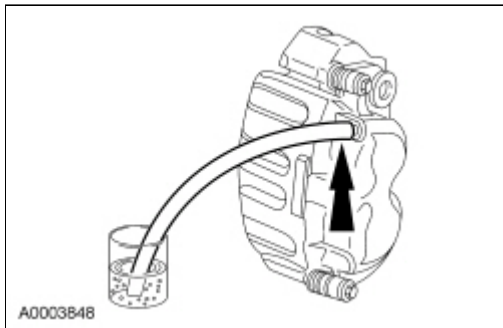
- Remove the RH rear brake caliper bleeder screw cap and place a box-end wrench on the bleeder screw. Attach a rubber drain hose to the bleeder screw and submerge the free end of the hose in a container partially filled with clean, specified brake fluid.



3. Have an assistant pump the brake pedal and then hold firm pressure on the brake pedal.
4. Loosen the RH rear brake caliper bleeder screw until a stream of brake fluid comes out. While the assistant maintains pressure on the brake pedal, tighten the bleeder screw.
 - Repeat until clear, bubble-free fluid comes out.
 - Refill the brake master cylinder reservoir with clean, specified brake fluid as necessary.
5. Tighten the RH rear brake caliper bleeder screw to specifications. Refer to Specifications in this section. Remove the rubber hose and install the bleeder screw cap.
6. Repeat Steps 2 through 5 for the LH rear brake caliper bleeder screw.

Vehicles equipped with 2 piston calipers

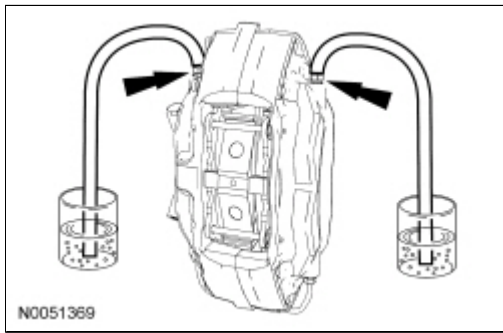
7. Remove the RH front brake caliper bleeder screw cap and place a box-end wrench on the bleeder screw. Attach a rubber drain hose to the bleeder screw and submerge the free end of the hose in a container partially filled with clean, specified brake fluid.



8. Have an assistant pump the brake pedal and then hold firm pressure on the brake pedal.
9. Loosen the RH front brake caliper bleeder screw until a stream of brake fluid comes out. While the assistant maintains pressure on the brake pedal, tighten the bleeder screw.
 - Repeat until clear, bubble-free fluid comes out.
 - Refill the brake master cylinder reservoir with clean, specified brake fluid as necessary.
10. Tighten the RH front brake caliper bleeder screw to specifications. Refer to Specifications in this section. Remove the rubber hose and install the bleeder screw cap.
11. Repeat Steps 7 through 10 for the LH front brake caliper bleeder screw.

Vehicles equipped with 4 or 6 piston calipers

12. Remove the RH front brake caliper inner bleeder screw cap and place a box-end wrench on the bleeder screw. Attach a rubber drain hose to the bleeder screw and submerge the free end of the hose in a container partially filled with clean, specified brake fluid.



13. Have an assistant pump the brake pedal and then hold firm pressure on the brake pedal.
14. Loosen the RH front brake caliper inner bleeder screw until a stream of brake fluid comes out. While the assistant maintains pressure on the brake pedal, tighten the bleeder screw.
 - Repeat until clear, bubble-free fluid comes out.
 - Refill the brake master cylinder reservoir with clean, specified brake fluid as necessary.
15. Tighten the RH front brake caliper inner bleeder screw to specifications. Refer to Specifications in this section. Remove the rubber hose and install the bleeder screw cap.
16. Repeat Steps 12 through 15 for the RH front brake caliper outer bleeder screw.
17. Repeat Steps 12 through 15 for the RH front brake caliper inner bleeder screw.
18. Repeat Steps 12 through 15 for the LH front brake caliper inner bleeder screw.
19. Repeat Steps 12 through 15 for the LH front brake caliper outer bleeder screw.
20. Repeat Steps 12 through 15 for the LH front brake caliper inner bleeder screw.

Pressure Bleeding



WARNING: Do not use any fluid other than clean brake fluid meeting manufacturer's specification. Additionally, do not use brake fluid that has been previously drained. Following these instructions will help prevent system contamination, brake component damage and the risk of serious personal injury.



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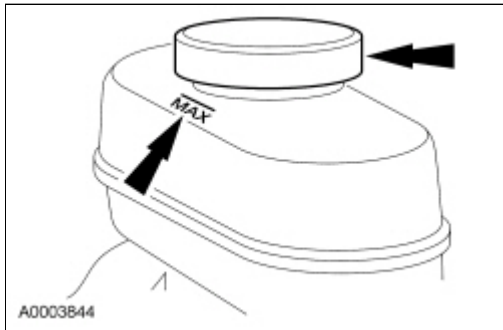
WARNING: Do not allow the brake master cylinder to run dry during the bleeding operation. Master cylinder may be damaged if operated without fluid, resulting in degraded braking performance. Failure to follow this instruction may result in serious personal injury.

NOTICE: Do not spill brake fluid on painted or plastic surfaces or damage to the surface may occur. If brake fluid is spilled onto a painted or plastic surface, immediately wash the surface with water.

NOTE: When any part of the hydraulic system is disconnected for repair or installation of new components, air can get into the system and cause spongy brake pedal action. This requires bleeding of the hydraulic system after it is correctly connected. The hydraulic system can be bled manually or with pressure bleeding equipment.

All vehicles

1. Clean all dirt from and remove the brake master cylinder filler cap and fill the brake master cylinder reservoir with clean, specified brake fluid.



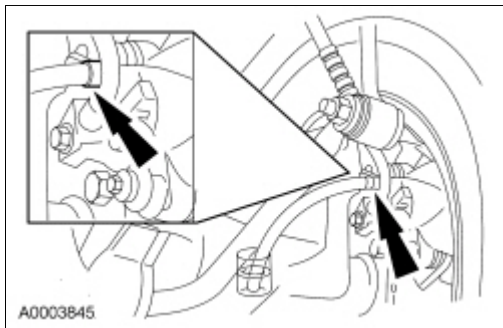
2. **NOTE:** Master cylinder pressure bleeder adapter tools are available from various manufacturers of pressure bleeding equipment. Follow the instructions of the manufacturer when installing the adapter.

Install the bleeder adapter to the brake master cylinder reservoir and attach the bleeder tank hose to the fitting on the adapter.

- Pressure bleed the brake system at 207-345 kPa (30-50 psi).

3. **NOTE:** Bleed the longest line first. Make sure the bleeder tank contains enough clean, specified brake fluid to complete the bleeding operation.

Remove the RH rear brake caliper bleeder screw cap and place a box-end wrench on the bleeder screw. Attach a rubber drain hose to the bleeder screw, and submerge the free end of the hose in a container partially filled with clean, specified brake fluid.



4. Open the valve on the bleeder tank.
5. Loosen the RH rear bleeder screw and leave open until clear, bubble-free brake fluid flows into the container. Wait 15 seconds after clear, bubble-free fluid flows through the rubber hose.
6. Tighten the RH rear bleeder screw to specifications. Refer to Specifications in this section. Remove the rubber hose and install the bleeder screw cap.

Vehicles equipped with 2 piston calipers

7. Continue bleeding the system in the following sequence:
 1. LH rear brake caliper bleeder screw
 - Tighten to specifications. Refer to Specifications in this section.
 2. RH front brake caliper bleeder screw
 - Tighten to specifications. Refer to Specifications in this section.
 3. LH front brake caliper bleeder screw
 - Tighten to specifications. Refer to Specifications in this section.

Vehicles equipped with 4 or 6 piston calipers

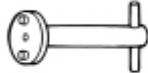

8. Continue bleeding the system in the following sequence:
 1. LH rear brake caliper bleeder screw
 - Tighten to specifications. Refer to Specifications in this section.
 2. RH front brake caliper inner bleeder screw
 - Tighten to specifications. Refer to Specifications in this section.
 3. RH front brake caliper outer bleeder screw
 - Tighten to specifications. Refer to Specifications in this section.
 4. RH front brake caliper inner bleeder screw
 - Tighten to specifications. Refer to Specifications in this section.
 5. LH front brake caliper inner bleeder screw
 - Tighten to specifications. Refer to Specifications in this section.
 6. LH front brake caliper outer bleeder screw
 - Tighten to specifications. Refer to Specifications in this section.
 7. LH front brake caliper inner bleeder screw
 - Tighten to specifications. Refer to Specifications in this section.

All vehicles

9. Close the bleeder tank valve and release the pressure. Remove the tank hose from the adapter and remove the adapter. Fill the brake master cylinder reservoir with clean, specified brake fluid if necessary. Install the brake master cylinder filler cap.
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Component Bleeding


Special Tool(s)


 ST1112-A	Adapter for Adjuster, Rear Brake Caliper Piston 206-026 (T87P-2588-A)
 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

Material

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Master Cylinder

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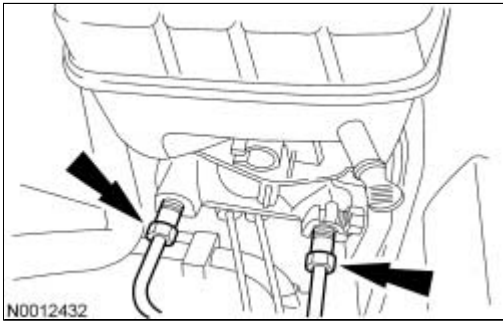
 **WARNING:** Carefully read cautionary information on product label. For emergency medical information seek medical advice. In the USA or Canada on Ford/Motorcraft products call: 1-800-959-3673. For additional information, consult the product Material Safety Data Sheet (MSDS) if available. Failure to follow these instructions may result in serious personal injury.

 **WARNING:** Do not allow the brake master cylinder to run dry during the bleeding operation. Master cylinder may be damaged if operated without fluid, resulting in degraded braking performance. Failure to follow this instruction may result in serious personal injury.

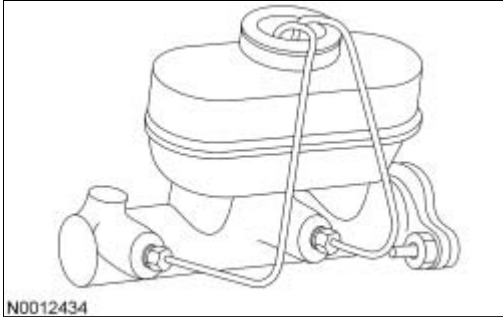
NOTICE: Do not spill brake fluid on painted or plastic surfaces or damage to the surface may occur. If brake fluid is spilled onto a painted or plastic surface, immediately wash the surface with water.

NOTE: When a new brake master cylinder has been installed or the system has been emptied, or partially emptied, it should be primed to prevent air from entering the system.

1. Disconnect the brake tubes.



2. Install short brake tubes onto the primary and secondary ports with the ends submerged in the brake master cylinder reservoir.



3. Fill the brake master cylinder reservoir with clean, specified brake fluid.
4. Have an assistant pump the brake pedal until clear fluid flows from the brake tubes, without air bubbles.
5. Remove the short brake tubes and install the master cylinder brake tube fittings.
 - Tighten to specifications. Refer to Specifications in this section.
6. Follow the pressure bleeding or manual bleeding procedure steps to bleed the system.

Front Brake Caliper



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WARNING: Do not allow the brake master cylinder to run dry during the bleeding operation. Master cylinder may be damaged if operated without fluid, resulting in degraded braking performance. Failure to follow this instruction may result in serious personal injury.

NOTICE: Do not spill brake fluid on painted or plastic surfaces or damage to the surface may occur. If brake fluid is spilled onto a painted or plastic surface, immediately wash the surface with water.

NOTE: When any part of the hydraulic system is disconnected for repair or installation of new components, air can get into the system and cause spongy brake pedal action. This requires bleeding of the hydraulic system after it is correctly

connected. The hydraulic system can be bled manually or with pressure bleeding equipment.

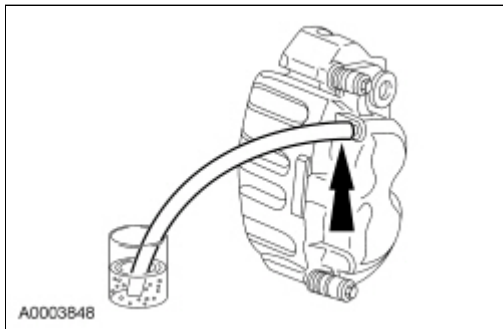
NOTE: Due to the complexity of the fluid path within the rear integral parking brake calipers, it is necessary to follow this procedure when new calipers are installed. This procedure is necessary only when installing a new rear brake caliper. To bleed the brake system, refer to [Brake System Bleeding](#) in this section.

All vehicles

1. Remove the wheel and tire. For additional information, refer to [Section 204-04](#).

Vehicles equipped with 2 piston calipers

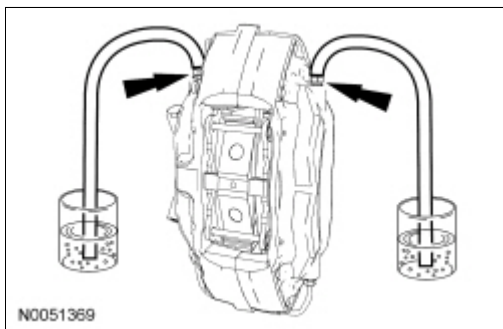
2. Remove the front brake caliper bleeder screw cap and place a box-end wrench on the bleeder screw. Attach a rubber drain hose to the bleeder screw and submerge the free end of the hose in a container partially filled with clean, specified brake fluid.



3. Have an assistant pump the brake pedal and then hold firm pressure on the brake pedal.
4. Loosen the front brake caliper bleeder screw until a stream of brake fluid comes out. While the assistant maintains pressure on the brake pedal, tighten the bleeder screw.
 - Repeat until clear, bubble-free fluid comes out.
 - Refill the brake master cylinder reservoir with clean, specified brake fluid as necessary.
5. Tighten the front brake caliper bleeder screw to specifications. Refer to Specifications in this section. Remove the rubber hose and install the bleeder screw cap.

Vehicles equipped with 4 or 6 piston calipers

6. Remove the front brake caliper inner bleeder screw cap and place a box-end wrench on the bleeder screw. Attach a rubber drain hose to the bleeder screw and submerge the free end of the hose in a container partially filled with clean, specified brake fluid.



7. Have an assistant pump the brake pedal and then hold firm pressure on the brake pedal.
8. Loosen the front brake caliper inner bleeder screw until a stream of brake fluid comes out. While the assistant maintains pressure on the brake pedal, tighten the bleeder screw.

- Repeat until clear, bubble-free fluid comes out.
 - Refill the brake master cylinder reservoir with clean, specified brake fluid as necessary.
9. Tighten the front brake caliper inner bleeder screw to specifications. Refer to Specifications in this section. Remove the rubber hose and install the bleeder screw cap.
 10. Repeat Steps 7 through 10 for the front brake caliper outer bleeder screw.
 11. Repeat Steps 7 through 10 for the front brake caliper inner bleeder screw.

All vehicles

12. Install the wheel and tire. For additional information, refer to [Section 204-04](#).

Rear Brake Caliper



WARNING: Do not use any fluid other than clean brake fluid meeting manufacturer's specification. Additionally, do not use brake fluid that has been previously drained. Following these instructions will help prevent system contamination, brake component damage and the risk of serious personal injury.



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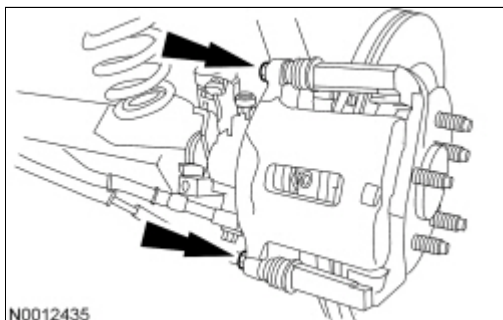
WARNING: Do not allow the brake master cylinder to run dry during the bleeding operation. Master cylinder may be damaged if operated without fluid, resulting in degraded braking performance. Failure to follow this instruction may result in serious personal injury.

NOTICE: Do not spill brake fluid on painted or plastic surfaces or damage to the surface may occur. If brake fluid is spilled onto a painted or plastic surface, immediately wash the surface with water.

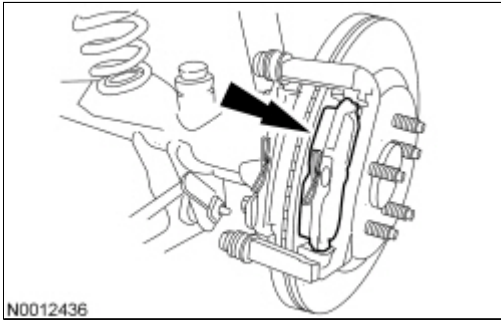
NOTE: When any part of the hydraulic system is disconnected for repair or installation of new components, air can get into the system and cause spongy brake pedal action. This requires bleeding of the hydraulic system after it is correctly connected. The hydraulic system can be bled manually or with pressure bleeding equipment.

NOTE: Due to the complexity of the fluid path within the rear integral parking brake calipers, it is necessary to follow this procedure when new calipers are installed. This procedure is necessary only when installing a new rear brake caliper. To bleed the brake system, refer to [Brake System Bleeding](#) in this section.

1. Remove the wheel and tire. For additional information, refer to [Section 204-04](#).
2. Remove the 2 brake caliper bolts and position the brake caliper aside.



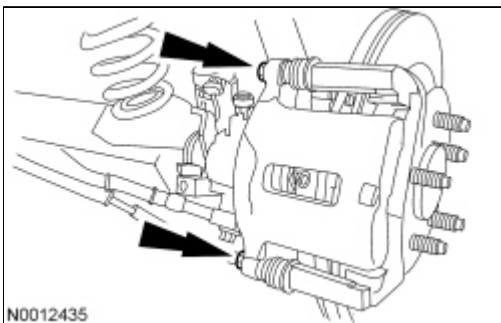
3. Remove the outer brake pad.



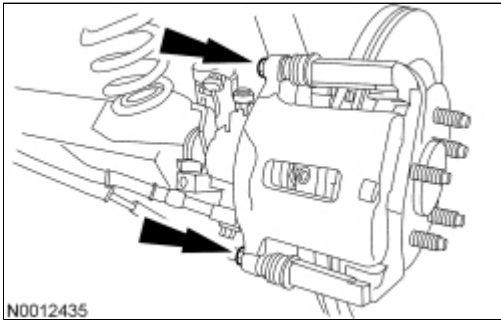
4. **NOTE:** Place a shop towel between the caliper and the brake disc.

Install the brake caliper using the 2 brake caliper bolts.

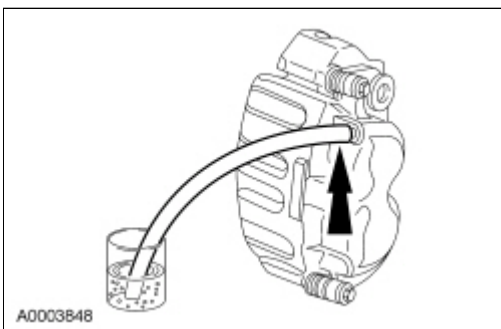
- Tighten to specifications. Refer to Specifications in this section.



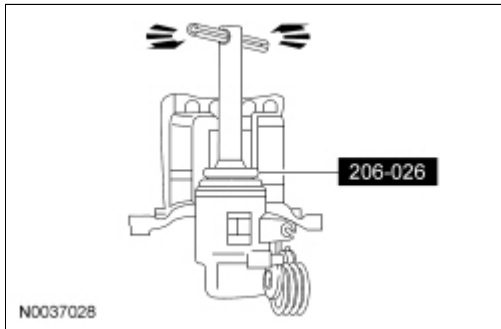
5. Slowly apply the brake pedal to extend the brake caliper piston outward.
6. Remove the 2 brake caliper bolts and position the brake caliper aside.



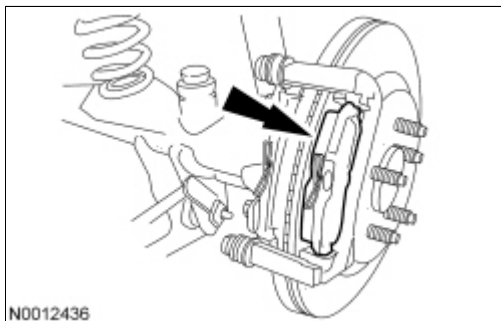
7. Remove the brake caliper bleeder screw cap and place a box-end wrench on the bleeder screw. Attach a rubber drain hose to the bleeder screw and submerge the free end of the hose in a container partially filled with clean, specified brake fluid.



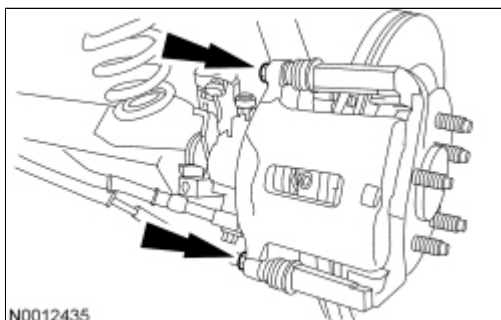
8. Loosen the brake caliper bleeder screw.
9. Using the Rear Brake Caliper Piston Adjuster Adapter, fully retract the brake caliper piston and tighten the bleeder screw to specifications. Refer to Specifications in this section.



10. Repeat Steps 4 through 9 until clear, bubble free fluid comes out.
 - Refill the brake master cylinder reservoir as necessary.
 - Install the bleeder screw cap.
11. Remove the 2 brake caliper bolts and the shop towel.
12. Install the outer brake pad.



13. Position the brake caliper and install the 2 brake caliper bolts.
 - Tighten RH caliper guide pin bolts in the following sequence:
 - Tighten the top bolt to 33 Nm (24 lb-ft).
 - Tighten the bottom bolt to 33 Nm (24 lb-ft).
 - Tighten LH caliper guide pin bolts in the following sequence:
 - Tighten the bottom bolt to 33 Nm (24 lb-ft).
 - Tighten the top bolt to 33 Nm (24 lb-ft).




14. Install the wheel and tire. For additional information, refer to [Section 204-04](#).

ABS Hydraulic Control Unit (HCU) Bleeding

 **WARNING:** Do not use any fluid other than clean brake fluid meeting manufacturer's specification.

Additionally, do not use brake fluid that has been previously drained. Following these instructions will help prevent system contamination, brake component damage and the risk of serious personal injury.

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 **WARNING:** Do not allow the brake master cylinder to run dry during the bleeding operation. Master cylinder may be damaged if operated without fluid, resulting in degraded braking performance. Failure to follow this instruction may result in serious personal injury.

NOTICE: Do not spill brake fluid on painted or plastic surfaces or damage to the surface may occur. If brake fluid is spilled onto a painted or plastic surface, immediately wash the surface with water.

NOTE: This procedure is only required when a new Hydraulic Control Unit (HCU) is installed.

NOTE: When any part of the hydraulic system is disconnected for repair or installation of new components, air can get into the system and cause spongy brake pedal action. This requires bleeding of the hydraulic system after it is correctly connected. The hydraulic system can be bled manually or with pressure bleeding equipment.

1. Connect the scan tool and follow the ABS HCU bleeding instructions.
 2. Use the pressure or manual bleeding procedure to bleed the system, refer to [Brake System Bleeding](#) in this section.
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